

**IBM Fiscal Printer
Argentina Model 4610 GR3/GA3/GE3 (Macarena)
Programming Guide Supplement
Version 0E 01**

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Version	Reviewers
All versions	Eduardo Revelli - Argentina Marketing

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Review Record.	<i>Martinez TEAM CONNECTION (family FISCAL), Componet AR90.</i>	<i>Heading in document.</i>	<i>GA + 2 years.</i>
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Summary of Changes

Changes resulting in document revisions will be summarized in this table in reverse chronological sequence. Revision numbers and letters will highlight the text changed in new document versions.

Version	Date	Change Description
v0E 01	Jan 24, 2003	<ul style="list-style-type: none"> Fiscal Memory - Connection and Disconnection: was added. Fiscal Memory - Error on Writing: was added. This version of Programming Guide Supplement corresponds to microcode EC level 0E.
v0D 01	Oct 9, 2002	<ul style="list-style-type: none"> USB Fiscal Printer Disconnected - Stand Alone Operation: was added. This version of Technical Specification corresponds to microcode EC level 0D.
v0C 01	Sep 4, 2002	<ul style="list-style-type: none"> Homologated/Microcode EC Level Table: was added. Fiscal Memory Map: was changed. Beta Versions: was removed. DA cmd. (Electronic Read Fiscal Memory Tables - Read Homologated and Microcode EC Level Table): was changed. Fiscal Memory Reports: homologated and microcode ec levels information was changed. This version of Technical Specification corresponds to microcode EC level 0C.
v0B 01	Jul 23, 2002	<ul style="list-style-type: none"> CD cmd. (Cash Drawer Management): was added. This version of Technical Specification corresponds to microcode EC level 0B.
v0A 01	Mar 26, 2002	<ul style="list-style-type: none"> There are not changes in the spec for this version. This version of Technical Specification corresponds to microcode EC level 0A. Internal microcode version 01.
v09 01	Mar 13, 2002	<ul style="list-style-type: none"> There are not changes in the spec for this version. This version of Technical Specification corresponds to microcode EC level 09. Internal microcode version 01.
v08 01	Feb 21, 2002	<ul style="list-style-type: none"> There are not changes in the spec for this version. This version of Technical Specification corresponds to microcode EC level 08. Internal microcode version 01.
v07 01	Jan 30, 2002	<ul style="list-style-type: none"> There are not changes in the spec for this version. This version of Technical Specification corresponds to microcode EC level 07. Internal microcode version 01.
v06 02	Jan 25, 2002	<ul style="list-style-type: none"> DB cmd. (Electronic Read Counters and Accumulators) <ul style="list-style-type: none"> Byte 29: was changed. Byte 30 - bit 0: was added. Byte 212 (in Initialization Settings): was added. This version of Technical Specification corresponds to microcode EC level 06. Internal microcode version 02.
v05 01	Dic 12, 2001	<ul style="list-style-type: none"> 4610 USB (Protocol USB - Cable USB) Fiscal Unit Status: was added. This version of Technical Specification corresponds to microcode EC level 05. Internal microcode version 01.

Version	Date	Change Description
v04 02	Nov 23, 2001	<ul style="list-style-type: none"> • 25 cmd. (Ticket Invoice/Credit Note Set Customer Information): the rules were changed. • This version of Technical Specification corresponds to microcode EC level 04. Internal microcode version 02.
v04 01	Nov 19, 2001	<ul style="list-style-type: none"> • 30 cmd. (Credit Note Print Header): flag FCUSTCN was added. • 30 cmd. (Credit Note Print Header): flag FCUSTSET was eliminated. • 39 cmd. (Credit Note End): flag FCUSTCN was added. • 3A cmd. (Credit Note Cancel): flag FCUSTCN was added. • D58, D59, D60, D61 and M53 msg.: were added. • Daily Entry Table: FM_DE_N_DNFH and FM_DE_N_DNF accumulators were added. • DA cmd. (Electronic Read Fiscal Memory Tables - Read Daily Entry Table): FM_DE_N_DNFH and FM_DE_N_DNF accumulators were added. • The Microcode EC Level will be printed in decimal format. • The Homologated Level will be printed in decimal format. • Microcode EC Level and Homologated Level are replicated on SJ station only when the sale period is been open. • Ticket, Ticket Invoice and Credit Note: 6 ordinary printing lines are allowed. • 2E cmd. (Set General Parameters): default value for Number of Lines To Print in Ticket Invoice and Credit Note is 9999. • This version of Technical Specification corresponds to microcode EC level 04. Internal microcode version 01.
v03 03	Sep 25, 2001	<ul style="list-style-type: none"> • Fiscal Memory Report: in V.ANT only homologated level (hh) is printed, microcode EC level (ee) was eliminated. • Non-Fiscal Homologated Documents: only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document. • RC 156: was changed. • This version of Technical Specification corresponds to microcode EC level 03. Internal microcode version 03.
v03 02	Ago 27, 2001	<ul style="list-style-type: none"> • The initialization sequence: was changed. • 18 cmd. (Set Fiscal Mode): flag FSETDATE was added. • CA cmd. (Download Graphics): new rules were added. • 2E cmd. (Set General Parameters): notes for cmd. extension 05 were changed. • RC 200: only valid for 4610 USB. • RC 203: there are ones for 4610 RS-485 and another for 4610 USB. • RC 206: was changed. • RC 209: only valid for 4610 USB. • This version of Technical Specification corresponds to microcode EC level 03. Internal microcode version 02.
v02 06	Ago 15, 2001	<ul style="list-style-type: none"> • Serial Number Table: was added. • 1B cmd. (Serialize Fiscal Printer): was changed. • DB cmd. (Electronic Read Counters and Accumulators): transaction counters was changed. • RC 163: was changed. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 06.

Version	Date	Change Description
v02 05	Jul 24, 2001	<ul style="list-style-type: none"> • CA cmd. (Download Graphics): was added. • Initialization Download Graphics printouts: were added. • 01 cmd. (Ticket Print Header): was changed. • Ticket Header printout: was changed. • 08 cmd. (Retrieve/Send Interrupted Command): was changed. • RC's 77, 78, 79 and 80: were added. • RC 75 and 105: were changed. • Microcode EC Level Table: was eliminated. • Homologated Level Table: was added. • DA cmd. (Electronic Read Fiscal Memory Tables) - Response to read Microcode EC Level Table: was eliminated. • DA cmd. (Electronic Read Fiscal Memory Tables) - Response to read Homologated Level Table: was added. • Msg. D57: was added. • All printouts: the homologated level was added. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 05.
v02 01	Jul 4, 2001	<ul style="list-style-type: none"> • E7 cmd. (Diagnostic and Alignment Utilities): acceptable state restrictions were added. • 30 cmd. (Credit Note Print Header): flag FHDRPRT (Ticket Header Printed): was added. • DB cmd. (Electronic Read Counters and Accumulators): Lif_N_RetV_A and Lif_N_RetV_BC were added. • Msg's C32, C33, D16 and D17: were added. • X-Report: new messages lines were added. • Closure Report: new messages lines were added. • Fiscal Memory Report: new messages lines were added. • This version of Technical Specification corresponds to microcode EC level 02. Internal microcode version 01.

Version	Date	Change Description
v01 01	Jun 13, 2001	<ul style="list-style-type: none"> • 03 cmd. (Item Additional Description): was changed. • E0 cmd. (Ticket Invoice Print Header): was changed. • 30 cmd. (Credit Note Print Header): was added. • 31 cmd. (Credit Note Fixed Price Item Sale): was added. • 32 cmd. (Credit Note Fixed Price Negative Item Sale): was added. • 33 cmd. (Credit Note Item Sale): was added. • 34 cmd. (Credit Note Negative/Uplift Item Sale): was added. • 35 cmd. (Credit Note Subtotal/Total): was added. • 36 cmd. (Credit Note Global Perception): was added. • 37 cmd. (Credit Note Uplift/Discount on Subtotal): was added. • 38 cmd. (Credit Note Payment): was added. • 39 cmd. (Credit Note End): was added. • 3A cmd. (Credit Note Cancel): was added. • C8 cmd. (Set Barcode Parameters): was added. • C9 cmd. (Print Barcode): was added. • D7 cmd. (Ticket Set/Reset Header): reset action was added. • B7 cmd. (Ticket Invoice/Credit Note Set/Reset Header): reset action was added. • 17 cmd. (Set/Reset Trailer): reset action was added. • 22 cmd. (TI/CN Set/Reset Perception Type): reset action was added. • 24 cmd. (Set/Reset Payment Type): reset action was added. • DB cmd. (Electronic Read Counters and Accumulators): initialization setting values were added. • EB cmd. (Ordinary Printing Line on DI Station): was changed. • EC cmd. (Line Feed): was changed. • EE cmd. (Cut Paper): was changed. • F4 cmd. (Head Position & Open/Close Throat): was changed. • F8 cmd. (Report Printer EC): was changed. • E7 cmd. (Diagnostic and Alignment Utilities): was changed. • Flag FCRENOT (Credit Note in Progress): was added. • Flag FTOTACN (Credit Note Total): was added. • RC's 104, 105, 125, 126, 169, 204, 208, 209, 210, 235: were added. • RC's 75, 163, 200, 203, 206, 214: were changed. • Msg's V25, M13, M14, M51, M52: were added. • Cmd. Extension: the reserved bits will be set to 0. • Ticket Invoice and Credit Note Type 'A': VAT Not Enrolled calculations applicable to the item sale was added. • Fiscal Memory (Daily Entry Table): daily total and daily VAT total are stored in ones-complement notation. • This version of Technical Specification corresponds to microcode EC level 01. Internal microcode version 05.

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1.0 Fiscal Hardware Technical Specification

1.1 4610 Fiscal Printer - Model GR3/GA3/GE3 Features

The fiscal printer is the TI-3/4 printer with a second thermal station which is used as a journal station. Since 4610 fiscal printer is based on the TI-3/4, it has the same SBCS logic card as a the TI-3/4.

The printer features are:

- Customer Receipt Station (CR) - thermal printing
- Summary Journal Station (SJ) - thermal printing
- Document Insert Station (DI) - impact printing
- User defined character sets
- RS-232 communication interfaces
- RS-485 or USB communication interfaces
- Bar Code printing capability (all stations)
- Paper Cutter (CR station only)
- Barcode generation (CR and SJ stations only)

1.1.1 Characters Per Inch

- Thermal Printing (CR and SJ stations)
 - 15 CPI => 44 characters/line
 - 12 CPI => 34 characters/line
- Impact Printing (DI stations)
 - 15 CPI => 47 characters/line
 - 12 CPI => 37 characters/line

1.2 Fiscal Security Characteristics of the 4610 Fiscal Printer

The IBM POS fiscal solution is based on the concept of a 'fiscal printer'. Because of the restrictions in most countries relative to the definition of a 'fiscal machine', a distributed POS must have the fiscal electronics sealed in the printer. The printer becomes the 'fiscal machine' in a distributed POS.

This solution prevents fraud by ensuring absolutely that what is printed is recorded in the fiscal electronics.

In this case the only fiscal dependency remaining on the POS terminal that the printer is attached to is the ability to sense connection of the POS displays.

Our system provides that capability by having all the POS I/O wired in parallel which allows the fiscal printer to monitor the serial I/O responses to polls from the configured displays. If a display is disconnected or stops operating, the fiscal printer will inhibit further printing until the display resumes operation.

1.2.1 Method of Sealing

IBM seals the printer with a single screw covered by a lead plug. The CE uses an official tool to stamp the authorized fiscal logo into the lead seal when it is inserted into the opening over the screw.

1.2.2 Fiscal Processing

The IBM fiscal printer has a special electronics board sealed in the fiscal base which intercepts the data from the POS terminal and processes it before sending it to the printer to be printed. This ensures that nothing is printed that does not completely comply with the fiscal law requirements and that all data is captured in the fiscal printer non-volatile memory.

The fiscal processor logic board has 64K bytes of static RAM and a time of day clock module both backed up by a 10 year lithium battery.

A fixed pattern in the memory is checked each time the printer is powered on as an alternative to having a battery voltage sensor.

For 4610 RS-485, a DS80C320 microprocessor is used to process the data and perform arithmetic.

For 4610 USB, a DS80C390 microprocessor is used to process the data and perform arithmetic.

All fiscal data is calculated by the fiscal processor board and any totals sent from the POS terminal are verified before printing is allowed. The microprocessor has special internal circuitry which detects power down situations with enough warning to save all fiscal data in the battery backed up memory.

1.2.3 J4/CE Jumper

1.2.3.1 Description

There is a J4/CE jumper which is used to reset the RAM after a repair or in the event of a temporary data error in the RAM. The J4/CE jumper can also be used to control some commands so that only the CE can perform them.

When the J4/CE jumper is activated, the RAM is cleared and all totals are reset. Available information, such as the serial number, is loaded from the fiscal memory to the RAM.

A battery jumper is available on the fiscal printer logic card to allow a certification test to verify that the processor card would detect a low battery condition.

1.2.3.2 Procedure

The activate J4/CE jumper procedure consists in:

- Turn OFF the Fiscal Printer
- Put the J4/CE jumper in ON (ACTIVE) position
- Turn ON the Fiscal Printer

The deactivate J4/CE jumper procedure consists in:

- Turn OFF the Fiscal Printer
- Put the J4/CE jumper in OFF (STORED) position
- Turn ON the Fiscal Printer

1.2.3.3 Calculations while the J4/CE jumper is active:

- Recover the following counters from the fiscal memory tables

Lif_N_Clos

Lif_N_Ract

Lif_N_Lock

- Operate on the following counters as shown below and they are incremented on every IPL with J4/CE jumper ON (ACTIVE) position.

Day_N_Ract = *Day_N_Ract* + 1

Lif_N_Ract = *Lif_N_Ract* + 1

Day_N_Lock = *Day_N_Lock* + 1

Lif_N_Lock = *Lif_N_Lock* + 1

1.2.3.4 Rules

- Only authorized service personnel can move the J4/CE jumper.
- 200 repair actions are allowed during the life of the fiscal printer and each repair action is stored in the fiscal memory.
- When the fiscal printer is locked only the following commands can be issued:
 - 15 - Extended and Short Fiscal Memory Report
 - 1F - POS Identification Report
 - FF - Dump Fiscal RAM and Fiscal Memory
 - DA - Electronic Read Fiscal Memory Tables
 - DB - Electronic Read Counters and Accumulators
- When the number repair reach 200, no more J4/CE jumper action can be issued and only the following commands are allowed:
 - 15 - Fiscal Memory Report - Extended and Short
 - 1F - POS Identification Report
 - FF - Dump Fiscal RAM and Fiscal Memory
 - DA - Electronic Read Fiscal Memory Tables
 - DB - Electronic Read Counters and Accumulators
- The RAM pattern is initialized after all the other initialization has been completed.
- This process can take a long time if the fiscal memory is almost full or full.
- Flags are set or cleared as shown below.

1.2.4 Fiscal Memory

IBM uses a 2 megabit EPROM (electronically programmable read-only memory) sealed in a tub of epoxy on the base of the fiscal printer for the long term fiscal memory. At the end of each day the daily totals are written to the fiscal memory. The fiscal processor logic board generates the appropriate voltages and logic to write data to an EPROM. EPROMs are completely non-volatile and have a life span measured in decades rather than years.

Because it is covered with epoxy the EPROM data cannot be erased.

(Although EPROMs start at all 'ones', so if the fiscal seal is breached any 'one' bits could be programmed to 'zero' even in previously recorded data.)

The IBM fiscal printer can store 3840 days of data at 64 bytes of data per day.

The IBM fiscal printer provides electronic readout of the fiscal data (if allowed by law) to allow a tax inspector to readout the data electronically, possibly from the store controller/server, as opposed to having to printout the data from each cash register on the register tape.

1.2.5 Fiscal Memory - A5 pattern

The fiscal microcode writes the pattern "A5" in address 82 (hexa) in the fiscal memory to be able to detect the eeprom connection.

It is read by all fiscal commands.

If it isn't found, the fiscal printer returns error code 109.

1.2.6 Fiscal Label

The fiscal label is attached to the base of the fiscal printer and contains the same serial number that is electronically written in the fiscal memory.

Since the label is part of the same field replaceable unit as the fiscal base with epoxied fiscal memory there is no danger of having a serial number mismatch.

In accordance with many of the fiscal laws, the integrated mounting hardware for the IBM 469X POS terminals has been modified to allow visibility of the fiscal label and fiscal seal to a person walking around the POS terminal without requiring any disassembly.

1.2.7 Display Checking

The microcode continually checks for connection of the POS displays by monitoring the Serial I/O (Device Channel) connection for display polls and then checking for appropriate responses.

If the microcode detects a required display missing, the FDISPLY flag is set to NO. If the correct number of displays is connected and operational the microcode sets the FDISPLY state to YES.

2.0 Fiscal Accounting Technical Description

This section discusses the fiscal printer operation, defines the terminology used in the operation of the printer, and describes the fiscal commands in terms of the function they provide.

2.1 Fiscal Printer Operation

The fiscal printer operates under control of an application program communicating with it through a serial link (Device Channel).

It is designed to execute a predefined set of commands, logically sequenced according to the type of operations to be performed.

The application program has no direct control of the resources residing in the fiscal unit, but it can retrieve data related to accumulators, counters, fiscal unit state, and fiscal memory.

The fiscal printer performs the following operations, assuring that they are executed according to the fiscal law in Argentina:

- Record serialization parameters
- Record fiscal configuration options
- Record store configuration options
- Record sale amount and generate customer ticket
- Record ticket invoice amount and generate ticket invoice document
- Print X-Report
- Record daily sales in the fiscal memory and generate closure report
- Generate fiscal memory content reports
- Print reports generated by the application program
- Report selected data to the application program
- Print on credit card slips

2.2 Definition of Terminology

Please study these definitions:

Initial Program Loading (IPL)

is a procedure executed when the power is turned on.

Power Line Disturbance (PLD)

is a power failure.

J4/CE Jumper

is a procedure performed by service representatives that clears the battery-backed RAM.

Customer Receipt (CR)

is the left side print station that prints from rolls of paper. This station prints the slip of paper that verifies that a sales transaction occurred.

Summary Journal (SJ)

is the right side print station that prints on rolls of paper and winds up the printed paper in the printer as the journal of the day's printing.

Document Insert (DI)

is the print station that has the capability to insert forms from the top or the bottom of the printer and print either in a forward or reverse direction, where allowed.

Sales Period

is a group of sales transactions over a given amount of time, usually measured daily.

Sales Transaction	is a process of recording item sales and arriving at the amount to be paid by or to a customer. The receiving of payment for merchandise or services is also included in a transaction.
Rectify	is an option on certain sales transaction commands used to modify, cancel, or undo a previous operation.
Ticket	The ticket is the slip of paper that verifies that a sales transaction occurred. The ticket is printed on the customer receipt station of the printer.
Ticket Invoice	is used to indicate a wholesale transaction printed on the document insert station of the fiscal printer. There are rules that apply in this case.
Credit Note	is used to indicate a credit note printed on the document insert station of the fiscal printer. There are rules that apply in this case.
VAT	is value-added tax.
Item Ordinal Number	is the number that designates each item in a sales transaction. For example, the first item is number one, the second is number two and so on.
Fixed-price Items	are item prices that are not affected by discount on subtotal or uplift on subtotal operations.
Void	is used when cancelling or voiding items.
Discount	is the reduction of the item price (negative item), or the reduction of a part of a sales transaction (discount on subtotal), or the reduction of an entire sales transaction (discount on total).
Tendering	is the process of concluding a sales transaction and accounting for the methods of payment.
Cancel	is used when cancelling or voiding an entire sales transaction.
Ordinary Printing	also known as application-originated (or normal) printing, these are print lines that do not have a specific fiscal law function monitored or controlled by the printer.

2.3 Definition of Fiscal Printer States

2.3.1 Initialization States

2.3.1.1 Fiscal Printer Serialized - (FMEMNIT)

The fiscal printer has been serialized, fiscal commands can be executed. However, fiscal memory is not used until the fiscal printer is placed in the Fiscal Mode of operation.

2.3.1.2 Fiscal Printer Set in Fiscal Mode - (FISCFLG)

This is the normal mode of fiscal operation. Totals are stored into the fiscal memory at the time of the daily closure.

2.3.1.3 Date/Time Set - (FSETDAT)

This indicates that the time and date has been set.

2.3.1.4 Ticket Headers Set - (FHEADER)

This indicates that the ticket headers have been loaded into the fiscal printer.

2.3.1.5 POS Trailers Set - (FTRAILR)

This indicates that the stored POS trailer lines have been loaded into the fiscal printer.

2.3.1.6 Identification Information Loaded - (FPOSIDS)

This indicates that the POS information have been loaded into the fiscal memory.

2.3.1.7 VAT Table Verified - (FVXTBL)

This state is active when the VAT table has been verified since the last J4/CE jumper operation.

2.3.2 POS Fiscal States

2.3.2.1 Sales Period in Progress - (FSALEON)

This indicates that a daily sales period has been started. Typically, many of the fiscal configuration commands cannot be allowed during a day.

To end this state a daily closure must be performed.

2.3.2.2 Sales Transaction

Steps in a sale transaction are listed below:

2.3.2.2.1 Ticket Header Printed - (FHDRPRT): This indicates that the ticket header has been printed. However, it does not yet start a actual ticket.

2.3.2.2.2 Item Processed - (FTRANON): This indicates that a ticket is officially started.

2.3.2.2.3 Total Requested - (FTOTALR): This indicates that the total has been requested.

2.3.2.2.4 Payment in Progress - (FPAYMNT): This indicates that the payment phase is in progress due to either a payment command.

2.3.2.2.5 End of Transaction Attempted - (FENDTRA): This indicates that an end of transaction command was attempted but an error or power down occurred before all the printing associated with this command could complete.

2.3.2.2.6 Cancel Transaction Attempted - (FCANCEL): This indicates that a cancel transaction command was attempted but an error or power down occurred before all the printing associated with this command could complete.

2.3.2.3 Ticket Invoice in Progress - (FPRNTCK)

This indicates that a ticket invoice (printed on the document insert station) is in progress.

2.3.2.4 Ticket Invoice Total - (FTOTINVO)

This indicates that the second ticket invoice total has been requested.

2.3.2.5 Credit Note in Progress - (FCREDNOT)

This indicates that a credit note (printed on the document insert station) is in progress.

2.3.2.6 Credit Note Total - (FTOTACN)

This indicates that the second credit note total has been requested.

2.3.2.7 CR - Application-Originated Report in Progress - (FOPENCR)

This indicates that an application-originated report is open on the customer receipt station.

2.3.2.8 SJ - Application-Originated Report in Progress - (FOPENSJ)

This indicates that an application-originated report is open on the summary journal station.

2.3.2.9 DI Portrait - Application-Originated Report in Progress - (FOPNDIP)

This indicates that a portrait application-originated report is open on the document insert station.

2.3.2.10 Training Mode Active - (FTRAINM)

This indicates that training mode is active.

2.3.2.11 Power on in Progress - (FIPLINP)

This indicates that a power on sequence is in progress.

2.3.2.12 Fiscal Printer Ready - (FISCRDY)

This indicates that the fiscal printer is ready for new commands.

2.3.2.13 Fiscal Memory Locked - (FLOCKED)

This indicates that the fiscal printer is locked.

2.3.2.14 J4/CE Jumper Finished - (FJMPFIN)

The J4/CE jumper activation procedure was performed. Certain initialization procedures are allowed before normal fiscal commands are executed.

2.3.3 Non-Fiscal Homologated Reports

2.3.3.1 NFH Report Issued - (FDNFHON)

This indicate that any non-fiscal homologated report was issued.

2.3.3.2 NFH Report in Progress - (FOPNNFH)

This indicate that a non-fiscal homologated report is in progress.

2.3.4 POS Fiscal Hardware States

2.3.4.1 J4/CE Jumper Active - (FJUMPER)

The J4/CE jumper is in the active position.

2.3.4.2 Fiscal Memory Connected - (FEPRMC)

The fiscal memory is connected to the fiscal processor card.

Each time that this flag is tested in the specification, the microcode is reading a test pattern from the fiscal memory to ensure that it is connected.

If the test pattern is bad the FEPRMC state is cleared. This state can only be set when the J4/CE jumper is active.

2.3.4.3 Fiscal Memory Full - (FEPRMF)

The fiscal memory is full.

2.3.4.4 200 Repair Actions Already Performed - (FEPRMR)

The limit of repair actions has been reached.

2.3.4.5 Display(s) Connected - (FDISPLY)

This indicates that the displays that have been configured by the 1A cmd. are connected and working. Note that there is no 'Displays Set' state. So until they are set correctly, this state will not be set.

2.4 POS Fiscal General Information and Rules

I 2.4.1 Fiscal Memory

I 2.4.1.1 Connection and Disconnection

I The microcode checks for a good fiscal memory connection at power up and before execution of the any
I command.

I If the fiscal memory is disconnected, the error code 109 is returned.

I Once the memory is detected as being disconnected, the error code 134 is returned if any command is sent to
I the printer.

I Recovery from this error requires that the RAM is cleared thru J4/CE jumper intervention.

I 2.4.1.2 Error on Writing

I If an error occurs during writing in fiscal memory, the error code 109 is sent to the application.

I After this event, any command will be rejected with the error code 134.

I Recovery from this error requires that the RAM is cleared thru J4/CE jumper intervention.

2.5 Y2K Issues

2.5.1 Scope

The Fiscal Printer microcode have the ability to correctly process, provide and receive date data within and between the 20th and 21st centuries constrained to a 100 year window as described below.

2.5.2 Year Window Description

The microcode is utilizing the fixed window method.

It Define a 100 years window from Jan 1, 1990 through Dec 31, 2089 and interprets the date in 2-digit year format using this window.

Year values from 90 to 99 must be interpreted as 1990 through 1999.

Year values from 00 to 89 must be interpreted as 2000 through 2089.

2.5.3 Format Date in Printouts

In the following reports the format date printed is:

- Ticket: dd/mm/yy
- Ticket Invoice: dd/mm/yy
- Credit Note: dd/mm/yy
- Credit Card: dd/mm/yy
- X-Report: dd/mm/yy
- Z-Report (Closure): dd/mm/yy
- Fiscal Memory Report: dd/mm/yy
- Dump Fiscal RAM and Fiscal Memory: dd/mm/yy
- POS Identification Report: dd/mm/yy
- Initialization Reports: dd/mm/yy
- Audit Error Reports: dd/mm/yy
- Lock Reports: dd/mm/yy
- Power-On Report: dd/mm/yy

Where:

dd (date) ranges from 01 to 31.

mm (month) ranges from 01 to 12.

yy (year) ranges from 90 (1990) to 89 (2089).

2.5.4 Commands that have dates as I/O

- Have dates as input:
 - 16 cmd. (Set Date) use 'ddmmyyyy' input format
 - 1E cmd. (Set POS Identification) use 'mmyyyy' input format
 - C0 cmd. (Print Credit Card Slips) use 'ddmmyy' input format

- 15 cmd. (Fiscal Memory Report) use 'ddmmyyy' input format
- Have dates as output:
 - DA cmd. (Electronic Read Fiscal Memory Tables) use 'dd/mm/yy' input format
 - DB cmd. (Electronic Read Counters & Accumulators) use 'dd/mm/yy' input format

2.5.5 Date in Fiscal Memory

The date is stored in fiscal memory ('yymmdd' compacted format) during each:

- Daily entry table generated with 13 cmd.
- Repair action table generated with J4/CE jumper intervention.
- Locked action table generated with 85 cmd.

2.6 Homologated Level and Microcode EC Level

- When a final microcode EC level is homologated in the I.N.T.I. institution, the homologated level and microcode EC level is updated.

The homologated level and microcode EC level are stored in a table in fiscal memory and can be changed 30 times during the life of the fiscal printer (the first entry of this table will be usually filled during the first IPL in factory).

When the table is full and is installed a microcode EC level not equal to the last stored in the table, the microcode must be exchanged by the last microcode EC level stored in the table or the fiscal memory must be exchanged.

When a IPL occurs the homologated and microcode EC level stored in EPROM code is compared to the last entry in the homologated/microcode EC level table stored in fiscal memory.

If the homologated and microcode EC level is the same, a new entry is not added to the table.

If the homologated and microcode EC level is not the same, a new entry is added to the table

When a IPL occurs and the homologated level is not equal to the last stored in fiscal memory and the homologated/microcode EC level table is full, the RC 107 will be returned and the message M07 will printed during IPL printout.

3.0 USB Fiscal Printer Disconnection - Stand Alone Operation

ONLY VALID FOR 4610 USB

3.1 Description

The fiscal printer operates in three states:

- **Connected State** The fiscal printer is connected to PC/POS thru USB cable and the PC/POS is power-on.
In this state, the fiscal printer operates normally issuing commands thru USB cable.
- **Disconnected State** The fiscal printer is not connected to PC/POS thru USB cable or the PC/POS is power-off.
- **Suspended State** The fiscal printer is connected to PC/POS thru USB cable and the PC/POS is power-on but disconnected.
In windows operating system, the PC/POS can be suspended instead of shutdown.
To suspend the PC/POS, select "Suspend" option from the Start Menu.

To verify if the fiscal printer is connected to PC/POS, the fiscal microcode sense periodically the PC/POS 5V line thru USB cable.

Also, the fiscal printer can be connected to PC/POS thru RS-232 Audit Port.

In "Connected and Disconnected States", the fiscal printer can issue audit commands received thru RS-232 audit port.

3.2 State Machine Diagram

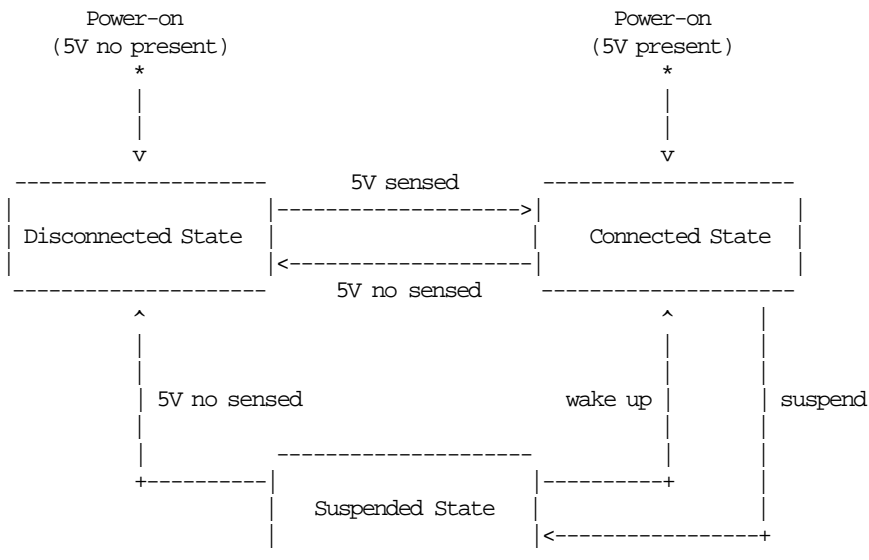


Figure 1. State Machine Diagram.

3.3 States

3.3.1 Disconnected State

- Start Disconnected State

NORMAL CASE	ALTERNATIVE
1) Power-on the printer with Power Brick.	1) End of "Connected State" or "Suspended State" (5V no present).
2) The fiscal microcode sense the PC/POS 5V line thru USB cable to verify if the fiscal printer is connected to PC/POS. <ul style="list-style-type: none"> • If 5V line is no present, the fiscal printer start the "Disconnected State". • The Power-On Report is printed only if no any document or report is in progress. 	
In this state: <ul style="list-style-type: none"> • The fiscal printer can issue audit commands received thru RS-232 Audit Port. • The fiscal microcode sense the PC/POS 5V line thru USB cable to verify if the fiscal printer is connected to PC/POS. 	In this state: <ul style="list-style-type: none"> • If any document or report is in progress, the fiscal printer not issue the audit commands received thru RS-232 Audit Port.

- End Disconnected State

NORMAL CASE	ALTERNATIVE
1) Power-on the PC/POS or connect USB cable (5V line is present). <ul style="list-style-type: none"> • The printer start the "Connected State". 	

3.3.2 Connected State

- Start Connected State

NORMAL CASE	ALTERNATIVE
1) Power-on the fiscal printer, connect the USB cable and power-on the PC/POS (5V line is present).	1) End of "Disconnected or Suspended State".
2) The fiscal microcode sense the PC/POS 5V line thru USB cable to verify if the fiscal printer is connected to PC/POS. <ul style="list-style-type: none"> • If 5V line is present, the printer start the "Connected State". • The Power-On Report is printed only if no any document or report is in progress. 	
In this state: <ul style="list-style-type: none"> • The fiscal printer can issue: <ul style="list-style-type: none"> – Fiscal commands received thru USB cable. – Audit commands received thru RS-232 Audit Port. • The fiscal printer verify: <ul style="list-style-type: none"> – The 5V line is present. – If the PC/POS is in "Suspend State". 	In this state: <ul style="list-style-type: none"> – If any document or report is in progress, the fiscal printer not issue audit commands received thru RS-232 Audit Port.

- End Connected State

NORMAL CASE	ALTERNATIVE
1) The USB cable is disconnected or PC/POS is power-off.	1) The suspended option is issued in the PC/POS to start the "Suspended State".
2) The fiscal microcode sense the PC/POS 5V line thru USB cable to verify if the fiscal printer is connected to PC/POS. <ul style="list-style-type: none"> • If 5V line is no present, the printer start the "Disconnected State". 	2) If a command is in progress, then: <ul style="list-style-type: none"> • If USB cable is disconnected, the command end normally and then the fiscal microcode sense that 5V line is present. • If the suspended command is issued in the PC/POS, the command in progress is suspended until the PC/POS will be restored. If the suspended command is issued in the PC/POS, the fiscal printer start the "Suspended State".

3.3.3 Suspended State

- Start Suspended State

NORMAL CASE	ALTERNATIVE
1) The suspended option is issue in the PC/POS while the fiscal printer is in "Connected State". <ul style="list-style-type: none"> • The fiscal printer start the "Suspended State". 	
In this state: <ul style="list-style-type: none"> • The fiscal printer can NOT issue audit commands received thru RS-232 Audit Port. • The fiscal printer NOT receive fiscal commands thru RS-232 Audit Port. • The fiscal printer verify: <ul style="list-style-type: none"> – The 5V line is present. – If the PC/POS is in "Suspend State". 	In this state: <ul style="list-style-type: none"> • If the fiscal printer is printing any document or report, it is suspended until the PC/POS wake up.

- End Suspended State

NORMAL CASE	ALTERNATIVE
1) The PC/POS wake up.	1) The USB cable is disconnected or the PC/POS is power-off.
2) The fiscal microcode sense the PC/POS 5V line thru USB cable to detect if the fiscal printer is connect to the PC/POS. <ul style="list-style-type: none"> • If 5V line is present, the fiscal printer start the "Connected State". 	<ul style="list-style-type: none"> • If 5V line is no present, the fiscal printer start the "Disconnected State".

3.4 Audit Port

3.4.1 Operation Modes

The fiscal printer can issue audit commands received thru RS-232 Audit Port in the following states:

- Connected State
- Disconnected State

The fiscal printer can NOT issue audit commands received thru RS-232 Audit Port during "Suspended State".

3.4.2 State Changes

- If during the communication establishing thru RS-232 Audit Port, a USB cable connection or disconnection occurs or the PC/POS is power-off:
 - The communication is continued.
 - Will be printed:
 - The "Fiscal Memory Report" with the corresponding audit period. OR
 - The "Audit Error Report" if a error occur.
 - The "Power-On Report" will be printed.
 - The fiscal printer start the corresponding state (connection or disconnection).
- If during the communication establishing thru RS-232 Audit Port, the PC/POS is suspended:
 - The communication is suspended.
 - If commands or packets are sending thru RS-232 Audit Port, the fiscal microcode will ignore its until the communication will be restored.

4.0 Fiscal Accounting Variables

The following variables are defined in this section:

- Transaction accumulators.
- Transaction counters.
- Daily accumulators.
- Daily counters.
- Lifetime accumulators.
- Lifetime counters.
- Miscellaneous counters.

4.1 Definition of Transaction Accumulators

Table 2 list the accumulators used during a sales transaction.

Table 2. Transaction Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Tra_Tot	General totals	0	99999999,49
Tra_Tot_v(vv)	General totals by VAT category	0	99999999,49
Tra_Tot_Fixed	General fixed item total	0	99999999,49
Tra_Tot_Fixed_v(vv)	General fixed item total by VAT category	0	99999999,49
Tra_Tax_v(vv)	General not taxable concepts by VAT category	0	99999999,49
Tra_Tax_F	Fixed not taxable concepts	0	99999999,49
Tra_Tax_F_v(vv)	Fixed not taxable concepts by VAT category	0	99999999,49
Tra_Tax_P	Percentage not taxable concepts	0	99999999,49
Tra_Tax_P_v(vv)	Percentage not taxable concepts by VAT category	0	99999999,49
Tra_Tax_Fixed	Fixed item not taxable concepts	0	99999999,49
Tra_Tax_Fixed_v(vv)	Fixed item not taxable concepts by VAT category	0	99999999,49
Tra_VAT	General VAT	0	99999999,49
Tra_VAT_v(vv)	General VAT by VAT category	0	99999999,49
Tra_VAT_Fixed	General VAT fixed item	0	99999999,49
Tra_VAT_Fixed_v(vv)	General VAT fixed item by VAT category	0	99999999,49
Tra_VAT_NE	General VAT not enrolled	0	99999999,49
Tra_VAT_NE_v(vv)	General VAT not enrolled by VAT category	0	99999999,49
Tra_Tot_NE_v(vv)	General VAT not enrolled total by VAT category	0	99999999,49
Tra_Tot_Fixed_NE_v(vv)	General fixed VAT not enrolled total by VAT category	0	99999999,49
Tra_Tot_Percep_t(tt)	General global perception total by perception type	0	99999999,49
Tra_Percep	General perception total	0	99999999,49
Tra_Percep_t(tt)	General perception by perception type	0	99999999,49
Tra_Percep_vt(vv,tt)	General perception by VAT category and perception type	0	99999999,49
Tra_Disc_Quo_v(vv)	Discount Ratio by VAT category	0	99999999,49
Tra_Pay_Type	General payment total	0	99999999,49
Tra_Pay_Type(pp)	General payment total by payment type	0	99999999,49
Tra_Amt_Due	Amount due	-99999999,49	99999999,49

Where:

- vv = VAT category, range from 01 to 20.
- tt = Perception type, range from 01 to 30.
- pp = Payment type, range from 01 to 30.

4.2 Definition of Transaction Counters

Table 3 lists the transaction counters.

Table 3. Transaction Counters

Counter Name	Description	Minimum Range	Maximum Range
Item_Ordinal_Number	The number (position) of an item in a sale ticket or ticket invoice.	1	999

4.2.1 Definition of Daily Accumulators

Table 4 list the accumulators that are used during a sales period.

Table 4. Daily Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Day_Tot_v(vv)	Total by VAT category	0	99999999,49
Day_Tot	Total	0	99999999,49
Day_VAT_v(vv)	VAT total by VAT category	0	99999999,49
Day_VAT	VAT total	0	99999999,49
Day_Tax_v(vv)	Not taxable concepts by VAT category	0	99999999,49
Day_Tax	Not taxable concepts	0	99999999,49
Day_VAT_NE_v(vv)	VAT not enrolled by VAT category	0	99999999,49
Day_Percep	Perception	0	99999999,49
Day_Percep_t(tt)	Perception by perception type	0	99999999,49
Day_Pay_Type	Payment total	0	99999999,49
Day_Pay_Type(pp)	Payment total by payment type	0	99999999,49
Day_RetV_Tot_v(vv)	Credit note total by VAT category	0	99999999,49
Day_RetV_Tot	Credit note total	0	99999999,49
Day_RetV_VAT_v(vv)	Credit note VAT total by VAT category	0	99999999,49
Day_RetV_VAT	Credit note VAT total	0	99999999,49
Day_RetV_Tax_v(vv)	Credit note not taxable concepts total by VAT category	0	99999999,49
Day_RetV_Tax	Credit note not taxable concepts total	0	99999999,49
Day_RetV_VAT_NE_v(vv)	Credit note VAT not enrolled by VAT category	0	99999999,49
Day_RetV_Percep	Credit note perception	0	99999999,49
Day_RetV_Percep_t(tt)	Credit note perception by perception type	0	99999999,49
Day_RetV_Pay_Type(pp)	Credit note payment total by payment type	0	99999999,49

Where:

- vv = VAT category, range from 01 to 20.
- tt = Perception type, range = 01 up to 30
- pp = Payment type, range = 01 up to 30

4.3 Definition of Daily Counters

Table 5 lists the counters used during a Sales Period.

Table 5. Daily Counters

Counter Name	Description	Minimum Range	Maximum Range
Day_N_Vouc	Number of tickets and tickets invoice B, C	0	65535
Day_N_TInv_A	Number of tickets invoice A	0	65535
Day_N_RetV_A	Number of credit notes A	0	65535
Day_N_RetV_BC	Number of credit notes B and C	0	65535
Day_N_Ract	Number of repair actions	0	200
Day_N_Lock	Number of locked actions	0	99
Day_N_Dump	Number of fiscal memory reports	0	9999
Day_N_Canc	Number of cancelled transactions	0	9999
Day_N_NFHD	Number of non-fiscal homologated documents.	0	9999
Day_N_NFR	Number of application-originated reports – all stations	0	9999

4.4 Definition of Lifetime Accumulators

Table 6 lists the accumulators kept for the life of the fiscal printer.

Table 6. Lifetime Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Gran_Tot	Grand total	0	1080863910568915200

4.5 Definition of Lifetime Counters

Table 7 lists the counters kept for the life of the fiscal printer.

Table 7. Lifetime Counters

Counter Name	Description	Minimum Range	Maximum Range	See Notes
Lif_N_Clos	Closure number	1	3840	1
Lif_N_Ract	Number of repair actions	0	200	1
Lif_N_Lock	Number of locked actions	0	99	1
Lif_N_Vouc	Number of tickets and tickets invoice B, C	1	99999999	2, 3
Lif_N_TInv_A	Number of tickets invoice A	1	99999999	2, 3
Lif_N_RetV_A	Number of credit notes A	1	99999999	2, 3
Lif_N_RetV_BC	Number of credit notes B and C	1	99999999	2, 3

Notes:

1. This counter must be recovered from the fiscal memory in the case of the J4/CE jumper activation procedure being performed.
2. After reaching 99999999 the lifetime number rolls over to 00000001.
3. This value is reset to 00000001 by use of the J4/CE jumper procedure.

4.6 Definition of Miscellaneous Counters

Table 8 lists the counters used during a ticket invoice or credit note.

Table 8. Miscellaneous Counters

Counter Name	Description	Minimum Range	Maximum Range
Mis_N_TI_Lines_To_Print	Number of lines to print in a ticket invoice sheet paper	50	9999
Mis_N_TI_End_Lines_To_Print	Number of lines to print by end ticket invoice (E3 cmd.)	4	4
Mis_N_TI_Cancel_Lines_To_Print	Number of lines to print by cancel ticket invoice (0F cmd.)	2	2
Mis_N_CN_Lines_To_Print	Number of lines to print in a credit note sheet paper	50	9999
Mis_N_CN_End_Lines_To_Print	Number of lines to print by end credit note (39 cmd.)	5	5
Mis_N_CN_Cancel_Lines_To_Print	Number of lines to print by cancel credit note (3A cmd.)	2	2
Mis_N_Lines_Printed	Number of lines printed	0	9999
Mis_N_Cmd_Lines_To_Print	Number of lines to print during a command	0	9999
Mis_N_Lines_Avail_To_Print	Number of lines available to print	0	9999

5.0 Initialization and Flows

5.1 Initialization Sequence

The initialization sequence (where the fiscal printer wasn't serialized or fiscalized) for Argentina is:

1. RAM CLEAR

- Turn ON the fiscal printer **with J4/CE jumper in OFF (STORED) position**
- **Put J4/CE jumper in ON (ACTIVE) position**
- Execute --> Reset = 1B66 4s
- **Put J4/CE jumper in OFF (STORED) position**
- Execute --> Reset = 1B66 4s

2. SERIALIZATION

- Execute --> Set Primary Serial Number = 1B66 1B00

3. FISCALIZATION

- **Put J4/CE Jumper in ON (ACTIVE) position**
- Execute --> Reset = 1B66 4s
- Execute --> Set Date = 1B66 1600
- Execute --> Set Fiscal Mode = 1B66 1800
- **Put J4/CE Jumper in OFF (STORED) position**
- Execute --> Reset = 1B66 4s

4. SET FISCAL PARAMETER CONFIGURATION

(Optional)

- Execute --> Set Display Sensing Definition = 1B66 C402

5. SET DISPLAY ADDRESS

(Optional)

- Execute --> Set Display = 1B66 1A00

6. SET POS IDENTIFICATION

- Execute --> Set POS Identification = 1B66 1E01

7. TICKET SET HEADERS

(Optional)

- Execute --> Ticket Set Header 1 = 1B66 D701
- Execute --> Ticket Set Header 2 = 1B66 D702

- Execute --> Ticket Set Header 3 = 1B66 D703
- Execute --> Ticket Set Header 4 = 1B66 D704
- Execute --> Ticket Set Header 5 = 1B66 D705
- Execute --> Ticket Set Header 6 = 1B66 D706
- Execute --> Ticket Set Header 7 = 1B66 D707

8. TICKET INVOICE/CREDIT NOTE SET HEADER

(Optional)

- Execute --> TI/CN Set Header 1 = 1B66 B701
- Execute --> TI/CN Set Header 2 = 1B66 B702
- Execute --> TI/CN Set Header 3 = 1B66 B703
- Execute --> TI/CN Set Header 4 = 1B66 B704
- Execute --> TI/CN Set Header 5 = 1B66 B705
- Execute --> TI/CN Set Header 6 = 1B66 B706
- Execute --> TI/CN Set Header 7 = 1B66 B707

9. SET VAT AND COMPARE VAT

- Execute --> Set Vat = 1B66 2001
- Execute --> Cmp Vat = 1B66 2101

10. SET TRAILER

(Optional)

- Execute --> Set Trailer 1 = 1B66 1701
- Execute --> Set Trailer 2 = 1B66 1702
- Execute --> Set Trailer 3 = 1B66 1703
- Execute --> Set Trailer 4 = 1B66 1704
- Execute --> Set Trailer 5 = 1B66 1705
- Execute --> Set Trailer 6 = 1B66 1706
- Execute --> Set Trailer 7 = 1B66 1707

11. SET PAYMENT TYPE

(Optional)

(Can be executed 30 times)

- Execute --> Set Payment Type = 1B66 2400

12. TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE

(Optional)

(Can be executed 30 times)

- Execute --> TI/CN Set Perception Type = 1B66 2200

13. SET GENERAL PARAMETERS

- Execute --> Set Limit for Ticket Total = 1B66 2E00
- Execute --> Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01
- Execute --> Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02
- Execute --> Set VAT Not Enrolled Percent = 1B66 2E03
- Execute --> Set Taxpayer Issuer Condition = 1B66 2E04
- Execute --> Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

5.2 Reinitialization Sequence

The reinitialization sequence (where the fiscal printer was serialized and fiscalized previously) for Argentina is:

1. RAM CLEAR

- Turn ON the fiscal printer **with J4/CE jumper in OFF (STORED) position**
- **Put J4/CE jumper in ON (ACTIVE) position**
- Execute --> Reset = 1B66 4s
- **Put J4/CE jumper in OFF (STORED) position**
- Execute --> Reset = 1B66 4s

2. SET DATE

- Execute --> Set Date = 1B66 1600

3. SET FISCAL PARAMETER CONFIGURATION

(Optional)

- Execute --> Set Display Sensing Definition = 1B66 C402

4. SET DISPLAY ADDRESS

(Optional)

- Execute --> Set Display = 1B66 1A00

5. SET POS IDENTIFICATION

- Execute --> Set POS Identification = 1B66 1E01

6. TICKET SET HEADER

(Optional)

- Execute --> Ticket Set Header 1 = 1B66 D701
- Execute --> Ticket Set Header 2 = 1B66 D702
- Execute --> Ticket Set Header 3 = 1B66 D703
- Execute --> Ticket Set Header 4 = 1B66 D704
- Execute --> Ticket Set Header 5 = 1B66 D705
- Execute --> Ticket Set Header 6 = 1B66 D706
- Execute --> Ticket Set Header 7 = 1B66 D707

7. TICKET INVOICE/CREDIT NOTE SET HEADER

(Optional)

- Execute --> TI/CN Set Header 1 = 1B66 B701
- Execute --> TI/CN Set Header 2 = 1B66 B702

- Execute --> TI/CN Set Header 3 = 1B66 B703
- Execute --> TI/CN Set Header 4 = 1B66 B704
- Execute --> TI/CN Set Header 5 = 1B66 B705
- Execute --> TI/CN Set Header 6 = 1B66 B706
- Execute --> TI/CN Set Header 7 = 1B66 B707

8. SET VAT AND COMPARE VAT

- Execute --> Set Vat = 1B66 2001
- Execute --> Cmp Vat = 1B66 2101

9. SET TRAILER

(Optional)

- Execute --> Set Trailer 1 = 1B66 1701
- Execute --> Set Trailer 2 = 1B66 1702
- Execute --> Set Trailer 3 = 1B66 1703
- Execute --> Set Trailer 4 = 1B66 1704
- Execute --> Set Trailer 5 = 1B66 1705
- Execute --> Set Trailer 6 = 1B66 1706
- Execute --> Set Trailer 7 = 1B66 1707

10. SET PAYMENT TYPE

(Optional)

(Can be executed 30 times)

- Execute --> Set Payment Type = 1B66 2400

11. TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE

(Optional)

(Can be executed 30 times)

- Execute --> TI/CN Set Perception Type = 1B66 2200

12. SET GENERAL PARAMETERS

- Execute --> Set Limit for Ticket Total = 1B66 2E00
- Execute --> Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01
- Execute --> Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02
- Execute --> Set VAT Not Enrolled Percent = 1B66 2E03
- Execute --> Set Taxpayer Issuer Condition = 1B66 2E04
- Execute --> Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

5.3 Unlocked Sequence

The unlocked sequence for Argentina is:

1. RAM CLEAR

- Turn on the fiscal printer **with J4/CE jumper in OFF (STORED) position**
- **Put J4/CE jumper in ON (ACTIVE) position**
- Execute --> Reset = 1B66 4s
- **Put J4/CE jumper in OFF (STORED) position**
- Execute --> Reset = 1B66 4s

2. SET DATE

- Execute --> Set Date = 1B66 1600

3. SET FISCAL PARAMETER CONFIGURATION

(Optional)

- Execute --> Set Display Sensing Definition = 1B66 C402

4. SET DISPLAY ADDRESS

(Optional)

- Execute --> Set Display = 1B66 1A00

5. SET POS IDENTIFICATION

- Execute --> Set POS Identification = 1B66 1E01

6. TICKET SET HEADER

(Optional)

- Execute --> Ticket Set Header 1 = 1B66 D701
- Execute --> Ticket Set Header 2 = 1B66 D702
- Execute --> Ticket Set Header 3 = 1B66 D703
- Execute --> Ticket Set Header 4 = 1B66 D704
- Execute --> Ticket Set Header 5 = 1B66 D705
- Execute --> Ticket Set Header 6 = 1B66 D706
- Execute --> Ticket Set Header 7 = 1B66 D707

7. TICKET INVOICE/CREDIT NOTE SET HEADER

(Optional)

- Execute --> TI/CN Set Header 1 = 1B66 B701
- Execute --> TI/CN Set Header 2 = 1B66 B702

- Execute --> TI/CN Set Header 3 = 1B66 B703
- Execute --> TI/CN Set Header 4 = 1B66 B704
- Execute --> TI/CN Set Header 5 = 1B66 B705
- Execute --> TI/CN Set Header 6 = 1B66 B706
- Execute --> TI/CN Set Header 7 = 1B66 B707

8. SET VAT AND COMPARE VAT

- Execute --> Set Vat = 1B66 2001
- Execute --> Cmp Vat = 1B66 2101

9. SET TRAILER

(Optional)

- Execute --> Set Trailer 1 = 1B66 1701
- Execute --> Set Trailer 2 = 1B66 1702
- Execute --> Set Trailer 3 = 1B66 1703
- Execute --> Set Trailer 4 = 1B66 1704
- Execute --> Set Trailer 5 = 1B66 1705
- Execute --> Set Trailer 6 = 1B66 1706
- Execute --> Set Trailer 7 = 1B66 1707

10. SET PAYMENT TYPE

(Optional)

(Can be executed 30 times)

- Execute --> Set Payment Type = 1B66 2400

11. TICKET INVOICE/CREDIT NOTE SET PERCEPTION TYPE

(Optional)

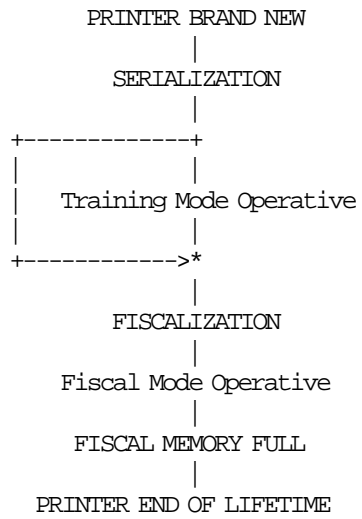
(Can be executed 30 times)

- Execute --> TI/CN Set Perception Type = 1B66 2200

12. SET GENERAL PARAMETERS

- Execute --> Set Limit for Ticket Total = 1B66 2E00
- Execute --> Set Limit for Ticket Invoice/Credit Note Total = 1B66 2E01
- Execute --> Set Limit for Ticket Invoice/Credit Note Total to Final Customer = 1B66 2E02
- Execute --> Set VAT Not Enrolled Percent = 1B66 2E03
- Execute --> Set Taxpayer Issuer Condition = 1B66 2E04
- Execute --> Set Number of Lines To Print in a Sheet Paper (DI Station) = 1B66 2E05 (optional)

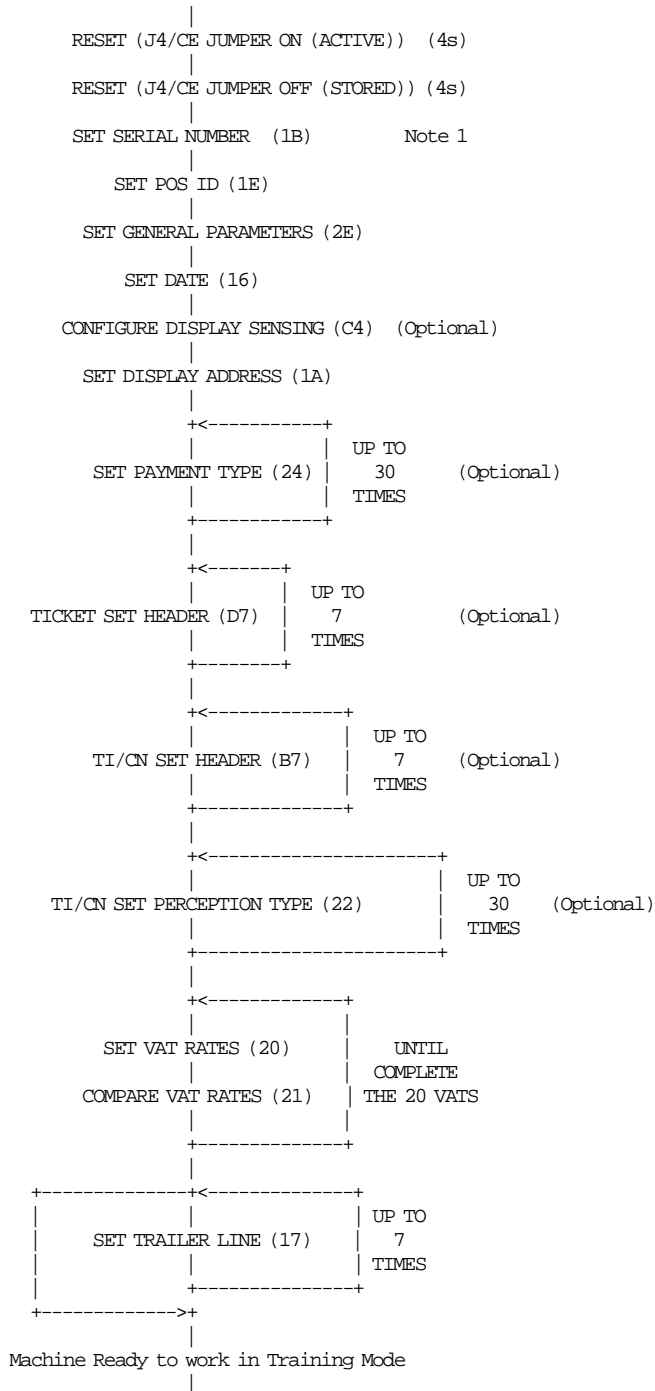
5.4 States of the printer during its lifetime.



5.5 Training Mode Initialization.

The following procedure initializes the printer and gets it ready to work in training mode, to fiscalize the printer see the following procedure.

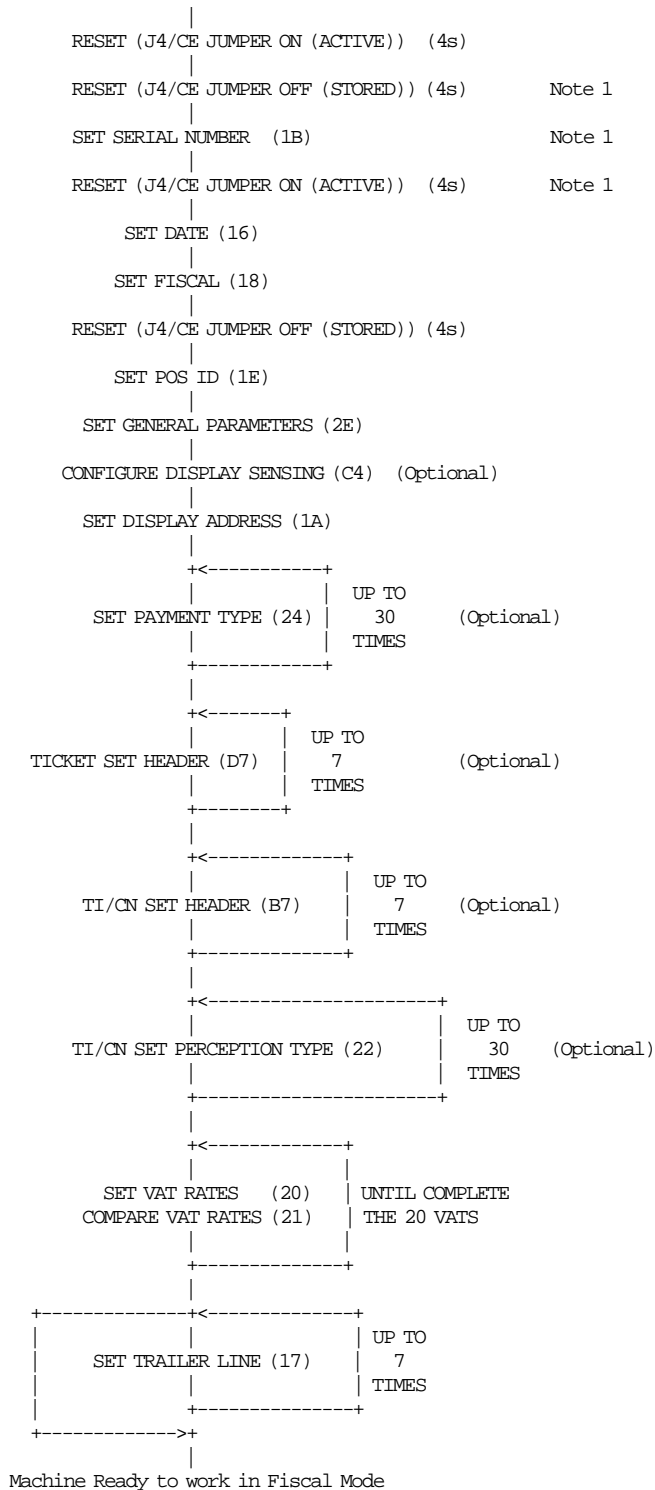
Once in fiscal mode, the training mode can not be achieved.



Note 1: If the machine is factory serialized this command has not to be executed.

5.6 Fiscal Mode Initialization.

The following procedure initializes the printer and gets it ready to work in fiscal mode.



Note 1: If the machine is factory serialized or is already set in Training Mode, these commands have not to be executed.

6.0 Command Set Reference

A command consists of a string of data received from the serial communication link. The minimum length of a command string is four byte; the maximum length depends on the command type.

The microcode checks that the length is not less than the minimum required for the command type specified in byte 2. A command is composed of four parts:

1. Command Prefix

It consists of two constant bytes x'1B66' (ESC f).

Command prefix is not present in system commands.

2. Command Code

Command code is in byte 2 of command string. It identifies the command to be executed.

Its value can range from x'00' to x'FF'.

3. Command Extension

Command extension is in byte 3 of command string. It contains command options.

Reserved bits must be set to 0. Only exception is retry bit which is ignored by microcode on commands where it has not any effect.

4. Command Data

Command data starts from byte 4 of command string. Its content depends on the command type.

Character strings must be left aligned.

Numeric strings must be right aligned.

Non significant digits in numeric fields can be blank.

At least one status is sent in response to a command.

The only exception is related to system commands: no response is given for system commands not recognized by the fiscal unit.

The format of the status is described in 7.0, "Fiscal Unit Status" on page 293.

Note - 7 is the most significant bit and 0 is the least significant bit.

6.1 Initialization Commands

Those commands that require FJUMPER=ON (ACTIVE) have to be executed with the jumper in active position and those that require FJUMPER=OFF (STORED) have to be executed with the jumper in store position, taking care that the jumper position is sensed during IPL, so each time the jumper is moved it's necessary to execute an IPL immediately after in order to have the jumper state updated.

Note: To execute several commands which require the jumper in active position it's necessary to execute only one IPL and then all the commands.

These are the initialization commands:

- 1B - Serialize Fiscal Printer
- 18 - Set Fiscal Mode
- 16 - Set Date
- C4 - Fiscal Parameter Configuration
- 1A - Set Display Address
- 1E - Set POS Identification
- D7 - Ticket Set/Reset Header
- B7 - Ticket Invoice/Credit Note - Set/Reset Header
- 20 - Load VAT Rate Table
- 21 - Verify VAT Rate Table
- 17 - Set/Reset Trailer
- 24 - Set/Reset Payment Type
- 22 - Ticket Invoice/Credit Note - Set/Reset Perception Type
- 2E - Set General Parameters

There are no calculations performed for any of the initialization commands.

6.1.1 1B - SERIALIZE FISCAL PRINTER

This command is used at the end of the manufacturing process to write the unit serial number in a fixed area of the fiscal memory.

6.1.1.1 Command Format

```
-----
```

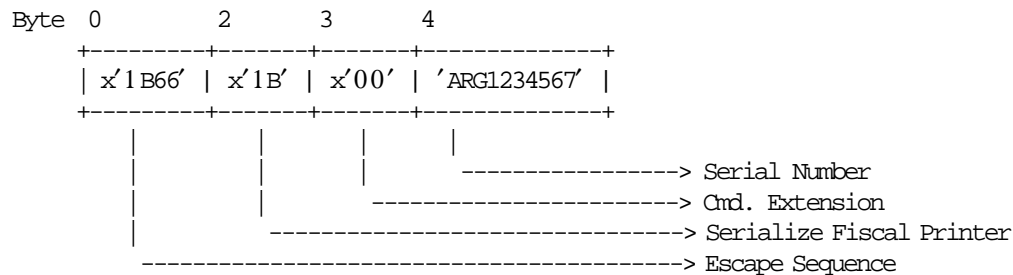
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		1B - Serialize Fiscal Printer	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-4		Manufacturing_Code	ASCII	1 (Note 1)
5-5		Brand_Code	ASCII	1 (Note 1)
6-6		Model_Code	ASCII	1 (Note 1)
7-13		Serial_Number	ASCII	7 (Note 2)

```
-----
```

Notes:

1. Characters from 'A' to 'Z' and from 'a' to 'z' are allowed.
2. Values from '0000000' to '9999999' are allowed.

6.1.1.2 Command Example



6.1.1.3 Serialize Fiscal Printer Rules

- This command can be executed only once and updates the fiscal memory.

6.1.2 18 - SET FISCAL MODE

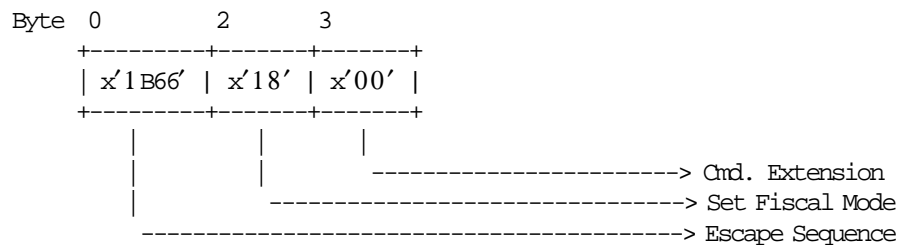
This command is used to pass the training mode to fiscal mode. In this mode the information is write in fiscal memory.

To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

6.1.2.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		18 - Set Fiscal Mode	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		

6.1.2.2 Command Example



6.1.2.3 Set Fiscal Mode Rules

- Once this procedure has been executed the fiscal printer operates according to the configured country fiscal law.
- This command can be executed only once and updates the fiscal memory.
- The J4/CE jumper must be used immediately prior to execution of this command to clear all RAM.

6.1.3 16 - SET DATE AND TIME

This command is used to update the fiscal printer time of day clock.
 To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

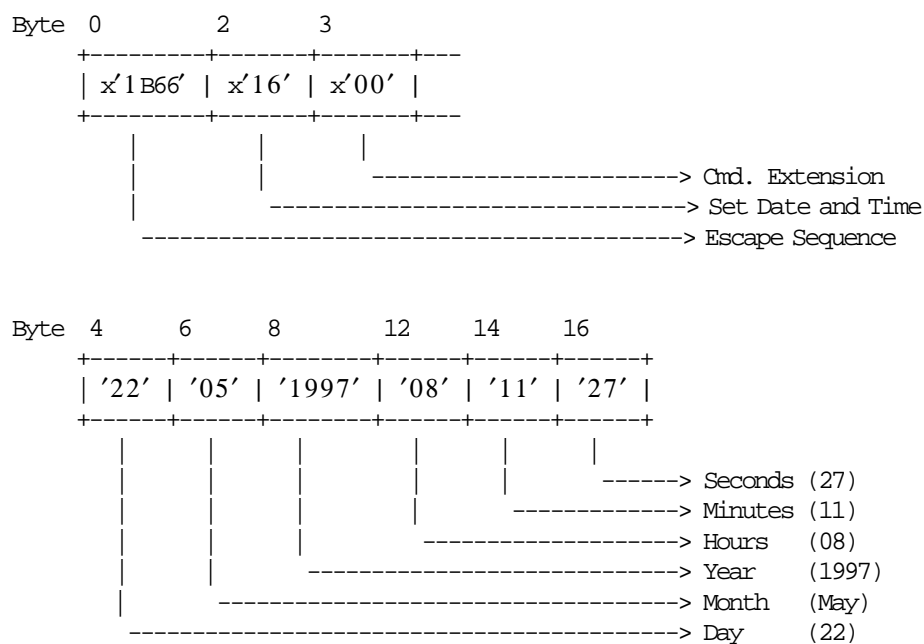
6.1.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		16 - Set Date and Time	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-5		Day	ASCII	2 (Note 1)
6-7		Month	ASCII	2 (Note 2)
8-11		Year	ASCII	4 (Note 3)
12-13		Hours	ASCII	2 (Note 4)
14-15		Minutes	ASCII	2 (Note 5)
16-17		Seconds	ASCII	2 (Note 5)

Notes:

1. Values from '01' to '31' are allowed according to month and leap year.
2. Values from '01' to '12' are allowed.
3. Values from '1990' to '2089' are allowed.
4. Values from '00' to '23' are allowed.
5. Values from '00' to '59' are allowed.

6.1.3.2 Command Example



6.1.3.3 Set Date Rules

- The time and date can be set only if a sales period is not in progress.
- The time and date can be set once out of a sales period.
- The date/time cannot be set previous to the time stamp of the last closure in the fiscal memory.
- The command is rejected if the new date is more than one day after the current date.
- When J4/CE jumper is in "ON" position, any date and time can be set, providing it is later than the time stamp of the last closure.

6.1.4 D7 - TICKET SET/RESET HEADER

This command is used to set or reset the header into fiscal printer battery backed up RAM. To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

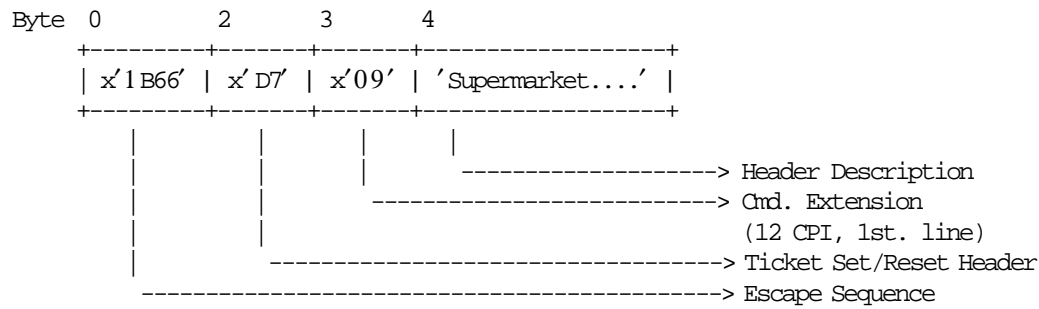
6.1.4.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		D7 - Ticket Set/Reset Header	hex	1
3		Cmd. Extension	hex	1
7		Reserved (always = '0')		
6		Action		
		0 = Set		
		1 = Reset		
5-3		Print Typeface		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2-0		Line Number		(Note 1, 2)
		001 = First Line		
		010 = Second Line		
		011 = Third Line		
		100 = Fourth Line		
		101 = Fifth Line		
		110 = Sixth Line		
		111 = Seventh Line		
4-41		Description	ASCII	38 (Note 3)

Notes:

1. If the line number is not set, it is not printed.
2. If the line number is reset, it is not printed.
3. If all blank character are specified in the description string, then the corresponding header line is not printed.

6.1.4.2 Command Example



6.1.4.3 Ticket Set/Reset Header Rules

- The header is erased when RAM is cleared by activation of the J4/CE jumper.
- This command cannot be executed when sales period is in progress.
- The minimum number of header lines that can be set is 0.
- The maximum number of header lines that can be set is 7.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.1.5 24 - SET/RESET PAYMENT TYPE

This command is used to set or reset different payment types.

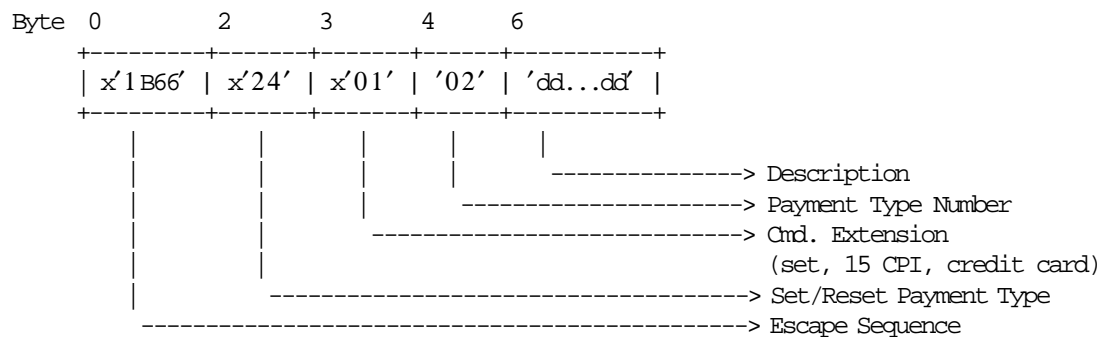
6.1.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		24 - Set/Reset Payment Type	hex	1
3		Cmd. Extension	hex	1
	7	Reserved (always = '0')		
	6	Action		
		0 = Set		
		1 = Reset		
	5-3	Print Mode		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = Reserved		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = Reserved		
	2-1	Reserved (always = '0')		
	0	Payment Type		
		0 = Reserved		
		1 = Credit Card		
4-5		Payment Type Number	ASCII	2 (Note 1)
6-27		Description	ASCII	22 (Note 2)

Notes:

1. Values 01 to 30 are allowed.
2. When set action, blank description string is not allowed.

6.1.5.2 Command Example



6.1.5.3 Set/Reset Payment Type Rules

- This information is stored in RAM memory.
- This command can be executed only out of sale period.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.1.6 17 - SET/RESET TRAILER

This command is used to set or reset the trailer lines into fiscal printer battery backed up RAM. To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

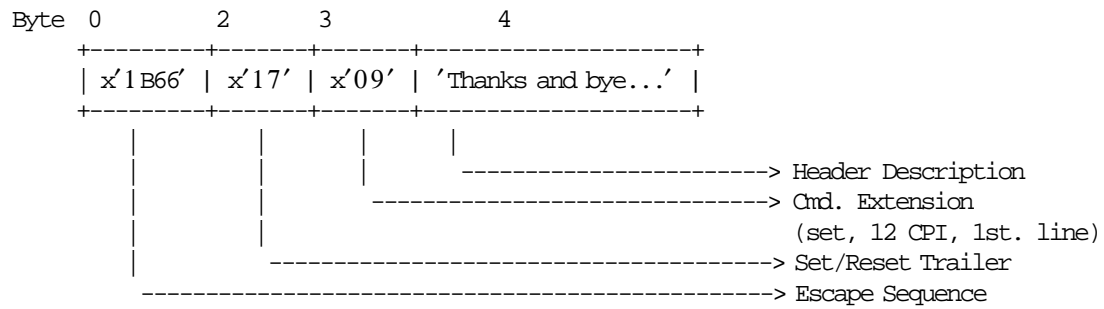
6.1.6.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		17 - Set/Reset Trailer	hex	1
3		Cmd. Extension	hex	1
7		Reserved (always = '0')		
6		Action		
		0 = Set		
		1 = Reset		
5-3		Print Typeface		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2-0		Line Number		(Note 1, 2)
		001 = First Line		
		010 = Second Line		
		011 = Third Line		
		100 = Fourth Line		
		101 = Fifth Line		
		110 = Sixth Line		
		111 = Seventh Line		
4-41		Description	ASCII	38 (Note 3)

Notes:

1. If the line number is not set, it is not printed.
2. If the line number is reset, it is not printed.
3. If all blank character are specified in the description string, then the corresponding header line is not printed.

6.1.6.2 Command Example



6.1.6.3 Set/Reset Trailer Rules

- The trailer lines are erased when RAM is cleared by activation of the J4/CE jumper.
- This command cannot be executed when sales period is in progress.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.1.7 20 - LOAD VAT RATE TABLE

This command is used to load the VAT rate table into fiscal battery backed up RAM.

To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), ticket set/reset header (D7 cmd.) and ticket invoice/credit note set/reset header (B7 cmd.) have to be executed before.

6.1.7.1 Command Format

```
-----
```

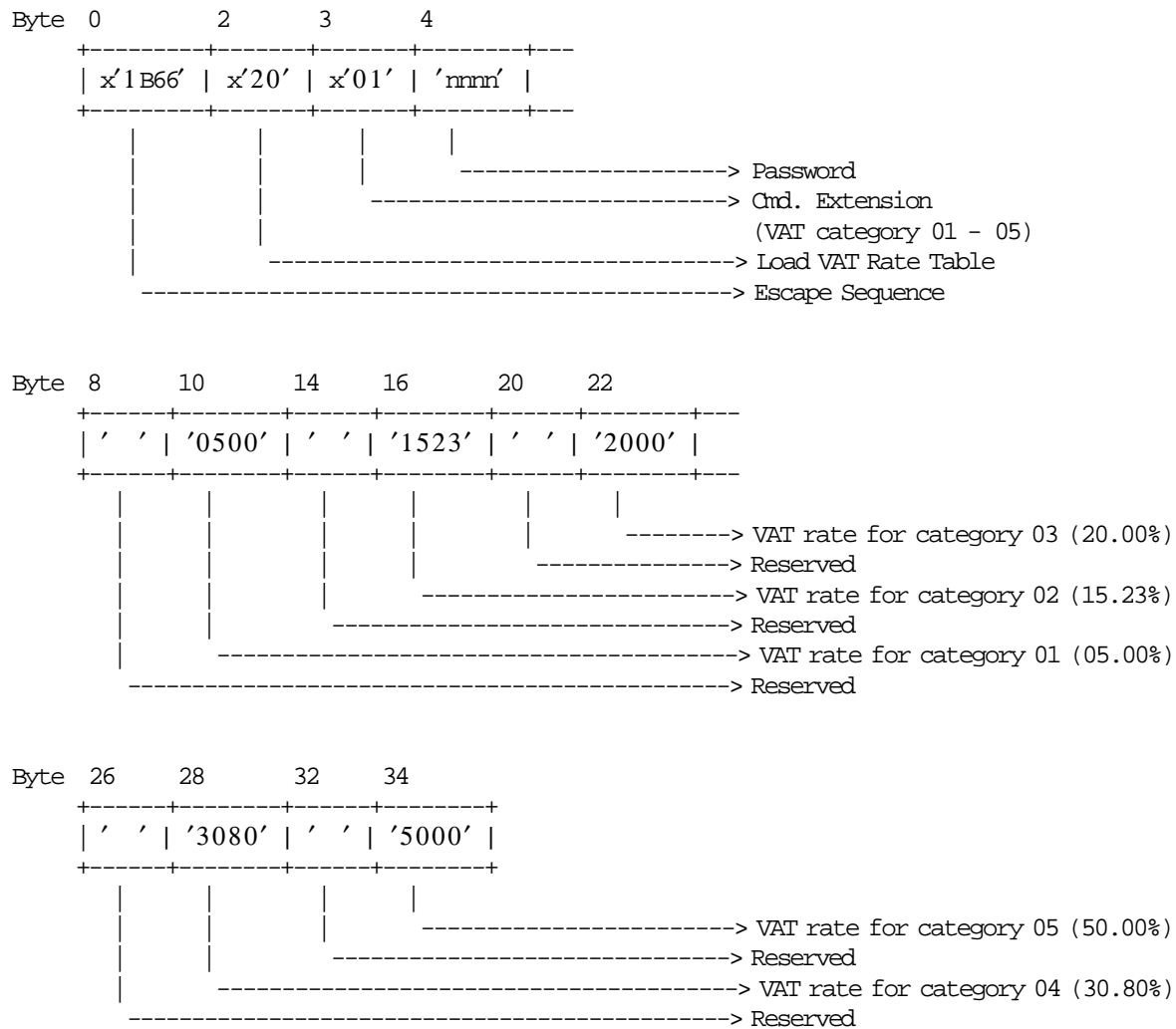
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		20 - Load VAT Tables	hex	1
3		Cmd. Extension	hex	1
		01 = VAT Categories 01 - 05		
		02 = VAT Categories 06 - 10		
		03 = VAT Categories 11 - 15		
		04 = VAT Categories 16 - 20		
4-7		Password	ASCII	4
8-9		Reserved	ASCII	2
10-13		VAT Rate For Category 01/06/11/16	ASCII	4
14-15		Reserved	ASCII	2
16-19		VAT Rate For Category 02/07/12/17	ASCII	4
20-21		Reserved	ASCII	2
22-25		VAT Rate For Category 03/08/13/18	ASCII	4
26-27		Reserved	ASCII	2
28-31		VAT Rate For Category 04/09/14/19	ASCII	4
32-33		Reserved	ASCII	2
34-37		VAT Rate For Category 05/10/15/20	ASCII	4

```
-----
```

Notes:

1. VAT rate is a fixed point number with 2 decimal digits. Separator characters must not be included in the VAT rate string. For example, for VAT rate 8%, specify '0800'.
2. VAT rate field can range from '0000' to '9999'. Values from '0000' to '9998' are used to specify the VAT rate, while value '9999' is used to inhibit the corresponding category.
3. The print format for VAT rates depends on their specification:
 - a. If all rates are specified as 'xx00' the print format is %rr.
 - b. If at least one rate is not specified as 'xx00' the print format is %rr.rr.

6.1.7.2 Command Example



6.1.7.3 Load VAT Rate Table Rules

- In Argentina, 20 categories can be loaded.
- The VAT category 01 is "GENERAL VAT". Its value cannot be '0000' or '9999'.
- The VAT rate tables are stored in the BATTERY-BACKED RAM.

6.1.8 21 - VERIFY VAT RATE TABLE

This command is used to compare the VAT rates loaded with 20 command. If the VAT rates are equals, the table will be write into fiscal battery backed up RAM.

To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), ticket set/reset header (D7 cmd.) and ticket invoice/credit note set/reset header (B7 cmd.) have to be executed before.

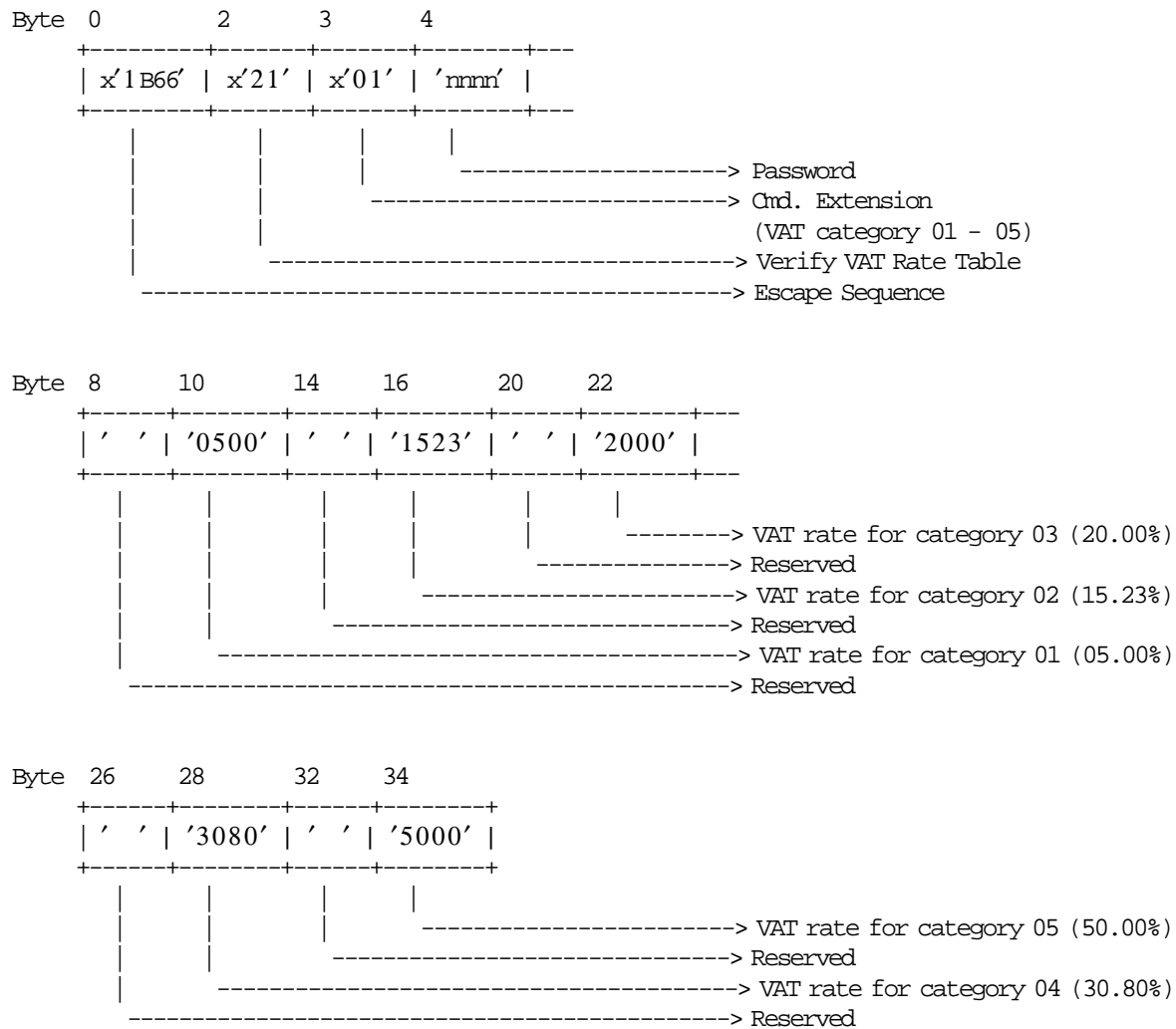
6.1.8.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	21 - Verify VAT Tables	hex	1
3	Cmd. Extension	hex	1
	01 = VAT Categories 01 - 05		
	02 = VAT Categories 06 - 10		
	03 = VAT Categories 11 - 15		
	04 = VAT Categories 16 - 20		
4-7	Password	ASCII	4
8-9	Reserved	ASCII	2
10-13	VAT Rate for Category 01/06/11/16	ASCII	4
14-15	Reserved	ASCII	2
16-19	VAT Rate for Category 02/07/12/17	ASCII	4
20-21	Reserved	ASCII	2
22-25	VAT Rate for Category 03/08/13/18	ASCII	4
26-27	Reserved	ASCII	2
28-31	VAT Rate for Category 04/09/14/19	ASCII	4
32-33	Reserved	ASCII	2
34-37	VAT Rate for Category 05/10/15/20	ASCII	4

Notes:

1. VAT rate is a fixed point number with 2 decimal digits. Separator characters must not be included in the VAT rate string. For example, for VAT rate 8%, specify '0800'.
2. VAT rate field can range from '0000' to '9999'. Values from '0000' to '9998' are used to specify the VAT rate, while value '9999' is used to inhibit the corresponding category.
3. The print format for VAT rates depends on their specification:
 - a. If all rates are specified as 'xx00' the print format is %rr.
 - b. If at least one rate is not specified as 'xx00' the print format is %rr.rr.

6.1.8.2 Command Example



6.1.8.3 Verify VAT Rate Table Rules

- In Argentina, 20 categories can be verified before the VAT table verified status is set.

6.1.9 85 - LOCKUP FISCAL PRINTER

This command is used to disabled the operation of the fiscal printer. Only authorized service personnel will can restore the fiscal printer using the J4/CE jumper procedure.

To execute this command, the serialize fiscal printer (1B cmd.), set POS identification (1E cmd.), set/reset header (D7 cmd.), TAX table verified (21 cmd.) and set date (16 cmd.) have to be executed before.

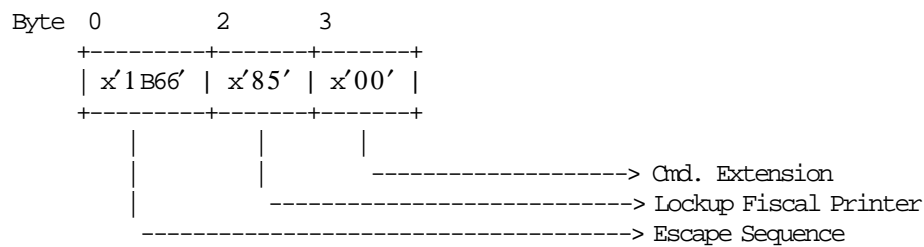
6.1.9.1 Command Format

```
-----
```

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		85 - Lockup Fiscal Printer	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		

```
-----
```

6.1.9.2 Command Example



6.1.9.3 Lockup Fiscal Printer Calculations

The Lif_N_Lock counter is incremented when the activate and desactive J4/CE jumper operation is done to restore the fiscal printer.

6.1.9.4 Lockup Fiscal Printer Rules

- 99 locked actions are allowed during the life of the fiscal printer and each locked action is stored into the fiscal memory.
- When the number locked reach 99, the printer can never be unlocked again.
- This command cannot be executed when sales period is in progress.
- When the fiscal printer is locked only the following commands can be issued:
 - 15 - Extended and Short Fiscal Memory Report
 - 1F - POS Identification Report
 - FF - Dump Fiscal RAM and Fiscal Memory
 - DA - Electronic Read Fiscal Memory Tables
 - DB - Electronic Read Counters and Accumulators

6.2 Setup and Utility Commands

The utility and configuration commands include:

- C4 - Fiscal Parameter Configuration
- 1A - Set Display Address
- F1 - Communicate Power On Status
- F9 - Read Current Status
- 1E - Set POS Identification
- 2E - Set General Parameters

6.2.1 C4 - FISCAL PARAMETER CONFIGURATION

This command is used to configure the number of displays to be sensed during the printer operation. To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

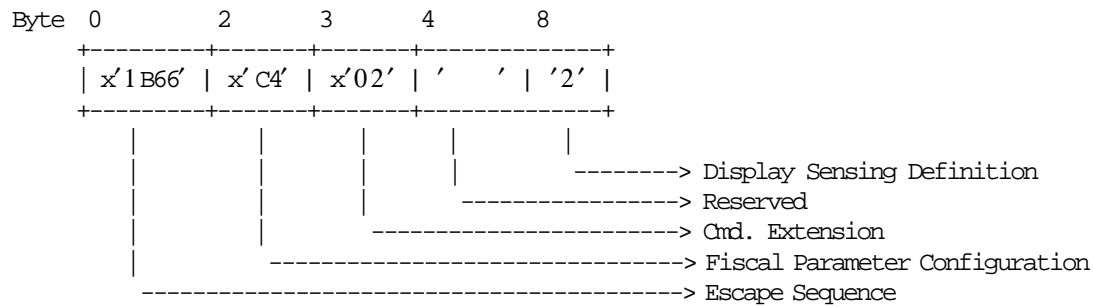
6.2.1.1 Command Format

```
-----
```

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	C4 - Fiscal Parameter Configuration	hex	1
3	Cmd. Extension	hex	1
	02 = Set Display Sensing Definition		
4-7	Reserved	ASCII	4
8	Display Sensing Definition	ASCII	1
	1 = Single/Dual Display Sensing		
	2 = Dual Display Sensing Only		

```
-----
```

6.2.1.2 Command Example



6.2.1.3 Fiscal Parameter Configuration Rules

There are not rules for this command.

6.2.2 1A - SET DISPLAY ADDRESS

This command is used to set into fiscal printer battery backed up RAM the addresses of the 2 display(s) that have to be monitored for connection by the fiscal unit.

To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

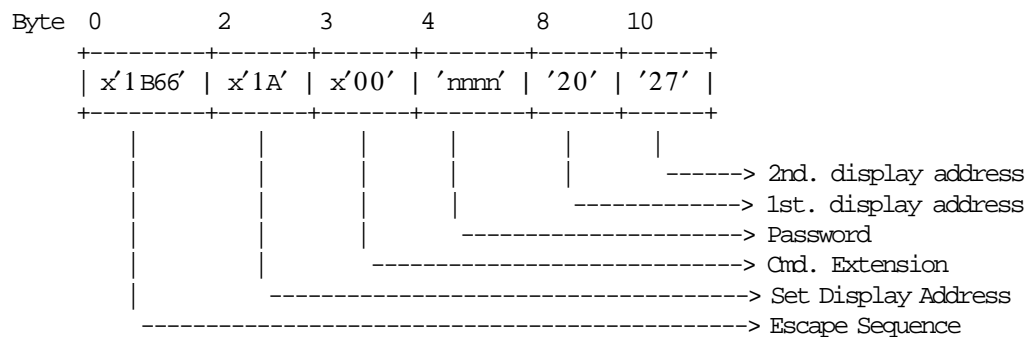
6.2.2.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		1A - Set Display Address	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Password	ASCII	4
8-9		First Display Address	ASCII	2 (Note 1)
10-11		Second Display Address	ASCII	2 (Note 1, 2)

Notes:

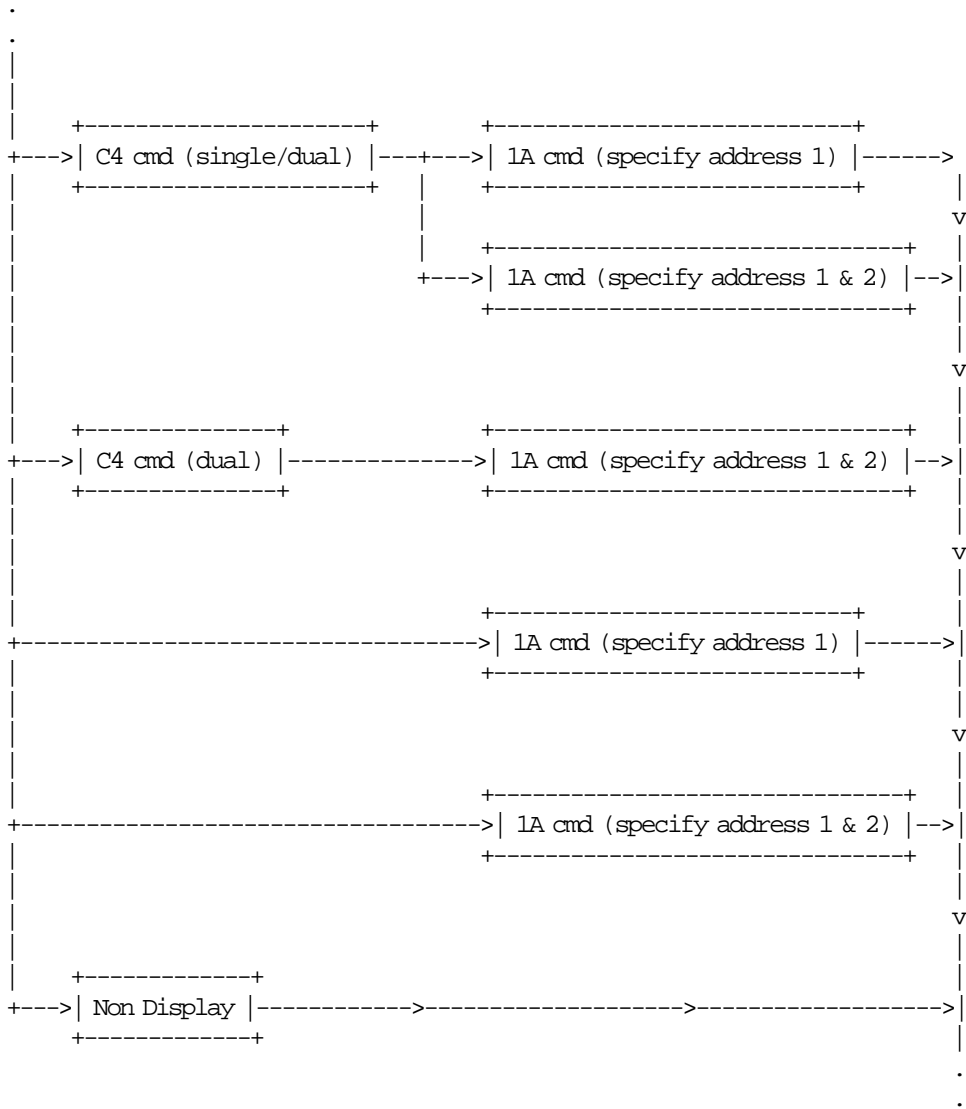
- Specify the ASCII representation of the hexadecimal address.
 Example: for hexadecimal address x'2A' specify ASCII characters '2', 'A'.
 Valid display addresses are: x'20' - x'27' and x'2A' - x'2F'.
- If command C4 was issued to allow single display, specify the second address as x'0000' for single display sensing.

6.2.2.2 Command Example



6.2.2.3 Set Display Flow

The following flow show the procedure to set displays.



6.2.2.4 Set Displays Rules

- Display addresses are erased when RAM is cleared by activation of the CE jumper.

6.2.3 F1 - COMMUNICATE POWER ON STATUS

This command requests the fiscal unit to communicate the power-on completion status.

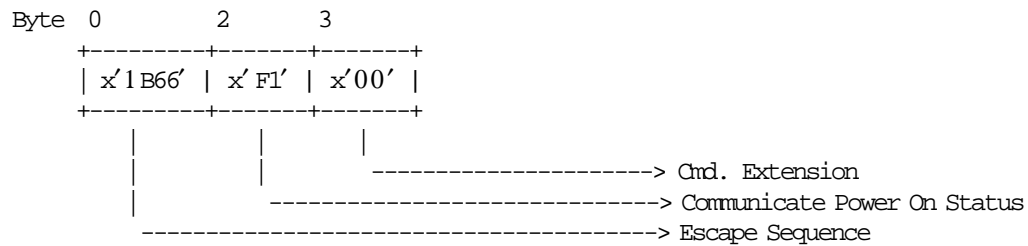
6.2.3.1 Command Format

```
-----
```

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command prefix	hex	2
2		F1 - Communicate Power ON Status	hex	1
3		Cnd. Extension	hex	1
7-0		Reserved (always = '0x00')		

```
-----
```

6.2.3.2 Command Example



6.2.3.3 Communicate Power On Status Rules

- Determines if the printer power was turned off in the middle of a command as shown by status byte 6, bit 4.

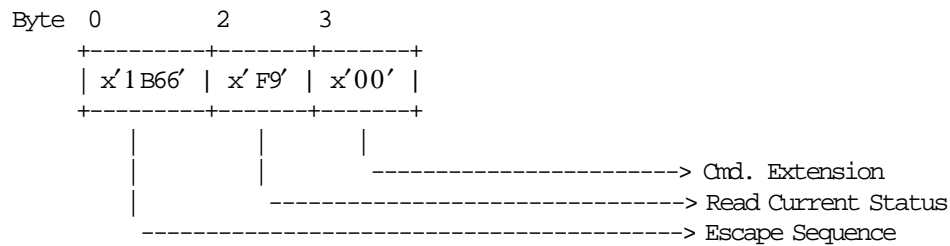
6.2.4 F9 - READ CURRENT STATUS

This command is used to requests the fiscal unit to report its current status.

6.2.4.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - command prefix	hex	2
2	F9 - Report Current Status	hex	1
3	Cmd. Extension	hex	1
7-0	Reserved (always = '0x00')		

6.2.4.2 Command Example



6.2.4.3 Read Power On Status Rules

There are not rules for this command.

6.2.5 1E - SET POS IDENTIFICATION

This command is used to load specific store information into the fiscal memory.
To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

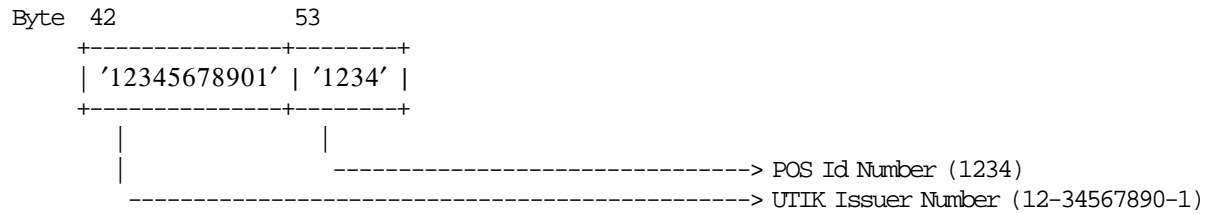
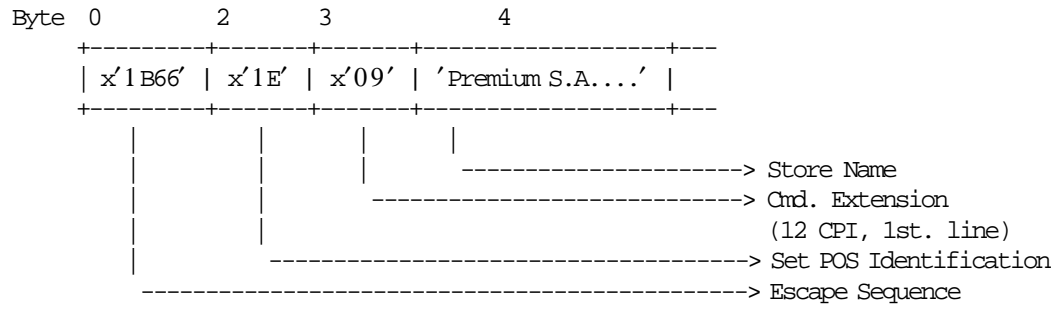
6.2.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		1E - Set POS Identification	hex	1
3		Cmd. Extension	hex	1
7-6		Reserved (always = '0')		
5-3		Print Typeface		(Note 1)
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = Reserved		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = Reserved		
2-0		Line Number		
		001 = First Line		
4-41		Store Name	ASCII	38
42-52		UTIK Issuer Number	ASCII	11
53-56		POS Id Number	ASCII	4 (Note 2)

Notes:

1. The number of CPI and emphasized apply to store name.
2. Values from '0001' to '9998'.

6.2.5.2 Command Example



6.2.5.3 Set POS Identification Rules

- New POS information can be loaded into the fiscal memory 1 time(s) during the life of the fiscal printer.
- The string TOTAL in upper, lower or mixed case is not allowed in the store name field of this command.

6.2.6 2E - SET GENERAL PARAMETERS

This command is used to set general parameters in fiscal RAM and fiscal EPROM memory. To execute this command, the serialize fiscal printer (1B cmd.) has to be executed before.

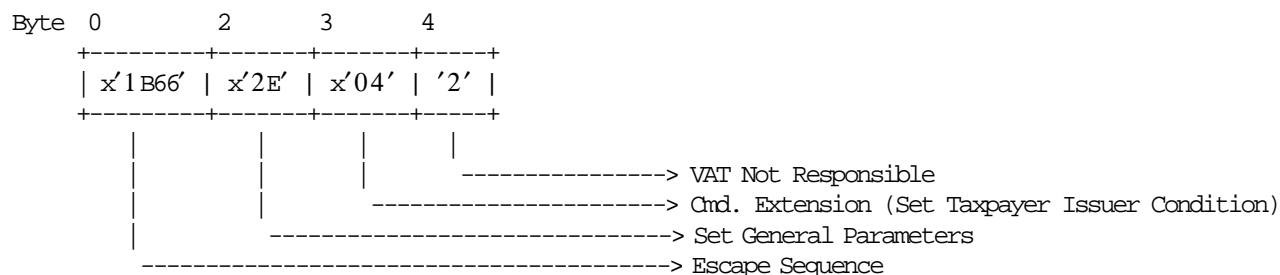
6.2.6.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
1		1B66 - cmd prefix	hex	2
2		2E - Set General Parameters	hex	1
3		Cmd. Extension	hex	1
		00 = Set Maximum Total for Ticket		
		01 = Set Maximum Total for Ticket Invoice/Credit Note		
		02 = Set Maximum Total for Ticket Invoice/Credit Note to Final Customer		
		03 = Set VAT Not Enrolled Percent		
		04 = Set Taxpayer Issuer Condition		
		05 = Set Number of Lines To Print in a Sheet Paper (DI Station)		
		06 = Reserved		
		For Cmd. Extension = 00 or 01 or 02		
4-13		Amount	ASCII	10 (Note 1)
		For Cmd. Extension = 03		
4-7		Percent	ASCII	4 (Note 2)
		For Cmd. Extension = 04		
4-4		Taxpayer Issuer Condition	ASCII	1
		0 = VAT Responsible Enrolled		
		1 = VAT Responsible Not Enrolled		
		2 = VAT Not Responsible		
		3 = VAT Exempt		
		4 = Monotribute Responsible		
		For Cmd. Extension = 05		
4-7		Number of Lines To Print in Ticket Invoice	ASCII	4 (Note 3)
8-11		Number of Lines To Print in Credit Note	ASCII	4 (Note 3)

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.
2. Range allowed = 0000 to 9999.
3. Range allowed = 0050 to 9999.
Default value = 9999.
Value 9999 disables the paper control.

6.2.6.2 Command Example



6.2.6.3 Set General Parameters Calculations

Mis_N_TI_Lines_To_Print = Number_of_Lines_To_Print_in_Ticket_Invoice

Mis_N_CN_Lines_To_Print = Number_of_Lines_To_Print_in_Credit_Note

6.2.6.4 Set General Parameters Rules

- Set Limit for Ticket Total
 - The amount is stored in RAM memory.
- Set Limit for Ticket Invoice/Credit Note Total
 - The amount is stored in RAM memory.
- Set Limit for Ticket Invoice/Credit Note Total to Final Customer
 - The amount is stored in RAM memory.
- Set VAT Not Enrolled Percent
 - The percent is stored in RAM memory.
- Set Taxpayer Issuer Condition
 - In training mode, the taxpayer issuer condition is loaded in the RAM memory and can be changed unlimited times during the life of the fiscal printer.
 - In fiscal mode, the taxpayer issuer condition is loaded in the fiscal EPROM memory and can be changed 5 times during the life of the fiscal printer.
 - The taxpayer issuer condition data is compared to the last entry in the table.
 - If the data is the same, the new entry is not added to the table.
 - When taxpayer issuer condition is changed, the perception types set with 22 cmd. (Set Perception Type) are eliminated.
 - Therefore, in order to use the perception types again, the 22 cmd. must be executed.
- Set Number of Lines To Print in a Sheet Paper (DI Station)
 - This set represent the number of lines to print in a ticket invoice and credit note sheet paper and will be used to control the out of paper.
 - The set is optional.
 - If the set isn't issued, the default value will be **50 lines** to print in sheet paper.
 - The number of lines set are stored in RAM memory.
 - If the J4/CE jumper intervention is executed, the restored value will be 50.
 - Examples of the number of lines that can be printed in differents paper size to 6 lines/inch:
 - Letter size (11"): 63 lines
 - Legal size (14"): 81 lines

6.3 Sales Period in Progress Commands

- These commands can be executed to start a sale period and sale transaction
 - 01 - Ticket - Print Header
 - E0 - Ticket Invoice - Print Header
 - 30 - Credit Note - Print Header
- When a sale period is in progress or after that a PLD or printer error occurs, these commands can be executed.
 - 00 - System Commands
 - 03 - Item Additional Description
 - D0 - Ticket - Fixed Price Item Sale
 - D1 - Ticket - Fixed Price Negative/Uplift Item Sale
 - D2 - Ticket - Item Sale
 - D3 - Ticket - Negative/Uplift Item Sale
 - D4 - Ticket - Subtotal/Total
 - D9 - Ticket - Uplift/Discount on Subtotal
 - D5 - Ticket - Payment
 - 06 - Ticket - End
 - 07 - Ticket - Cancel
 - 25 - Ticket Invoice/Credit Note - Set Customer Information
 - 22 - Ticket Invoice/Credit Note - Set/Reset Perception Type
 - B0 - Ticket Invoice - Fixed Price Item Sale
 - B1 - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
 - B2 - Ticket Invoice - Item Sale
 - B3 - Ticket Invoice - Negative/Uplift Item Sale
 - B4 - Ticket Invoice - Subtotal/Total
 - B8 - Ticket Invoice - Global Perception
 - B9 - Ticket Invoice - Uplift/Discount on Subtotal
 - B5 - Ticket Invoice - Payment
 - E3 - Ticket Invoice - End
 - 0F - Ticket Invoice - Cancel
 - 30 - Credit Note - Print Header
 - 31 - Credit Note - Fixed Price Item Sale
 - 32 - Credit Note - Fixed Price Negative/Uplift Item Sale
 - 33 - Credit Note - Item Sale
 - 34 - Credit Note - Negative/Uplift Item Sale
 - 35 - Credit Note - Subtotal/Total
 - 36 - Credit Note - Global Perception
 - 37 - Credit Note - Uplift/Discount on Subtotal
 - 38 - Credit Note - Payment
 - 39 - Credit Note - End
 - 3A - Credit Note - Cancel
 - 08 - Retrieve Interrupted Command
 - C8 - Set Barcode Parameters
 - C9 - Print Barcode
 - DA - Electronic Read Fiscal Memory Tables
 - DB - Electronic Read Counters and Accumulators
 - F1 - Communicate Power On Status
 - F4 - Head Position & Open/Close Throat
 - F8 - Communicate Printer EC
 - F9 - Read Current Status
 - FA - Reset Fiscal Printer
 - FC - Communicate Fiscal Printer EC

- FF10 - Electronic Dump Fiscal RAM Memory
- FF11 - Electronic Dump Fiscal EPROM Memory
- Additionally, the following commands can be executed when a sales period is or not in progress:
 - C0 - Legacy Print Credit Card Slips
 - DD - Start Application-Originated Report
 - DE - End Application-Originated Report
 - EA - Ordinary Printing Line on CR/SJ Station
 - EB - Ordinary Printing Line on DI Station
 - A7 - Set NFH Information
 - A8 - Start NFH Document
 - A9 - Print NFH Document
 - AA - End NFH Document
 - AB - Cancel NFH Document

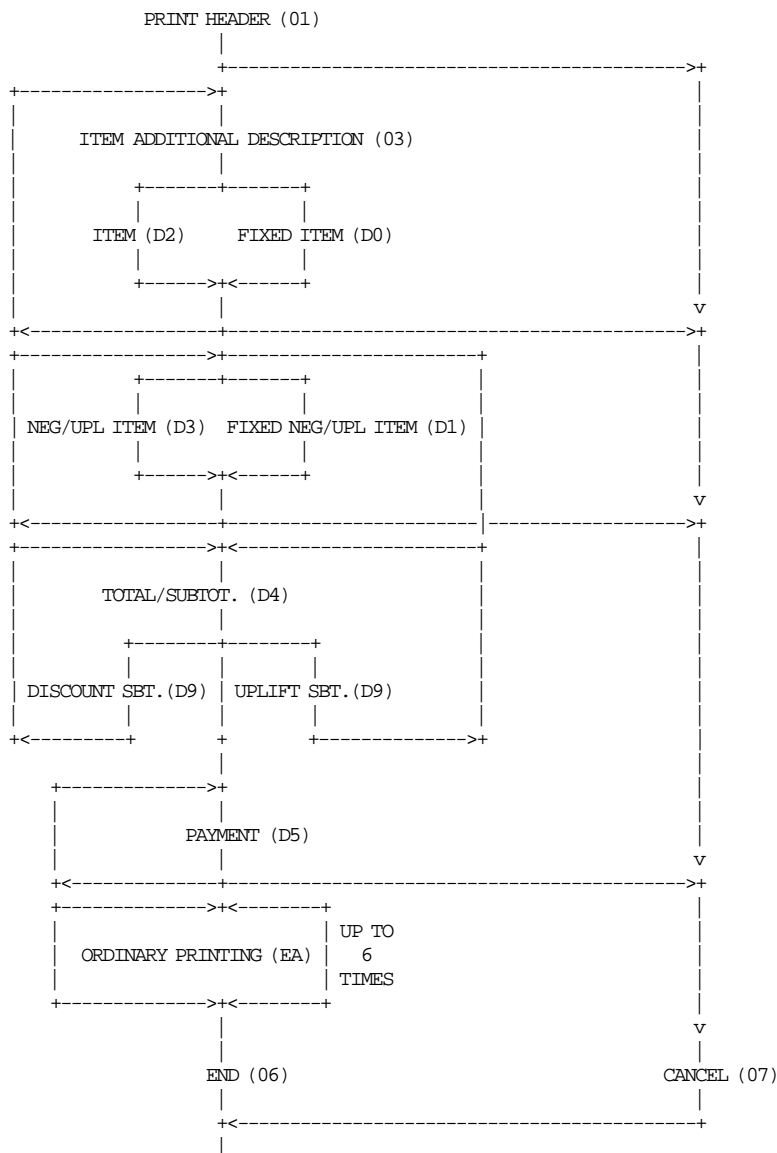
The calculations listed in this section are performed after the successful execution of the command.

6.4 Ticket in Progress Commands

The ticket in progress commands include:

- 01 - Ticket - Print Header
- 03 - Item Additional Description
- D0 - Ticket - Fixed Price Item Sale
- D1 - Ticket - Fixed Price Negative/Uplift Item Sale
- D2 - Ticket - Item Sale
- D3 - Ticket - Negative/Uplift Item Sale
- D4 - Ticket - Subtotal/Total
- D9 - Ticket - Uplift/Discount on Subtotal
- D5 - Ticket - Payment
- 06 - Ticket - End
- 07 - Ticket - Cancel

6.4.1 Ticket Flow Chart



6.4.2 General Ticket Rules

- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on CR station can be printed. After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.
- Credit card printing on the DI station is allowed in the payment phase only.

6.4.3 01 - TICKET PRINT HEADER

This command is used to print the ticket header on customer receipt station.
 To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

6.4.3.1 Command Format

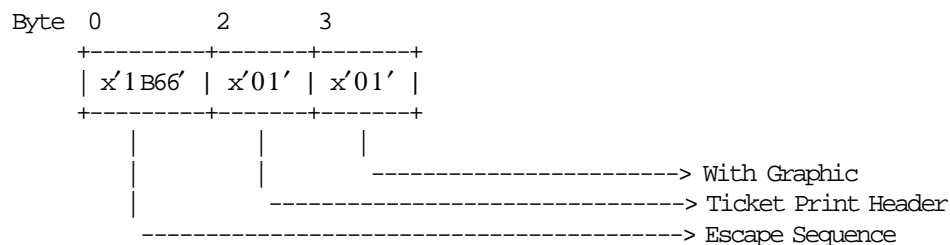
BYTE	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	01 - Ticket Print Header	hex	1
3	Graphic 00 = NO 01 = YES	hex	1

If Cmd. Extension = 01 specify			
4	Graphic Number	hex	1 (Note 1)

Notes:

1. Valid value is x01.

6.4.3.2 Command Example



6.4.3.3 Ticket Print Header Calculations

Item_Ordinal_Number = 0

6.4.3.4 Ticket Print Header Rules

- The following checking is performed before the execution of the command in order to ensure that the ticket could be eventually cancelled.

$(999,999,999.49 - \text{Day_Canc_g}(\text{gg})) > \text{Limit for Ticket Total}$
 The Limit for Ticket Total is set with 2E cmd.

If this expression isn't satisfied the error code 016 is returned.

- Graphics are printed on CR station and are not replicated on SJ station.
- All graphics will be printed always at 200 DPI.
- The maximum number of lines to print a graphic is 5.

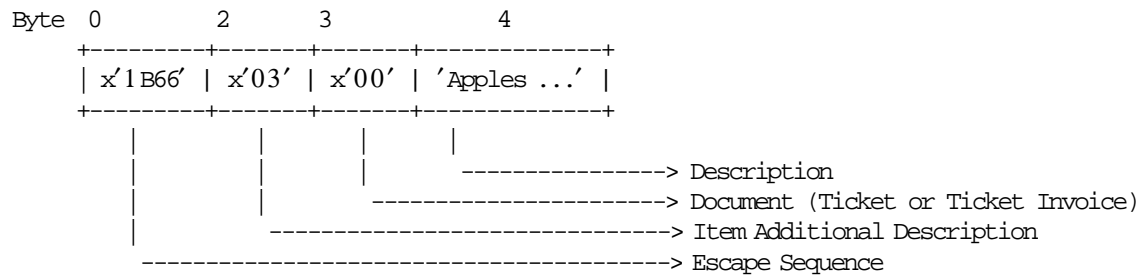
6.4.4 03 - ITEM ADDITIONAL DESCRIPTION

This command is used to print the additional description lines during a ticket, ticket invoice or credit note. To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

6.4.4.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		03 - Item Additional Description	hex	1
3		Document 00 = Ticket or Ticket Invoice 01 = Credit Note	hex	1
4-25		Description	ASCII	22

6.4.4.2 Command Example



6.4.4.3 Item Additional Description Rules

- The maximum number of item additional description lines allowed in the ticket - item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the ticket - fixed negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the ticket invoice - negative/uplift fixed item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - negative/uplift item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - fixed item sale is 4.
- The maximum number of item additional description lines allowed in the credit note - negative/uplift fixed item sale is 4.

- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.4.5 D0 - TICKET FIXED PRICE ITEM SALE

The fixed price negative items are items which prices are not affected by discount or uplift on subtotal operations.

This command is used to record the amount of a fixed price item and to print lines containing description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

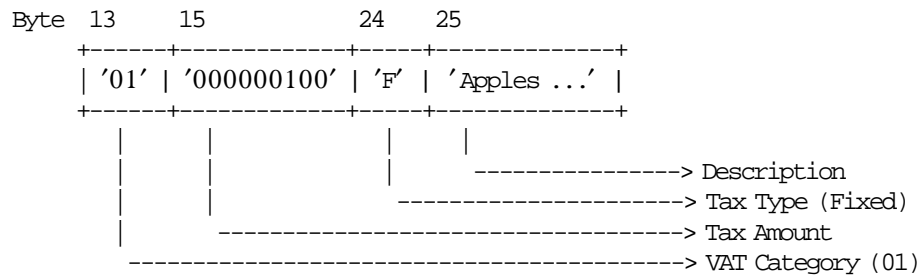
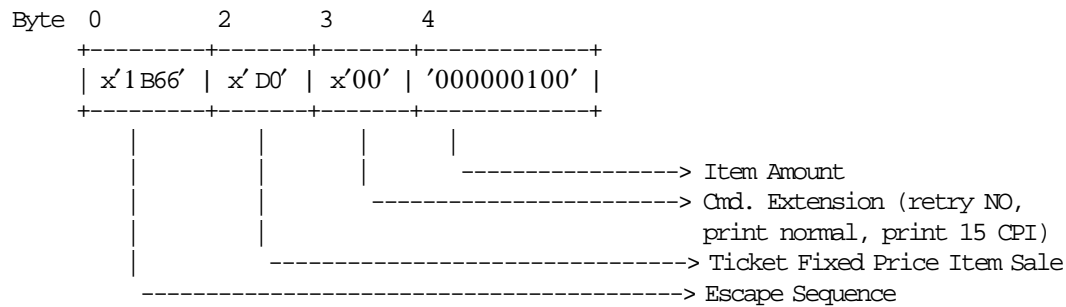
6.4.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		D0 - Ticket Fixed Price Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry 0 = NO 1 = YES		
6		Reserved (always = '0')		
5		Print Density 0 = Normal 1 = Emphasized		
4		Reserved (always = '0')		
3		Print Typeface 0 = 15 CPI 1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Item Amount	ASCII	9 (Note 1)
13-14		VAT Category	ASCII	2 (Note 2)
15-23		Tax Amount	ASCII	9 (Note 3)
24		Tax Type	ASCII	1 (Note 4)
25-46		Description	ASCII	22 (Note 5)

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
2. Specify a valid VAT category if amount string is not blank.
Range allowed is from 01 up to 20.
For ticket type 'C', value allowed is 00.
3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
The tax amount must be less than item amount.
4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
If blank, the tax amount is ignored.
5. The special character 0x0E is not accepted.

6.4.5.2 Command Example



6.4.5.3 Ticket Fixed Price Item Sale Calculations

$Item_Ordinal_Number = Item_Ordinal_Number + 1$

- **For Taxpayer Issuer Condition = VAT Responsible Enrolled**

$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + ItemAmount$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(ItemAmount - TaxAmount) \times (VAT_Rate(vv) \times 100)}{(ItemAmount \times (VAT_Rate(vv) + 100))} \times 100 + 0.5\right)/100$$

The calculated Factor must be printed in the ticket.

$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$

- **For Taxpayer Issuer Condition <> VAT Responsible Enrolled**

$Tra_Tot_Fixed = Tra_Tot_Fixed + ItemAmount$

$Tra_Tax_Fixed = Tra_Tax_Fixed + TaxAmount$

Where:

vv = VAT category, range = 01 up to 20.

6.4.5.4 Ticket Fixed Price Item Sale Rules

- The item ordinal number is reset to 1 at the start of every sales transaction.
- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket total calculated (Tra_Tot_v + Item Amount) can not be greater than the limit ticket total allowed (Set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- Each item is assigned a value-added tax (VAT) category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the "GENERAL VAT".
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in the fixed price item sale command is disabled (rate = 9999).
- The fixed price item sale amount includes VAT.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.4.6 D1 - TICKET FIXED PRICE NEGATIVE/UPLIFT ITEM SALE

The Fixed Price Negative/Uplift Items are items which prices are not affected by discount or uplift on subtotal operations.

This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the print header (01 cmd.) and at least one fixed price item sale (D0 cmd.) have to be executed before.

6.4.6.1 Command Format

```
-----
```

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - Cmd Prefix	hex	2
2	D1 - Ticket Fixed Price Neg/Upl Item Sale	hex	1
3	Cmd. Extension	hex	1
7	Retry 0 = NO 1 = YES		
6	Reserved (always = '0')		
5	Print Density 0 = Normal 1 = Emphasized		
4	Reserved (always = '0')		
3	Print Typeface 0 = 15 CPI 1 = 12 CPI		
2-0	Item Type 000 = Reserved 001 = VOID (on previous Item Sale) 010 = REDUCTION (by VAT) 011 = DISCOUNT (on previous Item Sale) 100 = EMPTY (by VAT) 101 = DISCOUNT (by VAT) 110 = UPLIFT (on previous Item Sale) 111 = Reserved		
4-12	Item Amount	ASCII	9 (Note 1)
13-14	VAT Category	ASCII	2 (Note 2)
15-23	Tax Amount	ASCII	9 (Note 3)
24	Tax Type	ASCII	1 (Note 4)
25-27	Item Ordinal Number	ASCII	3 (Note 5 on page 95)
28-49	Description	ASCII	22 (Note 6 on page 95)

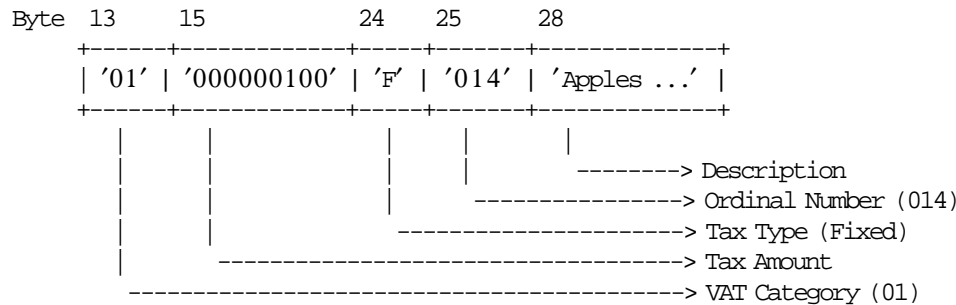
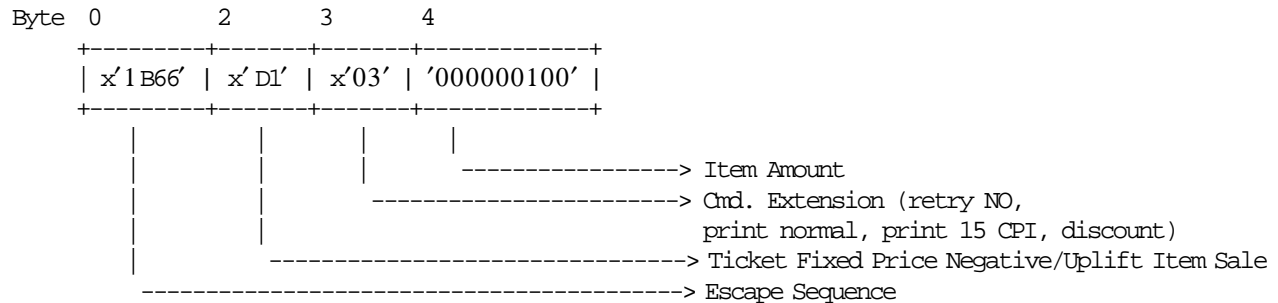
```
-----
```

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
2. Range allowed is from 01 to up 20.
Fixed point number with 2 decimal digits.
For ticket type 'C', value allowed is 00.
3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
The tax amount must be less or equal than item amount.
4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
If blank, the tax amount is ignored.

5. Is applied to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.
6. The special character 0x0E is not accepted.

6.4.6.2 Command Example



6.4.6.3 Ticket Fixed Price Negative Item Sale Calculations

• **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

– **If Item Type <> Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) - ItemAmount$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) - TaxAmount$$

– **If Item Type = Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + ItemAmount$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

– **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(ItemAmount - TaxAmount) \times (VAT_Rate(vv) \times 100)}{(ItemAmount \times (VAT_Rate(vv) + 100))} \times 100 + 0.5\right) / 100$$

The calculated Factor must be printed in the ticket.

• **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

– **If Item Type <> Uplift**

$$Tra_Tot_Fixed = Tra_Tot_Fixed - ItemAmount \quad Tra_Tax_Fixed = Tra_Tax_Fixed - TaxAmount$$

– **If Item Type = Uplift**

$$Tra_Tot_Fixed = Tra_Tot_Fixed + ItemAmount \quad Tra_Tax_Fixed = Tra_Tax_Fixed + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

6.4.6.4 Ticket Fixed Price Negative/Uplift Item Sale Rules

- The factor percent will be printed between brackets. Example: [12,32] or [12].
- The VAT category 01 is the "GENERAL VAT".
- Fixed price negative/uplift item cannot be accepted if the VAT category specified in the fixed price item sale is disabled (rate = 9999).
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (14,34) or (14).
- To void a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:
 - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)
 - D1.Amount = D0.Amount
 - D1.Tax Amount = D0.Tax Amount
 - D1.Description = D0.Description
 - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be voided.
- To discount a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:
 - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)
 - D1.Amount < D0.Amount
 - D1.Tax Amount ≤ D0.Tax Amount
 - (D0.Amount - D1.Amount) > (D0.Tax Amount - D1.Tax Amount)
 - D1.Description = D0.Description
 - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be discounted.
- To uplift a fixed price item previously sold in the same transaction with D0 cmd., the following rules has to be apply:
 - D1.Item Additional Descrip. = D0.Item Additional Descrip. (printed with 03 cmd.)
 - (D0.Amount + D1.Amount) ≤ 999999949
 - (D0.Tax Amount + D1.Tax Amount) ≤ 999999949
 - (D0.Amount - D1.Amount) > (D0.Tax Amount + D1.Tax Amount)
 - D1.Description = D0.Description
 - D1.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be uplifted.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- None of the fixed price negative or uplift item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.

6.4.7 D2 - TICKET ITEM SALE

This command is used to record the amount of an item and to print lines containing item description, item amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.) and print header (01 cmd.) have to be executed before.

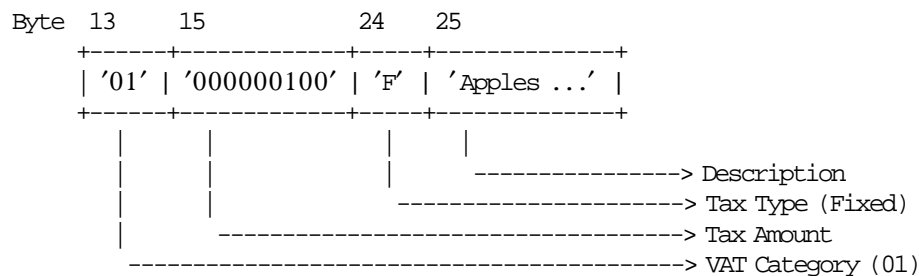
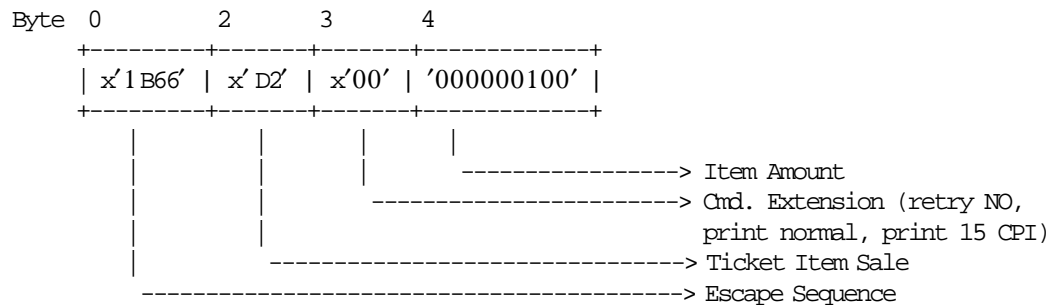
6.4.7.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		D2 - Ticket Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		Reserved (always = '0')		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Item Amount	ASCII	9 (Note 1)
13-14		VAT Category	ASCII	2 (Note 2)
15-23		Tax Amount	ASCII	9 (Note 3)
24		Tax Type	ASCII	1 (Note 4)
25-46		Description	ASCII	22 (Note 5)

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
2. Specify a valid VAT category if amount string is not blank.
Range allowed is from 01 up to 20.
Fixed point number with 2 decimal digits.
For ticket type 'C', value allowed is 00.
3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
The tax amount must be less than item amount.
4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
If blank, the tax amount is ignored.
5. The special character 0x0E is not accepted.

6.4.7.2 Command Example



6.4.7.3 Ticket Item Sale Calculations

Item_Ordinal_Number = Item_Ordinal_Number + 1

- For Taxpayer Issuer Condition = VAT Responsible Enrolled

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + ItemAmount$$

- If Tax Amount is greater than 0

$$Factor = TRUNC\left(\frac{(ItemAmount - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(ItemAmount \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket.

- If Tax Type = F

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- If Tax Type = P

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- For Taxpayer Issuer Condition NOT = VAT Responsible Enrolled

$$Tra_Tot = Tra_Tot + ItemAmount$$

- If Tax Type = F

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

- If Tax Type = P

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20.

6.4.7.4 Ticket Item Sale Rules

- The item ordinal number is reset to 1 at the start of every sales transaction.
- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket total calculated (Tra_Tot_v + Item Amount) can not be greater than the limit ticket total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- Each item is assigned a value-added tax (VAT) category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the "GENERAL VAT".
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses. Example: (21,34) or (21).
- Items cannot be accepted if the VAT category specified in the item sale command is disabled (rate = 9999).
- The item price includes VAT.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.4.8 D3 - TICKET NEGATIVE/UPLIFT ITEM SALE

This command is used to record the amount of a negative/uplift item and prints lines containing the item description, item amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the print header (01 cmd.) and at least one item sale (D2 cmd.) have to be executed before.

6.4.8.1 Command Format

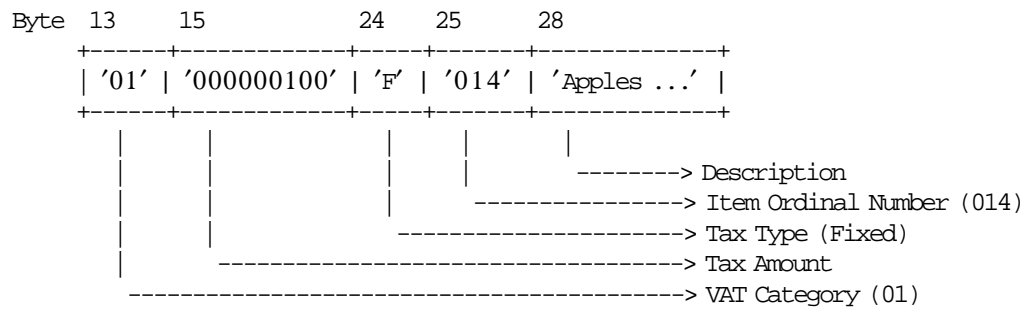
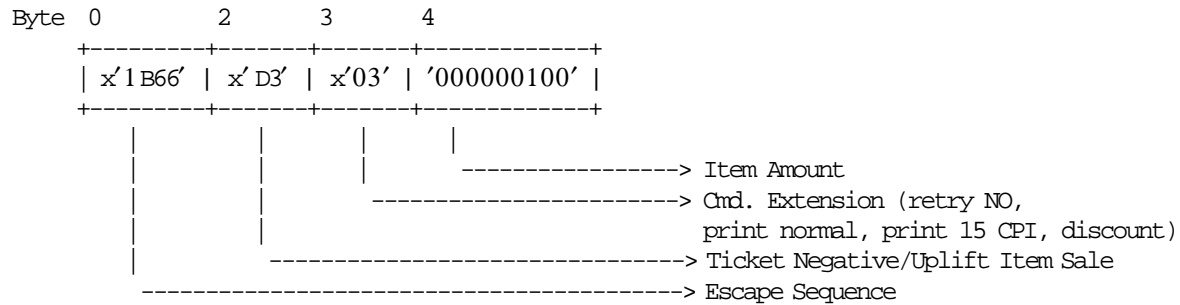
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		D3 - Ticket Negative/Uplift Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		Reserved (always = '0')		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Item Type		
		000 = Reserved		
		001 = VOID (on previous Item Sale)		
		010 = REDUCTION (by VAT)		
		011 = DISCOUNT (on previous Item Sale)		
		100 = EMPTY (by VAT)		
		101 = DISCOUNT (by VAT)		
		110 = UPLIFT (on previous Item Sale)		
		111 = Reserved		
4-12		Item Amount	ASCII	9 (Note 1)
13-14		VAT Category	ASCII	2 (Note 2)
15-23		Tax Amount	ASCII	9
24		Tax Type	ASCII	1 (Note 3, 4)
25-27		Item Ordinal Number	ASCII	3 (Note 5 on page 101)
28-49		Description	ASCII	22 (Note 6 on page 101)

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
2. Range allowed is from 01 to up 20.
Fixed point number with 2 decimal digits.
For ticket type 'C', value allowed is 00.
3. Fixed point number with 2 decimal digits. Maximum amount = 999999948.
The tax amount must be less or equal than item amount.
4. The Tax Type can be 'F' = Fixed, 'P' = Percentage or ' ' = blank.
If blank, the tax amount is ignored.

5. Is applied to Void (on previous Item Sale), Discount (on previous Item Sale) and Uplift (on previous Item Sale) only.
6. The special character 0x0E is not accepted.

6.4.8.2 Command Example



6.4.8.3 Ticket Negative/Uplift Item Sale Calculations

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

- **If Item Type <> Uplift**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) - TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TaxAmount$$

- **If Item Type = Uplift**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(ItemAmount - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(ItemAmount \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket.

- **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

- **If Item Type <> Uplift**

$$Tra_Tot = Tra_Tot - Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F - TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P - TaxAmount$$

- **If Item Type = Uplift**

$$Tra_Tot = Tra_Tot + Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

6.4.8.4 Ticket Negative/Uplift Item Sale Rules

- A minus sign is printed for negative items.
- The factor percent will be printed between brackets.
Example: [12,32] or [12].
- The VAT category 01 is the "GENERAL VAT".
- Negative or uplifts items cannot be accepted if the VAT category specified in the item sale command is disabled (rate = 9999).
- For the VAT category from 02 to 20, the value-added tax (VAT) category will be printed between parentheses.
Example: (21,34) or (21).
- To void item previously sold in the same transaction with D2 cmd., the following rules has to be apply:
 - D3.Item Additional Descrip. = D2.Item Additional Descrip. (printed with 03 cmd.)
 - D3.Amount = D2.Amount
 - D3.Tax Amount = D2.Tax Amount
 - D3.Description = D2.Description
 - D3.Item Ordinal Number = Sequence number of the item previously sold in the same transaction which has to be voided.
- To discount a item previously sold in the same transaction with D2 cmd., the following rules has to be apply:
 - D3.Item Additional Descrip. = D2.Item Additional Descrip. (printed with 03 cmd)
 - D3.Amount < D2.Amount
 - D3.Tax Amount ≤ D2.Tax Amount

- $(D2.Amount - D3.Amount) > (D2.Tax Amount - D3.Tax Amount)$
- $D3.Description = D2.Description$
- $D3.Item Ordinal Number =$ Sequence number of the item previously sold in the same transaction which has to be discounted.
- To Uplift a item previously sold in the same transaction with D2 cmd., the following rules has to be apply:
 - $D3.Item Additional Descrip. = D2.Item Additional Descrip.$ (printed with 03 cmd.)
 - $(D2.Amount + D3.Amount) \leq 999999949$
 - $(D2.Tax Amount + D3.Tax Amount) \leq 999999949$
 - $(D2.Amount - D3.Amount) > (D2.Tax Amount + D3.Tax Amount)$
 - $D3.Description = D2.Description$
 - $D3.Item Ordinal Number =$ Sequence number of the item previously sold in the same transaction which has to be uplifted.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- None of the negative or uplift item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.
- The negative/uplift item number must match the item that it is modifying.
- If the void option is selected, the command amount must match exactly the adjusted item accumulator that has resulted from any operations on the item.
- The resulting operation must respect the minimum and maximum values of the item accumulator. Only voids can result in an item accumulator of zero, otherwise the minimum item accumulator value is 1.
- Once an item is voided, no future negative item or uplift item operations are allowed against that item.

6.4.9 D4 - TICKET SUBTOTAL/TOTAL

This command is used to calculate the transaction subtotal or total and amount due and verify that the total amount accumulated by the fiscal unit matches the amount accumulated by the application program.

To execute this command the serialize fiscal printer (1B cmd.) and any item sale (D2 cmd.) have to be executed before.

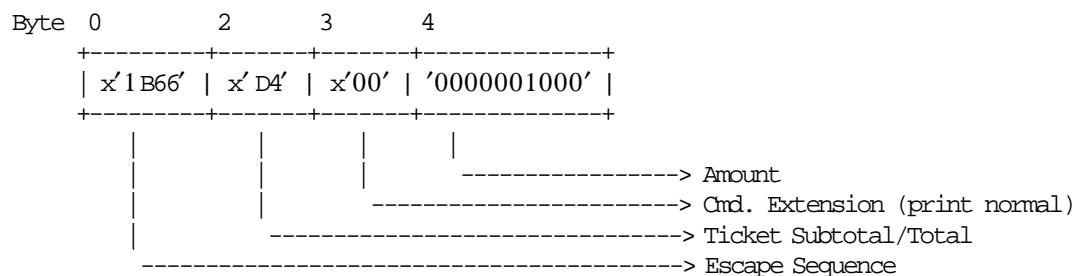
6.4.9.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		D4 - Ticket Subtotal/Total	hex	1
3		Cmd. Extension	hex	1
	7	Retry		
		0 = NO		
		1 = YES		
	6	Reserved (always = '0')		
	5	Print Density		
		0 = Normal		
		1 = Emphasized		
	4-0	Reserved (always = '0')		
4-13		Amount	ASCII	10 (Note 1)

Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

6.4.9.2 Command Example



6.4.9.3 Ticket Subtotal/Total Calculations

VAT rates are recorded as percentages.

VAT rates of 00.00% to 99.98% are supported. 99.99% loaded into the VAT rate table disables the use of that category.

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra_Tot = \sum_{vv} Tra_Tot_v(vv)$$

$$Tra_Tot_Fixed = \sum_{vv} Tra_Tot_Fixed_v(vv)$$

$$Tra_Tax_F = \sum_{vv} Tra_Tax_F_v(vv)$$

$$Tra_Tax_P = \sum_{vv} Tra_Tax_P_v(vv)$$

$$Tra_Tax_Fixed = \sum_{vv} Tra_Tax_Fixed_v(vv)$$

$$Tra_VAT_Fixed_v(vv) = TRUNC\left(\frac{(Tra_Tot_Fixed_v(vv) - Tra_Tax_Fixed_v(vv)) \times VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5\right)$$

$$Tra_VAT_Fixed = \sum_{vv} Tra_VAT_Fixed_v(vv)$$

$$Tra_VAT_v(vv) = TRUNC\left(\frac{(Tra_Tot_v(vv) - Tra_Tax_F_v(vv) - Tra_Tax_P_v(vv)) \times VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5\right)$$

$$Tra_VAT = \sum_{vv} Tra_VAT_v(vv)$$

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed$$

Where:

vv = VAT category, range = 01 up to 20

6.4.9.4 Ticket Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum total ticket allowed (Vouc_Max_Total).
- The item accumulators are erased and the item ordinal number is reset to 1. No negative item or uplift item operations are accepted on items that occurred before the total cmd. If this need arises, a cancel (07 cmd.) must be performed.
- The string "TOTAL" will be printed double-wide.
- The string "SUBTOT." will be printed single-wide.

6.4.10 D9 - TICKET DISCOUNT/UPLIFT ON SUBTOTAL

This command is used to apply discount or uplift on subtotal.

To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

6.4.10.1 Command Format

```

-----

```

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	D9 - Ticket Discount/Uplift on Subtotal	hex	1
3	Cmd. Extension	hex	1
7	Retry 0 = NO 1 = YES		
6-1	Reserved (always = '0')		
0	Operation Type 0 = Discount on Subtotal 1 = Uplift on Subtotal		
4-23	Description	ASCII	20 (Note 1)
24-25	Reserved	ASCII	2
26-35	Amount	ASCII	10

```

-----

```

Notes:

- The special character 0x0E is not accepted.

6.4.10.2 Command Example

```

Byte 0      2      3      4
+-----+-----+-----+-----+
| x'1B66' | x'D9' | x'00' | 'Discount 10% ...' |
+-----+-----+-----+-----+
           |           |           |
           |           |           |-----> Description
           |           |-----> Cmd. Extension (discount on subtotal)
           |-----> Ticket Discount/Uplift on Subtotal
           |-----> Escape Sequence

Byte 24      26
+-----+-----+
| ' ' | '0000001000' |
+-----+-----+
           |
           |-----> Amount
           |-----> Reserved

```

6.4.10.3 Ticket Discount/Uplift on Subtotal Calculations

$$Factor = TRUNC\left(\left(\frac{Tra_VAT}{Tra_Tot - Tra_Tax_F} \times 100\right) + 0.5\right)/100$$

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra_Disc_Quo_v(vv) = TRUNC\left(\left(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)\right) \times \frac{Amount}{Tra_Tot - Tra_Tax_F}\right)$$

$$Tra_Disc_Rem_v(vv) = \text{mod}\left(TRUNC\left(\left(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)\right) \times \frac{Amount}{Tra_Tot - Tra_Tax_F}\right)\right)$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest remainder (Tra_Disc_Rem_v(vv)), then the next until the first condition is no longer met.

- **DISCOUNT ON SUBTOTAL**

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Tra_Disc_Quo_v(vv)$$

$$Tra_VAT_v(vv) = Tra_VAT_v(vv) - TRUNC\left(\frac{Tra_VAT_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

- **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

$$Tra_Tot = Tra_Tot - Amount$$

$$Tra_Tax_P = Tra_Tax_P - TRUNC\left(\frac{Tra_Tax_P \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

- **UPLIFT ON SUBTOTAL**

- **If Taxpayer Issuer Condition = VAT Responsible Enrolled:**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Tra_Disc_Quo_v(vv)$$

$$Tra_VAT_v(vv) = Tra_VAT_v(vv) + TRUNC\left(\frac{Tra_VAT_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

- **If Taxpayer Issuer Condition <> VAT Responsible Enrolled:**

$$Tra_Tot = Tra_Tot + Amount$$

$$Tra_Tax_P = Tra_Tax_P + TRUNC\left(\frac{Tra_Tax_P \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

Where:

vv = VAT category, range = 01 up to 20

6.4.10.4 Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string `TOTAL` in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code 133 is issued.

6.4.11 D5 - TICKET PAYMENT

This command is used to select the payment type and to apply the paid amount.

To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

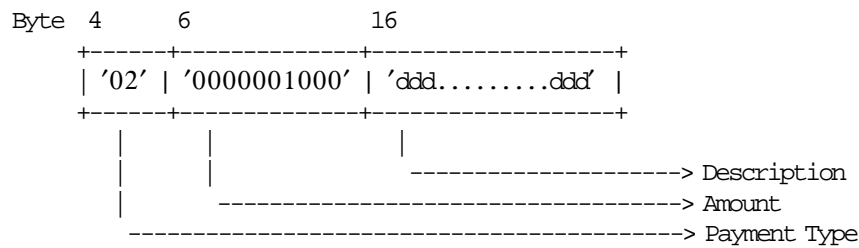
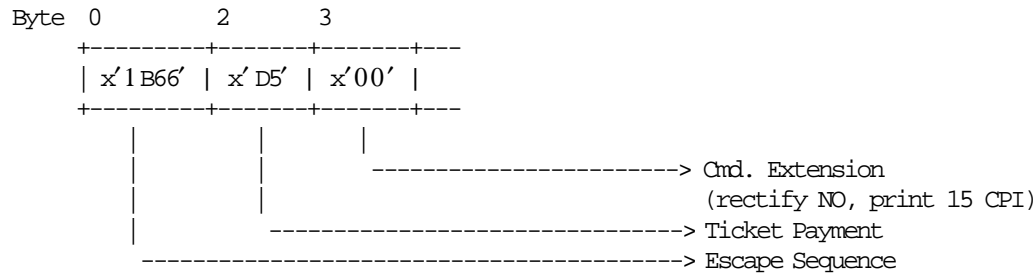
6.4.11.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		D5 - Ticket Payment	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Rectify		
		0 = NO		
		1 = YES		
5-3		Print Typeface		(Note 1)
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = Reserved		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = Reserved		
2-0		Reserved (always = '0')		
4-5		Payment Type Number	ASCII	2 (Note 2)
6-15		Amount	ASCII	10 (Note 3)
16-53		Payment Trailer Line	ASCII	38 (Note 4)

Notes:

1. Print typeface is also applied to the change due line.
2. Values 01 to 30 are allowed.
3. Maximum Amount = 9999999949.
4. If payment type number correspond to "credit card" payment type this field is mandatory. For others payment types, this field is not allowed.
When this field is applied, the special character 0x0E is not accepted.

6.4.11.2 Command Example



6.4.11.3 Ticket Payment Calculations

- **Rectify = NO**

$$Tra_Amt_Due = Tra_Amt_Due - Payment_Amt$$

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) + Payment_Amt$$

- **Rectify = YES**

$$Tra_Amt_Due = Tra_Amt_Due + Payment_Amt$$

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) - Payment_Amt$$

Where:

pp = payment type, range = 01 up to 30

6.4.11.4 Ticket Payment Rules

- This command is optional.
- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed in a ticket.
- The end transaction command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 normal print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.4.12 06 - TICKET END

This command is used to end the sale transaction.

To execute this command the serialize fiscal printer (1B cmd.) and ticket subtotal/total (D4 cmd.) have to be executed before.

6.4.12.1 Command Format

```
-----
```

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		06 - Ticket End	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4
8-15		Reserved	ASCII	8
16-53		Trailer Message Line 1	ASCII	38 (Note 1)
54-91		Trailer Message Line 2	ASCII	38 (Note 1)

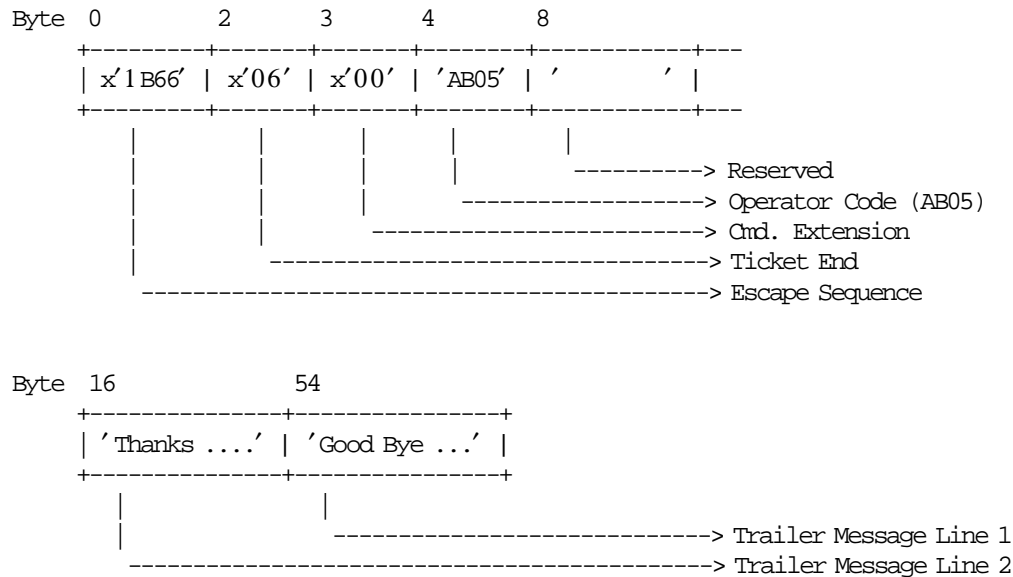
```
-----
```

Notes:

1. Optional fields.

If trailer message line 1 is not filled, the trailer message line 2 is ignored.

6.4.12.2 Command Example



6.4.12.3 Ticket End Calculations

$$Lif_N_Vouc = Lif_N_Vouc + 1$$

$$Day_N_Vouc = Day_N_Vouc + 1$$

$$Day_Pay_Type(pp) = Day_Pay_Type(pp) + Tra_Pay_Type(pp)$$

- **If Tra_Amt_Due < 0**

$$Change_Due = Tra_Amt_Due \times (-1)$$

- **For Taxpayer Issuer Condition = VAT Responsible Enrolled**

$$Day_Tot_v(vv) = Day_Tot_v(vv) + Tra_Tot_v(vv) + Tra_Tot_Fixed_v(vv)$$

$$Day_Tot = \sum_{vv} Day_Tot_v(vv)$$

$$Day_VAT_v(vv) = Day_VAT_v(vv) + Tra_VAT_v(vv) + Tra_VAT_Fixed_v(vv)$$

$$Day_VAT = \sum_{vv} Day_VAT_v(vv)$$

$$Day_Tax_v(vv) = Day_Tax_v(vv) + Tra_Tax_F_v(vv) + Tra_Tax_P_Fixed_v(vv) + Tra_Tax_Fixed_v(vv)$$

- **For Taxpayer Issuer Condition <> VAT Responsible Enrolled**

$$Day_Tot = Day_Tot + Tra_Tot + Tra_Tot_Fixed$$

$$Day_Tax = Day_Tax + Tra_Tax_F + Tra_Tax_P + Tra_Tax_Fixed$$

- **Clearing Transaction Accumulators**

$$Tra_Tot = 0$$

$$Tra_Tot_v(vv) = 0$$

$$Tra_Tot_Fixed = 0$$

$$Tra_Tot_Fixed_v(vv) = 0$$

$$Tra_Tax_F = 0$$

$$Tra_Tax_F_v(vv) = 0$$

$$Tra_Tax_P = 0$$

$$Tra_Tax_P_v(vv) = 0$$

$$Tra_Tax_Fixed = 0$$

$$Tra_Tax_Fixed_v(vv) = 0$$

$$Tra_VAT_v(vv) = 0$$

$$Tra_VAT_Fixed_v(vv) = 0$$

$$Tra_Pay_Type(pp) = 0$$

$$Tra_Amt_Due = 0$$

Where:

vv = VAT category, range = 01 up to 20

pp = payment type, range = 01 up to 30

6.4.12.4 Ticket End Rules

- If the payment phase is desired, this command is allowed only if the "total paid amount \geq transaction total amount".
Tra_Amt_Due must be less than or equal to 0.
- The string TOTAL in upper, lower, or mixed case is not allowed in the trailer message line 1 and 2 fields of this command.
- If the 'FTRAILR' state = YES, then the stored trailer lines will be printed (up till a blank trailer line is encountered or until all stored lines have been printed) before the variable trailer lines on the ticket.

Tra_Tax_Fixed_v(vv) = 0

Tra_VAT_v(vv) = 0

Tra_VAT_Fixed_v(vv) = 0

Tra_Amt_Due = 0

Tra_Pay_Type(pp) = 0

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

pp = payment type, range = 01 up to 30

6.4.13.4 Ticket Cancel Rules

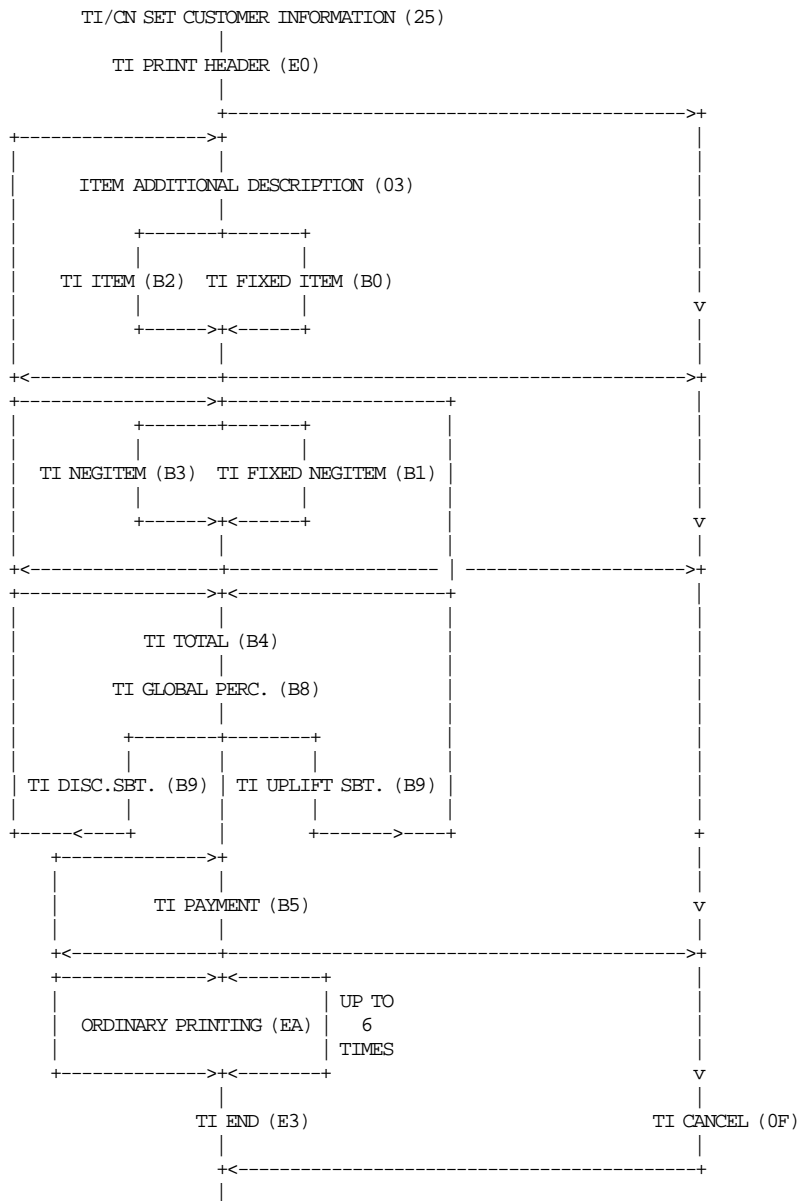
- The fiscal logo and machine serial number will be not printed in the ticket.

6.5 Ticket Invoice in Progress Commands

The ticket invoice in progress commands include:

- B7 - Ticket Invoice/Credit Note - Set/Reset Header
- 25 - Ticket Invoice/Credit Note - Set Customer Information
- 22 - Ticket Invoice/Credit Note - Set/Reset Perception Type
- E0 - Ticket Invoice - Print Header
- B0 - Ticket Invoice - Fixed Price Item Sale
- B1 - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
- B2 - Ticket Invoice - Item Sale
- B3 - Ticket Invoice - Negative Item
- B4 - Ticket Invoice - Subtotal/Total
- B8 - Ticket Invoice - Global Perception
- B9 - Ticket Invoice - Uplift/Discount on Subtotal
- B5 - Ticket Invoice - Payment
- E3 - Ticket Invoice - End
- 0F - Ticket Invoice - Cancel

6.5.1 Ticket Invoice Flow Chart



6.5.2 General Ticket Invoice Rules

- The ticket invoice is printed on DI station (portrait orientation) and all lines are replicated to the SJ station exactly as printed to the DI station except header.
- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on DI station can be printed. After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.

- The following table show the ticket invoice/credit note types allowed between issuer and customer conditions.

<i>ISSUER CONDITION</i>	<i>CUSTOMER CONDITION</i>	<i>TYPE</i>
VAT Responsible Enrolled (0)	VAT Responsible Enrolled (0)	A
	VAT Responsible Not Enrolled (1)	A
VAT Responsible Enrolled (0)	VAT Not Responsible (2)	B
	VAT Exempt (3)	B
	Monotribute Responsible (4)	B
	To Final Consumer (5)	B
	VAT Responsible Not Enrolled CGP (6)	B
	Not Categorized (7)	B
VAT Responsible Not Enrolled (1)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
VAT Not Responsible (2)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
VAT Exempt (3)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C
Monotribute Responsible (4)	VAT Responsible Enrolled (0)	C
	VAT Responsible Not Enrolled (1)	C
	VAT Not Responsible (2)	C
	VAT Exempt (3)	C
	Monotribute Responsible (4)	C
	To Final Consumer (5)	C
	Not Categorized (7)	C

Table 9. Ticket invoice/credit note types between issuer and customer conditions

6.5.3 22 - TICKET INVOICE/CREDIT NOTE SET/RESET PERCEPTION TYPE

This command is used to set or reset a perception type and description.

6.5.3.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - Cmd Prefix	hex	2
2	22 - TI/CN Set/Reset Perception Type	hex	1
3	Cmd. Extension	hex	1
7	Reserved (always = '0')		
6	Action 0 = Set 1 = Reset		
5-3	Print Mode 000 = 15 CPI 001 = 12 CPI 010 = Reserved 011 = Reserved 100 = 15 CPI Emphasized 101 = 12 CPI Emphasized 110 = Reserved 111 = Reserved		
2-0	Reserved (always = '0')		
4-5	Perception Type Number	ASCII	2 (Note 1)
6-27	Description	ASCII	22 (Note 2)

Notes:

1. Values 01 to 30 are allowed.
2. When set action, blank description string is not allowed.

6.5.3.2 Command Example

```

Byte 0      2      3
+-----+-----+-----+
| x'1B66' | x'22' | x'00' |
+-----+-----+-----+
|         |         |         |
|         |         |         |-----> Cmd. Extension (set, print 15 CPI)
|         |         |         |-----> TI/CN Set/Reset Perception Type
|         |         |         |-----> Escape Sequence

```

```

Byte 4      6
+-----+-----+
| '02' | 'ddd.....ddd' |
+-----+-----+
|         |         |-----> Description
|         |         |-----> Perception Type Number

```

6.5.3.3 Ticket Invoice/Credit Note Set/Reset Perception Type Rules

- This information is stored in RAM memory.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.5.4 25 - TICKET INVOICE/CREDIT NOTE SET CUSTOMER INFORMATION

This command is used to set customer information.

6.5.4.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	25 - Ticket Invoice/Credit Note Set Cust.Inf.	hex	1
3	Cmd. Extension	hex	1
	00 = Mandatory Data		
	01 = Description Data (Line 1)		
	02 = Description Data (Line 2)		
	03 = Description Data (Line 3)		
	04 = Description Data (Line 4)		
	05 = Description Data (Line 5)		
	If Cmd. Extension is 00 specify:		
4-4	Customer Document Type	ASCII	1 (Note 1, 2)
5-15	Customer Document Number	ASCII	11
16-16	Taxpayer Customer Condition	ASCII	1 (Note 3)
17-54	Customer Name	ASCII	38
	If Cmd. Extension is 01 or 02 or 03 or 04 or 05 specify:		
4-41	Description Data	ASCII	38

Notes:

1. The Customer Document Type will be:

- 0 - C.U.I.T.
- 1 - C.U.I.L.
- 2 - D.N.I.
- 3 - C.I.
- 4 - Passport
- 5 - L.C.
- 6 - L.E.
- 7 - Document
- 8 - Not Document

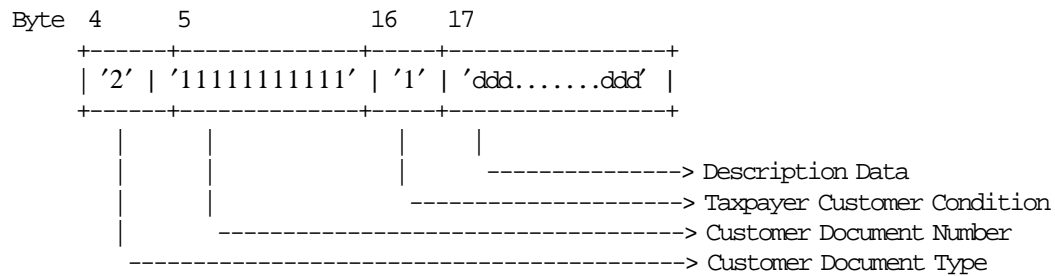
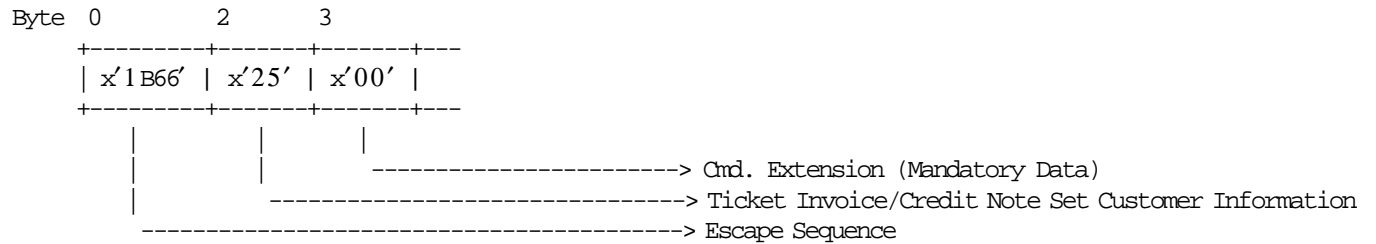
2. When customer document type is equal '0', '1', '2', '3', '4', '5', '6' or '7', the customer document number must be a valid number.
When customer document type is equal '8', the customer document number must be blank.

3. The Taxpayer Customer Condition will be:

- 0 = VAT Responsible Enrolled
- 1 = VAT Responsible Not Enrolled
- 2 = VAT Not Responsible

- 3 = VAT Exempt
- 4 = Monotribute Responsible
- 5 = To Final Consumer
- 6 = VAT Responsible Not Enrolled Capital Goods Purchasing
- 7 = Not Categorized

6.5.4.2 Command Example



6.5.4.3 Ticket Invoice/Credit Note Set Customer Information Rules

- The customer information is stored in RAM memory.
- The following table shows the information to set

```

*****
*      *      TICKET INVOICE      *      *      CREDIT NOTE      *
*      *      A - B - C            *      *      A - B - C            *
*      *      *****            *      *      *****            *
*      * TCC = "To Final * TCC not equal "To * TCC = "To Final * TCC not equal "To *
*      * Consumer" * Final Consumer" * Consumer" * Final Consumer" *
*      * (5) * (1, 2, 3, 4, 6, 7) * (5) * (1, 2, 3, 4, 6, 7) *
*      *      *****            *      *      *****            *
* CDT * Mandatory * Mandatory * Mandatory * Mandatory *
*-----*-----*-----*-----*-----*
* CDN * Mandatory * Mandatory * Mandatory * Mandatory *
*-----*-----*-----*-----*
* TCC * Mandatory * Mandatory * Mandatory * Mandatory *
*-----*-----*-----*-----*
* CN * Optional * Mandatory * Mandatory * Mandatory *
*-----*-----*-----*-----*
* D1 * Optional * Mandatory * Mandatory * Mandatory *
*-----*-----*-----*-----*
* D2 * Optional * Optional * Mandatory * Mandatory *
*-----*-----*-----*-----*
* D3 * Optional * Optional * Optional * Optional *
*-----*-----*-----*-----*
* D4 * Optional * Optional * Optional * Optional *
*-----*-----*-----*-----*
* D5 * Optional * Optional * Optional * Optional *
*****

```

```

CDT = Customer Document Type      (set with cmd. x25 00)
CDN = Customer Document Number    (set with cmd. x25 00)
TCC = Taxpayer Customer Condition (set with cmd. x25 00)
CN = Customer Name                (set with cmd. x25 00)
D1 = Description Data (Line 1)    (set with cmd. x25 01)
D2 = Description Data (Line 2)    (set with cmd. x25 02)
D3 = Description Data (Line 3)    (set with cmd. x25 03)
D4 = Description Data (Line 4)    (set with cmd. x25 04)
D5 = Description Data (Line 5)    (set with cmd. x25 05)

```

- The string TOTAL in upper, lower or mixed case is not allowed in any field of this command.

6.5.5 B7 - TICKET INVOICE/CREDIT NOTE SET/RESET HEADER

This command is used to set or reset the taxpayer information header.

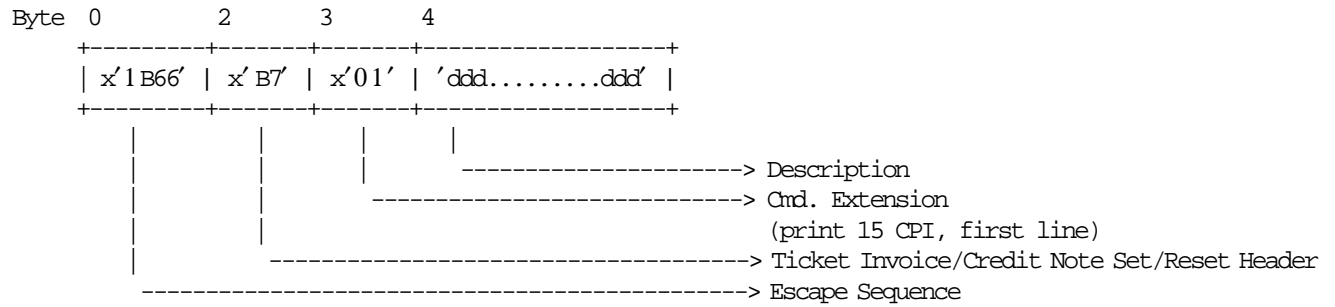
6.5.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		B7 - Tick. Invoice/Credit Note Set/Reset Header	hex	1
3		Cmd. Extension	hex	1
7		Reserved (always = '0')		
6		Action		
		0 = Set		
		1 = Reset		
5-3		Print Mode		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2-0		Line Number		(Note 1, 2)
		001 = First		
		010 = Second		
		011 = Third		
		100 = Fourth		
		101 = Fifth		
		110 = Sixth		
		111 = Seventh		
4-41		Description	ASCII	38 (Note 3)

Notes:

1. If the line number is not set, it is not printed.
2. If the line number is reset, it is not printed.
3. If all blank character are specified in the description string, then the corresponding header line is not printed.

6.5.5.2 Command Example



6.5.5.3 Ticket Invoice/Credit Note Set/Reset Header Calculations

There are no calculations for this command.

6.5.5.4 Ticket Invoice/Credit Note Set/Reset Header Rules

- The header set is stored into fiscal printer battery backed up RAM.
The header is erased when RAM is cleared by activation of the J4/CE jumper.
- This command cannot be executed when sales period is in progress.
- The minimum number of header lines that can be set is 0.
- The maximum number of header lines that can be set is 7.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.5.6 E0 - TICKET INVOICE PRINT HEADER

This command is used to print the taxpayer header on the ticket invoice type selected.
To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

6.5.6.1 Command Format

```
-----
```

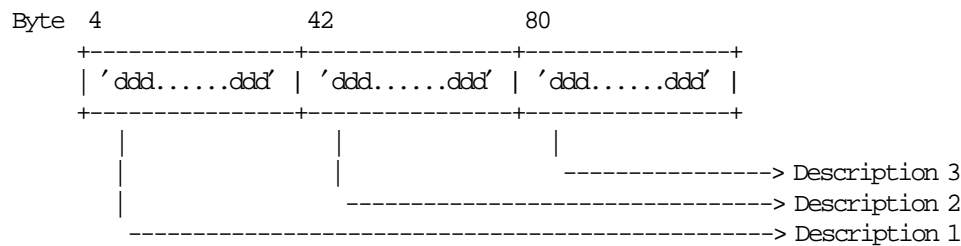
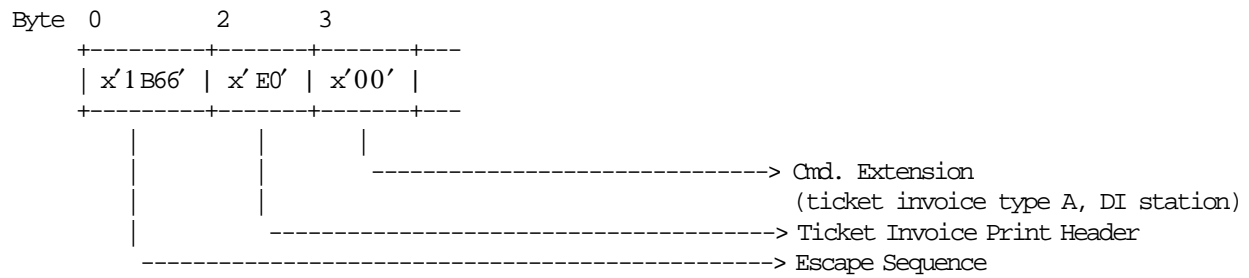
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		E0 - Ticket Invoice Print Header	hex	1
3		Cnd. Extension	hex	1
7		Reserved (always = '0')		
6-5		Type		
		00 = A		
		01 = B		
		10 = C		
		11 = Reserved		
4-2		Reserved (always = '0')		
1-0		Printer Station		(Note 1)
		00 = DI		
		01 = Reserved		
		10 = Reserved		
		11 = Reserved		
4-41		Description 1	ASCII	38 (Note 2)
42-79		Description 2	ASCII	38 (Note 2)
80-117		Description 3	ASCII	38 (Note 2)

```
-----
```

Notes:

1. The selected station print will be preserved until an end transaction command will be sent.
2. The description field is optional.

6.5.6.2 Command Example



6.5.6.3 Ticket Invoice Print Header Calculations

Item_Ordinal_Number = 0

6.5.6.4 Control Paper Calculations

- Before the lines are printed

Mis_N_Lines_Avail_To_Print = *Mis_N_TI_Lines_To_Print*

- After the lines were printed correctly

Mis_N_Lines_Printed = *Mis_N_Cmd_Lines_To_Print*

6.5.6.5 Ticket Invoice Print Header Rules

- The following checking is performed before the execution of the command in order to ensure that the ticket invoice could be eventually cancelled.

$(999,999,999.49 - \text{Day_Canc_g(gg)}) > \text{Limit for Ticket Invoice Total}$

The Limit for Ticket Invoice Total is set with 2E cmd.

If this expression isn't satisfied the error code 016 is returned.

- The string TOTAL in upper, lower or mixed case is not allowed in the description fields of this command.

6.5.7 B0 - TICKET INVOICE FIXED PRICE ITEM SALE

The ticket invoice fixed price items are items which prices are not affected by discount or uplift on subtotal operations.

To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice print header (E0 cmd.) have to be executed before.

6.5.7.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		B0 - Ticket Invoice Fixed Price Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1)
		0 = YES		
		1 = NO		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3)
20-21		VAT Category	ASCII	2 (Note 4)
22-30		Tax Amount	ASCII	9 (Note 5)
31		Tax Type	ASCII	1 (Note 6)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 129)
41-42		Item Perception Type	ASCII	2 (Note 8 on page 129)
43-64		Description	ASCII	22

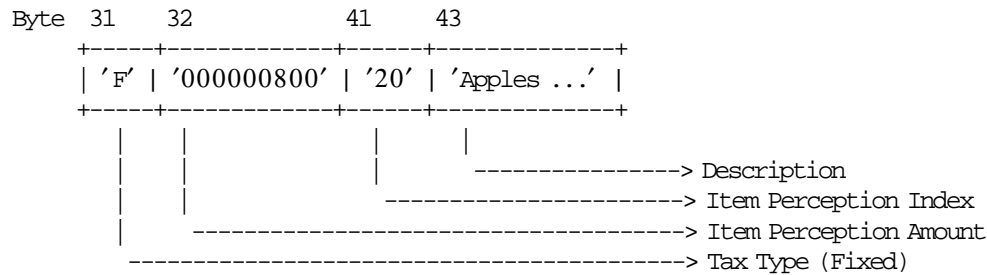
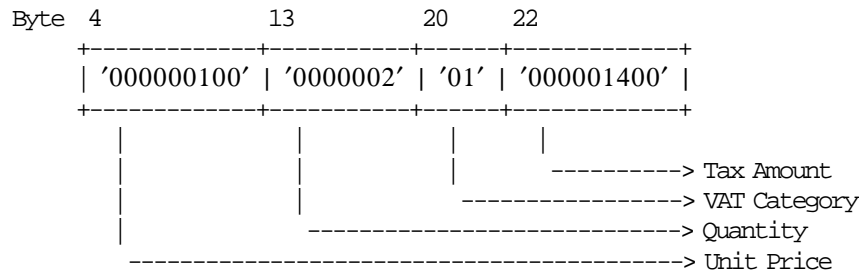
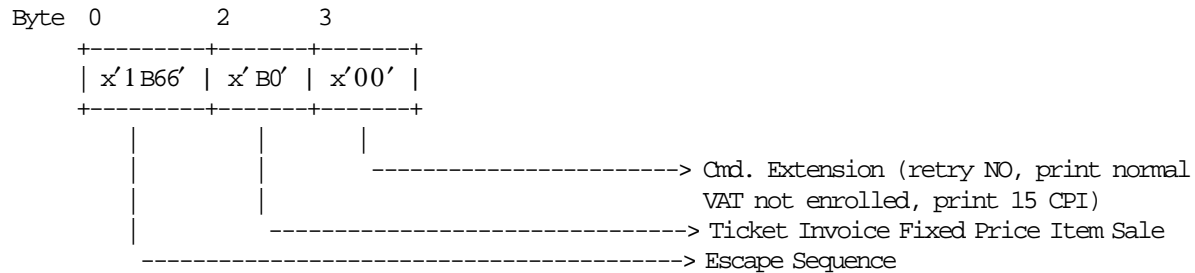
Notes:

- Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
- Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'A', the amount will be Unit Base Price.
For ticket invoice type 'A', the VAT ISN'T included in the amount.
For ticket invoice type 'B', the VAT IS included in the amount.
- Fixed point number with 3 decimal digits. Maximum amount = 99999999.
- For ticket invoice type 'A', range allowed is from 01 to up 20.
- Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'B', the tax amount must be less than Item_Amt.
- The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

6.5.7.2 Command Example



6.5.7.3 Ticket Invoice Fixed Price Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

$$Item_Ordinal_Number = Item_Ordinal_Number + 1$$

- **For Ticket Invoice Type A**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$Tra_Tot_Fixed_NE_v(vv) = Tra_Tot_Fixed_NE_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100\right) + 0.5\right) / 100$$

The calculated Factor must be printed in the ticket invoice.

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

- **If Item Perception Amount is greater than 0**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$$

- **For Ticket Invoice Type B**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket invoice.

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

- **For Ticket Invoice Type C**

$$Tra_Tot_Fixed = Tra_Tot_Fixed + Item_Amt$$

$$Tra_Tax_Fixed = Tra_Tax_Fixed + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.5.7.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print$
Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

6.5.7.5 Ticket Invoice Fixed Price Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated ($Tra_Tot_v + Item_Amt$) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).

- For ticket invoice type A, the Item_Amt does not include VAT.
- For ticket invoice type B, the Item_Amt includes VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.5.8 B1 - TICKET INVOICE FIXED PRICE NEGATIVE/UPLIFT ITEM SALE

The fixed price negative/uplift items are items which prices are not affected by discount or uplift on subtotal operations.

This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the ticket invoice print header (E0 cmd.) and at least one ticket invoice fixed price item sale (B0 cmd.) have to be executed before.

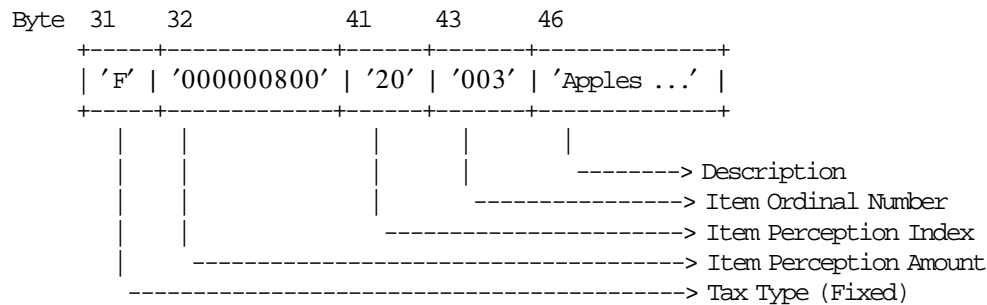
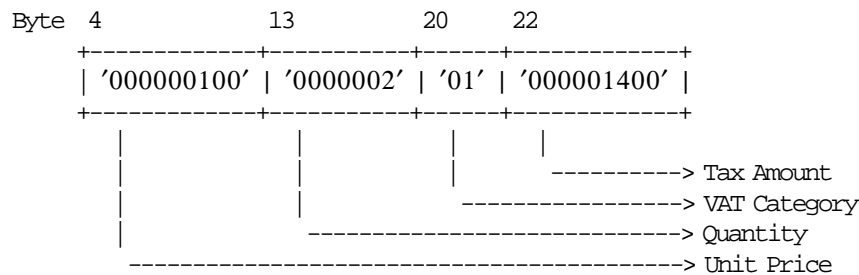
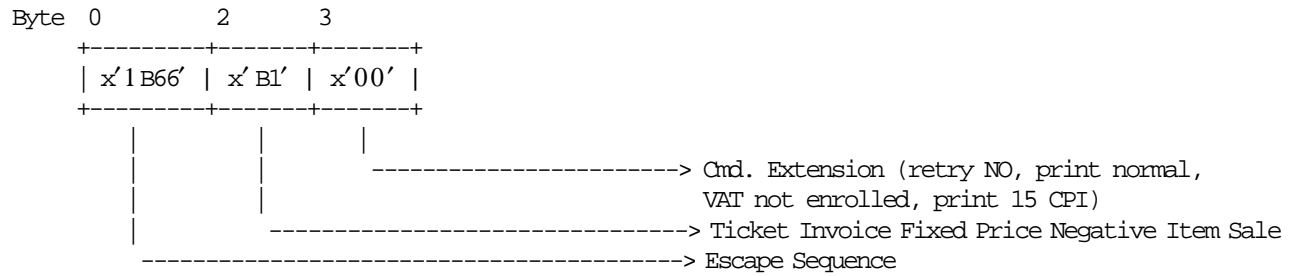
6.5.8.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		B1 - T.I. Fixed Price Negative/Uplift	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1 on page 133)
		0 = YES		
		1 = NO		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Item Type		
		000 = Reserved		
		001 = VOID (on previous Item Sale)		
		010 = REDUCTION (by VAT)		
		011 = DISCOUNT (on previous Item Sale)		
		100 = EMPTY (by VAT)		
		101 = DISCOUNT (by VAT)		
		110 = UPLIFT (on previous Item Sale)		
		111 = Reserved		
4-12		Unit Price (Amount)	ASCII	9 (Note 2 on page 133)
13-19		Quantity	ASCII	7 (Note 3 on page 133)
20-21		VAT Category	ASCII	2 (Note 4 on page 133)
22-30		Tax Amount	ASCII	9 (Note 5 on page 133)
31		Tax Type	ASCII	1 (Note 6 on page 133)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 133)
41-42		Item Perception Index	ASCII	2 (Note 8 on page 133)
43-45		Item Ordinal Number	ASCII	3 (Note 9 on page 133)
46-67		Description	ASCII	22

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'A', the amount will be Unit Base Price.
For ticket invoice type 'A', the VAT ISN'T included in the amount.
For ticket invoice type 'B', the VAT IS included in the amount.
3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. Range allowed is from 01 to up 20.
For ticket invoice type 'C', value allowed is 00.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'B', the tax amount must be less or equal than Item_Amt.
For ticket invoice type 'C', the tax amount must be less or equal than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.
7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
8. For ticket invoice type 'A', range allowed is from 01 to up 30.
For ticket invoice type 'B' and 'C', value allowed is 00.
9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

6.5.8.2 Command Example



6.5.8.3 Ticket Invoice Fixed Price Negative/Uplift Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

- **For Ticket Invoice Type A**

- **If Item Type <> Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) - TaxAmount$$

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - ItemPerceptionAmount$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $Tra_Tot_Fixed_NE_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$

- **If Item Type = Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

$$\begin{aligned} \text{Tra_Percep_vt}(vv,tt) &= \text{Tra_Percep_vt}(vv,tt) + \text{ItemPerceptionAmount} \\ \text{Tra_Percep_t}(tt) &= \text{Tra_Percep_t}(tt) + \text{ItemPerceptionAmount} \end{aligned}$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$\text{Tra_Tot_Fixed_NE_v}(vv) = \text{Tra_Tot_Fixed_NE_v}(vv) + \text{Item_Amt}$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$\text{Tra_Tot_Fixed_NE_v}(vv) = \text{Tra_Tot_Fixed_NE_v}(vv) + \text{Item_Amt}$$

- **If Tax Amount is greater than 0**

$$\text{Factor} = \text{TRUNC}\left(\left(\frac{\text{Item_Amt} \times 100}{\text{Item_Amt} + \text{TaxAmount}} \times 100\right) + 0.5\right)/100$$

The calculated Factor must be printed in the ticket invoice.

- **For Ticket Invoice Type B**

- **If Item Type <> Uplift**

$$\text{Tra_Tot_Fixed_v}(vv) = \text{Tra_Tot_Fixed_v}(vv) - \text{Item_Amt}$$

$$\text{Tra_Tax_Fixed_v}(vv) = \text{Tra_Tax_Fixed_v}(vv) - \text{TaxAmount}$$

- **If Item Type = Uplift**

$$\text{Tra_Tot_Fixed_v}(vv) = \text{Tra_Tot_Fixed_v}(vv) + \text{Item_Amt}$$

$$\text{Tra_Tax_Fixed_v}(vv) = \text{Tra_Tax_Fixed_v}(vv) + \text{TaxAmount}$$

- **If Tax Amount is greater 0**

$$\text{Factor} = \text{TRUNC}\left(\frac{(\text{Item_Amt} - \text{TaxAmount}) \times (\text{VAT_Rate}(vv) \times 1000)}{(\text{Item_Amt} \times (\text{VAT_Rate}(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket invoice.

- **For Ticket Invoice Type C**

- **If Item Type <> Uplift**

$$\text{Tra_Tot_Fixed_v}(vv) = \text{Tra_Tot_Fixed_v}(vv) - \text{Item_Amt}$$

$$\text{Tra_Tax_Fixed_v}(vv) = \text{Tra_Tax_Fixed_v}(vv) - \text{TaxAmount}$$

- **If Item Type = Uplift**

$$\text{Tra_Tot_Fixed_v}(vv) = \text{Tra_Tot_Fixed_v}(vv) + \text{Item_Amt}$$

$$\text{Tra_Tax_Fixed_v}(vv) = \text{Tra_Tax_Fixed_v}(vv) + \text{TaxAmount}$$

Where:

vv = VAT category, range = 01 up to 20

vt = VAT category (range = 01 up to 20) and perception type (range = 01 up to 30)

tt = perception type, range = 01 up to 30

6.5.8.4 Control Paper Calculations

- **Before the lines are printed**

$$\text{Mis_N_Lines_Avail_To_Print} = \text{Mis_N_TI_Lines_To_Print} - \text{Mis_N_Lines_Printed}$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print$
Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

6.5.8.5 Ticket Invoice Fixed Price Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated ($Tra_Tot_Fixed_v + Item_Amt$) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For ticket invoice type A, the Item_Amt does not include VAT.
- For ticket invoice type B, the Item_Amt includes VAT.
- To void a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:
 - B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)
 - B1.Description = B0.Description
 - B1.Unit Price = B0.Unit Price
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $B1.VATNotEnrolled = B0.VATNotEnrolled$
 - B1.Quantity \leq B0.Quantity
 - If B1.Quantity = B0.Quantity
 $B1.TaxAmount = B0.TaxAmount$
 $B1.ItemPercep.Amount = B0.ItemPercep.Amount$
 - If B1.Quantity < B0.Quantity
 $0 \leq B1.TaxAmount \leq B0.TaxAmount$
 $0 \leq B1.ItemPercep.Amount \leq B0.ItemPercep.Amount$
 - If ticket invoice type \neq A
 $((B0.Quantity - B1.Quantity) \times B0.Amount) > (B0.TaxAmount - B1.TaxAmount)$
- To discount a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:
 - B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)
 - B1.Description = B0.Description
 - B1.Quantity = B0.Quantity
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $B1.VATNotEnrolled = B0.VATNotEnrolled$
 - B1.Unit Price < B0.Unit Price
 - B1.Item Percep.Amount \leq B0.Item Percep.Amount
 - B1.Item Percep.Amount \geq 0

- B1.Tax Amount ≥ 0
- If ticket invoice type $\neq A$
 $(B0.Quantity \times (B0.Amount - B1.Amount)) > (B0.TaxAmount - B1.TaxAmount)$
- To uplift a fixed price item previously sold in the same transaction with B0 cmd., the following rules has to be apply:
 - B1.Item Additional Descrip. = B0.Item Additional Descrip. (printed with 03 cmd.)
 - B1.Description = B0.Description
 - B1.Quantity = B0.Quantity
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $B1.VATNotEnrolled = B0.VATNotEnrolled$
 - $((B0.Amount + B1.Amount) * B0.Quantity) \leq 999999949$
 - $(B0.Tax Amount + B1.Tax Amount) \leq 999999949$
 - $(B0.Item Percep.Amount + B1.Item Percep.Amount) \leq 999999949$
 - If ticket invoice type $\neq A$
 $(B0.Quantity \times (B0.Amount + B1.Amount)) > (B0.TaxAmount + B1.TaxAmount)$
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.5.9 B2 - TICKET INVOICE ITEM SALE

This command is used to record the amount of an item and to print lines containing quantity, unit price, description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice print header (E0 cmd.) have to be executed before.

6.5.9.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		B2 - Ticket Invoice Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Typeface		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1)
		0 = YES		
		1 = NO		
3		Print Density		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3)
20-21		VAT Category	ASCII	2 (Note 4)
22-30		Tax Amount	ASCII	9 (Note 5)
31		Tax Type	ASCII	1 (Note 6)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 139)
41-42		Item Perception Type	ASCII	2 (Note 8 on page 139)
43-64		Description	ASCII	22

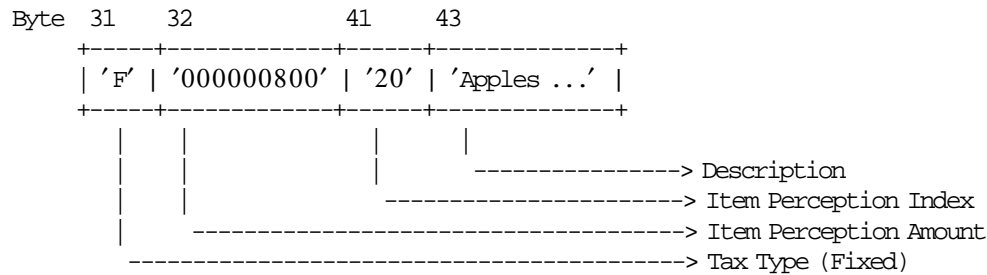
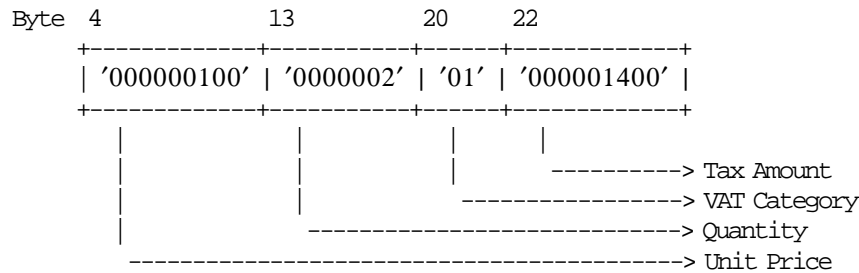
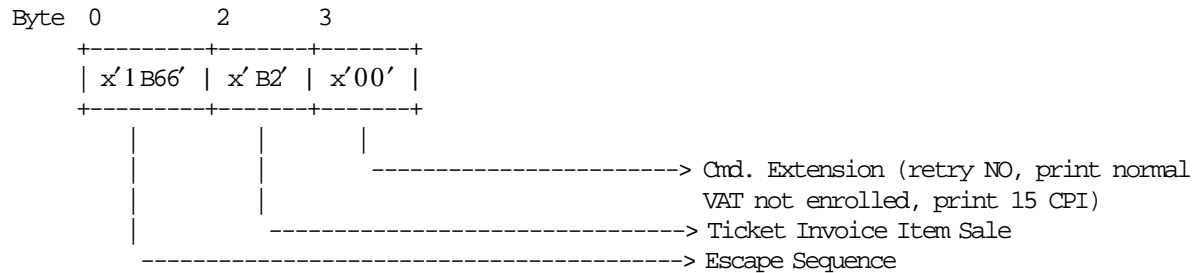
Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'A', the amount will be Unit Base Price.
For ticket invoice type 'A', the VAT ISN'T included in the amount.
For ticket invoice type 'B', the VAT IS included in the amount.
3. Fixed point number with 3 decimal digits. Maximum amount = 99999999.
4. For ticket invoice type 'A', range allowed is from 01 to up 20.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'B', the tax amount must be less than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For ticket invoice type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

6.5.9.2 Command Example



6.5.9.3 Ticket Invoice Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

$$Item_Ordinal_Number = Item_Ordinal_Number + 1$$

- **For Ticket Invoice Type A**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100\right) + 0.5\right) / 100$$

The calculated Factor must be printed in the ticket invoice.

- **If Tax Type = F**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **If Item Perception Amount is greater than 0**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$$

- **For Ticket Invoice Type B**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket invoice.

- **If Tax Type = F**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **For Ticket Invoice Type C**

$$Tra_Tot = Tra_Tot + Item_Amt$$

- **If Tax Type = F**

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.5.9.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

6.5.9.5 Ticket Invoice Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the ticket invoice item sale command is disabled (rate = 9999).
- For ticket invoice type B, the item_amt includes VAT.
- For ticket invoice type A, the item_amt does not include VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.5.10 B3 - TICKET INVOICE NEGATIVE/UPLIFT ITEM SALE

This command is used to record the amount of a negative item and prints lines containing the quantity, unit price, item description, item amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the fiscal invoice print header (E0 cmd.) and at least one ticket invoice item sale (B2 cmd.) have to be executed before.

6.5.10.1 Command Format

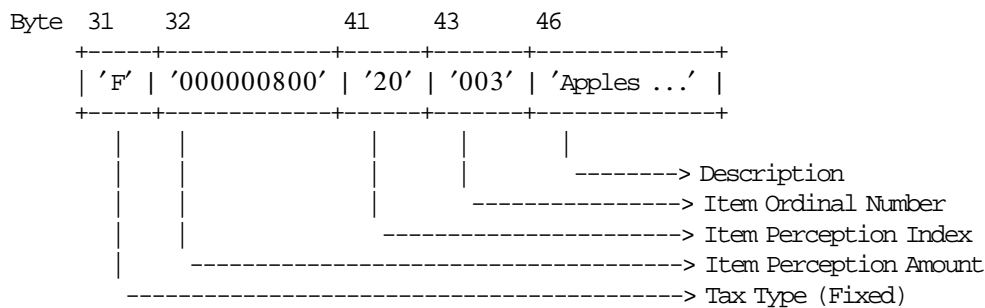
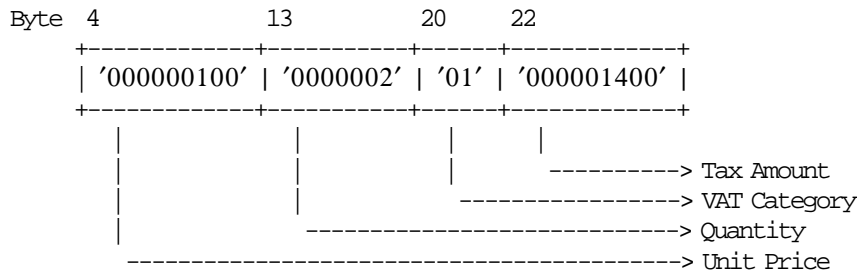
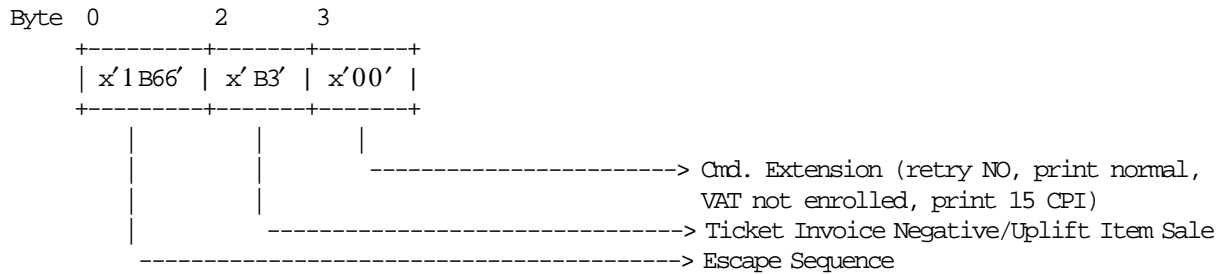
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		B3 - Ticket Invoice Negative/Uplift Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1)
		0 = YES		
		1 = NO		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Item Type		
		000 = Reserved		
		001 = VOID (on previous Item Sale)		
		010 = REDUCTION (by VAT)		
		011 = DISCOUNT (on previous Item Sale)		
		100 = EMPTY (by VAT)		
		101 = DISCOUNT (by VAT)		
		110 = UPLIFT (on previous Item Sale)		
		111 = Reserved		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3 on page 143)
20-21		VAT Category	ASCII	2 (Note 4 on page 143)
22-30		Tax Amount	ASCII	9 (Note 5 on page 143)
31		Tax Type	ASCII	1 (Note 6 on page 143)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 143)
41-42		Item Perception Index	ASCII	2 (Note 8 on page 143)
43-45		Item Ordinal Number	ASCII	3 (Note 9 on page 143)
46-67		Description	ASCII	22

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'A', the amount will be Unit Base Price.
For ticket invoice type 'A', the VAT ISN'T included in the amount.
For ticket invoice type 'B', the VAT IS included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. Range allowed is from 01 to up 20.
For ticket invoice type 'C', value allowed is 00.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For ticket invoice type 'B', the tax amount must be less or equal than Item_Amt.
For ticket invoice type 'C', the tax amount must be less or equal than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.
7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
8. For ticket invoice type 'A', range allowed is from 01 to up 30.
For ticket invoice type 'B' and 'C', value allowed is 00.
9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

6.5.10.2 Command Example



6.5.10.3 Ticket Invoice Negative/Uplift Item Sale Calculations

$Item_Amt = UnitPrice \times Quantity$

- **If Ticket Invoice Type = 'A'**

- **If Item Type <> Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Item_Amt$

$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - ItemPerceptionAmount$

$Tra_Percep_t(tt) = Tra_Percep_t(tt) - ItemPerceptionAmount$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
Taxpayer Customer Condition = VAT Responsible Not Enrolled

$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) - Item_Amt$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) - TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TaxAmount$

- **If Item Type = Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$

$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$

$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$

- **If Tax Amount is greater than 0**

$Factor = TRUNC\left(\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100\right) + 0.5\right) / 100$

The calculated Factor must be printed in the ticket invoice.

- **If Ticket Invoice Type = 'B'**

- **If Item Type <> Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Item_Amt$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) - TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TaxAmount$

- **If Item Type = Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$

- **If Tax Type = 'F'**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

— **If Tax Type = 'P'**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

– **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the ticket invoice.

• **If Ticket Invoice Type = 'C'**

– **If Item Type <> Uplift**

$$Tra_Tot = Tra_Tot - Item_Amt$$

— **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F - TaxAmount$$

— **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P - TaxAmount$$

– **If Item Type = Uplift**

$$Tra_Tot = Tra_Tot + Item_Amt$$

— **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

— **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.5.10.4 Control Paper Calculations

• **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$$

• If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_Cancel_Lines_To_Print$

Return_Code 125

• **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

6.5.10.5 Ticket Invoice Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The ticket invoice total calculated ($Tra_Tot_v + Item_Amt$) can not be greater than the limit ticket invoice total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For ticket invoice type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is the "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the ticket invoice item sale command is disabled (rate = 9999).
- For ticket invoice type B, the *item_amt* includes VAT.
- For ticket invoice type A, the *item_amt* does not include VAT.
- To void a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:
 - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)
 - B3.Description = B2.Description
 - B3.Item Ordinal Number = Sequence number of the item previously sold which to be voided.
 - B3.Unit Price = B2.Unit Price
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
B3.VATNotEnrolled = B2.VATNotEnrolled
 - $B3.Quantity \leq B2.Quantity$
 - If $B3.Quantity = B2.Quantity$
B3.TaxAmount = B2.TaxAmount
B3.ItemPercep.Amount = B2.ItemPercep.Amount
 - If $B3.Quantity < B2.Quantity$
 $0 \leq B3.TaxAmount \leq B2.TaxAmount$
 $0 \leq B3.ItemPercep.Amount \leq B2.ItemPercep.Amount$
 - If ticket invoice type $\neq A$
 $((B2.Quantity - B3.Quantity) \times B2.Amount) > (B2.TaxAmount - B3.TaxAmount)$
- To discount a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:
 - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)
 - B3.Description = B2.Description
 - B3.Item Ordinal Number = Sequence number of the item previously sold which to be discounted.
 - B3.Quantity = B2.Quantity
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
B3.VATNotEnrolled = B2.VATNotEnrolled
 - B3.Unit Price < B2.Unit Price
 - B3.Item Percep.Amount \leq B2.Item Percep.Amount
 - B3.Item Percep.Amount ≥ 0
 - B3.Tax Amount ≥ 0
 - If ticket invoice type $\neq A$

$$(B2.Quantity \times (B2.Amount - B3.Amount)) > (B2.TaxAmount - B3.TaxAmount)$$

- To uplift a item previously sold in the same transaction with B2 cmd., the following rules has to be apply:
 - B3.Item Additional Descrip. = B2.Item Additional Descrip. (printed with 03 cmd.)
 - B3.Description = B2.Description
 - B3.Item Ordinal Number = Sequence number of the item previously sold which to be uplifted.
 - B3.Quantity = B2.Quantity
 - If ticket invoice type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $B3.VATNotEnrolled = B2.VATNotEnrolled$
 - $((B2.Amount + B3.Amount) * B2.Quantity) \leq 999999949$
 - $(B2.Tax Amount + B3.Tax Amount) \leq 999999949$
 - $(B2.Item Percep.Amount + B3.Item Percep.Amount) \leq 999999949$
 - If ticket invoice type \neq A
 $(B2.Quantity \times (B2.Amount + B3.Amount)) > (B2.TaxAmount + B3.TaxAmount)$
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.

6.5.11 B4 - TICKET INVOICE SUBTOTAL/TOTAL

This command is used to verify that the subtotal or total amount accumulated by the fiscal unit matches the amount accumulated by the application program.

To execute this command the serialize fiscal printer (1B cmd.) and any ticket invoice item sale (B2 cmd.) have to be executed before.

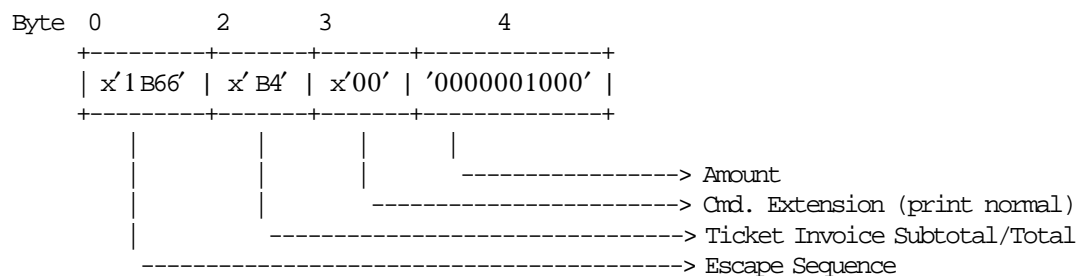
6.5.11.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		B4 - Ticket Invoice Subtotal/Total	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4-0		Reserved (always = '0')		
4-13		Amount	ASCII	10 (Note 1)

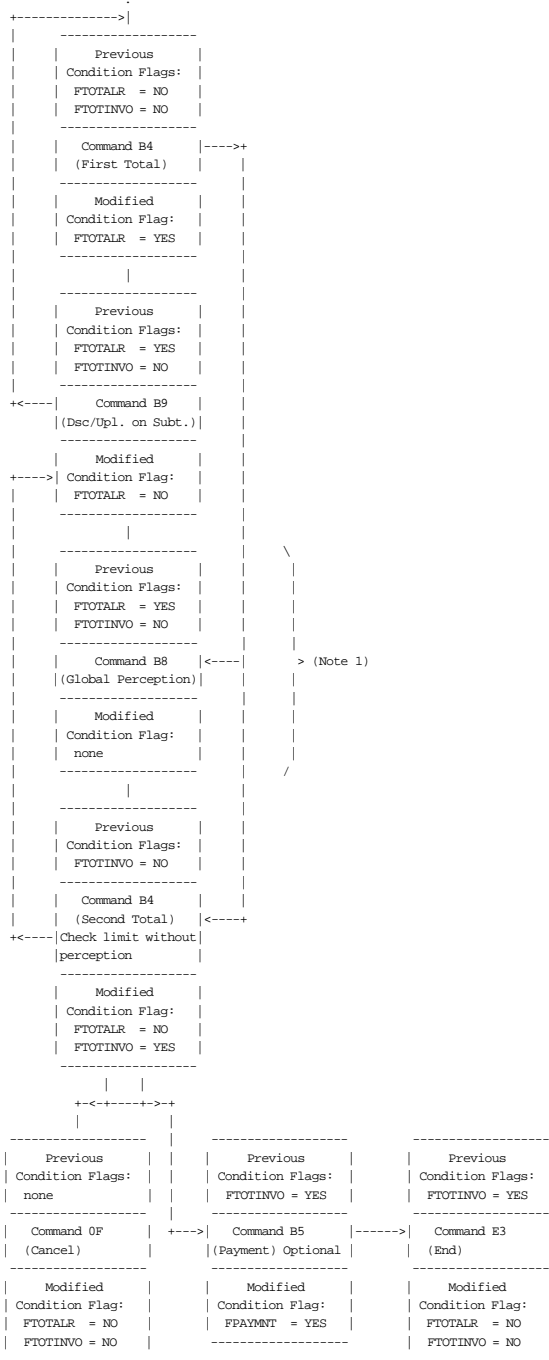
Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

6.5.11.2 Command Example



6.5.11.3 Ticket Invoice Subtotal/Total Command Flow



Note 1: Optional for Ticket Invoice 'A' and 'B'.
Not allowed for Ticket Invoice 'C'.

Figure 2. Ticket Invoice Subtotal/Total Command Flow

6.5.11.4 Ticket Invoice Subtotal/Total Calculations

- **For Ticket Invoice Type = 'A' or 'B'**

$$Tra_Tot = \sum_{vv} Tra_Tot_v(vv)$$

$$Tra_Tot_Fixed = \sum_{vv} Tra_Tot_Fixed_v(vv)$$

$$Tra_Tax_v(vv) = Tra_Tax_F_v(vv) + Tra_Tax_P_v(vv) + Tra_Tax_Fixed_v(vv)$$

$$Tra_Tax_F = \sum_{vv} Tra_Tax_F_v(vv)$$

$$Tra_Tax_P = \sum_{vv} Tra_Tax_P_v(vv)$$

$$Tra_Tax_Fixed = \sum_{vv} Tra_Tax_Fixed_v(vv)$$

- **For Ticket Invoice Type = 'A'**

$$Tra_VAT_Fixed_v(vv) = TRUNC(Tra_Tot_Fixed_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_v(vv) = TRUNC(Tra_Tot_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

- **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra_VAT_NE_Fixed_v(vv) = TRUNC(Tra_Tot_Fixed_NE_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_NE_v(vv) = TRUNC(Tra_Tot_NE_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_NE_v(vv) = (Tra_VAT_NE_v(vv) + Tra_VAT_NE_Fixed_v(vv)) \times (VATNotEnrolledPercent)$$

$$Tra_VAT = \sum_{vv} Tra_VAT_v(vv)$$

$$Tra_VAT_Fixed = \sum_{vv} Tra_VAT_Fixed_v(vv)$$

$$Tra_VAT_NE = \sum_{vv} Tra_VAT_NE_v(vv)$$

$$Tra_Percep = \sum_{tt} Tra_Percep_t(tt)$$

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed + Tra_VAT + Tra_VAT_Fixed + Tra_Tax_F + Tra_Tax_P + Tra_Tax_Fixed + Tra_VAT_NE + Tra_Percep$$

- **For Ticket Invoice Type = 'B'**

$$Tra_VAT_Fixed_v(vv) = TRUNC((Tra_Tot_Fixed_v(vv) - Tra_Tax_Fixed_v(vv)) \times \frac{VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5)$$

$$Tra_VAT_v(vv) = TRUNC((Tra_Tot_v(vv) - Tra_Tax_F_v(vv) - Tra_Tax_P_v(vv)) \times \frac{VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5)$$

$$Tra_VAT = \sum_{vv} Tra_VAT_v(vv)$$

$$Tra_VAT_Fixed = \sum_{vv} Tra_VAT_Fixed_v(vv)$$

$$Tra_Percep = \sum_{tt} Tra_Percep_t(tt)$$

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed + Tra_Percep$$

- **For Ticket Invoice Type = 'C'**

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

VAT Not Enrolled Percent was loaded with 2E cmd.

6.5.11.5 Ticket Invoice Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum ticket invoice total allowed (loaded with 2E cmd.).
- The string "TOTAL" will be printed double-high and emphasized.
- The string "SUBTOT." will be printed double-high and emphasized.
- When the ticket invoice total exceed the limit for ticket invoice total allowed (loaded with 2E cmd.) the following action can be performed:
 - Cancel transaction
 - OR
 - Issue discount on item or discount on subtotal

6.5.12.3 Ticket Invoice Global Perception Calculations

- **For Ticket Invoice Type = 'A'**

- **If Rectify = NO**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) + Amount$$

- **If VAT Category not = '00'**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

- **If Rectify = YES**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) - Amount$$

- **If VAT Category not = '00'**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

- **For Ticket Invoice Type = 'B'**

- **If Rectify = NO**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

- **If Rectify = YES**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

Where:

vv = VAT category, range = 00 up to 20
tt = perception type, range = 01 up to 30

6.5.12.4 Ticket Invoice Global Perception Rules

- This command is applicable to ticket invoice types A and B.
- This command is allowed if taxpayer customer condition is VAT Responsible Enrolled or if taxpayer customer condition is VAT Responsible Not Enrolled and is allowed the perception for this customer condition (set with 2E cmd.).

Without Decimals

$$Factor = TRUNC\left(\frac{Tra_Tot \times 100}{Tra_Tot + Tra_Tax_P}\right) + 0.5$$

$$Tra_Disc_Quo_v(vv) = TRUNC\left(\frac{Tra_Tot_v(vv) \times Amount}{Tra_Tot}\right)$$

$$Tra_Disc_Rem_v(vv) = \text{mod}\left(TRUNC\left(\frac{Tra_Tot_v(vv) \times Amount}{Tra_Tot}\right)\right)$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest remainder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **For Uplift on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Tra_Disc_Quo_v(vv)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot} + 0.5\right)$$

- **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) + TRUNC\left(\left(\frac{Tra_Tot_NE_v(vv) \times Item_Amt \times 10}{Tra_Tot}\right) + 5\right)/10$$

- **For Discount on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Tra_Disc_Quo_v(vv)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot} + 0.5\right)$$

- **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) - TRUNC\left(\left(\frac{Tra_Tot_NE_v(vv) \times Item_Amt \times 10}{Tra_Tot}\right) + 5\right)/10$$

- **For Ticket Invoice Type = 'B'**

With Decimals

$$Factor = TRUNC\left(\frac{Tra_VAT}{Tra_Tot - Tra_Tax_F} \times 100\right)$$

Without Decimals

$$Factor = TRUNC\left(\left(\frac{Tra_VAT}{Tra_Tot - Tra_Tax_F} \times 100\right) + 0.5\right)$$

$$Tra_Disc_Quo_v(vv) = TRUNC\left(\frac{(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)) \times Amount}{Tra_Tot - Tra_Tax_F}\right)$$

$$Tra_Disc_Rem_v(vv) = \text{mod}\left(TRUNC\left(\frac{(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)) \times Amount}{Tra_Tot - Tra_Tax_F}\right)\right)$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than amount by adding one to the $\text{Tra_Disc_Quo_v(vv)}$ that has the highest remainder ($\text{Tra_Disc_Rem_v(vv)}$), then the next until the first condition is not longer met.

– **For Uplift on Subtotal**

$$\text{Tra_Tot_v(vv)} = \text{Tra_Tot_v(vv)} + \text{Tra_Disc_Quo_v(vv)}$$

$$\text{Tra_VAT_v(vv)} = \text{Tra_VAT_v(vv)} + \text{TRUNC}\left(\frac{\text{Tra_VAT_v(vv)} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

$$\text{Tra_Tax_P_v(vv)} = \text{Tra_Tax_P_v(vv)} + \text{TRUNC}\left(\frac{\text{Tra_Tax_P_v(vv)} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

– **For Discount on Subtotal**

$$\text{Tra_Tot_v(vv)} = \text{Tra_Tot_v(vv)} - \text{Tra_Disc_Quo_v(vv)}$$

$$\text{Tra_VAT_v(vv)} = \text{Tra_VAT_v(vv)} - \text{TRUNC}\left(\frac{\text{Tra_VAT_v(vv)} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

$$\text{Tra_Tax_P_v(vv)} = \text{Tra_Tax_P_v(vv)} - \text{TRUNC}\left(\frac{\text{Tra_Tax_P_v(vv)} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

• **For Ticket Invoice Type = 'C'**

– **For Uplift on Subtotal**

$$\text{Tra_Tot} = \text{Tra_Tot} + \text{Amount}$$

$$\text{Tra_Tax_P} = \text{Tra_Tax_P} + \text{TRUNC}\left(\frac{\text{Tra_Tax_P} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

– **For Discount on Subtotal**

$$\text{Tra_Tot} = \text{Tra_Tot} - \text{Amount}$$

$$\text{Tra_Tax_P} = \text{Tra_Tax_P} - \text{TRUNC}\left(\frac{\text{Tra_Tax_P} \times \text{Amount}}{\text{Tra_Tot} - \text{Tra_Tax_F}} + 0.5\right)$$

Where:

vv = VAT category, range = 01 up to 20

6.5.13.4 Control Paper Calculations

• **Before the lines are printed**

$$\text{Mis_N_Lines_Avail_To_Print} = \text{Mis_N_TI_Lines_To_Print} - \text{Mis_N_Lines_Printed}$$

- If $\text{Mis_N_Lines_Avail_To_Print} < \text{Mis_N_Cmd_Lines_To_Print} + \text{Mis_N_TI_Cancel_Lines_To_Print}$

Return_Code 125

• **After the lines were printed correctly**

$$\text{Mis_N_Lines_Printed} = \text{Mis_N_Lines_Printed} + \text{Mis_N_Cmd_Lines_To_Print}$$

6.5.13.5 Ticket Invoice Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string `TOTAL` in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code error is issued.

6.5.14 B5 - TICKET INVOICE PAYMENT

This command is used to select the payment type and to apply the paid amount.

To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice subtotal/total (B4 cmd.) have to be executed before.

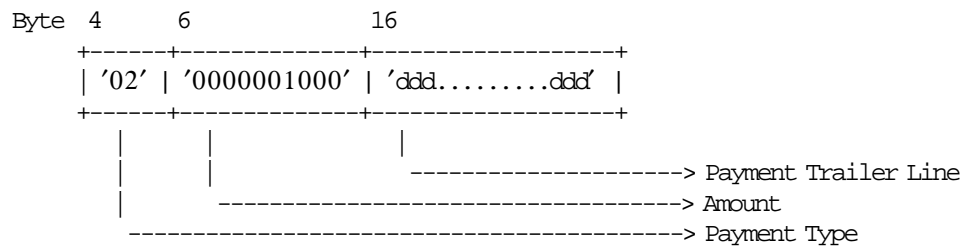
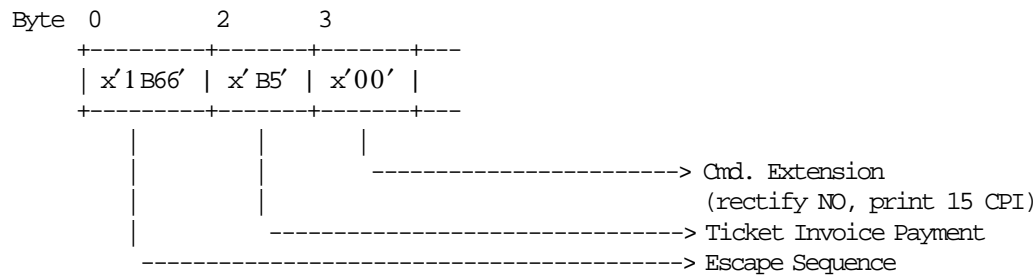
6.5.14.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		B5 - Ticket Invoice Payment	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Rectify		
		0 = NO		
		1 = YES		
5-3		Print Mode		(Note 1)
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = Reserved		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = Reserved		
2-0		Reserved (always = '0')		
4-5		Payment Type Number	ASCII	2 (Note 2)
6-15		Amount	ASCII	10 (Note 3)
16-53		Payment Trailer Line	ASCII	38 (Note 4)

Notes:

1. Print mode is applied to the change due printed line only.
2. Range allowed is from 01 to 30.
3. Maximum Amount = 9999999949. The amount is printed with the same print mode used by the description field set in the 24 command (Set Payment Type).
4. If payment type number correspond to "credit card" payment type this field is mandatory. For others payment types, this field is not allowed.
When this field is applied, the special character 0x0E is not accepted.

6.5.14.2 Command Example



6.5.14.3 Ticket Invoice Payment Calculations

- **Rectify = NO**

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

- **Rectify = YES**

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

Where:

pp = payment type, range = 01 up to 30

6.5.14.4 Ticket Invoice Payment Rules

- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed.
- The Ticket Invoice End Transaction command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 Normal Print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the Payment Trailer Line field of this command.

6.5.15 E3 - TICKET INVOICE END

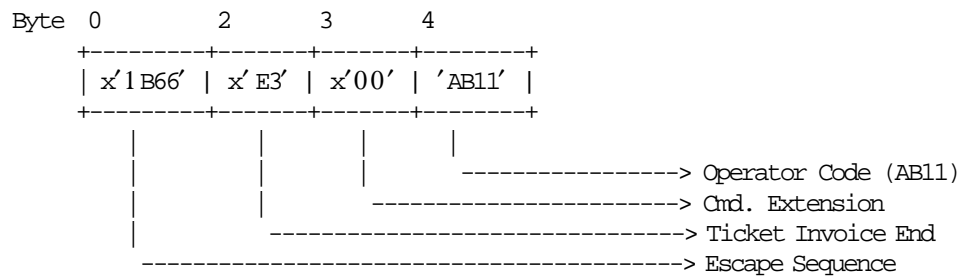
This command is used to end a ticket invoice sale transactions.

To execute this command the serialize fiscal printer (1B cmd.) and ticket invoice subtotal/total (B4 cmd.) have to be executed before.

6.5.15.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command prefix	hex	2
2		E3 - Ticket Invoice End	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4

6.5.15.2 Command Example



6.5.15.3 Ticket Invoice End Calculations

- **If Ticket Invoice Type = 'A'**

$$Day_N_TInv_A = Day_N_TInv_A + 1$$

$$Lif_N_TInv_A = Lif_N_TInv_A + 1$$

- **If Ticket Invoice Type = 'B' or 'C'**

$$Day_N_Vouc = Day_N_Vouc + 1$$

$$Lif_N_Vouc = Lif_N_Vouc + 1$$

- **If Tra_Amt_Due < 0**

$$Change_Due = Tra_Amt_Due \times (-1)$$

- **If Ticket Invoice = 'A', 'B' or 'C'**

$$Day_Pay_Type(pp) = Day_Pay_Type(pp) + Tra_Pay_Type(pp)$$

- **If Ticket Invoice = 'A' or 'B'**

$$Day_Tot_v(vv) = Day_Tot_v(vv) + Tra_Tot_v(vv) + Tra_Tot_Fixed_v(vv)$$

$$\begin{aligned} \text{Tra_VAT_v(vv)} &= \text{Tra_VAT_v(vv)} + \text{Tra_VAT_Fixed_v(vv)} \\ \text{Day_VAT_v(vv)} &= \text{Day_VAT_v(vv)} + \text{Tra_VAT_v(vv)} \\ \text{Tra_Tax_v(vv)} &= \text{Tra_Tax_F_v(vv)} + \text{Tra_Tax_v(vv)} + \text{Tra_Tax_Fixed_v(vv)} \\ \text{Day_Tax_v(vv)} &= \text{Day_Tax_v(vv)} + \text{Tra_Tax_v(vv)} \\ \text{Day_VAT_NE_v(vv)} &= \text{Day_VAT_NE_v(vv)} + \text{Tra_VAT_NE_v(vv)} \\ \text{Day_Percep_t(tt)} &= \text{Day_Percep_t(tt)} + \text{Tra_Percep_t(tt)} \end{aligned}$$

- **If Ticket Invoice Type = 'A'**

$$\text{Day_Tot_v(vv)} = \text{Day_Tot_v(vv)} + \text{Tra_VAT_v(vv)} + \text{Tra_Tax_v(vv)} + \text{Tra_VAT_NE_v(vv)}$$

- **If Ticket Invoice Type = 'C'**

$$\begin{aligned} \text{Day_Tot} &= \text{Day_Tot} + \text{Tra_Tot} + \text{Tra_Tot_Fixed} \\ \text{Tra_Tax} &= \text{Tra_Tax_F} + \text{Tra_Tax_P} + \text{Tra_Tax_Fixed} \\ \text{Day_Tax} &= \text{Day_Tax} + \text{Tra_Tax} \end{aligned}$$

- **Clearing Transaction Accumulators**

$$\begin{aligned} \text{Tra_Tot} &= 0 \\ \text{Tra_Tot_v(vv)} &= 0 \\ \text{Tra_Tot_Fixed} &= 0 \\ \text{Tra_Tot_Fixed_v(vv)} &= 0 \\ \text{Tra_Tot_Fixed_NE_v(vv)} &= 0 \\ \text{Tra_Tot_NE_v(vv)} &= 0 \\ \text{Tra_Tax_Fixed} &= 0 \\ \text{Tra_Tax_Fixed_v(vv)} &= 0 \\ \text{Tra_Tax_F} &= 0 \\ \text{Tra_Tax_F_v(vv)} &= 0 \\ \text{Tra_Tax_P} &= 0 \\ \text{Tra_Tax_P_v(vv)} &= 0 \\ \text{Tra_VAT_v(vv)} &= 0 \\ \text{Tra_VAT_NE_v(vv)} &= 0 \\ \text{Tra_VAT_Fixed_v(vv)} &= 0 \\ \text{Tra_Percep_t(tt)} &= 0 \\ \text{Tra_Percep_vt(vv,tt)} &= 0 \\ \text{Tra_Tot_Percep_t(tt)} &= 0 \\ \text{Tra_Pay_Type(pp)} &= 0 \\ \text{Tra_Amt_Due} &= 0 \end{aligned}$$

Where:

vv = VAT category, range = 01 up to 20
 tt = perception type, range = 01 up to 30
 pp = payment type, range = 01 up to 30

6.5.15.4 Control Paper Calculations

- **If EB cmd. wasn't issued before**

- **Before the lines are printed**

- $Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$

- $Mis_N_Cmd_Lines_To_Print = Totalization_Lines + Mis_N_TI_End_Lines_To_Print$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print$

- Return_Code 125

- **After the lines were printed correctly**

- $Mis_N_Lines_Printed = 0$

- **If EB cmd. was issued before**

- **Before the lines are printed**

- $Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$

- $Mis_N_Cmd_Lines_To_Print = Mis_N_TI_End_Lines_To_Print$

- **After the lines were printed correctly**

- $Mis_N_Lines_Printed = 0$

6.5.15.5 Ticket Invoice End Rules

There are not rules for this command.

6.5.16 0F - TICKET INVOICE CANCEL

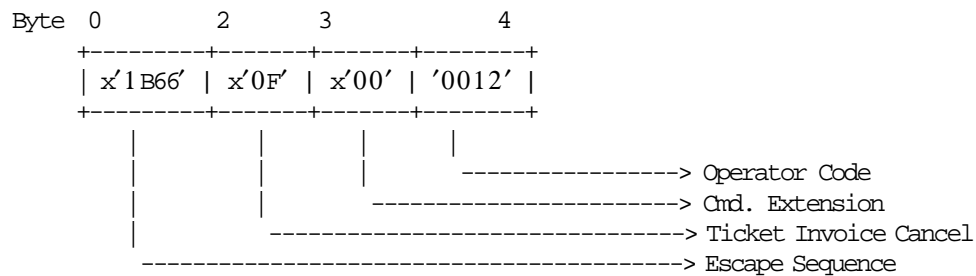
This command is used to cancel the sale transaction at any point.

To execute this command the serialize fiscal printer (1B cmd.) and the ticket invoice print header (E0 cmd.) have to be executed before.

6.5.16.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		0F - Ticket Invoice Cancel	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4

6.5.16.2 Command Example



6.5.16.3 Ticket Invoice Cancel Calculations

$$Day_N_Canc = Day_N_Canc + 1$$

- **For Ticket Invoice Type 'A'**

$$Day_N_TInv_A = Day_N_TInv_A + 1$$

$$Lif_N_TInv_A = Lif_N_TInv_A + 1$$

- **For Ticket Invoice Type 'B' or 'C'**

$$Day_N_Vouc = Day_N_Vouc + 1$$

$$Lif_N_Vouc = Lif_N_Vouc + 1$$

- **Clearing Transaction Accumulators:**

$$Tra_Tot = 0$$

$$Tra_Tot_v(vv) = 0$$

$$Tra_Tot_Fixed_v(vv) = 0$$

$$Tra_Tot_Fixed_NE_v(vv) = 0$$

$$Tra_Tot_NE_v(vv) = 0$$

$Tra_Tax_F_v(vv) = 0$
 $Tra_Tax_P_v(vv) = 0$
 $Tra_Tax_Fixed_v(vv) = 0$

$Tra_Percep_t(tt) = 0$
 $Tra_Tot_Percep_t(tt) = 0$
 $Tra_Percep_vt(vv,tt) = 0$

$Tra_VAT_v(vv) = 0$
 $Tra_VAT_NE_v(vv) = 0$
 $Tra_VAT_Fixed_v(vv) = 0$

$Tra_Amt_Due = 0$

$Tra_Pay_Type(pp) = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

6.5.16.4 Control Paper Calculations

- **Before the lines are printed**

$Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$

- **After the lines were printed correctly**

$Mis_N_Lines_Printed = 0$

6.5.16.5 Ticket Invoice Cancel Rules

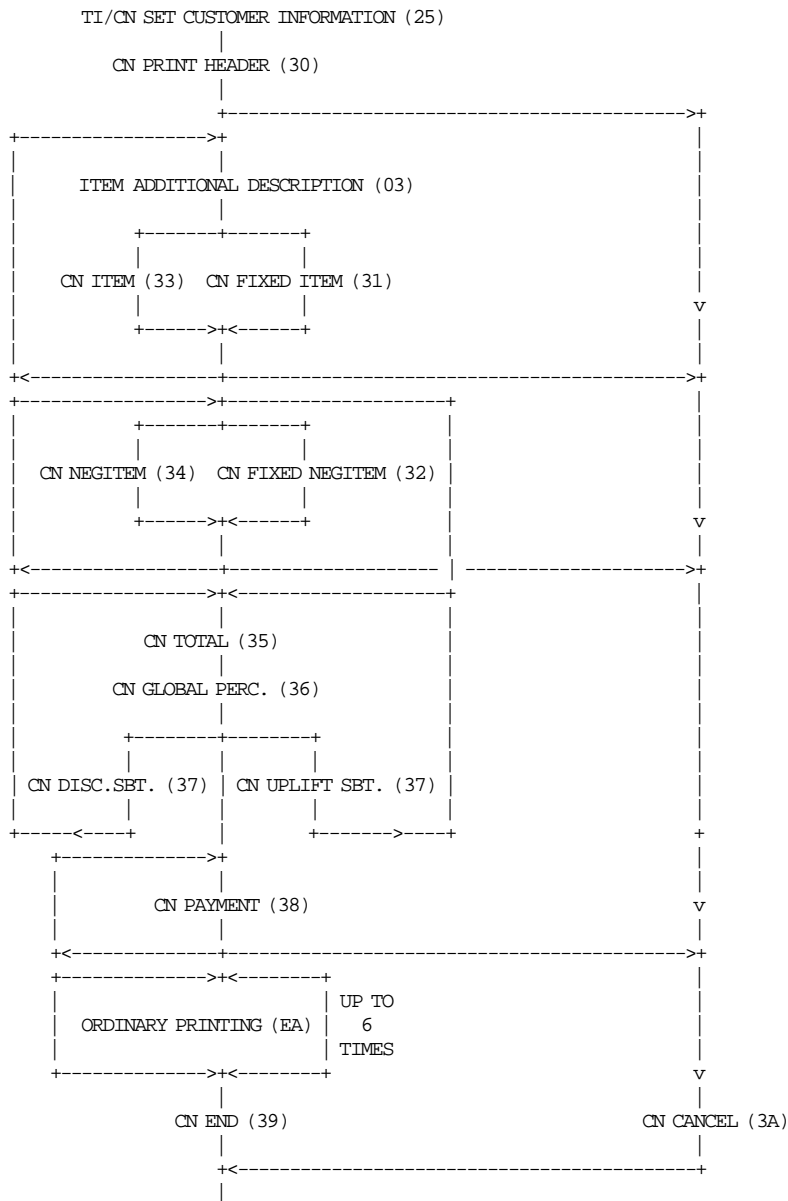
- This command is not allowed if V24 message "TOTAL" was printed before.
- The fiscal logo and machine serial number will be not printed.

6.6 Credit Notes

This procedure is used to generate credit notes and is controlled by the following commands:

- B7 - Ticket Invoice/Credit Note - Set/Reset Header
- 25 - Ticket Invoice/Credit Note - Set Customer Information
- 22 - Ticket Invoice/Credit Note - Set/Reset Perception Type
- 30 - Credit Note - Print Header
- 31 - Credit Note - Fixed Price Item Sale
- 32 - Credit Note - Fixed Price Negative Item Sale
- 33 - Credit Note - Item Sale
- 34 - Credit Note - Negative/Uplift Item Sale
- 35 - Credit Note - Subtotal/Total
- 36 - Credit Note - Global Perception
- 37 - Credit Note - Uplift/Discount on Subtotal
- 38 - Credit Note - Payment
- 39 - Credit Note - End
- 3A - Credit Note - Cancel

6.6.1 Credit Note Flow Chart



6.6.2 Credit Notes Rules

- The credit note is printed on DI station (portrait orientation) and all lines are replicated to the SJ station exactly as printed to the DI station except header.
- Payment phase is optional.
- After the payment phase, only a total of 6 ordinary printing lines on DI station can be printed. After the last of the 6 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.

6.6.3 30 - CREDIT NOTE PRINT HEADER

This command is used to print the credit note header on document insert station.
To execute this command the serialize fiscal printer (1B cmd.) have to be executed before.

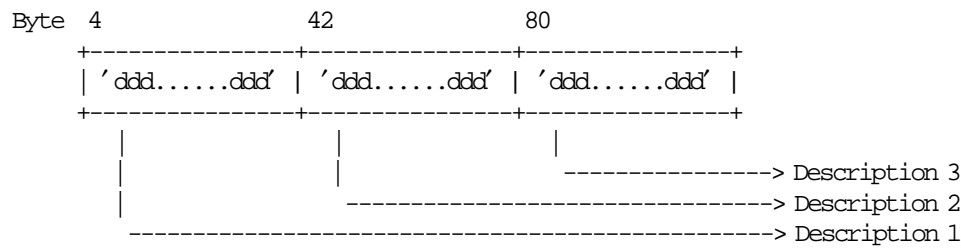
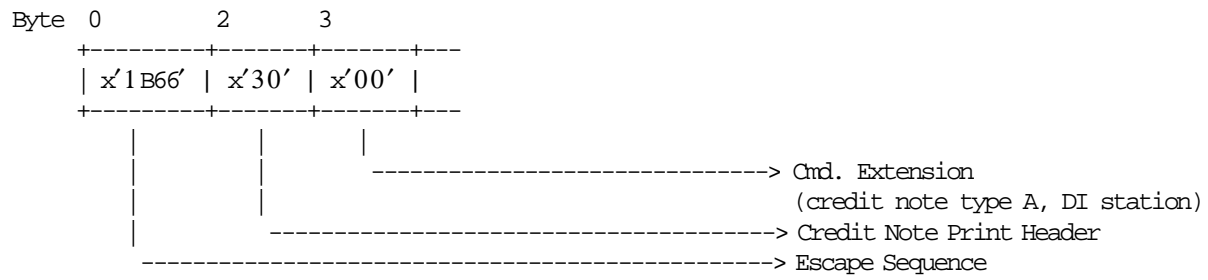
6.6.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		30 - Credit Note Print Header	hex	1
3		Cnd. Extension	hex	1
7		Reserved (always = '0')		
6-5		Type		
		00 = A		
		01 = B		
		10 = C		
		11 = Reserved		
4-2		Reserved (always = '0')		
1-0		Printer Station		(Note 1)
		00 = DI		
		01 = Reserved		
		10 = Reserved		
		11 = Reserved		
4-41		Description 1	ASCII	38 (Note 2)
42-79		Description 2	ASCII	38 (Note 2)
80-117		Description 3	ASCII	38 (Note 2)

Notes:

1. The selected station print will be preserved until an end transaction command will be sent.
2. The description field is optional.

6.6.3.2 Command Example



6.6.3.3 Credit Note Print Header Calculations

Item_Ordinal_Number = 0

6.6.3.4 Control Paper Calculations

- Before the lines are printed

$$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print$$

- After the lines were printed correctly

$$Mis_N_Lines_Printed = Mis_N_Cmd_Lines_To_Print$$

6.6.3.5 Credit Note Print Header Rules

- The string TOTAL in upper, lower or mixed case is not allowed in the description fields of this command.

6.6.4 31 - CREDIT NOTE FIXED PRICE ITEM SALE

The fixed price items are items which prices are not affected by discount or uplift on subtotal operations. To execute this command the serialize fiscal printer (1B cmd.) and credit note print header (30 cmd.) have to be executed before.

6.6.4.1 Command Format

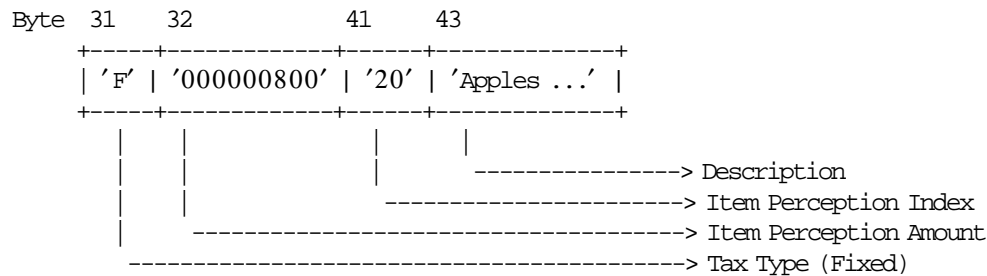
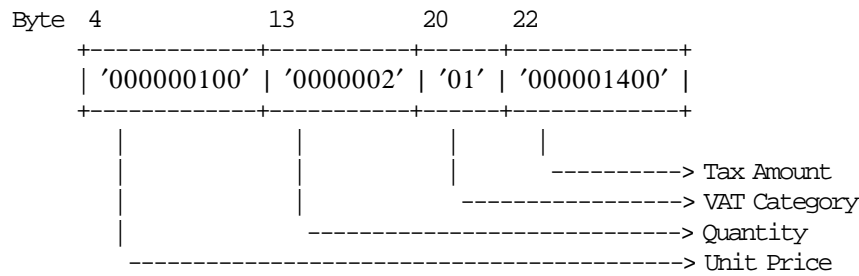
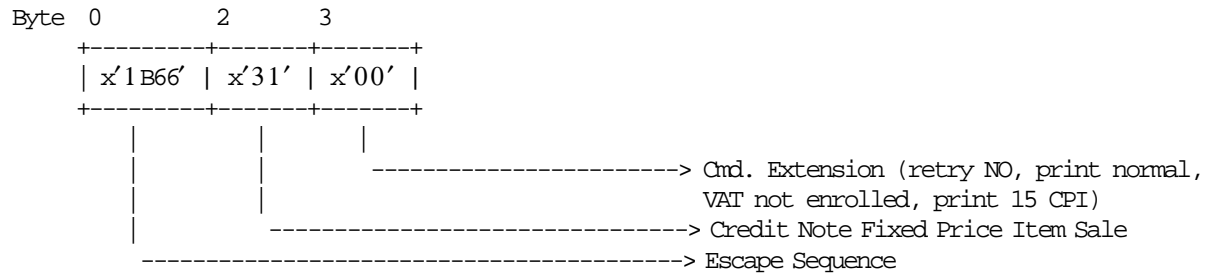
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		31 - Credit Note Fixed Price Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry 0 = NO 1 = YES		
6		Reserved (always = '0')		
5		Print Density 0 = Normal 1 = Emphasized		
4		VAT Not Enrolled 0 = YES 1 = NO		(Note 1)
3		Print Typeface 0 = 15 CPI 1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3)
20-21		VAT Category	ASCII	2 (Note 4)
22-30		Tax Amount	ASCII	9 (Note 5)
31		Tax Type	ASCII	1 (Note 6)
32-40		Item Perception Amount	ASCII	9 (Note 7)
41-42		Item Perception Type	ASCII	2 (Note 8 on page 171)
43-64		Description	ASCII	22

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'A', the amount will be Unit Base Price.
For credit note type 'A', the VAT ISN'T included in the amount.
For credit note type 'B', the VAT IS included in the amount.
3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. For credit note type 'A', range allowed is from 01 to up 20.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'B', the tax amount must be less than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.
7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

6.6.4.2 Command Example



6.6.4.3 Credit Note Fixed Price Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

$$Item_Ordinal_Number = Item_Ordinal_Number + 1$$

- **For Credit Note Type 'A'**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$Tra_Tot_Fixed_NE_v(vv) = Tra_Tot_Fixed_NE_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100 + 0.5\right) / 100$$

The calculated Factor must be printed in the Credit Note.

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

- **If Item Perception Amount is greater than 0**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$$

- **For Credit Note Type 'B'**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the credit note.

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

- **For Credit Note Type 'C'**

$$Tra_Tot_Fixed = Tra_Tot_Fixed + Item_Amt$$

$$Tra_Tax_Fixed = Tra_Tax_Fixed + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.6.4.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_Cancel_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

6.6.4.5 Credit Note Fixed Price Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated ($Tra_Tot_Fixed_v + Item_Amt$) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (14,34) or (14).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the Item_Amt does not include VAT.
- For credit note type B, the Item_Amt includes VAT.

- The string `TOTAL` in upper, lower, or mixed case is not allowed in the description field of this command.

6.6.5 32 - CREDIT NOTE FIXED PRICE NEGATIVE/UPLIFT ITEM SALE

The fixed price negative/uplift items are items which prices are not affected by discount or uplift on subtotal operations.

This command is used to record the amount of a fixed price negative/uplift item and prints lines containing the description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the credit note print header (30 cmd.) and at least one credit note fixed price item sale (31 cmd.) have to be executed before.

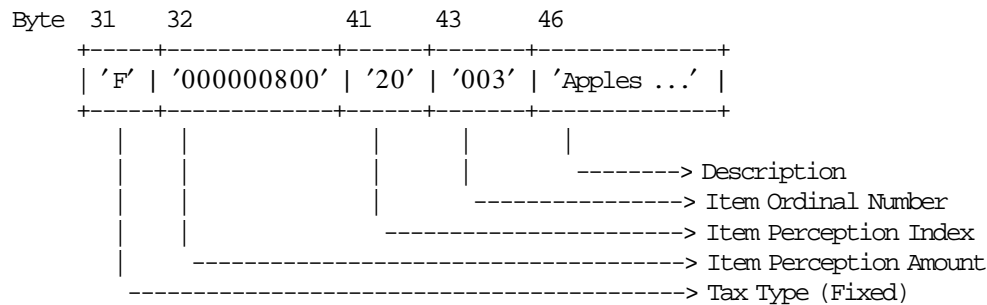
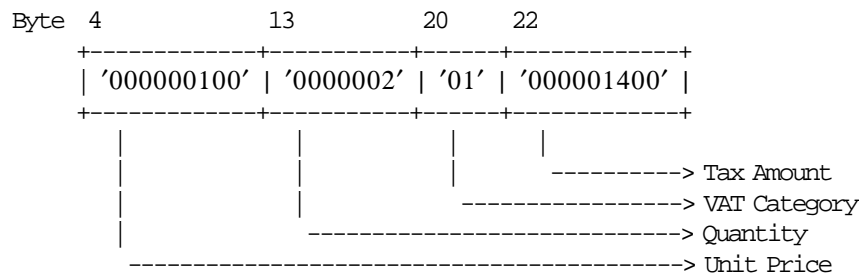
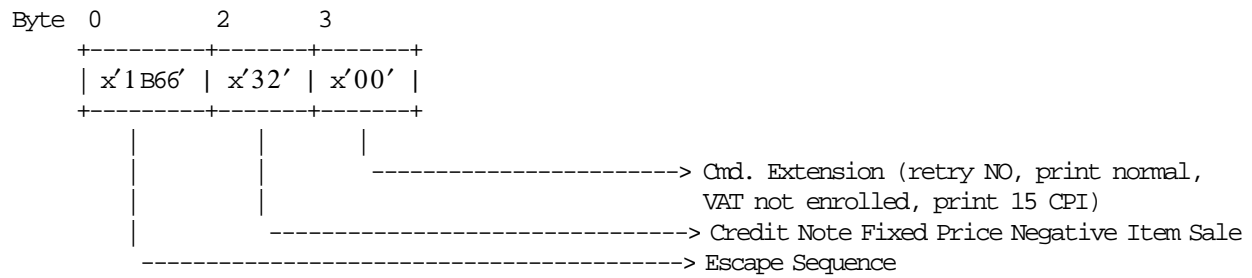
6.6.5.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - Command Prefix	hex	2
2	32 - C.N. Fixed Price Negative/Uplift	hex	1
3	Cmd. Extension	hex	1
7	Retry 0 = NO 1 = YES		
6	Reserved (always = '0')		
5	Print Density 0 = Normal 1 = Emphasized		
4	VAT Not Enrolled 0 = YES 1 = NO		(Note 1 on page 175)
3	Print Typeface 0 = 15 CPI 1 = 12 CPI		
2-0	Item Type 000 = Reserved 001 = VOID (on previous Item Sale) 010 = REDUCTION (by VAT) 011 = DISCOUNT (on previous Item Sale) 100 = EMPTY (by VAT) 101 = DISCOUNT (by VAT) 110 = UPLIFT (on previous Item Sale) 111 = Reserved		
4-12	Unit Price (Amount)	ASCII	9 (Note 2 on page 175)
13-19	Quantity	ASCII	7 (Note 3 on page 175)
20-21	VAT Category	ASCII	2 (Note 4 on page 175)
22-30	Tax Amount	ASCII	9 (Note 5 on page 175)
31	Tax Type	ASCII	1 (Note 6 on page 175)
32-40	Item Perception Amount	ASCII	9 (Note 7 on page 175)
41-42	Item Perception Index	ASCII	2 (Note 8 on page 175)
43-45	Item Ordinal Number	ASCII	3 (Note 9 on page 175)
46-67	Description	ASCII	22

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'A', the amount will be Unit Base Price.
For credit note type 'A', the VAT ISN'T included in the amount.
For credit note type 'B', the VAT IS included in the amount.
3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. Range allowed is from 01 to up 20.
For credit note type 'C', value allowed is 00.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'B', the tax amount must be less or equal than Item_Amt.
For credit note type 'C', the tax amount must be less or equal than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.
7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
8. For credit note type 'A', range allowed is from 01 to up 30.
For credit note type 'B' and 'C', value allowed is 00.
9. Is applied to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

6.6.5.2 Command Example



6.6.5.3 Credit Note Fixed Price Negative/Uplift Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

- **For Credit Note Type A**

- **If Item Type <> Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) - TaxAmount$$

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - ItemPerceptionAmount$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 - $Tra_Tot_Fixed_NE_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$

- **If Item Type = Uplift**

$$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$$

$$Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$$

$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$
 $Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
Taxpayer Customer Condition = VAT Responsible Not Enrolled
Tra_Tot_Fixed_NE_v(vv) Tra_Tot_Fixed_NE_v(vv) + Item_Amt

– **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100 + 0.5\right)/100$$

The calculated Factor must be printed in the credit note.

• **For Credit Note Type B**

– **If Item Type <> Uplift**

$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$
 $Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) - TaxAmount$

– **If Item Type = Uplift**

$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$
 $Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$

– **If Tax Amount is greater 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the credit note.

• **For Credit Note Type C**

– **If Item Type <> Uplift**

$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) - Item_Amt$
 $Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) - TaxAmount$

– **If Item Type = Uplift**

$Tra_Tot_Fixed_v(vv) = Tra_Tot_Fixed_v(vv) + Item_Amt$
 $Tra_Tax_Fixed_v(vv) = Tra_Tax_Fixed_v(vv) + TaxAmount$

Where:

- vv = VAT category, range = 01 up to 20
- vt = VAT category (range = 01 up to 20) and perception type (range = 01 up to 30)
- tt = perception type, range = 01 up to 30

6.6.5.4 Control Paper Calculations

• **Before the lines are printed**

$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_Cancel_Lines_To_Print$
Return_Code 125

• **After the lines were printed correctly**

$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$

6.6.5.5 Credit Note Fixed Price Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated ($Tra_Tot_Fixed_v + Item_Amt$) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the $Item_Amt$ does not include VAT.
- For credit note type B, the $Item_Amt$ includes VAT.
- To void a fixed price item previously sold in the same transaction with 31 cmd., the following rules has to be apply:
 - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)
 - 32.Description = 31.Description
 - 32.Unit Price = 31.Unit Price
 - 32.Quantity ≤ 31.Quantity
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $32.VATNotEnrolled = 31.VATNotEnrolled$
 - If 32.Quantity = 31.Quantity
 $32.TaxAmount = 31.TaxAmount$
 $32.ItemPercep.Amount = 31.ItemPercep.Amount$
 - If 32.Quantity < 31.Quantity
 $0 \leq 32.TaxAmount \leq 31.TaxAmount$
 $0 \leq 32.ItemPercep.Amount \leq 31.ItemPercep.Amount$
 - If credit note type ≠ A
 $((31.Quantity - 32.Quantity) \times 31.Amount) > (31.TaxAmount - 32.TaxAmount)$
- To discount a fixed price item previously sold in the same transaction with 31 command, the following rules has to be apply:
 - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)
 - 32.Description = 31.Description
 - 32.Quantity = 31.Quantity
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
 $32.VATNotEnrolled = 31.VATNotEnrolled$
 - 32.Unit Price < 31.Unit Price
 - 32.Item Percep.Amount ≤ 31.Item Percep.Amount
 - 32.Item Percep.Amount ≥ 0
 - 32.Tax Amount ≥ 0
 - If credit note type ≠ A
 $(31.Quantity \times (31.Amount - 32.Amount)) > (31.TaxAmount - 32.TaxAmount)$

- To uplift a fixed price item previously sold in the same transaction with 31 cmd., the following rules has to be apply:
 - 32.Item Additional Descrip. = 31.Item Additional Descrip. (printed with 03 cmd.)
 - 32.Description = 31.Description
 - 32.Quantity = 31.Quantity
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
32.VATNotEnrolled = 31.VATNotEnrolled
 - $((31.Amount + 32.Amount) * 31.Quantity) \leq 999999949$
 - $(31.Tax Amount + 32.Tax Amount) \leq 999999949$
 - $(31.Item Percep.Amount + 32.Item Percep.Amount) \leq 999999949$
 - If credit note type \neq A
 $(31.Quantity \times (31.Amount + 32.Amount)) > (31.TaxAmount + 32.TaxAmount)$
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.6.6 33 - CREDIT NOTE ITEM SALE

This command is used to record the amount of an item and to print lines containing quantity, unit price, description, amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.) and credit note print header (30 cmd.) have to be executed before.

6.6.6.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		33 - Credit Note Item Sale	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Typeface		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1)
		0 = YES		
		1 = NO		
3		Print Density		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Reserved (always = '0')		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3)
20-21		VAT Category	ASCII	2 (Note 4)
22-30		Tax Amount	ASCII	9 (Note 5)
31		Tax Type	ASCII	1 (Note 6)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 181)
41-42		Item Perception Type	ASCII	2 (Note 8 on page 181)
43-64		Description	ASCII	22

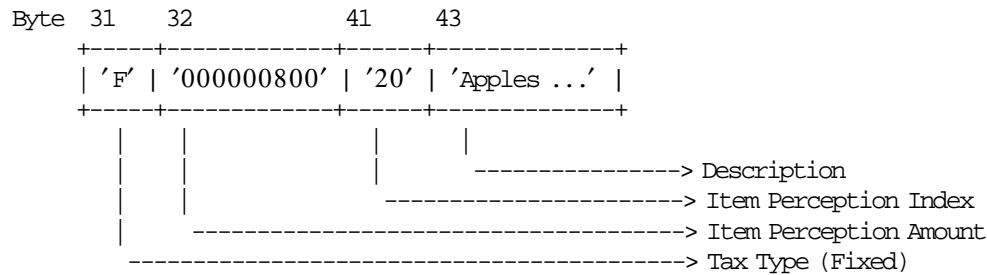
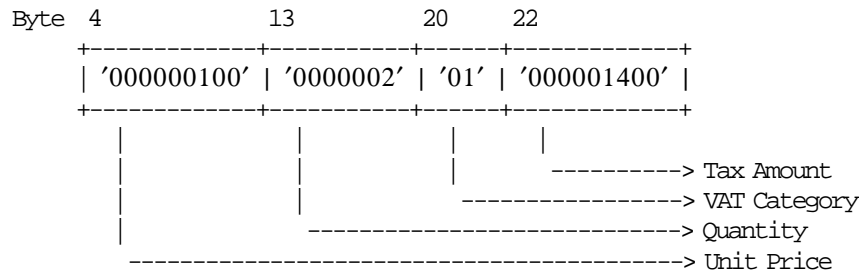
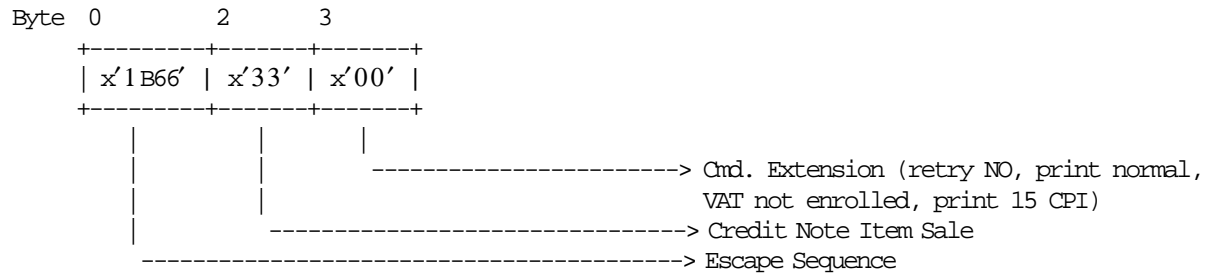
Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'A', the amount will be Unit Base Price.
For credit note type 'A', the VAT ISN'T included in the amount.
For credit note type 'B', the VAT IS included in the amount.
3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. For credit note type 'A', range allowed is from 01 to up 20.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'B', the tax amount must be less than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.

7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.

8. For credit note type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to up 30.

6.6.6.2 Command Example



6.6.6.3 Credit Note Item Sale Calculations

$$Item_Amt = UnitPrice \times Quantity$$

$$Item_Ordinal_Number = Item_Ordinal_Number + 1$$

- **For Credit Note Type A**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100\right) + 0.5\right) / 100$$

The calculated Factor must be printed in the credit note.

- **If Tax Type = F**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **If Item Perception Amount is greater than 0**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$$

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$$

- **For Credit Note Type B**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the credit note.

- **If Tax Type = F**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **For Credit Note Type C**

$$Tra_Tot = Tra_Tot + Item_Amt$$

- **If Tax Type = F**

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

- **If Tax Type = P**

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.6.6.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_Cancel_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print

6.6.6.5 Credit Note Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated (Tra_Tot_v + Item_Amt) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in this command is disabled (rate = 9999).
- For credit note type A, the item_amt does not include VAT.
- For credit note type B, the item_amt includes VAT.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.6.7 34 - CREDIT NOTE NEGATIVE/UPLIFT ITEM SALE

This command is used to record the amount of a negative item and prints lines containing the quantity, unit price, item description, item amount, VAT percent and factor percent.

To execute this command the serialize fiscal printer (1B cmd.), the credit note print header (30 cmd.) and at least one credit note item sale (33 cmd.) have to be executed before.

6.6.7.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		34 - Credit Note Negative/Uplift	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Reserved (always = '0')		
5		Print Density		
		0 = Normal		
		1 = Emphasized		
4		VAT Not Enrolled		(Note 1)
		0 = YES		
		1 = NO		
3		Print Typeface		
		0 = 15 CPI		
		1 = 12 CPI		
2-0		Item Type		
		000 = Reserved		
		001 = VOID (on previous Item Sale)		
		010 = REDUCTION (by VAT)		
		011 = DISCOUNT (on previous Item Sale)		
		100 = EMPTY (by VAT)		
		101 = DISCOUNT (by VAT)		
		110 = UPLIFT (on previous Item Sale)		
		111 = Reserved		
4-12		Unit Price (Amount)	ASCII	9 (Note 2)
13-19		Quantity	ASCII	7 (Note 3 on page 185)
20-21		VAT Category	ASCII	2 (Note 4 on page 185)
22-30		Tax Amount	ASCII	9 (Note 5 on page 185)
31		Tax Type	ASCII	1 (Note 6 on page 185)
32-40		Item Perception Amount	ASCII	9 (Note 7 on page 185)
41-42		Item Perception Index	ASCII	2 (Note 8 on page 185)
43-45		Item Ordinal Number	ASCII	3 (Note 9 on page 185)
46-67		Description	ASCII	22

Notes:

1. Select YES if VAT Not Enrolled is applicable to the item sale.
Select NO if VAT Not Enrolled is not applicable to the item sale.
2. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'A', the amount will be Unit Base Price.
For credit note type 'A', the VAT ISN'T included in the amount.
For credit note type 'B', the VAT IS included in the amount.

3. Fixed point number with 3 decimal digits. Maximum amount = 9999999.
4. Range allowed is from 01 to up 20.
For credit note type 'C', value allowed is 00.
5. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
For credit note type 'B', the tax amount must be less or equal than Item_Amt.
For credit note type 'C', the tax amount must be less or equal than Item_Amt.
6. The Tax Type can be 'F' = FIXED, 'P' = PERCENTAGE or ' ' = BLANK.
If blank, the tax amount must be equal 0.
7. Fixed point number with 2 decimal digits. Maximum amount = 999999949.
8. For credit note type 'A', range allowed is from 01 to up 30.
For credit note type 'B' and 'C', value allowed is 00.
9. Is applicable to void (on previous item sale), discount (on previous item sale) and uplift (on previous item sale) only.

6.6.7.2 Command Example

```

Byte 0      2      3
+-----+-----+-----+
| x'1B66' | x'34' | x'00' |
+-----+-----+-----+
|         |         |         |
|         |         |         |-----> Cmd. Extension (retry NO, print normal,
|         |         |         |-----> VAT not enrolled, print 15 CPI)
|         |         |         |-----> Credit Note Negative Item Sale
|         |         |         |-----> Escape Sequence

```

```

Byte 4      13      20      22
+-----+-----+-----+-----+
| '000000100' | '0000002' | '01' | '000001400' |
+-----+-----+-----+-----+
|         |         |         |         |
|         |         |         |         |-----> Tax Amount
|         |         |         |         |-----> VAT Category
|         |         |         |         |-----> Quantity
|         |         |         |         |-----> Unit Price

```

```

Byte 31  32      41  43  46
+-----+-----+-----+-----+
| 'F' | '000000800' | '20' | '003' | 'Apples ...' |
+-----+-----+-----+-----+
|         |         |         |         |
|         |         |         |         |-----> Description
|         |         |         |         |-----> Item Ordinal Number
|         |         |         |         |-----> Item Perception Index
|         |         |         |         |-----> Item Perception Amount
|         |         |         |         |-----> Tax Type (Fixed)

```

6.6.7.3 Credit Note Negative or Uplift Item Sale Calculations

$Item_Amt = UnitPrice \times Quantity$

- **For Credit Note Type 'A'**

- **If Item Type <> Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Item_Amt$

$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - ItemPerceptionAmount$

$Tra_Percep_t(tt) = Tra_Percep_t(tt) - ItemPerceptionAmount$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
Taxpayer Customer Condition = VAT Responsible Not Enrolled

$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) - Item_Amt$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) - TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TaxAmount$

- **If Item Type = Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$

$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + ItemPerceptionAmount$

$Tra_Percep_t(tt) = Tra_Percep_t(tt) + ItemPerceptionAmount$

- If VAT Not Enrolled (byte 3 - bit 4) = 0 (YES) AND
Taxpayer Customer Condition = VAT Responsible Not Enrolled

$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) + Item_Amt$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$

- **If Tax Amount is greater than 0**

$Factor = TRUNC\left(\left(\frac{Item_Amt \times 100}{Item_Amt + TaxAmount} \times 100\right) + 0.5\right) / 100$

The calculated Factor must be printed in the credit note.

- **For Credit Note Type 'B'**

- **If Item Type <> Uplift**

$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Item_Amt$

- **If Tax Type = 'F'**

$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) - TaxAmount$

- **If Tax Type = 'P'**

$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TaxAmount$

- **If Item Type = Uplift**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F_v(vv) = Tra_Tax_F_v(vv) + TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TaxAmount$$

- **If Tax Amount is greater than 0**

$$Factor = TRUNC\left(\frac{(Item_Amt - TaxAmount) \times (VAT_Rate(vv) \times 1000)}{(Item_Amt \times (VAT_Rate(vv) + 100))} + 0.5\right)/10$$

The calculated Factor must be printed in the credit note.

- **For Credit Note Type 'C'**

- **If Item Type <> Uplift**

$$Tra_Tot = Tra_Tot - Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F - TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P - TaxAmount$$

- **If Item Type = Uplift**

$$Tra_Tot = Tra_Tot + Item_Amt$$

- **If Tax Type = 'F'**

$$Tra_Tax_F = Tra_Tax_F + TaxAmount$$

- **If Tax Type = 'P'**

$$Tra_Tax_P = Tra_Tax_P + TaxAmount$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

6.6.7.4 Control Paper Calculations

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_Cancel_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

6.6.7.5 Credit Note Negative/Uplift Item Sale Rules

- A new item will not be accepted if the item ordinal number is already equal to the maximum value.
- The credit note total calculated ($Tra_Tot_v + Item_Amt$) can not be greater than the limit credit note total allowed (set with 2E cmd.).
- The factor percent will be printed between brackets. Example: [12,32] or [12].
- For credit note type B, each item is assigned a value-added VAT category that indicates the VAT rate applied to the base price to obtain the sale price.
- The VAT category 01 is "GENERAL VAT".
- For VAT category from 02 to 20, the VAT rate will be printed between parentheses. Example: (15,34) or (15).
- Items cannot be accepted if the VAT category specified in the credit note item sale command is disabled (rate = 9999).
- For credit note type B, the *item_amt* includes VAT.
- For credit note type A, the *item_amt* does not include VAT.
- To void a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:
 - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)
 - 34.Description = 33.Description
 - 34.Item Ordinal Number = Sequence number of the item previously sold which to be voided.
 - 34.Unit Price = 33.Unit Price
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
34.VATNotEnrolled = 33.VATNotEnrolled
 - 34.Quantity \leq 33.Quantity
 - If 34.Quantity = 33.Quantity
34.TaxAmount = 33.TaxAmount
34.ItemPercep.Amount = 33.ItemPercep.Amount
 - If 34.Quantity < 33.Quantity
 $0 \leq 34.TaxAmount \leq 33.TaxAmount$
 $0 \leq 34.ItemPercep.Amount \leq 33.ItemPercep.Amount$
 - If credit note type \neq A
 $((33.Quantity - 34.Quantity) \times 33.Amount) > (33.TaxAmount - 34.TaxAmount)$
- To discount a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:
 - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)
 - 34.Description = 33.Description
 - 34.Item Ordinal Number = Sequence number of the item previously sold which to be discounted.
 - 34.Quantity = 33.Quantity
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
34.VATNotEnrolled = 33.VATNotEnrolled
 - 34.Unit Price < 33.Unit Price
 - 34.Item Percep.Amount \leq 33.Item Percep.Amount
 - 34.Item Percep.Amount \geq 0
 - 34.Tax Amount \geq 0
 - If credit note type \neq A

$$(33.Quantity \times (33.Amount - 34.Amount)) > (33.TaxAmount - 34.TaxAmount)$$

- To uplift a item previously sold in the same transaction with 33 cmd., the following rules has to be apply:
 - 34.Item Additional Descrip. = 33.Item Additional Descrip. (printed with 03 cmd.)
 - 34.Description = 33.Description
 - 34.Item Ordinal Number = Sequence number of the item previously sold which to be uplifted.
 - 34.Quantity = 33.Quantity
 - If credit note type = A AND Taxpayer Customer Condition = VAT Responsible Not Enrolled
34.VATNotEnrolled = 33.VATNotEnrolled
 - $((33.Amount + 34.Amount) * 33.Quantity) \leq 999999949$
 - $(33.Tax Amount + 34.Tax Amount) \leq 999999949$
 - $(33.Item Percep.Amount + 34.Item Percep.Amount) \leq 999999949$
 - If credit note type \neq A
 $(33.Quantity \times (33.Amount + 34.Amount)) > (33.TaxAmount + 34.TaxAmount)$
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.6.8 35 - CREDIT NOTE SUBTOTAL/TOTAL

This command is used to verify that the subtotal or total amount accumulated by the fiscal unit matches the amount accumulated by the application program.

To execute this command the serialize fiscal printer (1B cmd.) and any credit note fixed item sale (31 cmd.) or credit note item sale (33 cmd.) have to be executed before.

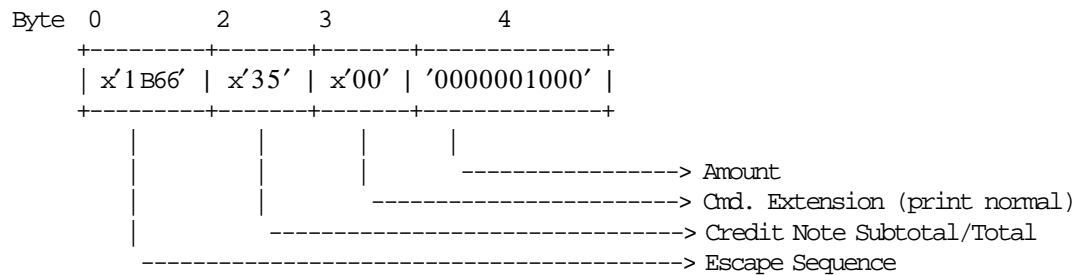
6.6.8.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		35 - Credit Note Subtotal/Total	hex	1
3		Cmd. Extension	hex	1
	7	Retry		
		0 = NO		
		1 = YES		
	6	Reserved (always = '0')		
	5	Print Density		
		0 = Normal		
		1 = Emphasized		
	4-0	Reserved (always = '0')		
4-13		Amount	ASCII	10 (Note 1)

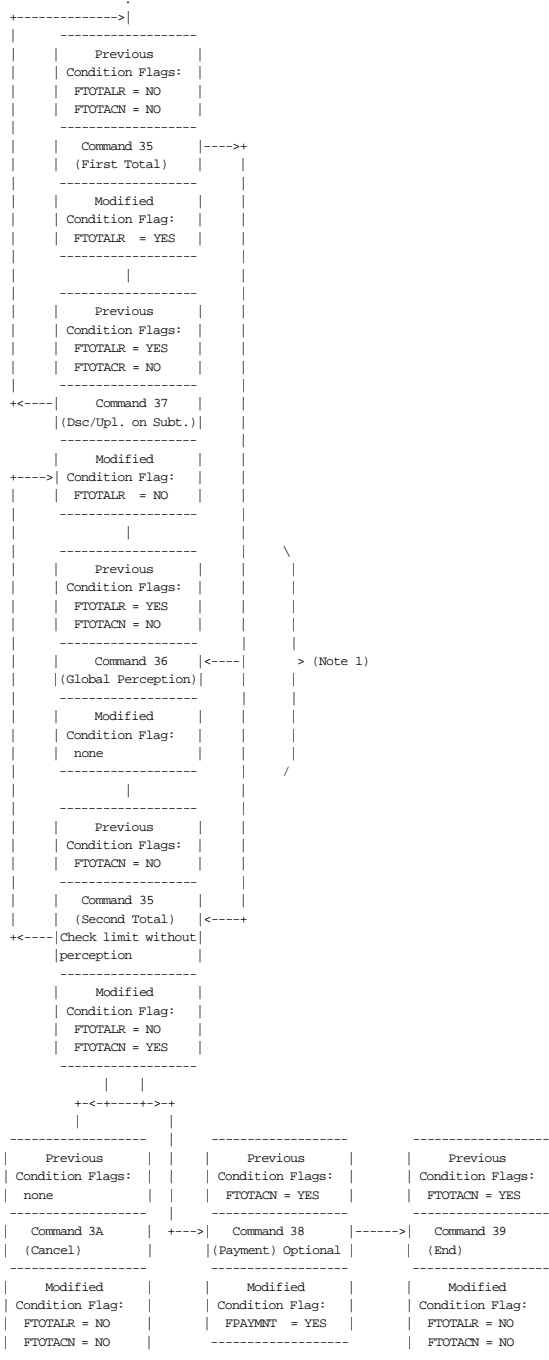
Notes:

1. Fixed point number with 2 decimal digits. Maximum amount = 9999999949.

6.6.8.2 Command Example



6.6.8.3 Credit Note Subtotal/Total Command Flow



Note 1: Optional for Credit Note 'A' and 'B'.
Not allowed for Credit Note 'C'.

Figure 3. Credit Note Subtotal/Total Command Flow

6.6.8.4 Credit Note Subtotal/Total Calculations

- For Credit Note Type = 'A' or 'B'

$$Tra_Tot = \sum_{vv} Tra_Tot_v(vv)$$

$$Tra_Tot_Fixed = \sum_{vv} Tra_Tot_Fixed_v(vv)$$

$$Tra_Tax_v(vv) = Tra_Tax_F_v(vv) + Tra_Tax_P_v(vv) + Tra_Tax_Fixed_v(vv)$$

$$Tra_Tax_F = \sum_{vv} Tra_Tax_F_v(vv)$$

$$Tra_Tax_P = \sum_{vv} Tra_Tax_P_v(vv)$$

$$Tra_Tax_Fixed = \sum_{vv} Tra_Tax_Fixed_v(vv)$$

- For Credit Note Type = 'A'

$$Tra_VAT_Fixed_v(vv) = TRUNC(Tra_Tot_Fixed_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_v(vv) = TRUNC(Tra_Tot_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

- If Taxpayer Customer Condition = VAT Responsible Not Enrolled

$$Tra_VAT_NE_Fixed_v(vv) = TRUNC(Tra_Tot_Fixed_NE_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_NE_v(vv) = TRUNC(Tra_Tot_NE_v(vv) \times \frac{VAT_Rate(vv)}{100} + 0.5)$$

$$Tra_VAT_NE_v(vv) = (Tra_VAT_NE_v(vv) + Tra_VAT_NE_Fixed_v(vv)) \times (VATNotEnrolledPercent)$$

$$Tra_VAT = \sum_{vv} Tra_VAT_v(vv)$$

$$Tra_VAT_Fixed = \sum_{vv} Tra_VAT_Fixed_v(vv)$$

$$Tra_VAT_NE = \sum_{vv} Tra_VAT_NE_v(vv)$$

$$Tra_Percep = \sum_{tt} Tra_Percep_t(tt)$$

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed + Tra_VAT + Tra_VAT_Fixed + Tra_Tax_F + Tra_Tax_P + Tra_Tax_Fixed + Tra_VAT_NE + Tra_Percep$$

- For Credit Note Type = 'B'

$$Tra_VAT_Fixed_v(vv) = TRUNC((Tra_Tot_Fixed_v(vv) - Tra_Tax_Fixed_v(vv)) \times \frac{VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5)$$

$$Tra_VAT_v(vv) = TRUNC((Tra_Tot_v(vv) - Tra_Tax_F_v(vv) - Tra_Tax_P_v(vv)) \times \frac{VAT_Rate(vv)}{100 + VAT_Rate(vv)} + 0.5)$$

$$Tra_VAT = \sum_{vv} Tra_VAT_v(vv)$$

$$Tra_VAT_Fixed = \sum_{vv} Tra_VAT_Fixed_v(vv)$$

$$Tra_Percep = \sum_{ii} Tra_Percep_t(vv,tt)$$

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed + Tra_Percep$$

- **For Credit Note Type = 'C'**

$$Tra_Amt_Due = Tra_Tot + Tra_Tot_Fixed$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

VAT Not Enrolled Percent was loaded with 2E cmd.

6.6.8.5 Credit Note Subtotal/Total Rules

- The transaction total (Tra_Tot) cannot be less or equal to 0.
- The amount due calculated (Tra_Amt_Due) can not be greater than the maximum credit note total allowed (loaded with 2E cmd.).
- The string "TOTAL" will be printed double-high and emphasized.
- The string "SUBTOT." will be printed double-high and emphasized.
- When the credit note total exceed the limit for credit note total allowed (loaded with 2E cmd.) the following action can be performed:
 - Cancel transaction
 - OR
 - Issue discount on item or discount on subtotal

6.6.9 36 - CREDIT NOTE GLOBAL PERCEPTION

This command is used to apply global perceptions.

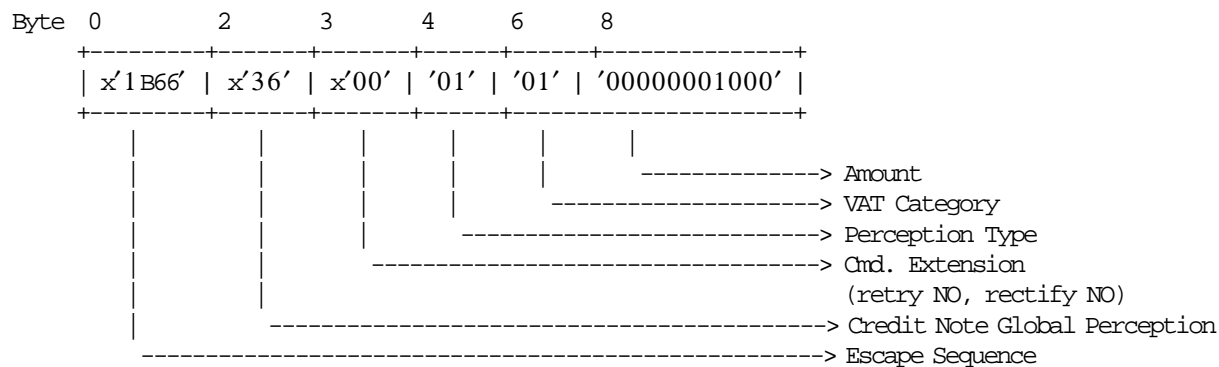
6.6.9.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		36 - Credit Note Global Perception	hex	1
3		Cnd. Extension	hex	1
	7	Retry 0 = NO 1 = YES		
	6	Rectify 0 = NO 1 = YES		
	5-0	Reserved (always = '0')		
4-5		Perception Type Number	ASCII	2 (Note 1)
6-7		VAT Category	ASCII	2 (Note 2)
8-17		Amount	ASCII	10

Notes:

1. Range allowed is from 01 to up 30.
2. For credit note type 'A' and taxpayer customer condition equal to VAT responsible enrolled, range allowed is from 00 to 20.
For credit note type 'A' and taxpayer customer condition equal to VAT responsible not enrolled, value allowed is 00.
For credit note type 'B' and all taxpayer customer conditions, value allowed is 00.

6.6.9.2 Command Example



6.6.9.3 Credit Note Global Perception Calculations

- **For Credit Note Type = 'A'**

- **If Rectify = NO**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) + Amount$$

- **If VAT Category not = '00'**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

- **If Rectify = YES**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) - Amount$$

- **If VAT Category not = '00'**

$$Tra_Percep_vt(vv,tt) = Tra_Percep_vt(vv,tt) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

- **For Credit Note Type = 'B'**

- **If Rectify = NO**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) + Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

- **If Rectify = YES**

$$Tra_Percep_t(tt) = Tra_Percep_t(tt) - Amount$$

- **If VAT Category = '00'**

$$Tra_Tot_Percep_t(tt) = Tra_Tot_Percep_t(tt) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

Where:

vv = VAT category, range = 00 up to 20
tt = perception type, range = 01 up to 30

6.6.9.4 Credit Note Global Perception Rules

- This command is applicable to credit note types A and B.
- This command is allowed if taxpayer customer condition is VAT Responsible Enrolled or if taxpayer customer condition is VAT Responsible Not Enrolled and is allowed the perception for this customer condition (set with 2E cmd.).

6.6.10 37 - CREDIT NOTE UPLIFT/DISCOUNT ON SUBTOTAL

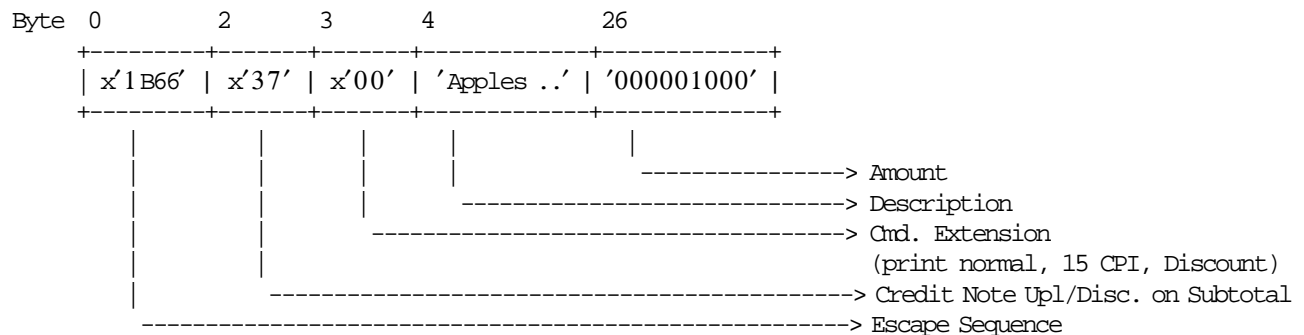
This command is used to apply discount or uplift on subtotal.

To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

6.6.10.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		37 - Credit Note Upl/Disc on Subtotal	hex	1
3		Cmd. Extension	hex	1
	7	Retry 0 = NO 1 = YES		
	6	Reserved (always = '0')		
	5	Print Density 0 = Normal 1 = Emphasized		
	4	Reserved (always = '0')		
	3	Print Typeface 0 = 15 CPI 1 = 12 CPI		
	2-1	Reserved (always = '0')		
	0	Type 0 = Discount 1 = Uplift		
4-25		Description	ASCII	22
26-35		Amount	ASCII	10

6.6.10.2 Command Example



6.6.10.3 Credit Note Uplift/Discount on Subtotal Calculations

- For Credit Note Type = 'A'

With Decimals

$$Factor = TRUNC\left(\frac{Tra_Tot \times 100}{Tra_Tot + Tra_Tax_P}\right)$$

Without Decimals

$$Factor = TRUNC\left(\frac{Tra_Tot \times 100}{Tra_Tot + Tra_Tax_P}\right) + 0.5$$

$$Tra_Disc_Quo_v(vv) = TRUNC\left(\frac{Tra_Tot_v(vv) \times Amount}{Tra_Tot}\right)$$

$$Tra_Disc_Rem_v(vv) = \text{mod}\left(TRUNC\left(\frac{Tra_Tot_v(vv) \times Amount}{Tra_Tot}\right)\right)$$

Rounding is performed when the sum of Disc_Quo_v(vv) is less than Amount by adding one to the Tra_Disc_Quo_v(vv) that has the highest remainder (Tra_Disc_Rem_v(vv)), then the next until the first condition is not longer met.

- **For Uplift on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Tra_Disc_Quo_v(vv)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot} + 0.5\right)$$

- **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) + TRUNC\left(\left(\frac{Tra_Tot_NE_v(vv) \times Item_Amt \times 10}{Tra_Tot}\right) + 5\right)/10$$

- **For Discount on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Tra_Disc_Quo_v(vv)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot} + 0.5\right)$$

- **If Taxpayer Customer Condition = VAT Responsible Not Enrolled**

$$Tra_Tot_NE_v(vv) = Tra_Tot_NE_v(vv) - TRUNC\left(\left(\frac{Tra_Tot_NE_v(vv) \times Item_Amt \times 10}{Tra_Tot}\right) + 5\right)/10$$

- **For Credit Note Type = 'B'**

- With Decimals**

$$Factor = TRUNC\left(\frac{Tra_VAT}{Tra_Tot - Tra_Tax_F} \times 100\right)$$

- Without Decimals**

$$Factor = TRUNC\left(\left(\frac{Tra_VAT}{Tra_Tot - Tra_Tax_F} \times 100\right) + 0.5\right)$$

$$Tra_Disc_Quo_v(vv) = TRUNC\left(\frac{(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)) \times Amount}{Tra_Tot - Tra_Tax_F}\right)$$

$$Tra_Disc_Rem_v(vv) = \text{mod}\left(TRUNC\left(\frac{(Tra_Tot_v(vv) - Tra_Tax_F_v(vv)) \times Amount}{Tra_Tot - Tra_Tax_F}\right)\right)$$

Rounding is performed when the sum of `Disc_Quo_v(vv)` is less than `Amount` by adding one to the `Tra_Disc_Quo_v(vv)` that has the highest remainder (`Tra_Disc_Rem_v(vv)`), then the next until the first condition is not longer met.

– **For Uplift on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) + Tra_Disc_Quo_v(vv)$$

$$Tra_VAT_v(vv) = Tra_VAT_v(vv) + TRUNC\left(\frac{Tra_VAT_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) + TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

– **For Discount on Subtotal**

$$Tra_Tot_v(vv) = Tra_Tot_v(vv) - Tra_Disc_Quo_v(vv)$$

$$Tra_VAT_v(vv) = Tra_VAT_v(vv) - TRUNC\left(\frac{Tra_VAT_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

$$Tra_Tax_P_v(vv) = Tra_Tax_P_v(vv) - TRUNC\left(\frac{Tra_Tax_P_v(vv) \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

• **For Credit Note Type = 'C'**

– **For Uplift on Subtotal**

$$Tra_Tot = Tra_Tot + Amount$$

$$Tra_Tax_P = Tra_Tax_P + TRUNC\left(\frac{Tra_Tax_P \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

– **For Discount on Subtotal**

$$Tra_Tot = Tra_Tot - Amount$$

$$Tra_Tax_P = Tra_Tax_P - TRUNC\left(\frac{Tra_Tax_P \times Amount}{Tra_Tot - Tra_Tax_F} + 0.5\right)$$

Where:

vv = VAT category, range = 01 up to 20

6.6.10.4 Credit Note Uplift/Discount on Subtotal Rules

- The discount or uplift amount is distributed (subtracted or added) to the VAT category accumulators proportionally to their current amount.
- The string TOTAL in upper, lower or mixed case is not allowed in the description field of this command.
- The amount field must be greater than 0, otherwise return code error is issued.

6.6.11 38 - CREDIT NOTE PAYMENT

This command is used to select the payment type and to apply the paid amount.

To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

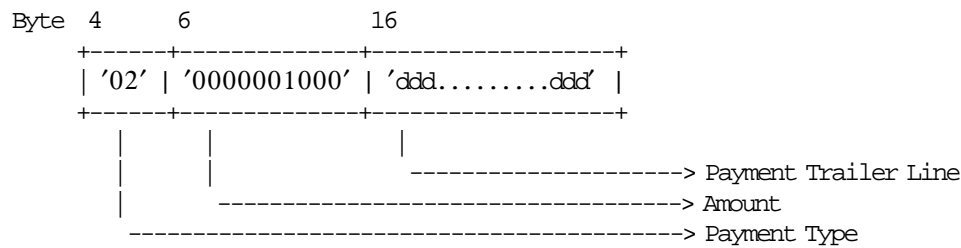
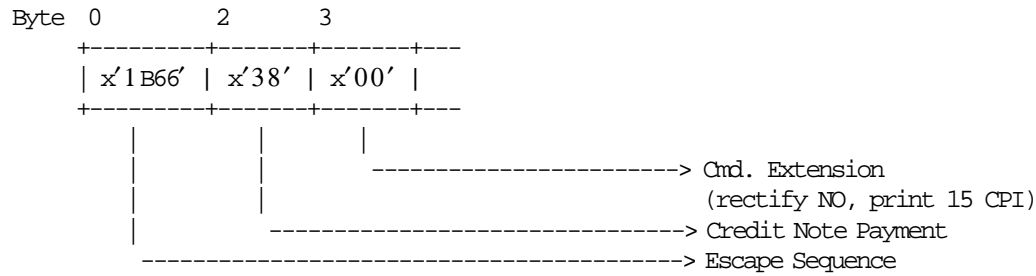
6.6.11.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		38 - Credit Note Payment	hex	1
3		Cmd. Extension	hex	1
7		Retry		
		0 = NO		
		1 = YES		
6		Rectify		
		0 = NO		
		1 = YES		
5-3		Print Mode		(Note 1)
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = Reserved		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = Reserved		
2-0		Reserved (always = '0')		
4-5		Payment Type Number	ASCII	2 (Note 2)
6-15		Amount	ASCII	10 (Note 3)
16-53		Payment Trailer Line	ASCII	38 (Note 4)

Notes:

1. Print mode is applied to the change due printed line only.
2. Range allowed is from 01 to 30.
3. Maximum Amount = 9999999949.
The amount is printed with the same print mode used by the description field set in the 24 cmd. (Set Payment Type).
4. If payment type number correspond to "credit card" payment type this field is mandatory.
For others payment types, this field is not allowed.
When this field is applied, the special character 0x0E is not accepted.

6.6.11.2 Command Example



6.6.11.3 Credit Note Payment Calculations

- **Rectify = NO**

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) + Amount$$

$$Tra_Amt_Due = Tra_Amt_Due - Amount$$

- **Rectify = YES**

$$Tra_Pay_Type(pp) = Tra_Pay_Type(pp) - Amount$$

$$Tra_Amt_Due = Tra_Amt_Due + Amount$$

Where:

pp = payment type, range = 01 up to 30

6.6.11.4 Credit Note Payment Rules

- Only five payment lines types developed in five contiguous lines and a sixth line reserved for change due are allowed.
- The credit note end command is executed only if the total paid amount is greater than or equal to the transaction total.
- If the paid amount is greater than the transaction total, a 'CHANGE DUE' line is printed.
- After 'CHANGE DUE' line is allowed to print 6 normal print lines.
- After 'CHANGE DUE' line is allowed to print UNLIMITED blank lines (linefeed).
- The string TOTAL in upper, lower or mixed case is not allowed in the payment trailer line field of this command.

6.6.12 39 - CREDIT NOTE END

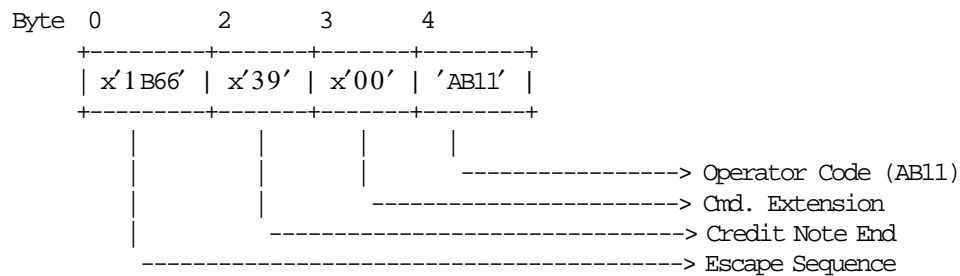
This command is used to end a credit note.

To execute this command the serialize fiscal printer (1B cmd.) and credit note subtotal/total (35 cmd.) have to be executed before.

6.6.12.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command prefix	hex	2
2		39 - Credit Note End	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4

6.6.12.2 Command Example



6.6.12.3 Credit Note End Calculations

$$Day_N_NFHD = Day_N_NFHD + 1$$

- **For Credit Note Type 'A'**

$$Day_N_RetV_A = Day_N_RetV_A + 1$$

$$Lif_N_RetV_A = Lif_N_RetV_A + 1$$

- **If Credit Note Type 'B' or 'C'**

$$Day_N_RetV_BC = Day_N_RetV_BC + 1$$

$$Lif_N_RetV_BC = Lif_N_RetV_BC + 1$$

- **If Tra_Amt_Due < 0**

$$Change_Due = Tra_Amt_Due \times (-1)$$

- **For Credit Note Type 'A', 'B' or 'C'**

$$Day_RetV_Pay_Type(pp) = Day_RetV_Pay_Type(pp) + Tra_Pay_Type(pp)$$

- **For Credit Note Type 'A' or 'B'**

$$Day_RetV_Tot_v(vv) = Day_RetV_Tot_v(vv) + Tra_Tot_v(vv) + Tra_Tot_Fixed_v(vv)$$

$$Tra_VAT_v(vv) = Tra_VAT_v(vv) + Tra_VAT_Fixed_v(vv)$$

$$Day_RetV_VAT_v(vv) = Day_RetV_VAT_v(vv) + Tra_VAT_v(vv)$$

$$Tra_Tax_v(vv) = Tra_Tax_F_v(vv) + Tra_Tax_v(vv) + Tra_Tax_Fixed_v(vv)$$

$$Day_RetV_Tax_v(vv) = Day_RetV_Tax_v(vv) + Tra_Tax_v(vv)$$

$$Day_RetV_VAT_NE_v(vv) = Day_RetV_VAT_NE_v(vv) + Tra_VAT_NE_v(vv)$$

$$Day_RetV_Percep_t(tt) = Day_RetV_Percep_t(tt) + Tra_Percep_t(tt)$$

- **For Credit Note Type 'A'**

$$Day_RetV_Tot_v(vv) = Day_RetV_Tot_v(vv) + Tra_VAT_v(vv) + Tra_Tax_v(vv) + Tra_VAT_NE_v(vv)$$

- **For Credit Note Type 'C'**

$$Day_RetV_Tot = Day_RetV_Tot + Tra_Tot + Tra_Tot_Fixed$$

$$Tra_Tax = Tra_Tax_F + Tra_Tax_P + Tra_Tax_Fixed$$

$$Day_RetV_Tax = Day_RetV_Tax + Tra_Tax$$

- **Clearing Transaction Accumulators**

$$Tra_Tot = 0$$

$$Tra_Tot_v(vv) = 0$$

$$Tra_Tot_Fixed = 0$$

$$Tra_Tot_Fixed_v(vv) = 0$$

$$Tra_Tot_Fixed_NE_v(vv) = 0$$

$$Tra_Tot_NE_v(vv) = 0$$

$$Tra_Tax_Fixed = 0$$

$$Tra_Tax_Fixed_v(vv) = 0$$

$$Tra_Tax_F = 0$$

$$Tra_Tax_F_v(vv) = 0$$

$$Tra_Tax_P = 0$$

$$Tra_Tax_P_v(vv) = 0$$

$$Tra_VAT_v(vv) = 0$$

$$Tra_VAT_NE_v(vv) = 0$$

$$Tra_VAT_Fixed_v(vv) = 0$$

$$Tra_Percep_t(tt) = 0$$

$$Tra_Percep_vt(vv,tt) = 0$$

$$Tra_Tot_Percep_t(tt) = 0$$

$$Tra_Pay_Type(pp) = 0$$

$$Tra_Amt_Due = 0$$

Where:

vv = VAT category, range = 01 up to 20

tt = perception type, range = 01 up to 30

pp = payment type, range = 01 up to 30

6.6.12.4 Control Paper Calculations

- **If EB cmd. wasn't issued before**

- **Before the lines are printed**

- $Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$

- $Mis_N_Cmd_Lines_To_Print = Totalization_Lines + Mis_N_CN_End_Lines_To_Print$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print$

- Return_Code 125

- **After the lines were printed correctly**

- $Mis_N_Lines_Printed = 0$

- **If EB cmd. was issued before**

- **Before the lines are printed**

- $Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$

- $Mis_N_Cmd_Lines_To_Print = Mis_N_CN_End_Lines_To_Print$

- **After the lines were printed correctly**

- $Mis_N_Lines_Printed = 0$

6.6.12.5 Credit Note End Rules

There are not rules for this command.

6.6.13 3A - CREDIT NOTE CANCEL

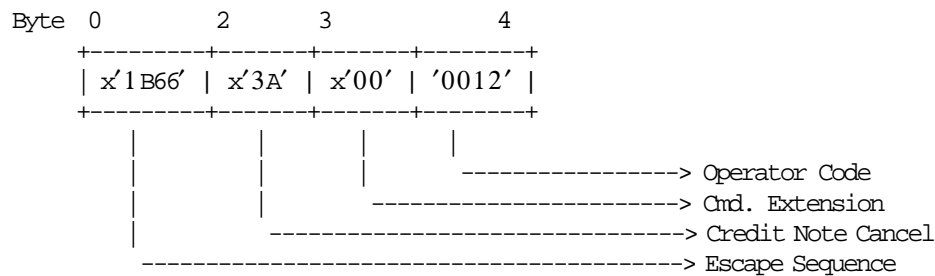
This command is used to cancel the credit note transaction at any point.

To execute this command the serialize fiscal printer (1B cmd.) and the credit note print header (30 cmd.) have to be executed before.

6.6.13.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		3A - Credit Note Cancel	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4

6.6.13.2 Command Example



6.6.13.3 Credit Note Cancel Calculations

$$Day_N_NFHD = Day_N_NFHD + 1$$

- **For Credit Note Type 'A'**

$$Day_N_RetV_A = Day_N_RetV_A + 1$$

$$Lif_N_RetV_A = Lif_N_RetV_A + 1$$

- **If Credit Note Type 'B' or 'C'**

$$Day_N_RetV_BC = Day_N_RetV_BC + 1$$

$$Lif_N_RetV_BC = Lif_N_RetV_BC + 1$$

Clearing Transaction Accumulators:

$$Tra_Tot = 0$$

$$Tra_Tot_v(vv) = 0$$

$$Tra_Tot_Fixed_v(vv) = 0$$

$$Tra_Tot_Fixed_NE_v(vv) = 0$$

$$Tra_Tot_NE_v(vv) = 0$$

$Tra_Tax_F_v(vv) = 0$
 $Tra_Tax_P_v(vv) = 0$
 $Tra_Tax_Fixed_v(vv) = 0$

$Tra_Percep_t(tt) = 0$
 $Tra_Tot_Percep_t(tt) = 0$
 $Tra_Percep_vt(vv,tt) = 0$

$Tra_VAT_v(vv) = 0$
 $Tra_VAT_NE_v(vv) = 0$
 $Tra_VAT_Fixed_v(vv) = 0$

$Tra_Amt_Due = 0$

$Tra_Pay_Type(pp) = 0$

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

6.6.13.4 Control Paper Calculations

- **Before the lines are printed**

$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$

- **After the lines were printed correctly**

$Mis_N_Lines_Printed = 0$

6.6.13.5 Credit Note Cancel Rules

- This command is not allowed if V24 message "TOTAL" was printed before.
- The fiscal logo and machine serial number will not be printed.

6.7 Credit Card in Progress Command

The credit card in progress commands include:

- C0 - Print Credit Card Slips

6.7.1 C0 - LEGACY PRINT CREDIT CARD SLIPS

This command is used to print credit card slips for the store and customer.

To execute this command the serialize fiscal printer (1B cmd.) and set POS identification (1E cmd.) have to be executed before.

6.7.1.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		C0 - Legacy Print Credit Card Slips	hex	1
3		Cmd. Extension	hex	1
		00 = Store Data		
		01 = Credit Card Data		
		02 = Customer Data		

(continued on next page)

(C0 command continued)

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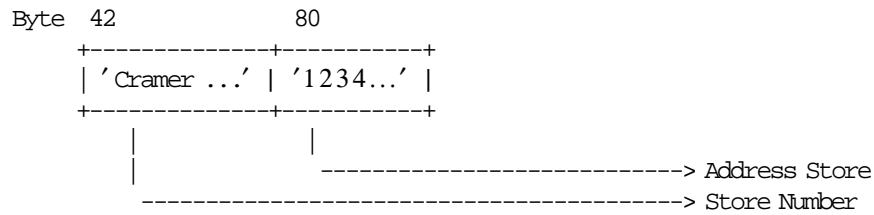
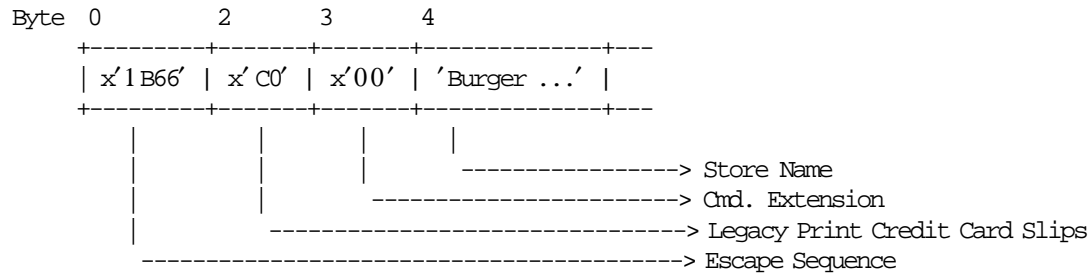
BYTE	BIT	CONTENT	TYPE	LENGTH
If Cmd. Extension = 00				
4-41		Fantasy Name Store	ASCII	38
42-79		Address Store	ASCII	38
80-94		Store Number	ASCII	15
If Cmd. Extension = 01				
4-19		Card Number	ASCII	16
20-23		Expiration Date	ASCII	4
24-24		Entry Mode T = Track M = Manual	ASCII	1
25-25		Operation Type 0 = Compra (Sale) 1 = Anulacion de Compra (Cancel Sale) 2 = Devolucion (Return) 3 = Anulacion de devolucion (Cancel Return)	ASCII	1
26-26		Mode 0 = ON-Line 1 = OFF-Line	ASCII	1
27-32		Autorization Code	ASCII	6
33-33		Debit 0 = NO 1 = YES	ASCII	1
34-34		Account Type 0 = CA (Saving Account) 1 = CC (Checking Account)	ASCII	1
35-35		Currency 0 = Pesos (Pesos) 1 = Dolares (Dollars)	ASCII	1
36-45		Account Number	ASCII	10
46-55		Amount	ASCII	10
56-57		Quantity Quota	ASCII	2
58-74		Plan	ASCII	17
75-75		Devolution 0 = NO 1 = YES	ASCII	1
76-79		Ticket Orig.	ASCII	4
80-85		Date Orig. (ddmmyy)	ASCII	6
86-89		Operator Number	ASCII	4
90-92		Lote	ASCII	3
93-96		Coupon	ASCII	4
If Cmd. Extension = 02				
4-41		Customer Name	ASCII	38

```

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```

6.7.1.2 Command Example



6.7.1.3 Legacy Print Credit Card Slips Calculations

$$Day_N_NFHD = Day_N_NFHD + 1$$

6.7.1.4 Legacy Print Credit Card Slips Rules

- The string TOTAL in upper, lower or mixed case is not allowed in any field of this command.
- Are printed credit card slip for the customer and store. Only for the store is replicated on SJ station.

6.8 Report Printing Commands

These are the report printing commands:

- 13 - Daily Closure (Z-Report)
- 14 - X-Report
- 15 - Fiscal Memory Report
- 1F - Print POS ID Information Report
- DA - Electronic Read Fiscal Memory Tables
- DB - Electronic Read Counters and Accumulators

6.8.1 13 - DAILY CLOSURE (Z-REPORT)

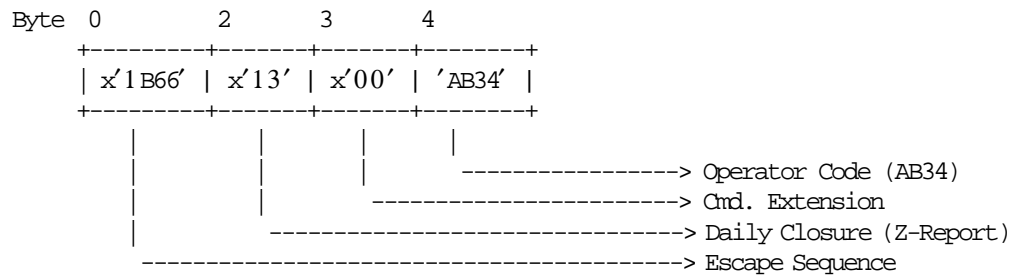
This command is used to close the sale period, update the fiscal memory (when fiscal mode is set) and issued the closure report.

To execute this command the serialize fiscal printer (1B cmd.), verify VAT table (21 cmd.) and set/reset header (D7 cmd.) have to be executed before.

6.8.1.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		13 - Close Sales Period	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-7		Operator Code	ASCII	4

6.8.1.2 Command Example



6.8.1.3 Daily Closure Calculations

- The following operations are performed before printing the report and writing the fiscal memory:

$$Lif_N_Clos = Lif_N_Clos + 1$$

$$Gran_Tot = Gran_Tot + Day_Tot$$

$$Day_Percep = \sum_{tt} Day_Percep_t(tt)$$

$$Day_RetV_Percep = \sum_{tt} Day_RetV_Percep_t(tt)$$

- For Ticket Invoice 'A' or 'B'

$$Day_Tot = \sum_{vv} Day_Tot_v(vv)$$

$$Day_VAT = \sum_{vv} Day_VAT_v(vv)$$

$$Day_Tax = \sum_{vv} Day_Tax_v(vv)$$

- For Credit Note 'A' or 'B'

$$Day_RetV_Tot = \sum_{vv} Day_RetV_Tot_v(vv)$$

$$Day_RetV_VAT = \sum_{vv} Day_RetV_VAT_v(vv)$$

$$Day_RetV_Tax = \sum_{vv} Day_RetV_Tax_v(vv)$$

- **The following operations are performed after writing the fiscal memory:**

- **Clearing Daily Accumulators:**

Day_Tot = 0
Day_Tot_v(vv) = 0

Day_VAT = 0
Day_VAT_v(vv) = 0
Day_VAT_NE_v(vv) = 0

Day_Percep = 0
Day_Percep_t(tt) = 0

Day_Tax_v(vv) = 0

Day_Pay_Type(pp) = 0

Day_Pay_Type = 0

Day_RetV_Tot = 0
Day_RetV_VAT_v(vv) = 0
Day_RetV_VAT = 0
Day_RetV_Tax_v(vv) = 0
Day_RetV_Tax = 0
Day_RetV_VAT_NE_v(vv) = 0
Day_RetV_Percep = 0
Day_RetV_Percep_t(tt) = 0
Day_RetV_Pay_Type_p(pp) = 0

- **Clearing Daily Counters:**

Day_N_Ract = 0
Day_N_Lock = 0

Day_N_Vouc = 0
Day_N_Dump = 0
Day_N_Canc = 0
Day_N_NFHD = 0
Day_N_NFR = 0
Day_N_TInv_A = 0

Where:

vv = VAT category, range = 01 up to 20
tt = perception type, range = 01 up to 30
pp = payment type, range = 01 up to 30

6.8.1.4 Daily Closure Rules

- New daily entry can be loaded into the fiscal memory 3840 times during the life of the fiscal printer.
- If FISCFLG (fiscal printer set in fiscal mode) = NO, then fiscal memory is NOT updated by the closure command.

6.8.3 15 - FISCAL MEMORY REPORT

This command is used to print the fiscal memory content on customer receipt station.

To execute this command the serialize fiscal printer (1B cmd.) and set fiscal mode (18 cmd.) have to be executed before.

6.8.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		15 - Fiscal Memory Report	hex	1
3		Cmd. Extension	hex	1
7		Reserved (always = '0')		
6		Type		
		0 = Extended		
		1 = Short		
5-3		Reserved (always = '0')		
2-0		Range		
		100 (4) = Between Closure Numbers		
		010 (2) = Between Closure Dates		
		001 (1) = All Fiscal Memory		
If Range = 1 specify:				
4-23		Reserved	ASCII	20
24-27		Operator Code	ASCII	4
If Range = 2 specify:				
4-11		First Closure Date	ASCII	8 (Note 1)
12-19		Last Closure Date	ASCII	8 (Note 1)
20-23		Reserved	ASCII	4
24-27		Operator Code	ASCII	4
If Range = 4 specify:				
4-7		First Closure Number	ASCII	4
8-11		Last Closure Number	ASCII	4
12-23		Reserved	ASCII	12
24-27		Operator Code	ASCII	4

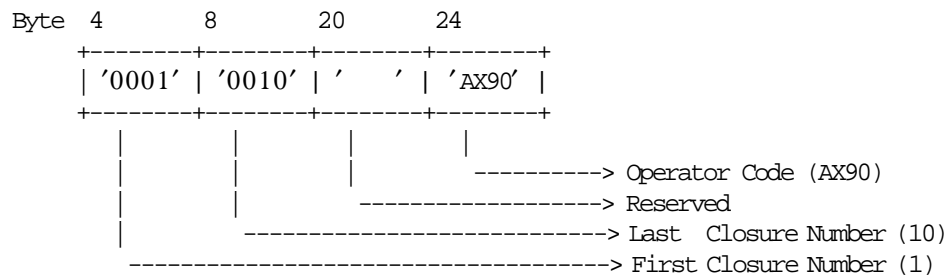
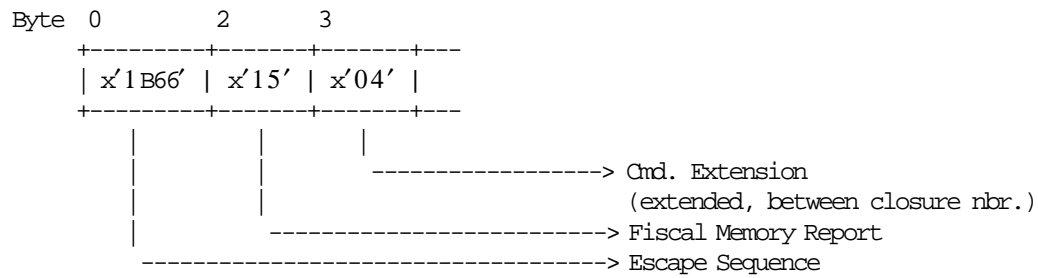
Notes:

1. Dates strings must be formatted as: ddmmYYYY

where:

- dd = day
- mm = month
- YYYY = year

6.8.3.2 Command Example



6.8.3.3 Fiscal Memory Report Calculations

$$Day_N_Dump = Day_N_Dump + 1$$

6.8.3.4 Fiscal Memory Report Rules

- Fiscal memory content must be printed on customer receipt station.
- Two types of fiscal memory reports are provided: short and extended.
- This process can take a long time if the fiscal memory is almost full or full.

6.8.4 1F - POS IDENTIFICATION REPORT

This command is used to print a report listing of the POS Identification.

To execute this command the serialize fiscal printer (1B cmd.), the set POS identification (1E cmd.) and set fiscal mode (18 cmd.) have to be executed before.

6.8.4.1 Command Format

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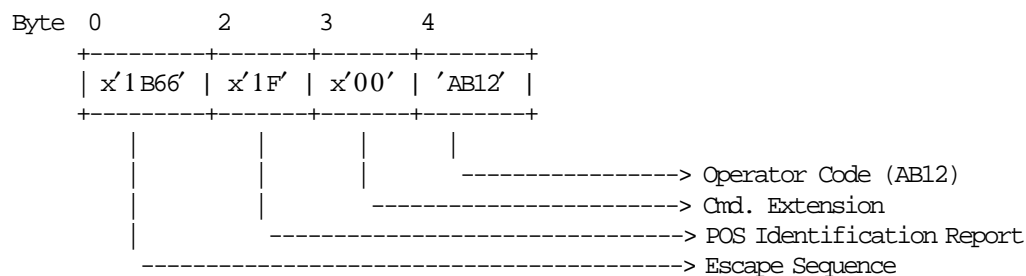
BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	1F - POS Identification Report	hex	1
3	Cmd. Extension	hex	1
7-0	Reserved (always = '0x00')		
4-7	Operator Code	ASCII	4

```

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```

6.8.4.2 Command Example



6.8.4.3 POS Identification Report Calculations

$$Day_N_NFHD = Day_N_NFHD + 1$$

6.8.4.4 POS Identification Report Rules

- The POS Identification to print is stored into the fiscal printer by the 1E cmd.

6.8.5 DA - ELECTRONIC READ FISCAL MEMORY TABLES

This command is used to request the fiscal unit to report the fiscal memory table content.

To execute this command the serialize fiscal printer (1B cmd.) and set fiscal mode (18 cmd.) have to be executed before.

6.8.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		DA - Electronic Read Fiscal Memory Tables	hex	1
3		Cmd. Extension	hex	1
	11	Read Taxpayer Issuer Condition Table		
	10	Start Taxpayer Issuer Condition Table		
	0F	Read Homologated/Microcode EC Level Table		
	0E	Start Homologated/Microcode EC Level Table		
	0D	Read Next Locked Action Table		
	0C	Start Read Locked Action Table		
	0B	Reserved (always = '0')		
	0A	Read POS Identification Table		
	09	Reserved (always = '0')		
	08	Reserved (always = '0')		
	07	Read Next Repair Action Table		
	06	Start Read Repair Action Table		
	05	Reserved (always = '0')		
	04	Reserved (always = '0')		
	03	Reserved (always = '0')		
	02	Reserved (always = '0')		
	01	Read Next Daily Entry Table		
	00	Start Read Daily Entry Table		
4-7		Closure Number	ASCII	4 (Note 1)

Note 1: Bytes 4-7 apply to start read daily entry table only.

Response to read Daily Entry Table will be formatted as follows:

BYTE	BYTE	CONTENT	TYPE	LENGTH	VARIABLE NAME
RS-485	USB				
0-8		Fiscal Unit Status	hex	9	
	0-14	Fiscal Unit Status	hex	15	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 60 = Invalid Character in Bytes 4-8 of Command 5A = Closure Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-33	32-39	Closure Date (dd/mm/yy)	ASCII	8	FM_DE_DATE
34-38	40-44	Closure Time (hh:mm)	ASCII	5	FM_DE_TIME
39-42	45-48	Closure Number	ASCII	4	FM_DE_N_Clos
43-48	49-54	Total	hex	6	FM_DE_Tot (Note 2)
49-54	55-60	VAT Total	hex	6	FM_DE_VAT (Note 2)
55-58	61-64	Last Ticket & Ticket Invoice B, C Number	hex	4	FM_DE_N_Vouc (Note 2)
59-60	65-66	Cancelled Transactions Number	hex	2	FM_DE_N_Canc (Note 2)
61-64	67-70	Last Invoice A Number	hex	4	FM_DE_N_TInv_A (Note 2)
65-70	71-76	Credit Note Total	hex	6	FM_DE_RetV_Tot (Note 2)
71-76	77-82	Credit Note VAT Total	hex	6	FM_DE_RetV_VAT (Note 2)
77-80	83-86	Last Credit Note A Number	hex	4	FM_DE_N_RetV_A (Note 2)
81-84	87-92	Last Credit Note BC Number	hex	4	FM_DE_N_RetV_BC (Note 2)
85	93	Locked Action Number	hex	1	FM_DE_N_Lock (Note 2)
86-87	94-95	Non-Fiscal Homologated Document Number	hex	2	FM_DE_N_DNFH (Note 2)
88-89	96-97	Non-Fiscal Document Number	hex	2	FM_DE_N_DNF (Note 2)

Note : Bit 7 is the most significant bit and bit 0 is the least significant bit.

Note 1: If the return code indicates an error, then closure data are meaningless.

Note 2: Hex data is in normal format, not byte switch format.

Response to read Taxpayer Issuer Condition Table will be formatted as follows:

BYTE RS-485	BYTE USB	CONTENT	TYPE	LENGTH	VARIABLE NAME
0-8		Fiscal Unit Status	hex	9	
	0-14	Fiscal Unit Status	hex	15	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 5C = Register Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-29	32-35	Closure Number	ASCII	4	FM_TI_N_Clos
30	36	Taxpayer Issuer Condition	ASCII	1	FM_TI_Taxp_I_Cond

Response to read Homologated/Microcode EC Level Table will be formatted as follows:

BYTE RS-485	BYTE USB	CONTENT	TYPE	LENGTH	VARIABLE NAME
0-8		Fiscal Unit Status	hex	9	
	0-14	Fiscal Unit Status	hex	15	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 5C = Register Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-27	32-33	Homologated Level	ASCII	2	FM_EC_Homologated_Level
28-35	34-41	Date (dd/mm/yy)	ASCII	8	FM_EC_Date
36-40	42-46	Time (hh:mm)	ASCII	5	FM_EC_Time
41-44	47-50	Closure Number	ASCII	4	FM_EC_Clos
45-46	51-52	Microcode EC Level	ASCII	2	FM_EC_Microcode_Level

Note 1: If the return code indicates an error then data are meaningless.

Response to read POS Identification Table will be formatted as follows:

BYTE	BYTE	CONTENT	TYPE	LENGTH	VARIABLE NAME
RS-485	USB				
0-8		Fiscal Unit Status	hex	9	
	0-14	Fiscal Unit Status	hex	15	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 5C = Register Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-63	32-69	Store Name	ASCII	38	FM_PI_StNa
64-74	70-80	UTIK Number	ASCII	11	FM_PI_UTIK
75-78	81-84	POS ID Number	ASCII	4	FM_PI_POS
79-82	85-88	Closure Number	ASCII	4	FM_PI_N_Clos

Response to read Repair Action Table will be formatted as follows:

BYTE	BYTE	CONTENT	TYPE	LENGTH	VARIABLE NAME
RS-485	USB				
0-8		Fiscal Unit Status	hex	9	
	0-14	Fiscal Unit Status	hex	15	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 5C = Register Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-28	32-34	Repair Action Number	ASCII	3	FM_RA_N_Ract
29-32	35-38	Closure Number	ASCII	4	FM_RA_N_Clos
33-40	39-46	Repair Action Date (dd/mm/yy)	ASCII	8	FM_RA_Date
41-45	47-51	Repair Action Time (hh:mm)	ASCII	5	FM_RA_Time

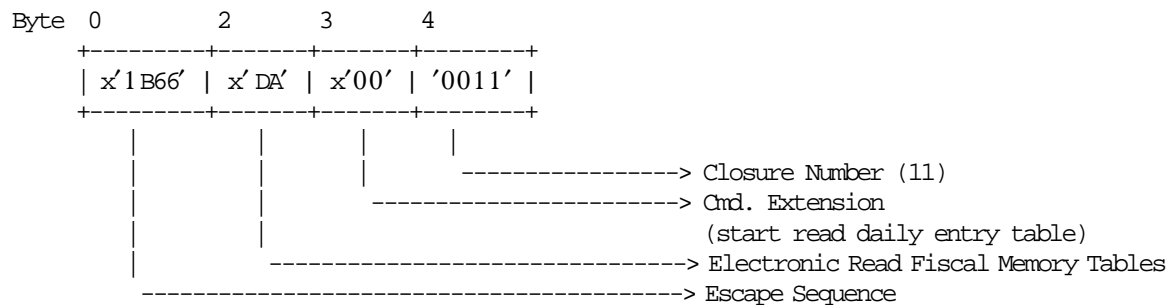
Note 1: If the return code indicates an error then data are meaningless.

Response to the Electronic Read Fiscal Memory Tables command for read Locked Action Table will be formatted as follows:

RS-485	USB	CONTENT	TYPE	LENGTH	VARIABLE NAME
0-8	0-14	Fiscal Unit Status	hex	9	
9	15	DA - Electronic Read Fiscal Memory Tables	hex	1	
10-23	16-29	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	30	Return Code 43 = Good Completion 5C = Register Not Found 64 = Error on Reading Fiscal Memory BB = Block Empty	hex	1	(Note 1, 2)
25	31	Reserved	hex	1	(Note 2)
26-28	32-34	Locked Action Number	ASCII	3	FM_LO_N_Lock
29-32	35-38	Closure Number	ASCII	4	FM_LO_N_Clos
33-40	39-46	Locked Action Date (dd/mm/yy)	ASCII	8	FM_LO_Date
41-45	47-51	Locked Action Time (hh:mm)	ASCII	5	FM_LO_Time

Note 1: If the return code indicates an error then data are meaningless.

6.8.5.2 Command Example



6.8.5.3 Electronic Read Fiscal Memory Tables Rules

- The totals and counters related to each sales period are read from the fiscal memory and sent over the serial I/O.

6.8.6 DB - ELECTRONIC READ COUNTERS AND ACCUMULATORS

This command is used to request the fiscal unit to report the content of transaction and daily counters and accumulators.

To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

6.8.6.1 Command Format

BYTE	BIT	CONTENTS	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		DB - Electronic Read Counters and Accumulators	hex	1
3		Cmd. Extension	hex	1
7-4		Reserved (always = '0')		
3-2		Query Criterial 00 = Accumulators By VAT Category, Perception Type and Payment Type 01 = Initialization Setting Values 10 = Counters		
1-0		Accounting Variables 00 = Transaction 01 = Daily 10 = Lifetime		
4-5		VAT Category (vv)	ASCII	2 (Note 1)
6-7		Payment Type (pp)	ASCII	2 (Note 2)
8-9		Perception Type (tt)	ASCII	2 (Note 3)
		If (byte 3 - bit 3-2) = 01		
10-11		Header Line Number	ASCII	2 (Note 4)
12-13		TI/CN Header Line Number	ASCII	2 (Note 5)
14-15		Trailer Line Number	ASCII	2 (Note 6)

Note 1: VAT Category, range 01 up to 20.

To read the sum of the transaction totals for all VAT categories, use '00' as the ASCII data string.

Note 2: Payment Type, range 01 up to 30.

To read the sum of the transaction totals and transaction counters for all payment types, use '00' as the ASCII data string.

Note 3: Perception Type, range 01 up to 30.

To read the sum of the transaction totals and transaction counters for all perception types, use '00' as the ASCII data string.

Note 4: Header Line Number, range 01 up to 07.

Note 5: TI/CN Header Line Number, range 01 up to 07.

Note 6: Trailer Line Number, range 01 up to 07.

6.8.6.2 Electronic Read Counters and Accumulators Response

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE NAME
RS-485	USB					
0-8			Fiscal Unit Status	hex	9	
	0-14		Fiscal Unit Status	hex	15	
9	15		DB - Record Identification	hex	1	
10-23	16-29		REQUEST DATE AND TIME (dd/mm/yy hh:mm)	ASCII	14	
24	30		Return Code 43 = Good Completion	hex	1	
25	31		FISCAL UNIT PROCEDURE IN PROGRESS 00 = No Procedure in Progress 01 = Ticket in Progress 02 = Reserved 03 = Ticket Invoice in Progress 04 = Reserved 05 = Appl.Orig. Report on CR in Progress 06 = Appl.Orig. Report on SJ in Progress 07 = Reserved 08 = Appl.Orig. Report on DI Portrait in Progress 09 = Credit Card Slip Printing in Progress 0A = NFH Document in Progress 0B = Credit Note in Progress	hex	1	
26	32		SALES TRANSACTION STEP 7 1 = Header Printed 6 1 = Item/Negitem Sold 5 1 = Total Requested 4 1 = Payment Phase 3 1 = End Transaction in Progress 2 1 = Cancel Transaction in Progress 1 1 = Ordinary Printing Phase 0 1 = Second Total Requested	hex	1	
27	33		FISCAL UNIT MODE 7 1 = Fiscal Mode Set 6 Reserved 5 1 = Sales Period in Progress 4 1 = Training Mode Set 3 1 = NFH Document Issued 2-0 Reserved	hex	1	
28	34		END APPL.ORIG. REPORT ON DI 7 1 = End Appl.Orig. Report on DI in Progress 6 1 = End Appl.Orig. Report on DI - Phase 1 Done 5-0 Reserved	hex	1	
			If NFH Document in Progress (byte 25 = 0A)			
29	35		NFH DOCUMENT TYPE	hex	1	(Note 1)
			If Ticket Invoice or Credit Note in Progress (byte 25 = 03 or 0B)			
29	35		TICKET INVOICE/CREDIT NOTE TYPE	ASCII	1	(Note 2)
30	36		INITIALIZATION SET 7 1 = Header Set 6 1 = Ticket Invoice/Credit Note Header Set 5 1 = Trailer Set 4 1 = Payment Set 3 1 = Perception Table Set 2 1 = VAT Table Set 1 1 = General Parameters Set 0 1 = Graphics Set	hex	1	

Note 1: NFH document type can be 01 (Credit Card), 02 (Fidelity Programs Voucher), 03 (Services Payment), 04 (Home Shipment) or 05 (Cash Flow).

Note 2: Ticket invoice/credit note type can be A (0x41), B (0x42) or C (0x43).

(DB Response continued on next page)

Response where **Query Criterial** = '00' and **Accounting Variable** = '00' is formatted as follows:

```

-----

```

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE NAME	
RS-485	USB						
TRANSACTION ACCUMULATORS							

31-35	37-41		General Total by VAT	hex	5	Tra_Tot_v(vv)	(Note 1)
36-40	42-46		General Fixed Item Total by VAT	hex	5	Tra_Tot_Fixed_v(vv)	
41-45	47-51		Fixed Item Not Taxable Concepts by VAT	hex	5	Tra_Tax_Fixed_v(vv)	
46-50	52-56		Fixed Not Taxable Concepts by VAT	hex	5	Tra_Tax_F_v(vv)	
51-55	57-61		Percentage Not Taxable Concepts by VAT	hex	5	Tra_Tax_P_v(vv)	
56-60	62-66		General VAT by VAT	hex	5	Tra_VAT_v(vv)	(Note 2)
61-65	67-71		General VAT Not Enrolled by VAT	hex	5	Tra_VAT_NE_v(vv)	(Note 3)
66-70	72-76		General VAT Fixed Item by VAT	hex	5	Tra_VAT_Fixed_v(vv)	
71-75	77-81		Item Perception by Percep. Type	hex	5	Tra_Percep_t(tt)	
76-80	82-86		Item Perception by VAT and Percep. Type	hex	5	Tra_Percep_vt(vv,tt)	(Note 4)
81-85	87-91		General Global Perception by Percep. Type	hex	5	Tra_Tot_Percep_t(tt)	
86-90	92-96		General Payment Total by Payment Type	hex	5	Tra_Pay_Type(pp)	(Note 5)
91-95	97-101		Amount Due	hex	5	Tra_Amt_Due	(Note 6)
96-100	102-106		General VAT Not Enrolled Total by VAT	hex	5	Tra_Tot_NE_v(vv)	(Note 7)
101-105	107-111		General Fixed VAT Not Enrolled Total by VAT	hex	5	Tra_Tot_Fixed_NE_v(vv)	(Note 8)

Note 1: When the VAT Category selected = '00', the Tra_Tot accumulator will be showed.

Note 2: When the VAT Category selected = '00', the Tra_VAT accumulator will be showed.

Note 3: When the VAT Category selected = '00', the Tra_VAT_NE accumulator will be showed.

Note 4: When the VAT Category selected = '00' and Perception Type = '00', the Tra_Percep accumulator will be showed.

Note 5: When the Payment Type = '00', the Tra_Pay_Type will be showed.

Note 6: When Amount Due is negative, it is expressed in two's complement.

Note 7: When the VAT Category selected = '00', the sum(Tra_Tot_NE_v(vv)) will be showed.

Note 8: When the VAT Category selected = '00', the sum(Tra_Tot_Fixed_NE_v(vv)) will be showed.

Response where **Query Criterial** = '10' and **Accounting Variable** = '00' is formatted as follows:

```

-----

```

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE NAME	
RS-485	USB						
TRANSACTION COUNTERS							

31-32	37-38		Item Ordinal Number	hex	2	Item_Ordinal_Number	
33-34	39-40		Lines Printed in T.Invoice or Credit Note	hex	2	Mis_N_Lines_Printed	

(DB Response continued on next page)

Response where **Query Criterial = '00'** and **Accounting Variable = '01'** is formatted as follows:

```

-----

```

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE	NAME
RS-485	USB						
DAILY ACCUMULATORS							

31-36	37-42		Total by VAT	hex	6	Day_Tot_v(vv)	(Note 1)
37-42	43-48		VAT Total by VAT	hex	6	Day_VAT_v(vv)	(Note 1)
43-48	49-54		Not Taxable Concepts by VAT	hex	6	Day_Tax_v(vv)	(Note 1)
49-54	55-60		VAT not Enrolled by VAT	hex	6	Day_VAT_NE_v(vv)	(Note 1)
55-60	61-66		Perception by Percep. Type	hex	6	Day_Percep_t(tt)	(Note 2)
61-66	67-72		Payment Total by Payment Type	hex	6	Day_Pay_Type(pp)	(Note 3)
67-72	73-78		Credit Note Total by VAT	hex	6	Day_RetV_Tot_v(vv)	(Note 1)
73-78	79-84		Credit Note VAT Total by VAT	hex	6	Day_RetV_VAT_v(vv)	(Note 1)
79-84	85-90		Credit Note Not Taxable Concepts by VAT	hex	6	Day_RetV_Tax_v(vv)	(Note 1)
85-90	91-96		Credit Note VAT Not Enrolled by VAT	hex	6	Day_RetV_VAT_NE_v(vv)	(Note 1)
91-96	97-102		Credit Note Perception by Percep. Type	hex	6	Day_RetV_Percep_t(tt)	(Note 2)
97-102	103-108		Credit Note Payment Total by Payment Type	hex	6	Day_RetV_Pay_Type(pp)	(Note 3)

```

-----

```

Response where **Query Criterial = '10'** and **Accounting Variable = '01'** is formatted as follows:

```

-----

```

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE	NAME
RS-485	USB						
DAILY COUNTERS							

31-32	37-38		Number of Tickets & Tickets Invoice B, C	hex	2	Day_N_Vouc	
33-34	39-40		Number of Repair Actions	hex	2	Day_N_Ract	
35-36	41-42		Number of Fiscal Memory Reports	hex	2	Day_N_Dump	
37-38	43-44		Number of Cancelled Transactions	hex	2	Day_N_Canc	
39-40	45-46		Number of Non-Fiscal Homologated Reports	hex	2	Day_N_NFHD	
41-42	47-48		Number of Application-Originated Reports	hex	2	Day_N_NFR	
43-44	49-50		Number of Ticket Invoice A	hex	2	Day_N_TInv_A	
45-46	51-52		Number of Credit Notes A	hex	2	Day_N_RetV_A	
47-48	53-54		Number of Credit Notes B, C	hex	2	Day_N_RetV_BC	
49	55		Number of Locked Actions	hex	1	Day_N_Lock	

```

-----

```

Note 1: Will be showed for VAT Category (range 01 up to 20).

Note 2: Will be showed for Perception Type (range 01 up to 30).

Note 3: Will be showed for Payment Type (range 01 up to 30).

(DB Response continued on next page)

Response where **Accounting Variable** = '10' is formatted as follows:

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH	VARIABLE NAME
RS-485			USB			

LIFETIME ACCUMULATORS AND COUNTERS

31-38	37-44		Reserved	hex	8	
39-42	45-48		Number of Tickets Invoice A	hex	4	Lif_N_TInv_A
43-46	49-52		Number of Tickets and Tickets Invoice B, C	hex	4	Lif_N_Vouc
47-48	53-54		Last Closure Number	hex	2	Lif_N_Clos
49-50	55-56		Repair Actions	hex	2	Lif_N_Ract
51-60	57-66		Fiscal Printer Serial Number	ASCII	10	
61	67		Number of Locked Actions	hex	1	Lif_N_Lock
62-65	68-71		Number of Credit Note A	hex	4	Lif_N_RetV_A
66-69	72-75		Number of Credit Note BC	hex	4	Lif_N_RetV_BC

(DB Response continued on next page)

Response where **Query Criterial = 01** is formatted as follows:

```

-----
BYTE      BYTE BIT CONTENT                                     TYPE LENGTH VARIABLE NAME
RS-485    USB

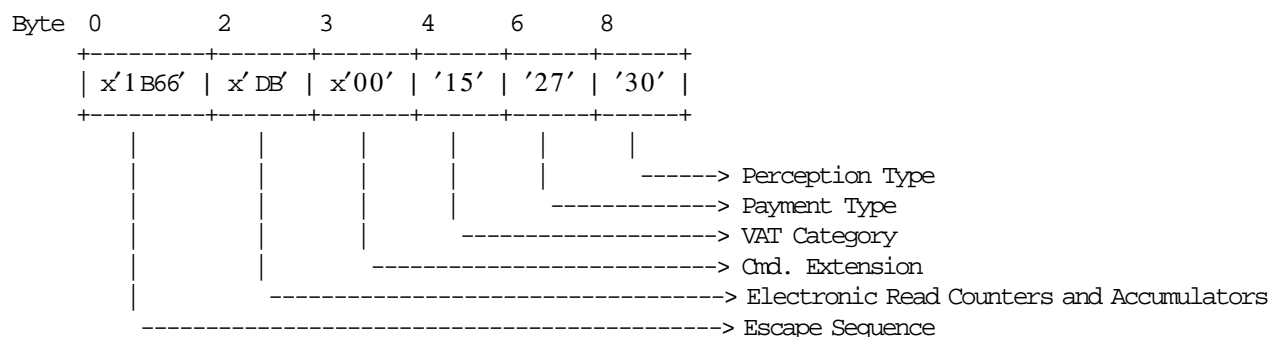
INITIALIZATION SETTINGS
-----

31-68     37-74     Ticket Header Description                                     ASCII  38
69-106    75-112    Ticket Invoice/Credit Note Header Description               ASCII  38
107-144   113-150   Trailer Description                                         ASCII  38
145-166   151-172   Payment Description                                         ASCII  22
167-188   173-194   Perception Description                                       ASCII  22
189-190   195-196   VAT Rate                                                     hex    2
191-195   197-201   Maximum Total for Ticket                                     hex    5
196-200   202-206   Maximum Total for Ticket Invoice/Credit Note               hex    5
201-205   207-211   Maximum Total for TI/CN to Final Customer                 hex    5
206-207   212-213   VAT Not Enrolled Percent                                   hex    2
208-209   214-215   Number of Lines To Print in Ticket Invoice                 hex    2
210-211   216-217   Number of Lines To Print in Credit Note                   hex    2
212       218       Credit Card Payment Type                                   hex    1 (Note 1)
-----

```

Note 1: Indicate if during initialization sequence the credit card payment type was set (thru 24 cmd.)
0 = NO
1 = YES

6.8.6.3 Command Example



6.8.6.4 Electronic Read Counters and Accumulators Calculations

$$Tra_Pay_Type = \sum_{pp} Tra_Pay_Type(pp)$$

$$Day_Pay_Type = \sum_{pp} Day_Pay_Type(pp)$$

$$Day_RetV_Percep = \sum_{vv} Day_RetV_Percep_v(vv)$$

$$Day_RetV_Tot = \sum_{vv} Day_RetV_Tot_v(vv)$$

$$Day_RetV_VAT = \sum_{vv} Day_RetV_VAT_v(vv)$$

$$Day_RetV_Tax = \sum_{vv} Day_RetV_Tax_v(vv)$$

Where:

pp = payment type, range = 01 up to 30

vv = VAT category, range = 01 up to 20

6.8.6.5 Electronic Read Counters and Accumulators Rules

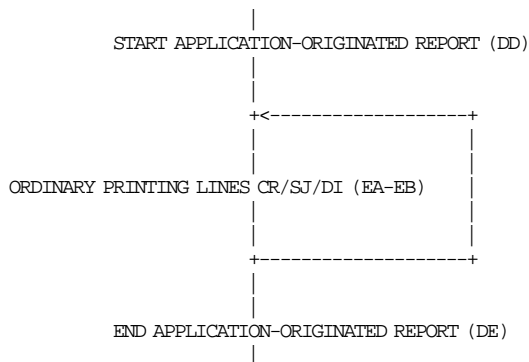
- This command can be issued at any time.
- It is useful for the application program to determine the state of the fiscal printer and read its accumulators and counters.

6.9 Application-Originated Reports

There are two commands that control application-originated reports:

- DD - Start Application-Originated Report
- DE - End Application-Originated Report

6.9.1 Application-Originated Report Flow Chart



6.9.2 General Application-Originated Printing Rules

If a special printout format is available for an application-originated report, it will be defined in the section "Format of Printouts for Argentina".

6.9.2.1 Inserted "NO FISCAL" Message Rules During an Application-Originated Report

- A a-o report on the CR station is preceded by an inserted "NO FISCAL" (M05 msg.). This message will be printed by the first ordinary printing line (EA or E9 cmd.) printed.
- A a-o report on the SJ station is preceded by an inserted "NO FISCAL" (M05 msg.). This message will be printed by the first ordinary printing line (EA or E9 cmd.) printed.
- A a-o report on the DI station is preceded by an inserted "NO FISCAL" (M05 msg.). This message will be printed by the first ordinary printing line (EB or E9 cmd.) printed.
- A a-o report on the CR station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- A a-o report on the SJ station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- A a-o report on the DI station is ended (DE cmd.) by an inserted "NO FISCAL" (M05 msg.).
- During an a-o report on the CR station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- During an a-o report on the SJ station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- During an a-o report on the DI station a "NO FISCAL" (M05 msg.) is inserted every 4 printed lines.
- In Argentina count is kept of empty lines (EC or EA cmd.) during an a-o report on the CR station.
- In Argentina count is kept of empty lines (EC or EA cmd.) during an a-o report on the SJ station.
- In Argentina count is kept of empty lines (EC or EB cmd.) during an a-o report on the DI station.
- The a-o report on CR station is replicated to SJ station.
- The a-o report on SJ station isn't replicated.

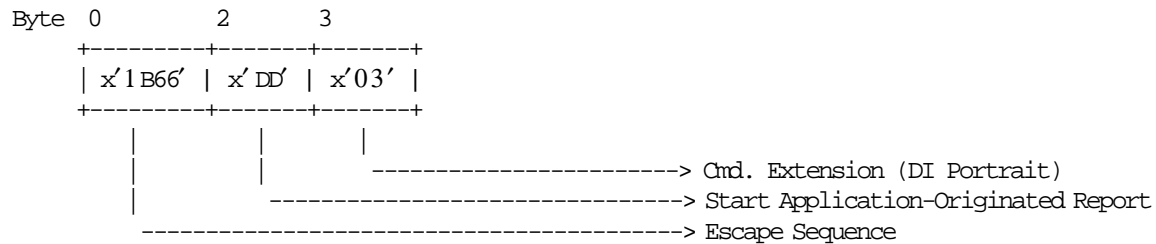
6.9.3 DD - START APPLICATION-ORIGINATED REPORT

This command is used to start a non-fiscal document printing a "NO FISCAL" message line. To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

6.9.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		DD - Start Application-Originated Report	hex	1
3		Cnd. Extension	hex	1
7-2		Reserved (always = '0')		
1-0		Station		
		00 (0) = CR		
		01 (1) = SJ		
		10 (2) = Reserved		
		11 (3) = DI - Portrait		

6.9.3.2 Command Example



6.9.3.3 Start Application-Originated Report Calculations

There are no calculations for this command.

6.9.3.4 Start Application-Originated Report Rules

- The execution of the start application-originated report command sets the fiscal unit into the application-originated report in progress.
- This report can be printed on customer receipt, summary journal and document insert stations.

6.10 Non-Fiscal Homologated Documents

This procedure is used to generate non-fiscal homologated documents and is controlled by the following commands:

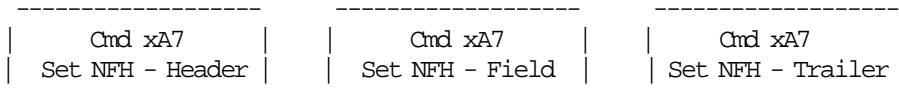
- A7 - Set NFH Information
- A8 - Start NFH Document
- A9 - Print NFH Document
- AA - End NFH Document
- AB - Cancel NFH Document

The non-fiscal homologated documents types allowed are:

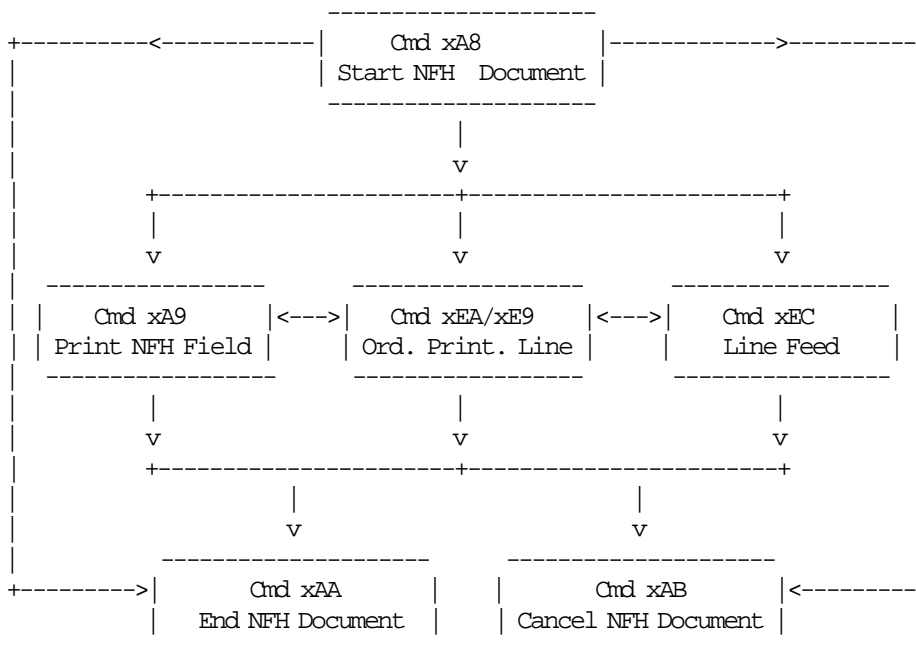
- 01 = Credit Card
- 02 = Fidelity Programs Voucher
- 03 = Services Payment
- 04 = Home Shipment
- 05 = Cash Flow

6.10.1 Non-Fiscal Homologated Documents Flow

• Set NFH Information



• NFH Documents Process



6.10.2 Non-Fiscal Homologated Documents Rules

- These documents are printed on CR station and some lines are replicated on SJ station.
- These documents are allowed during fiscal and training mode and are printed similarly in both modes.
- Only a total of 4 ordinary printing lines (EA cmd. or E9 cmd.) on CR station without SJ replication can be printed in any place of the document.
- Only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document.
- Line feed lines (EC cmd. or E9 cmd.) are allowed in CR station only. It can be issued unlimited times in any place of the document.
- If PLD or paper out occurs during print header (A8 cmd.) of the document, it will be cancelled printing `"* DOCUMENTO CANCELADO *"` msg. on CR station.
In the PLD case, the power on report will be printed.
- If PLD or paper out occurs during printing document (except header), the command that was in progress before the PLD or paper out occurs can be issued again. In this case the power on report is not printed.

6.10.3 NFH Tables Definition

There are three NFH tables types and each one is stored in RAM memory.

- NFH Header Table Definition
 - Header_Table_00 (General Template)
 - Header_Table_01 (Credit Card Template)
 - Header_Table_02 (Fidelity Programs Voucher Template)
 - Header_Table_03 (Services Payment Template)
 - Header_Table_04 (Home Shipment Template)
 - Header_Table_05 (Cash Flow Template)
- NFH Field Tables Definition
 - Field_Table_00 (General Template)
 - Field_Table_01 (Credit Card Template)
 - Field_Table_02 (Fidelity Programs Voucher Template)
 - Field_Table_03 (Services Payment Template)
 - Field_Table_04 (Home Shipment Template)
 - Field_Table_05 (Cash Flow Template)
- NFH Trailer Table Definition
 - Trailer_Table_00 (General Template)
 - Trailer_Table_01 (Credit Card Template)
 - Trailer_Table_02 (Fidelity Programs Voucher Template)
 - Trailer_Table_03 (Services Payment Template)
 - Trailer_Table_04 (Home Shipment Template)
 - Trailer_Table_05 (Cash Flow Template)

6.10.3.1 NFH Header Table Definition

The header table for each template type (tt = template type) is defined as follow:

- **Header_Table_tt (tt range = 00 to 05)**

```
* ----- *
* Field *           MESSAGE DESCRIPTION *
* Line # *           Spanish           English *
* ----- * ----- *
* 1 * Header Line 1 (user defined w/A7 cmd.) *
* 2 * Header Line 2 (user defined w/A7 cmd.) *
* 3 * Header Line 3 (user defined w/A7 cmd.) *
* 4 * Header Line 4 (user defined w/A7 cmd.) *
* ----- * ----- *
```

Figure 4. Header_Table_tt (NFH Header Table)

6.10.3.2 NFH Field Tables Definition

The field tables for each document type are defined as follow:

- **Field_Table_00 (General Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----* -----* -----*
* 1 * CLIENTE NRO. : * CUSTOMER NB. : *
* 2 * CLIENTE NOMBRE: * CUSTOMER NAME : *
* 3 * DOCUMENTO: ..... * DOCUMENT : ..... *
* 4 * FIRMA: ..... * SIGN : ..... *
* 5 * ACLARACION: ..... * CLARIFICA.: ..... *
* 6 * FECHA HORA SUC CAJA TICKET CJRO * DATE TIME SUC CASH TICKET CSHR *
* 7 * IMPORTE: * AMOUNT: *
* 8 * PAGO: * PAYM: *
* 9 * DOMICILIO: * ADDRESS: *
* 10 * TICKET ORIGINAL: * ORIGINAL TICKET: *
* 11 * COMERCIO: * STORE: *
* 12 * TARJETA NRO. : * CARD NBR. : *
* -----*

```

Figure 5. Field_Table_00 (General Template)

- **Field_Table_01 (Credit Card Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----* -----* -----*
* 1 * Field Line 1 (user defined w/A7 cmd.) *
* 2 * Field Line 2 (user defined w/A7 cmd.) *
* 3 * Field Line 3 (user defined w/A7 cmd.) *
* 4 * Field Line 4 (user defined w/A7 cmd.) *
* 5 * C.U.I.T. : * U.T.I.K. : *
* 6 * TERMINAL: * TERMINAL: *
* 7 * INGR. : * INPUT: *
* 8 * LOTE/CUPON: * LOTE/COUP. : *
* 9 * PLAN: * PLAN: *
* 10 * VTO. : * EXP. : *
* 11 * CREDITO * CREDIT *
* 12 * DEBITO * DEBIT *
* 13 * OFF-LINE * OFF-LINE *
* 14 * ON-LINE * ON-LINE *
* 15 * CODIGO DE AUTORIZACION: * AUTORIZATION CODE: *
* 16 * FECHA ORIGINAL: * ORIGINAL DATE: *
* 17 * CANT.CUOTAS: * QUANT.QUOTA: *
* 18 * FACTURA: * INVOICE: *
* 19 * ORIGINAL PARA EL COMERCIO * ORIGINAL FOR STORE *
* 20 * COPIA PARA EL CLIENTE * CUSTOMER COPY *
* -----*

```

Figure 6. Field_Table_01 (Credit Card Template)

• **Field_Table_02 (Fidelity Programs Voucher Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----* -----* -----*
* 1 * Field Line 1 (user defined w/A7 cmd.) *
* 2 * Field Line 2 (user defined w/A7 cmd.) *
* 3 * Field Line 3 (user defined w/A7 cmd.) *
* 4 * Field Line 4 (user defined w/A7 cmd.) *
* 5 * PUNTAJE ACUMULADO AL:          * CUMULATE POINT AT:
* 6 * PUNTOS ACUMULADOS:          * CUMULATE POINTS:
* 7 * PUNTOS DE LA COMPRA:        * SALE POINTS:
* 8 * PUNTOS EXTRAS:              * EXTRA POINTS:
* 9 * PUNTOS CANJEADOS:          * EXCHANGED POINTS:
* 10 * TARJETA NOMBRE:            * CARD NAME
* 11 * PREMIO:                    * AWARD:
* 12 * CODIGO DE PREMIO:         * AWARD CODE:
* -----*

```

Figure 7. Field_Table_02 (Fidelity Programs Voucher Template)

• **Field_Table_03 (Services Payment Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----* -----* -----*
* 1 * Field Line 1 (user defined w/A7 cmd.) *
* 2 * Field Line 2 (user defined w/A7 cmd.) *
* 3 * Field Line 3 (user defined w/A7 cmd.) *
* 4 * Field Line 4 (user defined w/A7 cmd.) *
* 5 * CONCEPTOS A PAGAR:        * PAYMENT FOR:
* 6 * CAMBIO:                     * CHANGE:
* 7 * SEGURIDAD:                  * SECURITY:
* 8 * CODIGO DE BARRAS:          * BAR CODE:
* 9 * TRANSACCION:               * TRANSACTION:
* -----*

```

Figure 8. Field_Table_03 (Services Payment Template)

• **Field_Table_04 (Home Shipment Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----*-----*-----*
* 1 * Field Line 1 (user defined w/A7 cmd.) *
* 2 * Field Line 2 (user defined w/A7 cmd.) *
* 3 * Field Line 3 (user defined w/A7 cmd.) *
* 4 * Field Line 4 (user defined w/A7 cmd.) *
* 5 * TIPO DE ENVIO: * SHIP TYPE: *
* 6 * CONTROL NRO.: * CONTROL NBR.: *
* 7 * ADEUDA: * DUE: *
* 8 * FECHA DE ENTREGA: * DELIVERY DATE: *
* 9 * CANASTO: * BASKET: *
* 10 * RECIBI CONFORME * RECEIVE OK: *
* -----*

```

Figure 9. Field_Table_04 (Home Shipment Template)

• **Field_Table_05 (Cash Flow Template)**

```

* -----*
* Field *          MESSAGE DESCRIPTION          *
* Line # *          Spanish                      English                      *
* -----*-----*-----*
* 1 * Field Line 1 (user defined w/A7 cmd.) *
* 2 * Field Line 2 (user defined w/A7 cmd.) *
* 3 * Field Line 3 (user defined w/A7 cmd.) *
* 4 * Field Line 4 (user defined w/A7 cmd.) *
* 5 * RETIROS * WITHDRW *
* 6 * CAMBIO DE VALORES * VALUES EXCHANGE *
* 7 * RECUENTO DE PAGOS * PAYMENTS RECOUNT *
* 8 * RETIRO NRO.: * WITHDRW NB.: *
* 9 * TRANSFERENCIA DE CAJA * CASH TRANSFER *
* 10 * AN * AN *
* 11 * RE * RE *
* 12 * TOT.RECUENTO: * RECOUNT TOT: *
* 13 * TOT.RETIRO: * WITHD.TOT.: *
* 14 * AUTORIZA (POR TECLADO): * KEYBOARD AUTORIZATION: *
* 15 * OPERACION FINALIZADA * OPERATION ENDED *
* 16 * DESCONECTADO * DISCONNECT *
* 17 * CAJA: * CASH: *
* 18 * CAJERO DESHABILITADO: * CASHIER DISABLED: *
* -----*

```

Figure 10. Field_Table_05 (Cash Flow Template)

6.10.3.3 NFH Trailer Table Definition

The trailer table for each template type (tt = template type) is defined as follow:

- **Trailer_Table_tt** (tt range = 00 to 05)

* Field *	MESSAGE DESCRIPTION	
* Line # *	Spanish	English
* 1 *	* Trailer Line 1 (user define w/A7 cmd.) *	*
* 2 *	* Trailer Line 2 (user define w/A7 cmd.) *	*
* 3 *	* Trailer Line 3 (user define w/A7 cmd.) *	*
* 4 *	* Trailer Line 4 (user define w/A7 cmd.) *	*

Figure 11. Trailer_Table_tt (NFH Trailer Table)

6.10.4 A7 - SET NFH INFORMATION

This command is used to set free header, field and trailer lines.

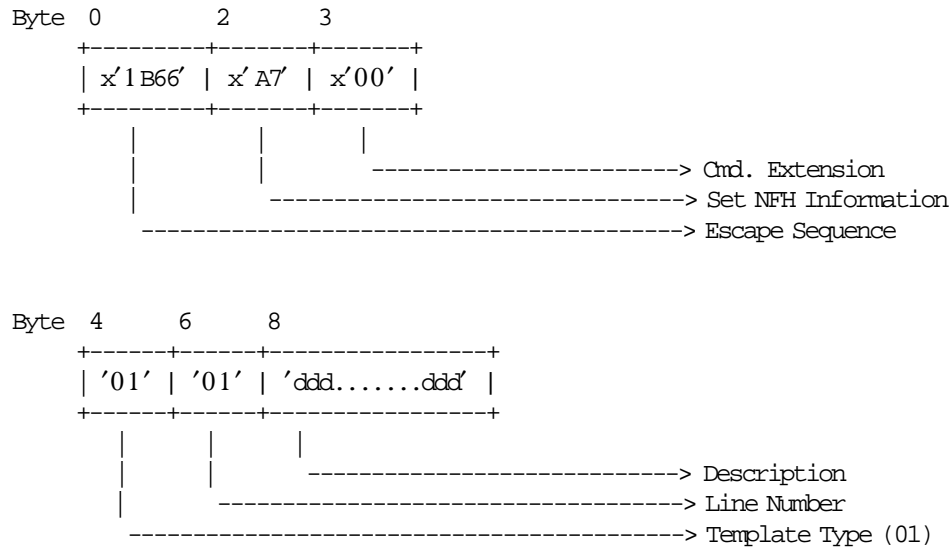
6.10.4.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	A7 - Set NFH Information	hex	1
3	Cmd. Extension	hex	1
7-6	Reserved (always = '0')		
5-3	Print Typeface		(Note 1)
	000 = 15 CPI		
	001 = 12 CPI		
	010 = Reserved		
	011 = 15 CPI Double-High		
	100 = 15 CPI Emphasized		
	101 = 12 CPI Emphasized		
	110 = Reserved		
	111 = 15 CPI Double-High, Emphasized		
2	Reserved (always = '0')		
1-0	Information Type		
	00 = Header Line		
	01 = Field Line		
	10 = Trailer Line		
	11 = Reserved		
4-5	Template Type	ASCII	2 (Note 2)
6-7	Line Number	ASCII	2 (Note 3)
8-45	Description	ASCII	38

Notes:

1. Only apply to header and trailer description lines.
2. The template types can be:
 - 00 = General
 - 01 = Credit Card
 - 02 = Fidelity Programs Voucher
 - 03 = Services Payment
 - 04 = Home Shipment
 - 05 = Cash Flow
3. For each information type and template type, the number lines allowed are from 01 up to 04.

6.10.4.2 Command Example



6.10.4.3 Set NFH Information Calculations

$$Day_N_NFR = Day_N_NFR + 1$$

6.10.4.4 Set NFH Information Rules

- This command is optional.
- The general header description lines can be used in all documents types and are stored in Header_Table_00.
- The header description lines for:
 - Credit card document is stored in Header_Table_01.
 - Fidelity programs voucher document is stored in Header_Table_02.
 - Services payment document is stored in Header_Table_03.
 - Home shipment document is stored in Header_Table_04.
 - Cash flow document is stored in Header_Table_05.

The NFH header table is described in 6.10.3.1, “NFH Header Table Definition” on page 236.

- The general field description lines can be used in all documents types and are stored in Field_Table_00.
- The field description lines for:
 - Credit card document is stored in Field_Table_01.
 - Fidelity programs voucher document is stored in Field_Table_02.
 - Services payment document is stored in Field_Table_03.
 - Home shipment document is stored in Field_Table_04.
 - Cash flow document is stored in Field_Table_05.

The NFH field tables are described in 6.10.3.2, “NFH Field Tables Definition” on page 237.

- The general trailer description lines can be used in all documents types and are stored in Trailer_Table_00.
- The trailer description lines for:
 - Credit card document is stored in Trailer_Table_01.
 - Fidelity programs voucher document is stored in Trailer_Table_02.
 - Services payment document is stored in Trailer_Table_03.
 - Home shipment document is stored in Trailer_Table_04.
 - Cash flow document is stored in Trailer_Table_05.

The NFH trailer table is described in 6.10.3.3, “NFH Trailer Table Definition” on page 240.

- The blank lines or not set, won’t be printed.

6.10.5 A8 - START NFH DOCUMENT

This command is used to start a non-fiscal homologated document.

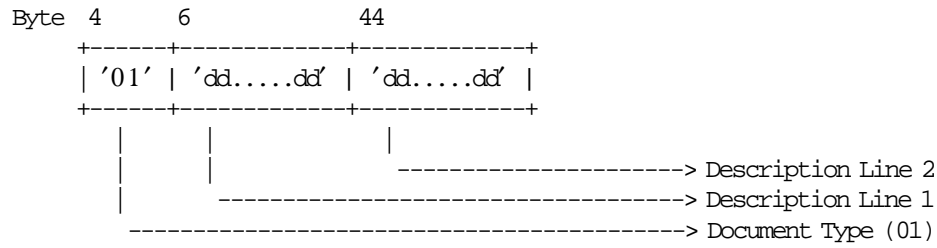
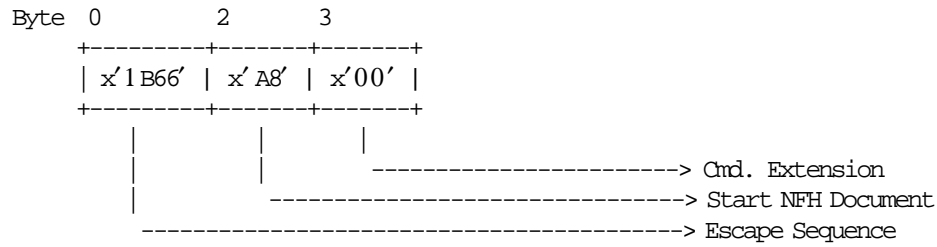
6.10.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		A8 - Start NFH Document	hex	1
3		Cmd. Extension	hex	1
7-6		Reserved (always = '0')		
5-3		Print Typeface		(Note 1)
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2		Print General Header (Header_Table_00)		(Note 2)
		0 = NO		
		1 = YES		
1		Print Document Type Header (Header_Table_01...05)		(Note 2)
		0 = NO		
		1 = YES		
0		Reserved (always = '0')		
4-5		Document Type	ASCII	2 (Note 3)
6-43		Supplementary Header Line 1	ASCII	38
44-81		Supplementary Header Line 2	ASCII	38

Notes:

1. Only apply in supplementary header lines.
2. Will be printed with the typeface and attributes so then were defined during A7 cmd.
3. The documents types can be:
 - 01 = Credit Card
 - 02 = Fidelity Programs Voucher
 - 03 = Services Payment
 - 04 = Home Shipment
 - 05 = Cash Flow

6.10.5.2 Command Example



6.10.5.3 Start NFH Document Rules

- This command is optional.

6.10.6 A9 - PRINT NFH FIELD

This command is used to print non-fiscal homologated fields.

6.10.6.1 Command Format

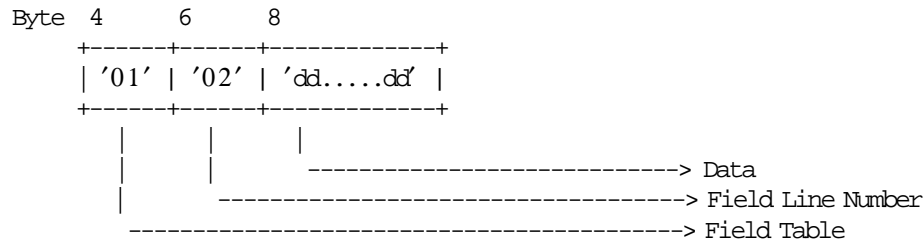
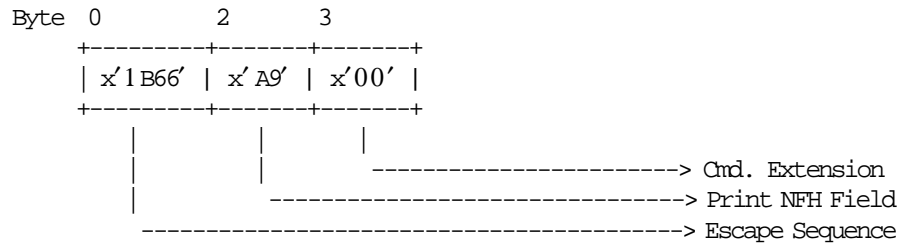
BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - cmd prefix	hex	2
2		A9 - Print NFH Field	hex	1
3		Cmd. Extension	hex	1
7-6		Reserved (always = '0')		
5-3		Print Typeface		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2-0		Reserved (always = '0')		
4-5		Field Table	ASCII	2 (Note 1)
6-7		Field Line Number	ASCII	2
8-45		Data	ASCII	38

Notes:

1. The field table can be:

- If NFH Document IS NOT in Progress (FOPNNFH = NO)
 - 01 = Field_Table_01 (Credit Card Template)
 - 02 = Field_Table_02 (Fidelity Programs Voucher Template)
 - 03 = Field_Table_03 (Services Payment Template)
 - 04 = Field_Table_04 (Home Shipment Template)
 - 05 = Field_Table_05 (Cash Flow Template)
- If NFH Document IS in Progress (FOPNNFH = YES)
 - 00 = Field_Table_00 (General Template)
 - 01 = Field_Table_01 (Credit Card Template)
 - 02 = Field_Table_02 (Fidelity Programs Voucher Template)
 - 03 = Field_Table_03 (Services Payment Template)
 - 04 = Field_Table_04 (Home Shipment Template)
 - 05 = Field_Table_05 (Cash Flow Template)

6.10.6.2 Command Example



6.10.6.3 Print NFH Field Rules

- The data field will be truncated to 38 characters which include the message description defined in Field_Table_tt (tt range from 00 to 05).
The NFH field tables are described in 6.10.3.2, “NFH Field Tables Definition” on page 237.
- Only a total of 4 field lines (user defined w/A7 cmd.) can be printed in any place of the document.
- The string TOTAL in upper, lower or mixed case is not allowed in the data field of this command.
- The string TOTAL in upper, lower or mixed case is not allowed in the message description defined in Field_Table_tt (tt range from 00 to 05).

6.10.7 AA - END NFH DOCUMENT

This command is used to end a non-fiscal homologated document.

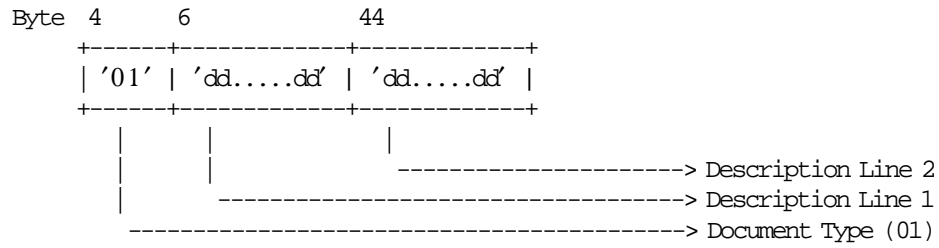
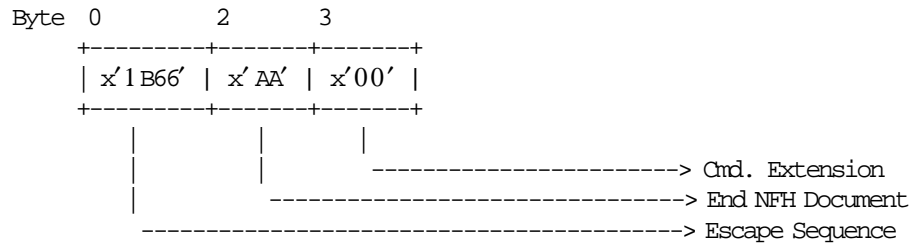
6.10.7.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	AA - End NFH Document	hex	1
3	Cmd. Extension	hex	1
7-6	Reserved (always = '0')		
5-3	Print Typeface		(Note 1)
	000 = 15 CPI		
	001 = 12 CPI		
	010 = Reserved		
	011 = 15 CPI Double-High		
	100 = 15 CPI Emphasized		
	101 = 12 CPI Emphasized		
	110 = Reserved		
	111 = 15 CPI Double-High, Emphasized		
2	Print General Trailer (Trailer_Table_00)		
	0 = NO		
	1 = YES		
1	Print Trailer for Document Type (Trailer_Table_01...05)		(Note 2)
	0 = NO		
	1 = YES		
0	Reserved (always = '0')		
4-5	Document Type	ASCII	2 (Note 3)
6-43	Supplementary Trailer Line 1	ASCII	38
44-81	Supplementary Trailer Line 2	ASCII	38

Notes:

1. Only apply in supplementary trailer lines.
2. Will be printed with the typeface and attributes so then were defined during A7 cmd.
3. The documents types can be:
 - 01 = Credit Card
 - 02 = Fidelity Programs Voucher
 - 03 = Services Payment
 - 04 = Home Shipment
 - 05 = Cash Flow

6.10.7.2 Command Example



6.10.7.3 End NFH Document Calculations

$$Day_N_NFHD = Day_N_NFHD + 1$$

6.10.7.4 End NFH Document Rules

There are not rules for this command.

6.10.8 AB - CANCEL NFH DOCUMENT

This command is used to cancel a non-fiscal homologated document.

6.10.8.1 Command Format

```

-----

```

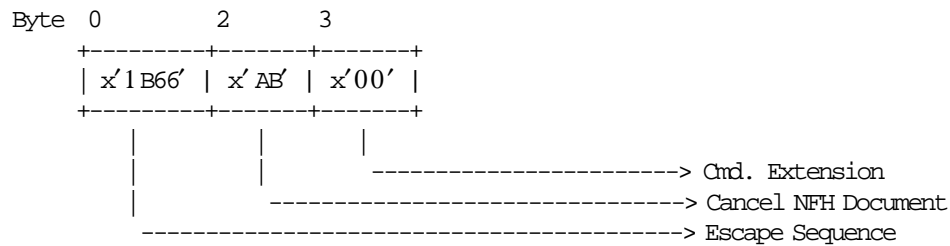
BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	AB - Cancel NFH Document	hex	1
3	Cmd. Extension	hex	1
7-0	Reserved (always = '0x00')		

```

-----

```

6.10.8.2 Command Example



6.10.8.3 Cancel NFH Document Rules

There are not rules for this command.

6.11 Miscellaneous Commands

The miscellaneous commands include:

- 08 - Retrieve/Send Interrupted Command
- C8 - Set Barcode Parameters
- C9 - Print Barcode
- CA - Download Graphics

6.11.1 08 - RETRIEVE/SEND INTERRUPTED COMMAND

This command is used to retrieve or send the same command that was in progress when a PLD or printer error occurred and returns it as part of the command response.

6.11.1.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command prefix	hex	2
2		08 - Retrieve/Send Interrupted Command	hex	1
3		Cmd. Extension	hex	1
		00 = Fixed Response Length		(Note 1)
		01 = Variable Response Length		(Note 2)
		02 = Informed Response Length		(Note 3)
		03 = Send Interrupted Command		(Note 4)
		04 = Send Interrupted Command		(Note 5)

Notes:

1. The length of the command response is fixed always.
2. The length of the command response is variable depending the command to retrieve.
3. The length of the command to retrieve is informed in the response and the command response have these length.
4. Using this cmd. extension: if a command is in progress when a PLD or printer error occur the interrupted command is sent, otherwise error code 165 is returned.
5. Using this cmd. extension: if a command is in progress when a PLD or printer error occur the interrupted command is sent, otherwise no actions are executed and error code 67 is returned.

Response for Cmd. Extension 00 will be formatted as follows :

BYTE	BYTE	CONTENT	TYPE	LENGTH
RS-485	USB			
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15
9-127	15-132	Command Response	ASCII	118

Response for Cmd. Extension 01 will be formatted as follows :

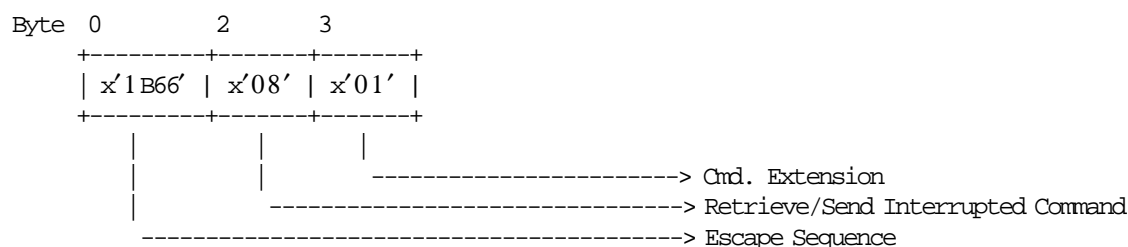
BYTE	BYTE	CONTENT	TYPE	LENGTH
RS-485	USB			
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15

9	15	Record Type	hex	1
10-nnn	16-nnn	Command Response	ASCII	nnn

Response for Cmd. Extension 02 will be formatted as follows :

BYTE	BYTE	CONTENT	TYPE	LENGTH
RS-485	USB			
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15
9	15	Record Type	hex	1
10	16	Length	hex	1
11-nnn	17-nnn	Command Response	ASCII	nnn

6.11.1.2 Command Example



6.11.1.3 Retrieve/Sale Interrupted Command Rules

- This command is allowed if a PLD or printed error occurs before.
- This command is optional.
- Using this command, the following commands can be retrieved or send after PLD or printer error:
 - 01 - Ticket - Print Header
 - D0 - Ticket - Fixed Price Item Sale
 - D1 - Ticket - Fixed Price Negative/Uplift Item Sale
 - D2 - Ticket - Item Sale
 - D3 - Ticket - Negative or Uplift Item Sale
 - D9 - Ticket - Uplift/Discount on Subtotal
 - 06 - Ticket - End
 - 07 - Ticket - Cancel
 - E0 - Ticket Invoice - Print Header
 - B0 - Ticket Invoice - Fixed Price Item Sale
 - B1 - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
 - B2 - Ticket Invoice - Item Sale
 - B3 - Ticket Invoice - Negative/Uplift Item Sale
 - B9 - Ticket Invoice - Uplift/Discount on Subtotal
 - E3 - Ticket Invoice - End
 - 0F - Ticket Invoice - Cancel
 - 30 - Credit Note - Print Header
 - 31 - Credit Note - Fixed Price Item Sale
 - 32 - Credit Note - Fixed Price Negative/Uplift Item Sale
 - 33 - Credit Note - Item Sale
 - 34 - Credit Note - Negative/Uplift Item Sale
 - 37 - Credit Note - Uplift/Discount on Subtotal
 - 39 - Credit Note - End
 - 3A - Credit Note - Cancel

- C9 - Print Barcode
- EA - Ordinary Printing Line on CR/SJ Station
- EB - Ordinary Printing Line on DI Station
- E9 - Printer Native Commands

6.11.2 C8 - SET BARCODE PARAMETERS

This command is used to set the barcode parameters.

6.11.2.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		C8 - Set Barcode Parameters	hex	1
3		Cmd. Extension	hex	1
		00 = Size Selection		
If Cmd. Extension = 00 Specify				
4		Barcode Width	ASCII	1 (Note 1)
5-7		Barcode Height	ASCII	3 (Note 2)

Notes:

1. Horizontal magnification of the line width in the barcode.
Minimum = 2
Maximum = 4
2. The dot height of the barcode.
Minimum = 001
Maximum = 255

6.11.2.2 Set Barcode Parameters Rules

- Horizontal default magnification of the line width is 3.
- The dot height default is 162.
- These settings will remain after power-off and will be reset to default only after PLD or J4/CE jumper operation.
- For barcode printing in DI station, height value range from 3 to 5. Values out of this range will be set to its closest valid value while printing on DI.

6.11.3 C9 - PRINT BARCODE

This command is used to print barcode.

6.11.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		C9 - Print Barcode	hex	1
3		Cmd. Extension	hex	1
	7	Reserved (always = '0')		
	6	HRI font 1 = 12 CPI 0 = 15 CPI		(Note 1)
	5-4	HRI location 00 = Not printed 01 = Above the barcode 10 = Below the barcode 11 = Both above and below the barcode		(Note 2)
	3-0	Barcode Type 0000 = UPC_A 0001 = UPC_E 0010 = JAN13 (EAN-13) 0011 = JAN8 (EAN-8) 0100 = CODE39 0101 = ITF 0110 = CODABAR 0111 = CODE128 (C) 1000 = CODE93 1001 = Reserved 1010 = Reserved 1011 = Reserved 1100 = Reserved 1101 = Reserved 1110 = Reserved 1111 = Reserved		
	4-n	Barcode Data	ASCII	n (Note 3)

Notes:

1. The Human Readable Characters font, if it must be printed.
2. Printing Position of the Human Readable Characters.
3. Data to be encoded in the barcode.
 - Data must be null terminated.
 - Excess characters will be discarded.
 - If a x'00 or an invalid char is received before the required number of data bytes, zeros will be inserted following the data until the required number of bytes is reached. This is for UPC-A, UPC-E, JAN8 and JAN13.
 - A check digit will be generated if one is not supplied for UPC-A and JAN13.
 - UPC-E will generate it's own check characters. The printer will expand the data, generate a check digit and then parse the data before generating the bar code. Six or seven digits will be expected. If seven digits are received and the first is a zero, then the last 6 bytes

will be used to generate the bar code. If the first digit is not a zero, then the first six bytes will be used to generate the bar code and the seventh byte ignored.

- A leading zero will be added to the data for ITF bar codes if the data received has an odd number of bytes.
- Check digits will be figured and added for Code 128 and Code 93.

6.11.3.2 Print Barcode Rules

- In barcode types CODE39 and CODE93, if the width is ≥ 3 , the barcode might not fit in the sheet. In this case, it will be truncated.
- The barcodes can be printed:
 - **Inside of non-fiscal homologated documents**
 - Is printed without restrictions in times and place.
 - Is printed on CR station without SJ replication.
 - **Inside of application-originated reports**
 - Has the same considerations of a ordinary printing line.
 - If the report is started on CR station, the barcode is printed on CR station with SJ replication.
 - If the report is started on SJ station, the barcode is printed on SJ station without CR replication.
 - If the report is started on DI station, the barcode is printed on DI station without SJ replication.

6.11.4 CA - DOWNLOAD GRAPHICS

This command is used to download graphics.

6.11.4.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Cmd Prefix	hex	2
2		CA - Download Graphics	hex	1
3		Cmd. Extension	hex	1
		00 = Reserved		
		01 = Reserved		
		02 = Download First Packet		(Note 1)
		08 = Download Next Packet		
		09 = Download Last Packet		
		0A = Cancel Graphics Transmission		
		10 = Initialize Graphics Download Area		
		11 = Reserved		
		12 = Reserved		
		If Cmd. Extension = 02 specify		
4		Width	hex	1 (Note 2)
5		Height	hex	1 (Note 2)
6		Graphic Number	hex	1 (Note 3)
7-65		First Pixels in Graphics	hex	59
		If Cmd. Extension = 08 or 09 specify		
4-65		Pixels in Graphics	hex	62

Notes:

1. If the number of data bytes exceeds 61 or 62 (depending on the cmd. extension), the POS will need to send a next or last packet after the first packet.
2. The number given in this field is expressed in bytes, it should be multiplied by 8 in order to get the number of pixels.
3. Valid value is x01.

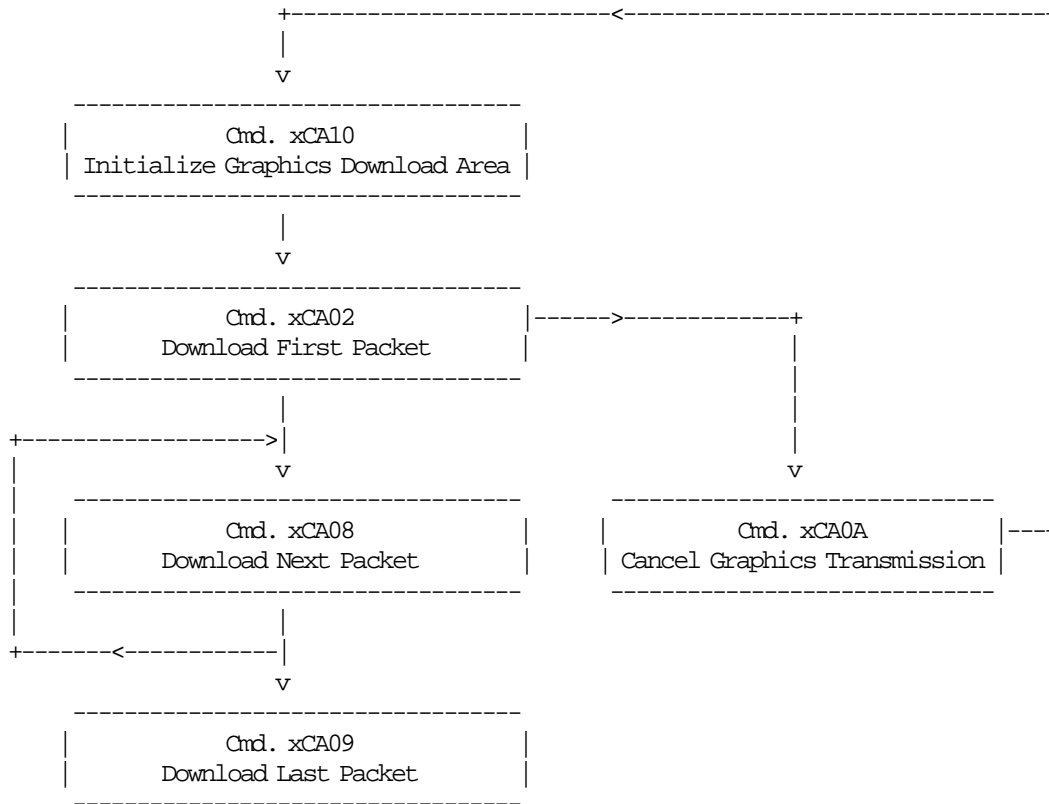
Response to the Cmd. Extension 02 will be formatted as follows:

BYTE RS-485	BYTE USB	CONTENT	TYPE	LENGTH
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15
9	15	CA - Record Identification	hex	1
10	16	Return Code	hex	1
		43 = Good Completion		
		74 = Invalid Sequence		
		75 = Invalid Size		
		76 = Invalid Graphic Number		
		77 = Graphic with same number already in printer flash		

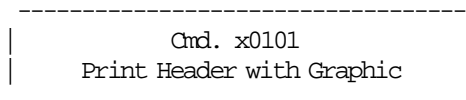
Response to the Cmd. Extension 08 or 09 will be formatted as follows:

BYTE RS-485	BYTE USB	CONTENT	TYPE	LENGTH
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15
9	15	CA - Record Identification	hex	1
10	16	Return Code	hex	1
		43 = Good Completion		
		74 = Invalid Sequence		

6.11.4.2 Download Graphics Flow



6.11.4.3 Print Graphics Flow



6.11.4.4 Print Graphic Example.

In order to understand the graphic data format used for the fiscal printer an example will be given.

- The number of bytes per row is specified in the width field and they represent the graphic row from left to right. The leftmost pixel is the most significant bit.
- The first data bytes correspond to the upper row.
- The last data bytes correspond to the bottom row.
- A bit should be set to '1' when the corresponding pixel is black and '0' when it is white. In the example below the 'X's are black and the '.'s are white.

Example: width = 2 (16 pixels) & height = 2 (16 pixels)

Column #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Data Bytes
Row #																	
0	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	1 2
1	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	3 4
2	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	5 6
3	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	7 8
4	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	9 10
5	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	11 12
6	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	13 14
7	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	15 16
8	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	17 18
9	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	19 20
10	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	21 22
11	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	23 24
12	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	25 26
13	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	27 28
14	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	29 30
15	.	X	.	X	.	X	.	X	.	X	.	X	.	X	.	X	31 32

Send the following packet in order to set the above graphic in 200 DPI in the CR station.
The semicolons (;) are used only to separate bytes in this example.

```
X'1B;66;CA;02;02;02;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;AA;55;55;55;55;55;55;55;55;55;55;55;55;55'
```

Figure 12. Print Graphic Example.

6.11.4.5 Download Graphics Rules

- The graphic printing is allowed in the header ticket.
- When a PLD, J4/CE jumper intervention, reset printer or cancel graphics transmission occur during the download packet, the graphics download area is corrupted. In this case, issue initialize graphics download area (CA cmd. - cmd. extension 10) and then download packet again.
- All graphics will be printed always at 200 DPI.
- The maximum size allowed for one graphic is 62 x 21 bytes (representing 496 x 168 pixels).

6.11.5 CD - CASH DRAWER MANAGEMENT

ONLY VALID FOR 4610 USB.

This command is used to open and read status of the chash drawer.

6.11.5.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - Cmd Prefix	hex	2
2	CD - Cash Drawer Management	hex	1
3	Cmd. Extension	hex	1
	00 = Open Cash Drawer		
	01 = Get Cash Drawer Status		
If Cmd. Extension = 00 specify			
4	Cash Drawer Number	hex	1 (Note 1)
5	Pulse Width ON Time	hex	1 (Note 2)
6	Pulse Width OFF Time	hex	1 (Note 2)

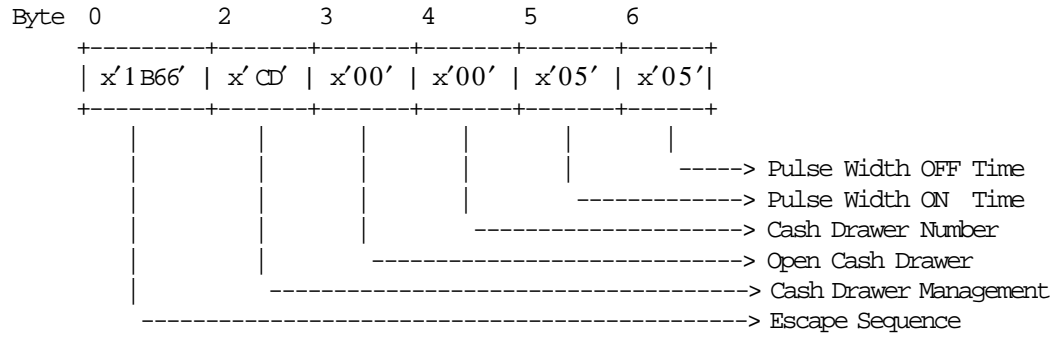
Notes:

1. Numbers allowed: 0 and 1.
2. The value given in this field must be multiplied by 2 in order to get the pulse width on/off in milliseconds.
Range allowed: from x00 to xFF.

Response to the Cmd. Extension 01 will be formatted as follows:

BYTE BIT	CONTENT	TYPE	LENGTH
0-14	Fiscal Unit Status	hex	15
15	Cash Drawer Status	hex	1
	00 = Open		
	01 = Close		

6.11.5.2 Command Example



6.12 Training Mode Rules

- After serialization and before fiscalization the machine is in training mode.
- In this mode the machine allows regular operations without writing in the fiscal memory.
- In this mode the following fiscal documents are allowed:
 - Ticket
 - Ticket Invoice
 - Credit Note
 - Daily Closure (Z-Report)
- In this mode the following non-fiscal documents are allowed:
 - Credit Card Slips
 - Summary Fiscal Report (X-Report)
 - Application-Originated Reports
 - Engineering Dump of the Fiscal RAM and the Fiscal Memory (Unformatted)
 - Non-Fiscal Homologated Documents
- Fiscal Documents:
 - The blanks characters are replaced by question marks (?).
 - Are started with a "NO FISCAL" message line.
 - Is insert a "NO FISCAL" message line each 6 lines.
 - Are ended with a "NO FISCAL" message line.
 - Count is kept of empty lines.
 - For control paper in ticket invoice or credit note, the number of lines to print during a command is:
$$\text{Mis_N_Cmd_Lines_To_Print} = \text{Mis_N_Cmd_Lines_To_Print in fiscal mode} + \text{"NO FISCAL" message lines.}$$
- Application-originated Reports:
 - Are started with a "NO FISCAL" message line.
 - Are inserted a "NO FISCAL" message line each 6 lines.
 - Are ended with a "NO FISCAL" message line.
 - Count is kept of empty lines.
- Non-Fiscal Homologated Documents
 - Are printed as in fiscal mode.
- The fiscal logo will not be printed.

6.13 Printer Commands

The printer commands include:

- EA - Ordinary Printing Line on CR/SJ Station
- EB - Ordinary Printing Line on DI Station
- EC - Line Feed
- ED - Ready Document
- EE - Cut Paper
- E8 - Set Number of Dot Rows per Line Feed
- EF - Document Eject
- F4 - Head Position & Open/Close Throat

There are no calculations performed for any printer commands.

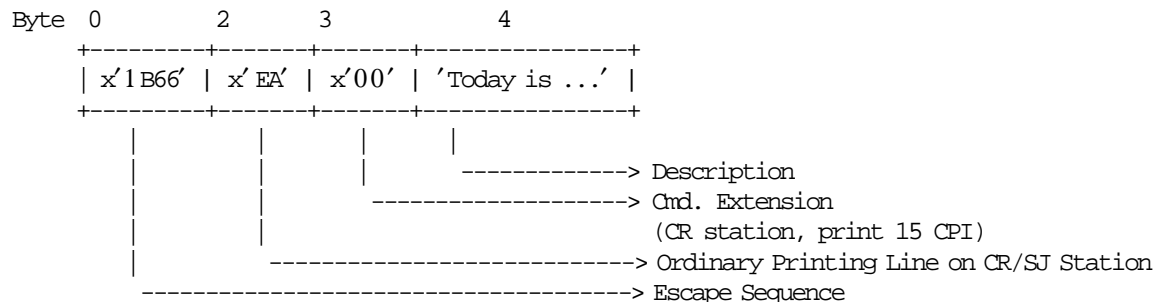
6.13.1 EA - ORDINARY PRINTING LINE ON CR/SJ STATION

This command is used to print one line on customer receipt and summary journal stations. To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

6.13.1.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		EA - Ordinary Printing Line on CR/SJ Station	hex	1
3		Cmd. Extension	hex	1
	7	Reserved (always = '0')		
	6	Station 0 = CR 1 = SJ		
	5-3	Print Typeface 000 = 15 CPI 001 = 12 CPI 010 = Reserved 011 = 15 CPI Double-High 100 = 15 CPI Emphasized 101 = 12 CPI Emphasized 110 = Reserved 111 = 15 CPI Double-High, Emphasized		
	2-0	Reserved (always = '0')		
4-41		Description	ASCII	38

6.13.1.2 Command Example



6.13.1.3 Ordinary Printing Line on CR/SJ Station Calculations

There are no calculations for this command.

6.13.1.4 Ordinary Printing Line on CR/SJ Station Rules

- Ordinary printing lines can be printed during a applications-originated reports.
- Ordinary printing lines can be printed during a ticket after the payment phase.
- Ordinary printing lines can be printed during a non-fiscal homologated reports.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.13.2 EB - ORDINARY PRINTING LINE ON DI STATION

This command is used to print one line on document insert station.

To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

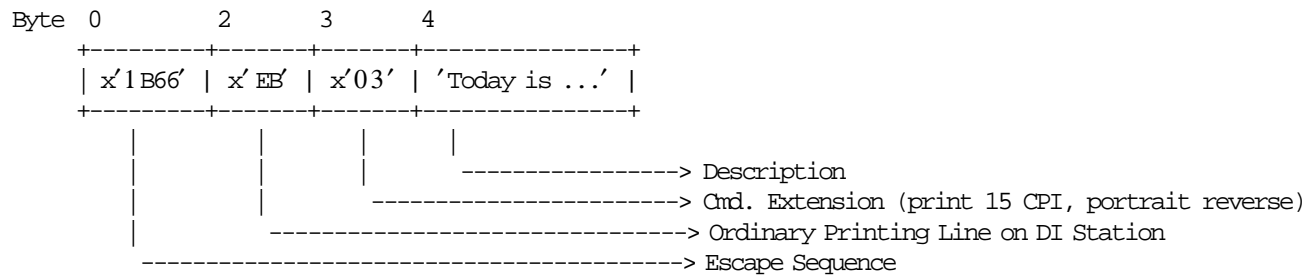
6.13.2.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - Command Prefix	hex	2
2		EB - Ordinary Printing Line on DI Station	hex	1
3		Cmd. Extension	hex	1
7-6		Reserved (always = '0')		
5-3		Print Typeface		
		000 = 15 CPI		
		001 = 12 CPI		
		010 = Reserved		
		011 = 15 CPI Double-High		
		100 = 15 CPI Emphasized		
		101 = 12 CPI Emphasized		
		110 = Reserved		
		111 = 15 CPI Double-High, Emphasized		
2-0		Orientation Print and Linefeed Direction		
		000 = Reserved		
		001 = Reserved		
		010 = Reserved		
		011 = Portrait - Reverse		
		100 = Reserved		
		101 = Reserved		
		110 = Portrait - Forward		
		111 = Reserved		
4-89		Description	ASCII	86 (Note 1)

Notes:

1. Description field will be truncated as follows:
Portrait orientation at 15 CPI to 38 characters.
Portrait orientation at 12 CPI to 30 characters.

6.13.2.2 Command Example



6.13.2.3 Control Paper Calculations

- **If Ticket Invoice is in Progress**

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_TI_Lines_To_Print - Mis_N_Lines_Printed$$

- **If 1st. Ordinary Printing Line**

$$Mis_N_Cmd_Lines_To_Print = Totalization_Lines + 1$$

- **If 2nd., 3st or 4th Ordinary Printing Line**

$$Mis_N_Cmd_Lines_To_Print = 1$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_TI_End_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

- **If 2nd., 3st or 4th Ordinary Printing Line**

$$Mis_N_Lines_Avail_To_Print = Mis_N_Lines_Avail_To_Print - Mis_N_Lines_Printed$$

- **If Credit Note is in Progress**

- **Before the lines are printed**

$$Mis_N_Lines_Avail_To_Print = Mis_N_CN_Lines_To_Print - Mis_N_Lines_Printed$$

- **If 1st. Ordinary Printing Line**

$$Mis_N_Cmd_Lines_To_Print = Totalization_Lines + 1$$

- **If 2nd., 3st or 4th Ordinary Printing Line**

$$Mis_N_Cmd_Lines_To_Print = 1$$

- If $Mis_N_Lines_Avail_To_Print < Mis_N_Cmd_Lines_To_Print + Mis_N_CN_End_Lines_To_Print$

Return_Code 125

- **After the lines were printed correctly**

$$Mis_N_Lines_Printed = Mis_N_Lines_Printed + Mis_N_Cmd_Lines_To_Print$$

- **If 2nd., 3st or 4th Ordinary Printing Line**

Mis_N_Lines_Avail_To_Print = Mis_N_Lines_Avail_To_Print - Mis_N_Lines_Printed

6.13.2.4 Ordinary Printing Line on DI Station Rules

- Ordinary printing lines can be printed during applications-originated reports.
- Ordinary printing lines can be printed during a ticket invoice after the payment phase.
- Ordinary printing lines can be printed during a credit note after the payment phase.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

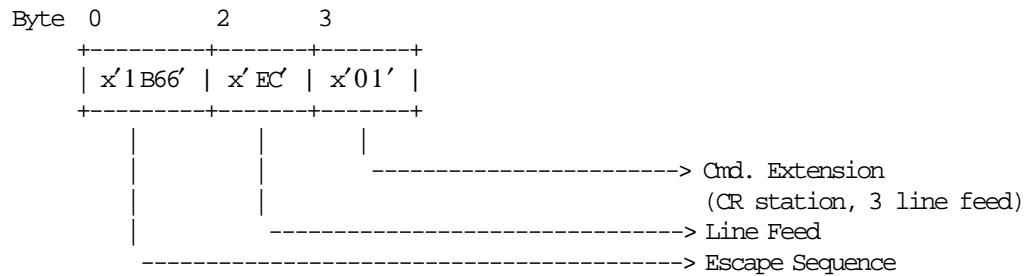
6.13.3 EC - LINE FEED

This command is used to feed the paper a specified number of lines on one of the printer stations. To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

6.13.3.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		EC - Line Feed	hex	1
3		Cnd. Extension	hex	1
7-6		Reserved (always = '0')		
5-4		Station		
		00 = CR		
		01 = SJ		
		10 = DI Portrait - Forward		
		11 = DI Portrait - Reverse		
3-0		Number of Line Feeds (min 1, max 15)		

6.13.3.2 Command Example



6.13.3.3 Line Feed Rules

- This command is allowed inside of application-originated reports and non-fiscal homologated documents.

6.13.6 E8 - SET NUMBER OF DOT ROWS PER LINE FEED

This command is used to change the number of dot rows per line feed from 12 (default - 6 lines/inch) to 9 (alternate - 8 lines/inch).

To execute this command the serialize fiscal printer (1B cmd.) had to be previously executed.

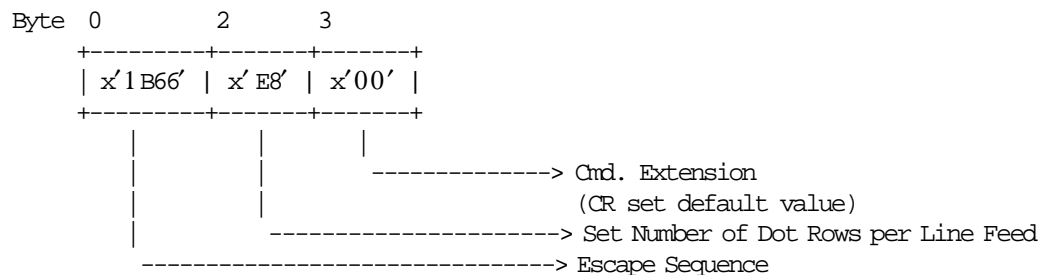
6.13.6.1 Command Format

```
-----
```

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		E8 - Set Number of Dot Rows per LF	hex	1
3		Cmd. Extension	hex	1
7-3		Reserved (always = '0')		
2		DI Station (Portrait)		
		0 = Set Default Value (6 lines/inch)		
		1 = Set Alternate Value (8 lines/inch)		
1		SJ Station		
		0 = Set Default Value (6 lines/inch)		
		1 = Set Alternate Value (8 lines/inch)		
0		CR Station		
		0 = Set Default Value (6 lines/inch)		
		1 = Set Alternate Value (8 lines/inch)		

```
-----
```

6.13.6.2 Command Example



6.13.6.3 Set Number of Dot Rows per Line Feed Rules

- The number of dot rows per line feed are restored to the default value when RAM is cleared by installing the J4/CE jumper.

6.13.7 EF - DOCUMENT EJECT

This command is used to request the printer to line feed a document until EOF sensor is broken.

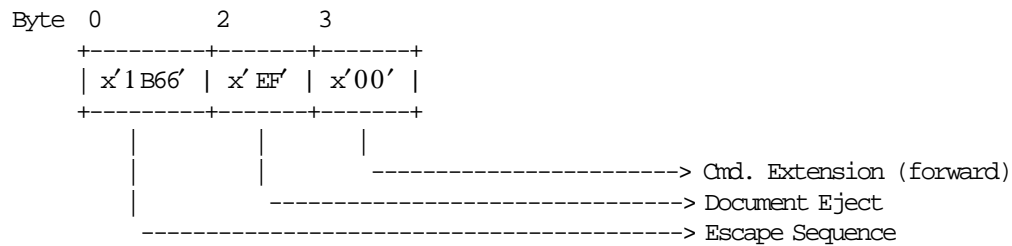
6.13.7.1 Command Format

```
-----
```

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - command prefix	hex	2
2	EF - Document Eject	hex	1
3	Cmd. Extension	hex	1
7-1	Reserved (always = '0')		
0	Line Feed Direction		
	0 = Forward		
	1 = Reverse		

```
-----
```

6.13.7.2 Command Example



6.13.7.3 Document Eject Rules

- Either forward feed or reverse feed can be specified.

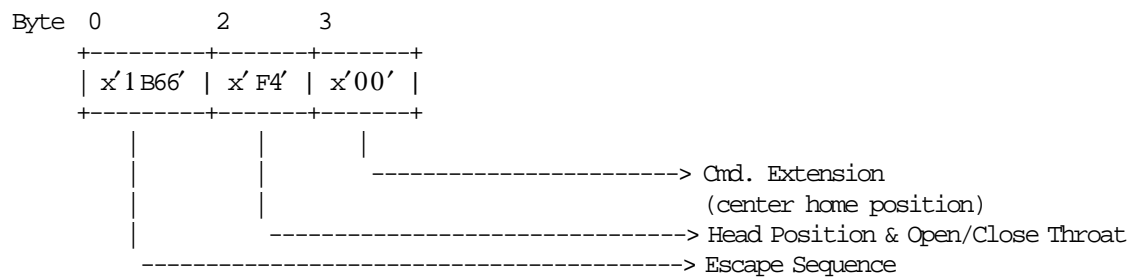
6.13.8 F4 - HEAD POSITION & OPEN/CLOSE THROAT

This command requests the printer to return the print head to center or left home position.

6.13.8.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		F4 - Head Position & Open/Close Throat	hex	1
3		Cmd. Extension	hex	1
7-2		Reserved (always = '0')		
1-0		Head Position and Throat		
		00 (00) = Right		
		01 (01) = Left		
		10 (02) = Open Throat		
		11 (03) = Close Throat		

6.13.8.2 Command Example



6.13.8.3 Head Position & Open/Close Throat Rules

- Either center or left home position can be specified.

6.14 Original Equipment Manufacturer Commands

The OEM commands include:

- 00 - System Commands
- E7 - Diagnostic and Alignment Utilities
- E9 - Printer Native Commands
- F8 - Communicate Printer EC
- FA - Reset Fiscal Printer
- FB - Run Diagnostics
- FC - Communicate Microcode EC
- FF - Dump Fiscal RAM and Fiscal Memory

6.14.1 00 - SYSTEM COMMANDS

System commands are processed as follows:

Test – First a fiscal unit test is performed and then the fiscal unit status is sent over the communication link.

Status – The fiscal unit status is sent over the communication link.

POR – The microcode performs a software fiscal unit POR.

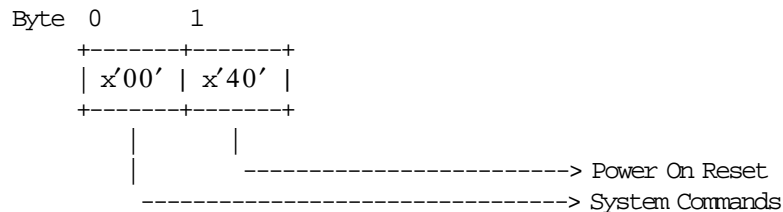
EC level – Bytes 6 and 7 of the fiscal unit status followed by the 1 microcode EC level byte are sent over the communication link.

6.14.1.1 Command Format

BYTE	CONTENT	TYPE	LENGTH
0	00 - System Commands	hex	1
1	10 - Test	hex	1
	20 - Status		
	40 - POR		
	80 - EC LEVEL		

If command byte 1 is different than those defined here, no processing is performed and no response is given.

6.14.1.2 Command Example



6.14.1.3 System Commands Rules

- This command cannot be used by applications using the IBM device drivers. It is intended for device driver use only.

6.14.2 E7 - DIAGNOSTIC AND ALIGNMENT UTILITIES

This command is used to diagnostics and alignmets.

6.14.2.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	E7 - Diagnostic and Alignment Utilities	hex	1
3	Cmd. Extension	hex	1
	00 = Set MCT Value		
	01 = DI Print Document Top Registration Pattern		
	02 = DI Print Document Botton Registration Pattern		
	03 = DI Print Backlash Adjustment Pattern		
	04 = DI Print Reinsertion Adjustment Pattern		
	05 = CR Read MCT Value		
	06 = Reserved		
	07 = Reserved		
	08 = CR Print Test Command		
	09 = SJ Print "HIHI...HIHI" Pattern		
	0A = DI Print "HIHI...HIHI" Pattern		
	0B = DI Character Alignment		
	0C = DI MICR Read, Print Front Check, Print Back Check & CR Print MICR data		
	0D = CR Cut Paper		
	0E = DI Home Head Left		
	0F = DI Home Head Right		
If Cmd. Extension = 00 or 01			
4-4	MCT Number	hex	1
5-5	MCT Value - High Order Byte	hex	1
6-6	MCT Value - Low Order Byte	hex	1

(Continued in the next page)

Diagnostic and Alignment Utilities Command continued

BYTE	BIT	CONTENT	TYPE	LENGTH
If Cmd. Extension = 03 or 0B				
4-4		MCT Number 1	hex	1
5-5		MCT Value 1 - High Order Byte	hex	1
6-6		MCT Value 1 - Low Order Byte	hex	1
7-7		MCT Number 2	hex	1
8-8		MCT Value 2 - High Order Byte	hex	1
9-9		MCT Value 2 - Low Order Byte	hex	1
10-10		MCT Number 3	hex	1
11-11		MCT Value 3 - High Order Byte	hex	1
12-12		MCT Value 3 - Low Order Byte	hex	1
13-13		MCT Number 4	hex	1
14-14		MCT Value 4 - High Order Byte	hex	1
15-15		MCT Value 4 - Low Order Byte	hex	1
16-16		MCT Number 5	hex	1
17-17		MCT Value 5 - High Order Byte	hex	1
18-18		MCT Value 5 - Low Order Byte	hex	1
19-19		MCT Number 6	hex	1
20-20		MCT Value 6 - High Order Byte	hex	1
21-21		MCT Value 6 - Low Order Byte	hex	1
22-22		MCT Number 7	hex	1
23-23		MCT Value 7 - High Order Byte	hex	1
24-24		MCT Value 7 - Low Order Byte	hex	1
25-25		MCT Number 8	hex	1
26-26		MCT Value 8 - High Order Byte	hex	1
27-27		MCT Value 8 - Low Order Byte	hex	1
28-28		MCT Number 9	hex	1
29-29		MCT Value 9 - High Order Byte	hex	1
30-30		MCT Value 9 - Low Order Byte	hex	1
If Cmd. Extension = 05				
4-4		MCT Number	hex	1

(Continued in the next page)

Diagnostic and Alignment Utilities Command continued

Response to the Diagnostic and Alignment Utilities Command for Read MCT Value (Cmd. Extension 05):

BYTE	BYTE	CONTENT	TYPE	LENGTH
RS-485	USB			
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15
9	15	MCT Value - High Order Byte	hex	1
10	16	MCT Value - Low Order Byte	hex	14

6.14.2.2 Command Example

```
Byte 0      2      3
+-----+-----+-----+
| x'1B66' | x'E7' | x'00' |
+-----+-----+-----+
          |         |         |
          |         |         |-----> Cmd. Extension (set MCT value)
          |         |         |-----> Diagnostic and Alignment Utilities
          |         |         |-----> Escape Sequence
```

6.14.2.3 Diagnostic and Alignment Utilities Rules

- The printed documents are fixed format and cannot be modified by the users.
- The printed documents on CR, SJ or DI stations are not replicated.

6.14.3 E9 - PRINTER NATIVE COMMANDS

This command is used to execute the printer native commands.

To execute this command the serialize fiscal printer (1B cmd.) has to be executed before.

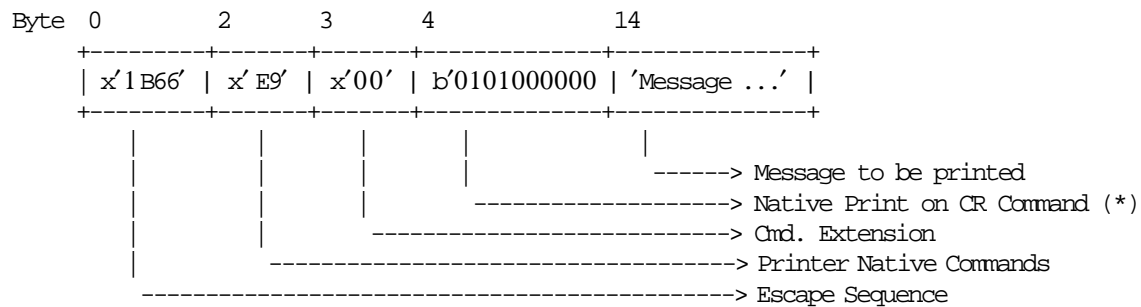
6.14.3.1 Command Format

```
-----
```

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		E9 - Printer Native Commands	hex	1
3		Cmd. Extension	hex	1
7-0		Reserved (always = '0x00')		
4-n		Start of Model 3 printer commands and data. The Model 3 printer interface can be obtained through IBM Corporate Relations.		

```
-----
```

6.14.3.2 Command Example



(*) See Model 3 Printer Operation Manual.

6.14.3.3 Printer Native Commands Rules

- This command is not intended for application programs.
- It is only intended for use by device drivers to provide compatibility with the Model 3 printer for application-originated printing.
- The string TOTAL in upper, lower, or mixed case is not allowed in the description field of this command.

6.14.4 F8 - REPORT PRINTER EC

This command is used to request the fiscal unit to report the printer EC level. Printer EC level is returned in the fiscal unit status.

6.14.4.1 Command Format

BYTE BIT	CONTENT	TYPE	LENGTH
0-1	1B66 - cmd prefix	hex	2
2	F8 - Report Printer EC	hex	1
3	Cmd. Extension	hex	1
	00 (00) = Fiscal Unit		
	01 (01) = Fiscal Device Information		
	10 (02) = Printer Device Information		

Response to the Fiscal Unit:

BYTE	BYTE	CONTENT	TYPE	LENGTH
RS-485	USB			
0-8		Fiscal Unit Status	hex	9
	0-14	Fiscal Unit Status	hex	15

Response to the Fiscal Device Information:

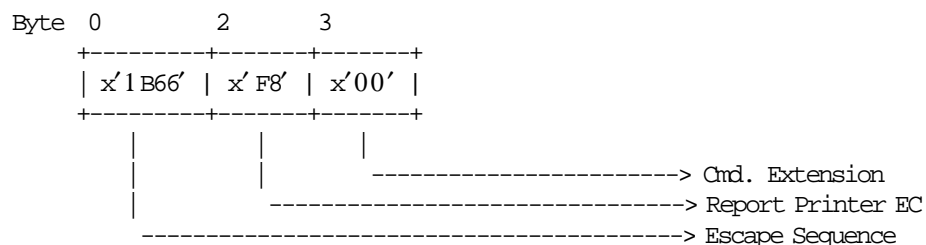
BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH
RS-485	USB				
0-5			PRINTER STATUS	hex	6
	0-7		PRINTER STATUS	hex	8
6	8		FISCAL STATUS & DEVICE INFO	hex	1
	7-1		Fiscal Status		
	0		(For RS-485) Fiscal/Printer Device Info		
			0 = Fiscal Device Info is NOT contained in this message		
			1 = Fiscal or Printer Device Info IS contained in this message		
	0		(For USB) Reserved		
7			COUNTRY VERSION - COUNTRY CODE	hex	1
	9		ADDITIONAL STATUS	hex	1
	7		Device Information Response		
			0 = NO		
			1 = YES		
	6-0		Reserved		
	10		COUNTRY CODE	hex	1
	11		COUNTRY VERSION	hex	1
	12		COUNTRY EC LEVEL	hex	1
8	13		FISCAL RETURN CODE	hex	1
	14		FISCAL RETURN CODE	hex	1
9	15		DEVICE TYPE	hex	1
			0x31 = Fiscal Printer		
10	16		DEVICE ID	hex	1
			0x00 = Jacare		
			0x01 = Macarena		
			0x02 - 0xFF = Reserved		
11	17		FEATURE BYTE #1	hex	1
	7-4		Reserved (always = '0')		
	3		Reference Data Base Present		
			0 = NOT		
			1 = YES		
	2		Microcode Flash Can be Updated		
			0 = NO		
			1 = YES		
	1		Compact Flash Present		
			0 = NO		
			1 = YES		
	0		Fiscal Memory Size		
			0 = 512 KB		
			1 = 256 KB		
12	18		RESERVED (always '0x00')	hex	1
13	19		FISCAL EC LEVEL	hex	1

(Continued in the next page)

Response to the Printer Device Information:

BYTE	BYTE	BIT	CONTENT	TYPE	LENGTH
RS-485	USB				
0-5			PRINTER STATUS	hex	6
	0-7		PRINTER STATUS	hex	8
6	8		FISCAL STATUS & DEVICE INFO	hex	1
	7-1		Fiscal Status		
	0		(For RS-485) Fiscal/Printer Device Info		
			0 = Fiscal Device Info is NOT contained in this message		
			1 = Fiscal or Printer Device Info IS contained in this message		
	0		(For USB) Reserved		
7			COUNTRY VERSION - COUNTRY CODE	hex	1
	9		ADDITIONAL STATUS	hex	1
	7		Device Information Response		
			0 = NO		
			1 = YES		
	6-0		Reserved		
	10		COUNTRY CODE	hex	1
	11		COUNTRY VERSION	hex	1
	12		COUNTRY EC LEVEL	hex	1
8	13		FISCAL RETURN CODE	hex	1
	14		FISCAL RETURN CODE	hex	1
9-13	15-19		DEVICE INFO BYTES (exactly as received from the printer microcode - See SureMark User Guide Extended Address Command)	hex	5

6.14.4.2 Command Example



6.14.4.3 Report Printer EC Rules

There are not rules for this command.

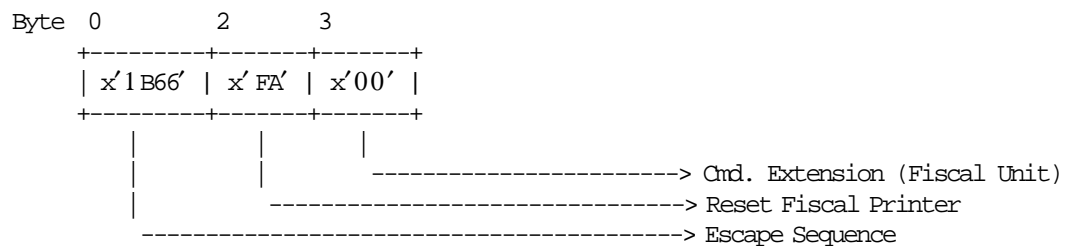
6.14.5 FA - RESET FISCAL PRINTER

This command is used to reset the fiscal unit and fiscal printer.

6.14.5.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		FA - Perform POR	hex	1
3		Cnd. Extension	hex	1
7-1		Reserved (always = '0')		
0		Unit		
		0 = Fiscal Unit		
		1 = Printer		

6.14.5.2 Command Example



6.14.5.3 Reset Fiscal Printer Rules

- This command cannot be used by applications using the IBM device drivers. It is intended for device driver use only.

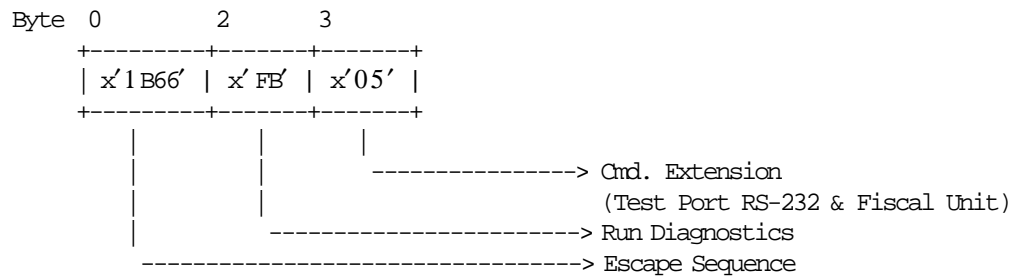
6.14.6 FB - RUN DIAGNOSTICS

This command is used to run the fiscal unit and printer diagnostics.

6.14.6.1 Command format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		FB - Run Diagnostics	hex	1
3		Cmd. Extension	hex	1
7-3		Reserved (always = '0')		
2	1	1 = Test Port RS-232		
1	1	1 = Printer		
0	1	1 = Fiscal Unit		

6.14.6.2 Command Example



6.14.6.3 Run Diagnostics Rules

- For test port RS232 is necessary the usage of RS232 (DB9) wrap connector.

6.14.7 FC - COMMUNICATE MICROCODE EC

This command is used to retrieve the fiscal microcode EC level in the return code.

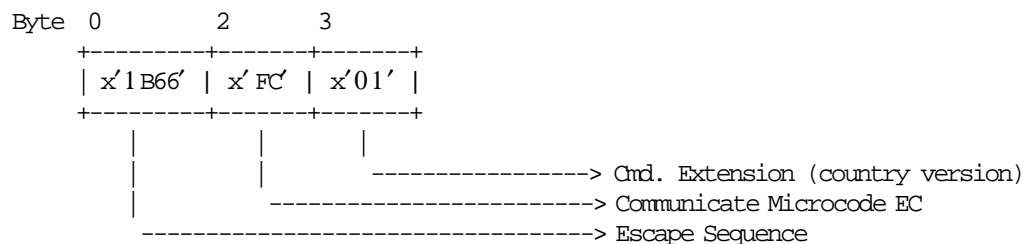
6.14.7.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		FC - Communicate Microcode EC	hex	1
3		Cmd. Extension	hex	1
		00 = Fiscal Microcode EC External Level		
		01 = Fiscal Microcode EC Internal Level		
		02 = Country Code		(Note 1)
		03 = Country Version (Hardware Model)		(Note 2)
		04 = Homologated Version		

Notes:

1. Country Code = x07.
2. For 4610 Hardware Model with:
 - RS-485 communication interface
Country Version = 01
 - USB communication interface
Country Version = 04

6.14.7.2 Command Example



6.14.7.3 Communicate Microcode EC Rules

There are not rules for this command.

6.14.8 FF - DUMP FISCAL RAM AND FISCAL EPROM MEMORY

This command is used to print the content of the fiscal EPROM or the fiscal RAM memory in hexadecimal format.

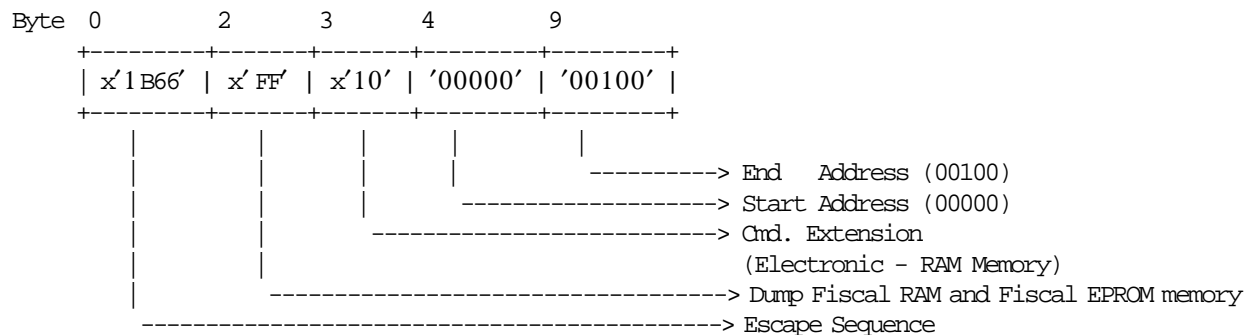
6.14.8.1 Command Format

BYTE	BIT	CONTENT	TYPE	LENGTH
0-1		1B66 - command prefix	hex	2
2		FF - Dump Fiscal RAM and Fiscal EPROM Memory	hex	1
3		Cnd. Extension	hex	1
7-5		Reserved (always = '0')		
4		Type Report 0 = Printed (on paper) 1 = Electronic (on screen)		
3-1		Reserved (always = '0')		
0		Type Memory 0 = RAM 1 = EPROM		
4-8		Start Address	ASCII	5 (Note 1)
9-13		End Address	ASCII	5 (Note 2)

Notes:

1. The fiscal RAM address range is X'00000' - X'0FFFF'
2. The fiscal EPROM address range is X'00000' - X'3FFFF'

6.14.8.2 Command Example



6.14.8.3 Dump Fiscal RAM and Fiscal EPROM Memory Calculations

- If Type Report = 00 (Printed)

$$Day_N_NFHD = Day_N_NFHD + 1$$

6.14.8.4 Dump Fiscal RAM and Fiscal EPROM Memory Rules

- This command can be issued with J4/CE jumper (FJUMPER flag) in ON or OFF position.

6.15 Command Set Summary List

This section contains a cross-reference between the fiscal unit command code and command name. The command code preceding the command name represents the hexadecimal value of command byte 0.

6.15.1 Initialization

- 16** Set Date and Time
- 17** Set/Reset Trailer
- 18** Set Fiscal Mode
- 1A** Set Display Address
- 24** Set/Reset Payment Type
- 1B** Serialize Fiscal Printer
- 1E** Set POS Identification
- 2E** Set General Parameters
- 20** Load VAT Rate Table
- 21** Verify VAT Rate Table
- B7** TI/CN - Set/Reset Header
- 22** TI/CN - Set/Reset Perception Type
- 25** TI/CN - Set Customer Information
- C4** Fiscal Parameter Configuration
- D7** Ticket Set/Reset Header

6.15.2 Sales Transaction

Sales transactions are printed on the customer receipt and summary journal stations.

6.15.2.1 Ticket

- 01** Ticket - Print Header
- 03** Item Additional Description
- D0** Ticket - Fixed Price Item Sale
- D1** Ticket - Fixed Price Negative/Uplift Item
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- D2** Ticket - Item Sale
- D3** Ticket - Negative/Uplift Item Sale
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- D4** Ticket - Subtotal/Total
- D5** Ticket - Payment
- 06** Ticket - End
- 07** Ticket - Cancel
- D9** Ticket - Discount/Uplift on Subtotal

6.15.2.2 Ticket Invoice

- E0** Ticket Invoice - Print Header
- B0** Ticket Invoice - Fixed Price Item Sale
- B1** Ticket Invoice - Fixed Price Negative/Uplift Item
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- B2** Ticket Invoice - Item Sale
- B3** Ticket Invoice - Negative/Uplift Item
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- B4** Ticket Invoice - Subtotal/Total
- B8** Ticket Invoice - Global Perceptions
- B9** Ticket Invoice - Uplift/Discount on Subtotal
- B5** Ticket Invoice - Payment
- E3** Ticket Invoice - End
- 0F** Ticket Invoice - Cancel

6.15.2.3 Credit Note

- 30** Credit Note - Print Header
- 31** Credit Note - Fixed Price Item Sale
- 32** Credit Note - Fixed Price Negative/Uplift Item
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- 33** Credit Note - Item Sale
- 34** Credit Note - Negative/Uplift Item
 - Void (on previous Item Sale)
 - Reduction (by VAT)
 - Discount (on previous Item Sale)
 - Empty (by VAT)
 - Discount (by VAT)
 - Uplift (on previous Item Sale)
- 35** Credit Note - Subtotal/Total
- 36** Credit Note - Global Perceptions
- 37** Credit Note - Uplift/Discount on Subtotal
- 38** Credit Note - Payment
- 39** Credit Note - End
- 3A** Credit Note - Cancel

6.15.3 Close Sales Period

- 13** Daily Closure (Z-Report)

6.15.4 Credit Card Printing

C0 Print Credit Card Slip

6.15.5 Non-Fiscal Homologated Documents

A7 Set NFH Information
A8 Start NFH Document
A9 Print NFH Document
AA End NFH Document
AB Cancel NFH Document

6.15.6 Reports

14 Summary Fiscal Report (X-Report)
15 Fiscal Memory Report
DD Start Application-Originated Report
DE End Application-Originated Report
1F POS Identification Report

6.15.7 Printer

E7 Diagnostic and Alignment Utilities
E8 Set Number of Dot Rows per Line Feed
EA Ordinary Print on CR and SJ Station
EB Ordinary Printing on DI Station
Line Feed
EC Line Feed
ED Ready Document (Top/Bottom Registration)
EE Cut paper
EF Document Eject
E9 Application-Originated Printing

6.15.8 Utilities

FB Run Diagnostics

6.15.9 Query Commands (Electronics)

00 System Commands
DA Electronic Read Fiscal Memory Tables
DB Electronic Read Accumulators and Counters
F1 Report IPL Completion Status
F4 Head Position & Open/Close Throat
F8 Communicate Printer EC
F9 Report Current Status
FA Reset Fiscal Printer
FC Communicate Microcode EC
FF Engineering Dump Fiscal RAM and Fiscal Memory

6.15.10 Lockup

85 Lockup Fiscal Printer

6.15.11 Miscellaneous

- 08** Retrieve/Send Interrupted Command
- C8** Set Barcode Parameters
- C9** Print Barcode
- CA** Download Graphics
- CD** Cash Drawer Management

7.0 Fiscal Unit Status

7.1 4610 RS-485 (Protocol SIO - Cable RS485) Fiscal Unit Status

The fiscal unit response to the application program is contained in the fiscal unit status, which is 9 bytes long (6 bytes for the printer status and 3 bytes for fiscal unit status).

For compatibility reasons, the printer status bytes received from the 4610 are mapped in the closest possible way to the model 3 status bytes.

The "MAPPED FROM" column shows from which byte/bit of the 4610 status bytes was the returned taken form.

The following table shows the content of the fiscal unit status.

BYTE	BIT	CONTENT	MAPPED FROM	
			BYTE	BIT
0		PRINTER UNIT STATUS		n/a
	0 (LSB)	COMMAND COMPLETE Set to 1 when the command is complete.		
	1	LEFT HOME POSITION Set to 1 when the print head is in the left home position.	1	2
	2	RESERVED (Always = '0')		n/a
	3	MICR PRESENT Set to 1 when the micr is present.		n/a
	4	RESERVED (Always = '0')		n/a
	5	HOME ERROR	3	1
	6	DOCUMENT ERROR The document not inserted after document station was selected and the wait timed out.	3	2
7 (MSB)	COMMAND REJECT			
1		PRINTER UNIT STATUS		
	0 (LSB)	CASH RECEIPT PRINT ERROR Paper cover is open or the CR station is out of paper.	1	6
	1	RESERVED (Always = '0')		n/a
	2	PRINTER KEY PRESSED Set to 1 when a printer key operation is in progress.	7	4
	3	EC LEVEL Set to 1 when responding to an EC level request.	5	1
	4	SJ COVER OPEN Set to 1 when the cover on the SJ station is open.	5	6
	5	DOCUMENT READY Set to 0 when the DI station is ready for printing. This occurs when both document sensors are made and the document has been fed to the first print position.	2	0
	6	DOCUMENT PRESENT UNDER THE FRONT SENSOR Set to 0 when a document is under the front document sensor.	2	1
7	CASH RECEIPT PRINT ERROR Paper cover is open or the CR station is out of paper.			

Figure 13. 4610 RS-485 Fiscal Unit Status - Part 1 of 2

BYTE	BIT	CONTENT	MAPPED FROM	
			BYTE	BIT
2		PRINTER UNIT STATUS		
	0 (LSB)	LEFT HOME POSITION Set to 1 when the print head is in the left home position.	1	2
	1	DOCUMENT ERROR The document not inserted after DI station was selected and the wait timed out.	3	2
	2	DOCUMENT PRESENT UNDER THE TOP SENSOR Set to 0 when a document is under the top document sensor.	2	2
	3	RESERVED (Always = '0')		n/a
	4	FLASH EPROM LOAD ERROR OR MCT LOAD ERROR	3	3
	5	RIBBON COVER OPEN Set to 1 when the ribbon cover is open.	1	5
	6	RESERVED (Always = '0')		n/a
	7 (MSB)	SJ STATION PAPER FAULT Set to 1 when the paper is not present.	5	7
3		PRINTER UNIT STATUS Contains the printer EC level with all status messages.	4	
4		RESERVED (Always = '00')		n/a
5		PRINTER UNIT STATUS Contains the current line count the printer is on.	6	
6		FISCAL UNIT STATUS		(Note 1)
	0 (LSB)	RESERVED (Always = '0')		
	1	IPL STATUS Used only for F1 cmd. When set, it indicates that status byte 9 contains the IPL completion status; and bit 4 of byte 6 is set as it was at IPL time.		
	2	IPL IN PROGRESS Set to indicate that the fiscal unit is performing the IPL sequence.		
	3	MICROCODE EC When set it indicates that status byte 8 contains the microcode EC.		
	4	PLD This bit is set at IPL time to indicate that a command was in execution during PLD and that all modifications caused by the suspended command have been deleted.		
	5	ASYNCHRONOUS STATUS When set it indicates that the fiscal unit is executing an internal command (e.g. POR sequence) or it received an asynchronous status from the printer.		
	6	INTERMEDIATE STATUS When set it indicates that execution of a command is still in progress.		
	7 (MSB)	FISCAL UNIT BUSY Set to 1 when a command is received while a previous command is still in execution.		
7		ADDITIONAL DATA/COUNTRY VERSION/COUNTRY CODE - x27 (39)		
	0-4	COUNTRY CODE Argentina = x00111 (07)		
	5-7	COUNTRY VERSION (Hardware Model) 4610 (RS-485) = x01 (01)		
	7 (MSB)	ADDITIONAL DATA		(Note 2)
8		FISCAL UNIT RETURN CODE		(Note 3)
9 - n		ADDITIONAL DATA (if byte 7 bit 7 is on)		

Note : Bit 7 is the most significant bit and bit 0 is the least significant bit.

Note 1: When fiscal unit status byte 5 is 00 then command is complete.

Note 2: Where additional data follows the nine fiscal status bytes.

Note 3: When fiscal unit return code is 43 hex. (67_{10}), it means that no error is indicated on this status message.
The fiscal unit return codes are defined in chapter 8.0, "Fiscal Unit Return Codes" on page 301.

Figure 14. 4610 RS-485 Fiscal Unit Status - Part 2 of 2

7.2 Version/Country Code Definitions

- Country Name = Argentina
- Country Version (hardware model) = 01 (4610 GR3 (Protocol SIO, Cable RS-485))
- Country Code = 07
- Country Version + Country Code
 - Hexadecimal = 27
 - Decimal = 39
- Fiscal Microcode EC Level = 0E

7.3 4610 USB (Protocol USB - Cable USB) Fiscal Unit Status

The fiscal unit response to the application program is contained in the fiscal unit status, which is 15 bytes long (8 bytes for the fiscal printer status and 7 bytes for fiscal unit status).

The following figure shows the content of the fiscal status.

BYTE	BIT	CONTENT	
0	0 (LSB)	PRINTER UNIT STATUS	
		COMMAND LOADED	
		For USB buffered commands.	
		Set to 1 when the command is received into the print buffer.	
		Note: this is not when the line is actually printed.	
		COMMAND COMPLETE	
		For USB immediate command and flash storage commands.	
		Set to 1 when the command is complete.	
1	CASH RECEIPT RIGHT HOME POSITION	Set to 1 when the print head is in the cash receipt right home position.	
		LEFT HOME POSITION	
2	LEFT HOME POSITION	Set to 1 when the print head is in the left home position.	
		DOCUMENT RIGHT HOME POSITION	
3	DOCUMENT RIGHT HOME POSITION	Set to 1 when the print head is in the document right home position.	
		RESERVED (Always = '0')	
4	RIBBON COVER OPEN	Set to 1 when the ribbon cover is open.	
		CASH RECEIPT PRINT ERROR	
6	Paper cover is open or the CR station is out of paper.	COMMAND REJECT	
		7 (MSB)	
1	0 (LSB)	PRINTER UNIT STATUS	
		DOCUMENT READY	
		Set to 0 when the DI station is ready for printing. This occurs when both document sensors are made and the document has been fed to the first print position.	
		1	DOCUMENT PRESENT UNDER THE FRONT SENSOR
		Set to 0 when a document is under the front document sensor.	
		2	DOCUMENT PRESENT UNDER THE TOP SENSOR
		Set to 0 when a document is under the top document sensor.	
		3	RESERVED (Always = '1').
4	PRINT BUFFER HELD	Set to a 1 when the print buffer is being held. Cleared when buffer released.	
		The printer may be held due to a hold buffer command or one of the following printer errors:	
5	OPEN THROAT POSITION	- Ribbon cover open with commands to be printed on the DI station.	
		- CR print error with commands to the CR station.	
6	BUFFER EMPTY	Set when there is no longer any print data or commands in the buffer.	
		7 (MSB)	
BUFFER FULL	Set when only 512 bytes remain in the buffer.		
	Cleared when 3k bytes are free (RS-485 only).		

Figure 15. 4610 USB Fiscal Unit Status - Part 1 of 3

BYTE	BIT	CONTENT
2		PRINTER UNIT STATUS
	0 (LSB)	MEMORY SECTOR IS FULL
	1	HOME ERROR
	2	DOCUMENT ERROR The document not inserted after document station was selected and the wait timed out.
	3	FLASH EPROM LOAD ERROR OR MCT LOAD ERROR
	4	RESERVED (Always = '0')
	5	USER FLASH STORAGE SECTOR IS FULL
	6	FIRMWARE ERROR CRC on the firmware failed. The printer is running out of the boot sector. ONLY system commands and firmware commands will be accepted.
	7 (MSB)	FISCAL BIT Set to show a line completed printing.
3		PRINTER UNIT STATUS Contains the printer EC level with all status messages.
4		PRINTER UNIT STATUS
	0 (LSB)	PRINTER ID REQUEST/EXTENDED ADDRESS CMD Set to 1 when responding to a printer ID request.
	1	EC LEVEL Set to 1 when responding to an EC level request.
	2	MICR READ Set to 1 when responding to a MICR read command.
	3	MCT READ Set to 1 when responding to a MCT read command.
	4	USER FLASH READ Set to 1 when responding to a user flash read command.
	5	Reserved (Always = '1').
	6	SJ COVER OPEN Set to 1 when the cover on the SJ station is open.
	7	SJ STATION PAPER FAULT Set to 1 when the paper is not present.
5		PRINTER UNIT STATUS Contains the current line count the printer is on.
6		PRINTER UNIT STATUS
	0 (LSB)	JOURNAL STATUS SELECTION (Note 1) 1 = Selected 0 = Not Selected
	1	
	2	PDF417 BAR CODE GENERATION PROBLEM Set to 1 when there is a problem creating a pdf417 bar code image.
	3	CASH DRAWER STATUS Set to 1 when cash draw is opened.
	4	PRINTER KEY PRESSED Set to 1 when a printer key operation is in progress.
	5	RESERVED (Always = '1')
	6	STATION SELECTED Set when the DI station is selected. Clear when the CR station is selected.
	7 (MSB)	DOCUMENT FEED ERROR Set when there is an error after a Flip Check or a MICR command is executed.

Figure 16. 4610 USB Fiscal Unit Status - Part 2 of 3

BYTE	BIT	CONTENT
7		PRINTER UNIT STATUS (reserved for future use)
8		FISCAL UNIT STATUS
	0	RESERVED (Always = '0')
	1	IPL STATUS When set, it indicates that status byte 13 contains the IPL completion status and bit 4 of byte 8 is set as it was at IPL time.
	2	IPL IN PROGRESS Set to indicate that the fiscal unit is performing the IPL sequence.
	3	MICROCODE EC When set it indicates that status byte 13 contains the microcode EC.
	4	PLD This bit is set at IPL time to indicate that a command was in execution during PLD and that all modifications caused by the suspended command have been deleted.
	5	ASYNCHRONOUS STATUS When set it indicates that the fiscal unit is executing an internal command (e.g. POR sequence) or it received an asynchronous status from the printer).
	6	INTERMEDIATE STATUS When set it indicates that execution of a command is still in progress.
	7	FISCAL UNIT BUSY Set to 1 when a command is received while a previous command is still in execution.
9		FISCAL UNIT STATUS
	0-5	RESERVED (Always = '0')
	6	Host attempted to send a new command without reading the feature report for the previous command.
	7	ADDITIONAL DATA AND COUNTRY VERSION (= 1 when any data is available; otherwise = 0)
10		COUNTRY CODE 07 = Argentina
11		ADDITIONAL DATA AND COUNTRY VERSION
	0-4	COUNTRY VERSION (printer model) 4610 USB (Macarena) = x00100 (04)
	5-6	RESERVED
	7	ADDITIONAL DATA (Note 2)
12		FISCAL MICROCODE EC LEVEL
13		FISCAL UNIT RETURN CODE (Note 3)
14		FISCAL UNIT RETURN CODE (reserved for future use)
15-n		ADDITIONAL DATA (if byte 11 bit 7 is ON)

Note : Bit 7 is the most significant bit and bit 0 is the least significant bit.

Note 1: In order to remain compatible with existing 4610 printer status definitions, when reading the status bytes to determine which station is selected, the journal station selected status bit and the CR/DI station selected status bit must be checked in the following sequence:
 1 - Check byte 6, bit 0 first
 - If it is '1' then the journal station is selected
 - If it is '0' then the journal station is not selected and status byte 6, bit 6 must be checked to determine which station is selected.
 If status byte 6, bit 6 is a '0' then the CR is selected.
 If status byte 6, bit 6 is a '1' then the DI is selected.

Note 2: Where additional data follows the sixteen fiscal status bytes.

Note 3: When fiscal unit return code is 43 hex. (67₁₀), it means that no error is indicated on this status message.
 The fiscal unit return codes are defined in 8.0, "Fiscal Unit Return Codes" on page 301.

Figure 17. 4610 USB Fiscal Unit Status - Part 3 of 3

7.3.1 Version/Country Code Definitions

- Country Name = Argentina
- Printer Model = 4610 GA3/GE3 (Protocol USB, Cable USB)
- Country Version (printer model) = 04
- Country Code = 07
- Fiscal Microcode EC Level = 0E

8.0 Fiscal Unit Return Codes

8.1 4690 OS Hardware Return Code Descriptions

This list contains information about the return code (RC=8090xxxx) in system messages.

If your return code is not listed here - or - under “Return Code Descriptions” in the *IBM 4690 OS Store System: Messages Guide*, it is an undefined error.

Note: *Service the fiscal printer to replace both the fiscal processor card and the fiscal printer.*

The following tables define the meaning of fiscal unit return codes reported in byte 8 of fiscal unit status.

8.2 DOS/WINDOWS and 4690 OS Return Code Descriptions

002 => DOS/WINDOWS 80900102 => 4690 OS

Explanation: An overflow occurred. The void transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end transaction commands to end the sales transaction or a cancel transaction command to cancel the sales transaction.

004 => DOS/WINDOWS 80900104 => 4690 OS

Explanation: An overflow occurred. The discount transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

006 => DOS/WINDOWS 80900106 => 4690 OS

Explanation: An overflow occurred. The uplift transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

008 => DOS/WINDOWS 80900108 => 4690 OS

Explanation: An underflow occurred. The current transaction total or one of the VAT category transaction sales totals is less than the minimum allowed value. The request is not processed.

User Response: Cancel the transaction or make the total greater than the minimum allowed value.

010 => DOS/WINDOWS 80900110 => 4690 OS

Explanation: An underflow occurred. The void transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

012 => DOS/WINDOWS 80900112 => 4690 OS

Explanation: An underflow occurred. The discount transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sales transaction or cancel command to cancel the sales transaction.

014 => DOS/WINDOWS 80900114 => 4690 OS

Explanation: An underflow occurred. The uplift transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total and end commands to end the sale transaction or cancel command to cancel the sales transaction.

015 => DOS/WINDOWS 80900115 => 4690 OS

Explanation: The requested rectify can not be executed by any of the following causes:

- There is no command executed before that could be rectified.
- The requested rectify has been already done.
- Some data of the rectify issued does not match with the original values.

The request is not processed.

User Response: Check the application program for the first two cases or correct the rectify data for the last one.

016 => DOS/WINDOWS 80900116 => 4690 OS

Explanation: An overflow occurred. The daily total or one of the VAT category daily sales totals exceeds the maximum allowed value at total request time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

018 => DOS/WINDOWS 80900118 => 4690 OS

Explanation: An overflow occurred. The void daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

020 => DOS/WINDOWS 80900120 => 4690 OS

Explanation: An overflow occurred. The discount daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

022 => DOS/WINDOWS 80900122 => 4690 OS

Explanation: An overflow occurred. The uplift daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

023 => DOS/WINDOWS 80900123 => 4690 OS

Explanation: The general parameters has not been set. The request is not processed.

User Response: Use the set general parameters (2E cmd.) to load the information.

024 => DOS/WINDOWS 80900124 => 4690 OS

Explanation: The user total amount is not equal to the fiscal total amount. The values associated with the total request do not match the totals stored in the fiscal memory. The request is not processed.

User Response: Correct the computation procedure of the total, then issue end or cancel command.

025 => DOS/WINDOWS 80900125 => 4690 OS

Explanation: A fiscal rules violation has occurred. The word 'total' (or equivalent) or logo characters occurs in a message when not allowed, or a reserved character is used in the message. Note that not all rules violations apply to all countries. The request is not processed.

User Response: Correct the fiscal rules violation and try the command again.

026 => DOS/WINDOWS 80900126 => 4690 OS

Explanation: An underflow occurred. A transaction amount was negative at total request time. This return code applies (where applicable) to:

- Transaction total
- VAT total
- VAT category total accumulator
- VAT category tax accumulator

The request is not processed.

User Response: Make the amount greater than or equal to zero, then issue an end or cancel command.

027 => DOS/WINDOWS 8090061B => 4690 OS

Explanation: An overflow occurred. The discount on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the amount less than the maximum allowed value, then issue an end or cancel command.

028 => DOS/WINDOWS 8090061C => 4690 OS

Explanation: An overflow occurred. The uplift on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the amount less than the maximum allowed value, then issue end or cancel command.

029 => DOS/WINDOWS 80900129 => 4690 OS

Explanation: Tender is not completed. The payment total was less than the transaction total. The request is not processed.

User Response: Use the rectify option on the payment command or issue an additional payment command to complete processing.

030 => DOS/WINDOWS 80900130 => 4690 OS

Explanation: The item or negative item operation is not valid. Possible reasons are:

- The requested VOID amount did not match the current adjusted item accumulator.
- The requested DISCOUNT amount is not less than the current item accumulator.
- The resulting item accumulator is either less than or equal to zero or greater than the maximum allowed item value.
- A negative item operation was requested for an item that was previously voided.
- The TAX category did not match the previously sold referenced item.

The request is not processed.

User Response: If a negative item command was issued, correct the application program. If you issued an item sale command, issue a subtotal command and continue the ticket.

031 => DOS/WINDOWS 8090061F => 4690 OS

Explanation: An underflow occurred. The sum of the discount on subtotal operations in this sales transaction is less than the minimum allowed value. The request is not processed.

User Response: Make the amount greater than or equal to the minimum allowed value, then issue an end or cancel command.

032 => DOS/WINDOWS 80900620 => 4690 OS

Explanation: An underflow occurred. The sum of the uplift on subtotal operations in this sales transaction is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to zero, then issue an end or cancel command.

033 => DOS/WINDOWS 80900141 => 4690 OS

Explanation: The TI/CN set/reset perception type table has not been set or the perception type number is out of range. The request is not processed.

User Response: Use the TI/CN set/reset perception type (22 cmd.) to load the information or correct the perception type number (range 01 to up 30) and then issue the command again.

034 => DOS/WINDOWS 80900142 => 4690 OS

Explanation: An underflow occurred. The void daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

035 => DOS/WINDOWS 80900143 => 4690 OS

Explanation: Illegal condition on negative item:

- Documents Type A: The net price accumulator became zero while Tra_Tax or Tra_Percep are not zero of the same VAT category.
- Documents Type B and C: The transaction total accumulator became less than the Tra_Tax of the same Vat category.

The request is not processed.

User Response: Issue the command again with the correct values or issue the command after there is enough amounts in the corresponding accumulators.

036 => DOS/WINDOWS 80900144 => 4690 OS

Explanation: An underflow occurred. The discount daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

037 => DOS/WINDOWS 80900145 => 4690 OS

Explanation: The command is not accepted in phase 1 because it has been done before or the command is not accepted in phase 2 because the phase 1 must be executed first. The request is not processed.

User Response: Issue an phase 2 or issue the phase 1.

038 => DOS/WINDOWS 80900146 => 4690 OS

Explanation: An underflow occurred. The uplift daily total is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

039 => DOS/WINDOWS 80900627 => 4690 OS

Explanation: Not allowed items or negative items sale (D0, D1, D2, D3, B0, B1, B2, B3, 31, 32, 33 or 34 cmd's.) after to issued uplift or discount on subtotal (D9, B9 or 37 cmd's.). The request is not processed.

User Response: Correct the application program.

040 => DOS/WINDOWS 80900628 => 4690 OS

Explanation: The VAT category field is not blank and the amount field is blank in a item sales transaction. The request is not processed.

User Response: Correct the application program.

041 => DOS/WINDOWS 80900629 => 4690 OS

Explanation: The current VAT rate table is not verified. The request is not processed.

User Response: Check the application program. The program must issue a verify VAT rate table command before further operations are processed. The VAT rate table must be loaded before issuing the verify VAT rate table command.

042 => DOS/WINDOWS 8090062A => 4690 OS

Explanation: There is a VAT rate table mismatch. The request is not processed.

User Response: Correct the VAT rate table and issue the command again.

043 => DOS/WINDOWS 8090062B => 4690 OS

Explanation: The fiscal memory VAT rate table is full. The request is not processed.

User Response: Call for service. The fiscal base unit must be exchanged in order to load new VAT table rates.

044 => DOS/WINDOWS 8090062C => 4690 OS

Explanation: The VAT category specified is not valid or the data supplied with the load VAT rate table (20 cmd.) is not valid or the VAT category is disabled. The request is not processed.

User Response: Correct the application program.

045 => DOS/WINDOWS 8090062D => 4690 OS

Explanation: The ticket cancel (07 cmd.) or ticket invoice cancel (0F cmd.) or credit note cancel (3A cmd.) is not allowed because the amount total was already printed. The request is not processed.

User Response: Correct the application program sequence.

048 => DOS/WINDOWS 80900630 => 4690 OS

Explanation: An overflow occurred. The sum of the daily operations for discount on subtotal exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

049 => DOS/WINDOWS 80900631 => 4690 OS

Explanation: An overflow occurred. The sum of the daily operations for uplift on subtotal exceeds the maximum allowed value. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

050 => DOS/WINDOWS 80900632 => 4690 OS

Explanation: An underflow occurred. The sum of the daily operations for discount on subtotal is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

051 => DOS/WINDOWS 80900633 => 4690 OS

Explanation: An underflow occurred. The sum of the daily operations for uplift on subtotal is less than the minimum allowed value. The request is not processed.

User Response: Make the total greater than the minimum allowed value, issue an end or cancel command and then issue a daily closure command.

052 => DOS/WINDOWS 80900634 => 4690 OS

Explanation: The transaction total is equal to zero. The request is not processed.

User Response: Adjust the transaction total or issue a cancel command.

053 => DOS/WINDOWS 80900635 => 4690 OS

Explanation: The requested time used on the set date (16 cmd.) is not within the allowed range of the current fiscal printer time or the requested time is previous to the date of the last closure stored in the fiscal memory. The request is not processed.

User Response: Either correct the time sent to the fiscal printer or if the fiscal printer time differs from the actual time by more than the allowed range, call for service.

054 => DOS/WINDOWS 80900636 => 4690 OS

Explanation: The perception type table is not set. The request is not processed.

User Response: Use the TI/CN set/reset perception type (22 cmd.) to load the information.

055 => DOS/WINDOWS 80900203 => 4690 OS

Explanation: The fiscal request message length is less than the minimum required value. The request is not processed.

User Response: Check the application program.

056 => DOS/WINDOWS 80900150 => 4690 OS

Explanation: An overflow occurred. The cancel transaction daily total exceeds the maximum allowed value at cancel transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue a cancel command and then issue a daily closure command.

057 => DOS/WINDOWS 80900151 => 4690 OS

Explanation: An underflow occurred. The cancel transaction daily total is less than the minimum allowed value at cancel transaction time. The request is not processed.

User Response: Make the total greater than or equal to the minimum allowed value, issue a cancel command and then issue a daily closure command.

058 => DOS/WINDOWS 8090063A => 4690 OS

Explanation: An overflow occurred. The amount due accumulator exceeds the maximum allowed value. The request is not processed.

User Response: Correct the payment amount and issue the command again.

059 => DOS/WINDOWS 8090063B => 4690 OS

Explanation: An underflow occurred. The amount due accumulator is less than the minimum allowed value. The request is not processed.

User Response: Correct the payment amount and issue the command again.

060 => DOS/WINDOWS 8090063C => 4690 OS

Explanation: The payment type table is not loaded. The request is not processed.

User Response: Use the set payment type (24 cmd.) to load the information.

061 => DOS/WINDOWS 8090063D => 4690 OS

Explanation: An overflow occurred. The transaction total or one of the VAT category transaction sales totals exceeds the maximum allowed value on an item command. The request is not processed.

User Response: Issue an end or cancel command.

062 => DOS/WINDOWS 8090063E => 4690 OS

Explanation: The command can be executed only for ticket invoice or credit note type A or B. The request is not processed.

User Response: Check the application program.

063 => DOS/WINDOWS 8090063F => 4690 OS

Explanation: The set POS identification is not set. The request is not processed.

User Response: Use the set POS identification (1E cmd.) to load the information. Depending on the country laws, this command may require IBM service personnel.

064 => DOS/WINDOWS 80900127 => 4690 OS

Explanation: An overflow occurred. The specified value received amount from the application program exceeds the maximum allowed amount or the daily payment type accumulators exceeds the maximum allowed value. The request is not processed.

User Response: Correct the value and try the operation again.

065 => DOS/WINDOWS 80900201 => 4690 OS

Explanation: A request was sent to the fiscal unit and the fiscal command byte is not recognized. The request is not processed.

User Response: Check the application program.

066 => DOS/WINDOWS 80900202 => 4690 OS

Explanation: A request was sent to the fiscal unit and the fiscal command byte extension is not recognized. The request is not processed.

User Response: Check the application program.

067 => DOS/WINDOWS 80900643 => 4690 OS

Explanation: The command was processed successfully. No error occurred.

User Response: No action is required.

068 => DOS/WINDOWS 80900204 => 4690 OS

Explanation: An overflow occurred. The transaction general global perception total by perception type or the transaction general perception by perception type or the transaction general perception by VAT category and perception type or the transaction general perception total exceeds the maximum allowed value. The request is not processed.

User Response: Issue an ticket invoice end or ticket invoice cancel or credit note end or credit note cancel command.

069 => DOS/WINDOWS 80900205 => 4690 OS

Explanation: An attempt was made to print a line on the CR, SJ or DI stations

- without the correct payment phase done inside of ticket, ticket invoice or credit note OR
- that exceeds the maximum number of ordinary print lines allowed during a ticket, ticket invoice or credit note.

The request is not processed.

User Response: Issue the payment phase (D5, B5 or 38 cmd.) OR issue an end (06, E3 or 39 cmd.)

073 => DOS/WINDOWS 80900303 => 4690 OS

Explanation: An error occurred while printing on an inserted document. The request is not processed.

User Response: If the error continues, service the printer.

075 => DOS/WINDOWS 80900209 => 4690 OS

Explanation: Printing not allowed. Possible reasons are:

- If ticket is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If ticket invoice is in progress, ordinary printing line on CR/SJ station (EA cmd.) is not allowed at this point.
- If credit note is in progress, ordinary printing line on CR/SJ station (EA cmd.) is not allowed at this point.
- Orientation print PORTRAIT and linefeed direction REVERSE on DI station not allowed during ticket invoice or credit note.

The request is not processed.

User Response: Check the application program.

076 => DOS/WINDOWS 80900210 => 4690 OS

Explanation: Invalid print station selected. The request is not processed.

User Response: Correct the print station and issue the command again.

077 => DOS/WINDOWS 80900211 => 4690 OS

Explanation: The download graphic is corrupted. The request is not processed.

User Response: The graphics must be initialized. Erase all graphics from printer flash using CA cmd. (cmd. extension 10) and the issued CA cmd. (cmd. extension 02) again.

078 => DOS/WINDOWS 80900304 => 4690 OS

Explanation: Graphic with same number already in printer flash. The request is not processed.

User Response: The user attempted to download a graphic using a number already in printer flash.

Correct the graphic number or erase all graphics from printer flash using the CA cmd. (10 cmd. extension) and then issue the CA cmd. (02 cmd. extension) again.

079 => DOS/WINDOWS 80900212 => 4690 OS

Explanation: Invalid Sequence. This command can only be sent inside a download graphics command set. The request is not processed.

User Response: Issue the CA cmd. (cmd. extension 10) and then restart the download sequence.

080 => DOS/WINDOWS 80900213 => 4690 OS

Explanation: Graphic don't downloaded. The request is not processed.

User Response: Download graphic with CA cmd. (cmd. extension 02) before printing.

081 => DOS/WINDOWS 80900651 => 4690 OS

Explanation: The print typeface specified is not valid. The request is not processed.

User Response: Specify a valid print typeface.

082 => DOS/WINDOWS 80900306 => 4690 OS

Explanation: A request to print on the CR, SJ or DI station was made:

- without start an application-originated report. OR
- without start a NFH Document. OR
- without issue the ticket, ticket invoice or credit note.

The request is not processed.

User Response: Start an application-originated report or a NFH document or issued a ticket, ticket invoice or credit note.

083 => DOS/WINDOWS 80900307 => 4690 OS

Explanation: An unrecoverable error occurred reading the fiscal memory identification/status/setup area.

User Response: Service the printer.

084 => DOS/WINDOWS 80900308 => 4690 OS

Explanation: The payment trailer line is mandatory when the payment type correspond to "credit card".

User Response: Fill the payment trailer line and issue the command again.

085 => DOS/WINDOWS 80900309 => 4690 OS

Explanation: The VAT rate for this VAT category is not valid. The request is not processed.

User Response: Check the application program.

086 => DOS/WINDOWS 80900401 => 4690 OS

Explanation: The password entered is not valid or the maximum number of attempts to enter the correct password was exceeded. The request is not processed.

User Response: Reenter the correct password or if the maximum number of attempts was exceeded, use the J4/CE jumper to restore normal operation.

Note: Only authorized service personnel can perform functions that require a password.

087 => DOS/WINDOWS 80900657 => 4690 OS

Explanation: The printer command received by the fiscal printer is not valid. The request is not processed.

User Response: Issue a valid printer command.

089 => DOS/WINDOWS 80900312 => 4690 OS

Explanation: The fiscal memory is full. All fiscal commands are rejected except the fiscal memory report.

User Response: Service the printer.

090 => DOS/WINDOWS 8090065A => 4690 OS

Explanation: The requested daily closure was not found in the fiscal memory. The request is not processed.

User Response: Specify a valid closure number or valid dates.

091 => DOS/WINDOWS 80900314 => 4690 OS

Explanation: An error occurred while printing the start-up message.

User Response: Turn the power OFF and ON again. If the error continues, service the printer.

092 => DOS/WINDOWS 80900315 => 4690 OS

Explanation: The requested internal table register was not found in the fiscal memory. The request is not processed.

User Response: Specify a valid table entry.

095 => DOS/WINDOWS 80900425 => 4690 OS

Explanation: The address or length data is not valid. The requested address range is not valid or is wrong in the engineering dump command. The request is not processed.

User Response: Correct the input data.

096 => DOS/WINDOWS 80900140 => 4690 OS

Explanation: A numeric field contains characters that are not valid. The request is not processed.

User Response: Correct the value and issue the command again.

097 => DOS/WINDOWS 80900410 => 4690 OS

Explanation: Fiscal RAM is in error or does not match the fiscal memory.

User Response: Service the printer. The J4/CE jumper procedure is required.

Note: Only authorized service personnel can move the J4/CE jumper.

098 => DOS/WINDOWS 80900411 => 4690 OS

Explanation: Fiscal RAM is restored.

User Response: Remove the J4/CE jumper to restore normal operation.

Note: Only authorized service personnel can move the J4/CE jumper.

099 => DOS/WINDOWS 80900318 => 4690 OS

Explanation: The maximum 200 repair actions have been reached.

User Response: Exchange the fiscal printer at the next failure occurrence.

100 => DOS/WINDOWS 80900329 => 4690 OS

Explanation: An error occurred while reading from the fiscal memory. The request is not processed.

User Response: Service the printer.

101 => DOS/WINDOWS 80900326 => 4690 OS

Explanation: An unrecoverable error occurred when writing to fiscal memory. The request is not processed.

User Response: Service the printer.

102 => DOS/WINDOWS 80900327 => 4690 OS

Explanation: The fiscal parameter configuration (C4 cmd.) was attempted more than once with the same extension since the last J4/CE jumper reset or X' C402' was attempted with the display addresses already set. The request is not processed.

User Response: Reset the printer using the J4/CE jumper procedure and initialize the printer again.

Note: Only authorized service personnel can move the J4/CE jumper.

103 => DOS/WINDOWS 80900421 => 4690 OS

Explanation: The data is not valid. The requested data or number is out-of-range. The request is not processed.

User Response: Correct the input data.

104 = DOS/WINDOWS 80900360 = 4690 OS

Explanation: The barcode data must be null terminated. The request is not processed.

User Response: Correct the barcode data and issue the command again.

105 = DOS/WINDOWS 80900361 = 4690 OS

Explanation: The barcode size is invalid OR the graphic size is invalid. The width is greater than 62 (0x3E) or the height is greater than 21 (0x15). The request is not processed.

User Response: Correct the barcode size and issue the command again OR correct the graphic size and issue the CA cmd. (cmd. extension 02) again.

107 => DOS/WINDOWS 8090066B => 4690 OS

Explanation: The microcode EC level table is full. The request is not processed.

User Response: Exchange the microcode EC level by the last EC level stored in the microcode EC level table or exchange the fiscal memory.

108 => DOS/WINDOWS 80900328 => 4690 OS

Explanation: The POS identification table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

109 => DOS/WINDOWS 80900324 => 4690 OS

Explanation: The fiscal memory is not connected. The fiscal unit cannot restart processing.

User Response: Service the printer. When servicing, first check to ensure the cable connections on the fiscal processor card are correct.

The J4/CE jumper procedure is required when the fiscal memory is reconnected.

Note: Only authorized service personnel can move the J4/CE jumper.

112 => DOS/WINDOWS 80900670 => 4690 OS

Explanation: The fiscal printer was reset.

User Response: No action is required.

113 => DOS/WINDOWS 80900341 => 4690 OS

Explanation: An unrecoverable printer error occurred after two power-on resets.

User Response: Turn the power off and then on again. If the problem persists, service the printer.

114 => DOS/WINDOWS 80900363 => 4690 OS

Explanation: A printer communication error occurred.

User Response: Service the printer.

115 => DOS/WINDOWS 80900701 => 4690 OS

Explanation: The taxpayer issuer condition table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

116 => DOS/WINDOWS 80900702 => 4690 OS

Explanation: The payment type lines used exceeds the maximum payment type lines allowed. The request is not processed.

User Response: If the payment total is less than transaction total, cancel the transaction or If the payment total is greater than or equal to transaction total, cancel or end the transaction.

118 => DOS/WINDOWS 80900704 => 4690 OS

Explanation: The selected payment type or perception type is invalid or the description field data is blank. The request is not processed.

User Response: Select the correct payment type or perception type or input data in the description field and then issue the command again.

119 => DOS/WINDOWS 80900677 => 4690 OS

Explanation: Alphabetic fields with invalid data. The request is not processed.

User Response: Correct the data and then issue the command again.

120 => DOS/WINDOWS 80900678 => 4690 OS

Explanation: A printer card time-out occurred while executing a command.

User Response: Turn the power OFF and then ON again. If the problem persists, service the printer.

121 => DOS/WINDOWS 80900679 => 4690 OS

Explanation: Audit port wrap test fail.

User Response: None. Service the printer.

123 => DOS/WINDOWS 8090067B => 4690 OS

Explanation: An overflow occurred. The fixed transaction total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command, and then issue a daily closure command.

124 => DOS/WINDOWS 8090067C => 4690 OS

Explanation: An overflow occurred. The fixed daily total exceeds the maximum allowed value at end transaction time. The request is not processed.

User Response: Make the total less than or equal to the maximum allowed value, issue an end or cancel command and then issue a daily closure command.

125 => DOS/WINDOWS 8090067D => 4690 OS

Explanation: The number of lines available to print is not sufficient. The request is not processed.

User Response: Possible actions to take are:

- If the string TOTAL wasn't printed
 - To send any command with less lines to print.
 - Issue the ticket invoice cancel (OF cmd.) or credit note cancel (3A cmd.)

- If the string TOTAL was printed
 - Issue the ticket invoice end (E3 cmd.) or credit note end (39 cmd.) with the less quantity of lines.

128 => DOS/WINDOWS 80900320 => 4690 OS

Explanation: Fiscal memory is not serialized. The request is not processed.

User Response: Service the printer.

129 => DOS/WINDOWS 80900321 => 4690 OS

Explanation: The fiscal unit is not in fiscal mode. The request is not processed.

User Response: Call for service to set fiscal mode.

131 => DOS/WINDOWS 80900323 => 4690 OS

Explanation: A problem was detected in a display or in the configuration for the point-of-sale displays. No fiscal commands can be executed. The minimum number of POS displays that must be configured is 2.

User Response: Follow the maintenance manual procedures to set the configuration correctly. If problem persists, service the POS terminal.

133 => DOS/WINDOWS 80900364 => 4690 OS

Explanation: The amount is zero. The request is not processed.

User Response: The amount must be greater than zero.

134 => DOS/WINDOWS 80900325 => 4690 OS

Explanation: The fiscal unit detected an internal hardware error. The request is not processed.

User Response: Run the printer test to determine the cause of the problem. Service the printer.

136 => DOS/WINDOWS 80900221 => 4690 OS

Explanation: A ticket related command was issued while a sales transaction was not in progress. The request is not processed.

User Response: Correct the application program sequence.

138 => DOS/WINDOWS 80900223 => 4690 OS

Explanation: A ticket invoice or credit note related command was issued while a ticket invoice or credit note was not in progress. The request is not processed.

User Response: Correct the application program sequence.

139 => DOS/WINDOWS 80900224 => 4690 OS

Explanation: The ticket invoice/credit note set customer information table has not been set or description data (Line 1) has not been set. The request is not processed.

User Response: Use the ticket invoice/credit note set customer information (25 cmd.) to load the information or issue the cmd 25 with cmd.ext. 01 to set the description data (line 1).

140 => DOS/WINDOWS 80900225 => 4690 OS

Explanation: A ticket, ticket invoice or credit note related command was issued before printing the header. The request is not processed.

User Response: Correct the application program sequence.

141 => DOS/WINDOWS 80900226 => 4690 OS

Explanation: A command was issued that is not allowed before the total command is successfully executed. The request is not processed.

User Response: Correct the application program sequence.

142 => DOS/WINDOWS 80900227 => 4690 OS

Explanation: The transaction payment procedure is not in progress. The request is not processed.

User Response: Correct the application program sequence.

144 => DOS/WINDOWS 80900229 => 4690 OS

Explanation: The command was issued before the store header was set. The request is not processed.

User Response: Correct the application program sequence to set the store headers before issuing this command.

145 => DOS/WINDOWS 80900691 => 4690 OS

Explanation: The command is not accepted when the J4/CE jumper is not active. The request is not processed.

User Response: Activate the J4/CE jumper and try issuing the command again.

146 => DOS/WINDOWS 80900692 => 4690 OS

Explanation: A command not related to a NFH document was issued while a NFH document is in progress. The request is not processed.

User Response: Issue the command again after the NFH document is completed.

147 => DOS/WINDOWS 80900693 => 4690 OS

Explanation: A NFH related command was issued while a NFH document was not in progress. The request is not processed.

User Response: Correct the application program sequence.

148 => DOS/WINDOWS 80900694 => 4690 OS

Explanation: The NFH document type specified don't correspond with the NFH document type in progress. The request is not processed.

User Response: Correct the NFH document type and issue the command again.

149 => DOS/WINDOWS 80900695 => 4690 OS

Explanation: When command extension 00 is selected the customer document type and/or customer document number and/or taxpayer customer condition and/or customer name must be loaded OR the customer document type and/or customer document number and/or taxpayer customer condition and/or customer name is/are invalid. The request is not processed.

User Response: Issue the ticket invoice/credit not set customer information (25 cmd.) to load the information correctly.

150 => DOS/WINDOWS 80900696 => 4690 OS

Explanation: The first two digits of UTIK user number are invalid. The request is not processed.

User Response: Correct the UTIK user number and try the command again.

151 => DOS/WINDOWS 80900697 => 4690 OS

Explanation: The UTIK user number is invalid. The request is not processed.

User Response: Correct the UTIK user number and try the command again.

152 => DOS/WINDOWS 80900698 => 4690 OS

Explanation: Invalid ticket invoice or credit note type selected. The request is not processed.

User Response: Correct the ticket invoice type (E0 cmd.) or credit note type (30 cmd.) and issue the command again.

154 => DOS/WINDOWS 8090069A => 4690 OS

Explanation: The taxpayer issuer condition is invalid. The request is not processed.

User Response: Correct the taxpayer issuer condition and issue the command again.

155 => DOS/WINDOWS 8090069B => 4690 OS

Explanation: The ordinal item number in the negative item operation is not valid. The request is not processed.

User Response: Correct the ordinal item number and issue the command again.

156 => DOS/WINDOWS 8090069C => 4690 OS

Explanation: The NFH field line number (for field) specified could be out of range, or it wasn't set for the document type in progress, or the NFH field line (user defined w/A7 cmd.) has already been used the maximum of times allowed. The request is not processed.

User Response: Issue the command again with the correct NFH field line number.

157 => DOS/WINDOWS 8090069D => 4690 OS

Explanation: The correct operation of credit card slip printing is not in progress. The request is not processed.

User Response: Correct the application program sequence.

158 => DOS/WINDOWS 8090069E => 4690 OS

Explanation: The date is not set by application program. The request is not processed.

User Response: Correct the application program sequence.

159 => DOS/WINDOWS 8090069F => 4690 OS

Explanation: The fiscal printer is locked. The request is not processed.

User Response: Reset the printer using the J4/CE jumper procedure and initialize the printer again.

Note: Only authorized service personnel can move the J4/CE jumper.

160 => DOS/WINDOWS 80900330 => 4690 OS

Explanation: Fiscal memory is serialized. The request is not processed.

User Response: No action is required.

161 => DOS/WINDOWS 80900331 => 4690 OS

Explanation: The fiscal unit is in fiscal mode. The request is not processed.

User Response: No action is required.

163 => DOS/WINDOWS 809006A3 => 4690 OS

Explanation: Invalid command after a printer error or PLD. The request is not processed.

User Response: After a printer error or PLD, the same command that was in progress during a printer error or PLD to be issued again or a cancel transaction if is it allowed. Query commands like DA, DB, F8, F9 are accepted too.

164 => DOS/WINDOWS 80900350 => 4690 OS

Explanation: The power-on sequence is in progress.

User Response: No action is required.

165 => DOS/WINDOWS 809006A5 => 4690 OS

Explanation: The retrieve/send interrupted (08 cmd.) was issued without a printer error or PLD previous. The request is not processed.

User Response: Correct the application program sequence.

166 => DOS/WINDOWS 809006A6 => 4690 OS

Explanation: The set NFH information (A7 cmd.) cannot be issued because any non-fiscal homologated document was printed after the last daily closure. The request is not processed.

User Response: Issue the daily closure (13 cmd.) and issue the set NFH information (A7 cmd.) before to start any NFH document.

167 => DOS/WINDOWS 80900230 => 4690 OS

Explanation: The requested command cannot be issued while a sales period is in progress. The request is not processed.

User Response: Perform a daily closure command and then issue the command again.

168 => DOS/WINDOWS 80900231 => 4690 OS

Explanation: A command not related to a sales transaction was issued while a sales transaction is in progress. The request is not processed.

User Response: Issue the command again after the ticket is completed. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

169 => DOS/WINDOWS 80900232 => 4690 OS

Explanation: A command not related to credit note was issued while a credit note is in progress. The request is not processed.

User Response: Issue the command again after the credit note is complete.

170 => DOS/WINDOWS 80900233 => 4690 OS

Explanation: A command not related to a ticket invoice was issued while a ticket invoice is in progress. The request is not processed.

User Response: Issue the command again after the ticket invoice is complete.

171 => DOS/WINDOWS 80900234 => 4690 OS

Explanation: A command not related to a ticket invoice was issued while a ticket invoice is in progress. The request is not processed.

User Response: Issue the command again after the ticket invoice is complete.

172 => DOS/WINDOWS 80900235 => 4690 OS

Explanation: Only a fiscal ticket related sales transaction command is accepted after the header is printed. The request is not processed.

User Response: Check the application program.

173 => DOS/WINDOWS 80900236 => 4690 OS

Explanation: After the total command was issued, the command sequence is not valid. The request is not processed.

User Response: If the ticket invoice 'A' is in progress only ticket invoice payment (B5 cmd.) or ticket invoice cancel (0F cmd.) or ticket invoice end (E3 cmd.) are allowed.

If the credit note 'A' is in progress only credit note payment (38 cmd.), credit note cancel (3A cmd.) or credit note end (39 cmd.) are allowed.

If ticket is in progress, item/negative items sale are not allowed.

If ticket invoice 'B' or 'C' is in progress, item/negative items sale are not allowed.

If credit note 'B' or 'C' is in progress, item/negative items sale are not allowed.

174 => DOS/WINDOWS 80900237 => 4690 OS

Explanation: A payment is in progress. The request is not processed.

User Response: After the payment processing is complete, issue the request again.

175 => DOS/WINDOWS 80900238 => 4690 OS

Explanation: Training mode is in progress. The request is not processed.

User Response: Correct the application program sequence or issue a set training mode Off command.

176 => DOS/WINDOWS 80900239 => 4690 OS

Explanation: The payments are already completed and printed, so you can't continue paying. The request is not processed.

User Response: Continue with ordinary printing lines or end transaction.

177 => DOS/WINDOWS 809006B1 => 4690 OS

Explanation: The POS Id number is invalid. The request is not processed.

User Response: Correct the POS Id number and issue the command again.

178 => DOS/WINDOWS 809006B2 => 4690 OS

Explanation: Invalid C.U.I.T. or C.U.I.L. or document number. The request is not processed.

User Response: Correct the C.U.I.T or C.U.I.L or document number and issue the command again.

179 => DOS/WINDOWS 809006B3 => 4690 OS

Explanation: Invalid taxpayer customer condition selected. The request is not processed.

User Response: Correct the taxpayer customer condition and issue the command again.

180 => DOS/WINDOWS 809006B4 => 4690 OS

Explanation: Fiscal EPROM is in error. EPROM serialized but pattern not found.

User Response: Service the printer.

181 => DOS/WINDOWS 809006B5 => 4690 OS

Explanation: Fiscal RAM is in error. Return to the FB command.

User Response: Service the printer.

182 => DOS/WINDOWS 809006B6 => 4690 OS

Explanation: An error occurred on an end transaction (06 cmd.). The request is not processed.

User Response: Issue the end transaction command again or issue a cancel transaction command. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

183 => DOS/WINDOWS 809006B7 => 4690 OS

Explanation: An error occurred on a cancel transaction (07 cmd.). The request is not processed.

User Response: Issue the cancel transaction command again. If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sales transaction is in progress. Either have the salesperson end the transaction or diagnose the printer problem using the offline printer test that is invoked by pressing the keys on the printer in the correct sequence.

184 => DOS/WINDOWS 809006B8 => 4690 OS

Explanation: The command sequence is not valid.

- A command not related to application-originated report was requested that is not allowed during a application-originated report.
- If CR application-originated report is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If SJ application-originated report is in progress, ordinary printing line on DI station (EB cmd.) is not allowed at this point.
- If DI application-originated report is in progress, ordinary printing line on CR or SJ station (EA cmd.) is not allowed at this point.

The request is not processed.

User Response: Check the application program sequence.

185 => DOS/WINDOWS 809006B9 => 4690 OS

Explanation: An EPROM load error occurred on the printer logic card. The request is not processed.

User Response: Service the printer.

186 => DOS/WINDOWS 809006BA = 4690 OS

Explanation: Mismatch between RAM fiscalization flag and EPROM Mark. The request is not processed.

User Response: Insert the jumper and reinitialize the printer.

If the problem persists, service the printer.

187 => DOS/WINDOWS 809006BB => 4690 OS

Explanation: Block read from fiscal memory empty. The request is not processed.

User Response: Check the application program.

188 => DOS/WINDOWS 809006BC => 4690 OS

Explanation: Invalid customer document type selected. The request is not processed.

User Response: Correct the customer document type and issue the command again.

192 => DOS/WINDOWS 80900524 => 4690 OS

Explanation: The command is rejected from the printer logic card. The request is not processed.

User Response: Check for a device driver programming error.

194 => DOS/WINDOWS 80900521 => 4690 OS

Explanation: A print head home error occurred. The request is not processed.

User Response: If the problem persists, service the printer.

200 = DOS/WINDOWS 8090070D => 4690 OS

ONLY VALID FOR 4610 USB

Explanation: CR printer cover is open or CR out of paper occurred. The request is not processed.

User Response: Close the CR cover or ensure the CR paper is installed correctly. If the problem persists, service the printer.

201 => DOS/WINDOWS 80900528 => 4690 OS

Explanation: The front-insert document is not present. The request is not processed.

User Response: Insert the document or if a document is already inserted, try removing and reinserting it. If the problem persists, service the printer.

202 => DOS/WINDOWS 80900527 => 4690 OS

Explanation: The inserted document is not ready. The request is not processed.

User Response: Try removing the document and reinserting it. If the problem persists, service the printer.

203 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR 4610 USB

Explanation: The DI printer cover is open. The request is not processed.

User Response: Close the DI printer cover.

If the cover is already closed, service the printer.

203 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR 4610 RS-485

Explanation: The CR, SJ or DI printer cover is open, or CR out of paper occurred. The request is not processed.

User Response: Close the CR, SJ or DI printer cover or ensure the CR paper is installed correctly.

If the problem persists, service the printer.

204 => DOS/WINDOWS 80900711 => 4690 OS

Explanation: Internal Error. The request is not processed.

User Response: Service the printer.

205 => DOS/WINDOWS 80900526 => 4690 OS

Explanation: A printer keybutton is pressed. The request is not processed.

User Response: Release the pressed keybutton. If a keybutton is not pressed, service the printer.

206 => DOS/WINDOWS 80900525 => 4690 OS

Explanation: SJ paper error occurred. The request is not processed.

User Response: Ensure the paper is installed correctly.

If the problem persists, service the printer.

208 => DOS/WINDOWS 809006D0 => 4690 OS

Explanation: Printer Error. The request is not processed.

User Response: Service the printer.

209 = DOS/WINDOWS 80900522 = 4690 OS

ONLY VALID FOR 4610 USB

Explanation: The SJ printer cover is open. The request is not processed.

User Response: Close the SJ printer cover.

If the cover is already closed, service the printer.

210 => DOS/WINDOWS 809006D2 => 4690 OS

Explanation: Printer DI throat is opened. The request is not processed.

User Response: Close the throat and issue the command print again.

214 => DOS/WINDOWS 80900527 => 4690 OS

Explanation: A feed paper error occurred. The request is not processed.

User Response: Ensure that the paper is inserted correctly.

235 => DOS/WINDOWS 809006EB => 4690 OS

Explanation: EPROM load error. The request is not processed.

User Response: Service the printer.

8.3 Return Code Conversion Table (4690 OS to DOS/WINDOWS)

The following table is for converting 4690 OS return codes into DOS/WINDOWS return codes. Find the DOS/WINDOWS return code under 8.0, "Fiscal Unit Return Codes" on page 301.

Table 10 (Page 1 of 2). 4690 OS to DOS/WINDOWS
Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900102	002
80900104	004
80900106	006
80900108	008
80900110	010
80900112	012
80900114	014
80900115	015
80900116	016
80900118	018
80900120	020
80900122	022
80900123	023
80900124	024
80900125	025
80900126	026
80900127	064
80900129	029
80900130	030
80900140	096
80900141	033
80900142	034
80900143	035
80900144	036
80900145	037
80900146	038
80900150	056
80900151	057
80900201	065
80900202	066
80900203	055
80900204	068
80900205	069
80900209	075
80900210	076
80900211	077
80900212	079
80900213	080
80900220	135
80900221	136
80900223	138
80900224	139
80900225	140
80900226	141
80900227	142
80900229	144
80900230	167
80900231	168
80900232	169
80900233	170

Table 10 (Page 1 of 2). 4690 OS to DOS/WINDOWS
Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900234	171
80900235	172
80900236	173
80900237	174
80900238	175
80900239	176
80900303	073
80900304	078
80900306	082
80900307	083
80900308	084
80900309	085
80900312	089
80900314	091
80900315	092
80900318	099
80900320	128
80900321	129
80900323	131
80900324	109
80900325	134
80900326	101
80900327	102
80900328	108
80900329	100
80900330	160
80900331	161
80900341	113
80900350	164
80900363	114
80900364	133
80900401	086
80900410	097
80900411	098
80900421	103
80900425	095
80900521	194
80900522	203
80900524	192
80900525	206
80900526	205
80900527	202
80900527	214
80900528	201
8090061B	027
8090061C	028
8090061F	031
80900620	032
80900627	039
80900628	040

Table 10 (Page 2 of 2). 4690 OS to DOS/WINDOWS
Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900629	041
8090062A	042
8090062B	043
8090062C	044
8090062D	045
80900630	048
80900631	049
80900632	050
80900633	051
80900634	052
80900635	053
80900636	054
8090063A	058
8090063B	059
8090063C	060
8090063D	061
8090063E	062
8090063F	063
80900643	067
80900651	081
80900657	087
8090065A	090
8090066B	107
80900670	112
80900677	119
80900678	120
80900679	121
8090067B	123
8090067C	124
8090067D	125
80900691	145
80900692	146
80900693	147
80900694	148
80900695	149
80900696	150
80900697	151
80900698	152
8090069A	154
8090069B	155
8090069C	156
8090069D	157
8090069E	158
8090069F	159
809006A3	163
809006A5	165
809006A6	166
809006B1	177
809006B2	178
809006B3	179
809006B4	180
809006B5	181
809006B6	182
809006B7	183
809006B8	184
809006B9	185
809006BA	186

Table 10 (Page 2 of 2). 4690 OS to DOS/WINDOWS
Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
809006BB	187
809006BC	188
809006BF	191
809006D0	208
809006D1	209
809006D2	210
809006EB	235
80900701	115
80900702	116
80900704	118
8090070D	200

9.0 Fiscal Software and Hardware Interface Information

9.1 Supported Printer Typefaces

The printer typefaces supported are:

- 12 characters per inch (CPI), single high
- 12 CPI, single high, emphasized
- 15 CPI, single high
- 15 CPI, single high, emphasized
- 15 CPI, double-high
- 15 CPI, double-high, emphasized

The print typeface is controlled by the application program by setting the required bits in the command extension.

The selected print typeface applies to all characters of the same line.

It is also possible to print one or more substrings, within the same printed line, with a double-wide character size.

The size of each double-wide substring can range from one character to the number of characters in the printed line.

The double-wide substring is enabled by delimiting it with the special control characters X'0E' (enable double-wide) and X'14' (disable double-wide).

Note: Double-wide printing does **not** apply to the amount field in fiscal commands.

9.2 Error Conditions

Errors encountered during command execution are processed as follows:

- Command processing is suspended.
- Internal accumulators and counters are restored to their original value (the value they had before the command in error was received).
- An error is included in the final status sent over the communication link.
The error type indicates the cause of the abnormal termination.
- The application program can retrieve or send the last one command issued again using the Retrieve/Send Interrupted Command (08 cmd.) or send any other command that is valid for the procedure in progress.
The retrieve/send interrupted command has effect only on the following commands:
 - 01 - Ticket - Print Header
 - D0 - Ticket - Fixed Price Item Sale
 - D1 - Ticket - Fixed Price Negative/Uplift Item Sale
 - D2 - Ticket - Item Sale
 - D3 - Ticket - Negative or Uplift Item Sale
 - D9 - Ticket - Uplift/Discount on Subtotal
 - 06 - Ticket - End
 - 07 - Ticket - Cancel

 - E0 - Ticket Invoice - Print Header
 - B0 - Ticket Invoice - Fixed Price Item Sale
 - B1 - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
 - B2 - Ticket Invoice - Item Sale
 - B3 - Ticket Invoice - Negative/Uplift Item Sale
 - B9 - Ticket Invoice - Uplift/Discount on Subtotal
 - E3 - Ticket Invoice - End

- 0F - Ticket Invoice - Cancel
- 30 - Credit Note - Print Header
- 31 - Credit Note - Fixed Price Item Sale
- 32 - Credit Note - Fixed Price Negative/Uplift Item Sale
- 33 - Credit Note - Item Sale
- 34 - Credit Note - Negative/Uplift Item Sale
- 35 - Credit Note - Subtotal/Total
- 36 - Credit Note - Global Perception
- 37 - Credit Note - Uplift/Discount on Subtotal
- 38 - Credit Note - Payment
- 39 - Credit Note - End
- 3A - Credit Note - Cancel
- E0 - Ordinary Printing Line on CR/SJ Station
- E9 - Printer Native Commands

9.2.1 Exceptions

The only exceptions to this overlay process occur during the following commands: daily closure and fiscal memory report.

- **Daily Closure Command** – On receipt of the first command after error, the closure is completed in one of the following two ways:
 - Fiscal Memory Already Updated** - The Daily Closure command is terminated as if the error did not occur.
 - Fiscal Memory Not Yet Updated** - The daily data is restored as it was before the Daily Closure command and the closure report printout is voided.
- **Fiscal Memory Report command** – On receipt of first command after an error, the memory report function is terminated and the report is voided.

9.3 (PLD) - Power Line Disturbance

PLD during command execution are processed as follows:

- When a PLD occurs the fiscal unit goes into a power off state.
- When power is restored the microcode checks if command execution was in progress when PLD occurred.
- If no command was in progress a normal IPL is performed. If command was in progress then internal accumulators and counters are restored to their original value (the value they had at PLD time).

9.3.1 Retrieve/Send Interrupted Command

A bit (PLD bit) is included in the IPL status sent over the communication link.

The PLD bit indicates to the application that the last command sent was not executed because of PLD.

The IPL routines restore the accumulators and counters to their original values, but no actions can be performed on totally or partially printed lines.

The application program can retrieve or send the last one command issued again using the Retrieve/Send Interrupted Command (08 cmd.) or send any other command that is valid for the procedure in progress.

The retrieve/send interrupted command has effect only on the following commands:

- 01 - Ticket - Print Header
- D0 - Ticket - Fixed Price Item Sale
- D1 - Ticket - Fixed Price Negative/Uplift Item Sale
- D2 - Ticket - Item Sale
- D3 - Ticket - Negative or Uplift Item Sale
- D9 - Ticket - Uplift/Discount on Subtotal
- 06 - Ticket - End
- 07 - Ticket - Cancel

- E0 - Ticket Invoice - Print Header
- B0 - Ticket Invoice - Fixed Price Item Sale
- B1 - Ticket Invoice - Fixed Price Negative/Uplift Item Sale
- B2 - Ticket Invoice - Item Sale
- B3 - Ticket Invoice - Negative/Uplift Item Sale
- B9 - Ticket Invoice - Uplift/Discount on Subtotal
- E3 - Ticket Invoice - End
- 0F - Ticket Invoice - Cancel

- 30 - Credit Note - Print Header
- 31 - Credit Note - Fixed Price Item Sale
- 32 - Credit Note - Fixed Price Negative/Uplift Item Sale
- 33 - Credit Note - Item Sale
- 34 - Credit Note - Negative/Uplift Item Sale
- 37 - Credit Note - Uplift/Discount on Subtotal
- 39 - Credit Note - End
- 3A - Credit Note - Cancel

- C9 - Print Barcode
- EA - Ordinary Printing Line on CR/SJ Station
- EB - Ordinary Printing Line on DI Station
- E9 - Printer Native Commands

9.3.2 Exceptions

The only exceptions to this overlay process occurs during the following commands: ticket - print header, ticket invoice - print header, credit note - print header, daily closure and fiscal memory report.

- **Ticket - Print Header command:** On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continue automatically from the point it was interrupted.
- **Ticket Invoice - Print Header command:** On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continue automatically from the point it was interrupted.
- **Credit Note - Print Header command:** On IPL completion, after a PLD, the messages M36 and M12 will be printed and the header printout will continue automatically from the point it was interrupted.
- **Daily Closure command:** On IPL completion, after a PLD, the daily data is restored as it was before the daily closure command and the closure report printout is voided.
- **Fiscal Memory Report command** – On IPL completion, after a PLD, this function is terminated and the fiscal memory report printout is voided.

10.0 Serial Communication

The fiscal printer will have a serial communication port for electronic data collection. These services will print the short fiscal memory report.

The information transfer will be initiated for a device data collection (DRD) sending an audit command. The fiscal printer will respond with a data fiscal record (RDF). Each time that the fiscal printer finishes to transmit a RDF, will wait a response from DRD which will be one of the following ASCII characters.

- ACK (Acknowledge, hexadecimal 6), means that DRD received correctly data.
The fiscal printer will transmit the following RDF.
- NAK (Negative Acknowledge, hexadecimal 15), means that DRD received incorrect data.
The fiscal printer will retransmit the last RDF.

The fiscal printer always will wait ACK or NAK after transmit a RDF and will not accomplish any other task (unless to answer a unexpected test link command (CPV)).

From this condition will only come out with some external operation communication, for instance, turning on/off the fiscal printer.

After receiving the ACK response corresponding last RDF transmitted, the fiscal printer will send a finish report record (RFR) and then will print the fiscal memory report.

10.1 Communications Parameters

The communications parameters will be:

- 8 bits character length
- 1 start bit
- 1 stop bit
- parity none
- 9600 bauds transmission speed

10.2 Transmission Block Format

The transmission block format is shown in Figure 18 on page 332.

```

-----
- STX - DATA - ETX - CHK -
-----

=====
= FIELD = LENGTH = DESCRIPTION =
=====
= STX   = 1 byte = ASCII character STX (Start of Text, =
=       =       = hexadecimal 02). Indicate the record start. =
=====
= DATA = variable = Set of ASCII characters with data to transmit. =
=       =       = The length depend on the Record Type. =
=====
= ETX   = 1 byte = ASCII character ETX (End of Text, =
=       =       = hexadecimal 03). Indicate the record end. =
=====
= CHK   = 1 byte = Check Byte. Will be the negative value (two's =
=       =       = complement) of the modulus 2**8 sum of the =
=       =       = data, the start and the end characters record. =
=       =       = (STX + DATA + ETX). =
=====

```

Figure 18. Transmission Block format

10.3 Audit Command

This record is used for the DRD to transmit fiscal data and then print the fiscal memory report. It is transmitted only one time at the beginning of the communication. The data field have a fixed length of thirteen (13) bytes and its content will depend on the command received from host: Date or Closure Z.

1. Request Fiscal Data by Date

The field data will be the following:

FFYYMMDDYYMMDD

Where:

F = ASCII character capital letter F (hexadecimal 46), indicating fiscal data by date.

YYMMDD = ASCII character indicating the period date (YY=year, MM=month, DD=day) initial and final.
The first YYMMDD set is initial date and second YYMMDD set is final date.

2. Request Fiscal Data by Closure Z

The field data will be the following:

Z000000000000

Where:

Z = ASCII character capital letter Z (hexadecimal 5A), indicating fiscal data by closure Z.

000000 = set of six (6) digits compound for ASCII characters, indicating initial closure number and final closure number of audit period.

The first two digits have fixed value (ASCII character 0, hexadecimal 30) while the four remaining indicate the closure number. If the closure number is less than 4 digits, this field will be padded left with '0'.

The first 000000 set is initial closure number and second 000000 set is final closure number.

10.4 Data Fiscal Record (RDF)

This record is used by the fiscal printer to send fiscal data to DRD. The length of this field is fixed and will consist of the record type 1 or 2.

10.5 Finish Report Record (RFR)

This record is used for the fiscal printer to indicate the DRD the end of fiscal data transmission. The data field has fixed length of four (4) ASCII characters corresponding to the four-digit number indicating the number of RDF sent. If this number is less than 4 digits, it will be padded left with '0'. After receiving the ACK character corresponding to this record, the fiscal printer will print the fiscal memory report.

10.6 Test Link Command (CPV)

Anytime, the DRD will can send a unique character ASCIIENQ (ENQuiry, hexadecimal 05) and the fiscal printer will respond with a ACK character. This will allow to verify the link communication integrity and also restore it in case of a temporary break.

10.7 Lock Command (thru Audit Port)

This record is used by the data collection device (DRD) to perform thru the audit port the locking of the fiscal printer.

The data field of the command will have a length of 13 digits with the following structure.

B00XYZrrrrrrr

Where:

- | | |
|---------|--|
| B | One ASCII character of uppercase of letter B (hex 42) indicating that this is a locking command to the Fiscal Printer. |
| 00 | Two ASCII characters zero (hex 30) for field filling. |
| XYZ | Three ASCII characters corresponding for manufacturing, brand and model code id assigned by the tax offices (DGI). |
| rrrrrrr | Seven ASCII characters corresponding to the machine serial number. |

Upon receiving this command the printer could answer a NAK, which implies the re-transmitting of the command from the DRD. If the command was received OK, the machine will answer with a data fiscal report (RFR) indicating the result of the command execution.

The possible values for RFR could be:

CONDITION	ERROR MESSAGE
0000	Comando de bloqueo ejecutado exitosamente (Locking command executed OK)
0001	Codigo de registro de C.F. no coincidente (Serial Number Code not match)
0002	Falta realizar cierre Z (Closure has to be done)
0003	El C.F. ya esta bloqueado (Fiscal Printer already locked)
0004	Error de solicitud de datos (Wrong data requested)

In all cases the DRD will finish sending an ACK upon receiving the RFR correctly.

After receiving the corresponding ACK, the message will be printed in a non-fiscal report.

10.8 Calculations

When the lock action is executed OK, the following counters are incremented:

$$Lif_N_Lock = Lif_N_Lock + 1$$

$$Day_N_Lock = Day_N_Lock + 1$$

10.9 Electronic Data Collection

10.9.1 Audit Data: Specifications and Record Designs

10.9.1.1 Record Type "6" Description

The record type 6 will have data from the different fiscal memory reports required by the taxes agent. It must exist a record for each fiscal memory report, the period will be delimited by the field FROM and TO. The days requested in these fields will be included in the audited period.

Field 1: RECORD TYPE

Record type identification, fill with constant "6".

Field 2: UTIK NUMBER

Unique Tributary Identification Key Number of the Fiscal Printer owner.

Field 3: DENOMINATION

First name and last name or Enterprise name of the Fiscal Printer owner.

Field 4: MANUFACTURING CODE

Alphabetic manufacturing code assigned for Agency Tax Collection (DGI).

Field 5: BRAND CODE

Alphabetic brand code assigned for Agency Tax Collection (DGI).

Field 6: MODEL CODE

Alphabetic model code assigned for Agency Tax Collection (DGI).

Field 7: SERIAL NUMBER

Serial number assigned for factory owner.

Field 8: CURRENT DATE

Data extraction date.

Field 9: POINT OF SALE

Point of sale number assigned to Fiscal Printer.

Field 10: FIRST CLOSURE

First closure number of audit period.

Field 11: FIRST DATE CLOSURE

First closure date of audit period. This date will be included in the audit period.

Field 12: LAST CLOSURE

Last closure number of audit period.

Field 13: LAST DATE CLOSURE

Last closure date of audit period. This date will be included in the audit period.

Field 14: LAST TRANS.FISC.BC

Last transaction fiscal number of audit period. Include tickets,

invoices C or invoices B.

Field 15: LAST INVOICE A

Last invoice A number of audit period.

Field 16: PERIOD TOTAL

Total amount of audit period.

Field 17: PERIOD VAT TOTAL

Total VAT amount of audit period.

Field 18: TRANS.FISC.CNT.

Quantity of tickets, invoices A, invoices B and invoices C emitted during audit period.

Field 19: TRANS.FISC.CANC.CNT.

Quantity of tickets, invoices A, invoices B and invoices C cancelled during audit period.

Field 20: LOCK CNT.

Times locked fiscal printer during audit period.

Field 21: LAST CREDIT NOTE A

Last credit note A number during audit period.

Field 22: LAST CREDIT NOTE BC

Last credit note B and C number during audit period.

Field 23: LAST REMIT

Last remit number during audit period.

Field 24: CREDIT NOTE TOTAL

Credit note total during audit period.

Field 25: CREDIT NOTE VAT TOTAL

Credit note VAT total during audit period.

FIELD =	POSITIONS			DATA =		OBSERVATIONS =
NBR.	FROM	TO	QT.	TYPE =	DESCRIPTION	
1	1	1	1	2	Record Type	Constant 6
2	2	12	11	2	UTIK Number	
3	13	52	40	3	Denomination	
4	53	53	1	1	Manufacturing Code	
5	54	54	1	1	Brand Code	
6	55	55	1	1	Model Code	
7	56	62	7	3	Serial Number	
8	63	68	6	2	Current Date	format YYMMDD
9	69	72	4	2	Point of Sale	
10	73	76	4	2	First Closure	
11	77	82	6	2	Date 1' st Closure	format YYMMDD
12	83	86	4	2	Last Closure	
13	87	92	6	2	Date Last Closure	format YYMMDD
14	93	100	8	2	Last Trans.Fisc.BC	
15	101	108	8	2	Last Invoice A	
16	109	126	18	2	Period Total	
17	127	144	18	2	Period VAT Total	
18	145	152	8	2	Trans.Fisc.Cnt.	
19	153	160	8	2	Trans.Fisc.Canc.Cnt.	
20	161	164	4	2	Lock.Cnt.	
21	165	172	8	2	Last Credit Note A	
22	173	180	8	2	Last Credit Note BC	
23	181	188	8	2	Last Remit	
24	189	206	18	2	Credit Note Total	
25	207	224	18	2	Credit Note VAT Total	

DATA TYPE CODE: 1 - alphabetic, 2 - numeric, 3 - alphanumeric

10.9.1.2 Record Type "6" Description

The record type 2 will have daily detailed data of the transactions done. It must exist a record for each closure of the audited period.

Field 1: RECORD TYPE

Record type identification, fill with constant "6".

Field 2: UTIK NUMBER

Unique Tributary Identification Key Number of the fiscal printer owner.

Field 3: CLOSURE DATE

Closure date.

Field 4: CLOSURE NUMBER

Closure number.

Field 5: MANUFACTURING CODE

Alphabetic manufacturing code assigned for Agency Tax Recolection (DGI).

Field 6: BRAND CODE

Alphabetic brand code assigned for Agency Tax Recolection (DGI).

Field 7: MODEL CODE

Alphabetic model code assigned for Agency Tax Recollection (DGI).

Field 8: SERIAL NUMBER

Serial number assigned for factory owner.

Field 9: DAILY TOTAL

Daily total corresponding at this closure date.

Field 10: DAILY VAT TOTAL

Daily VAT total corresponding at this closure date.

Field 11: LAST.TRANS.FISC.BC

Last transaction fiscal number corresponding at this closure date.

Include tickets, invoices C and invoices B.

Field 12: LAST INVOICE A

Last invoice A number corresponding at this closure date.

Field 13: TRANS.FISC.CANC.CNT.

Quantity of tickets, invoices A, invoices B and invoices C cancelled corresponding at this closure date.

Field 14: LOCK CNT.

Times locked fiscal printer corresponding at this closure date.

Field 15: LAST CREDIT NOTE A

Last credit note A number corresponding at this closure date.

Field 16: LAST CREDIT NOTE BC

Last credit note B and C number corresponding at this closure date.

Field 17: LAST REMIT

Last remit number corresponding at this closure date.

Field 18: CREDIT NOTE TOTAL

Credit note total corresponding at this closure date.

Field 19: CREDIT NOTE VAT TOTAL

Credit note VAT total corresponding at this closure date.

```

=====
= FIELD =      POSITIONS      = DATA =      =      =
= NBR. ===== TYPE =      DESCRIPTION      = OBSERVATIONS =
=   = FROM = TO = QT. = CODE =      =      =
=====
= 1 = 1 = 1 = 1 = 2 = Record Type      = Constant 2 =
= 2 = 2 = 12 = 11 = 2 = UTIK Number      =           =
= 3 = 13 = 18 = 6 = 2 = Closure Date      = format YYMMDD =
= 4 = 19 = 22 = 4 = 2 = Closure Number      =           =
= 5 = 23 = 23 = 1 = 1 = Manufacturing Code =           =
= 6 = 24 = 24 = 1 = 1 = Brand Code          =           =
= 7 = 25 = 25 = 1 = 1 = Model Code          =           =
= 8 = 26 = 32 = 7 = 3 = Serial Number       =           =
= 9 = 33 = 41 = 9 = 2 = Daily Total         =           =
= 10 = 42 = 50 = 9 = 2 = Daily Vat Total    =           =
= 11 = 51 = 58 = 8 = 2 = Last.Trans.Fisc.BC =           =
= 12 = 59 = 66 = 8 = 2 = Last Invoice A     =           =
= 13 = 67 = 70 = 8 = 2 = Trans.Fisc.Canc.Cnt. =           =
= 14 = 71 = 78 = 4 = 2 = Lock.Cnt.         =           =
= 15 = 79 = 86 = 8 = 2 = Last Credit Note A =           =
= 16 = 87 = 94 = 8 = 2 = Last Credit Note BC =           =
= 17 = 95 = 102 = 8 = 2 = Last Remit       =           =
= 18 = 103 = 120 = 18 = 2 = Credit Note Total =           =
= 19 = 121 = 138 = 18 = 2 = Credit Note VAT Total =           =
=====

```

DATA TYPE CODE: 1 - alphabetic, 2 - numeric, 3 - alphanumeric

11.0 Argentina - Specific Information

This chapter contains information that is specific to Argentina:

- Default Decimal Printing Status
- End of Paper Rules
- Character Set

11.1 Default Decimal Printing Status

The default for Argentina is that the decimal status is ACTIVE for fiscal printing. Amounts should be printed as 'aaa.aaa.aaa,aa'.

11.2 End of Paper Rules

- When end of paper condition is detected on CR station, the message M17 "END OF PAPER ON CR" will be printed on SJ station.
- When end of paper condition is detected on SJ station, the message M18 "END OF PAPER ON SJ" will be printed on the new paper roll of SJ station.

11.3 Character Set

Argentina uses code page 850.

Hex	1st	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	2nd		õ		0	@	P	.	p	Ç	É	á	.	.	H	.	.
Decimal		000	016	032	048	064	080	096	112	128	144	160	176	192	208	224	240
1		ø	μ	!	1	A	Q	a	q	ü	æ	í	.	.	|	.	.
2		Ð	þ	"	2	B	R	b	r	é	Æ	ó	.	.	|||	.	.
3		Ê	Ï	#	3	C	S	c	s	â	ô	ú	.	.	⌘	.	.
4		Ë	res	\$	4	D	T	d	t	ä	ö	ñ	.	.	■	Ú	.
5		È	Û	%	5	E	U	e	u	à	ò	Ñ	Á	.	|||	.	.
6		Í	Ü	&	6	F	V	f	v	á	û	Û	Â	ã	.	.	.
7		Î	Ý	'	7	G	W	g	w	ç	ù	ġ	À	Ã	.	.	.
8		Ï	Ÿ	(	8	H	X	h	x	ê	ÿ	ı	İ	⌞	.	.	.
9		Ï	±	)	9	I	Y	i	y	ë	Ö	.	⌞	⌞	.	.	.
A		Ó	÷	*	:	J	Z	j	z	è	Ü	.	||	⌞	.	.	.
B		β	.	+	;	K	[	k	{	ï	ø	.	⌞	⌞	.	.	.
C		Ô	⌘	,	<	L	\	l	|	î	£	.	⌞	⌞	.	.	.
D		Ò	■	-	=	M	]	m	}	ï	Ø	i	⌞	⌞	.	.	.
E		res	.	,	>	N	^	n	~	Ä	Ş	.	.	⌞	.	.	H
F		ö	▶	/	?	O	-	o	.	À	ş	⌘	.	.	.	.	|
		015	031	047	063	079	095	111	127	143	159	175	191	207	223	239	255

Notes: Character '0E' is reserved to turn ON double wide print mode in Fiscal Commands.
 Character '14' is reserved to turn OFF double wide print mode in Fiscal Commands.

12.0 Suggestions for Application Developers

This chapter is to suggest some hints for the application programs to improve the performance.

- The usage of the emphasized and double-high characters should be minimized in order to reduce the printing time, due to the lines that contains such characters take four times more than the regular printing.
- If the totals in regular vouchers are calculated by the application instead of be requested to the fiscal printer, generally takes less time.
- We recommend the usage the DA (Electronic Read Fiscal Memory Tables) and DB (Electronic Read Counters and Accumulators) commands after any type of interrupts, like power down, paper out to determine the state of the fiscal printer and the values of internal counters and accumulators to allow the continuation of the current document in progress, if any.
Fiscal memory tables can also be interrogated.
- In some countries, all the header and trailer lines are not mandatory, so the use of less lines result in a better performance.