IBM 4610 SureMark Fiscal Printer
Venezuela - Models GR4
Programming Guide Supplement
Version 04 01

Document Number (FVE90N04-PDF)

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
v04 01	Sep 25, 2003	• There are not changes in the spec for this version. • This version of Programming Guide Supplement corresponds to microcode EC level 04.
v03 01	Sep 11, 2003	• There are not changes in the spec for this version. • This version of Programming Guide Supplement corresponds to microcode EC level 03.
v02 01	Ago 28, 2003	• E8 cmd. (Set Number of Dot Rows per Linefeed): was changed. • F7 cmd. (Command Buffer Management): was added. • Fiscal Voucher Printout: was changed. • Credit Note Printout: was changed. • This version of Programming Guide Supplement corresponds to microcode EC level 02.
v01 01	Jan 31, 2003	• 4610 SureMark G RS-485 - Printer and Fiscal Unit Status: was added. • DD cmd. (Start Application-Originated Report): was changed. • DE cmd. (End Application-Originated Report): state restricctions were changed. • C0 cmd. (Print Check and Credit Slip): was changed. • C1 cmd. (End Check and Credit Slip): was changed. • C3 cmd. (Line Feed Check and Credit Slip): was changed. • EB cmd. (Ordinary Printing Lines on DI): was changed. • EC cmd. (Line Feed): was changed. • ED cmd. (Ready Document): new note was added. • EE cmd. (Cut Paper): was changed. • E8 cmd. (Set Number of Dot Rows per LF): was changed. • EF cmd. (Document Eject): 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. • FC cmd. (Report Microcode EC): was changed. • C8 cmd. (Set Barcode Parameters): was added. • C9 cmd. (Print Barcode): was added. • CB cmd. (Flip Document in DI Station): was added. • DC cmd. (MICR Read): was added. • RC's 110, 111, 117, 139, 188, 204, 208, 210 and 235: were added. • RC's 201, 203, 214: were changed. • RC's 026, 193, 200, 213, 225, 226 and 237: were eliminated. • Fiscal Memory size (EPROM) = 512 Kbytes (524288 bytes). • Fiscal Memory Map: was changed. • Fiscal Memory - Daily Totals Table: was changed. • This version of Programming Guide Supplement corresponds to microcode EC level 01.

Table 1. Change Summary

Contents

Figures

1.0 4610 SureMark Fiscal Printer - Hardware Technical Specification

1.1 Features

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-485 communication interfaces

- Barcode printing capability (all stations)

- Paper Cutter (CR station only)

- MICR character reading (DI station only)

- Document Flipping (DI station only)

1.2 Models

```
* ============================================= *
* MODEL * INTERFACE *  POWER   * STATIONS  * MICR  *
*       *           *          * SJ  * DI  *       *
* ----- * --------- * -------- * --- * --- * ----- *
*  GR4  * RS-485    * Terminal * Yes * Yes *  Yes  *
* ============================================= *


   Where:
        in MODEL, G = 4610 SureMark, fiscal 3 stations thermal/impact
```

1.3 Fiscal Security Characteristics

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.

1.3.1 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 SureMark fiscal printer with RS-485 communication interface, the DS80C320 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.

1.3.2 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 3000 days of data at 128 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.

1.3.3 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.

2.0 Printer and Fiscal Unit Status

2.1 For GR4 Model (RS-485)

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 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 in 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 CR station is out of paper.		

Figure 1. Printer and Fiscal Unit Status - GR4 Model - Part 1 of 2

```
BYTE   BIT        CONTENT                                                    MAPPED FROM
                                                                             BYTE   BIT

2                 PRINTER UNIT STATUS
       0 (LSB)    LEFT HOME POSITION                                          1      2
                  Set to 1 when the print head is in the left home position.
       1          DOCUMENT ERROR                                             3      2
                  The document not inserted after DI station was selected and
                  the wait timed out.
       2          DOCUMENT PRESENT UNDER THE TOP SENSOR                      2      2
                  Set to 0 when a document is under the top document sensor.
       3          RESERVED (Always = '0')                                      n/a
       4          FLASH EPROM LOAD ERROR OR MCT LOAD ERROR                   3      3
       5          RIBBON COVER OPEN                                          1      5
                  Set to 1 when the ribbon cover is open.
       6          RESERVED (Always = '0')                                      n/a
       7 (MSB)    SJ STATION PAPER FAULT                                     5      7
                  Set to 1 when the paper is not present.

3                 PRINTER UNIT STATUS                                        4
                  Contains the printer EC level with all status messages.

4                 RESERVED (Always = '00')                                     n/a

5                 PRINTER UNIT STATUS                                        6
                  Contains the current line count the printer is on.

6                 FISCAL UNIT STATUS                                         (Note 1)
       0 (LSB)    RESERVED (Always = '0')
       1          IPL STATUS
                  When set, it indicates that status byte 8 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 = x2F = decimal 47
       7 (MSB)    ADDITIONAL DATA                                            (Note 2)
       6-5        COUNTRY VERSION (hardware model)
                  4610 SureMark - RS-485 - GR4 Model = x01 = decimal 01
       4-0        COUNTRY CODE
                  binary pattern 01111 = x0F = decimal 15

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.
```

Figure 2. Printer and Fiscal Unit Status - GR4 Model - Part 2 of 2

The fiscal unit return codes are defined in 11.0, "Return Codes" on page 169 .

2.1.1 Version/Country Code Definitions

- Country Name = Venezuela

- Country Version (hardware model) = x01 = decimal 01
  (4610 SureMark (Protocol SIO, Cable RS-485))

- Model = GR4

- Country Code = x0F = decimal 15

- Country Version + Country Code:

  - Hexadecimal = 2F
  - Decimal = 47

- Fiscal Microcode EC Level = 04

3.0 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.

3.1 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 Venezuela:

- Record serialization parameters
- Record fiscal configuration options
- Record store configuration options
- Record sale amount and generate customer fiscal voucher
- 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 the front side of personal checks (fill in the date, payee and amount)
- Print on the rear side of personal checks (called franking)
- Print on credit slips

3.2 Definition of Terminology

Please study these definitions:

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.

TAX   is value-added TAX.

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.

Fiscal Voucher	the fiscal voucher is the slip of paper that verifies that a sales transaction occurred and is commonly called the "customer receipt" in US English. The fiscal voucher is printed in CR station of the printer.
Fixed-Price Items	are item prices that are not affected by discount on subtotal on operations.
Void	is used when cancelling or voiding items.
Bonus	although not limited to this description, bonus items are items that are discounted by means of a coupon or promotional sale.
Empties	although not limited to this description, empties are a type of return, such as the return of an empty bottle to be used for recycling purposes.
Rectify	is an option on certain sales transaction commands used to modify, cancel or undo a previous operation.
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 sale transaction.
Checks	are personal checks (cheques) written by a customer to pay for merchandise.
Check Franking	is printing several lines on the back of a personal check to indicate the deposit information of the store.
Ordinary Printing Lines	
	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.

3.3 Definition of Fiscal Printer States

3.3.1 INITIALIZATION STATES

3.3.1.1 (FMEMNIT) - Fiscal Memory Serialized

The fiscal memory 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.

3.3.1.2 (FLOCALSN) - Secondary Serial Number Set

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

3.3.1.3 (FISCFLG) - Fiscal Printer Set in Fiscal Mode

This is the normal mode of fiscal operation. Totals are stored into the fiscal memory at the time of the close sale period.

3.3.1.4 (FSETDAT) - Date/Time Set

This indicates that the time and date has been set.

3.3.1.5 (FHEADER) - POS Headers Set

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

3.3.1.6 (FTRAILR) - POS Trailers Set

This indicates that the stored POS trailer lines have been loaded into the RAM memory.

3.3.1.7 (FPOSIDS) - POS/Store Information Loaded

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

3.3.1.8 (FVTXTBL) - TAX Table Verified

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

3.3.1.9 (FBLKAMT)- Items/Negative Items with Blank Amount Set

This state indicates that the quantity the blank amount item sale lines between two normal item/negitem lines is loaded and operational.

3.3.1.10 (FINCLTAX) - Inclusive/Exclusive TAX Definition Set

This state indicates which Inclusive/Exclusive TAX method calculation is loaded and operational.

3.3.1.11 (FINCEXA) - Inclusive/Exclusive TAX Activated

This state indicates that the Inclusive/Exlusive TAX method calculation is activated.

3.3.2 POS FISCAL STATES

3.3.2.1 (FSALEON)- Sales Period in Progress

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 close sale period must be performed.

3.3.2.2 Fiscal Voucher Sales Transaction

Steps in a fiscal voucher transaction are listed below:

3.3.2.2.1 (FHDRPRT) - Header Printed: This indicates that the POS header has been printed. However, it does not yet start a actual fiscal voucher.

3.3.2.2.2 (FTRANON) - Item Processed: This indicates that an item has been processed so a fiscal voucher is officially started.

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

3.3.2.2.4 (FDISCUPL) - Discount on Subtotal Requested: This indicates that an operation on subtotal has been requested.

3.3.2.2.5 (FPAYMNT) - Payment in Progress: This indicates that the payment phase is in progress due to either a payment or not paid command.

3.3.2.2.6 (FENDTRA) - End of Transaction Attempted: 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.

3.3.2.2.7 (FCANCEL) - Cancel Transaction Attempted: 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.

3.3.2.3 (FCHECK) - Check Printing in Progress

This indicates that an operation on a check is in progress. Typically this would be franking the check or filling out the front side of a personal check in some countries.

3.3.2.4 (FCREDIT) - Credit Slip Printing in Progress

This indicates that an operation on a credit slip is in progress.
Typically this would be printing the amount on the credit slip.

3.3.2.5 (FCRENOT) - Credit Note in Progress

This indicates that an operation on a credit note is in progress.

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

This indicates that an application-originated report is open in CR station.

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

This indicates that an application-originated report is open in SJ station.

3.3.2.8 (FOPNDIF) - DI Landscape Application-Originated Report in Progress

This indicates that a landscape application-originated report is open in DI station.

3.3.2.9 (FOPNDIN) - DI Portrait Application-Originated Report in Progress

This indicates that a portrait application-originated report is open in DI station.

3.3.2.10 (FTRAINM) - Training Mode Active

This indicates that training mode is active.

3.3.2.11 (FIPLINP) - Power on in Progress

This indicates that a power on sequence is in progress.

3.3.2.12 (FISCRDY) - Fiscal Printer Ready

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

3.3.3 POS FISCAL HARDWARE STATES

3.3.3.1 (FJUMPER) - J4/CE Jumper Active

The J4/CE jumper is in the active position.

3.3.3.2 (FEPROMC) - Fiscal Memory Connected

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 FEPROMC state is cleared. This state can only be set when the J4/CE jumper is active.

3.3.3.3 (FEPROMF) - Fiscal Memory Full

The fiscal memory is full.

3.3.3.4 (FEPROMR) - 200 Repair Actions Already Performed

The limit of repair actions has been reached.

3.3.3.5 (FDISPLY) - Display(s) Connected

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.

3.4 POS Fiscal General Information and Rules

3.4.1 Fiscal Memory Connection
Fiscal memory may not be disconnected. The microcode checks for a good connection at power up and before execution of the following commands:

- 01 - Print Header
- 06 - End Transaction
- 15 - Fiscal Memory Report
- 13 - Close Sale Period

If the fiscal memory is not connected, an error is reported to the application when the application attempts to execute the commands above.

Once the memory is detected as being disconnected, an error is sent to the application if any of the following commands are sent to the printer:

- 1B - Serialize Fiscal Memory
- 18 - Set Fiscal Mode
- 19 - Modify Currency/Decimal Indication
- C4 - Fiscal Parameter Configuration
- 07 - Cancel Transaction
- D2 - Item Sale
- D3 - Negative Item Sale
- D4 - Total/Subtotal
- D5 - Payment
- D9 - Discount on Subtotal
- C0 - Print Checks or Credit Slips
- 14 - Summary Fiscal Report (X-Report)
- 1F - POS/Store Information Report
- DD - Start Application-Originated Report
- DE - End   Application-Originated Report
- All Printer Commands

If Fiscal memory is not connected, an error is reported to the application. Recovery from this error requires that the RAM is cleared using the hardware J4/CE jumper.

4.0 Fiscal Software Information

4.1 Supported Printer

4.1.1 Characters Per Inch

- Thermal Printing (CR and SJ stations)

  - 12 CPI => 34 characters/line
  - 15 CPI => 44 characters/line

- Impact Printing (DI station)

  - 12 CPI => 37 characters/line
  - 15 CPI => 47 characters/line

4.1.2 Typefaces

- 12 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.

4.2 Default Options

By default, the following options are enable in the fiscal printer:

- Scan the string "Total" in the fields with free description.
- All printouts are replicated in SJ station.

To disable these options, fiscal parameter configuration (C4 cmd.) must be issued.

4.2.1 Scan String "Total" Option

When this option is enabled, the following strings can not be present in the fields with free description.

```
"TOTAL"    "T O T A L"    "T.O.T.A.L"    "T-O-T-A-L"    "T_O_T_A_L"
"total"    "t o t a l"    "t.o.t.a.l"    "t-o-t-a-l"    "t_o_t_a_l"
"t0tal"    "t 0 t a l"    "t.0.t.a.l"    "t-0-t-a-l"    "t_0_t_a_l"
```

4.3 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 send the same command again (retry) or send any other command that is valid for the procedure in progress.

To warn the operator that the same line could appear more than once for the same item, an overlay string ### is provided by microcode.
This overlay operation is activated when the device driver sets the retry bit in the repeated command.
In response to a retry operation from the application program, the retry bit is set, allowing the ### string to overlay the characters on the slip.
The retry bit has effect only on the following commands, but it may be used on all other fiscal commands with no adverse effect.

The string ### overlays the first three characters of the printed line.

- Item Sale
- Negative Item Sale
- Payment
- Discount on Subtotal

The only exceptions to this overlay process occur during the commands close sale period, fiscal memory report, end transaction or cancel transaction:.

- **Close Sale Period (13 cmd.)** – On receipt of the first command after error, the closure is completed in one of the following two ways:

    Fiscal Memory Already Updated - The close sale period is terminated as if the error did not occur.

    Fiscal Memory Not Yet Updated - The daily data is restored as it was before the close sale period and the closure report printout is voided.

- **Fiscal Memory Report (15 cmd.)** – On receipt of first command after an error, the memory report function is terminated and the report is voided.

- **End Transaction (06 cmd.)** – Only the end transaction or cancel transaction are accepted.

- **Cancel Transaction (07 cmd.)** – Only the Cancel Transaction is accepted.

4.4 (PLD) - Power Line Disturbance

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).
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.

To warn the operator that the same line could appear more than once for the same item, an overlay string (###) is provided by microcode.
This overlay operation is activated when the device driver sets the retry bit in the repeated command.
In response to a retry operation from the application program, the retry bit is set, allowing the ### string to overlay the characters on the slip.
The retry bit has effect only on the following commands, but it may be used on all other fiscal commands with no adverse effect.

The string ### overlays the first 3 characters of the printed line.

- D0 - Fixed Price Item Sale
- D1 - Fixed Price Item Sale
- D2 - Item Sale
- D3 - Negative Item Sale
- D5 - Payment
- D9 - Discount on Subtotal

The only exceptions to this overlay process occurs during the following commands:

- 13 - Close Sale Period
- 15 - Fiscal Memory Report

    Close Sale Period (13 cmd.) – On IPL completion, after a PLD, the closure is completed in one of the following two ways:

    - **Fiscal memory already updated** - The close sale period is terminated as if the PLD did not occur.

    - **Fiscal memory not yet updated** - The daily data is restored as it was before the close sale period 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.

4.5 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.

5.0 Fiscal Accounting Variables and Command Reference

A detailed description of the rules governing the execution of fiscal commands and the effect on fiscal memory, accumulators, and counters is in this section.

Note: In all of the commands, bit 7 is the most significant bit and bit 0 is the least significant bit.

5.1 Definition of Accounting Variables

The following variables are defined in this section:

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

5.1.1 Definition of Transaction Counters

Table 2 lists the counters used during a sales transaction.

Table 2. Transaction Counters

Counter Name	Description	Minimum Range	Maximum Range
Tra_N_Retn	Number of returned items	0	65535
Tra_N_Void	Number of voided items	0	65535
Tra_N_Bonu	Number of bonus items	0	65535
Tra_N_Empt	Number of empties items	0	65535
Tra_N_Tdsc	Number of discounts on subtotal	0	65535
Tra_N_Pay_Type(p)	Number of each type of payment	0	65535

Where:

p = Payment type, range from 1 to n (n: number of payment types allowed).

5.1.2 Definition of Transaction Accumulators

Table 3 list the accumulators used during a sales transaction.

Table 3. Transaction Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Tra_Tot	Shopper transaction total	0	549755813887
Tra_Tot_v(vv)	Transaction total by TAX	0	549755813887
Tra_TAX	Shopper transaction TAX total	0	549755813887
Tra_TAX_v(vv)	Transaction TAX total by TAX category	0	549755813887
Tra_Fixed	Fixed portion of transaction total	0	549755813887
Tra_Fixed_v(vv)	Fixed portion of transaction total by TAX	0	549755813887
Tra_Retn	Transaction returns total	0	549755813887
Tra_Retn_v(vv)	Transaction returns total by TAX category	0	549755813887
Tra_Void	Transaction voids total	0	549755813887
Tra_Void_v(vv)	Transaction voids total by TAX category	0	549755813887
Tra_Bonu	Transaction bonus total	0	549755813887
Tra_Bonu_v(vv)	Transaction bonus total by TAX category	0	549755813887
Tra_Empt	Transaction empties total	0	549755813887
Tra_Empt_v(vv)	Transaction empties total by TAX category	0	549755813887
Tra_Calc_Tdisc_v(vv)	Transaction discount on subtotal by TAX	0	549755813887
Tra_Tdsc_v(vv)	Transaction discount on subtotal by TAX	0	549755813887
Tra_Amt_Due	Amount Due/Change	−549755813888	549755813887
Tra_Tdsc	Transaction discount on subtotal	0	549755813887
Tra_Pay_Type(p)	Transaction payment total by payment type	0	549755813887

Where:

vv = TAX category, range from 01 to nn (nn: number of TAX categories allowed).
p = Payment type, range from 1 to n (n: number of payment types allowed).

5.1.3 Definition of Daily Counters

Table 4 lists the counters used during a Sales Period.

Table 4. Daily Counters

Counter Name	Description	Minimum Range	Maximum Range
Day_N_Vouc	Number of fiscal vouchers	0	9999
Day_N_Slip	Number of fiscal and application-originated slips printed	0	9999
Day_N_Retn	Number of returned items	0	65535
Day_N_Void	Number of voided items	0	65535
Day_N_Bonu	Number of bonus items	0	65535
Day_N_Empt	Number of empties items	0	65535
Day_N_Tdsc	Number of discounts on subtotal	0	65535
Day_N_NFR	Number of application-originated reports − all stations	0	9999
Day_N_NFCR	Number of CR station NFR	0	9999
Day_N_NFJL	Number of SJ station NFR	0	9999
Day_N_NFDI	Number of DI station NFR	0	9999
Day_N_Canc	Number of cancelled transactions	0	9999
Day_N_Chek	Number of checks	0	9999
Day_N_Cred	Number of credit slips	0	9999
Day_N_X	Number of X-Reports	0	9999
Day_N_Dump	Number of fiscal memory reports	0	9999
Day_N_Ract	Number of repair actions	0	200

5.1.4 Definition of Daily Accumulators

Table 5 list the accumulators that are used during a sales period.

Table 5. Daily Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Day_Tot_v(vv)	Individual totals by TAX category	0	140737488355327
Day_Tot	Daily total	0	140737488355327
Day_TAX	Daily TAX total	0	140737488355327
Day_TAX_v(vv)	Daily TAX total by TAX category	0	140737488355327
Day_Retn	Daily returns total	0	140737488355327
Day_Retn_v(vv)	Daily returns total by TAX category	0	140737488355327
Day_Void	Daily voids total	0	140737488355327
Day_Void_v(vv)	Daily voids total by TAX category	0	140737488355327
Day_Bonu	Daily bonus total	0	140737488355327
Day_Bonu_v(vv)	Daily bonus total by TAX category	0	140737488355327
Day_Empt	Daily empties total	0	140737488355327
Day_Empt_v(vv)	Daily empties total by TAX category	0	140737488355327
Day_Tdsc	Daily discount on subtotal	0	140737488355327
Day_Tdsc_v(vv)	Daily discount on subtotal by TAX category	0	140737488355327
Day_CredN	Credit Note totals	0	140737488355327
Day_CredN_v(vv)	Credit Note totals by TAX	0	140737488355327

Where:

vv = TAX category, range from 01 to nn (nn: number of TAX categories allowed).

5.1.5 Definition of Daily Accumulators calculated at Reporting Time

Table 6 list the accumulators that are calculated during at reporting time (Closure Report and Electronic Read Counters and Accumulators).

Table 6. Daily Accumulators – calculated at Reporting Time

Accumulator Name	Description	Minimum Range	Maximum Range
Day_TAXC	Daily TAX total	0	140737488355327
Day_TAXC_v(vv)	Daily TAX total by TAX category	0	140737488355327
Day_Retn_TAXC	Daily return TAX total	0	140737488355327
Day_Retn_TAXC_v(vv)	Daily return TAX total by TAX category	0	140737488355327
Day_Void_TAXC	Daily void TAX total	0	140737488355327
Day_Void_TAXC_v(vv)	Daily void TAX total by TAX category	0	140737488355327
Day_Bonu_TAXC	Daily bonus TAX total	0	140737488355327
Day_Bonu_TAXC_v(vv)	Daily bonus TAX total by TAX category	0	140737488355327
Day_Empt_TAXC	Daily empties TAX total	0	140737488355327
Day_Empt_TAXC_v(vv)	Daily empties TAX total by TAX category	0	140737488355327
Day_Tdsc_TAXC	Daily discount on subtotal by TAX category	0	140737488355327
Day_Tdsc_TAXC_v(vv)	Daily discount on subtotal by TAX category	0	140737488355327
Day_CredN_TAXC_g(vv)	Daily credit note TAX total	0	140737488355327
Day_CredN_TAXC_v(vv)	Daily credit note TAX total by TAX category	0	140737488355327

Where:

vv = TAX category, range from 01 to nn (nn: number of TAX categories allowed).
p = Payment type, range from 1 to n (n: number of payment types allowed).

5.1.6 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_Vouc	Number of fiscal vouchers	1	99999999	1, 3
Lif_N_NFR	Number of application-originated reports (all stations)	1	99999999	1, 3
Lif_N_Clos	Closure number	1	3000	3
Lif_N_Dump	Number of fiscal memory reports	1	65535	1, 3
Lif_N_Ract	Number of repair actions	0	200	3

Notes:

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

5.1.7 Definition of Lifetime Accumulators

Table 8 lists the accumulators kept for the life of the fiscal printer.

Table 8. Lifetime Accumulators

Accumulator Name	Description	Minimum Range	Maximum Range
Grand_Tot	Grand total	0	1080863910568915200
Grand_Tot_v(vv)	Grand total by TAX category	0	1080863910568915200
Grand_TAXC_v(vv)	Grand TAX total by TAX category	0	1080863910568915200
Grand_TAXC	Grand TAX total	0	1080863910568915200

Where:

vv = TAX category, range from 01 to nn (nn: number of TAX categories allowed).

6.0 Fiscal Hardware Functions

6.1 J4/CE Jumper

6.1.1 Description

There is a J4/CE jumper which is used to reset the RAM memory 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 memory 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.

6.1.2 Procedure

The activate 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 jumper procedure consists in:

- Turn OFF the fiscal printer

- Put the J4/CE jumper in OFF (STORED) position

- Turn ON the fiscal printer

6.1.3 Calculations while the J4/CE jumper is active:

- **Recover the following counters from the fiscal memory tables and operate on them as shown below:**

  Lif_N_Clos
  Lif_N_Ract

  Lif_N_Ract = Lif_N_Ract + 1
  Day_N_Ract = Day_N_Ract + 1

6.1.4 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 number repair reach 200, no more J4/CE jumper action can be issued and only the following commands are allowed:
  - 15 - Fiscal Memory Report
  - 1F - POS/Store Information 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.

6.1.5 States Changed by When the Jumper is Moved to the Active Position

```
FSALEON (Sales Period in Progress.................................) = NO
FTRANON (Voucher Sales Transaction in Progress...................) = NO
FHDRPRT (Voucher Header Printed..................................) = NO
FTOTALR (Total Requested........................................) = NO
FPAYMNT (Payment in Progress....................................) = NO
FTRAINM (Training Model Active..................................) = NO
FHEADER (POS Headers Set........................................) = NO
FTRAILR (POS Trailers Set.......................................) = NO
FJUMPER (J4/CE Jumper Active....................................) = YES
FENDTRA (End of Transaction Attempted...........................) = NO
FCANCEL (Cancel Transaction Attempted...........................) = NO
FOPENCR (CR Application-Originated Report in Progress............) = NO
FOPENSJ (SJ Application-Originated Report in Progress...........) = NO
FOPNDIF (DI Application-Originated Report in Progress – Landscape) = NO
FOPNDIN (DI Application-Originated Report in Progress – Portrait.) = NO
FVTXTBL (TAX Table Verified.....................................) = NO
FDISCUPL(Discount on Subtotal Performed.........................) = NO
FPOSIDS (POS/Store Information Loaded...........................) = NO
FSETDAT (Date and Time Set......................................) = NO
If the Fiscal Memory Pattern is Correct then
{
  FEPROMC (Fiscal Memory Connected..............................) = YES
}
else
{
  FEPROMC (Fiscal Memory Connected..............................) = NO
}
```

6.1.6 States changed by when the jumper is moved to the stored position

Note that this is the same as a normal power-on.

```
FJUMPER (J4/CE Jumper Active....................................) = NO
```

7.0 Initialization Sequence

The initialization sequence for Venezuela is:

1. **RAM CLEAR**

   - Turn ON the fiscal printer **with J4/CE jumper in OFF (stored) position**

   - **Put the J4/CE jumper in ON (active) position**

   - Execute -->   Reset = 1B66 4s

   - **Put the J4/CE jumper in OFF (stored) position**

   - Execute -->   Reset = 1B66 4s

2. **SERIALIZATION**

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

   - Execute -->   Set Secondary FM Serial Number = 1B66 1B01

3. **FISCALIZATION**

   - **Put the J4/CE jumper in ON (active) position**

   - Execute -->   Reset = 1B66 4s

   - Execute -->   Set Fiscal Mode = 1B66 1800

   - **Put the J4/CE jumper in OFF (stored) position**

   - Execute -->   Reset = 1B66 4s

4. **SET DATE AND TIME**

   - Execute -->   Set Date and Time = 1B66 1600

5. **SET FISCAL PARAMETER CONFIGURATION**

   (Optional)

   - Execute -->   Disable String ″Total″ Scan = 1B66 C404

   - Execute -->   Disable SJ Replication = 1B66 C405

6. **SET DISPLAY ADDRESS**

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

7. **SET FISCAL PARAMETER CONFIGURATION**

   - Execute -->   Set Blank Amount = 1B66 C406

   - Execute -->   Set Inclusive/Exclusive TAX = 1B66 C407

8. **SET HEADERS**

   (Minimum = 1, Maximum = 7)

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

9. **SET POS/STORE INFORMATION**

- Execute --> Set POS/Store Information = 1B66 1E41

10. **SET TRAILERS**

(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. **LOAD AND VERIFY TAX RATE**

- Execute --> Load   TAX Rate = 1B66 2001
- Execute --> Verify TAX Rate = 1B66 2101

8.0 Training Mode

8.1 Rules

The following rules apply to training mode operation in the fiscal unit:

- After serialization and before fiscalization the fiscal unit is in training mode state.

- In this mode the fiscal unit allows regular operations without writing in the fiscal memory.

- Training mode is disabled when the fiscal unit has been fiscalized.

- The set date command can be issued in this mode.

- The accumulators and counters are not stored in RAM neither in fiscal memory.

- The fiscal logo is not printed in any document.

- In the documents, all blank spaces are printed as ′?′ characters.

- During training mode the following documents are allowed:

  - Fiscal Vouchers
  - Check and Credit Slips
  - Credit Notes

- During training mode the following documents are not allowed:

  - Z-Report (13 cmd.)
  - X-Report (14 cmd.)
  - Fiscal Memory Report (15 cmd.)
  - POS/Store Information Report (1F cmd.)
  - Application-Originated Reports (DD & DE cmd′s)

9.0 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.

9.1 Initialization

16   Set Date and Time
17   Set Store Trailer
18   Set Fiscal Mode
1A   Set Display Address
1B   Serialize Fiscal Memory
1E   Set POS/Store Information
20   Load TAX Rate Table
21   Verify TAX Rate Table
C4   Fiscal Parameter Configuration
D7   Set Store Header

9.2 Sales Transaction

Sales transactions are printed in CR station.

01   Print Store Header
06   End Transaction
07   Cancel Transaction
D0   Fixed Price Item Sale
D1   Fixed Price Negative Item Sale
      Returns
      Voids
      Bonus
      Empties
D2   Item Sale
D3   Negative Item Sale
      Returns
      Voids
      Bonus
      Empties
D4   Subtotal/Total Transaction
D5   Payment
D9   Discount on Subtotal

9.3 Credit Notes

BA   Credit Note Print Header
BB   Credit Note Item
BC   Credit Note Negative Item
BD   Credit Note End
BE   Credit Note Cancel

9.4 Check and Credit Slip

C0 Print Check and Credit Slip
C1 End Check and Credit Slip
C2 Cancel Check and Credit Slip
C3 Line Feed and Credit Slip

9.5 Reports

13 Close Sale Period (Z-Report)
14 Summary Fiscal Report (X-Report)
15 Fiscal Memory Report
1F POS/Store Information Report
DA Read Fiscal Memory
DB Read Accumulators and Counters
DD Start Application-Originated Report
DE End Application-Originated Report

9.6 Miscellaneous

C8 Set Barcode Parameters
C9 Print Barcode
CB Flip Document in DI Station
DC MICR Read

9.7 Utilities

19 Chance Currency/Decimal Point
F1 Report Power-On Status
F7 Command Buffer Management
F9 Read Current Status

9.8 Printer

E8 Set Number of Dot Rows per Line Feed
EA Ordinary Printing Lines in CR/SJ Station
EB Ordinary Printing Lines in DI Station
EC Line Feed
ED Ready Document (Top/Bottom Registration)
EE Cut Paper
EF Document Eject
F4 Head Position & Open/Close Throat

9.9 Original Equipment Manufacturer

00 System Commands
E7 Print DI Adjustment Data Patterns
F8 Report Printer EC
FA Reset Fiscal Printer

FB   Run Diagnostics
FC   Report Microcode EC
FF   Dump Fiscal RAM and Fiscal EPROM Memory

10.0 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**

   Cmd. 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 2.0, "Printer and Fiscal Unit Status" on page 17.

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

10.1 Initialization Commands

Those commands that require the J4/CE jumper in ON (ACTIVE) position and those that require the J4/CE jumper in OFF (STORED) 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 requires the J4/CE jumper in ON (ACTIVE) position, it′s necessary to execute only one IPL and then all the commands.

These are the initialization commands:

- 16 - Set Date and Time
- 17 - Set Trailer
- 18 - Set Fiscal Mode
- 1A - Set Display Address
- 1B - Serialize Fiscal Memory
- 1E - Set POS/Store Information
- 20 - Load   TAX Rate Table
- 21 - Verify TAX Rate Table
- C4 - Set Fiscal Parameter Configuration
- D7 - Set Header

10.1.1 16 - SET DATE AND TIME

This command is used to set the fiscal unit time-of-day clock.

10.1.1.1 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.

10.1.1.2 Command Example

```
Byte  0          2       3
      +---------+-------+-------+---
      | x'1B66' | x'16' | x'00' |
      +---------+-------+-------+---
           |         |       |
           |         |       ----------------------> Cmd. Extension
           |         ---------------------------> Set Date
           --------------------------------------> Escape Sequence

Byte  4      6      8        12     14     16
      +------+------+--------+------+------+------+
      | '22' | '05' | '1999' | '08' | '11' | '27' |
      +------+------+--------+------+------+------+
          |      |      |        |      |      |
          |      |      |        |      |      ------> Seconds (27)
          |      |      |        |      -------------> Minutes (11)
          |      |      |        --------------------> Hours   (08)
          |      |      ---------------------------> Year    (1999)
          |      ----------------------------------> Month   (Oct)
          -----------------------------------------> Day     (22)
```

10.1.1.3 Set Date and Time Rules

- The time and date can be set only if a sales period is not in progress.
- The date/time cannot be set previous to the time stamp of the last closure in the fiscal memory.
- The set time and date command is rejected if the new date is before the current date or more than one day after the current date.
- After the J4/CE jumper procedure is performed, any date and time can be set, providing it is later than the time stamp of the last closure and no other fiscal commands have been executed since the last jumper operation.

10.1.2 17 - SET TRAILER LINES

This command is issued to load the trailer lines in fiscal printer battery backed up RAM.

10.1.2.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                          TYPE   LENGTH

 0-1       1B66 - cmd prefix                                hex      2
 2         17 - Set Trailer Lines                           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   Trailer Line Number
           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


------------------------------------------------------------------------
```

Notes:

1. If an all blank character string is specified then the corresponding trailer line is not printed.

2. If a trailer line is not set, it is not printed.

10.1.2.2 Command Example

```
Byte  0        2       3       4
      +--------+-------+-------+--------------------+
      | x'1B66' | x'17' | x'09' | 'Thanks and bye...' |
      +--------+-------+-------+--------------------+
          |        |       |       |
          |        |       |       ----------------------> Description
          |        |       -----------------------------> Cmd. Extension
          |        |                                       (12 CPI, 1st. line)
          |        ------------------------------------> Set Trailer Lines
          -----------------------------------------------> Escape Sequence
```

10.1.2.3 Set Trailer Lines Rules

- The trailer lines are stored in RAM memory.
- The store trailer is erased when RAM is cleared by activation of the J4/CE jumper.
- This command cannot be executed when sales period is in progress.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.1.3 18 - SET FISCAL MODE

This command is used to set the fiscal mode in fiscal memory.
Once this procedure has been executed the fiscal printer operates according to the configured country fiscal law.

10.1.3.1 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')
 4-7       Password                                     ASCII      4


-------------------------------------------------------------------------
```

10.1.3.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'18' | x'00' | 'pppp' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Password
           |         |       -----------------------> Cmd. Extension
           |         -------------------------------> Set Fiscal Mode
           ------------------------------------------> Escape Sequence
```

10.1.3.3 Set Fiscal Mode Rules

• This procedure can be executed only once.
• The J4/CE jumper must be used immediately prior to execution of this command to clear all RAM.

10.1.4 1A - SET DISPLAY ADDRESS

This command is used to set the addresses of the 1 display(s) that have to be monitored for connection by the fiscal unit.

10.1.4.1 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)


----------------------------------------------------------------------
```

Notes:

```
1. Specify the ASCII representation of the hexadecimal address.
   Example: for hexadecimal address x2A specify ASCII characters '2', 'A'.
   Valid display addresses are:  x20-x27  and  x2A-x2F.
```

10.1.4.2 Command Example

```
Byte  0        2       3       4       8     10
      +---------+-------+-------+--------+------+------+
      | x'1B66' | x'1A' | x'00' | 'nnnn' | '20' | '25' |
      +---------+-------+-------+--------+------+------+
          |         |       |        |       |      |
          |         |       |        |       |      ------> 2nd. display address
          |         |       |        |       ------------> 1st. display address
          |         |       |        ---------------------> Password
          |         |       ----------------------------> Cmd. Extension
          |         ------------------------------------> Set Display Address
          -----------------------------------------------> Escape Sequence
```
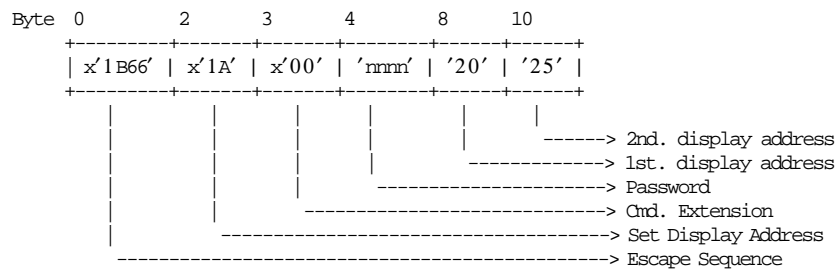
10.1.4.3 Set Displays Rules

- Only one display address is mandatory.
- Display addresses are erased when RAM is cleared by activation of the J4/CE jumper.

10.1.5 1B - SERIALIZE FISCAL MEMORY

This command is used at the end of manufacturing process to serialize the fixed area of the fiscal memory.

10.1.5.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - cmd prefix                          hex        2
 2         1B - Serialize Fiscal Memory               hex        1
 3         FM Serial Number Type                      hex        1
           00 = Primary
           01 = Secondary
 4-13      Fiscal Memory Serial Number                ASCII     10 (Note 1)


---------------------------------------------------------------------
```

Notes:

1. The fiscal memory serial number can include fixed fields (manufacturer ID, etc.) to be defined
   by marketing and communicated to manufacturing as required.

10.1.5.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------------+
      | x'1B66' | x'1B' | x'00' | 'ABC1234567' |
      +---------+-------+-------+--------------+
           |         |       |         |
           |         |       |          --------------> Fiscal Memory Serial Number
           |         |        -----------------------> Cmd. Extension
           |          ------------------------------> Serialize Fiscal Memory
            ----------------------------------------> Escape Sequence
```
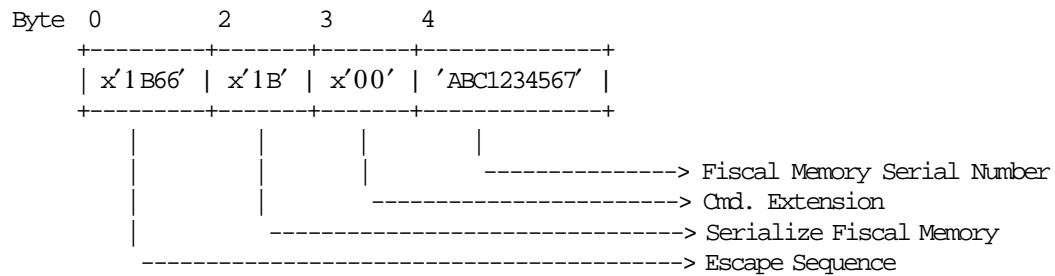
10.1.5.3 Serialize Fiscal Memory Rules

• This procedure can be executed only once.

10.1.6 1E - SET POS/STORE INFORMATION

This command is used to load the POS and store information in fiscal memory.

10.1.6.1 Command Format

```
-----------------------------------------------------------------------

BYTE  BIT  CONTENT                                    TYPE    LENGTH

 0-1       1B66 - command prefix                      hex       2
 2         1E - Set POS/Store Information             hex       1
 3         Cmd. Extension                             hex       1
      7    Reserved (always = '0')
      6    1 = Final Entry
      5-3  Print Typeface
           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
 4-7       Store Number                               ASCII     4
 8-11      Reserved                                   ASCII     4
12-22      RIF Number                                 ASCII    11 (Note 1)
23-49      Special Message                            ASCII    27 (Note 2)


-----------------------------------------------------------------------
```

Notes:

1. The RIF number is represented in the printouts by "iiiiiiiiiii".

2. The special message is represented in the printouts by "   SENIAT   ".

10.1.6.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+--
      | x′1B66′ | x′1E′ | x′05′ |
      +---------+-------+-------+--
           |        |       |
           |        |        --------------------------> Cmd. Extension (final entry,
           |        |                                     15 CPI, first line)
           |         ------------------------------------> Set POS/Store Information
            --------------------------------------------> Escape Sequence


Byte  4        8       12             23
      +--------+-------+--------------+--------------+
      | ′0001′ | ′rrrr′| ′11111111111′| ′SENIAT....′ |
      +--------+-------+--------------+--------------+
          |        |        |              |
          |        |        |               -------------> Special Message
          |        |         ----------------------------> RIF Number
          |         -------------------------------------> Reserved
           --------------------------------------------> Store Number
```
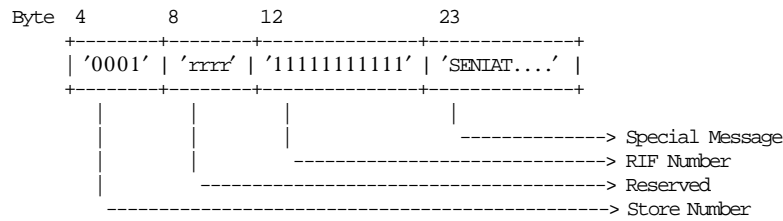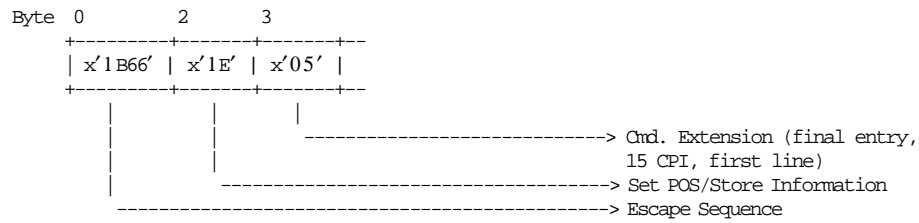
10.1.6.3 Set POS/Store Information Rules

- The store number, RIF number and special message can be loaded into the fiscal memory 10 time(s) during the life of the fiscal printer.
- The information is compared to the last entry in the table.
  If the information is the same the new entry will not be added to the table, otherwise will be added.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the controled data field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.1.7 20 - LOAD TAX RATE TABLE

This command is used to load the TAX rate table in fiscal memory.

10.1.7.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                              TYPE    LENGTH

  0-1      1B66 - cmd prefix                    hex       2
  2        20 - Load TAX Rate Table             hex       1
  3        Cmd. Extension                       hex       1
           01 = TAX Categories 1 - 4
  4-7      Password
  8-9      Reserved                             ASCII     2
  10-13    TAX Rate for Category 1              ASCII     4 (Note 1)
  14-15    Reserved                             ASCII     2
  16-19    TAX Rate for Category 2              ASCII     4 (Note 2, 3, 4)
  20-21    Reserved                             ASCII     2
  22-25    TAX Rate for Category 3              ASCII     4 (Note 2, 3, 4)
  26-27    Reserved                             ASCII     2
  28-31    TAX Rate for Category 4              ASCII     4 (Note 2, 3, 4)
  32-37    Reserved                             ASCII     6


-----------------------------------------------------------------------
```

Notes:

1. This category is used to TAX exempt. The rate must be '0000'.

2. TAX rate field consists of four characters (rrrr) that represent the tax rate.
   Tax rate is a fixed point number with 2 decimal digits.
   Separator characters must not be included in the tax rate string.
   For example, for tax rate 8%, specify '0800'.

3. Tax rate field can range from '0000' to '9999'.
   Values from '0000' to '9998' are used to specify the tax rate, while value '9999' is used to inhibit the corresponding category.

4. The print format for tax rates depends on their specification:

   a. If all rates are specified as 'rr00' the print format is %rr
   b. If at least one rate is not specified as 'rr00' the print format is %rr.rr

10.1.7.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+---
      | x'1B66' | x'20' | x'01' | 'nnnn' |
      +---------+-------+-------+--------+---
           |         |       |      |
           |         |       |      --------------------> Password
           |         |       --------------------------> Cmd. Extension
           |         |                                    (TAX category 1 - 4)
           |         -----------------------------------> Load TAX Rate Table
           -----------------------------------------------> Escape Sequence


Byte  8       10      14     16       20     22
      +------+--------+-----+--------+------+--------+---
      | 'rr' | '0500' | 'rr' | '1523' | 'rr' | '2000' |
      +------+--------+-----+--------+------+--------+---
          |      |       |      |       |       |
          |      |       |      |       |       --------> TAX rate for category 3 (20.00%)
          |      |       |      |       ---------------> Reserved
          |      |       |      -----------------------> TAX rate for category 2 (15.23%)
          |      |       -----------------------------> Reserved
          |      ---------------------------------------> TAX rate for category 1 (05.00%)
          -----------------------------------------------> Reserved


Byte  26     28      32
      +------+--------+----------+
      | 'rr' | '3080' | 'rrrrrr' |
      +------+--------+----------+
          |      |         |
          |      |         ---------------------------> Reserved
          |      -----------------------------------------> TAX rate for category 4 (30.80%)
          -----------------------------------------------> Reserved
```

10.1.7.3 Load TAX Rate Table Rules

- The TAX rate table is stored in the FISCAL MEMORY (EPROM).
- The TAX rate table is not actualized if the new entry is equal at the last entry stored.
- The TAX rate table can be changed up to 10 times during the life of the fiscal printer.
- The TAX rate tables may be modified only by approved service personnel.
  The operation is protected by a fixed 4-digit password.
- 4 categories must be loaded.
- Categories defined in the command greater than 4 are ignored.

10.1.8 21 - VERIFY TAX RATE TABLE

This command is used to compare the TAX rates loaded thru 20 cmd.
If the TAX rates are equals, the table will be writed in fiscal memory.

10.1.8.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                   TYPE    LENGTH

 0-1       1B66 - cmd prefix                         hex      2
 2         21 - Verify TAX Rate Table                hex      1
 3         Cmd. Extension                            hex      1
           01 = TAX Categories 1 - 4
 4-7       Password                                  ASCII    4
 8-9       Reserved                                  ASCII    2
10-13      TAX Rate for Category 1                   ASCII    4 (Note 1)
14-15      Reserved                                  ASCII    2
16-19      TAX Rate for Category 2                   ASCII    4 (Note 2, 3, 4)
20-21      Reserved                                  ASCII    2
22-25      TAX Rate for Category 3                   ASCII    4 (Note 2, 3, 4)
26-27      Reserved                                  ASCII    2
28-31      TAX Rate for Category 4                   ASCII    4 (Note 2, 3, 4)
32-37      Reserved                                  ASCII    6


-----------------------------------------------------------------------
```

Notes:

1. This category is used to TAX exempt. The rate must be '0000'.

2. TAX rate field consists of four characters (rrrr) that represent the TAX rate.
   TAX rate is a fixed point number with 2 decimal digits.
   Separator characters must not be included in the TAX rate string.
   For example, for TAX rate 8%, specify '0800'.

3. TAX rate field can range from '0000' to '9999'.
   Values from '0000' to '9998' are used to specify the TAX rate, while value '9999' is used to
   inhibit the corresponding category.

4. The print format for TAX rates depends on their specification:

   a. If all rates are specified as 'rr00' the print format is %rr
   b. If at least one rate is not specified as 'rr00' the print format is %rr.rr

10.1.8.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+--------+---
     | x'1B66' | x'21' | x'01' | 'nnnn' |
     +---------+-------+-------+--------+---
          |         |       |       |
          |         |       |       --------------------> Password
          |         |       ---------------------------> Cmd. Extension
          |         |                                    (TAX category 1 - 4)
          |         -----------------------------------> Verify TAX Rate Table
          -----------------------------------------------> Escape Sequence


Byte  8      10      14      16      20      22
     +------+--------+-----+--------+------+--------+---
     | 'rr' | '0500' | 'rr' | '1523' | 'rr' | '2000' |
     +------+--------+-----+--------+------+--------+---
         |      |       |       |       |       |
         |      |       |       |       |       --------> TAX rate for category 3 (20.00%)
         |      |       |       |       ---------------> Reserved
         |      |       |       -----------------------> TAX rate for category 2 (15.23%)
         |      |       -------------------------------> Reserved
         |      ---------------------------------------> TAX rate for category 1 (05.00%)
         -----------------------------------------------> Reserved


Byte  26     28      32      34
     +------+--------+----------+
     | 'rr' | '3080' | 'rrrrr' |
     +------+--------+----------+
         |      |        |
         |      |        ---------------------------> Reserved
         |      -------------------------------------> TAX rate for category 4 (30.80%)
         -----------------------------------------------> Reserved
```
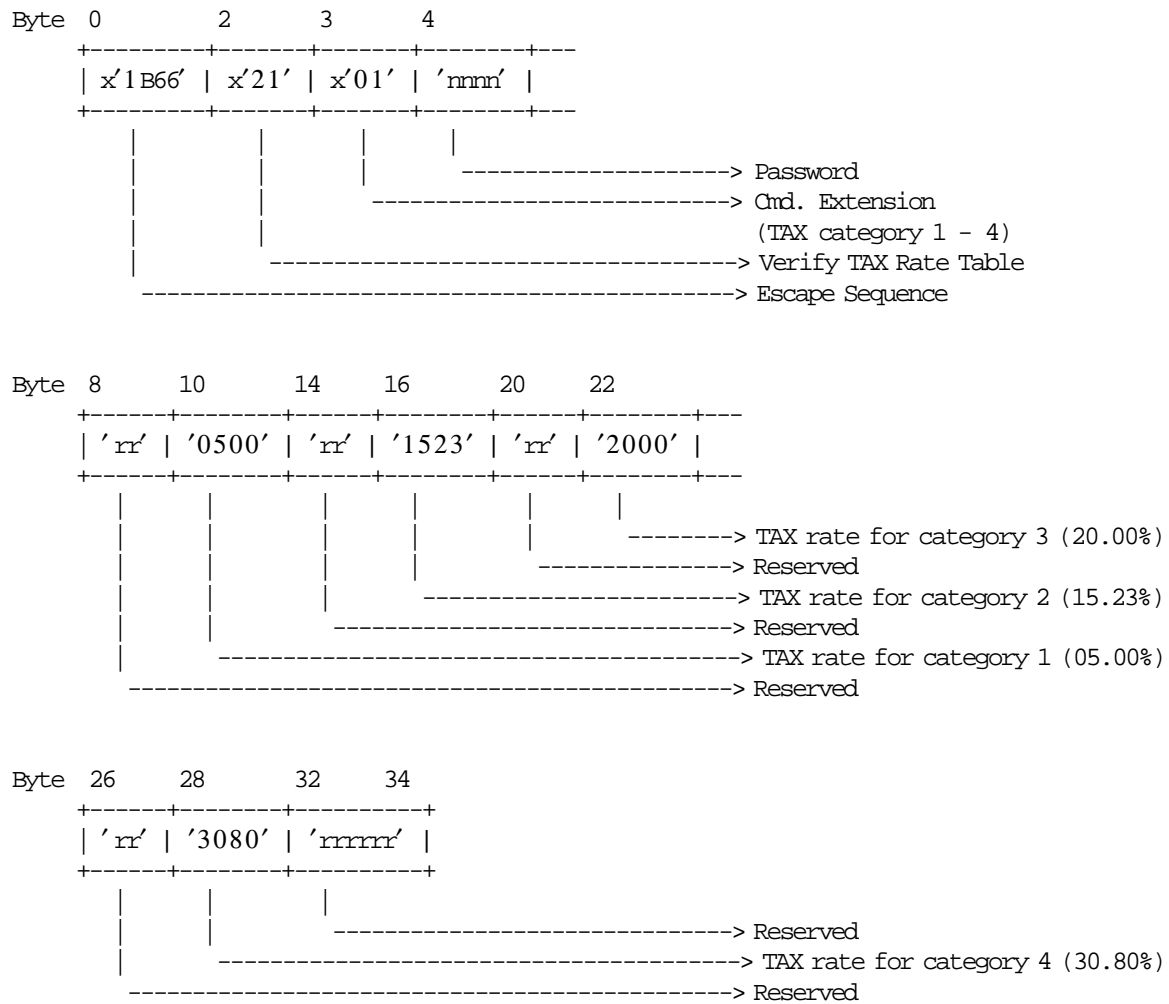
10.1.8.3 Verify TAX Rate Table Rules

- 4 categories must be verified before the TAX table verified status is set.
- Categories defined in the command greater than 4 are ignored.

10.1.9 C4 - FISCAL PARAMETER CONFIGURATION

This command is used to set any fiscal parameters.

10.1.9.1 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
           04 = Disable String "Total" Scan
           05 = Disable SJ Replication
           06 = Blank Amount allowed in Item Lines
           07 = Set TAX Method
 4-7       Password                                    ASCII      4

    If Cmd. Extension = 06 specify:
 8         Blank Amount Item Lines Quantity            ASCII      1 (Note 1)


    If Cmd. Extension = 07 specify:
 8         Set TAX Method                              ASCII      1 (Note 2)
           1 = Inclusive
           2 = Exclusive


----------------------------------------------------------------------
```

Notes:

1. This option can be executed only once for each extension after J4/CE jumper.
   The maximum allowed value is 2.

2. When the selection method is inclusive, the TAX is included in the price.
   When the selection method is exclusive, the TAX is not included in the price.

10.1.9.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'C4' | x'07' | 'pppp' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Password
           |         |       ----------------------> Cmd. Extension (Set TAX Method)
           |         -------------------------------> Fiscal Parameter Configuration
           -----------------------------------------> Escape Sequence
```
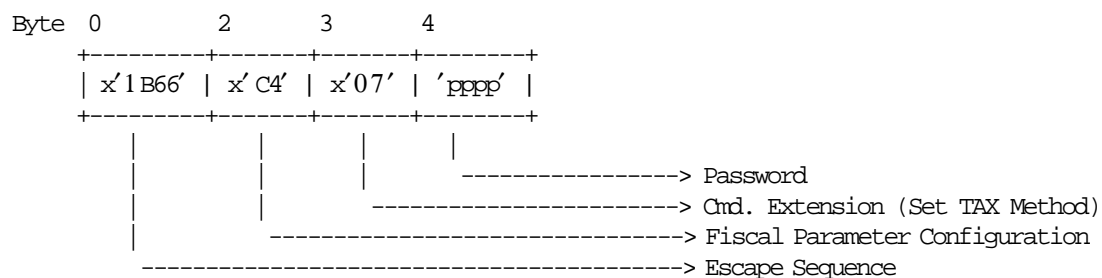
10.1.9.3 Fiscal Parameter Configuration Rules

- **Disable String "Total" Scan Rules**

    – If the cmd. extension 04 is not issued, the default is to scan the string "Total".
    – This option is allowed after the J4/CE jumper procedure (RAM cleared) and before the 1A cmd. is issued.

- **Disable SJ Replication Rules**

- If the cmd. extension 05 is not issued, the default is SJ replication.
- This option is allowed after the J4/CE jumper procedure (RAM cleared) and before the 1A cmd. is issued.

- **Set TAX Method Rules**

  - The TAX method table is stored into the Fiscal Memory (EPROM).
  - The TAX method can be changed up to 10 times during the life of the fiscal printer.
  - The TAX method selected is compared to the last entry in the table. If the data is the same, the new entry will not be added to the table.
  - The grand total is reseted when the TAX method change.

10.1.10 D7 - SET HEADER

This command is used to store the header in fiscal printer battery backed up RAM.

10.1.10.1 Command Format

```
 -----------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 - cmd prefix                              hex       2
 2         D7 - Set Header                                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   Header Line Number
           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


 -----------------------------------------------------------------------
```

Notes:

1. If an all blank character string is specified then the corresponding header line is not printed.

2. If a header line is not set, it is not printed.

10.1.10.2 Command Example

```
Byte  0        2      3      4
      +---------+------+------+------------------+
      | x'1B66' | x'D7' | x'01' | 'Supermarket....' |
      +---------+------+------+------------------+
          |        |      |      |
          |        |      |      -------------------> Description
          |        |      -------------------------> Cmd. Extension
          |        |                                 (15 CPI, 1st. line)
          |        ----------------------------------> Set Header
          -------------------------------------------> Escape Sequence
```

10.1.10.3 Set Header Rules

- The header lines are stored in RAM memory.
- The minimum number of header lines required is 1.
- The maximum number of header lines allowed is 7.
- The first header lines printed can start a daily sale period.
- The store 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.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2 Sale Period/Sale Transaction

10.2.1 Sale Period

The sale period indicates that a daily sale period has been started.
Typically, many of the initialization commands cannot be allowed during a sale period.

The sale period states are:

- **Start**

  Sale period is started when any one of the following commands have been executed:

  01 - Print Header
  BA - Credit Note Print Header
  14 - Summary Fiscal Report (X-Report)

- **End**

  Sale period is ended when the following command has been executed:

  13 - Close Sale Period (Z-Report)

Additionally, the following commands can be executed when a sale period is in progress:

- Check/Credit Slips
- Application-Originated Reports

10.2.2 Sale Transaction

The sale transaction is a process of recording item sales and arriving at the amount to be paid by or to a customer. During this process a fiscal voucher is printing.

Sale transaction states are:

- **Start**

  Sale transaction is started when the following command has been executed:

  01 - Print Header

- **In Progress**

  Sale transaction is in progress when any one of the following command have been executed:

  D0 - Fixed Price Item Sale
  D1 - Fixed Price Negative Item Sale
  D2 - Item Sale
  D3 - Negative Item Sale
  D4 - Subtotal/Total Transaction
  D5 - Payment
  D9 - Discount on Subtotal

- **End**

  Sale transaction is ended when any one of the following command have been executed:

  06 - End Transaction
  07 - Cancel Transaction

10.2.2.1 Fiscal Voucher Rules

• If SJ replication is enabled, the fiscal voucher will be printed in CR station and replicated in SJ station (except the logo). Otherwise will be printed in CR station only.

• Payment phase is required.

• During a fiscal voucher, including before any items have been sold, only a total of 65.535 ordinary printing lines in CR station can be printed.
After the last of the 65.535 lines is printed, the fiscal printer generates return code 069 if additional ordinary printing lines are requested.
These lines can be printed anywhere of the fiscal voucher.

• If trailer lines were set (17 cmd.), its will be printed after payment phase.

• Ordinary printing lines in DI station while in the sale transaction state is allowed in the payment phase only.

• Check and credit card printing in DI station while in the sale transaction state is allowed in the payment phase only.

• The sale transaction can be cancelled in any time, even after the ″Total CC.″ line (V32 msg.) was printed.

10.2.3 01 - PRINT HEADER

This procedure is used to print the store header in CR station.

10.2.3.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                     TYPE    LENGTH

 0-1       1B66 – cmd prefix                           hex        2
 2         01 – Print Store Header                     hex        1
 3         Cmd. Extension                              hex        1
    7-0    Reserved (always = '0x00')
 4-7       Reserved                                    ASCII      4
 8-11      Operator Number                             ASCII      4
12-15      Terminal Number                             ASCII      4


---------------------------------------------------------------------
```

10.2.3.2 Command Example

```
Byte  0         2       3       4        8        12
      +---------+-------+-------+--------+--------+--------+
      | x'1B66' | x'01' | x'00' | 'rrrr' | '2222' | '3333' |
      +---------+-------+-------+--------+--------+--------+
           |         |       |       |        |        |
           |         |       |       |        |        -------> Terminal Number
           |         |       |       |        ----------------> Operator Number
           |         |       |       ------------------------> Reserved
           |         |       ------------------------------> Cmd. Extension
           |         --------------------------------------> Print Header
           --------------------------------------------------> Escape Sequence
```
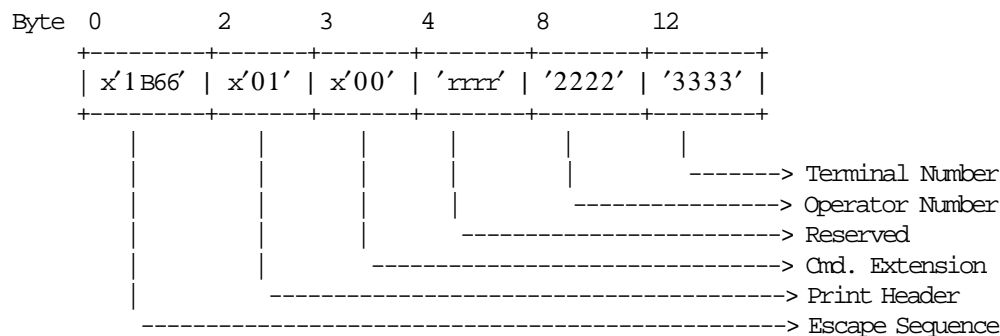
10.2.3.3 Print Header Rules

• The print header can start a daily sale period.

10.2.4 06 - END TRANSACTION

This command is used to end the sale transaction.

10.2.4.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 – cmd prefix                            hex       2
 2         06 – End Transaction                         hex       1
 3         Cmd. Extension                               hex       1
    7-0    Reserved (always = ′0x00′)
 4-15      Reserved                                     ASCII    12
16-53      Trailer Message 1                            ASCII    38 (Note 1)
54-91      Trailer Message 2                            ASCII    38 (Note 1)


-----------------------------------------------------------------------
```
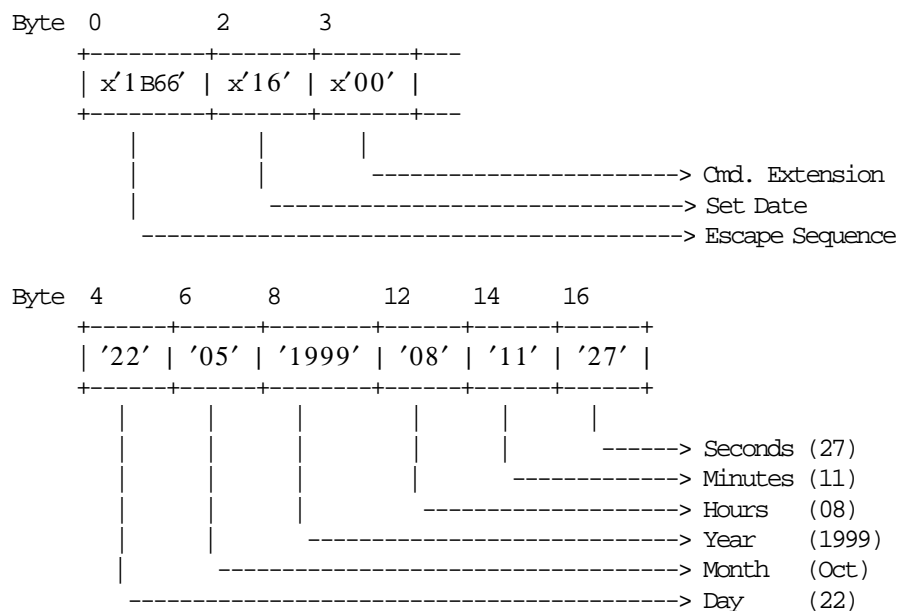
Notes:

1. If the trailer message is blank will be not printed.

10.2.4.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+---------------+--
     | x′1B66′ | x′06′ | x′00′ | ′rrrrrrrrrrr′ |
     +---------+-------+-------+---------------+---
          |        |       |       |
          |        |       |       ------------------> Reserved
          |        |       ------------------------> Cmd. Extension
          |        --------------------------------> End Transaction
          ------------------------------------------> Escape Sequence


Byte  16              54
     +--------------+---------------+
     | ′Thanks ....′ | ′Good Bye ...′ |
     +--------------+---------------+
           |             |
           |             -------------------------> Trailer Message Line 2
           -----------------------------------------> Trailer Message Line 1
```

10.2.4.3 End Transaction Calculations

Note that if training mode is set the calculations shown below are not performed except for those listed in ″Clearing Transaction Counters″ and ″Clearing Transaction Accumulators″.
So the transaction totals during training mode are not added to the daily totals.

- **Update Daily and Lifetime Counters**

  $Day\_N\_Vouc = Day\_N\_Vouc + 1$
  $Day\_N\_Slip = Day\_N\_Slip + 1$

  $Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

Date_Last_Vouc = current date
Time_Last_Vouc = current time

Day_N_Retn = Day_N_Retn + Tra_N_Retn
Day_N_Void = Day_N_Void + Tra_N_Void
Day_N_Bonu = Day_N_Bonu + Tra_N_Bonu
Day_N_Empt = Day_N_Empt + Tra_N_Empt

Day_N_Tdsc = Day_N_Tdsc + Tra_N_Tdsc

- **Update Daily Accumulators**

$Day\_Tot\_v(vv) = Day\_Tot\_v(vv) + Tra\_Tot\_v(vv)$
$Day\_Tot = \sum_{vv} Day\_Tot\_v(vv)$

$Day\_TAX\_v(vv) = Day\_TAX\_v(vv) + Tra\_TAX\_v(vv)$
$Day\_TAX = Day\_TAX + Tra\_TAX$

$Day\_Tdsc = Day\_Tdsc + Tra\_Tdsc$
$Day\_Tdsc\_v(vv) = Day\_Tdsc\_v(vv) + Tra\_Tdsc\_v(vv)$

  - **According to the Negative Item type:**

    $Day\_Retn = Day\_Retn + Tra\_Retn$
    $Day\_Retn\_v(vv) = Day\_Retn\_v(vv) + Tra\_Retn\_v(vv)$

    $Day\_Void = Day\_Void + Tra\_Void$
    $Day\_Void\_v(vv) = Day\_Void\_v(vv) + Tra\_Void\_v(vv)$

    $Day\_Bonu = Day\_Bonu + Tra\_Bonu$
    $Day\_Bonu\_v(vv) = Day\_Bonu\_v(vv) + Tra\_Bonu\_v(vv)$

    $Day\_Empt = Day\_Empt + Tra\_Empt$
    $Day\_Empt\_v(vv) = Day\_Empt\_v(vv) + Tra\_Empt\_v(vv)$

- **Clearing Transaction Counters**

$Tra\_N\_Retn = 0$
$Tra\_N\_Void = 0$
$Tra\_N\_Bonu = 0$
$Tra\_N\_Empt = 0$
$Tra\_N\_Tdsc = 0$

- **Clearing Transaction Accumulators**

$Tra\_Tot = 0$
$Tra\_Tot\_v(vv) = 0$

$Tra\_TAX = 0$
$Tra\_TAX\_v(vv) = 0$

$Tra\_Fixed = 0$
$Tra\_Fixed\_v(vv) = 0$

$Tra\_Retn = 0$
$Tra\_Retn\_v(vv) = 0$

$Tra\_Void = 0$
$Tra\_Void\_v(vv) = 0$

$Tra\_Bonu = 0$
$Tra\_Bonu\_v(vv) = 0$

$Tra\_Empt = 0$
$Tra\_Empt\_v(vv) = 0$

$Tra\_Tdsc = 0$
$Tra\_Tdsc\_v(vv) = 0$

$Tra\_Pay\_Type(p) = 0$

$Tra\_Amt\_Due = 0$

For values of vv ranging from 1 to the maximum values.

For values of p ranging from 1 to 6.

10.2.4.4 End Transaction Rules

- End transaction command is executed only if the total paid amount is not less than the transaction total amount if the payment phase is selected.
- Tra_Amt_Due must be less than or equal to 0.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the trailer message fields of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2.4.5 Printing Trailer Message Lines

If the ′FTRAILR′ state = YES, then the stored trailer lines in RAM memory will be printed (up till a blank trailer line is encountered or until all stored lines have been printed) before the variable trailer lines of the voucher.

10.2.5 07 - CANCEL TRANSACTION

This command is used to cancel the fiscal voucher.

10.2.5.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                       TYPE    LENGTH

 0-1      1B66 - cmd prefix                             hex       2
 2        07 - Cancel Transaction                       hex       1
 3        Cmd. Extension                                hex       1
     7-0  Reserved (always = '0x00')


 ----------------------------------------------------------------------
```

10.2.5.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'07' | x'00' |
     +---------+-------+-------+
         |         |       |
         |         |       -------------------------> Cmd. Extension
         |            -------------------------------> Cancel Transaction
         ---------------------------------------------> Escape Sequence
```

10.2.5.3 Cancel Transaction Calculations

- **If only the store header has been printed, the following calculations are performed:**

  $Day\_N\_Canc = Day\_N\_Canc + 1$
  $Day\_N\_Slip = Day\_N\_Slip + 1$
  $Day\_N\_NFR = Day\_N\_NFR + 1$
  $Lif\_N\_NFR = Lif\_N\_NFR + 1$

- **If anything more than the store header is printed, the following calculations are performed:**

  $Day\_N\_Vouc = Day\_N\_Vouc + 1$
  $Day\_N\_Slip = Day\_N\_Slip + 1$
  $Day\_N\_Canc = Day\_N\_Canc + 1$
  $Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

- **Clearing Transaction Counters**

  $Tra\_N\_Retn = 0$
  $Tra\_N\_Void = 0$
  $Tra\_N\_Bonu = 0$
  $Tra\_N\_Empt = 0$
  $Tra\_N\_Tdsc = 0$

- **Clearing Transaction Accumulators**

  $Tra\_Tot = 0$
  $Tra\_Tot\_v(vv) = 0$

  $Tra\_TAX = 0$
  $Tra\_TAX\_v(vv) = 0$

$Tra\_Fixed = 0$
$Tra\_Fixed\_v(vv) = 0$

$Tra\_Retn = 0$
$Tra\_Retn\_v(vv) = 0$

$Tra\_Void = 0$
$Tra\_Void\_v(vv) = 0$

$Tra\_Bonu = 0$
$Tra\_Bonu\_v(vv) = 0$

$Tra\_Empt = 0$
$Tra\_Empt\_v(vv) = 0$

$Tra\_Tdsc = 0$
$Tra\_Tdsc\_v(vv) = 0$

$Tra\_Pay\_Type(p) = 0$

$Tra\_Amt\_Due = 0$

For values of vv ranging from 1 to the maximum values.

For values of p ranging from 1 to 6.

10.2.5.4 Cancel Transaction Rules

• The sale transaction can be cancelled in any time, even after the ″Total CC.″ line (V32 msg.) was printed.

10.2.6 D0 - FIXED PRICE ITEM SALE

This command is used to record the amount of an fixed price item sale and to print a line containing description and amount.

10.2.6.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - cmd prefix                            hex        2
 2        D0 - 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')
 4-23     Description                                  ASCII     20
24-27     Reserved                                     ASCII      4
28-37     D0_Amount                                    ASCII     10 (Note 1, 2)
38-39     TAX Category                                 ASCII      2 (Note 3)


-----------------------------------------------------------------------
```
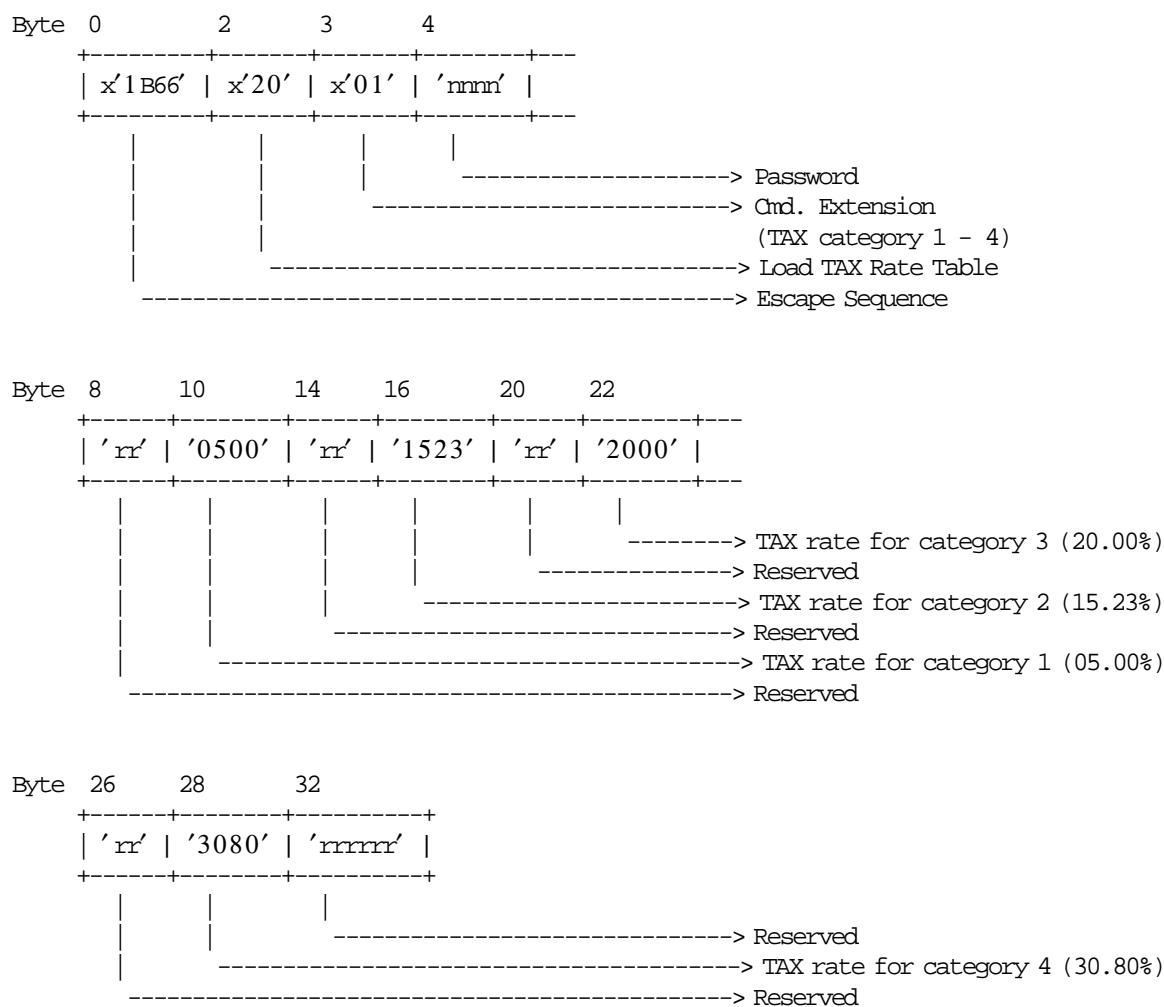
Notes:

1. D0_Amount string can be blank. Max D0_Amount = 2 147 483 647.

2. If amount string is blank then the transaction counters are not affected.

3. Specify a valid TAX category, ex. 01, 02,.... if amount string is not blank.

10.2.6.2 Command Example

```
Byte  0          2        3       4
     +---------+-------+-------+-------------+--
     | x'1B66' | x'D0' | x'00' | 'ddd...ddd' |
     +---------+-------+-------+-------------+--
          |         |       |       |
          |         |       |       ----------------> Description
          |         |       -----------------------> Cmd. Extension (retry NO,
          |         |                                  print normal & 15 CPI)
          |         --------------------------------> Fixed Price Item Sale
          -----------------------------------------> Escape Sequence
```

```
Byte  24       28             38
     +--------+--------------+------+
     | 'rrrr' | '0000001000' | '01' |
     +--------+--------------+------+
         |         |            |
         |         |            -------------------> TAX Category
         |         ---------------------------------> D0_Amount
         -----------------------------------------> Reserved
```
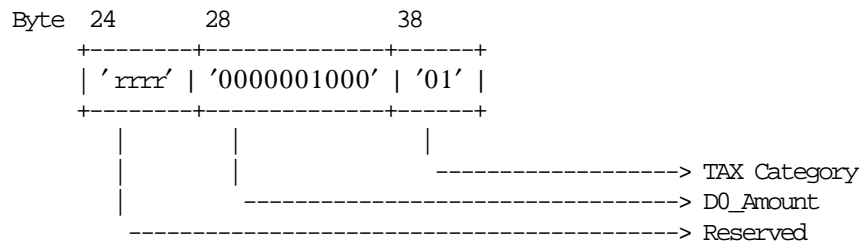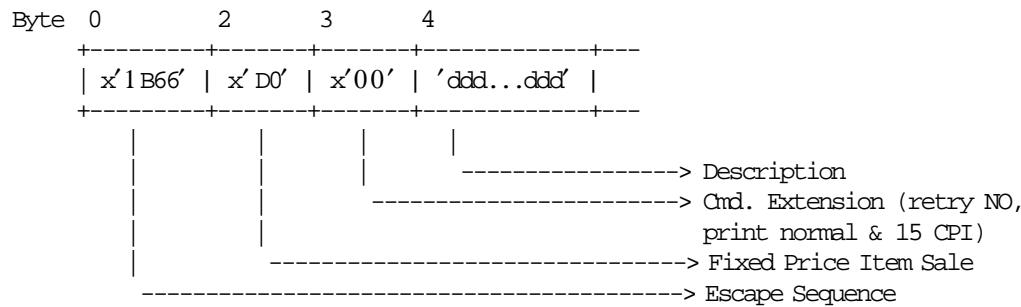
10.2.6.3 Fixed Price Item Sale Calculations

$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + D0\_Amount$

$Tra\_Fixed = Tra\_Fixed + D0\_Amount$
$Tra\_Fixed\_v(vv) = Tra\_Fixed\_v(vv) + D0\_Amount$

For values of vv ranging from 1 to the maximum values.

10.2.6.4 Fixed Price Item Sale Rules

- The fixed item is excluded from discount on subtotal.
- Each fixed item is assigned a value-added TAX (TAX) category that indicates the tax rate applied to the base price to obtain the sale price.
- Fixed item cannot be accepted if the TAX category specified in the fixed price item sale command is disabled (rate = 9999).
- When the selection method is inclusive, the fixed item price includes TAX.
- When the selection method is exclusive, the fixed item price doesn't includes TAX.
- Amount field in command string of fixed item can be blank.
  This allows the processing of fixed items with description longer than the number of characters allowed in one line.
- The number of fixed items with blank amount which can be sent between non-blank amount fixed items is 2.
- If amount field in command string of fixed item is not blank, specify TAX category.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2.7 D1 - FIXED PRICE NEGATIVE ITEM SALE

This command is used to record the amount of a fixed price negative item and prints a line containing the item description and item amount.

10.2.7.1 Command Format

```
 -------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - cmd prefix                            hex        2
 2        D1 - Fixed Price Negative Item Sale          hex        1
 3        Cmd. Extension                               hex        1
      7   Retry
          0 = NO
          1 = YES
      6   Rectify
          0 = NO
          1 = YES
      5   Print Density
          0 = Normal
          1 = Emphasized
      4   Reserved (always = '0')
      3   Print Typeface
          0 = 15 CPI
          1 = 12 CPI
     2-0  Negative Item Type
          0 = RETURN
          1 = VOID
          2 = BONUS/COUPONS
          4 = EMPTY (as in empty bottles)
 4-23     Description                                  ASCII     20 (Note 1)
24-27     Reserved                                     ASCII      4
28-37     D1_Amount                                    ASCII     10 (Note 2)
38-39     TAX Category                                 ASCII      2 (Note 3)


 -------------------------------------------------------------------
```

Notes:

1. Depending on the print options specified the negative item description may be cut off shorter than 20 characters.

2. D1_Amount string cannot be blank. Max D1_Amount = 2 147 483 647.

3. Specify a valid TAX category, ex. 01, 02,...

10.2.7.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+------------+---
     | x'1B66' | x'D1' | x'01' | 'ddd...ddd' |
     +---------+-------+-------+------------+---
         |         |       |         |
         |         |       |         ----------------> Description
         |         |       -----------------------> Cmd. Extension (retry NO, rectify NO,
         |         |                                  print normal & 15 CPI, void)
         |         ------------------------------> Fixed Price Negative Item Sale
         -----------------------------------------> Escape Sequence
```

```
Byte  24       28            38
     +--------+-------------+------+
     | 'rrrr' | '0000001000' | '01' |
     +--------+-------------+------+
         |         |            |
         |         |            -------------------> TAX Category
         |         --------------------------------> D1_Amount
         -------------------------------------------> Reserved
```
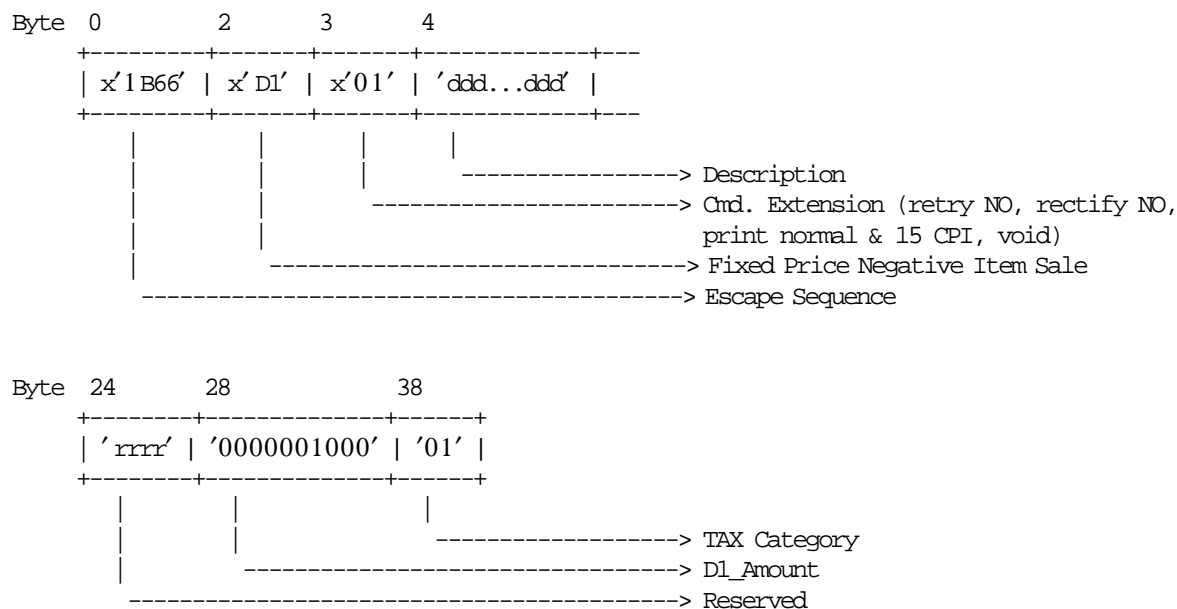
10.2.7.3 Fixed Price Negative Item Sale Calculations

- **RECTIFY = NO**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - D1\_Amount$

  $Tra\_Fixed = Tra\_Fixed - D1\_Amount$
  $Tra\_Fixed\_v(vv) = Tra\_Fixed\_v(vv) - D1\_Amount$

  − **According to the Fixed Price Negative Item Type**

    $Tra\_N\_Retn = Tra\_N\_Retn + 1$

    $Tra\_Retn = Tra\_Retn + D1\_Amount$
    $Tra\_Retn\_v(vv) = Tra\_Retn\_v(vv) + D1\_Amount$

    $Tra\_N\_Void = Tra\_N\_Void + 1$

    $Tra\_Void = Tra\_Void + D1\_Amount$
    $Tra\_Void\_v(vv) = Tra\_Void\_v(vv) + D1\_Amount$

    $Tra\_N\_Bonu = Tra\_N\_Bonu + 1$

    $Tra\_Bonu = Tra\_Bonu + D1\_Amount$
    $Tra\_Bonu\_v(vv) = Tra\_Bonu\_v(vv) + D1\_Amount$

    $Tra\_N\_Empt = Tra\_N\_Empt + 1$

    $Tra\_Empt = Tra\_Empt + D1\_Amount$
    $Tra\_Empt\_v(vv) = Tra\_Empt\_v(vv) + D1\_Amount$

- **RECTIFY = YES**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + D1\_Amount$

  $Tra\_Fixed = Tra\_Fixed + D1\_Amount$
  $Tra\_Fixed\_v(vv) = Tra\_Fixed\_v(vv) + D1\_Amount$

  − **According to the Fixed Price Negative Item Type**

$$Tra\_Retn = Tra\_Retn - D1\_Amount$$
$$Tra\_Retn\_v(vv) = Tra\_Retn\_v(vv) - D1\_Amount$$

$$Tra\_Void = Tra\_Void - D1\_Amount$$
$$Tra\_Void\_v(vv) = Tra\_Void\_v(vv) - D1\_Amount$$

$$Tra\_Bonu = Tra\_Bonu - D1\_Amount$$
$$Tra\_Bonu\_v(vv) = Tra\_Bonu\_v(vv) - D1\_Amount$$

$$Tra\_Empt = Tra\_Empt - D1\_Amount$$
$$Tra\_Empt\_v(vv) = Tra\_Empt\_v(vv) - D1\_Amount$$

For values of vv ranging from 1 to the maximum values.

10.2.7.4 Fixed Price Negative Item Sale Rules

- A minus sign is printed for fixed price negative items with the rectify option equal NO.
- The rectify option equal YES allows modification or cancellation of a previous fixed price negative item operation.
  The rectified value is added to the appropriate fixed price negative item category.
- Amount field in command string of fixed price negative item can be blank.
  This allows the processing of fixed price negative items with description longer than the number of characters allowed in one line.
- The number of fixed price negative items with blank amount which can be sent between non-blank amount fixed price negative items is 2.
- If amount field in command string of fixed price negative item is not blank, specify TAX category.
- Fixed price negative items cannot be accepted if the TAX category specified in the item sale command is disabled (rate = 9999).
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2.7.5 Arithmetic Pre-Checking

- None of the fixed price negative item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.

10.2.8 D2 - ITEM SALE

This command is used to record the amount of an item and to print a line containing item description and item amount.

10.2.8.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - cmd prefix                          hex       2
 2         D2 - 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')
 4-23      Description                                ASCII     20
24-27      Reserved                                   ASCII      4
28-37      D2_Amount                                  ASCII     10 (Note 1, 2)
38-39      TAX Category                               ASCII      2 (Note 3)


------------------------------------------------------------------------
```
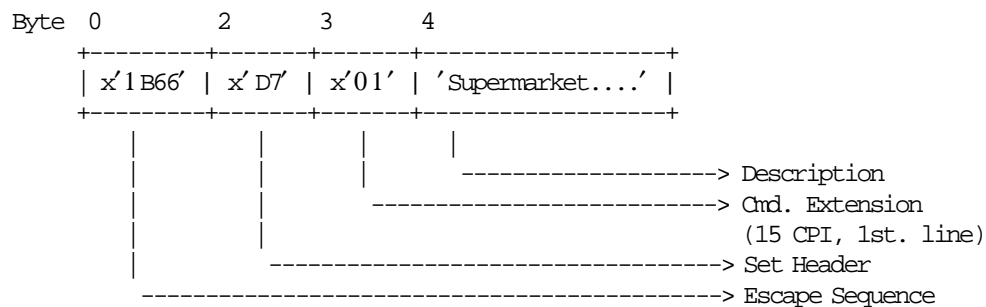
Notes:

1. D2_Amount string can be blank. Max D2_Amount = 2 147 483 647.

2. If D2_Amount string is blank then the transaction counters are not affected.

3. Specify a valid TAX category, ex. 01, 02,.... if D2_Amount string is not blank.

10.2.8.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+------------+---
     | x'1B66' | x'D2' | x'00' | 'ddd...ddd' |
     +---------+-------+-------+------------+---
          |         |       |        |
          |         |       |        ----------------> Description
          |         |       ----------------------> Cmd. Extension (retry NO,
          |         |                                   print normal & 15 CPI)
          |         -------------------------------> Item Sale
          ------------------------------------------> Escape Sequence
```

```
Byte  24        28              38
     +--------+-------------+------+
     | 'rrrr' | '0000001000' | '01' |
     +--------+-------------+------+
          |         |            |
          |         |            -------------------> TAX Category
          |         --------------------------------> D2_Amount
          -------------------------------------------> Reserved
```

10.2.8.3 Item Sale Calculations

$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + D2\_Amount$

For values of vv ranging from 1 to the maximum values.

10.2.8.4 Item Sale Rules

- Each item is assigned a value-added TAX category that indicates the TAX rate applied to the base price to obtain the sale price.
- Items cannot be accepted if the TAX category specified in this command is disabled (rate = 9999).
- When the selection method is inclusive, the D2_Amount includes TAX.
- When the selection method is exclusive, the D2_Amount doesn't includes TAX.
- D2_Amount field in command string of item sale can be blank.
  This allows the processing of item sales with description longer than the number of characters allowed in one line.
- The number of item sales with blank amount which can be sent between non-blank amount item sales is 2.
- If D2_Amount field in command string of item sale is not blank, specify TAX category.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2.9 D3 - NEGATIVE ITEM SALE

This command is used to record the amount of a negative item and prints a line containing the item description and item amount.

10.2.9.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                  TYPE    LENGTH

 0-1       1B66 - cmd prefix                        hex       2
 2         D3 - Negative Item Sale                  hex       1
 3         Cmd. Extension                           hex       1
       7   Retry
           0 = NO
           1 = YES
       6   Rectify
           0 = NO
           1 = YES
       5   Print Density
           0 = Normal
           1 = Emphasized
       4   Reserved (always = '0')
       3   Print Typeface
           0 = 15 CPI
           1 = 12 CPI
     2-0   Negative Item Type
           0 = RETURN
           1 = VOID
           2 = BONUS/COUPONS
           4 = EMPTY (as in empty bottles)
 4-23      Description                              ASCII    20 (Note 1)
24-27      Reserved                                 ASCII     4
28-37      D3_Amount                                ASCII    10 (Note 2)
38-39      TAX Category                             ASCII     2 (Note 3)


----------------------------------------------------------------------
```

Notes:

1. Depending on the print options specified the negative item description may be cut off shorter than 22 characters.

2. D3_Amount string cannot be blank. Max D3_Amount = 2 147 483 647.

3. Specify a valid TAX category, ex. 01, 02,...

10.2.9.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+------------+
      | x'1B66' | x'D3' | x'01' | 'ddd...ddd' |
      +---------+-------+-------+------------+
           |         |       |       |
           |         |       |       ----------------> Description
           |         |       -----------------------> Cmd. Extension (retry NO, rectify NO,
           |         |                                  print normal & 15 CPI, void)
           |         ----------------------------------> Negative Item Sale
           ------------------------------------------> Escape Sequence


Byte  24       28             38
      +--------+--------------+------+
      | 'rrrr' | '0000001000' | '01' |
      +--------+--------------+------+
           |         |           |
           |         |           -------------------> TAX Category
           |         --------------------------------> D3_Amount
           ------------------------------------------> Reserved
```
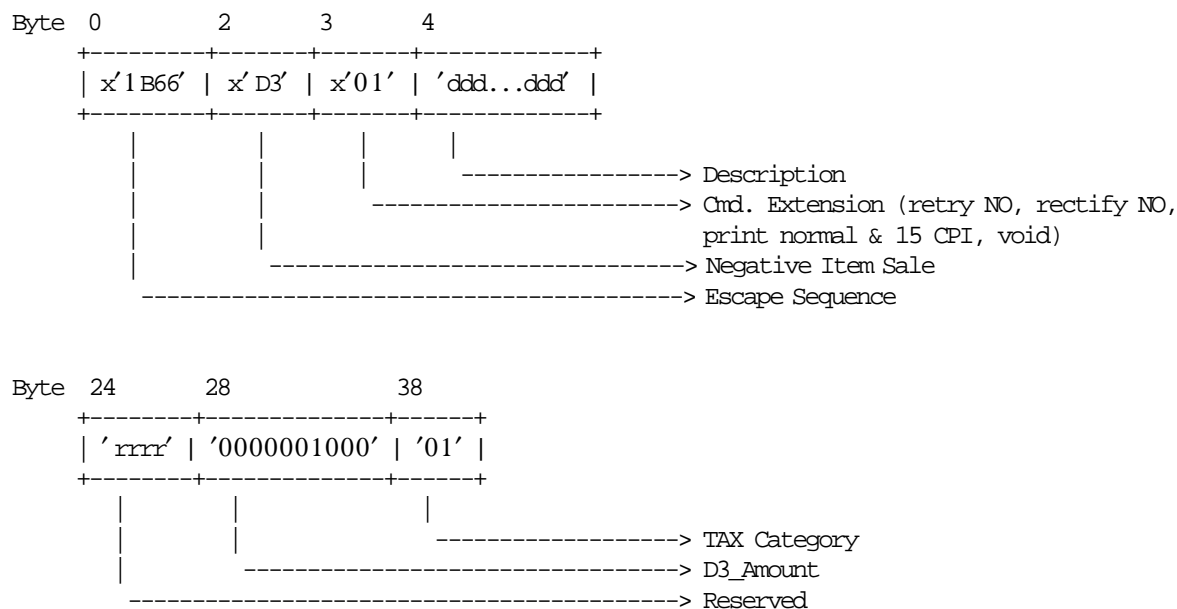
10.2.9.3 Negative Item Sale Calculations

- **RECTIFY = NO**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - D3\_Amount$

  – **According to the Negative Item Type**

  $Tra\_N\_Retn = Tra\_N\_Retn + 1$

  $Tra\_Retn = Tra\_Retn + D3\_Amount$
  $Tra\_Retn\_v(vv) = Tra\_Retn\_v(vv) + D3\_Amount$

  $Tra\_N\_Void = Tra\_N\_Void + 1$

  $Tra\_Void = Tra\_Void + D3\_Amount$
  $Tra\_Void\_v(vv) = Tra\_Void\_v(vv) + D3\_Amount$

  $Tra\_N\_Bonu = Tra\_N\_Bonu + 1$

  $Tra\_Bonu = Tra\_Bonu + D3\_Amount$
  $Tra\_Bonu\_v(vv) = Tra\_Bonu\_v(vv) + D3\_Amount$

  $Tra\_N\_Empt = Tra\_N\_Empt + 1$

  $Tra\_Empt = Tra\_Empt + D3\_Amount$
  $Tra\_Empt\_v(vv) = Tra\_Empt\_v(vv) + D3\_Amount$

- **RECTIFY = YES**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + D3\_Amount$

  – **According to the Negative Item Type**

  $Tra\_Retn = Tra\_Retn - D3\_Amount$
  $Tra\_Retn\_v(vv) = Tra\_Retn\_v(vv) - D3\_Amount$

  $Tra\_Void = Tra\_Void - D3\_Amount$
  $Tra\_Void\_v(vv) = Tra\_Void\_v(vv) - D3\_Amount$

$Tra\_Bonu = Tra\_Bonu - D3\_Amount$
$Tra\_Bonu\_v(vv) = Tra\_Bonu\_v(vv) - D3\_Amount$

$Tra\_Empt = Tra\_Empt - D3\_Amount$
$Tra\_Empt\_v(vv) = Tra\_Empt\_v(vv) - D3\_Amount$

For values of vv ranging from 1 to the maximum values.

10.2.9.4 Negative Item Sale Rules

- A minus sign is printed for negative items with the rectify NO.
- The rectify YES allows modification or cancellation of a previous negative item operation.
  The rectified value is added to the appropriate negative item category.
- D3_Amount field in command string of negative item sale can be blank.
  This allows the processing of negative item sales with description longer than the number of characters allowed in one line.
- The number of negative item sales with blank amount which can be sent between non-blank amount negative item sale lines is 2.
- If D3_Amount field in command string of negative item sale is not blank, specify TAX category.
- Negative items cannot be accepted if the TAX category specified in the item sale command is disabled (rate = 9999).
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).
- The following identification characters are printed for negative items:
  - A for type = VOID
  - B for type = BONUS
  - R for type = RETURN
  - V for type = EMPTY

10.2.9.5 Arithmetic Pre-Checking

- None of the negative item accumulators may be allowed to become negative as a result of the command or the command cannot be accepted.

10.2.10 D4 - SUBTOTAL/TOTAL TRANSACTION

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

10.2.10.1 Command Format

```
---------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 - cmd prefix                              hex       2
 2        D4 - Subtotal/Total Transaction                hex       1
 3        Cmd. Extension                                 hex       1
     7    Retry
          0 = NO
          1 = YES
     6    Reserved (always = '0')
     5    Print Density                                             (Note 1)
          0 = Normal
          1 = Emphasized
     4-3  Character Height                                          (Note 1)
          00 = Single-High
          01 = Reserved
          10 = Reserved
          11 = Double-High
     2-0  Reserved (always = '0')
 4-15     D4_Amount                                      ASCII    12 (Note 2)


---------------------------------------------------------------------------
```

Notes:

1. The print density an character height apply to both the total message and the D4_Amount.

2. When inclusive TAX method is used, the D4_Amount field will be Tra_Tot.
   When exclusive TAX method is used, the D4_Amount field will be Tra_Tot + Tra_TAX.

10.2.10.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------------+
      | x'1B66' | x'D4' | x'00' | '0000001000' |
      +---------+-------+-------+--------------+
         |          |       |       |
         |          |       |       ----------------> D4_Amount
         |          |       ------------------------> Cmd. Extension (retry NO, print normal,
         |          |                                 single-high)
         |          -----------------------------------> Subtotal/Total Transaction
         -----------------------------------------> Escape Sequence
```
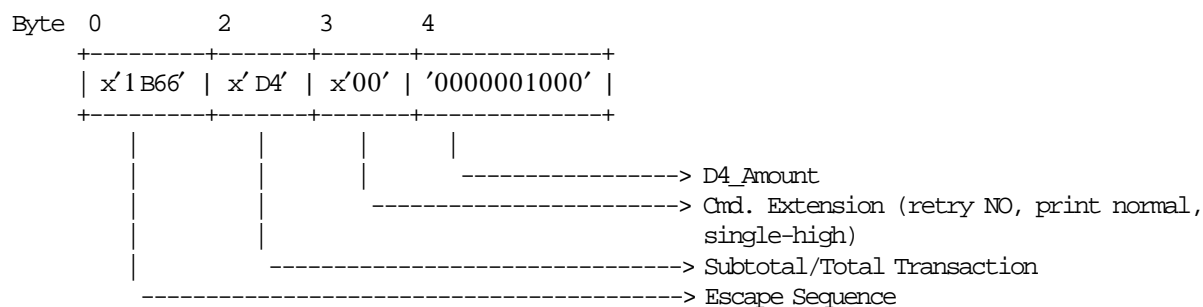
10.2.10.3 Subtotal/Total Transaction Calculations

$$Tra\_Tot = \sum_{vv} Tra\_Tot\_v(vv)$$

- **When Inclusive TAX (Flag FINCLTAX = YES)**

$$Tra\_TAX\_v(vv) = TRUNC(\frac{Tra\_Tot\_v(vv) \times TAX\_Rate\_v(vv)}{100 + TAX\_Rate\_v(vv)} + 0.5)$$

- **When Exclusive TAX (Flag FINCLTAX = NO)**

$$Tra\_TAX\_v(vv) = TRUNC(\frac{Tra\_Tot\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

$$Tra\_TAX = \sum_{vv} Tra\_TAX\_v(vv)$$

$$Tra\_Amt\_Due = Tra\_Tot$$

For values of vv ranging from 1 to the maximum value.

10.2.10.4 Subtotal/Total without TAX Printing Rules

- TAX rates are recorded as percentages.
- TAX rates of 00.00% to 99.98% are supported. 99.99% loaded into the TAX rate table disables the use of that category.

10.2.11 D5 - PAYMENT

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

10.2.11.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 – cmd prefix                          hex        2
 2        D5 – Payment                               hex        1
 3        Cmd. Extension                             hex        1
      7   Retry
          0 = NO
          1 = YES
      6   Rectify
          0 = NO
          1 = YES
     5-3  Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = Reserved
          100 = 15 CPI, Emphasized
          101 = 12 CPI, Emphasized
          110 = Reserved
          111 = Reserved
     2-0  Payment Type
          000 = Reserved
          001 = CASH
          010 = CHECK
          011 = CREDIT CARD
          100 = COUPONS
          101 = DEBIT CARD
          110 = Type 6
          111 = Reserved
 4-13     Description                                ASCII      10
14-25     D5_Amount                                  ASCII      12


------------------------------------------------------------------------
```

10.2.11.2 Command Example

```
Byte   0           2         3
      +---------+-------+-------+---
      | x'1B66' | x'D5' | x'01' |
      +---------+-------+-------+---
           |        |        |
           |        |        ------------------> Cmd. Extension (retry NO,
           |        |                            (rectify NO, 15 CPI, cash)
           |        --------------------------> Payment
           ------------------------------------> Escape Sequence


Byte   4             14
      +-------------+----------------+
      | 'ddd....ddd' | '000000001000' |
      +-------------+----------------+
           |               |
           |               -----------------------> D5_Amount
           ------------------------------------------> Description
```
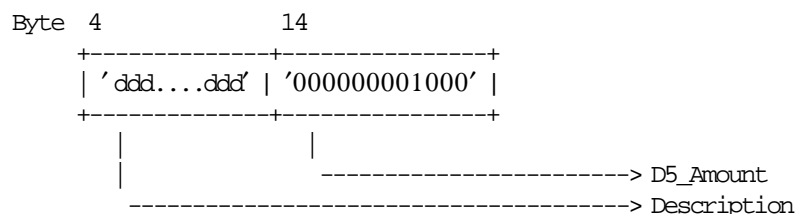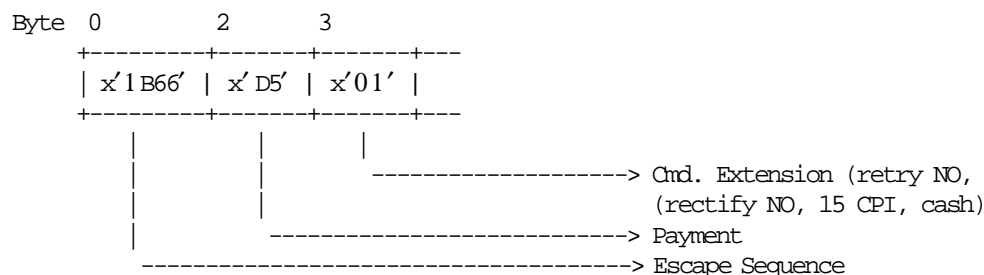
10.2.11.3 Payment Calculations

- **RECTIFY = NO**

  $Tra\_Pay\_Type(p) = Tra\_Pay\_Type(p) + D5\_Amount$
     Depending on the payment type selected (p)

  $Tra\_Amt\_Due = Tra\_Amt\_Due - D5\_Amount$

- **RECTIFY = YES**

  $Tra\_Pay\_Type(p) = Tra\_Pay\_Type(p) - D5\_Amount$
     Depending on the payment type selected (p)

  $Tra\_Amt\_Due = Tra\_Amt\_Due + D5\_Amount$

10.2.11.4 Payment Rules

- Payment phase is mandatory during fiscal vouchers.
- The end transaction (06 cmd.) 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 645 normal printing lines.
- With TAX exclusive, the subtotal, total taxes 1, total taxes 2, total taxes 3 and total lines are printed.
- With TAX inclusive, the subtotal and total lines are printed.
- Check printing in DI station IS allowed during the payment phase of a fiscal voucher.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.2.12 D9 - DISCOUNT ON SUBTOTAL

This command is used to apply discount on subtotal.

10.2.12.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - cmd prefix                             hex        2
 2         D9 - Discount on Subtotal                     hex        1
 3         Cmd. Extension                                hex        1
     7     Retry
           0 = NO
           1 = YES
     6     Rectify
           0 = NO
           1 = YES
     5-1   Reserved (always = '0')
     0     Operation Type
           0 = DISCOUNT
           1 = Reserved
 4-23      Description                                   ASCII      20
24-25      Reserved                                      ASCII       2
26-37      D9_Amount                                     ASCII      12


------------------------------------------------------------------------
```

10.2.12.2 Command Example

```
Byte  0         2       3       4
     +---------+-------+-------+-------------------+---
     | x'1B66' | x'D9' | x'00' | 'Discount 10% ...'|
     +---------+-------+-------+-------------------+---
         |         |       |        |
         |         |       |        ------------------> Description
         |         |       ------------------------> Cmd. Extension (retry NO,
         |         |                                 rectify NO, discount)
         |         ------------------------------> Discount on Subtotal
         ------------------------------------------> Escape Sequence


Byte  24     26
     +------+----------------+
     | 'rr' | '000000001000' |
     +------+----------------+
        |         |
        |         ----------------------------------> D9_Amount
        ------------------------------------------> Reserved
```
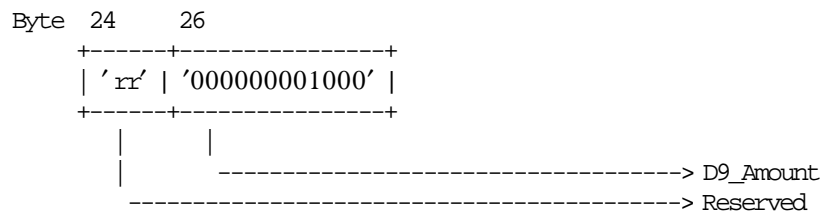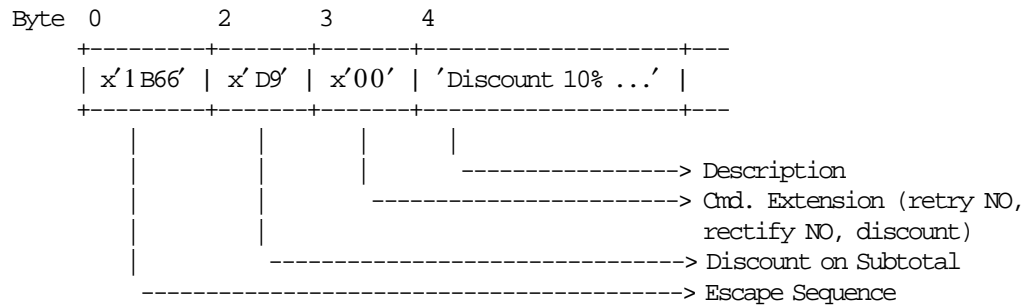
10.2.12.3 Discount on Subtotal Calculations

$$Tra\_Calc\_Tdisc\_v(vv) = \frac{D9\_Amount \times (Tra\_Tot\_v(vv) - Tra\_Fixed\_v(vv))}{Tra\_Tot - Tra\_Fixed}$$

Rounding is performed by incrementing quotients of divisions with highest reminders, until the sum of all quotients corresponds to discount amount.

Note that this rounding operation is done on the Tra_Calc_Tdisc_v accumulator.

- **RECTIFY = NO**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - Tra\_Calc\_Tdisc\_v(vv)$
  $Tra\_Tdsc\_v(vv) = Tra\_Tdsc\_v(vv) + Tra\_Calc\_Tdisc\_v(vv)$
  $Tra\_Tdsc = Tra\_Tdsc + D9\_Amount$

- **RECTIFY = YES**

  $Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + Tra\_Calc\_Tdisc\_v(vv)$
  $Tra\_Tdsc\_v(vv) = Tra\_Tdsc\_v(vv) - Tra\_Calc\_Tdisc\_v(vv)$
  $Tra\_Tdsc = Tra\_Tdsc - D9\_Amount$

For values of vv ranging from 1 to the maximum values.

10.2.12.4 Discount on Subtotal Rules

- The D9.Amount is distributed (subtracted) to the TAX category accumulators proportionally to their current amount.
- The D9.Amount field must be greater than 0, otherwise return code 052 is issued.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.3 Check and Credit Slip

The check or credit slip commands are:

- C0 - Print Check and Credit Slips
- C1 - End Check and Credit Slips
- C2 - Cancel Check and Credit Slips
- C3 - Line Feed Check and Credit Slips

10.3.1 Check and Credit Slip Rules

- No application-originated message line is printed at the start of a check or credit card document. Linefeed commands count the same as a print line as referenced below.

- The maximum number of special print lines that can be printed on the fronts of checks is 66.

- When printing on the front side of personal checks, after 66 lines, no additional printing can be allowed and an ″End Check command″ must be executed to end the state.
  Since the ″End Check command″ can have data to be printed, the total number of lines allowed is 66 + 1.

- The maximum number of special print lines that can be printed on the backs of checks during check franking is 66.

- When franking a check, that is printing account information on the rear side of the check, after 66 lines, no additional printing can be allowed and an ″End Check command″ must be executed to end the state.
  Since the ″End Check command″ can have data to be printed, the total number of lines allowed is 66 + 1.

- The maximum number of special print lines that can be printed in credit card slips is 66.

- When printing a credit slip, after 66 lines, no additional printing can be allowed and a end credit slip command must be executed to end the state.
  Since the end credit slip command can have data to be printed, the total number of lines allowed is 66 + 1.

10.3.2 C0 - PRINT CHECK AND CREDIT SLIP

This command is used to print lines inside of check or credit slip.

10.3.2.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - cmd prefix                            hex        2
 2        C0 - Print Check and Credit Slip             hex        1
 3        Cmd. Extension                               hex        1
     7    Retry
          0 = NO
          1 = YES
     6    Document Type
          0 = Check
          1 = Credit Slip
    5-3   Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = Reserved
          100 = 15 CPI, Emphasized
          101 = 12 CPI, Emphasized
          110 = Reserved
          111 = Reserved
    2-0   Orientation Print & Line-Feed Direction
          000 = Reserved
          001 = Reserved
          010 = Landscape - Reverse
          011 = Portrait  - Reverse
          100 = Reserved
          101 = Landscape - Forward
          110 = Portrait  - Forward
          111 = Reserved
 4-89     Description                                  ASCII     86 (Note 1)

------------------------------------------------------------------------
```

Notes:

```
1. Description field is truncated as follows:
   Portrait  orientation at 15 CPI to 47 characters.
   Portrait  orientation at 12 CPI to 37 characters.
   Landscape orientation at 15 CPI to 86 characters.
   Landscape orientation at 12 CPI to 86 characters.
```

10.3.2.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+------------+
      | x'1B66' | x'C0' | x'02' | 'ddd...ddd' |
      +---------+-------+-------+------------+
           |         |       |      |
           |         |       |      ----------------> Description
           |         |       ----------------------> Cmd. Extension (retry NO, check,
           |         |                                  15 CPI, landscape - reverse line-feed)
           |         -------------------------------> Print Check and Credit Slip
           ----------------------------------------> Escape Sequence
```

10.3.2.3 Print Check and Credit Slips Rules

- The check or credit slip is printed in DI station.
- If the string "Total" scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String "Total" Option" on page 27).

10.3.3 C1 - END CHECK AND CREDIT SLIPS

This command is used to end a check or credit slip printed in DI station.

10.3.3.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                     TYPE    LENGTH

 0-1      1B66 – cmd prefix                           hex        2
 2        C1 – End Check and Credit Slip              hex        1
 3        Cmd. Extension                              hex        1
     7    Retry
          1 = YES
          0 = NO
     6    Document Type
          0 = Check
          1 = Credit Slip
    5-3   Print Typeface
          000 = 15 CPI
          001 = 12 CPI
          010 = Reserved
          011 = Reserved
          100 = 15 CPI, Emphasized
          101 = 12 CPI, Emphasized
          110 = Reserved
          111 = Reserved
    2-0   Orientation Print and Direction
          000 = Reserved
          001 = Reserved
          010 = Landscape – Reverse
          011 = Portrait  – Reverse
          100 = Reserved
          101 = Landscape – Forward
          110 = Portrait  – Forward
          111 = Reserved
 4-89     Description                                 ASCII    86 (Note 1)


 ----------------------------------------------------------------------
```

Notes:

```
1. Description field is truncated as follows:
   Portrait   orientation at 15 CPI to 47 characters.
   Portrait   orientation at 12 CPI to 37 characters.
   Landscape orientation at 15 CPI to 86 characters.
   Landscape orientation at 12 CPI to 86 characters.
```

10.3.3.2 Command Example

```
Byte  0           2       3       4
      +---------+------+-------+------------+
      | x'1B66' | x'C1' | x'02' | 'ddd...ddd' |
      +---------+------+-------+------------+
           |         |      |       |
           |         |      |       ----------------> Description
           |         |      ----------------------> Cmd. Extension (retry NO, check,
           |         |                                15 CPI, landscape - reverse)
           |         -------------------------------> End Check and Credit Slip
           ------------------------------------------> Escape Sequence
```
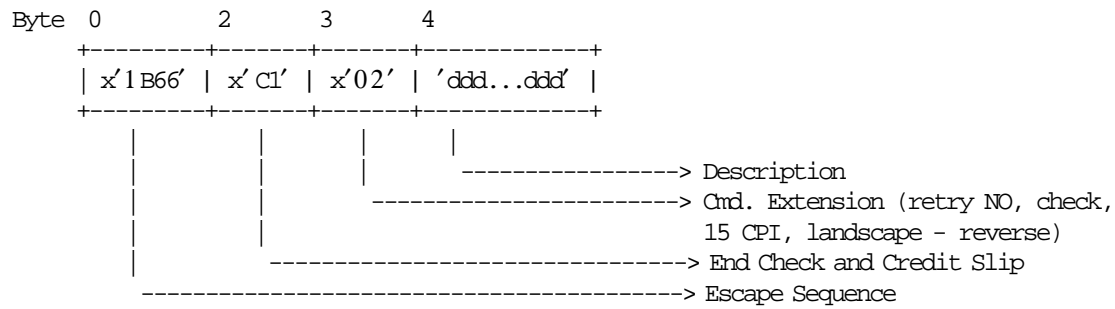
10.3.3.3 End Check and Credit Slips Calculations

If (byte 3 - bit 6) = 0 (Check)
{
   Day_N_Chek = Day_N_Chek + 1
   Day_N_NFR = Day_N_NFR + 1
   Lif_N_NFR = Lif_N_NFR + 1
}

If (byte 3 - bit 6) = 1 (Credit Slip)
{
   Day_N_Cred = Day_N_Cred + 1
   Day_N_NFR = Day_N_NFR + 1
   Lif_N_NFR = Lif_N_NFR + 1
}

10.3.3.4 End Check and Credit Slips Rules

- Ends check or credit slip printing in DI insert station.
- The fiscal printer will then issue a document eject command to the printer.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.3.4 C2 - CANCEL CHECK AND CREDIT SLIP

This command is used to cancel a check and credit slip in DI station.

10.3.4.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - cmd prefix                            hex        2
 2         C2 - Cancel Check and Credit Slip            hex        1
 3         Cmd. Extension                               hex        1
     7-0   Reserved (always = '0x00')


---------------------------------------------------------------------
```

10.3.4.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'C2' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd. Extension
          |          ------------------------------> Cancel Check and Credit Slip
          -----------------------------------------> Escape Sequence
```

10.3.4.3 Cancel Check and Credit Slip Rules

• Cancels Check and Credit Slip printing in DI station.

10.3.5 C3 - LINE FEED CHECK AND CREDIT SLIP

This command is used to execute line feed lines in check and credit slip.

10.3.5.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - cmd prefix                          hex       2
 2        C3 - Line Feed Check and Credit Slip       hex       1
 3        Cmd. Extension                             hex       1
     7    Reserved (always = '0')
     6    Document Type
          0 = Check
          1 = Credit Slip
   5-4    Orientation Print & Direction Line-Feed
          10 = Portrait - Forward
          11 = Portrait - Reverse
   3-0    Number of Line Feed                                    (Note 2)
 4        Number of Dots Rows per Line Feed          hex       1 (Note 3)


-----------------------------------------------------------------------
```

Notes:

1. This command starts the check printing state just as if a print check command had been issued.
   An end or cancel check command must be issued to exit this state.

2. Minimum allowed = 1.
   Maximum allowed = 15.

3. Minimum allowed = x'03' (decimal 03).
   Maximum allowed = x'0C' (decimal 12).

10.3.5.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'C3' | x'21' | 'x'03' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Number of rows
           |         |       ----------------------> Cmd. Extension (check, portrait forward, one line feed)
           |         --------------------------------> Line Feed Check and Credit Slip
           ----------------------------------------> Escape Sequence
```
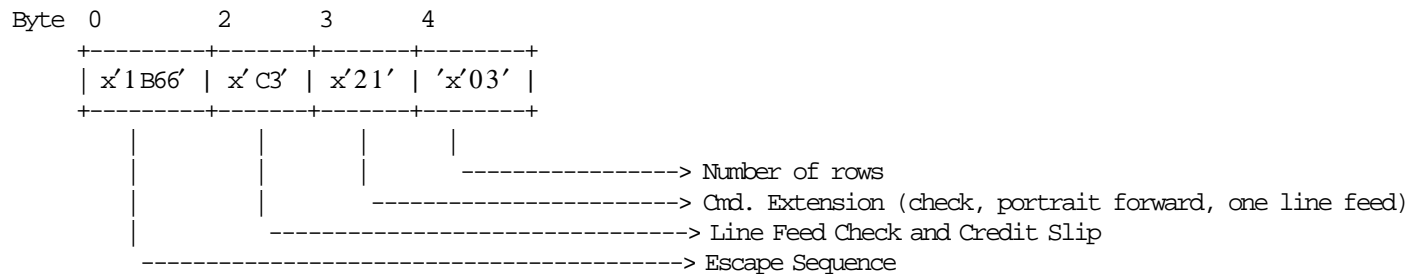
10.4 Credit Note

The credit note commands are:

- BA - Credit Note Print Header
- BB - Credit Note Item
- BC - Credit Note Negative Item
- BD - Credit Note End
- BE - Credit Note Cancel

10.4.1 Credit Note Rules

- If the SJ replication is enabled, the credit note will be printed in CR station and replicated in SJ station (except the logo). Otherwise will be printed in CR station only.

10.4.2 BA - CREDIT NOTE PRINT HEADER

This command is used to print the credit note header.

10.4.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - cmd prefix                          hex      2
 2         BA - Credit Note Print Header              hex      1
 3         Cmd. Extension                             hex      1
     7-0   Reserved (always = '0x00')
 4-7       Reserved                                   ASCII    4
 8-11      Operator Number                            ASCII    4
12-15      Terminal Number                            ASCII    4


---------------------------------------------------------------------
```

10.4.2.2 Command Example

```
Byte  0        2       3       4       8       12
     +---------+-------+-------+-------+-------+-------+
     | x'1B66' | x'BA' | x'00' | '    ' | 'oooo' | 'tttt' |
     +---------+-------+-------+-------+-------+-------+
          |        |       |       |       |       |
          |        |       |       |       |       -------> Terminal Number
          |        |       |       |       ----------------> Operator Number
          |        |       |       ------------------------> Reserved
          |        |       ------------------------------> Cmd. Extension
          |        ---------------------------------------> Credit Note Print Header
          ------------------------------------------------> Escape Sequence
```
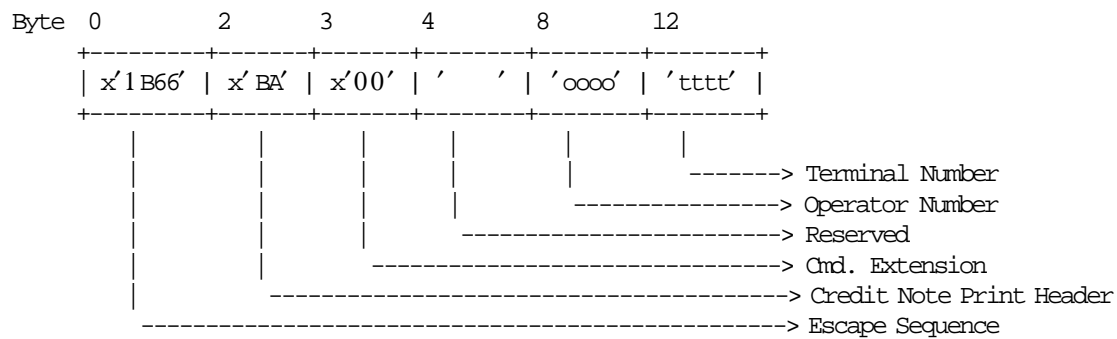
10.4.2.3 Credit Note Print Header Rules

• This command can start a daily sale period.

10.4.3 BB - CREDIT NOTE ITEM

This command is used to record the amount of a item and to print a line containing the description, amount and TAX category.

10.4.3.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE     LENGTH

 0-1       1B66 - cmd prefix                          hex        2
 2         BB - Credit Note Item                      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')
 4-23      Description                                ASCII     20
24-33      BB_Amount                                  ASCII     10 (Note 1)
34-35      TAX Category                               ASCII      2 (Note 2)


----------------------------------------------------------------------
```

Notes:

1. BB_Amount cannot be blank. Max BB_Amount = 2 147 483 647.

2. Valid TAX category is from 01 to 04.

10.4.3.2 Command Example

```
Byte  0         2       3       4           24              34
      +---------+-------+-------+-----------+---------------+------+
      | x'1B66' | x'BB' | x'00' | 'dd...dd' | '0000001000'  | '01' |
      +---------+-------+-------+-----------+---------------+------+
           |         |       |       |             |           |
           |         |       |       |             |           -----> TAX Category
           |         |       |       |             --------------------> BB_Amount
           |         |       |       ------------------------------> Description
           |         |       --------------------------------------> Cmd. Extension
           |         ----------------------------------------------> Credit Note Item
           ----------------------------------------------------------> Escape Sequence
```

10.4.3.3 Credit Note Item Calculations

$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) + BB\_Amount$
$Tra\_Tot = Tra\_Tot + BB\_Amount$

For values of vv ranging from 1 to the maximum values.

10.4.3.4 Credit Note Item Rules

- Each item is assigned a value-added TAX category that indicates the TAX rate applied to the base price to obtain the sale price (BB_Amount).
- Items cannot be accepted if the TAX category specified in this command is disabled (rate = 9999).
- When the selection method is inclusive, the BB_Amount includes TAX.
- When the selection method is exclusive, the BB_Amount doesn't includes TAX.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.4.4 BC - CREDIT NOTE NEGATIVE ITEM

This command is used to record the amount of a negative item and to print a line containing the description, amount, TAX category and the letter N.

10.4.4.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - cmd prefix                          hex       2
 2         BC - Credit Note Negative Item             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')
 4-23      Description                                ASCII    20
24-33      BC_Amount                                  ASCII    10 (Note 1)
34-35      TAX Category                               ASCII     2 (Note 2)


------------------------------------------------------------------------
```

Notes:

1. BC_Amount cannot be blank. Max BC_Amount = 2 147 483 647.

2. Valid TAX category is from 01 to 04.

10.4.4.2 Command Example

```
Byte  0         2       3       4           24             34
      +---------+-------+-------+-----------+--------------+------+
      | x'1B66' | x'BC' | x'00' | 'dd...dd' | '0000001000' | '01' |
      +---------+-------+-------+-----------+--------------+------+
           |         |       |       |            |           |
           |         |       |       |            |           -----> TAX Category
           |         |       |       |            -------------------> BC_Amount
           |         |       |       -----------------------------> Description
           |         |       -------------------------------------> Cmd. Extension
           |         ---------------------------------------------> Credit Note Negative Item
           -------------------------------------------------------> Escape Sequence
```

10.4.4.3 Credit Note Negative Item Calculations

$Tra\_Tot\_v(vv) = Tra\_Tot\_v(vv) - BC\_Amount$
$Tra\_Tot = Tra\_Tot - BC\_Amount$

For values of vv ranging from 1 to the maximum values.

10.4.4.4 Credit Note Negative Item Rules

- A minus sign is printed for negative item.
- The N identification character is printed for negative item.
- Each negtive item is assigned a value-added TAX category that indicates the TAX rate applied to the base price to obtain the sale price (BC_Amount).
- Items cannot be accepted if the TAX category specified in this command is disabled (rate = 9999).
- When the selection method is inclusive, the BC_Amount includes TAX.
- When the selection method is exclusive, the BC_Amount doesn't includes TAX.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.4.5 BD - CREDIT NOTE END

This command is used to end the credit note.

10.4.5.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT  CONTENT                                   TYPE    LENGTH

  0-1      1B66 - cmd prefix                        hex        2
  2        BD - Credit Note End                     hex        1
  3        Cmd. Extension                           hex        1
     7-0  Reserved (always = '0x00')
  4-41     Trailer Message 1                        ASCII     38 (Note 1)
 42-79     Trailer Message 2                        ASCII     38 (Note 1)


---------------------------------------------------------------------
```

Notes:

1. If the trailer message is blank will be not printed.

10.4.5.2 Command Example

```
Byte  0        2       3
      +---------+-------+-------+....
      | x'1B66' | x'BD' | x'00' |
      +---------+-------+-------+....
          |        |       |
          |        |       ------------------------> Cmd. Extension
          |         --------------------------------> Credit Note End
           -------------------------------------------> Escape Sequence

Byte  4                         42
      +--------------------------+--------------------+
      | 'Thanks for your visit ... | Happy New Year ... |
      +---------+-------+-------+--------------------+
           |                     |
           |                      -----------------> Trailer Message 2
            -------------------------------------------> Trailer Message 1
```
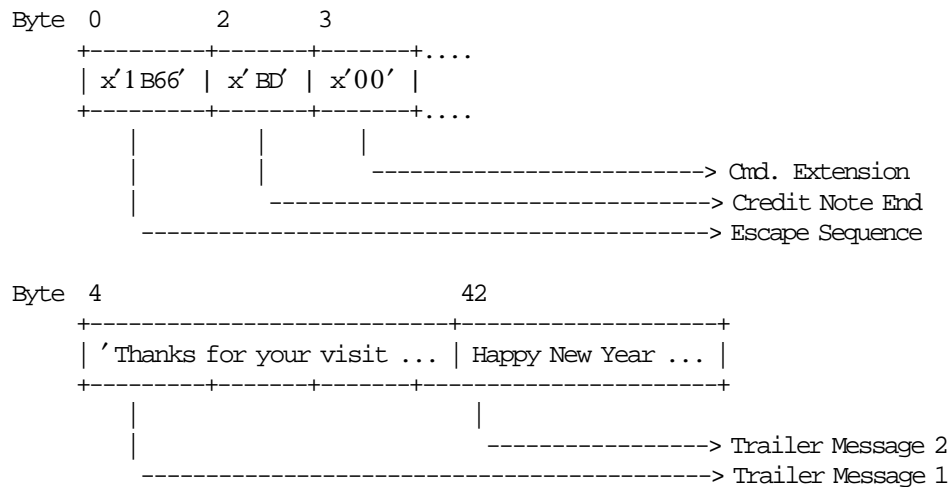
10.4.5.3 Credit Note End Calculations

- **Updating Daily and Lifetime Counters**

  Day_N_Vouc = Day_N_Vouc + 1
  Day_N_Slip = Day_N_Slip + 1

  Lif_N_Vouc = Lif_N_Vouc + 1

- **Calculating TAX**

  - **When Exclusive TAX (Flag FINCLTAX = NO):**

$$Tra\_TAX\_v(vv) = TRUNC(\frac{Tra\_Tot\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

$$Tra\_TAX = \sum_{vv} Tra\_TAX\_v(vv)$$

- **Updating Daily Accumulators**

$Day\_CredN\_v(vv) = Day\_CredN\_v(vv) + Tra\_Tot\_v(vv)$

- **Clearing Transaction Accumulators**

$Tra\_Tot\_v(vv) = 0$
$Tra\_Tot = 0$

$Tra\_TAX\_v(vv) = 0$
$Tra\_TAX = 0$

For values of vv ranging from 1 to the maximum values.

10.4.5.4 Credit Note End Rules

- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the trailer message fields of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.4.5.5 Printing Trailer Message Lines

If the ′FTRAILR′ state = YES, then the stored trailer lines in RAM memory will be printed (up till a blank trailer line is encountered or until all stored lines have been printed) before the variable trailer lines of the credit note.

10.4.6 BE - CREDIT NOTE CANCEL

This command is used to cancel a credit note.

10.4.6.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - cmd prefix                          hex        2
 2        BE - Credit Note Cancel                    hex        1
 3        Cmd. Extension                             hex        1
     7-0  Reserved (always = '0x00')


----------------------------------------------------------------------
```

10.4.6.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'BE' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       ------------------------> Cmd. Extension
           |            ------------------------------> Credit Note Cancel
           ------------------------------------------> Escape Sequence
```
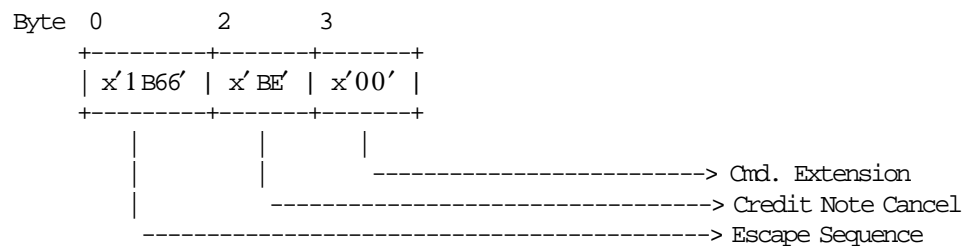
10.4.6.3 Credit Note Cancel Calculations

• **Update Daily and Lifetime Counters**

  $Day\_N\_Vouc = Day\_N\_Vouc + 1$
  $Day\_N\_Slip = Day\_N\_Slip + 1$

  $Lif\_N\_Vouc = Lif\_N\_Vouc + 1$

  − **Update when only header was printed**

    $Day\_N\_NFR = Day\_N\_NFR + 1$
    $Lif\_N\_NFR = Lif\_N\_NFR + 1$

• **Clearing Transaction Accumulators**

  $Tra\_Tot\_v(vv) = 0$
  $Tra\_Tot = 0$

  For values of vv ranging from 1 to the maximum value.

10.5 Report Printing

The report printing commands are:

- 13 - Close Sale Period (Z-Report)
- 14 - Summary Fiscal Report (X-Report)
- 15 - Fiscal Memory Report
- 1F - Print POS ID Information Report

There are two electronic printing commands:

- DA - Electronic Read Fiscal Memory Tables
- DB - Electronic Read Counters and Accumulators

There are two commands that control application-originated reports:

- DD - Start Application-Originated Report
- DE - End   Application-Originated Report

10.5.1 13 - CLOSE SALE PERIOD (Z-Report)

This command is used to close the sale period, update the fiscal memory (when the fiscal mode is set) and issue the closure report.

10.5.1.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE   LENGTH

 0-1      1B66 - cmd prefix                              hex      2
 2        13 - Close Sale Period                         hex      1
 3        Cmd. Extension                                 hex      1
    7-0   Reserved (always = '0x00')
 4-7      Reserved                                       ASCII    4
 8-11     Terminal Number                                ASCII    4
12-15     Store Number                                   ASCII    4


------------------------------------------------------------------------
```

10.5.1.2 Command Example

```
Byte  0         2       3       4        8       12
      +---------+-------+-------+--------+--------+--------+
      | x'1B66' | x'13' | x'00' | 'rrrr' | '2222' | '3333' |
      +---------+-------+-------+--------+--------+--------+
          |         |       |       |        |        |
          |         |       |       |        |        ---------> Store Number
          |         |       |       |        ------------------> Terminal Number
          |         |       |       --------------------------> Reserved
          |         |       ----------------------------------> Cmd. Extension
          |         -----------------------------------------> Close Sale Period
          -----------------------------------------------------> Escape Sequence
```
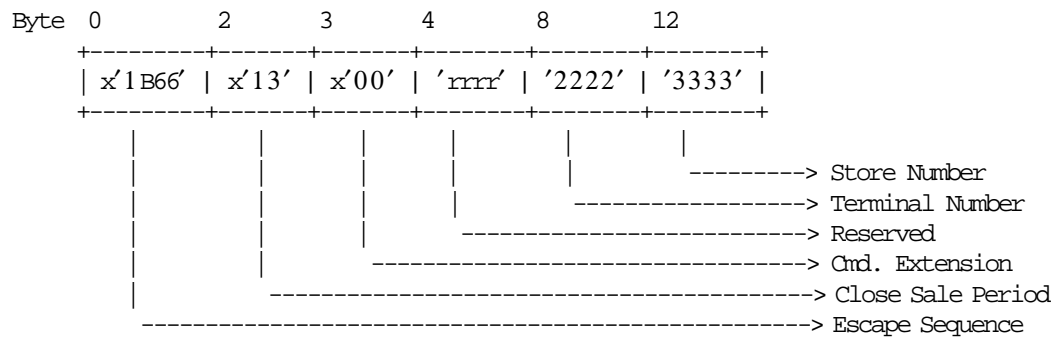
10.5.1.3 Close Sale Period Calculations

The following operations are performed before printing the report and writing the fiscal memory:

$Lif\_N\_Clos = Lif\_N\_Clos + 1$
$Day\_N\_Slip = Day\_N\_Slip + 1$

$Day\_Tot = \sum_{vv} Day\_Tot\_v(vv)$
$Day\_CredN = \sum_{vv} Day\_CredN\_v(vv)$

$Grand\_Tot = Grand\_Tot + Day\_Tot$
$Grand\_Tot\_v(vv) = Grand\_Tot\_v(vv) + Day\_Tot\_v(vv)$

- **For TAX calculations done at the close sale period time:**
  - **When Inclusive TAX (Flag FINCLTAX = YES):**

$$Day\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tot\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

$$Day\_Tdsc\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tdsc\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

$$Day\_CredN\_TAXC\_v(vv) = TRUNC(\frac{Day\_CredN\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

- **When Exclusive TAX (Flag FINCLTAX = NO):**

$$Day\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tot\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

$$Day\_Tdsc\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tdsc\_v(vv) \times TAX\_Rate(vv)}{100} + 0.5)$$

$$Day\_CredN\_TAXC\_v(vv) = TRUNC(\frac{Day\_CredN\_v(vv) \times TAX\_Rate(vv)}{100} + 0.5)$$

- **When Inclusive TAX for Negative Item Returns (Flag FINCLTAX = YES):**

$$Day\_Retn\_TAXC\_v(vv) = TRUNC(\frac{Day\_Retn\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

- **When Exclusive TAX for Negative Item Returns (Flag FINCLTAX = NO):**

$$Day\_Retn\_TAXC\_v(vv) = TRUNC(\frac{Day\_Retn\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

- **When Inclusive TAX for Negative Item Voids (Flag FINCLTAX = YES):**

$$Day\_Void\_TAXC\_v(vv) = TRUNC(\frac{Day\_Void\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

- **When Exclusive TAX for Negative Item Voids (Flag FINCLTAX = NO):**

$$Day\_Void\_TAXC\_v(vv) = TRUNC(\frac{Day\_Void\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

- **When Inclusive TAX for Negative Item Bonus (Flag FINCLTAX = YES):**

$$Day\_Bonu\_TAXC\_v(vv) = TRUNC(\frac{Day\_Bonu\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

- **When Exclusive TAX for Negative Item Bonus (Flag FINCLTAX = NO):**

$$Day\_Bonu\_TAXC\_v(vv) = TRUNC(\frac{Day\_Bonu\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

- **When Inclusive TAX for Negative Item Empties (Flag FINCLTAX = YES):**

$$Day\_Empt\_TAXC\_v(vv) = TRUNC(\frac{Day\_Empt\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

- **When Exclusive TAX for Negative Item Empties (Flag FINCLTAX = NO):**

$$Day\_Empt\_TAXC\_v(vv) = TRUNC(\frac{Day\_Empt\_v(vv) \times TAX\_Rate\_v(vv)}{100} + 0.5)$$

$Day\_TAXC = \sum\limits_{vv} Day\_TAXC\_v(vv)$

$Day\_Tdsc\_TAXC = \sum\limits_{vv} Day\_Tdsc\_TAXC\_v(vv)$

$Day\_Retn\_TAXC = \sum\limits_{vv} Day\_Retn\_TAXC\_v(vv)$

$Day\_Void\_TAXC = \sum\limits_{vv} Day\_Void\_TAXC\_v(vv)$

$Day\_Bonu\_TAXC = \sum\limits_{vv} Day\_Bonu\_TAXC\_v(vv)$

$Day\_Empt\_TAXC = \sum\limits_{vv} Day\_Empt\_TAXC\_v(vv)$

$Day\_CredN\_TAXC = \sum\limits_{vv} Day\_CredN\_TAXC\_v(vv)$

- **For TAX calculations done by adding up the daily totals:**

$Grand\_TAXC\_v(vv) = Grand\_TAXC\_v(vv) + Day\_TAXC\_v(vv)$
$Grand\_TAXC = Grand\_TAXC + Day\_TAXC$

- **The following operations are performed after writing the fiscal memory:**

  - **Clearing Daily Counters**

    $Day\_Tot\_v(vv) = 0$
    $Day\_Tot = 0$

    $Day\_TAX = 0$
    $Day\_TAX\_v(vv) = 0$

    $Day\_TAXC = 0$
    $Day\_TAXC\_v(vv) = 0$

    $Day\_Retn = 0$
    $Day\_Retn\_v(vv) = 0$

    $Day\_Void = 0$
    $Day\_Void\_v(vv) = 0$

    $Day\_Bonu = 0$
    $Day\_Bonu\_v(vv) = 0$

    $Day\_Empt = 0$
    $Day\_Empt\_v(vv) = 0$

    $Day\_Tdsc = 0$
    Day_Tdsc_TAXC
    $Day\_Tdsc\_TAXC\_v(vv)$

    $Day\_CredN = 0$
    $Day\_CredN\_v(vv) = 0$
    $Day\_CredN\_TAXC = 0$
    $Day\_CredN\_TAXC\_v(vv) = 0$

  - **Clearing Daily Counters:**

    $Day\_N\_Ract = 0$
    $Day\_N\_Vouc = 0$
    $Day\_N\_Slip = 0$

Day_N_Dump = 0
Day_N_Doc = 0
Day_N_NFCR = 0
Day_N_NFJL = 0
Day_N_NFDI = 0
Day_N_NFR = 0
Day_N_Chek = 0
Day_N_Retn = 0
Day_N_Void = 0
Day_N_Bonu = 0
Day_N_Empt = 0
Day_N_Tdsc = 0
Day_N_X = 0

For values of vv ranging from 1 to the maximum values.

10.5.1.4 Close Sale Period Rules

- If the SJ replication is enabled, the report will be printed in CR station and replicated in SJ station (except the logo). Otherwise will be printed in CR station only.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the terminal and store fields of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

  If FISCFLG = NO, then fiscal memory is NOT updated by the closure command.

10.5.2 14 - SUMMARY FISCAL REPORT (X-Report)

This command is used to print the accumulators and counters, like the closure report, without writing anything in the fiscal memory. This report can be executed at any time of the day.

10.5.2.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                  TYPE    LENGTH

 0-1      1B66 - cmd prefix                        hex      2
 2        14 - Summary Fiscal Report (X-Report)    hex      1
 3        Cmd. Extension                           hex      1
    7-0   Reserved (always = '0x00')
 4-7      Reserved                                 ASCII    4
 8-11     Terminal Number                          ASCII    4
12-15     Store Number                             ASCII    4


------------------------------------------------------------------------
```

10.5.2.2 Command Example

```
Byte  0         2       3       4        8        12
      +---------+-------+-------+--------+--------+--------+
      | x'1B66' | x'14' | x'00' | 'rrrr' | '2222' | '3333' |
      +---------+-------+-------+--------+--------+--------+
          |         |       |       |        |        |
          |         |       |       |        |        ---------> Store Number
          |         |       |       |        ------------------> Terminal Number
          |         |       |       --------------------------> Reserved
          |         |       -----------------------------------> Cmd. Extension
          |         ---------------------------------------------> Summary Fiscal Report (X-Report)
          ---------------------------------------------------> Escape Sequence
```
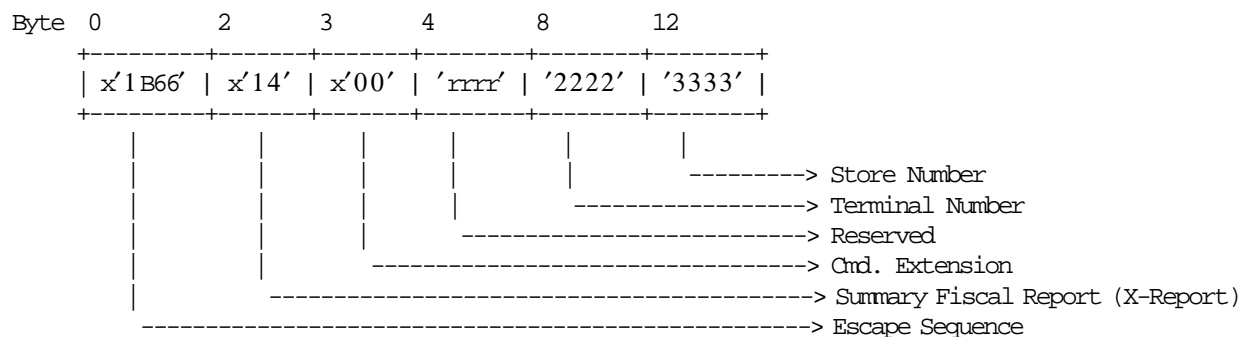
10.5.2.3 Summary Fiscal Report (X-Report) Calculations

The calculations done during the summary fiscal report are the same as those done during the close sale period (13 cmd.) before the fiscal memory is written.

PLUS THE FOLLOWING IS ALSO DONE:

$Day\_N\_X = Day\_N\_X + 1$
$Day\_N\_NFR = Day\_N\_NFR + 1$
$Lif\_N\_NFR = Lif\_N\_NFR + 1$

AND THE FOLLOWING ARE *NOT* DONE:

$Lif\_N\_Clos = Lif\_N\_Clos + 1$

The calculations done during the close sale period (13 cmd.) (after the fiscal memory is written) are NOT done in the summary fiscal report (14 cmd.).

10.5.2.4 Summary Fiscal Report (X-Report) Rules

- The X-Report can start a daily sale period.
- If the SJ replication is enabled, the report will be printed in CR station and replicated in SJ station. Otherwise will be printed in CR station only.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the terminal and store fields of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.5.3 15 - FISCAL MEMORY REPORT

This command is used to print the fiscal memory content.

10.5.3.1 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
     7-3   Reserved (always = '0')
     2-0   Range
           001 (1) = All Fiscal Memory
           010 (2) = Between Closure Dates
           011 (3) = Between Months/Year
           100 (4) = Between Closure Numbers

     If Range = 1 specify:
 4-19      Reserved                                ASCII   16
20-23      Password                                ASCII    4
24-27      Operator Number                         ASCII    4
28-31      Terminal Number                         ASCII    4
32-35      Store    Number                         ASCII    4

     If Range = 2 specify:
 4-11      First Closure Date                      ASCII    8 (Note 1 on page 114)
12-19      Last  Closure Date                      ASCII    8 (Note 1 on page 114)
20-23      Password                                ASCII    4
24-27      Operator Number                         ASCII    4
28-31      Terminal Number                         ASCII    4
32-35      Store    Number                         ASCII    4

     If Range = 3 specify:
 4-9       First Month/Year                        ASCII    6 (Note 2 on page 114)
10-15      Last  Month/Year                        ASCII    6 (Note 2 on page 114)
16-19      Reserved                                ASCII    4
20-23      Password                                ASCII    4
24-27      Operator Number                         ASCII    4
28-31      Terminal Number                         ASCII    4
32-35      Store    Number                         ASCII    4

     If Range = 4 specify:
 4-7       First Closure Number                    ASCII    4
 8-11      Last  Closure Number                    ASCII    4
12-19      Reserved                                ASCII    8
20-23      Password                                ASCII    4
24-27      Operator Number                         ASCII    4
28-31      Terminal Number                         ASCII    4
32-35      Store    Number                         ASCII    4

-----------------------------------------------------------------------
```

Notes:

1. Dates strings must be formatted as: `ddmmyyyy`
   Where:
   > dd = day
   > mm = month
   > yyyy = year

2. Month/Year strings must be formatted as: `mmyyyy`
   Where:
   > mm = month
   > yyyy = year

10.5.3.2 Fiscal Memory Report Calculations

Successful completion of command

Day_N_Dump = Day_N_Dump + 1
Day_N_Slip = Day_N_Slip + 1

Lif_N_Dump = Lif_N_Dump + 1

10.5.3.3 Fiscal Memory Report Rules

- This command is protected by a fixed 4-digit password.
- If the SJ replication is enabled, the report will be printed in CR station and replicated in SJ station (except the logo). Otherwise will be printed in CR station only.

10.5.4 1F - POS/STORE INFORMATION REPORT

This command is used to print a report of the POS/store information stored in fiscal memory thru 1E cmd.

10.5.4.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - cmd prefix                            hex       2
 2         1F - POS/Store Information Report            hex       1
 3         Cmd. Extension                               hex       1
     7-0   Reserved (always = '0x00')
 4-7       Operator Number                              ASCII     4
 8-11      Terminal Number                              ASCII     4


-----------------------------------------------------------------------
```

10.5.4.2 Command Example

```
Byte  0         2       3       4        8
      +---------+-------+-------+--------+--------+
      | x'1B66' | x'1F' | x'00' | '1111' | '2222' |
      +---------+-------+-------+--------+--------+
           |         |       |       |        |
           |         |       |       |         ------------> Terminal Number
           |         |       |        --------------------> Operator Number
           |         |        --------------------------> Cmd. Extension
           |          ----------------------------------> POS/Store Information Report
            --------------------------------------------> Escape Sequence
```
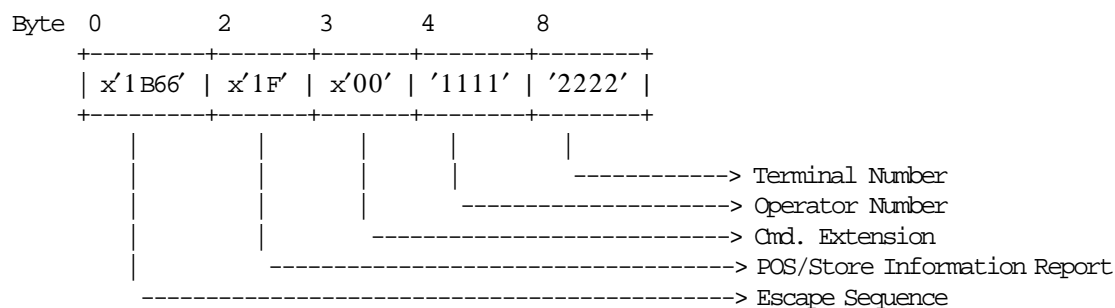
10.5.4.3 POS/Store Information Report Calculations

$Day\_N\_Slip = Day\_N\_Slip + 1$

$Day\_N\_NFR = Day\_N\_NFR + 1$

$Lif\_N\_NFR = Lif\_N\_NFR + 1$

10.5.4.4 POS/Store Information Report Rules

- If the SJ replication is enabled, the report will be printed in CR station and replicated in SJ station (except the logo). Otherwise will be printed in CR station only.
- If the string "Total" scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the operator and terminal fields of this command (See 4.2.1, "Scan String "Total" Option" on page 27).

10.5.5 DA - ELECTRONIC READ FISCAL MEMORY TABLES

This command is used to request a electronic report of the fiscal memory tables content.

10.5.5.1 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
           0F = Read  Next Inc/Exc TAX Method Table
           0E = Start Read Inc/Exc TAX Method Table
           0D = Reserved
           0C = Reserved
           0B = Read  POS/Store Information Table
           0A = Start POS/Store Information Table
           09 = Read  Next Decimal Point Table
           08 = Start Read Decimal Point Table
           07 = Read  Next Repair Action Table
           06 = Start Read Repair Action Table
           05 = Read  Next Currency Table
           04 = Start Read Currency Table
           03 = Read  Next TAX Table
           02 = Start Read TAX Table
           01 = Read  Next Daily Totals Block
           00 = Start Read Daily Totals Block
 4-7       Closure Number                               ASCII    4 (Note 2)


------------------------------------------------------------------------
```

Notes:

1. Bit 7 is the most significant bit and bit 0 is the least significant bit.

2. Bytes 4-7 apply to start read daily block only.

Response for Daily Totals Block will be formatted as follows:

BYTE BIT	CONTENT	TYPE	LENGTH	
0-8	Fiscal Unit Status	hex	9	
9	DA - Record Identification	hex	1	
10-23	Request Date and Time (dd/mm/yy hh:mm)	ASCII	14	
24	Return Code	hex	1	
	43 = Good Completion			
	60 = Invalid character in bytes 4-8 of command			
	5C = Register Not Found			
	64 = Error on Reading Fiscal Memory			
25	Decimal Point and TAX Calculation Method	hex	1	
7-2	Reserved			
1	Selected TAX Method			
	0 = Inclusive TAX Method			
	1 = Exclusive TAX Method			
0	Decimal Point Indicator			
	0 = Reset			
	1 = Set			
26-33	Date (dd/mm/yy)	ASCII	8	FM_DT_Date_Closure
34-38	Time (hh:mm)	ASCII	5	FM_DT_Time_Closure
39-40	Reserved	hex	2	0x00
41-42	Closure Number	hex	2	FM_DT_Lif_N_Clos
43-48	Individual Total for TAX 1	hex	6	FM_DT_Tot_v_1
49-54	Individual Total for TAX 2	hex	6	FM_DT_Tot_v_2
55-60	Individual Total for TAX 3	hex	6	FM_DT_Tot_v_3
61-66	Individual Total for TAX 4	hex	6	FM_DT_Tot_v_4
67-72	Total for TAX 2	hex	6	FM_DT_TAXC_v_2
73-78	Total for TAX 3	hex	6	FM_DT_TAXC_v_3
79-84	Total for TAX 4	hex	6	FM_DT_TAXC_v_4
85-88	Lifetime Voucher Number	hex	4	FM_DT_Lif_N_Vouc
89-92	Lifetime NFR Number	hex	4	FM_DT_Lif_N_NFR
93-94	Lifetime Fiscal Memory Report Number	hex	2	FM_DT_Lif_N_Dump
95-102	Date of Last Fiscal Voucher	ASCII	8	FM_DT_Date_Last_Vouc
103-107	Time of Last Fiscal Voucher	ASCII	5	FM_DT_Time_Last_Vouc
108-113	Credit Note Total	hex	6	
114-119	Credit Note TAX Total	hex	6	

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 for TAX Table will be formatted as follows:

```
  -----------------------------------------------------------------------

  BYTE BIT   CONTENT                                TYPE    LENGTH

   0-8       Fiscal Unit Status                     hex        9
   9         DA - Record Identification             hex        1
  10-23      Request Date and Time                  ASCII     14
             (dd/mm/yy hh:mm)
  24         Return Code                            hex        1
             43 = Good Completion
             5C = Register Not Found
             64 = Error on Reading Fiscal Memory
  25         Reserved                               hex        1
  26-33      Date (dd/mm/yy)                        ASCII      8    FM_TR_Date
  34-37      Closure Number                         ASCII      4    FM_TR_N_Clos
  38-39      TAX 2 Value (100 times)                hex        2    FM_TR_TAX_Rate_2 (Note 1)
  40-41      TAX 3 Value (100 times)                hex        2    FM_TR_TAX_Rate_3 (Note 1)
  42-43      TAX 4 Value (100 times)                hex        2    FM_TR_TAX_Rate_4 (Note 1)


  -----------------------------------------------------------------------
```

Note : If the return code indicates an error then data are meaningless.

Note 1: The returned values are 100 times the original values.
        (i.e. 12,34% will be returned as 1234, 20% as 2000)

Response for Currency Table will be formatted as follows:

```
  -----------------------------------------------------------------------

  BYTE BIT   CONTENT                                TYPE    LENGTH

   0-8       Fiscal Unit Status                     hex        9
   9         DA - Record Identification             hex        1
  10-23      Request Date and Time                  ASCII     14
             (dd/mm/yy hh:mm)
  24         Return Code                            hex        1
             43 = Good Completion
             5C = Register Not Found
             64 = Error on Reading Fiscal Memory
  25         Reserved                               hex        1
  26-29      Closure Number                         ASCII      4    FM_CC_N_Clos
  30-37      Date (dd/mm/yy)                        ASCII      8    FM_CC_Date
  38-43      Currency Description                   ASCII      6    FM_CC_Description
  44-45      Currency Description Abbreviation      ASCII      2    FM_CC_Descr_Abrev


  -----------------------------------------------------------------------
```

Note: If the return code indicates an error then data are meaningless.

Response for Decimal Point Table will be formatted as follows:

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                 TYPE    LENGTH

  0-8      Fiscal Unit Status                      hex        9
  9        DA - Record identification              hex        1
 10-23     Request Date and Time                   ASCII     14
           (dd/mm/yy hh:mm)
 24        Return Code                             hex        1
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
 25        Reserved                                hex        1
 26-29     Closure Number                          ASCII      4   FM_DP_N_Clos
 30-37     Date (dd/mm/yy)                         ASCII      8   FM_DP_Date
 38-38     Decimal Point Status                    ASCII      1   FM_DP_Dec_Status


-------------------------------------------------------------------------
```

Note: If the return code indicates an error then data are meaningless.

Response for POS/Store Information Table will be formatted as follows:

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                 TYPE    LENGTH

  0-8      Fiscal Unit Status                      hex        9
  9        DA - Record Identification              hex        1
 10-23     Request Date and Time                   ASCII     14
           (dd/mm/yy hh:mm)
 24        Return Code                             hex        1
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
 25        Reserved                                hex        1
 26-29     Closure Number                          ASCII      4   FM_SI_N_Clos
 30-33     Store Number                            ASCII      4   FM_SI_StoreNbr
 34-44     RIF Number                              ASCII     11   FM_SI_RIF
 45-71     Special Message                         ASCII     27   FM_SI_Message
 72-79     Date (dd/mm/yy)                         ASCII      8   FM_SI_Date
 80-80     Reserved                                ASCII      1   0


-------------------------------------------------------------------------
```

Note: If the return code indicates an error then data are meaningless.

Response for Repair Action Table will be formatted as follows:

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                               TYPE    LENGTH

 0-8       Fiscal Unit Status                    hex        9
 9         DA - Record Identification            hex        1
10-23      Request Date and Time                 ASCII     14
           (dd/mm/yy hh:mm)
24         Return Code                           hex        1
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
25         Reserved                              hex        1
26-28      Repair Action Number                  ASCII      3    FM_RA_N_Ract
29-32      Closure Number                        ASCII      4    FM_RA_N_Clos
33-40      Date (dd/mm/yy)                        ASCII      8    FM_RA_Date
41-45      Time (hh:mm)                          ASCII      5    FM_RA_Time


---------------------------------------------------------------------
```

Note: If the return code indicates an error then data are meaningless.

Response for Inclusive/Exclusive TAX Method Table will be formatted as follows:

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                               TYPE    LENGTH

 0-8       Fiscal Unit Status                    hex        9
 9         DA - Record Identification            hex        1
10-23      Request Date and Time                 ASCII     14
           (dd/mm/yy hh:mm)
24         Return Code                           hex        1
           43 = Good Completion
           5C = Register Not Found
           64 = Error on Reading Fiscal Memory
25         Reserved                              hex        1
26-29      Closure Number                        ASCII      4    FM_IE_N_Clos
30-37      Date (dd/mm/yy)                        ASCII      8    FM_IE_Date
38-42      Time (hh:mm)                          ASCII      5    FM_IE_Time
43-43      TAX Method                            ASCII      1    FM_IE_TAX_Method


---------------------------------------------------------------------
```

Note: If the return code indicates an error then data are meaningless.

10.5.5.2 Command Example

```
Byte  0           2       3       4
      +---------+-------+-------+--------+
      | x'1B66' | x'DA' | x'00' | '0011' |
      +---------+-------+-------+--------+
           |         |       |       |
           |         |       |       ----------------> Closure Number
           |         |       ----------------------> Cmd. Extension
           |         |                                 (start read daily block)
           |         -------------------------------> Electronic Read Fiscal Memory Tables
           ---------------------------------------> Escape Sequence
```
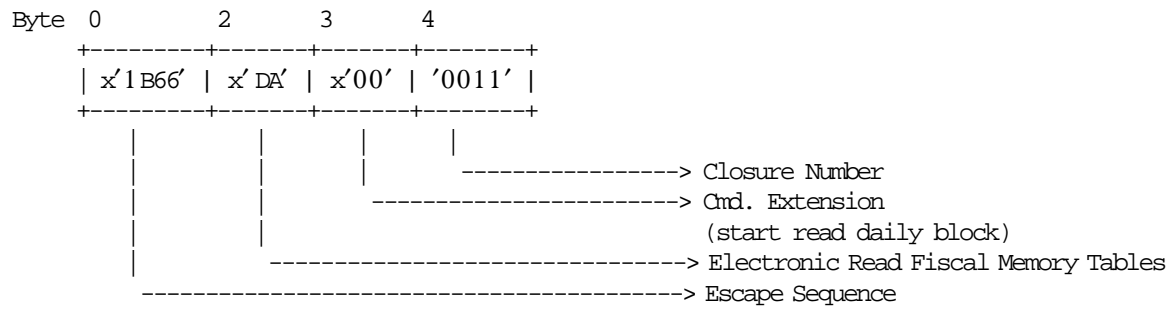
10.5.5.3 Electronic Read Fiscal Memory Tables Rules

• The totals and counters related to each sales period are read from the fiscal memory and sent over the serial I/O.

10.5.6 DB - ELECTRONIC READ COUNTERS AND ACCUMULATORS

This command is used to request a electronic report of the accumulators and counters values.

10.5.6.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                        TYPE    LENGTH

 0-1      1B66 – cmd prefix                              hex       2
 2        DB – Electronic Read Counters and Accumulators hex       1
 3        Cmd. Extension                                 hex       1
    7-1   Reserved (always = '0')
    0     Read Accumulators and Counters


          Format for Read Accumulators and Counters
          ----------------------------------------
 4        Auxiliary Cmd. Extension                       hex       1
    7-1   Reserved (always = '0')
    0     Type
          0 = Transaction
          1 = Daily
 5        Reserved                                       ASCII     1
 6-7      TAX Category (vv)                              ASCII     2 (Note 1)


----------------------------------------------------------------------
```

Notes:

1. To read the sum totals for all TAX categories, use '00' as the ASCII data string.

10.5.6.2 Electronic Read Counters and Accumulators Response Format (DB)

```
------------------------------------------------------------------------

BYTE BIT       CONTENTS                              TYPE   LENGTH

 0-8           Fiscal Unit Status                    hex       9
 9             DB - Record Identification            hex       1
10-23          Request Date and Time                 ASCII    14
               (dd/mm/yy hh:mm)

24             RETURN CODE                           hex       1
               43 = Good Completion

25             FISCAL UNIT PROCEDURE IN PROGRESS     hex       1
               00 = No Procedure in Progress
               01 = Sales Transaction in Progress
               02 = Reserved
               03 = Reserved
               04 = Reserved
               05 = Appl.-Orig. Report in CR in Progress
               06 = Appl.-Orig. Report in SJ in Progress
               07 = Appl.-Orig. Report in DI Landscape in Progress
               08 = Appl.-Orig. Report in DI Portrait  in Progress
               09 = Check or Credit Slip in Progress
               0A = Credit Note in Progress

For Sale Transaction in Progress (byte 25 = 01)
26              SALES TRANSACTION STEPS              hex       1
      7         1 = Header Printed
      6         1 = Item/Negitem Sold
      5         1 = Total Requested
      4         1 = Payment in Progress
      3         1 = End    Transaction in Progress
      2         1 = Cancel Transaction in Progress
      1         1 = Print Check in Payment Phase
      0         Reserved (set to 0)

For Credit Note in Progress (byte 25 = 0A)
26              CREDIT NOTE STEPS                    hex       1
      7         1 = Header Printed
      6         1 = Item/Negitem
      5-4       Reserved (set to 0)
      3         1 = End    Credit Note in Progress
      2         1 = Cancel Credit Note in Progress
      1-0       Reserved (set to 0)

27              FISCAL UNIT MODE                     hex       1
      7         1 = Fiscal Mode Set
      6         Reserved
      5         1 = Sales Period in Progress
      4         1 = Training Mode Set
      3         Reserved (set to 0)
      2         TAX Method Status
                0 = Exclusive
                1 = Inclusive
      1         SJ Replication Status
                0 = Disable
                1 = Enable
      0         String "Total" Scan Status
                0 = Disable
                1 = Enable
28-30          Reserved (set to 0)                   hex       3


------------------------------------------------------------------------

               (DB Response continued on next page)
```

10.5.6.3 Response to Read Accumulators and Counters (Byte 3 - Bit 0)

((byte 4 - bit 0) = 0 and TAX Category = 0) is formatted as follows:

```
----------------------------------------------------------------------------------

   BYTE    CONTENTS                               TYPE   LENGTH   VARIABLE NAME

           TRANSACTION ACCUMULATORS
           -----------------------

  31-36    Total                                  hex        6   Tra_Tot
  37-42    Reserved                               hex        6
  43-48    TAX Total                              hex        6   Tra_TAX
  49-54    Reserved                               hex        6
  55-60    Fixed Total                            hex        6   Tra_Fixed
  61-66    Return Total                           hex        6   Tra_Retn
  67-72    Voids Total                            hex        6   Tra_Void
  73-78    Bonus Total                            hex        6   Tra_Bonu
  79-84    Reserved                               hex        6
  85-90    Empties Total                          hex        6   Tra_Empt
 91-108    Reserved                               hex       18
109-114    Discounts on Subtotal                  hex        6   Tra_Tdsc
115-120    Reserved                               hex        6
121-125    Amount Due (signed)                    hex        5   Tra_Amt_Due
126-161    Reserved                               hex       36

           TRANSACTION COUNTERS
           --------------------

162-177    Reserved                               hex       16
178-179    Returned                               hex        2   Tra_N_Retn
180-181    Voided                                 hex        2   Tra_N_Void
182-183    Reserved                               hex        2
184-185    Bonus                                  hex        2   Tra_N_Bonu
186-187    Empties                                hex        2   Tra_N_Empt
188-191    Reserved                               hex        4
192-193    Discounts on Subtotal                  hex        2   Tra_N_Tdsc
194-207    Reserved                               hex       14
208-227    Reserved                               hex       20


----------------------------------------------------------------------------------
```

((byte 4 - bit 0) = 0 and TAX Category > 0) is formatted as follows:

```
--------------------------------------------------------------------------------

   BYTE    CONTENTS                              TYPE   LENGTH   VARIABLE NAME

           TRANSACTION ACCUMULATORS
           ------------------------

  31-36    Total                                 hex       6    Tra_Tot_v
  37-42    Reserved                              hex       6
  43-48    TAX Total                             hex       6    Tra_TAX_v
  49-54    Reserved                              hex       6
  55-60    Fixed Total                           hex       6    Tra_Fixed_v
  61-66    Return Total                          hex       6    Tra_Retn_v
  67-72    Voids Total                           hex       6    Tra_Void_v
  73-78    Bonus Total                           hex       6    Tra_Bonu_v
  79-84    Reserved                              hex       6
  85-90    Empties Total                         hex       6    Tra_Empt_v
 91-108    Reserved                              hex      18
109-114    Discounts on Subtotal                 hex       6    Tra_Tdsc_v
115-161    Reserved                              hex      47

           TRANSACTION COUNTERS
           --------------------

162-177    Reserved                              hex      16
178-179    Return                                hex       2    Tra_N_Retn
180-181    Void                                  hex       2    Tra_N_Void
182-183    Reserved                              hex       2
184-185    Bonus                                 hex       2    Tra_N_Bonu
186-187    Empties                               hex       2    Tra_N_Empt
188-191    Reserved                              hex       4
192-193    Discounts on Subtotal                 hex       2    Tra_N_Tdsc
194-207    Reserved                              hex      14
208-227    Reserved for additional counters      hex      20


--------------------------------------------------------------------------------
```

(DB Response continued on next page)

((byte 4 - bit 0) = 1 and TAX Category = 0) is formatted as follows:

```
----------------------------------------------------------------------------------

  BYTE     CONTENTS                                  TYPE   LENGTH   VARIABLE NAME

           DAILY ACCUMULATORS
           ------------------

  31-36    Total                                     hex       6    Day_Tot
  37-42    Reserved                                  hex       6
  43-48    TAX Total                                 hex       6    Day_TAXC
  49-60    Reserved                                  hex      12
  61-66    Returns Total                             hex       6    Day_Retn
  67-72    Voids Total                               hex       6    Day_Void
  73-78    Bonus Total                               hex       6    Day_Bonu
  79-84    Reserved                                  hex       6
  85-90    Empties Total                             hex       6    Day_Empt
  91-96    Reserved                                  hex       6
  97-102   Credit Note Total                         hex       6    Day_CredN
 103-108   TAX Credit Note Total                     hex       6    Day_CredN_TAXC
 109-114   Discounts on Subtotal Total               hex       6    Day_Tdsc
 115-120   TAX Discounts on Subtotal Total           hex       6    Day_Tdsc_TAXC
 121-161   Reserved                                  hex      41

           DAILY COUNTERS
           --------------

 162-163   Fiscal Voucher                            hex       2    Day_N_Vouc
 164-165   Total Slips                               hex       2    Day_N_Slip
 166-167   Total Application-Originated Reports       hex       2    Day_N_NFR
 168-169   Application-Originated Reports in CR Station hex     2    Day_N_NFCR
 170-171   Application-Originated Reports in SJ Station hex     2    Day_N_NFJL
 172-173   Application-Originated Reports in DI Station hex     2    Day_N_NFDI
 174-175   Checks Printed                            hex       2    Day_N_Chek
 176-177   Credit Slips Printed                      hex       2    Day_N_Cred
 178-179   Return                                    hex       2    Day_N_Retn
 180-181   Void                                      hex       2    Day_N_Void
 182-183   Reserved                                  hex       2
 184-185   Bonus                                     hex       2    Day_N_Bonu
 186-187   Empties                                   hex       2    Day_N_Empt
 188-191   Reserved                                  hex       4
 192-193   Discounts on Subtotal                     hex       2    Day_N_Tdsc
 194-195   Reserved                                  hex       2
 196-197   Cancelled Transactions                    hex       2    Day_N_Canc
 198-207   Reserved                                  hex      10
 208-208   Repair Actions                            hex       1    Day_N_Ract
 209-227   Reserved                                  hex      19


----------------------------------------------------------------------------------
```

(DB Response continued on next page)

((byte 4 - bit 0) = 1 and TAX Category > 0) is formatted as follows:

```
----------------------------------------------------------------------------------

   BYTE    CONTENTS                                      TYPE   LENGTH   VARIABLE NAME

           DAILY ACCUMULATORS
           ------------------

  31-36    Total                                         hex       6    Day_Tot_v
  37-42    Reserved                                      hex       6
  43-48    TAX Total                                     hex       6    Day_TAXC_v
  49-60    Reserved                                      hex      12
  61-66    Returns Total                                 hex       6    Day_Retn_v
  67-72    Voids Total                                   hex       6    Day_Void_v
  73-78    Bonus Total                                   hex       6    Day_Bonu_v
  79-84    Reserved                                      hex       6
  85-90    Empties Total                                 hex       6    Day_Empt_v
  91-96    Reserved                                      hex       6
  97-102   Credit Note Total                             hex       6    Day_CredN_v
 103-108   TAX Credit Note Total                         hex       6    Day_CredN_TAXC_v
 109-114   Discounts on Subtotal Total                   hex       6    Day_Tdsc_v
 115-120   TAX Discounts on Subtotal Total               hex       6    Day_Tdsc_TAXC_v
 121-161   Reserved                                      hex      41

           DAILY COUNTERS
           --------------

 162-163   Fiscal Voucher Counter                        hex       2    Day_N_Vouc
 164-165   Total Slips Counter                           hex       2    Day_N_Slip
 166-167   Total Application-Originated Reports           hex       2    Day_N_NFR
 168-169   Application-Originated Reports in CR Station   hex       2    Day_N_NFCR
 170-171   Application-Originated Reports in SJ Station   hex       2    Day_N_NFJL
 172-173   Application-Originated Reports in DI Station   hex       2    Day_N_NFDI
 174-175   Checks Printed                                hex       2    Day_N_Chek
 176-177   Credit Slips Printed                          hex       2    Day_N_Cred
 178-179   Return                                        hex       2    Day_N_Retn
 180-181   Void                                          hex       2    Day_N_Void
 182-183   Reserved                                      hex       2
 184-185   Bonus                                         hex       2    Day_N_Bonu
 186-187   Empties                                       hex       2    Day_N_Empt
 188-191   Reserved                                      hex       4
 192-193   Discounts on Subtotal                         hex       2    Day_N_Tdsc
 194-195   Reserved                                      hex       2
 196-197   Cancelled Transactions                        hex       2    Day_N_Canc
 198-207   Reserved                                      hex      10
 208-208   Repair Actions                                hex       1    Day_N_Ract
 209-227   Reserved                                      hex      19

----------------------------------------------------------------------------------
```
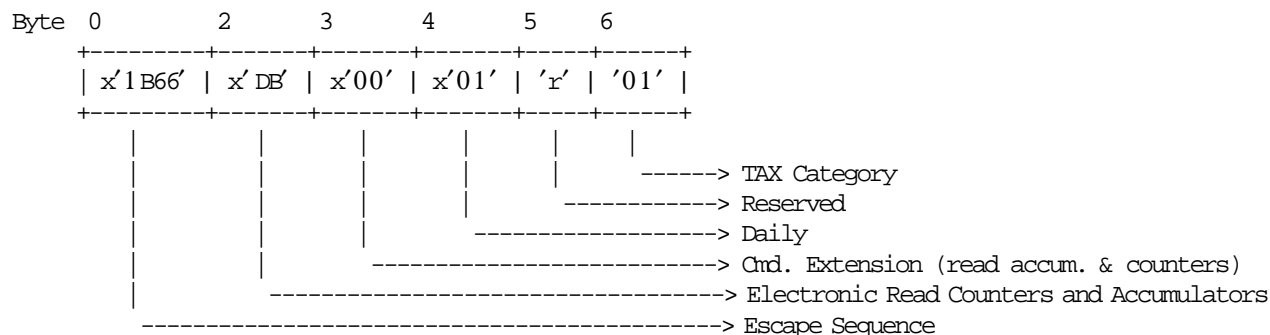
(DB Response continued on next page)

Miscellaneous:

```
-----------------------------------------------------------------------

  BYTE     CONTENTS                                    TYPE    LENGTH

           LIFETIME ACCUMULATORS AND COUNTERS
           -----------------------------------

228-228  Reserved                                      hex       1
229-236  Grand Total                                   hex       8    Grand_Tot
237-238  Last Closure Number                           hex       2    Lif_N_Clos
239-240  Number of Repair Actions                      hex       2    Lif_N_Ract
241-244  Last Fiscal Voucher Number                    hex       4    Lif_N_Vouc

           FIXED FIELDS
           ------------

245-245  Reserved                                      ASCII     1
246-255  Fiscal Memory Serial Number                   ASCII    10


-----------------------------------------------------------------------
```

Note: For all type hex, hex data is in normal format, not byte switch format.

10.5.6.4 Command Example

```
Byte  0          2       3       4      5     6
      +---------+-------+-------+-------+-----+------+
      | x'1B66' | x'DB' | x'00' | x'01' | 'r' | '01' |
      +---------+-------+-------+-------+-----+------+
          |         |       |       |      |     |
          |         |       |       |      |     ------> TAX Category
          |         |       |       |      -----------> Reserved
          |         |       |       -------------------> Daily
          |         |       -------------------------> Cmd. Extension (read accum. & counters)
          |         -------------------------------> Electronic Read Counters and Accumulators
          -------------------------------------------> Escape Sequence
```

10.5.6.5 Electronic Read Counters and Accumulators Calculations

$$Day\_CredN = \sum_{vv} Day\_CredN\_v(vv)$$

- **For TAX calculations done at the electronic read counters and accumulators time:**

  - **When Inclusive TAX (Flag FINCLTAX = YES):**

  $$Day\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tot\_v(vv) \times TAX\_Rate(vv)}{10000 + TAX\_Rate(vv)} + 0.5)$$

  $$Day\_Tdsc\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tdsc\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

  $$Day\_CredN\_TAXC\_v(vv) = TRUNC(\frac{Day\_CredN\_v(vv) \times TAX\_Rate(vv)}{100 + TAX\_Rate(vv)} + 0.5)$$

  - **When Exclusive TAX (Flag FINCLTAX = NO):**

$$Day\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tot\_v(vv) \times TAX\_Rate\_v(vv)}{10000} + 0.5)$$

$$Day\_Tdsc\_TAXC\_v(vv) = TRUNC(\frac{Day\_Tdsc\_v(vv) \times TAX\_Rate(vv)}{100} + 0.5)$$

$$Day\_CredN\_TAXC\_v(vv) = TRUNC(\frac{Day\_CredN\_v(vv) \times TAX\_Rate(vv)}{100} + 0.5)$$

$$Day\_TAXC = \sum_{vv} Day\_TAXC\_v(vv)$$

$$Day\_Tdsc\_TAXC = \sum_{vv} Day\_Tdsc\_TAXC\_v(vv)$$

$$Day\_CredN\_TAXC = \sum_{vv} Day\_CredN\_TAXC\_v(vv)$$

For values of vv ranging from 1 to the maximum values.

10.5.7 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 Venezuela″.

10.5.7.1 Inserted ″NO FISCAL″ Message Rules During a Application-Originated Report

- A application-originated report in CR station is preceded by an inserted ″NO FISCAL″ message.

- A application-originated report in SJ station is preceded by an inserted ″NO FISCAL″ message.

- A application-originated report in DI station is preceded by an inserted ″NO FISCAL″ message.

- The maximum number of ordinary printing lines which can be printed in DI station during an application-originated report before a ″NO FISCAL″ line is printed is 645.

- The maximum number of blank lines which can be printed in DI station during an application-originated report before a ″NO FISCAL″ line is printed is 645

- In Venezuela no count is kept of empty lines due to linefeed commands on the document insert for the purpose of inserting ″NO FISCAL″ messages.

10.5.7.2 Default Ordinary Printing

- If no procedure is in progress an ordinary print line received automatically starts an application-originated report and any unrelated command generates an end application-originated report (without an operator number).
  In this ′default′ application-originated report mode state, the print lines are preceded and followed by the ″NO FISCAL″ message.
  This way of printing lines is not recommended for new application development.
  To avoid the excessive ″NO FISCAL″ messages, the appropriate application-originated report should be started.

- Whenever a line is printed both in CR and SJ stations, the summary journal line feed is automatically set to one.
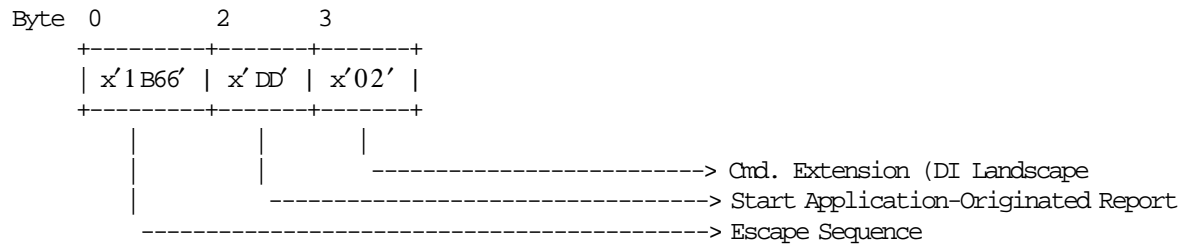
10.5.8 DD - START APPLICATION-ORIGINATED REPORT

This command is used to start a application-originated report (non-fiscal document) printing a ″NO FISCAL″ message line.

10.5.8.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - command prefix                        hex        2
 2        DD - Start Application-Originated Report      hex        1
 3        Cmd. Extension                               hex        1
     7-2  Reserved (always = '0')
     1-0  Station
          00 (00) = CR
          01 (01) = SJ
          10 (02) = DI - Landscape
          11 (03) = DI - Portrait


------------------------------------------------------------------------
```

10.5.8.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'DD' | x'02' |
      +---------+-------+-------+
          |         |       |
          |         |       ------------------------> Cmd. Extension (DI Landscape
          |         ---------------------------------> Start Application-Originated Report
          -----------------------------------------> Escape Sequence
```

10.5.8.3 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
- A CR application-originated report does need to start with a ″NO FISCAL″ message line (M05).
- A SJ application-originated report does need to start with a ″NO FISCAL″ message line (M05).
- A DI application-originated report does need to start with a ″NO FISCAL″ message line (M05).
- When the SJ replication is enabled
  - The lines printed in CR station will be replicated in SJ station.
  - The lines printed in SJ station will be not replicated in CR station.
- When the SJ replication is disabled
  - The lines printed in CR station will be not replicated in SJ station.
  - The lines printed in SJ station will be not replicated in CR station.

10.5.9 DE - END APPLICATION-ORIGINATED REPORT

This command is used to end a application-originated report (non-fiscal document).

10.5.9.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-1      1B66 - command prefix                        hex       2
 2        DE - End Application-Originated Report        hex       1
 3        Cmd. Extension                               hex       1
    7-0   Reserved (always = '0x00')


-----------------------------------------------------------------------
```

10.5.9.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'DE' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ------------------------------> Cmd. Extension
          |        ---------------------------------------> End Application-Originated Report
          ------------------------------------------------> Escape Sequence
```

10.5.9.3 End Application-Originated Report Calculations

- **CR Application-Originated Report**

  ```
  If 'FOPENCR' = YES
  {
    Day_N_Slip = Day_N_Slip + 1
    Day_N_NFR  = Day_N_NFR  + 1
    Lif_N_NFR  = Lif_N_NFR  + 1
    Day_N_NFCR = Day_N_NFCR + 1
  }
  ```

- **SJ Application-Originated Report**

  ```
  If 'FOPENSJ' = YES
  {
    Day_N_Slip = Day_N_Slip + 1
    Day_N_NFR  = Day_N_NFR  + 1
    Lif_N_NFR  = Lif_N_NFR  + 1
    Day_N_NFJL = Day_N_NFJL + 1
  }
  ```

- **DI Application-Originated Report**

  ```
  If 'FOPNDIF' or 'FOPNDIN' = YES
  {
    Day_N_Slip = Day_N_Slip + 1
    Day_N_NFR  = Day_N_NFR  + 1
    Lif_N_NFR  = Lif_N_NFR  + 1
    Day_N_NFDI = Day_N_NFDI + 1
  }
  ```

10.6 Utility Commands

The utility commands include:

- 19 - Modify Currency/Decimal Point Indication
- F1 - Report Power-On Status
- F7 - Command Buffer Management
- F9 - Read Current Status

10.6.1 19 - MODIFY CURRENCY/DECIMAL POINT INDICATION

This command is used to modify the currency and decimal point indication.

10.6.1.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                         TYPE    LENGTH

 0-1       1B66 - cmd prefix                               hex      2
 2         19 - Modify Currency/Decimal Point Indication   hex      1
 3         Cmd. Extension                                  hex      1
    7-2  Reserved (always = '0')
    1-0  Option Selection
         00 = Remove Dec. Point without Change Currency
         01 = Remove Dec. Point with    Change Currency
         10 = Set     Dec. Point without Change Currency
         11 = Set     Dec. Point with    Change Currency
 4-7       Password                                        ASCII    4
 8-13      Currency Description                            ASCII    6 (Note 1)
14-15      Currency Description Abreviation                ASCII    2 (Note 1)


----------------------------------------------------------------------
```
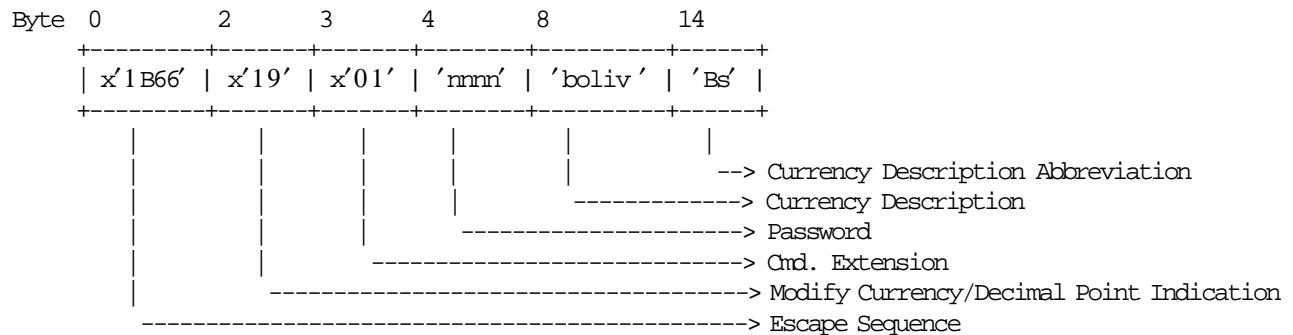
Notes:

 1. Only used when command extension is 01 or 11.

10.6.1.2 Command Example

```
Byte  0         2       3       4        8          14
      +---------+-------+-------+--------+----------+------+
      | x'1B66' | x'19' | x'01' | 'nnnn' | 'boliv'  | 'Bs' |
      +---------+-------+-------+--------+----------+------+
          |         |       |       |          |         |
          |         |       |       |          |         --> Currency Description Abbreviation
          |         |       |       |          -------------> Currency Description
          |         |       |       ---------------------> Password
          |         |       ---------------------------> Cmd. Extension
          |         -----------------------------------------> Modify Currency/Decimal Point Indication
          -------------------------------------------------> Escape Sequence
```

10.6.1.3 Modify Currency/Decimal Point Indication Rules

- The currency description and currency description abbreviation is stored in fiscal memory.
- The currency description and currency description abbreviation can be changed 10 times including the first one used by the default currency description and currency description abbreviation.
- The grand total is reseted when the currency change.
- The currency description default is ″Boliv ″.
- The currency description abbreviation default is ″Bs″.
- The decimal point indication can be changed 10 times.
- The grand total is reseted when the decimal point indication change.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the operator and terminal fields of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.6.2 F1 - REPORT POWER-ON STATUS

This command is used to communicate the power-on completion status.

10.6.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - command prefix                         hex        2
 2         F1 - Report Power-On Status                   hex        1
 3         Cmd. Extension                                hex        1
    7-0  Reserved (always = '0x00')


---------------------------------------------------------------------
```

10.6.2.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'F1' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ---------------------> Cmd. Extension
          |          ----------------------------> Report Power-On Status
          ---------------------------------------> Escape Sequence
```

10.6.2.3 Report Power-On Status Rules

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

10.6.3 F7 - COMMAND BUFFER MANAGEMENT

This command is used to retrieve the last command issued of the command buffer.

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - cmd prefix                             hex        2
 2         F7 - Command Buffer Management                hex        1
 3         Cmd. Extension                                hex        1
           00 = Retrieve Last    Command
           01 = Retrieve Previous Command
           02 = Clear Command Buffer


------------------------------------------------------------------------
```

Response for Command Buffer Management will be formatted as follows:

```
------------------------------------------------------------------------

BYTE       CONTENT                               TYPE   LENGTH

 0-8       Fiscal Unit Status                    hex        9
 9-128     Additional Information                hex      120 (Note 1)


------------------------------------------------------------------------
```

Notes:

1. See response for the Additional Information.

Response for Additional Information will be formatted as follows:

```
------------------------------------------------------------------------

BYTE       CONTENT                               TYPE   LENGTH

 9         Type                                  hex        1 (Note 1)
10         Command    Data Length                hex        1 (Note 2)
11         Additional Data Length                hex        1 (Note 3 on page 137)
12         Command                               hex        1
           Command Extension                     hex       n0
           Command    Data                       hex       n1
           Additional Data                       hex       n2 (Note 4 on page 137)
           Fiscal Untit Status Executed Command  hex       n3 (Note 5 on page 137)


------------------------------------------------------------------------
```

Notes:

1. Type:

   - 0xFF = command retrieved
   - 0xFE = there was a new command between F700 and F701
   - 0x00 = no commands found

2. Command Data Length = 1 byte + n0 bytes + n1 bytes
   Where:

   - Command   = 1 byte
   - Command Extension = n0 bytes
   - Command Data   = n1 bytes

3. Additional Data Length is n2 bytes
   Where:

   - Command Response = n2 bytes
   - n2 = 129 – (Type + Command + Command Extension + Command Data + Fiscal Unit Status)

4. The Additional Data of the Executed Command is shown in the remaining bytes (n2) of the Additonal Information Response.
   If the Additional Data of the Executed Command length is greater than the remaining bytes (n2) of the Additonal Information Response the Additional is truncated.

5. Fiscal Unit Status Executed Command (buffering command) length is n3
   Where:

   - RS-485 = 9 bytes

10.6.3.1 Example: Command Buffer Management - Additional Information Response

```
+----------------------------------------------+
| 0| 1| 2| 3| 4| 5| 6| 7| 8| 9| A| B| C| D| E| F|
|--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--|
|FF|10|5F|FF|11|30|35|30|30|43|30|35|30|39|30|34|
|39|31|36|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|FF|
|FF|FF|08|4F|00|0A|20|07|28|00|00|80|02|01|0B|43|
|00|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
+----------------------------------------------+
```

10.6.3.2 Command Buffer Management Rules

- The command buffer size is 2 Kb (2048 bytes).
- When a command is executed, this command is stored in the command buffer (except the F7 cmd.).
- If the command buffer is full the oldest command is removed of the command buffer.
- If a PLD occurs during the command execution, the interrupted command is stored in the command buffer and the fiscal unit status of the executed command is equal to zero.

10.6.4 F9 - READ CURRENT STATUS

This command is used to report the current status.

10.6.4.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 - command prefix                        hex        2
 2         F9 - Read Current Status                     hex        1
 3         Cmd. Extension                               hex        1
     7-0   Reserved (always = '0x00')


 ----------------------------------------------------------------------
```

10.6.4.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'F9' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd. Extension
          |         ------------------------------> Read Current Status
          ----------------------------------------> Escape Sequence
```
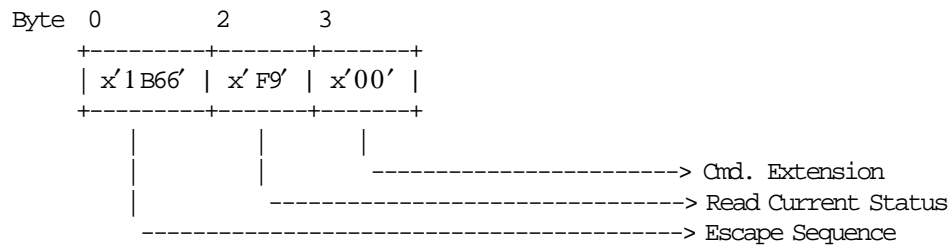
10.7 Miscellaneous Commands

The miscellaneous commands include:

- C8 - Set Barcode Parameters
- C9 - Print Barcode
- CB - Flip Document in DI Station
- DC - MICR Read

10.7.1 C8 - SET BARCODE PARAMETERS

This command is used to set the barcode parameters.

10.7.1.1 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
           01 = Station

If Cmd. Extension = 00 specify:
 4            Barcode Width                           ASCII      1 (Note 1)
 5-7          Barcode Height                          ASCII      3 (Note 2)

If Cmd. Extension = 01 specify:
 4            Station                                 hex        1
              0 = CR
              1 = SJ
              2 = DI


----------------------------------------------------------------------
```

Notes:

1. Ranges supported for horizontal magnification of the line width are:

   - Minimum = 2
   - Maximum = 4

2. Ranges supported for dot height of the barcode are:

   - For CR and SJ stations:
     - Minimum = 001
     - Maximum = 255
   - For DI station:
     - Minimum = 3
     - Maximum = 5

10.7.1.2 Set Barcode Parameters Rules

- Horizontal magnification of the line width default is 3.
- The dot height default:
  - For CR and SJ stations is 162.
  - For DI station is 4.
- CR is the default station.
- After PLD or J4/CE jumper operation, the printer returns to its default station (CR).

10.7.2 C9 - PRINT BARCODE

This command is used to print barcode.

10.7.2.1 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                                            (Note 1)
           1 = 12 CPI
           0 = 15 CPI
     5-4   HRI location                                        (Note 2)
           11 = Both above and below the barcode
           10 = Below the barcode
           01 = Above the barcode
           00 = Not printed
     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
           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. The data must be null terminated and each barcode type has it's own rules.

10.7.2.2 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 barcode will be printed in the station selected thru C8 cmd.
- The barcodes can be printed:
  – Inside Sale Period
    — Outside any documents.

- Outside Sale Period
  — Outside any documents.

10.7.3 CB - FLIP DOCUMENT IN DI STATION

This command is used to flip automatically a document in DI station to print the reverse side later.

10.7.3.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                      TYPE    LENGTH

 0-1       1B66 – Cmd Prefix                            hex        2
 2         CB – Flip Document in DI Station             hex        1
 3         Cmd. Extension                               hex        1
     7-0   Reserved (always = '0x00')


------------------------------------------------------------------------
```

10.7.3.2 Flip Document in DI Station Rules

- Specifications for documents that can be flipped (refer to 4610 User's Guide)
  - Minimum form lenght: 80 mm (3.14 in.)
  - Maximum form lenght: 223 mm (8.78 in.)
  - Maximum form width :   102 mm (4 in.)
  - Paper weight   : 75-95 g/●

10.7.4 DC - MICR READ

This command is used to read the checks magnetic ink data and returns it as part of the command response.

10.7.4.1 Command Format

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - Cmd Prefix                             hex        2
 2         DC - MICR Read                                hex        1
 3         Cmd. Extension                                hex        1
     7-0   Reserved (always = '0x00')


-----------------------------------------------------------------------
```

Response to the MICR Read will be formatted as follows :

```
-----------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-14      Fiscal Unit Status                            hex       15
 15        DC - MICR Read                                hex        1
 16        Return Code                                   hex        1
           43 = Good Completion
 17        Number of Bytes Read by MICR                  hex        1
 18-81     MICR Data                                     ASCII     64 (Note 1)


-----------------------------------------------------------------------
```

Notes:

1. This is the maximum data lenght that could be returned by the fiscal printer.
   Always the data is padded to right with 0 hex.

10.8 Printer Commands

Ordinary printing refers to a set of commands that request the fiscal unit to print a string of data on one of the printer stations.

The printer commands include:

- E8 - Set Number of Dot Rows per Line Feed
- EA - Application-Originated Printing in CR/SJ Station
- EB - Application-Originated Printing in DI Station
- EC - Line Feed
- ED - Ready Document
- EE - Cut Paper
- EF - Document Eject
- F4 - Head Position and Open/Close Throat

10.8.1 E8 - SET NUMBER OF DOT ROWS PER LINE-FEED

This command is used to change the number of the dot rows per line-feed.

10.8.1.1 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 - Landscape/Portrait                    (Note 1)
           0 = Set Default   Value
           1 = Set Alternate Value
     1     SJ Station                                         (Note 1, 2)
           0 = Set Default   Value
           1 = Set Alternate Value
     0     CR Station                                         (Note 1, 3)
           0 = Set Default   Value
           1 = Set Alternate Value


------------------------------------------------------------------------
```

Notes:

1. Default   = 9 Dot Rows per LF (6 lines/inch).
   Alternate = 12 Dot Rows per LF (8 lines/inch).

2. The setting will be done for the lines printed in SJ station.

3. The setting will be done for the lines printed in CR and SJ station (original and replica).

10.8.1.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'E8' | x'00' |
     +---------+-------+-------+
          |        |      |
          |        |      |
          |        |      +-------------> Cmd. Extension
          |        |                       (set default value DI,
          |        |                        set default value SJ,
          |        |                        set default valud CR)
          |        ---------------------> Set Number of Dot Rows per Line Feed
          -----------------------------> Escape Sequence
```
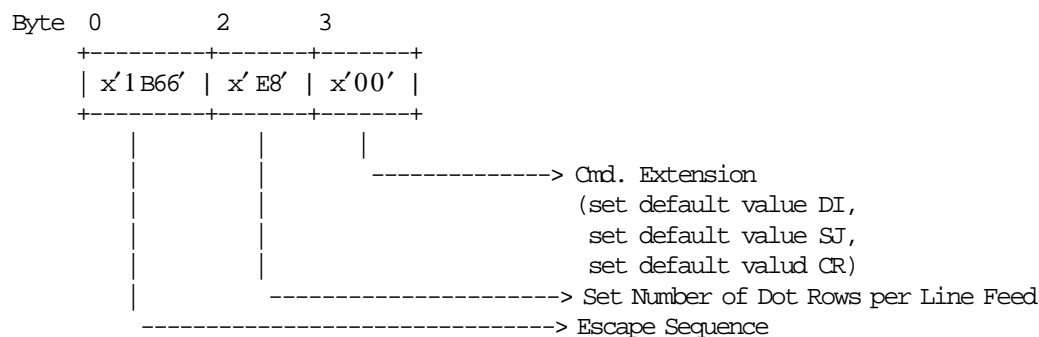
10.8.1.3 Set Number of Dot Rows per Line Feed Rules

- This command to change the number of dot rows per line feed from 12 (default - 6 lines/inch) to 9 (alternate - 8 lines/inch).
- The number of dot rows per line feed are restored to the default value when RAM is cleared by installing the J4/CE jumper.

10.8.2 EA - ORDINARY PRINTING LINES IN CR/SJ STATION

This command is used to print lines in CR and SJ station.

10.8.2.1 Command Format

```
---------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - command prefix                         hex       2
 2         EA - Ordinary Printing Lines in 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     Number of Line Feed (min 1, max 7)
 4-41      Description                                   ASCII    38


---------------------------------------------------------------------
```
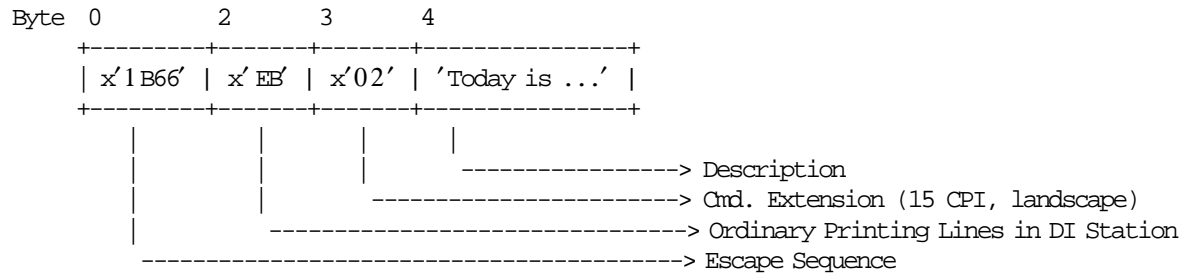
10.8.2.2 Command Example

```
Byte  0         2       3       4
      +---------+-------+-------+---------------+
      | x'1B66' | x'EA' | x'00' | 'Today is ...' |
      +---------+-------+-------+---------------+
           |         |       |       |
           |         |       |       |
           |         |       |       ------------> Description
           |         |       --------------------> Cmd. Extension
           |         |                             (CR station, 15 CPI)
           |         |
           |         --------------------------> Ordinary Printing Lines in CR/SJ Station
           --------------------------------------> Escape Sequence
```
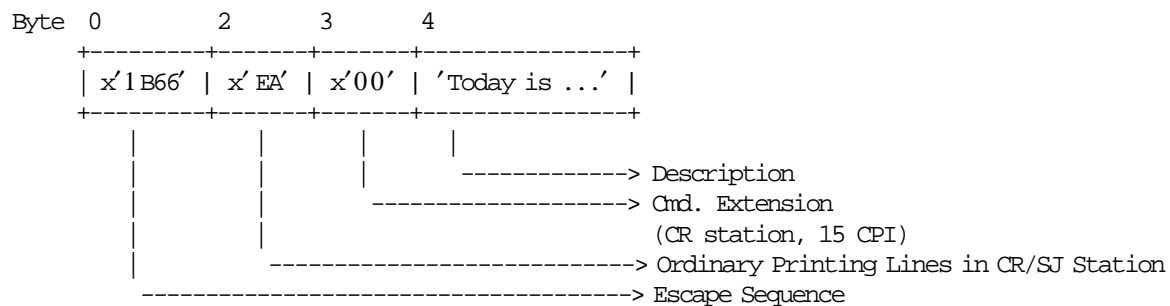
10.8.2.3 Ordinary Printing Lines in CR/SJ Station Rules

• When the SJ replication is enabled
   – The lines printed in CR station will be replicated in SJ station.
   – The lines printed in SJ station will be not replicated in CR station.
• When the SJ replication is disabled
   – The lines printed in CR station will be not replicated in SJ station.
   – The lines printed in SJ station will be not replicated in CR station.
• Inside the application-originated report, 65.535 ordinary printing lines in CR or SJ station can be issued.
• If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).
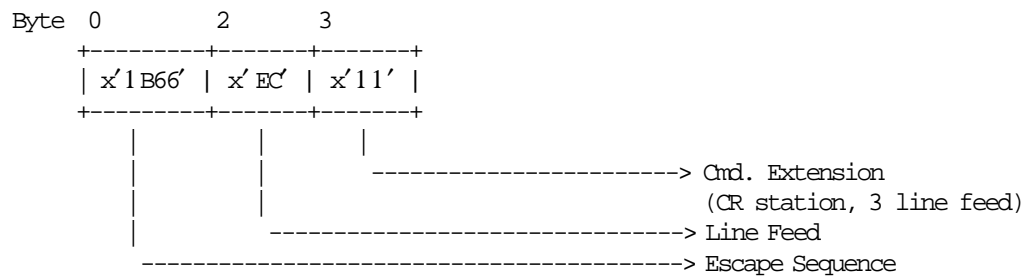
10.8.3 EB - ORDINARY PRINTING LINES IN DI STATION

This command is used to print lines in DI station.

10.8.3.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT   CONTENT                                       TYPE    LENGTH

 0-1       1B66 - command prefix                         hex        2
 2         EB - Ordinary Printing Lines in 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   Document & Line-Feed Direction
           000 = Reserved
           001 = Reserved
           010 = Landscape - Reverse                              (Note 1, 2)
           011 = Portrait  - Reverse                              (Note 3)
           100 = Reserved
           101 = Landscape - Forward                              (Note 1, 2)
           110 = Portrait  - Forward                              (Note 3)
           111 = Reserved
 4-89     Description                                    ASCII     86 (Note 4)


----------------------------------------------------------------------
```

Notes:

1. The emphasized option is ingnored during landscape orientation print.

2. The print lines sent are from bottom-of-form to the top-of-form.

3. Number of line-feeds is always set to 1.

4. Description field will be truncated as follows:
   Portrait orientation at 15 CPI to 47 characters.
   Portrait orientation at 12 CPI to 37 characters.
   Landscape orientation at 15 CPI to 86 characters.
   Landscape orientation at 12 CPI to 86 characters.

10.8.3.2 Command Example

```
Byte  0          2       3       4
      +---------+-------+-------+---------------+
      | x'1B66' | x'EB' | x'02' | 'Today is ...' |
      +---------+-------+-------+---------------+
           |         |       |       |
           |         |       |       -----------------> Description
           |         |       ----------------------> Cmd. Extension (15 CPI, landscape)
           |         ------------------------------> Ordinary Printing Lines in DI Station
           -----------------------------------------> Escape Sequence
```

10.8.3.3 Ordinary Printing Lines in DI Station Rules

- This command is allowed inside a fiscal voucher.
- If the string ″Total″ scan option is enabled, the string TOTAL in upper, lower or mixed case is not allowed in the description field of this command (See 4.2.1, "Scan String ″Total″ Option" on page 27).

10.8.4 EC - LINE FEED

This command is used to feed the paper a specified number of lines in any of the printer stations.

10.8.4.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                     TYPE    LENGTH

 0-1      1B66 - command prefix                       hex       2
 2        EC - Line Feed                              hex       1
 3        Cmd. Extension                              hex       1
     7-6  Reserved (always = '0')
     5-4  Station & Line-Feed Direccion
          00 = CR
          01 = SJ
          10 = DI Portrait - Forward
          11 = DI Portrait - Reverse
     3-0  Number of Line Feed (min 1, max 15)


 ----------------------------------------------------------------------
```

10.8.4.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'EC' | x'11' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd. Extension
          |        |                               (CR station, 3 line feed)
          |         ------------------------------> Line Feed
           ---------------------------------------> Escape Sequence
```

10.8.4.3 Line Feed Rules

- Line Feed requests the fiscal unit to feed the paper a specified number of lines on one of the printer stations.

10.8.5 ED - READY DOCUMENT

This command is used to advance the inserted document of the first print position.

10.8.5.1 Command Format

```
----------------------------------------------------------------------

BYTE BIT  CONTENT                                   TYPE    LENGTH

 0-1      1B66 - command prefix                     hex        2
 2        ED - Ready Document                       hex        1
 3        Cmd. Extension                            hex        1
    7-1   Reserved (always = '0')
     0    Document Registration
          0 = Top    Registration
          1 = Bottom Registration                                     (Note 1)


----------------------------------------------------------------------
```

Notes:

```
1. The botton margin is greater than 3F botton margin.
```

10.8.5.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'ED' | x'00' |
      +---------+-------+-------+
           |        |       |
           |        |       --------------------> Cmd. Extension (top regis.)
           |          --------------------------> Ready Document
            --------------------------------------> Escape Sequence
```
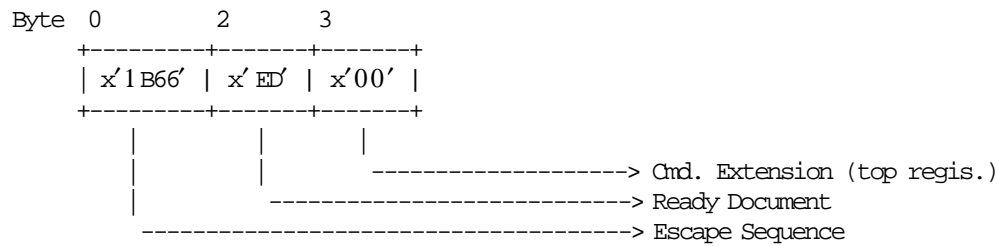
10.8.6 EE - CUT PAPER

This command is used to do a partial cut of the customer receipt paper.

10.8.6.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                    TYPE    LENGTH

 0-1       1B66 - command prefix                      hex       2
 2         EE - Cut Paper                             hex       1
 3         Cmd. Extension                             hex       1
    7-2 Reserved (always = '0')
    1-0 Guillotine
          00 = Partial Cut
          01 = Partial Cut


------------------------------------------------------------------------
```

10.8.6.2 Command Example

```
Byte  0        2       3
     +---------+-------+-------+
     | x'1B66' | x'EE' | x'01' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------------------> Cmd. Extension (partial cut)
          |        -------------------------------> Cut Paper
          ----------------------------------------> Escape Sequence
```

10.8.7 EF - DOCUMENT EJECT

This command is used to line-feed a document until the EOF sensor is broken.

10.8.7.1 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     Station & Line-Feed Direction
           0 = DI Portrait – Forward
           1 = DI Portrait – Reverse


---------------------------------------------------------------------
```

10.8.7.2 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'EF' | x'00' |
     +---------+-------+-------+
          |        |      |
          |        |      ----------------------> Cmd. Extension (DI portrait – forward)
          |        -------------------------------> Document Eject
          -----------------------------------------> Escape Sequence
```

10.8.7.3 Document Eject Rules

• This command requests the printer to line feed a document until EOF sensor is broken.
  Either forward feed or reverse feed can be specified.

10.8.8 F4 - HEAD POSITION & OPEN/CLOSE THROAT

This command is used to return the print head to right or left position and open or close throat.

10.8.8.1 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 & Throat
           00 (00) = Right Head Position
           01 (01) = Left  Head Position
           10 (02) = Open  Throat
           11 (03) = Close Throat


----------------------------------------------------------------------
```

10.8.8.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'F4' | x'00' |
      +---------+-------+-------+
          |         |       |
          |         |       ----------------------> Cmd. Extension
          |         |                                 (right head position)
          |         ------------------------------> Head Position & Open/Close Throat
          ----------------------------------------> Escape Sequence
```

10.9 Original Equipment Manufacturer Commands

The OEM commands include:

- 00 - System Commands
- E7 - Diagnostic and Alignment Utilities
- F8 - Report Printer EC
- FA - Reset Fiscal Printer
- FB - Run Diagnostics
- FC - Report Microcode EC
- FF - Dump Fiscal RAM and Fiscal EPROM Memory

10.9.1 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.

10.9.1.1 Command Format

```
---------------------------------------------------------------------

BYTE      CONTENT                                 TYPE    LENGTH

0         00 - System Commands                    hex        1
1         Options                                 hex        1
          10 = Test
          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.

10.9.2 E7 - DIAGNOSTIC AND ALIGNMENT UTILITIES

This command is used to do diagnostics and alignmets.

10.9.2.1 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 Bottom 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 Head Left
           0F = DI Head Right


------------------------------------------------------------------------

      (Continued in the next page)
```

Diagnostic and Alignment Utilities continued...

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE   LENGTH

If Cmd. Extension = 00 or 01 specify:
  4          MCT Number                                hex       1
  5          MCT Value - High Order Byte               hex       1
  6          MCT Value - Low  Order Byte               hex       1


If Cmd. Extension = 03 or 0B specify:
  4          MCT Number 1                              hex       1
  5          MCT Value  1 - High Order Byte            hex       1
  6          MCT Value  1 - Low  Order Byte            hex       1
  7          MCT Number 2                              hex       1
  8          MCT Value  2 - High Order Byte            hex       1
  9          MCT Value  2 - Low  Order Byte            hex       1
 10          MCT Number 3                              hex       1
 11          MCT Value  3 - High Order Byte            hex       1
 12          MCT Value  3 - Low  Order Byte            hex       1
 13          MCT Number 4                              hex       1
 14          MCT Value  4 - High Order Byte            hex       1
 15          MCT Value  4 - Low  Order Byte            hex       1
 16          MCT Number 5                              hex       1
 17          MCT Value  5 - High Order Byte            hex       1
 18          MCT Value  5 - Low  Order Byte            hex       1
 19          MCT Number 6                              hex       1
 20          MCT Value  6 - High Order Byte            hex       1
 21          MCT Value  6 - Low  Order Byte            hex       1
 22          MCT Number 7                              hex       1
 23          MCT Value  7 - High Order Byte            hex       1
 24          MCT Value  7 - Low  Order Byte            hex       1
 25          MCT Number 8                              hex       1
 26          MCT Value  8 - High Order Byte            hex       1
 27          MCT Value  8 - Low  Order Byte            hex       1
 28          MCT Number 9                              hex       1
 29          MCT Value  9 - High Order Byte            hex       1
 30          MCT Value  9 - Low  Order Byte            hex       1

If Cmd. Extension = 05 specify:
  4          MCT Number                                hex       1


-----------------------------------------------------------------------
```

Response to CR Read MCT Value

```
    --------------------------------------------------------------------

    BYTE        CONTENT                                   TYPE    LENGTH

    0-8         Fiscal Unit Status                        hex          9
    9           MCT Value - High Order Byte               hex          1
    10          MCT Value - Low  Order Byte               hex         14


    --------------------------------------------------------------------
```

10.9.3 Command Example

```
Byte  0         2       3
     +---------+-------+-------+
     | x'1B66' | x'E7' | x'00' |
     +---------+-------+-------+
          |        |       |
          |        |       ----------> Cmd. Extension (set MCT value)
          |         ------------------> Diagnostic and Alignment Utilities
           ---------------------------> Escape Sequence
```

10.9.4 F8 - REPORT PRINTER EC

This command is used to retrieve the printer EC level.

10.9.4.1 Command Format

```
------------------------------------------------------------------------

BYTE BIT   CONTENT                                        TYPE    LENGTH

 0-1       1B66 – command 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 BIT   CONTENT                                        TYPE    LENGTH

 0-8       Fiscal Unit Status                             hex        9


------------------------------------------------------------------------
```

Response to the Fiscal Device Information:

```
-------------------------------------------------------------------------

BYTE BIT   CONTENT                                  TYPE    LENGTH

 0-5       PRINTER STATUS                           hex        6

 6         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     Reserved

 7         COUNTRY VERSION - COUNTRY CODE           hex        1

           ADDITIONAL STATUS                        hex        1
     7     Device Information Response
           0 = NO
           1 = YES
     6-0   Reserved

           COUNTRY CODE                             hex        1

           COUNTRY VERSION                          hex        1

           COUNTRY EC LEVEL                         hex        1

 8         FISCAL RETURN CODE                       hex        1

           FISCAL RETURN CODE                       hex        1

 9         DEVICE TYPE                              hex        1
           0x31 = Fiscal Printer

10         DEVICE ID                                hex        1
           0x00       = fiscal 2 stations thermal/impact (K --> Jacare)
           0x01       = fiscal 3 stations thermal/impact (G --> Macarena)
           0x02 - 0xFF = Reserved

11         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         RESERVED (always '0x00')                 hex        1

13         FISCAL EC LEVEL                          hex        1

-------------------------------------------------------------------------

      (Continued in the next page)
```

Response to the Printer Device Information:

```
--------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-5      PRINTER STATUS                             hex        6

 6        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     Reserved

 7        COUNTRY VERSION - COUNTRY CODE             hex        1
          ADDITIONAL STATUS                          hex        1
    7     Device Information Response
          0 = NO
          1 = YES
    6-0   Reserved

 8        FISCAL RETURN CODE                         hex        1

 9-13     DEVICE INFO BYTES                          hex        5
          (exactly as received from the printer
          microcode - See SureMark User Guide
          Extended Address Command)

--------------------------------------------------------------------
```

10.9.5 Command Example

```
Byte  0           2       3
      +---------+-------+-------+
      | x'1B66' | x'F8' | x'00' |
      +---------+-------+-------+
          |         |       |
          |         |       ----------------------> Cmd. Extension
          |         ------------------------------> Report Printer EC
          --------------------------------------> Escape Sequence
```

10.9.6 FA - RESET FISCAL PRINTER

This command is used to reset the fiscal unit and fiscal printer.

10.9.6.1 Command Format

```
 ----------------------------------------------------------------------

BYTE BIT  CONTENT                                    TYPE    LENGTH

 0-1      1B66 - command prefix                      hex        2
 2        FA - Reset Fiscal Printer                  hex        1
 3        Cmd. Extension                             hex        1
     7-1  Reserved (always = '0')
     0    Unit
          0 = Fiscal Unit
          1 = Printer


 ----------------------------------------------------------------------
```

10.9.6.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'FA' | x'00' |
      +---------+-------+-------+
           |         |      |
           |         |       ----------------------> Cmd. Extension (Fiscal Unit)
           |          ------------------------------> Reset Fiscal Printer
            -----------------------------------------> Escape Sequence
```

10.9.6.3 Reset Fiscal Printer Rules

- This command cannot be used by applications using the IBM device drivers.
  It is intended for device driver use only.

10.9.7 FB - RUN DIAGNOSTICS

This command is used to run diagnostics.

10.9.7.1 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
     7-2   Reserved (always = '0')
     1-0   Unit
           00 = Reserved
           01 = Fiscal Unit
           10 = Printer
           11 = Both


------------------------------------------------------------------------
```

10.9.7.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'FB' | x'01' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------> Cmd. Extension (Fiscal Unit)
           |          ----------------------> Run Diagnostics
            ---------------------------------> Escape Sequence
```
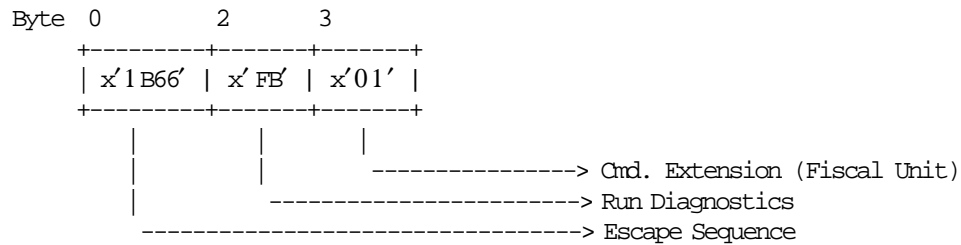
10.9.8 FC - REPORT MICROCODE EC

This command is used to retrieve the fiscal microcode EC level.

10.9.8.1 Command Format

```
 ----------------------------------------------------------------------

 BYTE BIT   CONTENT                                     TYPE    LENGTH

  0-1        1B66 - command prefix                      hex        2
  2          FC - Report Microcode EC                   hex        1
  3          Cmd. Extension                             hex        1
             00 (00) = Fiscal Microcode EC Level
             01 (01) = Fiscal Microcode Internal EC Level
             10 (02) = Country Code                              (Note 1)
             11 (03) = Country Version (Hardware Model)          (Note 2)


 ----------------------------------------------------------------------
```

Notes:

1. Country Code = x0F - decimal 15

2. For 4610 Hardware Model with:

   - RS-485 communication interface
     Country Version = x01 - decimal 01

10.9.8.2 Command Example

```
Byte  0         2       3
      +---------+-------+-------+
      | x'1B66' | x'FC' | x'01' |
      +---------+-------+-------+
           |        |       |
           |        |       ----------------> Cmd. Extension (Country Version)
           |        ------------------------> Report Microcode EC
           ------------------------------------> Escape Sequence
```
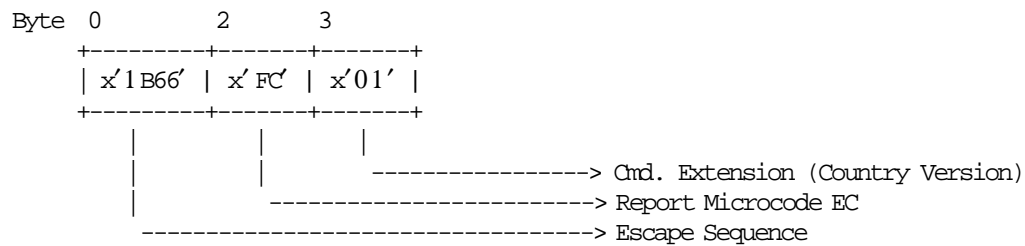
10.9.9 FF - DUMP FISCAL RAM AND FISCAL EPROM MEMORY

This command is used to print the content of the fiscal EPROM and the fiscal RAM memory in hexadecimal format.

10.9.9.1 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        Cmd. Extension                               hex        1
    7-5   Reserved (always = '0')
    4     Type Report
          0 = Printed
          1 = Electronic
    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)
14-17     Password                                     ASCII      4

-----------------------------------------------------------------------
```

Notes:

1. The fiscal RAM   address range is X'00000' - X'0FFFF'

2. The fiscal EPROM address range is X'00000' - X'3FFFF'

Response for Electronic Dump will be formatted as follows:

```
-----------------------------------------------------------------------

BYTE BIT  CONTENT                                      TYPE    LENGTH

 0-8      Fiscal Unit Status                           hex        9
 9-247    Electronic Data                              hex      239  (Note 1)

-----------------------------------------------------------------------
```

Notes:

1. Will be sent back the requested bytes only up to 239.

10.9.9.2 Command Example

```
Byte  0         2       3       4         9        14
      +---------+------+-------+---------+---------+-------+
      | x'1B66' | x'FF' | x'00' | '00000' | '00100' | 'pppp' |
      +---------+------+-------+---------+---------+-------+
           |        |      |       |         |         |
           |        |      |       |         |         ------> Password
           |        |      |       |         ----------------> End   Address (00100)
           |        |      |       ------------------------> Start Address (00000)
           |        |      -------------------------------> Cmd. Extension (on paper, RAM memory)
           |        ----------------------------------------> Dump Fiscal RAM and Fiscal EPROM
           --------------------------------------------------> Escape Sequence
```
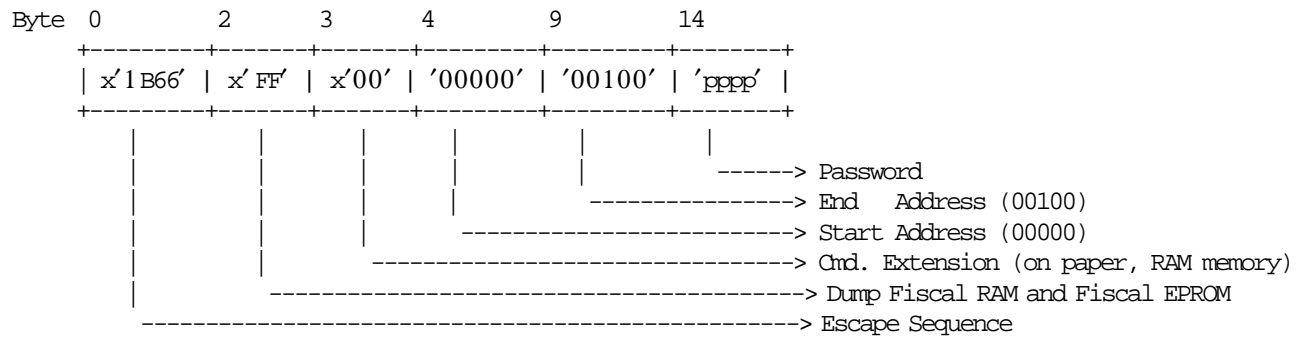
10.9.9.3 Dump Fiscal RAM and Fiscal EPROM Memory Rules

- This command can be issued with J4/CE jumper (FJUMPER flag) in ON or OFF position.

11.0 Return Codes

001 => DOS/WINDOWS 80900101 => 4690 OS

Explanation: An overflow occurred. The RETURN transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

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 (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

003 => DOS/WINDOWS 80900103 => 4690 OS

Explanation: An overflow occurred. The BONUS transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

005 => DOS/WINDOWS 80900105 => 4690 OS

Explanation: An overflow occurred. The EMPTIES transaction total exceeds the maximum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

008 => DOS/WINDOWS 80900108 => 4690 OS

Explanation: An underflow occurred. The current transaction total or one of the TAX category transaction sale totals is less than the minimum allowed value. The request is not processed.

User Response: Cancel the transaction (07 cmd.) or make the total greater than the minimum allowed value.

009 => DOS/WINDOWS 80900109 => 4690 OS

Explanation: An underflow occurred. The RETURN transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

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 (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

011 => DOS/WINDOWS 80900111 => 4690 OS

Explanation: An underflow occurred. The BONUS transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

013 => DOS/WINDOWS 80900113 => 4690 OS

Explanation: An underflow occurred. The EMPTIES transaction total is less than the minimum allowed value. The request is not processed.

User Response: Issue the total (D4 cmd.) and end transaction (06 cmd.) to end the sale transaction or a cancel transaction (07 cmd.) to cancel the sale transaction.

015 => DOS/WINDOWS 80900115 => 4690 OS

Explanation: An overflow occurred. The PAYMENT transaction total excess the maximum allowed value. The request is not processed.

User Response: Correct the value and try the operation again.

016 => DOS/WINDOWS 80900116 => 4690 OS

Explanation: An overflow occurred. The daily total or one of the TAX 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

017 => DOS/WINDOWS 80900117 => 4690 OS

Explanation: An overflow occurred. The RETURN 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

019 => DOS/WINDOWS 80900119 => 4690 OS

Explanation: An overflow occurred. The BONUS 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

021 => DOS/WINDOWS 80900121 => 4690 OS

Explanation: An overflow occurred. The EMPTIES 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

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 an end transaction (06 cmd.) or cancel transaction (07 cmd.).

025 => DOS/WINDOWS 80900125 => 4690 OS

Explanation: A fiscal rules violation has occurred. The word 'total' (or equivalent) occurs in a message when not allowed, or a reserved character is used in the message, or a number string matched the fiscal unit serial number. The request is not processed.

User Response: Correct the fiscal rules violation and try the command again.

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 transaction (06 cmd.) or cancel transaction (07 cmd.).

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 (D5 cmd.) or issue an additional payment (D5 cmd.) to complete processing.

030 => DOS/WINDOWS 80900130 => 4690 OS

Explanation: The negative or uplift item operation is not valid. Possible reasons are:

- The requested void amount did not match the current adjusted 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 or uplift item operation was requested for an item that was previously voided.

The request is not processed.

User Response: Correct the negative item or uplift item operation.

---

031 => DOS/WINDOWS 8090061F => 4690 OS

Explanation: An underflow occurred. The sum of the DISCOUNT ON SUBTOTAL operations in this sale 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 transaction (06 cmd.) or cancel transaction (07 cmd.).

---

033 => DOS/WINDOWS 80900141 => 4690 OS

Explanation: An underflow occurred. The RETURN 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

---

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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

---

035 => DOS/WINDOWS 80900143 => 4690 OS

Explanation: An underflow occurred. The BONUS 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

---

037 => DOS/WINDOWS 80900145 => 4690 OS

Explanation: An underflow occurred. The EMPTIES 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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

---

040 => DOS/WINDOWS 80900628 => 4690 OS

Explanation: The TAX category field is not blank and the amount field is blank in a item sale transaction. The request is not processed.

User Response: Correct the application program.

---

041 => DOS/WINDOWS 80900629 => 4690 OS

Explanation: The current TAX rate table is not verified. The request is not processed.

User Response: Check the application program. The program must issue a verify TAX rate table (21 cmd.) before further operations are processed. The TAX rate table must be loaded before issuing the verify TAX rate table (21 cmd.).

042 => DOS/WINDOWS 8090062A => 4690 OS

Explanation: There is a TAX rate table mismatch. The request is not processed.

User Response: Correct the application TAX rate table and issue the command again.

043 => DOS/WINDOWS 8090062B => 4690 OS

Explanation: The TAX 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 TAX table rates.

044 => DOS/WINDOWS 8090062C => 4690 OS

Explanation: The TAX category specified in item sale (D0/D2 cmd.) or negative item sale (D1/D3 cmd.) is not valid or the data supplied with the load TAX rate table (20 cmd.) is not valid.
For example, entering a non-zero rate for a category that must be equal to a rate of zero. The request is not processed.

User Response: Correct the application program.

047 => DOS/WINDOWS 8090062F => 4690 OS

Explanation: The decimal point is already reset. The request is not processed.

User Response: No action is required.

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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

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 transaction (06 cmd.) or cancel transaction (07 cmd.), and then issue a close sale period (13 cmd.).

052 => DOS/WINDOWS 80900634 => 4690 OS

Explanation: The discount on subtotal (D9 cmd.) is not allowed when the transaction total is equal to zero.

User Response: Adjust the transaction total or issue a cancel transaction (07 cmd.).

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.

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 transaction (07 cmd.), and then issue a close sale period (13 cmd.).

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 transaction (07 cmd.), and then issue a close sale period (13 cmd.).

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.

061 => DOS/WINDOWS 8090063D => 4690 OS

Explanation: An overflow occurred. The transaction total or one of the TAX category transaction sales totals exceeds the maximum allowed value on an item sale (D0/D2 cmd.). The request is not processed.

User Response: Issue an end transaction (06 cmd.) or cancel transaction (07 cmd.).

063 => DOS/WINDOWS 8090063F => 4690 OS

Explanation: The POS/Store information is not loaded. The request is not processed.

User Response: Issue the set pos/store information (1E cmd.) to load the information.

064 => DOS/WINDOWS 80900127 => 4690 OS

Explanation: An overflow occurred. The specified value received amount from the application program exceeds the maximum allowed amount. 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: A request has been made to print more than the allowed number of check or credit card print lines. The request is not processed.

User Response: Check the application program. Issue an end check or cancel check to exit the check or credit card printing sequence.

---

069 => DOS/WINDOWS 80900205 => 4690 OS

Explanation: An attempt was made to print a line in CR or SJ station that exceeds the maximum number of ordinary print lines allowed during a fiscal voucher. The request is not processed.

User Response: Either issue an end transaction or cancel transaction (07 cmd.) before printing the ordinary print lines.
If this error occurred 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 off-line printer test that is invoked by pressing the keys on the printer in the correct sequence.

---

070 => DOS/WINDOWS 80900646 => 4690 OS

Explanation: Partial line feed dots are out-of-range on the line feed check and credit slips (C3 cmd.). The request is not processed.

User Response: Check the application program sequence.

---

071 => DOS/WINDOWS 80900302 => 4690 OS

Explanation: An error occurred while printing on a customer receipt. The request is not processed.

User Response: If the error continues, service the printer.

---

072 => DOS/WINDOWS 80900207 => 4690 OS

Explanation: The print operation requested during training mode is not valid. The request is not processed.

User Response: Check the application program.

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 on an inserted document is not allowed at this point during a sales transaction. 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: An attempt was made to print a line in the SJ station outside a sale transaction during training mode. The request is not processed.

User Response: Check the application program.

078 => DOS/WINDOWS 80900304 => 4690 OS

Explanation: An error occurred while printing in the SJ station. The request is not processed.

User Response: If the error continues, service the printer.

079 => DOS/WINDOWS 80900212 => 4690 OS

Explanation: A line feed on the customer receipt station is not allowed during printing of inserted fiscal documents. The request is not processed.

User Response: Check the application program.

080 => DOS/WINDOWS 80900213 => 4690 OS

Explanation: A line feed on an inserted document is not allowed at this point during a sale transaction. The request is not processed.

User Response: Check the application program.

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 in CR, SJ or DI station was made without the correct application-originated report mode selected. The request is not processed.

User Response: Check the application program sequence.

083 => DOS/WINDOWS 80900307 => 4690 OS

Explanation: An unrecoverable error occurred reading the fiscal memory identification/status/setup area.

User Response: Service the printer.

085 => DOS/WINDOWS 80900309 => 4690 OS

Explanation: The TAX 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 command.

User Response: Service the printer.

090 => DOS/WINDOWS 8090065A => 4690 OS

Explanation: The requested close sale period was not found in the fiscal memory. The request is not processed.

User Response: Specify a valid closure number or valid dates for the fiscal memory report (15 cmd.).

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 requested address range is not valid or is wrong in the engineering dump (FF cmd.). 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. The request is not processed.

User Response: Reset the printer using the J4/CE jumper procedure and reissue the command 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 fiscal memory decimal point table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

---

105 => DOS/WINDOWS 80900361 => 4690 OS

Explanation: The fiscal memory currency table is full. The request is not processed.

User Response: If the table must be updated, exchange the fiscal memory.

---

106 => DOS/WINDOWS 80900362 => 4690 OS

Explanation: The fiscal parameter configuration (C4 cmd. - Command Ext. 04, 05, 06 or 07) must be issued before the set header (D7 cmd.). The request is not processed.

User Response: Service the printer. The J4/CE jumper procedure is required.

Note: Only authorized service personnel can move the J4/CE jumper.

---

107 => DOS/WINDOWS 8090066B => 4690 OS

Explanation: There is a print header application password matching error. The request is not processed.

User Response: Issue the command again using the correct password.

---

108 => DOS/WINDOWS 80900328 => 4690 OS

Explanation: The pos/store information 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.

---

110 = DOS/WINDOWS 80900131 = 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.

111 = DOS/WINDOWS 80900132 = 4690 OS

Explanation: The barcode size is invalid. The request is not processed.

User Response: Correct the barcode size and issue the command again.

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 inclusive/exclusive TAX method is not loaded. The request is not processed.

User Response: Use the fiscal parameter configuration (C4 cmd.) to load the information.

116 => DOS/WINDOWS 80900702 => 4690 OS

Explanation: The fiscal parameter configuration (C4 cmd. - Command Ext. 04 or 05) must be issued before the set display address (1A cmd.). The request is not processed.

User Response: Service the printer. The J4/CE jumper procedure is required.

Note: Only authorized service personnel can move the J4/CE jumper.

117 = DOS/WINDOWS 80900703 => 4690 OS

Explanation: Operation not valid.
Possible reasons are:

- Error reading MICR data.
- Error doing flipper function.
- MICR funtion not present in the printer.
- Flip function not present in the printer.

User Response: Test again with another check. If the error persists service the printer.

118 => DOS/WINDOWS 80900704 => 4690 OS

Explanation: The fiscal memory isn't compatible with the current microcode EC level. The request is not processed.

User Response: Change the fiscal memory or change the microcode EC level (previous to EC level x22).

119 => DOS/WINDOWS 80900677 => 4690 OS

Explanation: The inclusive/exclusive TAX method is incorrect. The request is not processed.

User Response: Issue the command again using the correct selection (1 = inclusive TAX) or (2 = exclusive TAX).

---

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 power-ON again. If the problem persists, service the printer.

---

121 => DOS/WINDOWS 80900679 => 4690 OS

Explanation: A printer card time-out occurred while executing a command.

User Response: Turn the power-OFF and then power-ON again. If the problem persists, service the printer.

---

122 => DOS/WINDOWS 8090067A => 4690 OS

Explanation: The maximum count of decimal point indication changes was reached. The request is not processed.

User Response: If it is required to change the decimal point indication, exchange the fiscal memory.

---

125 => DOS/WINDOWS 8090067D => 4690 OS

Explanation: Invalid sequence command. A sequence command was requested that is not allowed during a fiscal voucher. The request is not processed.

User Response: Check the application program sequence.

---

126 => DOS/WINDOWS 8090067E => 4690 OS

Explanation: The restricted header control mode is not set. The request is not processed.

User Response: Check the application program. Issue the set fiscal mode (18 cmd.) for restricted header control mode.

---

127 => DOS/WINDOWS 8090067F => 4690 OS

Explanation: Header lines 1-3 cannot be set in restricted header control mode. The request is not processed.

User Response: Check the application program.

---

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.

---

130 => DOS/WINDOWS 80900322 => 4690 OS

Explanation: The secondary serial number is not set. The request is not processed.

User Response: Service the printer.

---

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 1.

User Response: Follow the maintenance manual procedures to set the configuration correctly. If problem persists, service the POS terminal.

---

133 => DOS/WINDOWS 80900685 => 4690 OS

Explanation: The TAX method 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 TAX method table.

---

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.

---

135 => DOS/WINDOWS 80900220 => 4690 OS

Explanation: The command is not valid outside of a sales period. The request is not processed.

User Response: Issue an summary fiscal report (X-Report) (14 cmd.).

---

136 => DOS/WINDOWS 80900221 => 4690 OS

Explanation: A voucher-related sale transaction command was issued while a sale transaction was not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

139 = DOS/WINDOWS 80900224 = 4690 OS

Explanation: The logo or set character is corrupted. The request is not processed.

User Response: Service the printer.

---

140 => DOS/WINDOWS 80900225 => 4690 OS

Explanation: A fiscal voucher-related command was issued before printing the store 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 subtotal/total (D4 cmd.) 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.

149 => DOS/WINDOWS 80900695 => 4690 OS

Explanation: The blank amount item range is not set by application program. The request is not processed.

User Response: Correct the application program sequence.

150 => DOS/WINDOWS 80900696 => 4690 OS

Explanation: A command not related to a credit note was issued while a credit note print header is in progress. The request is not processed.

User Response: Issue the command again after the credit note is completed.

151 => DOS/WINDOWS 80900697 => 4690 OS

Explanation: A command not related to a 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 completed.

152 => DOS/WINDOWS 80900698 => 4690 OS

Explanation: A command related to a credit note was issued while a credit note header is not printed. The request is not processed.

User Response: Correct the application program sequence.

153 => DOS/WINDOWS 80900699 => 4690 OS

Explanation: A command related to a credit note was issued while a credit note is not in progress. The request is not processed.

User Response: Correct the application program sequence.

---

154 => DOS/WINDOWS 8090069A => 4690 OS

Explanation: An error occurred on an end credit note. The request is not processed.

User Response: Issue the credit note end (BD cmd.) again or issue a credit note cancel (BE cmd.).

---

155 => DOS/WINDOWS 8090069B => 4690 OS

Explanation: An error occurred on an cancel credit note. The request is not processed.

User Response: Issue the credit note cancel (BE cmd.) again.

---

157 => DOS/WINDOWS 8090069D => 4690 OS

Explanation: The correct operation of check printing or credit 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.

---

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.

---

162 => DOS/WINDOWS 80900332 => 4690 OS

Explanation: The maximum count of currency changes was reached. The request is not processed.

User Response: If it is required to change the currency, exchange the fiscal memory.

---

163 => DOS/WINDOWS 809006A3 => 4690 OS

Explanation: Secondary serial number is set. The request is not processed.

User Response: No action is required.

164 => DOS/WINDOWS 80900350 => 4690 OS

Explanation: The power-on sequence is in progress.

User Response: No action is required.

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 close sale period (13 cmd.) and then issue the command again.

168 => DOS/WINDOWS 80900231 => 4690 OS

Explanation: A command not related to a sale transaction voucher was issued while a sale transaction is in progress. The request is not processed.

User Response: Issue the command again after the fiscal voucher 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.

172 => DOS/WINDOWS 80900235 => 4690 OS

Explanation: Only a fiscal voucher-related sale transaction command is accepted after the store header is printed. The request is not processed.

User Response: Check the application program.

173 => DOS/WINDOWS 80900236 => 4690 OS

Explanation: After the subtotal/total (D4 cmd.) was issued, the command sequence is not valid. The request is not processed.

User Response: Check the application program.

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.

176 = DOS/WINDOWS 80900239 = 4690 OS

Explanation: Invalid value in the daily table pointer. The request is not processed.

User Response: Put the J4/CE jumper in ACTIVE (ON) position and reinitialize the printer.

Note: Only authorized service personnel can move the J4/CE jumper.

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 (06 cmd.) again or issue a cancel transaction (07 cmd.).
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 (07 cmd.) again.
If this error was encountered during the online printer diagnostic test, it indicates that the test cannot be completed because a sale 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: A command was requested that is not allowed during a application-originated report. The request is not processed.

User Response: Check the application program sequence.

185 => DOS/WINDOWS 809006B9 => 4690 OS

Explanation: An EEPROM 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 J4/CE jumper and reinitialize the printer.

If the problem persists, service the printer.

187 => DOS/WINDOWS 809006BB => 4690 OS

Explanation: Response from Electronic Read Fiscal Memory Tables (DA cmd.) when the daily totals block requested was found in blank.

User Response: None.

188 => DOS/WINDOWS 809006BC => 4690 OS

Explanation: A application-originated report related command was issued when a application-originated report is not in progress. The request is not processed.

User Response: Check the application program sequence.

189 => DOS/WINDOWS 809006BD => 4690 OS

Explanation: A different mode of check printing or credit slip printing is already in progress so the selected mode cannot be ended. The request is not processed.

User Response: Check the application program sequence.

---

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. (On 4680 Operating System, this error could be reported for other types of printer problems besides home errors.)

User Response: If the problem persists, service the printer.

---

201 => DOS/WINDOWS 80900528 => 4690 OS

Explanation: 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 cover or ensure the CR paper is installed correctly. 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

Explanation: The printer cover is open or CR out of paper. The request is not processed.

User Response: Close the printer cover or ensure the paper is installed correctly in CR station. If the proble 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: A journal 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.

---

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.

11.1 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 11.0, "Return Codes" on page 169.

Table 9 (Page 1 of 2). 4690 OS to DOS/WINDOWS Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900101	001
80900102	002
80900103	003
80900105	005
80900108	008
80900109	009
80900110	010
80900111	011
80900113	013
80900115	015
80900116	016
80900117	017
80900118	018
80900119	019
80900121	021
80900124	024
80900125	025
80900127	064
80900129	029
80900130	030
80900140	096
80900141	033
80900142	034
80900143	035
80900145	037
80900150	056
80900151	057
80900201	065
80900202	066
80900203	055
80900204	068
80900205	069
80900207	072
80900209	075
80900210	076
80900211	077
80900212	079
80900213	080
80900220	135
80900221	136
80900225	140
80900226	141
80900227	142
80900229	144
80900230	167
80900231	168
80900235	172
80900236	173
80900237	174
80900238	175
80900239	176

Table 9 (Page 1 of 2). 4690 OS to DOS/WINDOWS Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900302	071
80900303	073
80900304	078
80900306	082
80900307	083
80900309	085
80900312	089
80900314	091
80900315	092
80900318	099
80900320	128
80900321	129
80900322	130
80900323	131
80900324	109
80900325	134
80900326	101
80900327	102
80900328	108
80900329	100
80900330	160
80900331	161
80900332	162
80900341	113
80900350	164
80900360	104
80900361	105
80900362	106
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
8090061F	031
80900628	040
80900629	041
8090062A	042
8090062B	043
8090062C	044
8090062F	047

Table 9 (Page 2 of 2). 4690 OS to DOS/WINDOWS Return Code Conversion

4690 OS Return Code	Equivalent DOS/WINDOWS Return Code
80900630	048
80900632	050
80900634	052
80900635	053
8090063A	058
8090063B	059
8090063D	061
8090063F	063
80900643	067
80900646	070
80900651	081
80900657	087
8090065A	090
8090066B	107
80900670	112
80900677	119
80900678	120
80900679	121
8090067A	122
8090067D	125
8090067E	126
8090067F	127
80900691	145
80900695	149
80900696	150
80900697	151
80900698	152
80900699	153
8090069A	154
8090069B	155
8090069D	157
8090069E	158
809006A3	163
809006B6	182
809006B7	183
809006B8	184
809006B9	185
809006BA	186
809006BB	187
809006BD	189
809006D0	208
809006D2	210
809006EB	235
80900701	115
80900702	116
80900704	118
80900711	204

12.0 Venezuela - Specific Information

This chapter contains information that is specific to Venezuela:

- Default Decimal Setting
- Character Set

12.1 Default Decimal Printing Status

The default for Venezuela is that the decimal status is ACTIVE for fiscal printing. Amounts should be printed as ′a.aaa.aaa,aa′.

12.2 Character Set

Venezuela uses code page 850.

Hex 1st → / 2nd ↓	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	(000)	Õ (016)	(032)	0 (048)	@ (064)	P (080)	` (096)	p (112)	Ç (128)	É (144)	á (160)	. (176)	. (192)	╨ (208)	. (224)	. (240)
1	Ŏ (001)	μ (017)	! (033)	¬ (049)	A (065)	Q (081)	a (097)	q (113)	ü (129)	æ (145)	í (161)	. (177)	. (193)	│ (209)	. (225)	. (241)
2	Đ (002)	þ (018)	" (034)	2 (050)	B (066)	R (082)	b (098)	r (114)	é (130)	Æ (146)	ó (162)	. (178)	. (194)	‖‖ (210)	. (226)	. (242)
3	Ê (003)	Þ (019)	# (035)	3 (051)	C (067)	S (083)	c (099)	s (115)	â (131)	ô (147)	ú (163)	. (179)	. (195)	⊟ (211)	. (227)	. (243)
4	Ë (004)	res (020)	$ (036)	4 (052)	D (068)	T (084)	d (100)	t (116)	ä (132)	ö (148)	ñ (164)	. (180)	. (196)	■ (212)	Ú (228)	. (244)
5	È (005)	Û (021)	% (037)	5 (053)	E (069)	U (085)	e (101)	u (117)	à (133)	ò (149)	Ñ (165)	Á (181)	. (197)	‖‖ (213)	. (229)	. (245)
6	Í (006)	Ù (022)	& (038)	6 (054)	F (070)	V (086)	f (102)	v (118)	å (134)	û (150)	Ğ (166)	Â (182)	ã (198)	. (214)	. (230)	. (246)
7	Î (007)	ý (023)	' (039)	7 (055)	G (071)	W (087)	g (103)	w (119)	ç (135)	ù (151)	ḡ (167)	À (183)	Ã (199)	. (215)	. (231)	. (247)
8	Ï (008)	Ý (024)	((040)	8 (056)	H (072)	X (088)	h (104)	x (120)	ê (136)	ÿ (152)	¿ (168)	İ (184)	└ (200)	. (216)	. (232)	. (248)
9	Ì (009)	± (025)	) (041)	9 (057)	I (073)	Y (089)	i (105)	y (121)	ë (137)	Ö (153)	. (169)	╣ (185)	╔ (201)	. (217)	. (233)	. (249)
A	Ó (010)	÷ (026)	* (042)	: (058)	J (074)	Z (090)	j (106)	z (122)	è (138)	Ü (154)	. (170)	‖ (186)	╩ (202)	. (218)	. (234)	. (250)
B	β (011)	. (027)	+ (043)	; (059)	K (075)	[(091)	k (107)	{ (123)	Ï (139)	ø (155)	. (171)	╗ (187)	╦ (203)	. (219)	. (235)	. (251)
C	Ô (012)	⊟ (028)	, (044)	< (060)	L (076)	\ (092)	l (108)		(124)	Î (140)	£ (156)	. (172)	╝ (188)	╠ (204)	. (220)	. (236)	. (252)
D	Ò (013)	■ (029)	- (045)	= (061)	M (077)	] (093)	m (109)	} (125)	Ì (141)	Ø (157)	¡ (173)	¢ (189)	═ (205)	. (221)	. (237)	. (253)
E	res (014)	. (030)	. (046)	> (062)	N (078)	∧ (094)	n (110)	~ (126)	Ä (142)	Ş (158)	. (174)	. (190)	╬ (206)	. (222)	. (238)	H (254)
F	õ (015)	► (031)	/ (047)	? (063)	O (079)	— (095)	o (111)	. (127)	Å (143)	ş (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.

13.0 Suggestions for Application Developer's

This chapter is to suggest some hints for the application programs to improve the performance.

- If the totals in regular vouchers are calculated by the application instead of be requested to the fiscal printer, generally takes less time.

- **ONLY FOR RS-485**
  After a PLD, read the ″PLD STATUS″ bit to determine if the last command sent before the PLD was executed or not. This should avoid duplication of interrupted commands.
  For RS-485: see 2.1, "For GR4 Model (RS-485)" on page 17 (byte 6 - bit 4).

- 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.