# 4247-V03 & 003

# Flash Memory Download Procedure

The 4247-V03/003 printer models are equipped with flash memories.
The base code and the LAN code (if the NIC is installed) can be downloaded into the printer through the parallel port.
In addition, if the NIC card is installed, the codes (base and LAN) can be downloaded through the Ethernet LAN port.
The codes can be downloaded using any computer with DOS or DOS Windows. This procedure supports Windows systems running 3.1, 95, 98, ME, 2000, XP, or NT and it is applicable to the following code version levels:

| | |
|---|---|
| 003 base code: | version level 7.01 or higher |
| V03 base code | version level 2.01 or higher |
| ASCII/IPDS LAN code: | version level 3.01 or higher |

## 1.  Flash Memory download through parallel port

**1.1.** Connect a standard parallel cable to the default parallel port (LPT1) of a PC and to the printer parallel port.

**1.2.** On the printer Op Panel, press and hold down the "**Start**" and "**Cancel**" keys. Power On the printer without releasing the keys.

**1.3.** Release the keys when the printer operator panel LCD displays the following:

```
WAITING CODE DOWNLOAD
USING PARALLEL PORT
```

If the message doesn't appear, it means that the flash BIOS sector is damaged and the code can't be loaded. Power Off the printer, returns to step 1.2 and try again.

**1.4.** In a DOS window type:

**Copy "filename.bin" lpt1: /b**    <Return>

This command copies the code into the flash memory.

**1.5.** While the file is copied into the flash memory, the printer LCD informs you of the load process and displays the following:

```
WRITING BASE CODE
PLEASE WAIT
```

or

```
WRITING LAN CODE
PLEASE WAIT
```

"PLEASE WAIT" is flashing.

**1.6.** When the file is successfully loaded the LCD displays the message:

| BASE CODE LOADED |
| --- |

or

| LAN CODE LOADED |
| --- |

This message is posted for 3 seconds and then the printer automatically restarts with the new code in use.

**Error messages.**

If you try to load the LAN code binary file without the present of the NIC card, the following error is displayed:

| 201 NO ATTACHMENT CARD FOUND |
| --- |
| SEE USER'S GUIDE |

While the file is copied into the flash memory, some error messages may appear on the printer LCD.
These error messages have the following format:

| FOUND ERROR   XX |
| --- |

where XX is the error number identifier as follows:

| Base code error | Error type | Meaning |
| --- | --- | --- |
| 1 | R | The base code binary file is not a correct one |
| 2 | U | Error found during the checksum verification of the flash BIOS sector |
| 3 | U | Error found during the CRC-32 verification of the base code loaded |
| 4 | U | Error found during the execution of the algorithms used to erase/ write the base board flash memory |

| LAN code error | Error type | Meaning |
| --- | --- | --- |
| 1 | R | The LAN code binary file is not a correct one |
| 10 | R | The LAN code binary file has not the correct size |
| 11 | R | The checksum of the LAN code binary file is not correct |
| 12 | U | Error found during the execution of the algorithms used to erase/ write the NIC card flash memory |

The error type may be "recoverable" (R) or "un-recoverable" (U).

"R" means that the loading of the new binary file (base or LAN) is not started. At the next power-on, the printer restarts using the current (old) code. You can return to step 1.2 and copy the binary file again.

"U" means that the loading of the new binary file (base or LAN) has been done and the checking of the new code is damaged. At the next power-on the printer automatically restarts with the error recovery procedure.

**Error Recovery Procedure.**
In case of base code error, the following message is displayed:

| WAITING BASE CODE DOWNLOAD |
| --- |

or in case of LAN code error, the message is:

| WAITING LAN CODE DOWNLOAD |
| --- |

The printer is waiting for the binary file (base or LAN) and you can return to step 1.4 and copy the binary file again.

## 2.  <u>Flash Memory download through Ethernet LAN port</u>

**2.1.** The printer must be on "Ready" state and without "Data" present.


**2.2.** Open the **FTP** connection to the printer, using the IP address that has been set in the "LAN Interface" item in the printer Configuration menu.


**2.3.** Type **root** for the login, insert the password (default password=root) and type the commands:
- ha
- bin
- cd firmware


**2.4.** Start to transfer the binary file by typing the command:

- **put "filename.bin"**

Make sure that the binary file is in the same directory that you launched the FTP service from.
When the file is successfully transferred, the following message appears on the host screen:

- ….File has been submitted.

If an error occurred one of the following messages are displayed on the host screen:

| Error type | Meaning |
|---|---|
| Upgrade is not possible at this time. Please try later | The printer is not on "Ready" state or DATA is present |
| File is not a correct one | The base/LAN code binary file is not a correct one |
| File length is not correct | The length of the base/LAN code binary file is not correct |
| File checksum is not correct | The checksum of the LAN code binary file is not correct |


**2.5.** Close the FTP connection by typing the command:
- **bye**


**2.6.** Once the FTP is closed and the binary file has been correctly transferred (no error on step 2.4), the code updating process will start. The old code is erased and the new binary file is written into the flash memory.

If an error occurred on step 2.4, the updating process doesn't start. After printer is restarted, you can return to step 2.2 and open the FTP connection again.


**2.7.** While the binary file is copied into the flash memory, the printer LCD informs you of the load process and displays the following:

> WRITING BASE CODE
> PLEASE WAIT

or

> WRITING LAN CODE
> PLEASE WAIT

"PLEASE WAIT" is flashing.

**2.8.** When the file is successfully loaded, the LCD displays the message:

> BASE CODE LOADED

or

> LAN CODE LOADED

This message is posted for 3 seconds and then the printer automatically restarts with the new code in use.


**Error messages.**

While the file is written into the flash memory, some error messages may appear on the printer LCD. These error messages have the following format:

> FOUND ERROR   XX

where XX is the error number identifier as follows:

| Base code error | Meaning |
|---|---|
| 2 | Error found during the checksum verification of the flash BIOS sector |
| 3 | Error found during the CRC-32 verification of the base code loaded |
| 4 | Error found during the execution of the algorithms used to erase/ write the base board flash memory |

| LAN code error | Meaning |
|---|---|
| 12 | Error found during the execution of the algorithms used to erase/ write the NIC card flash memory |

The message is posted for 3 seconds and then the printer restarts with the error recovery procedure.

**Error Recovery Procedure.**
In case of base code error, the displayed message is:

> WAITING BASE CODE DOWNLOAD

or, in case of LAN code error, the message is:

> WAITING LAN CODE DOWNLOAD

After that, the LAN code enables the BootP (BootStrap) protocol service and requests the binary file over the Ethernet LAN interface port. It is needed to have a remote "BootP Server" to transfer the binary file requested by the printer via TFTP (Trivial File Transfer Protocol).
Independently from the code version level in use, the names of the binary files requested by the printer are:

- 4247base.bin.          for the 003 and V03 base codes.
- 4247lan.bin            for the LAN code.

The current base and LAN binary files must be renamed as above and the two files must be available at the "BootP Server" location

If the "BootP Server" is available, the download of the binary file will start and the new code is written into the flash memory.

When the code is successfully loaded, the LCD displays the message:

```
BASE CODE LOADED
```

or

```
LAN CODE LOADED
```

The message is posted for 3 seconds and then the printer restarts with the new code in use.

If an error occurs while the file is written into the flash memory, the printer restarts asking again the binary file via the BootP protocol service.

If for any reason is not possible to recover the errors using the LAN interface port, you can try to recover the error using the parallel port.
In any case, the parallel port can be also used if the "BootP Server" is not available.

End of Procedure