



EM220II

Mobile Printer

Unified Mobile Utility Manual

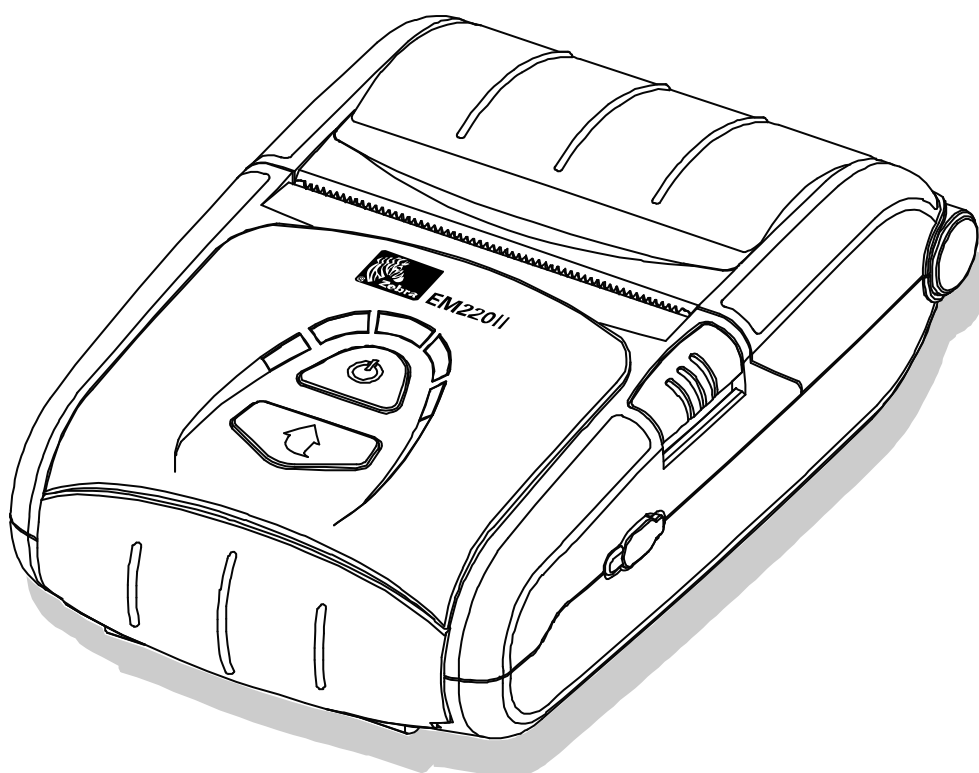


Table of Contents

1. Notice.....	6
2. Operating System (OS) Environment.....	6
3. Virtual Memory Switch Manager Usage	7
3-1 When Using on a PC	7
3-2 When Using on a PDA.....	12
4. NV Image Download Manager Usage	16
4-1 When Using on a PC	16
4-2 When Using on a PDA.....	19
5. Firmware Download Manager Usage	22
5-1 When Using on a PC	22
5-2 When Using on a PDA.....	23
5-3 Instructions of Firmware Download.....	24

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NOTE: This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet or circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

Changes or modifications to this unit not expressly approved by Zebra Technologies Corporation could void the user's authority to operate this equipment.

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Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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1. Notice

This Unified Mobile Utility Manual provides information on the utility program used to set printer operation conditions and add functions.

The utility program consists of three functions.

- 1) A function that sets printer operation conditions via non-hardware control, software-based virtual switches (**VMSM: Virtual Memory Switch Manager**)
- 2) A function that facilitates the downloading of image files, such as logos, intended for repetitive printing (**NV Image Download Manager**)
- 3) A function that is used to download and install the latest Firmware, which is subject to ongoing modification for the enhancement of product performance (**Firmware Download Manager**)

2. Operating System (OS) Environment

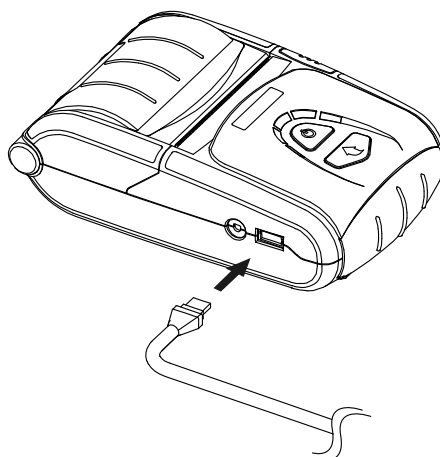
The following operating systems are supported for usage:

- Microsoft Windows XP (32bit/64bit)
- Microsoft Windows 2003 Server (32bit/64bit)
- Microsoft Windows Embedded For Point Of Service
- Microsoft Windows VISTA (32bit/64bit)
- Microsoft Windows 7 (32bit/64bit)
- Microsoft Windows 8 (32bit/64bit)
- Microsoft Windows CE 5.0
- Microsoft Windows CE 6.0
- Microsoft Windows Mobile 5.0
- Microsoft Windows Mobile 6.x

3. Virtual Memory Switch Manager Usage

3-1 When Using on a PC

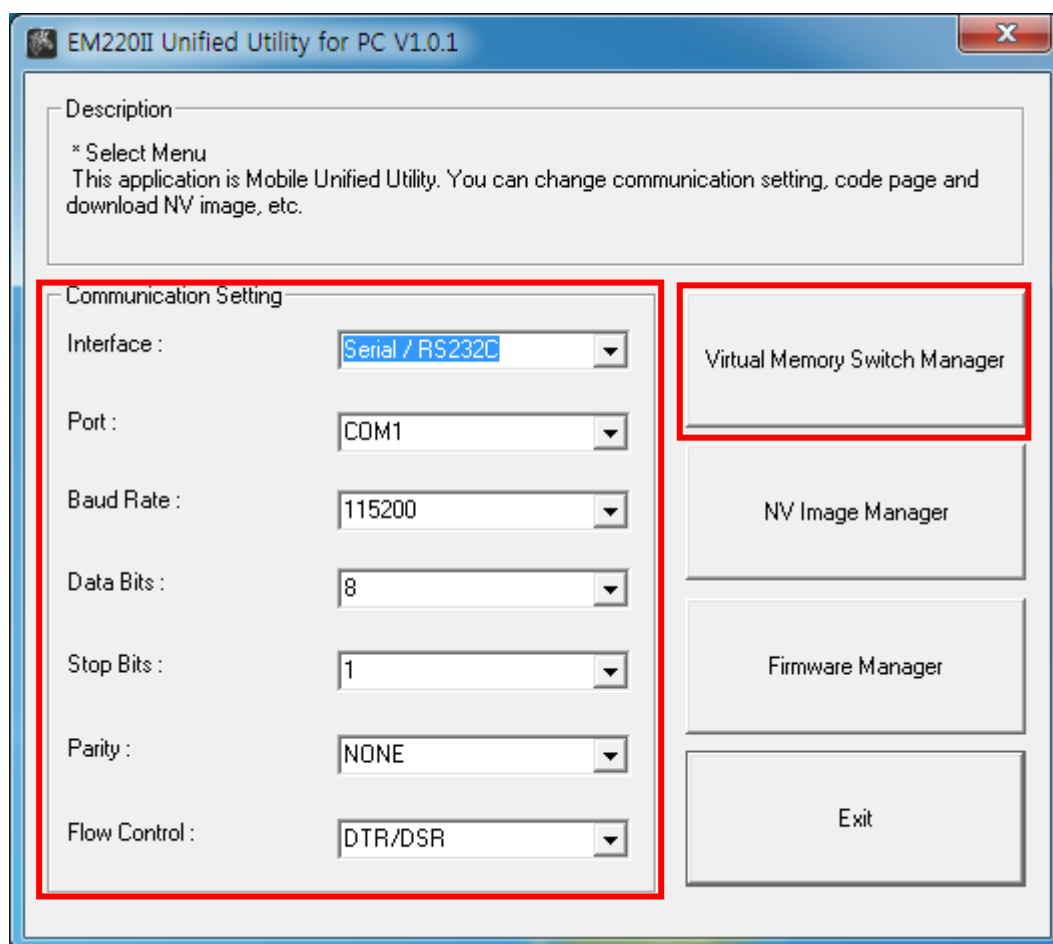
- 1) Connect the printer and the PC via the interface cable (USB or Serial type).
If using Bluetooth, a cable connection is not necessary.



- 2) Turn on the printer power.
- 3) Prepare the Unified Utility executable file to be used on the PC.
The executable file can be found on the enclosed CD.
(EM220II Unified Utility for PC ver 1.x.x.exe)
- 4) Run the Unified Utility executable file.

5) Select "Port" and click the "Virtual Memory Switch Manager" button.

Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device).



6) The Virtual Memory Switch settings information of the printer appears on screen.

Virtual Memory Switch Manager (fw:B02.00 STDa 021813)

Printer Setting 1 | Printer Setting 2 | Interface Setting

Printing Density: print density 100%

Printing Speed: 90mm/s

Default Code Page: WPC1256 - Arabic

Default Font Type: ☒ Font A (12 x 24) ☐ Font B (9 x 17) ☐ Font C (9 x 24)

Double Byte Font Mode: ☒ Off ☐ On _WPC1256

Two-Dimensional Barcode: ☒ PDF417 ☐ Datamatrix ☐ Maxi Code ☐ QR Code

Default Save Cancel

Virtual Memory Switch Manager (fw:B02.00 STDa 021813)

Printer Setting 1 | Printer Setting 2 | Interface Setting

Printer Service: Receipt

Beep For Roll Paper End: On

Beep Mode For Low Battery End: On

Auto Power Off Time (Not Connected): 0 min (1~90 ex> 30)

Auto Power Saving Time (Connected): 0 sec (10~255 ex> 100)

Black Mark Sensor: [Empty]

MFi Mode (iOS): Disable

MSR Configuration: MSR Trigger: Track 1/2/3 read mode AUTO trigger

Advance

Default Save Cancel

Advanced MSR Settings

Sentinel Option

☐ None
 ☐ Static Sentinel
 ☒ Dynamic Sentinel

Track1 Start Code

Track1 End Code

Track2 Start Code

Track2 End Code

Track3 Start Code

Track3 End Code

☐ ASCII (ex: "START(1)")

Virtual Memory Switch Manager (fw:B02.00 STDa 021813)

Printer Setting 1 | Printer Setting 2 | **Interface Setting**

Serial Interface Configuration

Baud Rate Parity
 Data Bits Flow Control

RF Interface Configuration

Select RF Interface Type

☐ Enable Bluetooth Setting

Bluetooth Interface Configuration

Authentication Encryption Connection Mode
 PIN Code Printer Name

7) After setting the desired function(s), click the “Save” button to store settings.

The functions per category are as follows:

Function	Description
Printing Density	Sets printing density Value range is 80~150%
Printing Speed	Sets printing speed Value range is 50 or 90 mm/s
Default Code Page	Sets the default code page (Refer to the Code Page Manual for more detailed information on the Code Pages supported.)
Default Font Type	Sets default font type and size
Double Byte Character Mode	Sets double byte language usage mode
Printer Service	Printer Service change receipt mode or label mode.
Beeps for Paper Roll End	Sets no beeping or beeping when reaching paper roll end
Beeps for Low Battery End	Sets beeping when reaching low battery capacity
Auto Power Off Time	Sets time interval between absence of printer use and automatic turning off of printer power
Auto Power Saving Time	Sets time interval for automatic entering into power saving mode while the printer is in use
Black Mark Sensor	Sets using front or rear paper sensor(black mark sensor)
MSR Trigger	Sets MSR data scanning mode, 7 modes supported (Refer to “GS (E” in the Control Commands Manual.)
RF Interface Configuration	Sets Wireless connection type (WLAN, Bluetooth)
Serial Interface Configuration	Changes the serial Interface setting *Printer must be reset after change for changed setting to take effect
Authentication & Encryption	Sets or cancels Authentication & Encryption mode when connecting via Bluetooth * If Authentication & Encryption mode is disabled, connection to a device can be done without a PIN Code.
Connection Mode	Sets Mode1, Mode2, or Mode3 when connecting via Bluetooth. - Mode1: connection possible only with the first device with which connection succeeds - Mode2: connection with all Bluetooth enabled devices possible via use of a PIN Code - Mode3: connection possible only with the first device with which connection succeeds and searching or use of connected device possible
PIN Code	Changes the PIN Code required for Bluetooth connections (maximum 12 characters long)
Printer Name	Changes the device name produced when establishing a Bluetooth connection (maximum 12 characters long)

* You can check authentication, Encryption mode as well as connection mode of the Bluetooth from self test page.

8) Reset the printers.

3-2 When Using on a PDA

1) Turn on the printer power.

2) Prepare the Unified Utility executable file to be used on the PDA.

The executable file varies according to CPU and can be found on the enclosed CD.

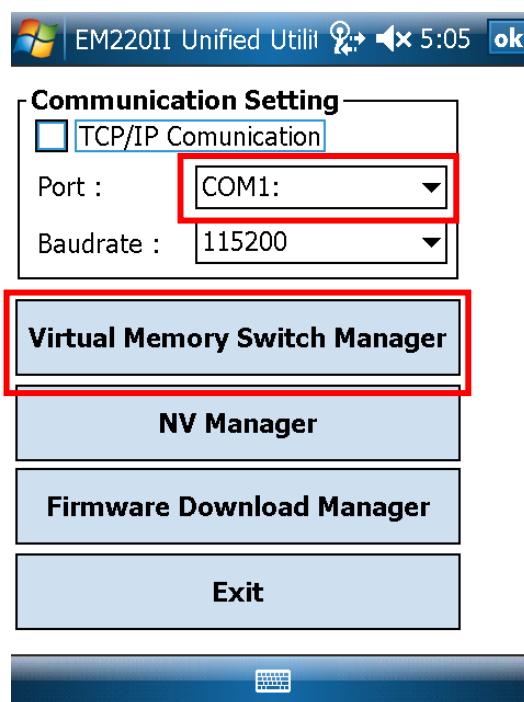
- ARMV4: EM220II Unified Utility for PPC armv4 ver 1.x.x.exe

- ARMV4I: EM220II Unified Utility for PPC armv4i ver 1.x.x.exe

3) Run the Unified Utility executable file.

4) Select "Port" and click the "Virtual Memory Switch Manager" button.

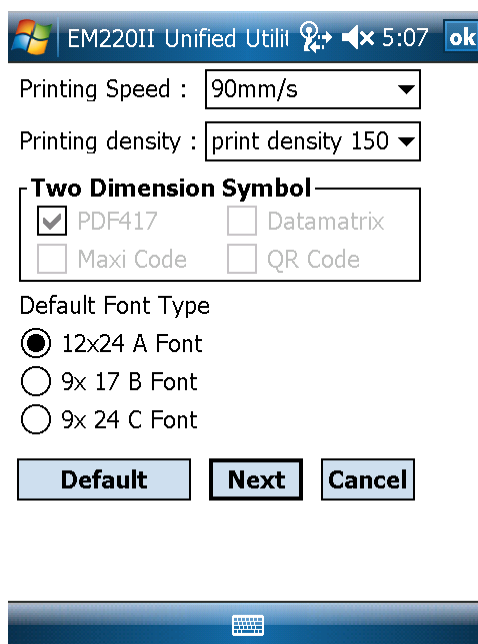
Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device).



5) The Virtual Memory Switch settings information of the printer is received and shown on screen.

- 6) After setting the desired function, click the “Next” button.
(The functions per category are identical to those on the PC.)

* Please click "Default" button to return the printer to default setting



EM220II Unified Utilit 5:07 ok

Printing Speed : 90mm/s

Printing density : print density 150

Two Dimension Symbol

☒ PDF417 ☐ Datamatrix

☐ Maxi Code ☐ QR Code

Default Font Type

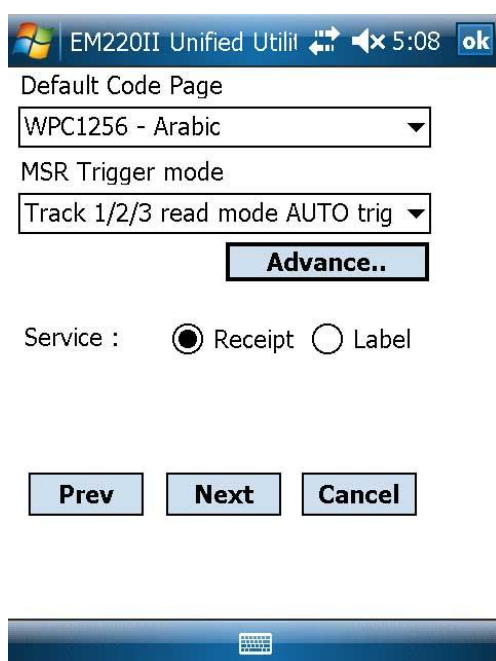
☒ 12x24 A Font

☐ 9x 17 B Font

☐ 9x 24 C Font

Default Next Cancel

- 7) After setting the desired function, click the “Next” button.
(Clicking the “Prev” button returns to the previous screen.)



EM220II Unified Utilit 5:08 ok

Default Code Page

WPC1256 - Arabic

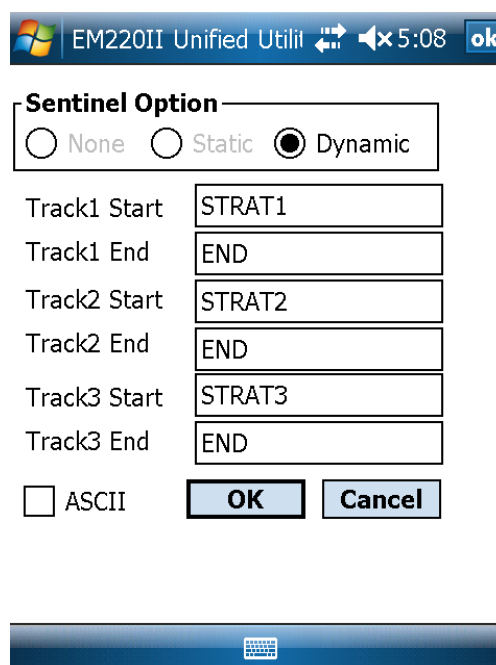
MSR Trigger mode

Track 1/2/3 read mode AUTO trig

Advance..

Service : ☒ Receipt ☐ Label

Prev Next Cancel



EM220II Unified Utilit 5:08 ok

Sentinel Option

☐ None ☐ Static ☒ Dynamic

Track1 Start STRAT1

Track1 End END

Track2 Start STRAT2

Track2 End END

Track3 Start STRAT3

Track3 End END

☐ ASCII OK Cancel

8) After setting the desired function, click the “Next” button.

The screenshot shows a Windows-style dialog box titled "EM220II Unified Utilit". The title bar includes a Windows logo, the title, a help icon, a maximize icon, a close icon, and the time "5:09". The dialog contains the following settings:

- Beeps for roll paper end: ☐ False ☒ True
- Beep mode for low battery status: ☒ On ☐ Off
- Double byte character mode: ☐ On ☒ Off
- Black Mark Sensor: ☐ Front ☐ Rear

At the bottom, there are three buttons: "Prev", "Next" (highlighted with a black border), and "Cancel". Below the buttons is a blue bar with a small printer icon.

9) After setting the desired function, click the “Next” button.

The screenshot shows the same dialog box, but now with a "Serial Interface configuration" section. The settings are:

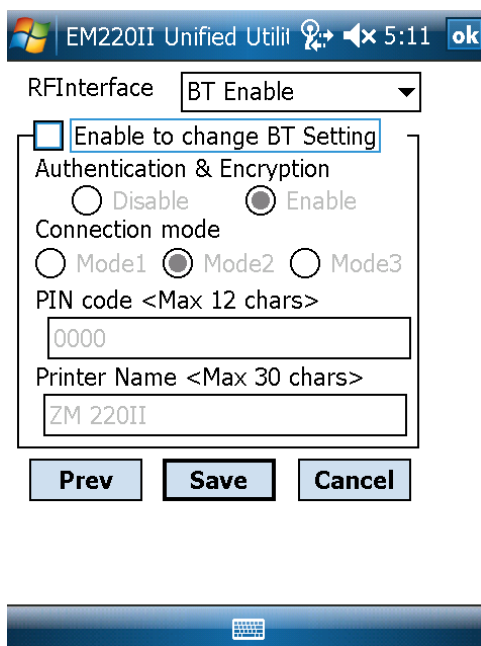
- Baudrate : 115200 (dropdown menu)
- Parity : None (dropdown menu)
- Data Length : 8 (dropdown menu)
- Flow control : DTR/DSR (dropdown menu)

Below this section are two more settings:

- Auto Power Off Time <0~90 min> : 0 (text input)
- Auto Power Saving Time <10~255 sec> : 0 (text input)

At the bottom, there are three buttons: "Prev", "Next" (highlighted with a black border), and "Cancel". Below the buttons is a blue bar with a small printer icon.

10) After setting the desired function, click the “Save” button.

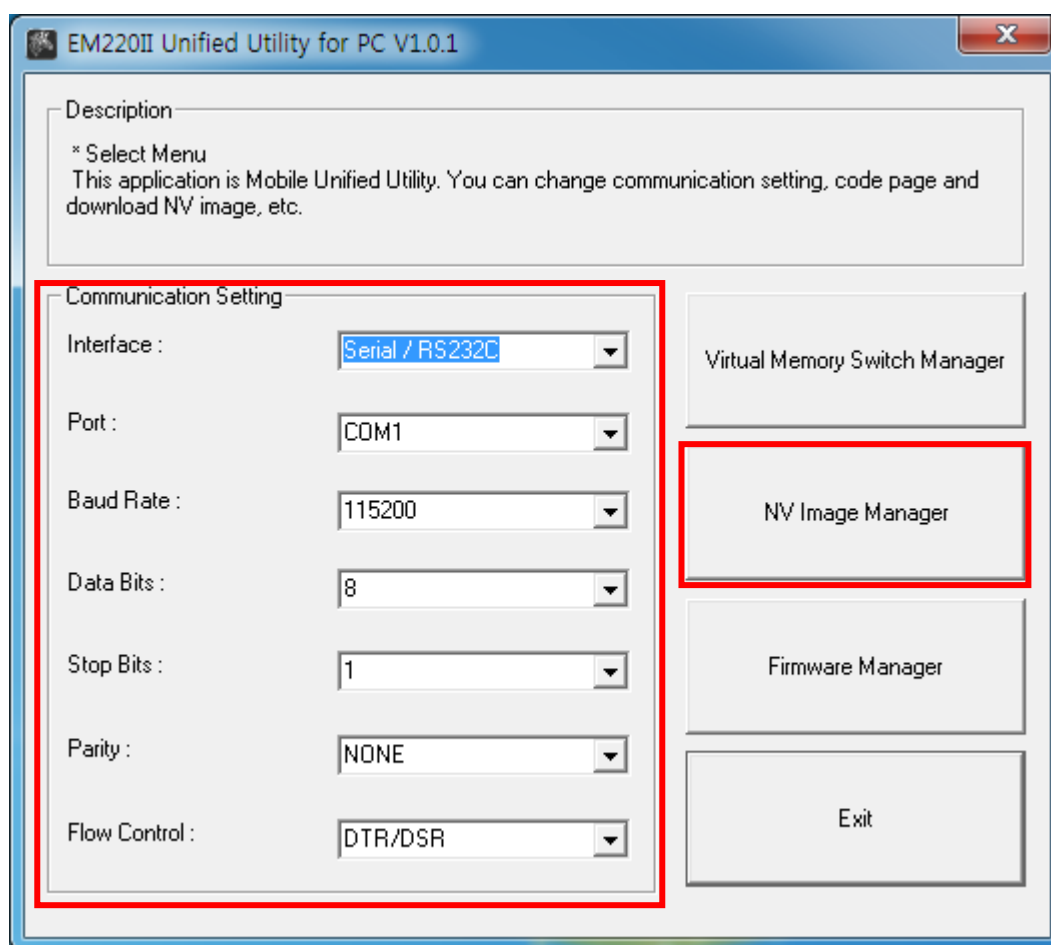


11) Reset the printer.

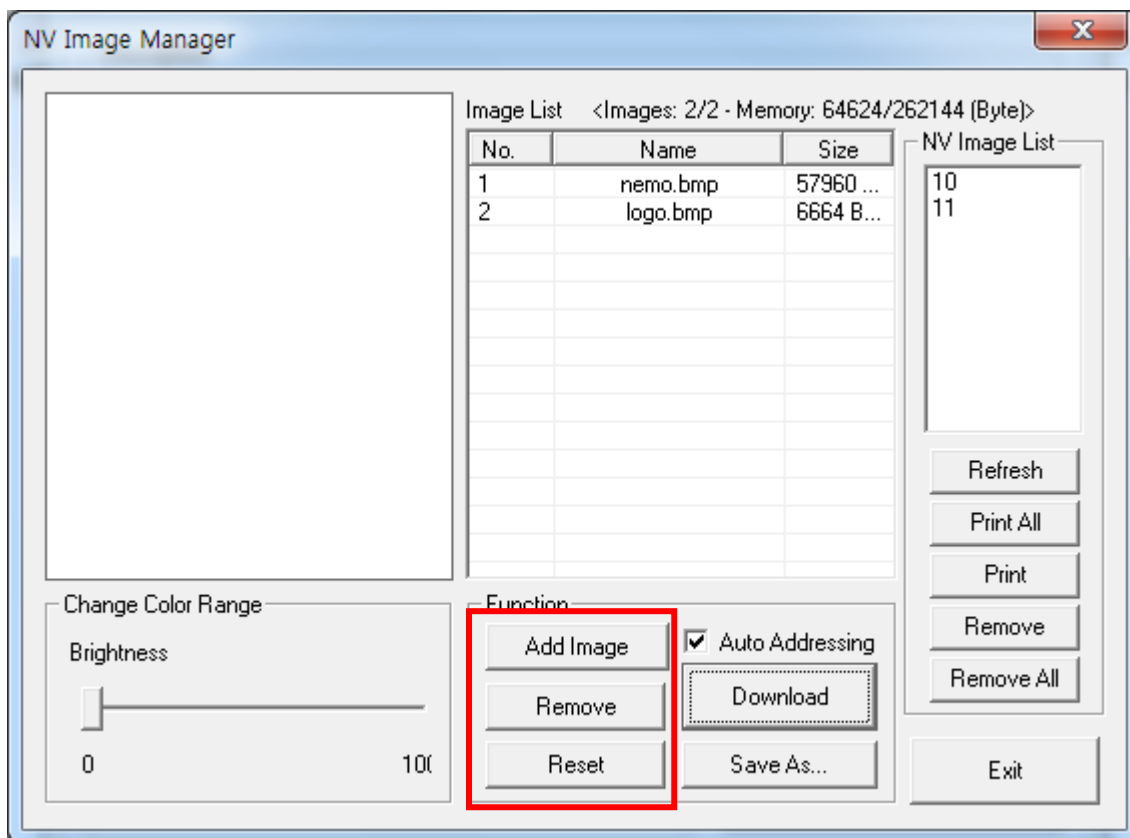
4. NV Image Download Manager Usage

4-1 When Using on a PC

- 1) The printer connection method and instructions for running the Unified Utility executable file are identical to those provided in “3. Virtual Memory Switch Manager”. Refer to the aforementioned section.
- 2) Prepare the image file on the PC (e.g. Main.bmp)
- 3) Select "Port" and click the " NV Image Manager " button.
Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device) “



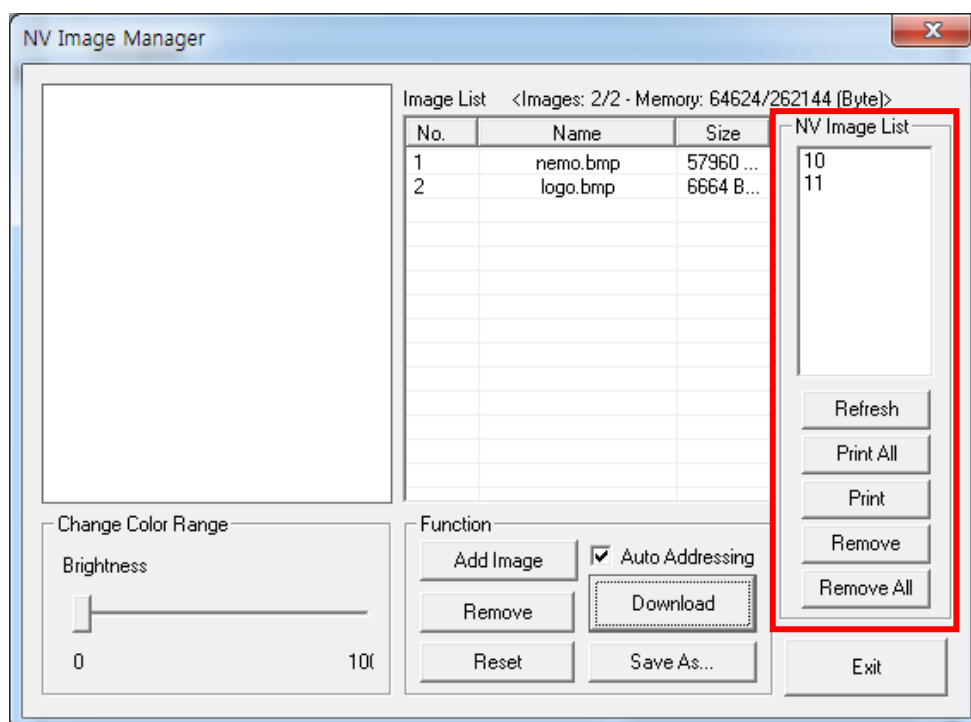
- 4) Click the “Add Image” button to add the desired image(s) to the image list.
Click the “Remove” button to delete selected image(s), and click the “Reset” button to delete the entire image list.



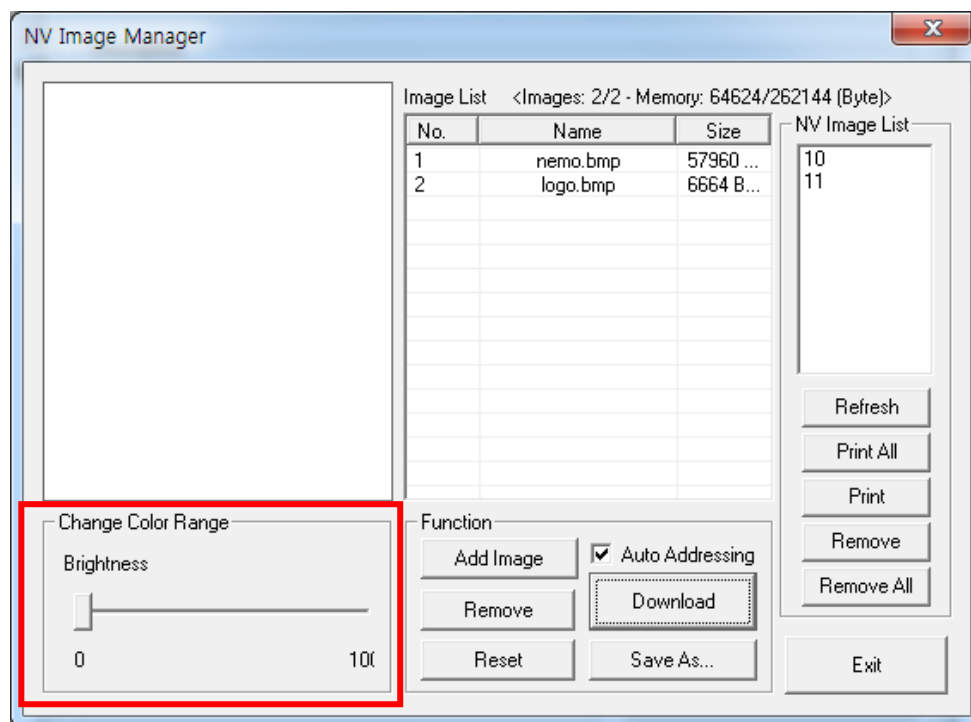
5) The “NV Image List” contains the address numbers of saved images.

The following buttons can be used to handle saved images.

- “Print All” Button: Prints all images in the list
- “Print” Button: Prints selected image(s)
- “Remove All” Button: Delete all images

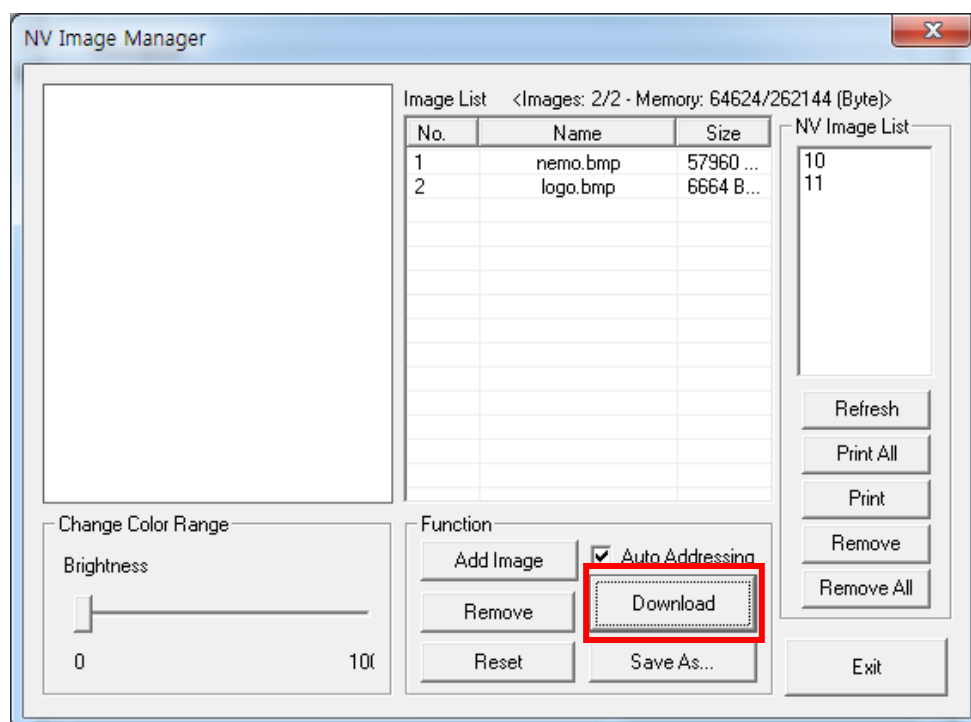


- 6) After selecting an image from the image list, adjust the brightness level to set the brightness of the image to be downloaded.



- 7) Click the “Download” button to download the image(s).

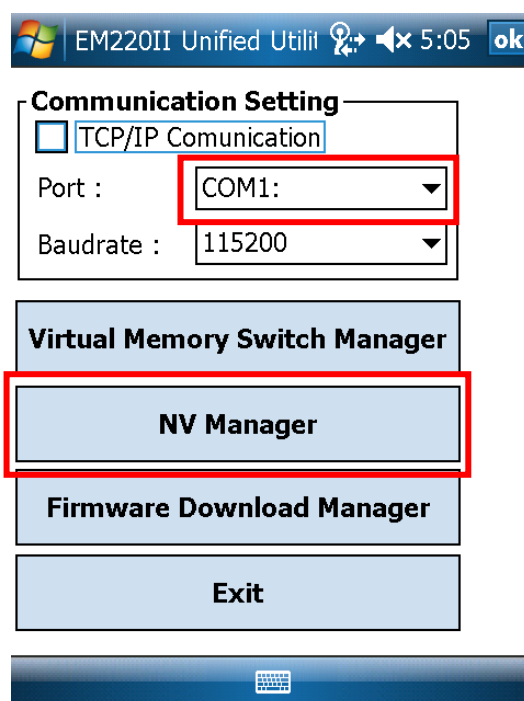
Checking the “Auto addressing” box automatically saves address numbers.
(Manual input is required if unchecked.)



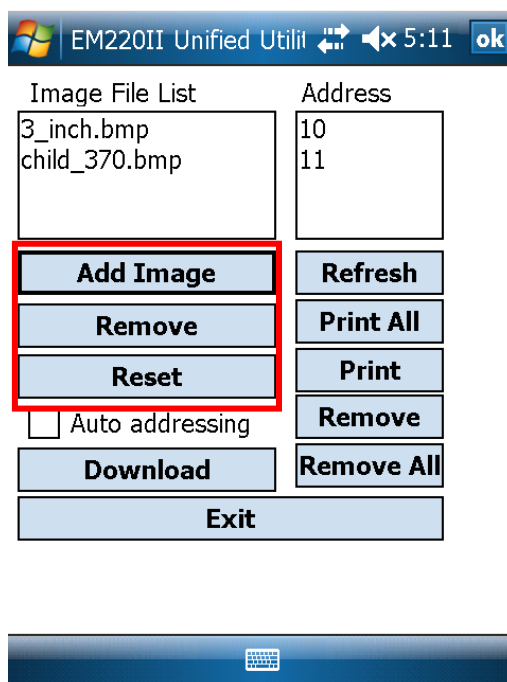
- 8) When downloading is complete, the saved address numbers appear in the “NV address list”.

4-2 When Using on a PDA

- 1) Turn on the printer power.
- 2) Prepare the Unified Utility executable file to be used on the PDA.
The executable file varies according to CPU and can be found on the enclosed CD.
 - ARMV4: EM220II Unified Utility for PPC armv4 ver 1.x.x.exe
 - ARMV4I: EM220II Unified Utility for PPC armv4i ver 1.x.x.exe
- 3) Prepare the image file on the PDA (e.g. Main.bmp)
- 4) Run the Unified Utility executable file.
- 5) Select "Port" and click the "NV Manager" button.
Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device).



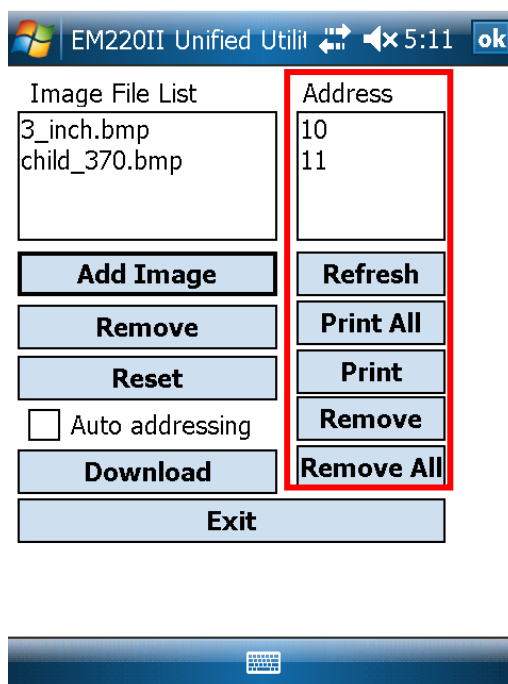
- 6) Click the “Add Image” button to add the desired image(s) to the image list.
Click the “Remove” button to delete selected image(s), and click the “Reset” button to make modifications.



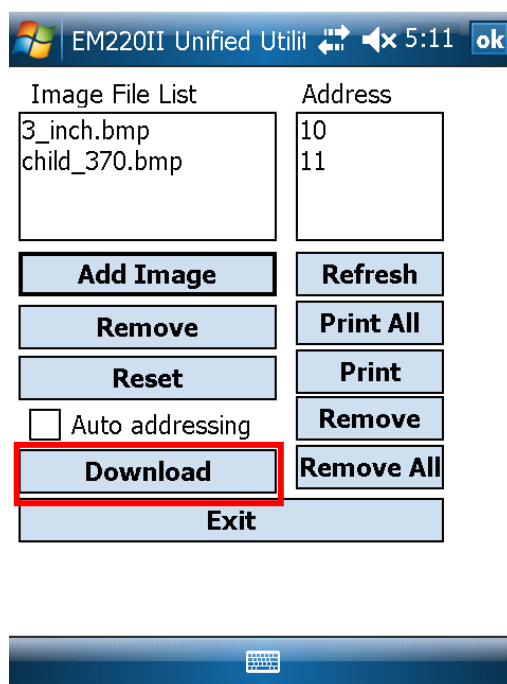
- 7) The “Address” contains the address numbers of saved images.

The following buttons can be used to handle saved images.

- “Print” Button: Prints selected image(s)
- “Print All” Button: Prints all images in the list
- “Remove All” Button: Delete all images



- 8) Click the “Download” button to download the image(s).
Automatically saves address numbers. (Start Address is “00”)



- 9) When downloading is complete, the saved address numbers appear in the “address”.

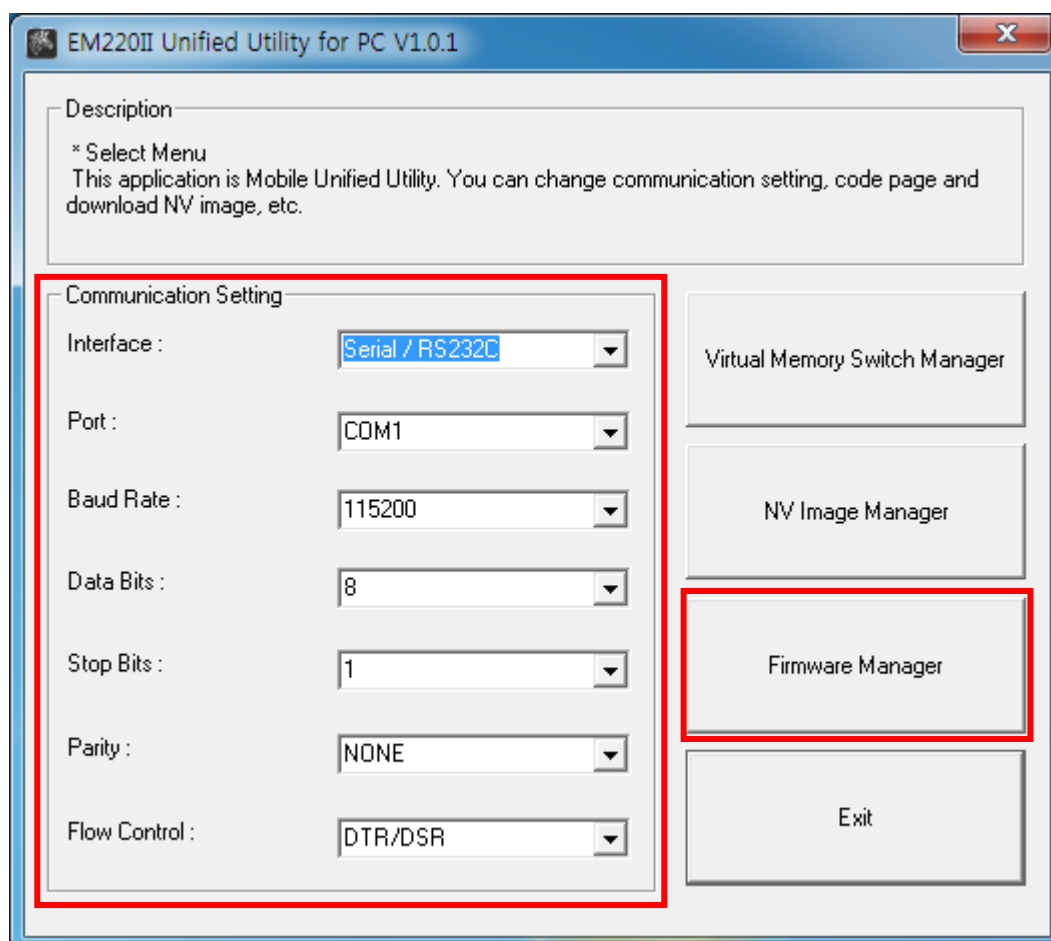
5. Firmware Download Manager Usage

5-1 When Using on a PC

The printer is already equipped with standard Firmware.

Follow the steps below to download and install firmware on the EM220II printer.

- 1) The printer connection method and instructions for running the Unified Utility executable file are identical to those provided in "3. Virtual Memory Switch Manager". Refer to the aforementioned section.
- 2) Prepare the Firmware file on the PC.
Firmware can be upgraded to improve printer performance.
- 3) Select "Port" and click the "Firmware Manager" button.
Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device) "



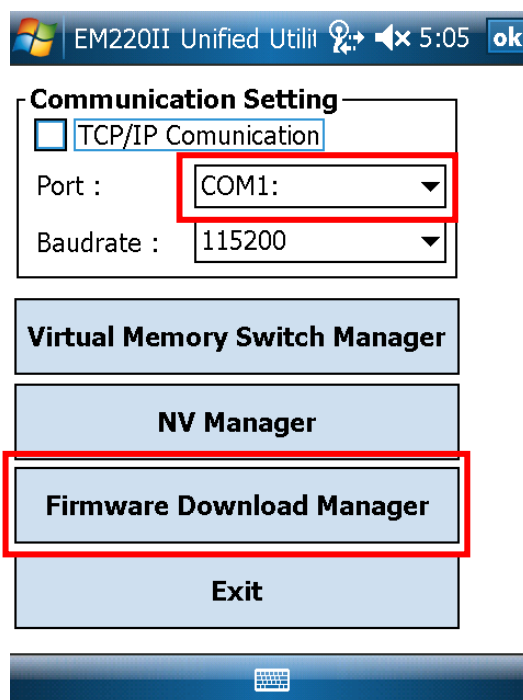
- 4) Download firmware; refer to section 5-3 for specifics.

5-2 When Using on a PDA

The printer is already equipped with standard Firmware.

Follow the steps below to download and install firmware on the EM220II printer.

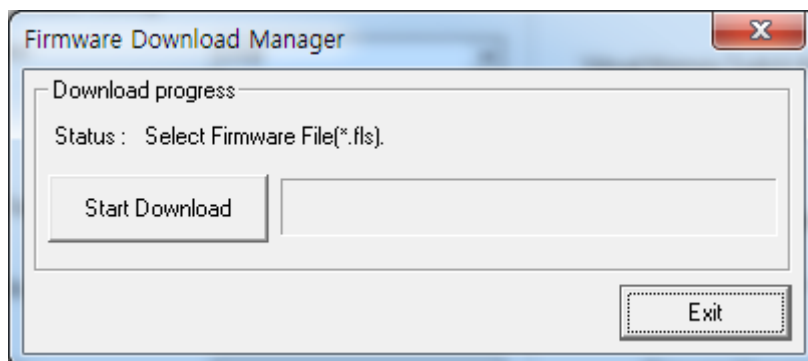
- 1) Turn on the printer power.
- 2) Prepare the Unified Utility executable file to be used on the PDA.
The executable file varies according to CPU and can be found on the enclosed CD.
 - ARMV4: EM220II Unified Utility for PPC armv4 ver 1.x.x.exe
 - ARMV4I: EM220II Unified Utility for PPC armv4i ver 1.x.x.exe
- 3) Prepare the Firmware file on the PDA.
Firmware can be upgraded to improve printer performance.
- 4) Run the Unified Utility executable file.
- 5) Select "Port" and click the "Firmware Download Manager" button.
Refer to the Bluetooth Connection Manual regarding the Port (may vary according to device) "



- 6) Download firmware; refer to section 5-3 for specifics.

5-3 Instructions of Firmware Download

- 1) Open [Unified Utility] and run [Firmware download Manager] to download a firmware (its extension is *.fls)



- 2) While downloading a firmware, the printer's status advances as follows:

- ① Green LED lights;
- ② Red LED lights;
- ③ Blue LED lights;
- ④ All three LED's turn on.

- 3) After step 2 is complete, reset the printer.

- 4) Open [Unified Utility], run [Firmware download Manager] and download a font file(its extension is *.fls) which matches your downloaded firmware.

The list below provides a mapping of font files to firmware.

- In case of KROB: mobile_godic.flc
- In case of CHOB: mobile_big5.flc
- In case of CNOB: mobile_gb2312.flc
- In case of JPOB: mobile_japfont.flc

Note: You do not need to reset the printer to use the fonts. You do not need to download the fonts in any specific order.

- 5) After downloading the firmware and fonts, you will need to set the memory switches according to user preferences and printer hardware settings.