

PPS - 10

Firmware Upgrade

April 2016, Rev. 2.2

EXCETUTIVE SUMMARY

The document contains a detailed description of the firmware upgrade procedure using the serial RS232/485 interface



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1. General purpose

MPS500 has two microcontroller boards:

- MainBoard,
- I/O board

Both of them can be programmed via bootloader, and can be update separately. The newest firmwares are provided by the MPS500 producer as BIN files – please ask for updates.

The firmware version can be checked in the “Information” menu of the power supply – refer to the MPS500 user manual.

NOTE: MPS500 can be upgraded only via RS232 or RS485 interface. Ethernet or Bluetooth interface cannot be used

For the firmware upgrade, the following are required:

- PC computer with any Terminal Software, to transfer the data to the the MPS500,

NOTE: This document will explain firmware download procedure with TeraTerm terminal. This software is freeware and can be downloaded from the following page:

<http://tera-term.en.lo4d.com/>

NOTE: Please choose the correct operating system for the download

- RS232 or RS485 hardware interface on the PC – USB converter can be also be used.

NOTE: Transmission mode for firmware upgrade is fixed and can not be changed. Please ensure your hardware PC configuration has the following parameters:

- transmission speed 115 200 b/s
- 8 data bits
- 1 stop bit
- no parity control

2. I/O board firmware upgrade

For proper firmware upgrade please proceed exactly as below;

1. Check in your System Manager number of COM port assigned/connected to the device – See Fig 1.0.0

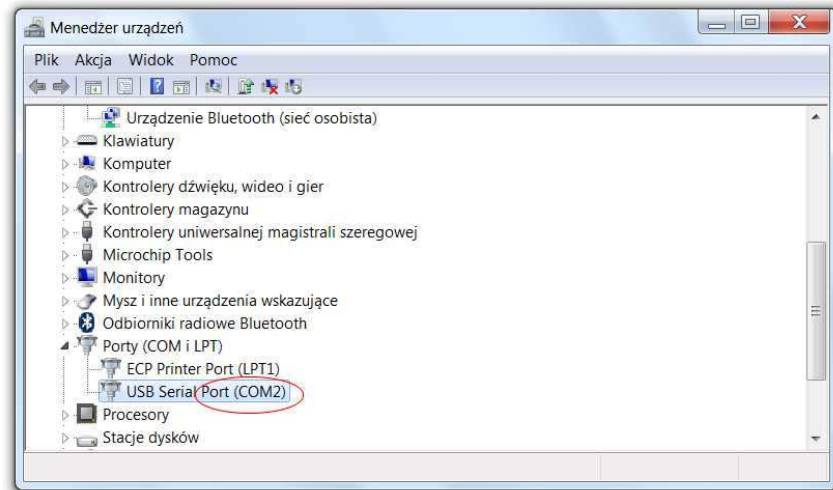


Fig. 1.0.0

2. Connect the device via RS 232 or RS485 interface with the PC
3. Configure TeraTerm connection to this port – Fig. 1.0.1, and check correct port settings in TeraTerm – Fig. 1.1.0 and Fig 1.1.1

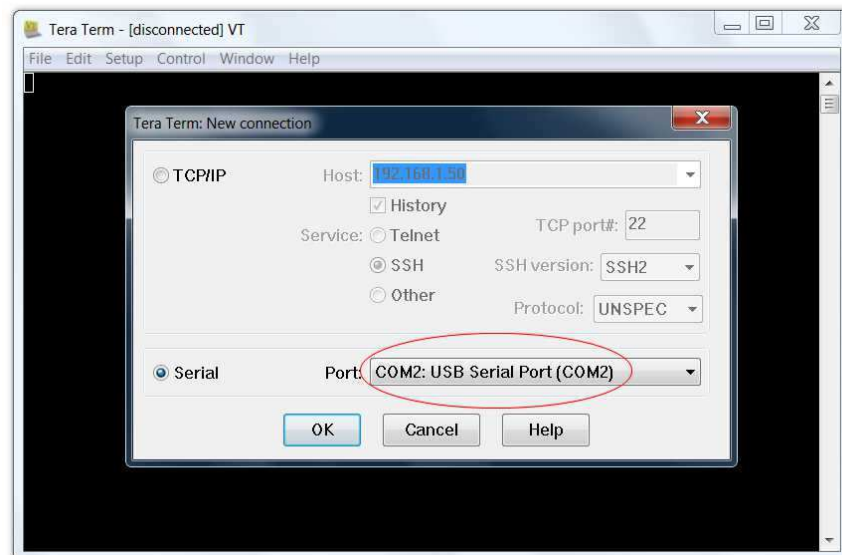


Fig.1.0.1

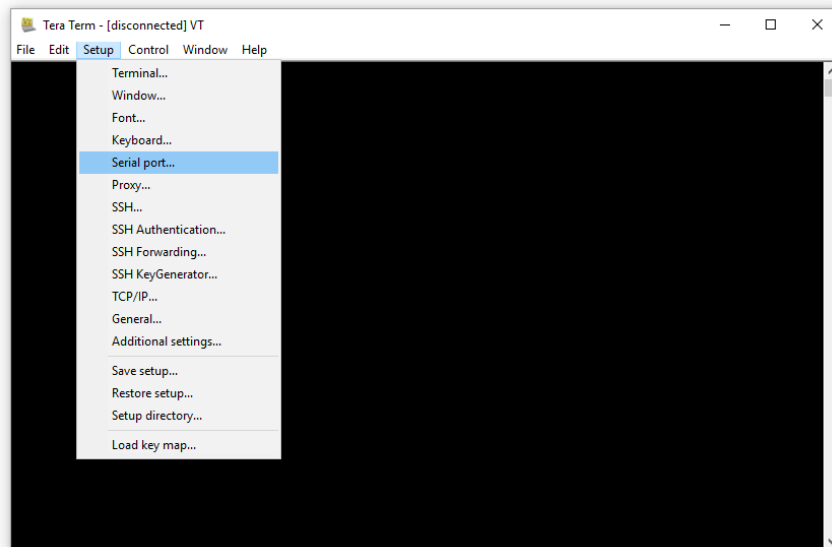


Fig.1.1.0

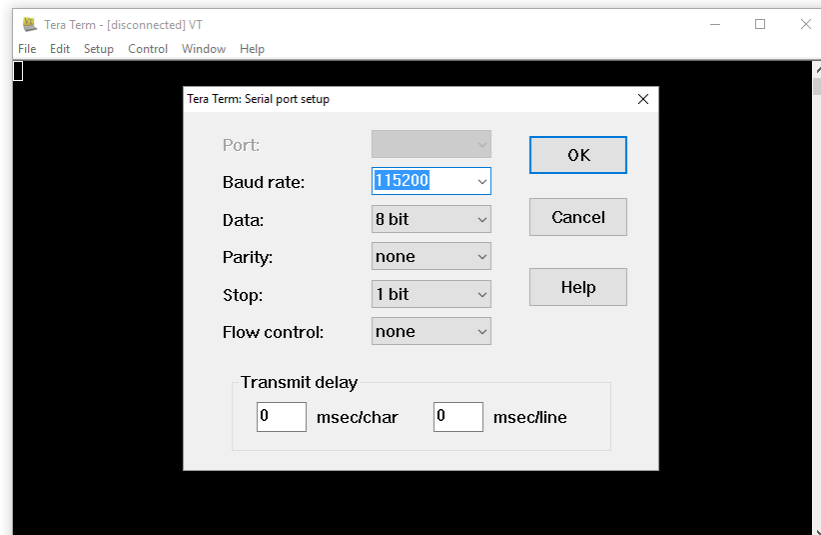


Fig.1.1.1

4. Activate the connection. To do this, press ESC button on the power supply and hold during the powering on of the unit on the main switch. The LCD display of the unit stays black and one green LED of the POWER bar stays on. At the same time the following message should appear on the terminal – Fig 1.0.2

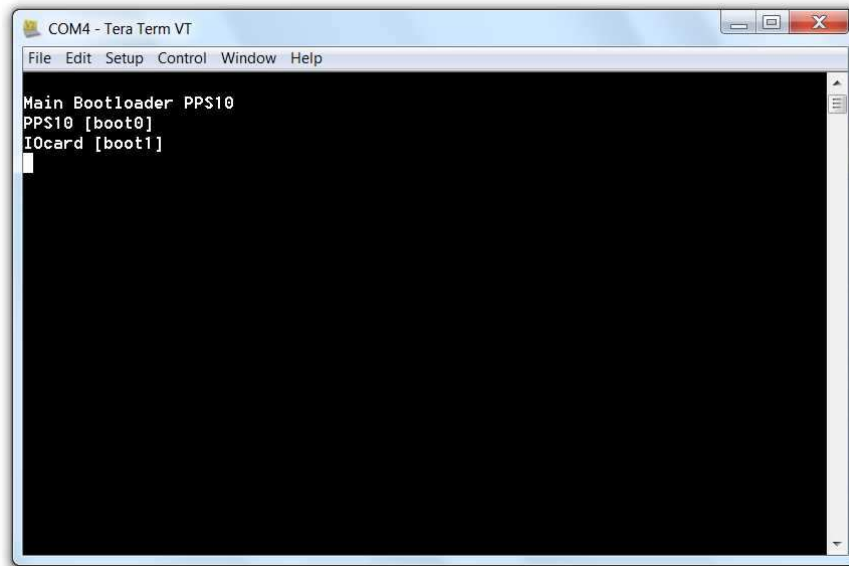


Fig. 1.0.2

5. System is ready to download both firmwares: for *Main board* (PPS10) and for *IO card* (IOcard). With the next step the correct bootloading has to be chosen.

NOTE: If upgrade of both firmwares is required please always download firmware to I/O card first.

To download firmware for *I/O card*, please type (send the command): "boot1" and press ENTER. Unit will answer to the terminal and will wait for the proper BIN file – Fig. 1.0.3

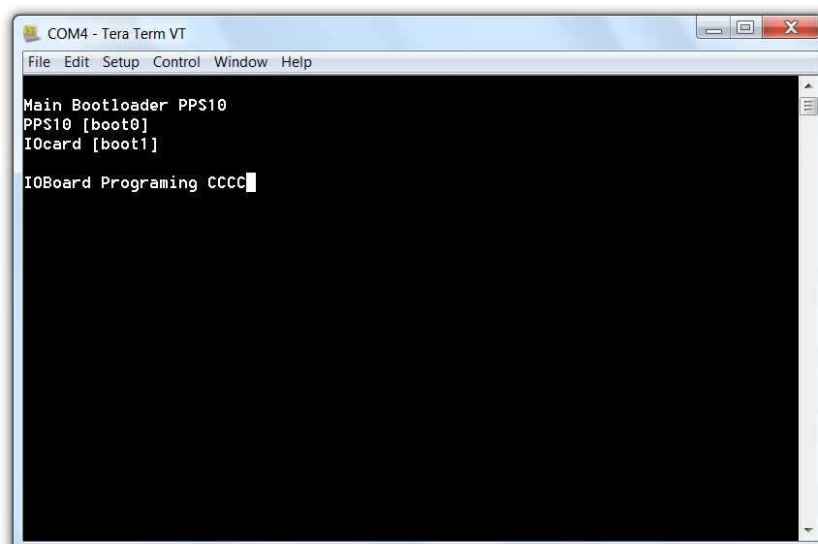


Fig. 1.0.3

Go to the *File* menu -> *Transfer* -> *XMODEM* -> *Send* – Fig. 1.0.4 and choose BIN file to be downloaded for I/O card – Fig. 1.0.5.

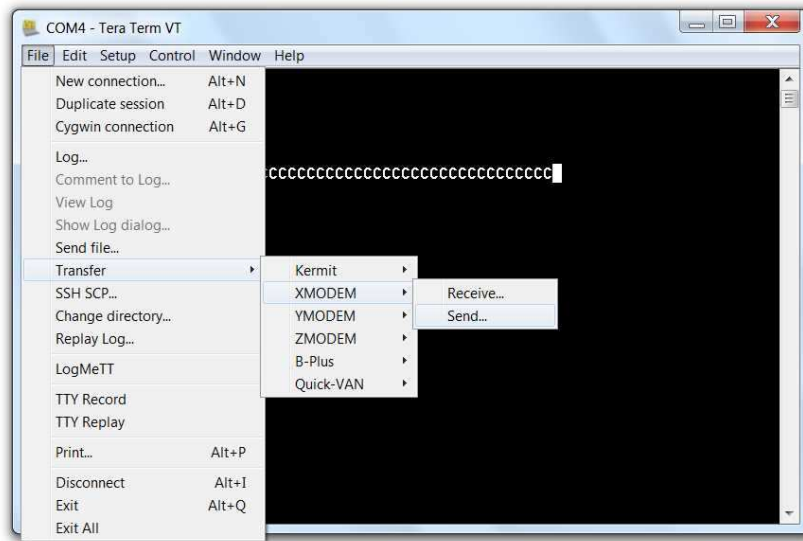


Fig. 1.0.4

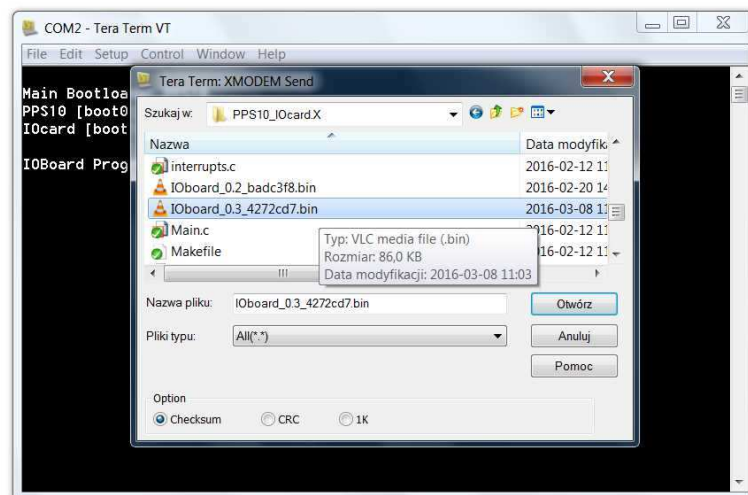


Fig. 1.0.5

BIN file transferring status is shown at Fig.1.0.6

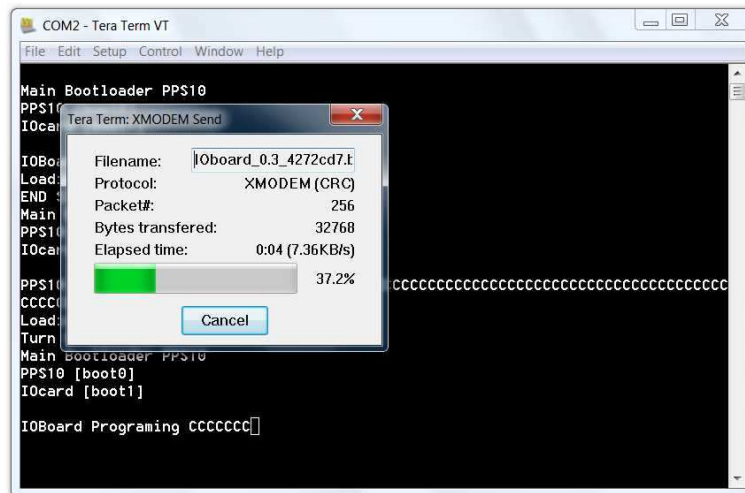


Fig. 1.0.6

When successful downloading is completed, the following information should appear – Fig. 1.0.7

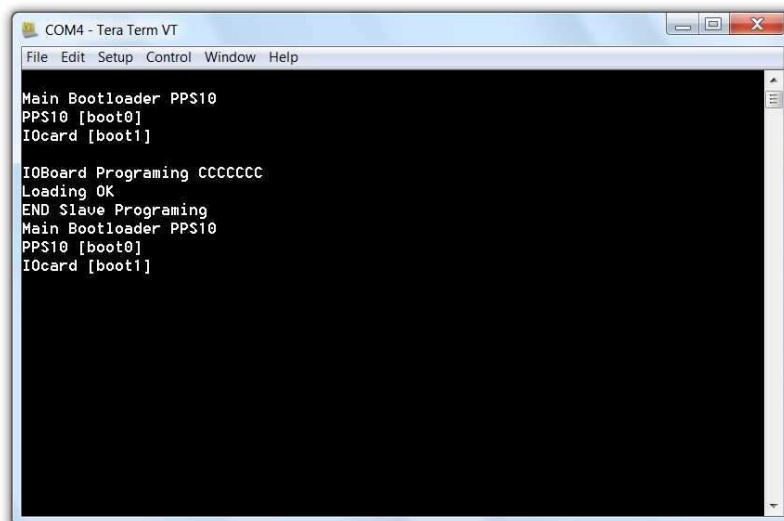


Fig 1.0.7

When *IO card* firmware is downloaded the *MainBoard* firmware can be done in the next step, if needed.

Otherwise just Turn Off/On the device

2. MainBoard firmware upgrade

For proper firmware upgrade please proceed exactly as follows;

NOTE: if I/O board firmware has been done and device is still in the bootmode, then continue from point 5

1. Check in your System Manager the number of COM port assigned/connected to the device – See Fig 2.0.0

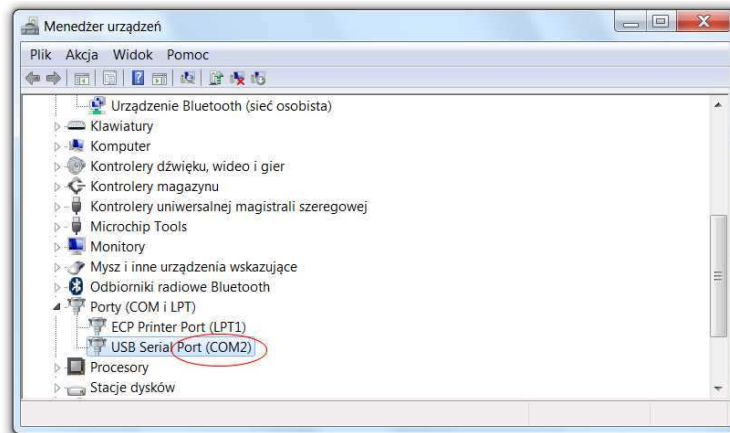


Fig. 2.0.0

2. Connect the device via RS 232 or RS485 interface with the PC
3. Configure Tera Term connection to this port – Fig. 2.0.1

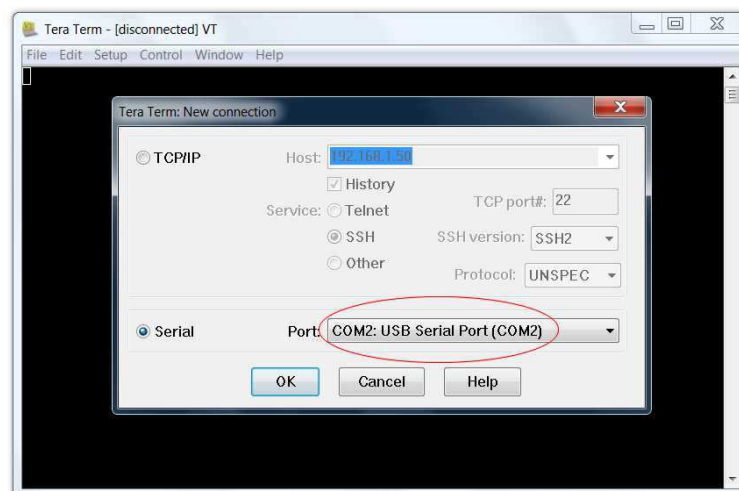


Fig.2.0.1

4. Activate the connection. To do this, press ESC button and hold during the powering on of the unit on the main switch. The LCD display of the unit stays black and one green LED of the POWER bar stays on.

At the same time the following message should appear on the terminal – Fig 2.0.2



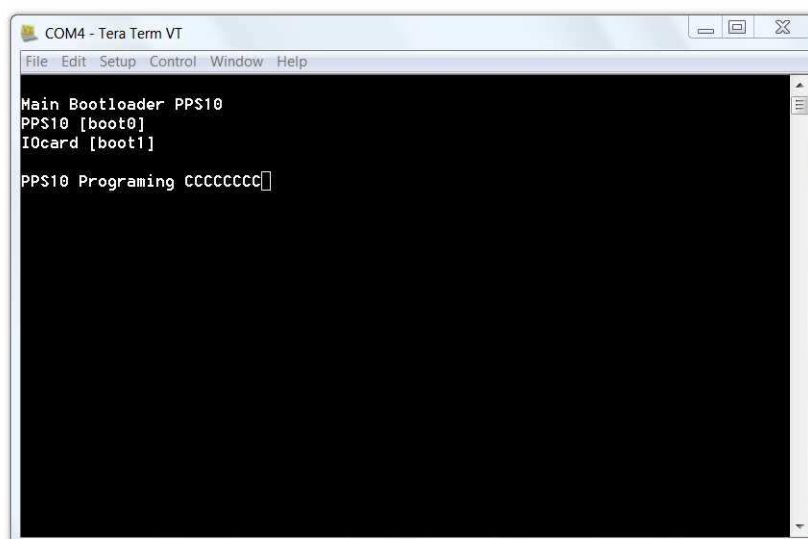
```
COM4 - Tera Term VT
File Edit Setup Control Window Help
Main Bootloader PPS10
PPS10 [boot0]
IOcard [boot1]
```

Fig. 2.0.2

5. System is ready to download both of the firmwares: for *Main board* (PPS10) and for *IO card* (IOcard). With the next step, the correct bootloading has to be chosen.

NOTE: If upgrade of both firmwares are required please always download firmware to I/O card at first.

To download firmware for MainBoard, please type (send the command): “boot0” and press ENTER. Unit will answer to the terminal and will wait for the proper BIN file – Fig. 2.0.3



```
COM4 - Tera Term VT
File Edit Setup Control Window Help
Main Bootloader PPS10
PPS10 [boot0]
IOcard [boot1]
PPS10 Programing CCCCCCCC
```

Fig. 2.0.3

Go to the *File* menu -> *Transfer* -> *XMODEM* -> *Send* – Fig. 2.0.4 and choose BIN file to be downloaded for I/O card – Fig. 2.0.5.

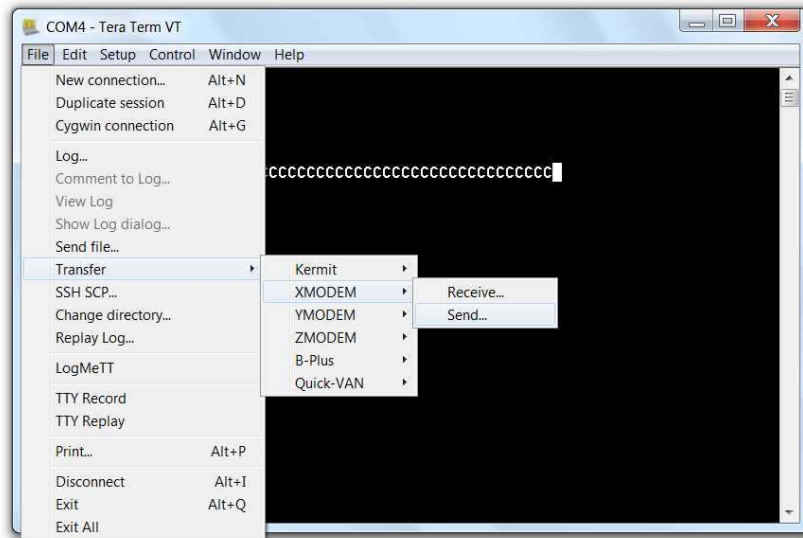


Fig. 2.0.4

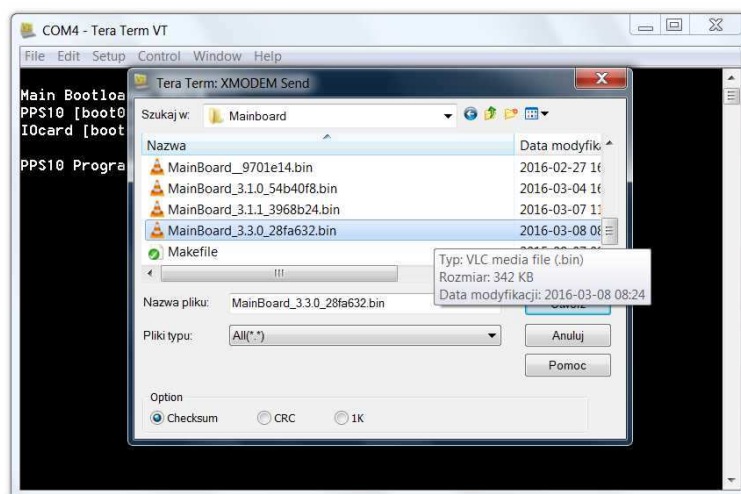


Fig. 2.0.5

BIN file transferring status is shown at Fig.2.0.6

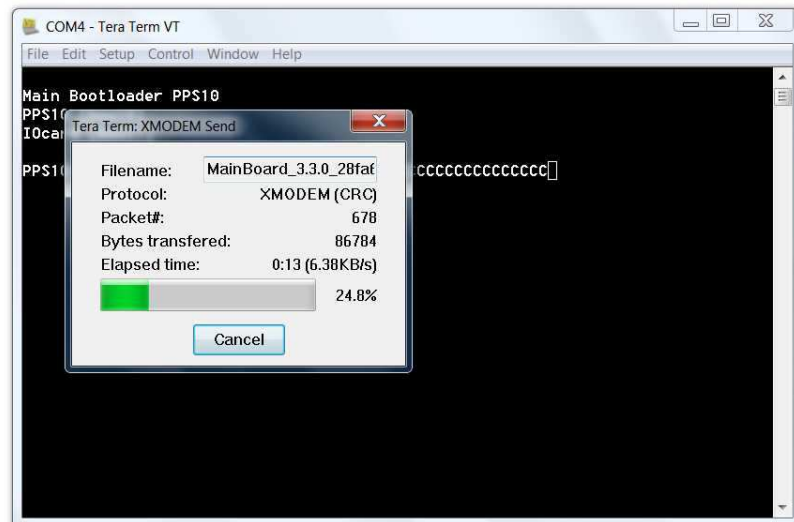


Fig. 2.0.6

When successful downloading is completed, the following information should appear – Fig. 2.0.7

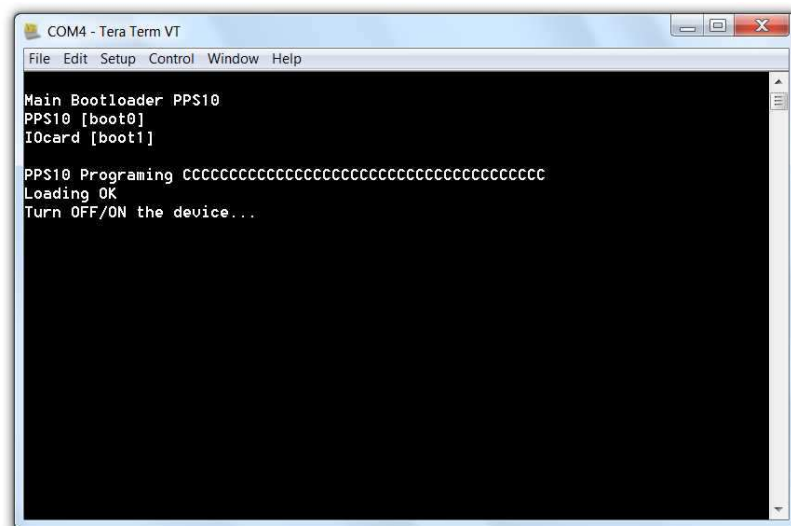


Fig 2.0.7

Turn Off/On the device to restart

NOTE: If any error message appears during or after downloading please proceed again from the beginning
 Not data are lost during the firmware upgrade. Also stored programs are unchanged – there is no need to setup parameters from the beginning