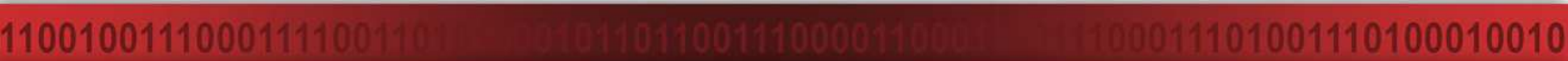




# **IndustrialPro™ and MobilityPro™ Gateway Wireless Modems**

## **Advanced Firmware Update Procedure**

**Version 1.1  
June 7, 2010**



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## Related Products

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This release applies to the following products:

- **IndustrialPro™ Gateway** wireless modems (BT-6000 Series):
  - BT-6401, BT-6401EB, BT-6421: GSM/EDGE Wireless modems
  - BT-6600, BT-6601, BT-6601EB, BT-6621: CDMA EVDO A Wireless modems
  - BT-6800, BT-6801, BT-6801EB, BT-6821: GSM/HSPA Wireless modems
- **MobilityPro™ Gateway** wireless modems with GPS (BT-5000v2 Series):
  - BT-5600v2: CDMA EVDO A Wireless modem with GPS
  - BT-5800v2: GSM/HSPA Wireless modem with GPS

## WARNINGS

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This procedure will entirely rewrite the non-volatile memory (Flash) of the modem, recovering the modem from any potential firmware-related issues and restoring its factory defaults.

The actual modem configuration will be rewritten with factory defaults.

The modem boot loader firmware, Operating System and firmware are all updated.

The procedure can only be performed locally via the Ethernet port. It cannot be performed remotely over the wireless network.

## Release content

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The Advanced Firmware Upgrade Package is composed of:

- **<Version>\_advanced-firmware\_6xxx-5600v2-5800.zip**: This archive contains the complete upgrade package. <Version> indicate the firmware version of the package (e.g. 3.8.4). This archive contains:
  - **Advanced Firmware Upgrade Procedure.pdf**: a copy of this procedure in PDF format.
  - **bt\_reflash.bat**: a Windows script used to launch the TFTP server on the PC, allowing the modem to get the various required binary image files.
  - **advanced\_upgrade.bat**: This script is equivalent to the bt\_reflash.bat script except that it handles only one Ethernet Adapter. It is kept for backward compatibility.
  - **AT\_REF\_<Version>.pdf**: a copy of the latest AT command reference document
  - **ReleaseNotes\_v<Version>\_<VersionDate>.pdf**: a copy of the release notes
  - **Images**: folder containing the binary images of the modem firmware as well as a Windows TFTP program.
- **Advanced Firmware Upgrade Procedure.pdf**: a copy of this procedure in PDF format.

The archive file shall be extracted on a local directory prior to being used in the upgrade process.

## Advanced Firmware Update Procedures

This procedure can be applied on IndustrialPro™ Gateway wireless modems and MobilityPro™ Gateway to update the installed firmware.

### Normal update

Upgrade firmware BlueVue Device Manager (the firmware release notes detail the procedure). Normal update do not modify the modem configuration.

### Advanced Firmware Update Procedure

This procedure reflashes the entire content of the modem non-volatile memory with images stored on a local TFTP server.

1. Connect PC and modem with an Ethernet cable
2. Double-click on **bt\_reflash.bat**
3. If the Windows PC has several Ethernet Adapter, the following screen will be displayed:

```
Command Prompt - bt_reflash.bat

H:\ITL>bt_reflash.bat
Sixnet Advanced Firmware Update ...
=====

This program is used to reflash an IndustrialPro Gateway <BT-6000> or
MobilityPro Gateway <BT-5000v2> Sixnet Wireless modems.

The modem non-volatile memory will be entirely re-written.

Attention: 3 ethernet adapters have been found on this PC:
=====
 1 "VirtualBox Host-Only Network"
   PHY:                                08-00-27-00-40-9B
   DHCP enabled:                        No
   TFTP default IP configured: no

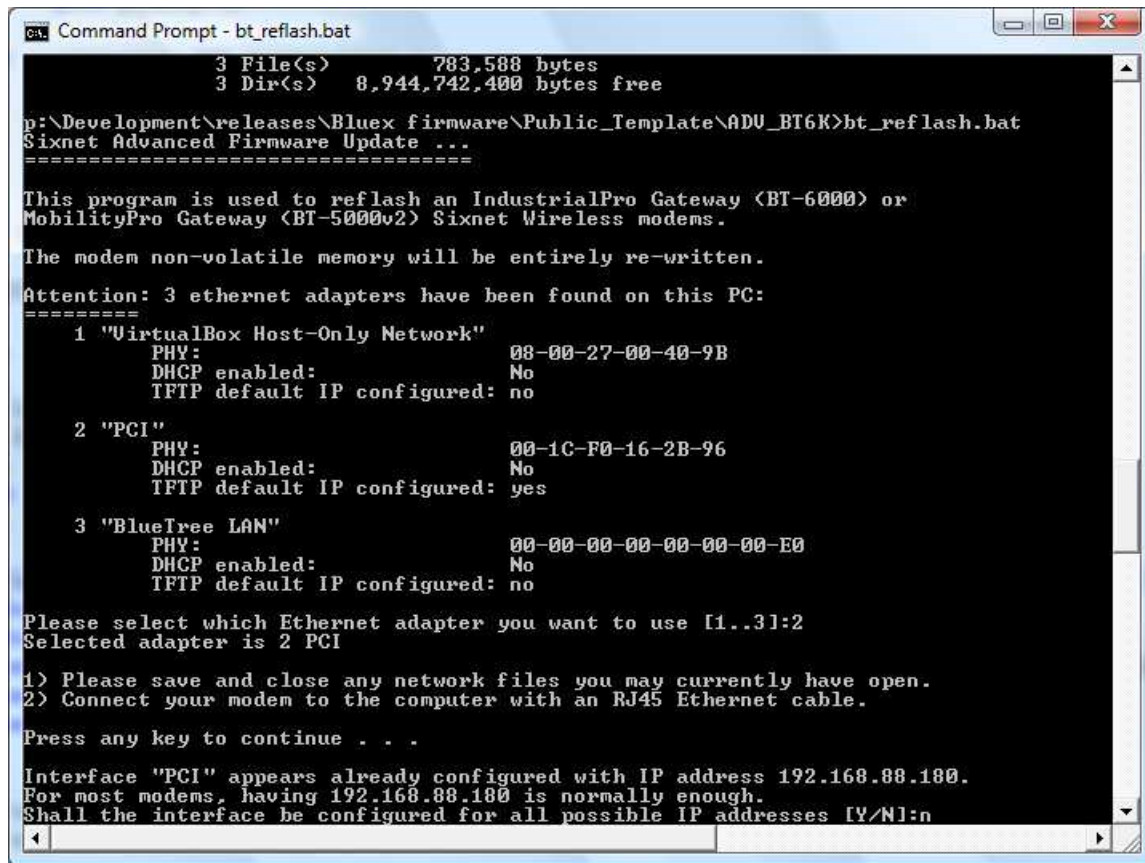
 2 "PCI"
   PHY:                                00-1C-F0-16-2B-96
   DHCP enabled:                        No
   TFTP default IP configured: yes

 3 "BlueTree LAN"
   PHY:                                00-00-00-00-00-00-E0
   DHCP enabled:                        No
   TFTP default IP configured: no

Please select which Ethernet adapter you want to use [1..3]:
```

Select the interface you want to use for the modem advanced upgrade.

4. The bt\_reflash warns to close any open network file since it will change network settings. Press any key to continue or <Ctrl>-C to stop the process.
5. If the selected interface, is already configured with the default IP address, the following message will be displayed:



```
cmd - Command Prompt - bt_reflash.bat

      3 File(s)      783,588 bytes
      3 Dir(s)      8,944,742,400 bytes free

p:\Development\releases\BlueX firmware\Public_Template\ADU_BT6K>bt_reflash.bat
Sixnet Advanced Firmware Update ...
=====

This program is used to reflash an IndustrialPro Gateway (BT-6000) or
MobilityPro Gateway (BT-5000v2) Sixnet Wireless modems.

The modem non-volatile memory will be entirely re-written.

Attention: 3 ethernet adapters have been found on this PC:
=====
  1 "VirtualBox Host-Only Network"
    PHY:                08-00-27-00-40-9B
    DHCP enabled:       No
    TFTP default IP configured: no

  2 "PCI"
    PHY:                00-1C-F0-16-2B-96
    DHCP enabled:       No
    TFTP default IP configured: yes

  3 "BlueTree LAN"
    PHY:                00-00-00-00-00-00-E0
    DHCP enabled:       No
    TFTP default IP configured: no

Please select which Ethernet adapter you want to use [1..3]:2
Selected adapter is 2 PCI

1) Please save and close any network files you may currently have open.
2) Connect your modem to the computer with an RJ45 Ethernet cable.

Press any key to continue . . .

Interface "PCI" appears already configured with IP address 192.168.88.180.
For most modems, having 192.168.88.180 is normally enough.
Shall the interface be configured for all possible IP addresses [Y/N]:n
```

For most modems, choosing 'n' is Ok. Some modems may need to have other IP addresses configured. In this case select 'y'.

6. Wait while the program configures the network interface and launches TFTP.
7. The following screen indicates that the TFTP server is awaiting firmware requests from the modem:



```
ca. Command Prompt - bt_reflash.bat

TFTP default IP configured: no

Please select which Ethernet adapter you want to use [1..3]:2
Selected adapter is 2 PCI

1) Please save and close any network files you may currently have open.
2) Connect your modem to the computer with an RJ45 Ethernet cable.

Press any key to continue . . .

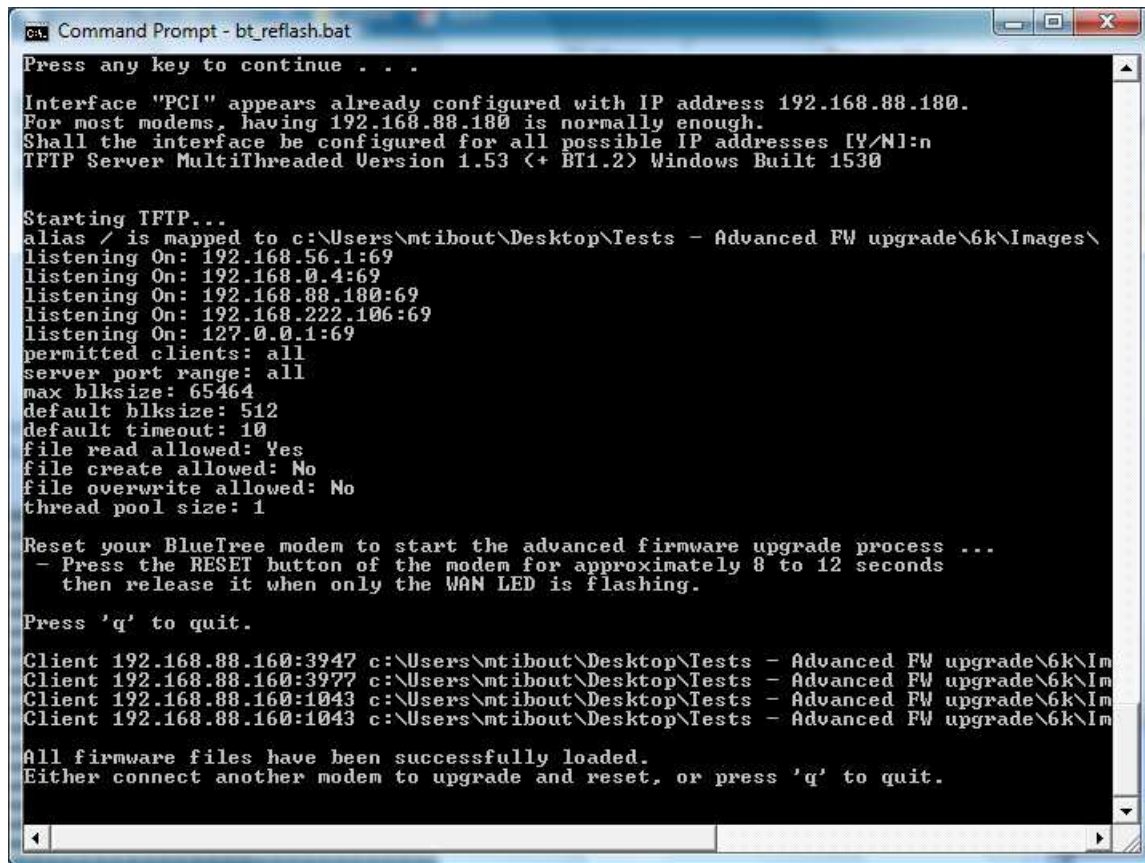
Interface "PCI" appears already configured with IP address 192.168.88.180.
For most modems, having 192.168.88.180 is normally enough.
Shall the interface be configured for all possible IP addresses [Y/N]:n
TFTP Server MultiThreaded Version 1.53 (+ BT1.2) Windows Built 1530

Starting IFTPD...
alias / is mapped to p:\Development\releases\Bluex firmware\Public_Template\ADU_BT6K\
listening On: 192.168.56.1:69
listening On: 192.168.0.4:69
listening On: 192.168.88.180:69
listening On: 192.168.222.106:69
listening On: 127.0.0.1:69
permitted clients: all
server port range: all
max blksize: 65464
default blksize: 512
default timeout: 10
file read allowed: Yes
file create allowed: No
file overwrite allowed: No
thread pool size: 1

Reset your BlueTree modem to start the advanced firmware upgrade process ...
- Press the RESET button of the modem for approximately 8 to 12 seconds
  then release it when only the WAN LED is flashing.

Press 'q' to quit.
```

8. Press the **RESET** button for between 10 and 15 seconds until the **WAN** LED starts flashing
9. Monitor the modem reflash in the bt\_reflash window. Four files should get served:



```
ca. Command Prompt - bt_reflash.bat
Press any key to continue . . .

Interface "PCI" appears already configured with IP address 192.168.88.180.
For most modems, having 192.168.88.180 is normally enough.
Shall the interface be configured for all possible IP addresses [Y/N]:n
TFTP Server MultiThreaded Version 1.53 (<+ BT1.2> Windows Built 1530)

Starting TFTP...
alias / is mapped to c:\Users\mtibout\Desktop\Tests - Advanced FW upgrade\6k\Images\
listening On: 192.168.56.1:69
listening On: 192.168.0.4:69
listening On: 192.168.88.180:69
listening On: 192.168.222.106:69
listening On: 127.0.0.1:69
permitted clients: all
server port range: all
max blksize: 65464
default blksize: 512
default timeout: 10
file read allowed: Yes
file create allowed: No
file overwrite allowed: No
thread pool size: 1

Reset your BlueTree modem to start the advanced firmware upgrade process ...
- Press the RESET button of the modem for approximately 8 to 12 seconds
  then release it when only the WAN LED is flashing.

Press 'q' to quit.

Client 192.168.88.160:3947 c:\Users\mtibout\Desktop\Tests - Advanced FW upgrade\6k\Im
Client 192.168.88.160:3977 c:\Users\mtibout\Desktop\Tests - Advanced FW upgrade\6k\Im
Client 192.168.88.160:1043 c:\Users\mtibout\Desktop\Tests - Advanced FW upgrade\6k\Im
Client 192.168.88.160:1043 c:\Users\mtibout\Desktop\Tests - Advanced FW upgrade\6k\Im

All firmware files have been successfully loaded.
Either connect another modem to upgrade and reset, or press 'q' to quit.
```

10. Wait for the reflash to complete ("All firmware files have been successfully loaded")
11. Wait for the modem to restart. Power and RS232 LEDs should be on. Modem has entirely restarted when the RS232 LED turns OFF.
12. Disconnect the modem from its power source.
13. Quit the bt\_reflash.bat program by pressing **q** in its window.

#### Notes:

- The bt\_reflash.bat launches a TFTP server after reconfiguring either the unique Ethernet Adapter ("Local Area Connection") or the selected adapter interface to a static IP address. Setting the network interface may take a few minutes. The interface configuration is then restored when the program quits. If this is a problem, you may configure your Ethernet interface to the following static IP address 192.168.88.180/24 and run `btftpsrv -v` in a DOS prompt of the Images directory.
- Launching the TFTP server may trigger a Windows firewall warning:



Select **Unblock** to continue.

- When performing the update procedure on multiple modems, you may keep bt\_reflash.bat running.
- Do not try to connect via Ethernet to the newly upgraded modem unless the TFTP server (bt\_reflash) is terminated (the LAN Ethernet interface has been specially configured for the TFTP operations). Once the TFTP server has been terminated, you may connect to your upgraded device using telnet to 192.168.0.1:6070.