FRM220 NMC Upgrade Procedure

The information within this document is intended for experienced service personnel with knowledge of TCP/IP networking, PC networking configuration, serial terminal configuration and operation.

Failure to follow steps precisely could leave the flash on the embedded device in an unusable state, requiring factory assistance.

Failure of boot code upgrade requires the factory to physically replace the flash chip, which is a surface mounted component, soldered with RoHS compliant materials (non-lead).

Please be warned and please be careful. **Stable AC power is a MUST!! during flash update**

Document Version 3.06 Apr.8, 2011 f/w ver. 2.23

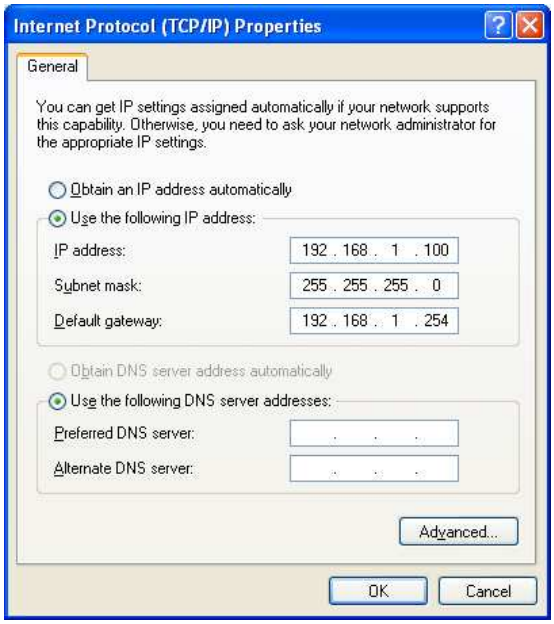
Prerequisites:
FRM220 20U Chassis with NMC, (contact CTC Union if version is prior to 1.32)
DB9F to DB9M 1:1 cable
Notebook or PC with available COM port and TCP/IP ready
Console emulation software (PuTTY, HyperTerminal or Tera Term)
TFTP server (Free/Open Source Tftpd32 by Ph. Jounin)
Upgrade firmware, for version 2.23, released as 'kernel14621.gz' and 'romfs223.gz' files which are Unix GZIPped image files (DO NOT UNZIP these files.) Pre-2.XX versions must upgrade the kernel from build 12314 or 14619 to 14621 for greater stability in networks with heavy multi-cast traffic.

Procedure:
1. Connect the NMC' DB9F serial port to the desktop's or laptop's COM port with 1:1 configuration cable.

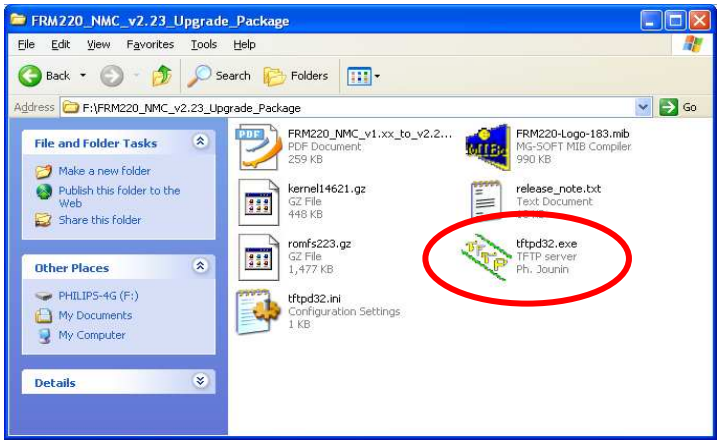
2. Start the terminal application and configure it for:
   a. 115.2k baud
   b. 8 pits
   c. no parity
   d. 1 stop bit
   e. no flow control

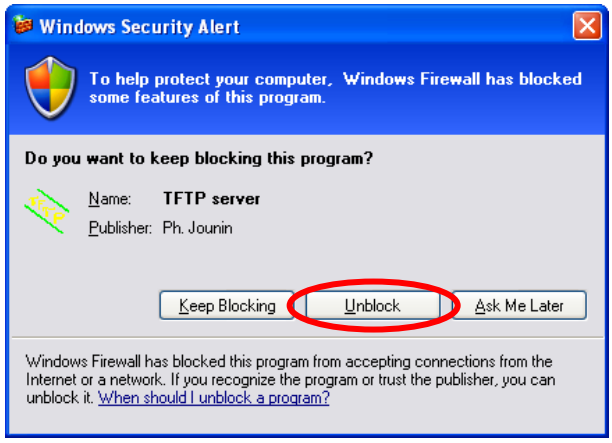
3. Connect the NMC's RJ-45 Ethernet port to the desktop's or Laptop's Ethernet LAN port. Configure TCP/IP settings on the PC as follows:

a. static IP 192.168.1.100
b. subnet mask 255.255.255.0
c. gateway 192.168.1.254

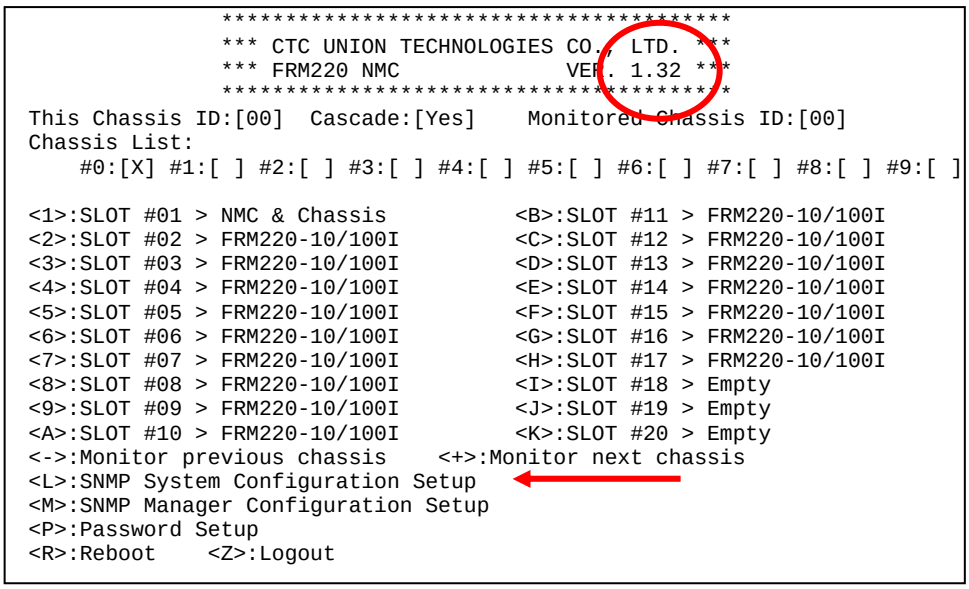


4. Start the TFTP application program by double-clicking. It was extracted with the upgrade package. If the firewall complains, select 'Unblock'. Make sure all 'gz' and 'bin' files are located in the same directory as the TFTP application program.

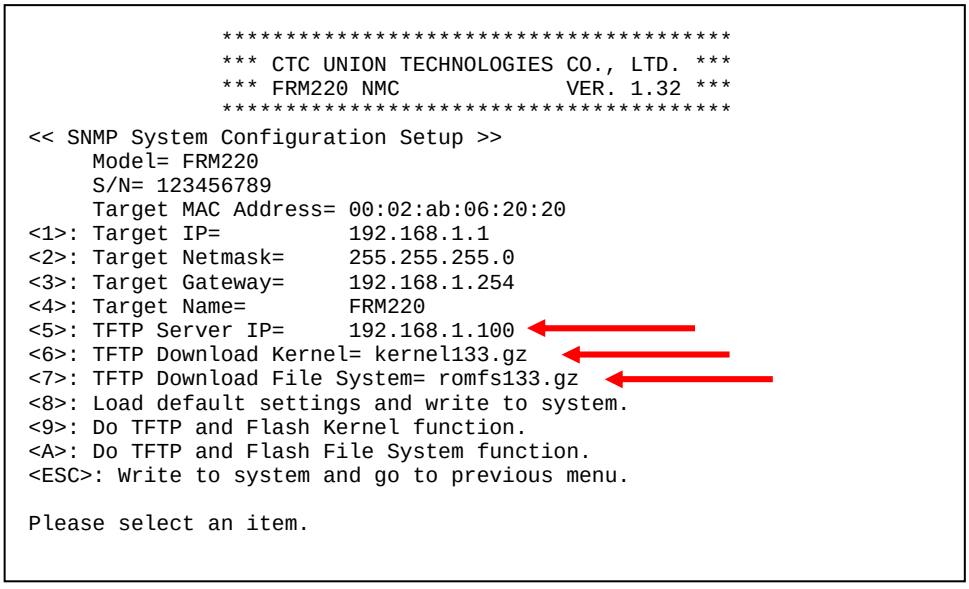




5. Kernel Upgrade: Boot the NMC and allow it to completely boot. NMC version must be 1.32 or above. Upgrade may also be performed on an online system, adjust the IP settings of TFTP server and image names without changing NMC IP address. For this version 2.23 upgrade, kernel also should be upgraded to build 14621. (14621 was introduced with filesystem version 2.16)



11. Key in the 'L' command to enter the SNMP System Configuration Setup.



12. If required, change the settings to match these below.

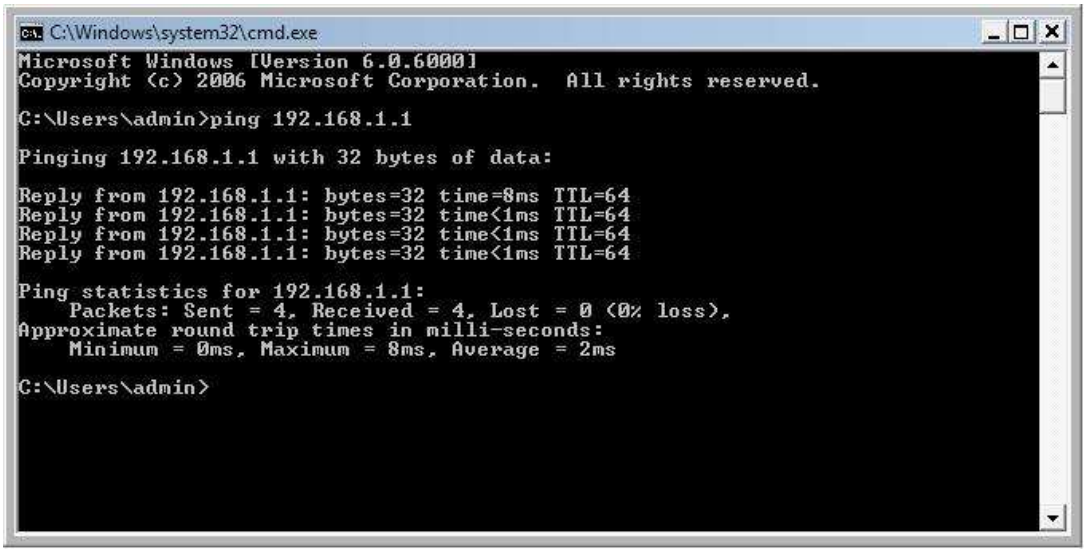
(1) Target IP Address: 192.168.1.1
(2) Target NetMask: 255.255.255.0
(3) Target Gateway: 192.168.1.254
(5) TFTP Server IP Address: 192.168.1.100
(6) Target Kernel File: kernel14621.gz
(7) Target Filesystem File: romfs223.gz

(ESC) to write the changes.

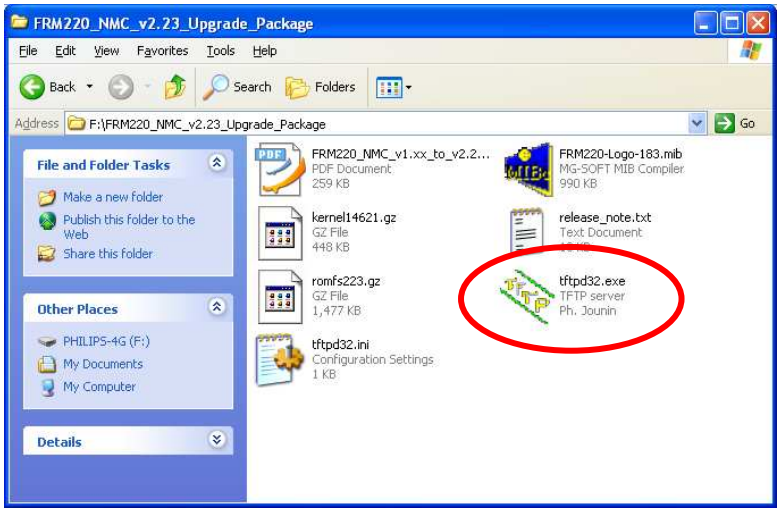
Be sure to reboot the NMC after any of these system changes.

(online traffic will not be effected when NMC is rebooted)

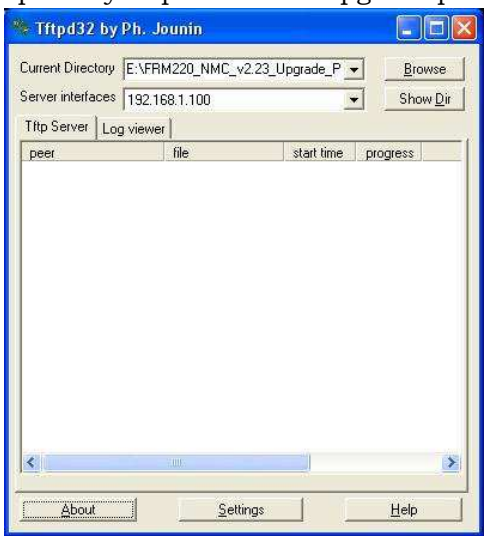
13. Open a command window on the laptop or desktop PC and ping the NMC. Make sure the network connection works and is reliable.



14. On the laptop or PC, if the TFTP application is not already running, start it now by double clicking the tftpd32.exe icon. Note: A Linux box on the network can also act as a TFTP server if configured properly. You can even upload the files to your TFTP server and then perform upgrade from Web interface of FRM220-NMC remotely.



(It is necessary to disable the built-in firewall in Windows temporarily to perform the upgrade process.)



Some anti-virus programs also include firewall. Make sure all firewalls are disabled or unblocked for the TFTP server.

15. On the laptop or PC, in the terminal screen and while in the SNMP System Configuration Setup, press the '9' key to do kernel upgrade.

```
Do TFTP and Flash File System function.
Are you sure?['y' or 'n']                    Answer with y

Start TFTP and Flash File System. Please Wait.....................
Upgrade Success!
```

Dots are added during flashing
DO NOT POWER OFF!!!!!

```
               ****************************************
               *** CTC UNION TECHNOLOGIES CO., LTD. ***
               *** FRM220 NMC              VER. 1.32 ***
               ****************************************
<< SNMP System Configuration Setup >>
     Model= FRM220
     S/N= 111111111
     Target MAC Address= 00:02:ab:06:20:20
<1>: Target IP=           192.168.1.1
<2>: Target Netmask=      255.255.255.0
<3>: Target Gateway=      192.168.1.254
<4>: Target Name=         FRM220
<5>: TFTP Server IP=      192.168.1.100
<6>: TFTP Download Kernel= kernel14621.gz
<7>: TFTP Download File System= romfs223.gz
<8>: Load default settings and write to system.
<9>: Do TFTP and Flash Kernel function.
<A>: Do TFTP and Flash File System function.
<U>: Upgrade Line Card Menu.
<ESC>: Write to system and go to previous menu.

Please select an item.

The settings were modified.
```

16. On the laptop or PC, in the terminal screen and while in the SNMP System Configuration Setup, press the 'A' key to do filesystem upgrade.

```
Do TFTP and Flash File System function.
Are you sure?['y' or 'n']                    Answer with y

Start TFTP and Flash File System. Please Wait.....................
Upgrade Success!
```

Dots are added during flashing
DO NOT POWER OFF!!!!!

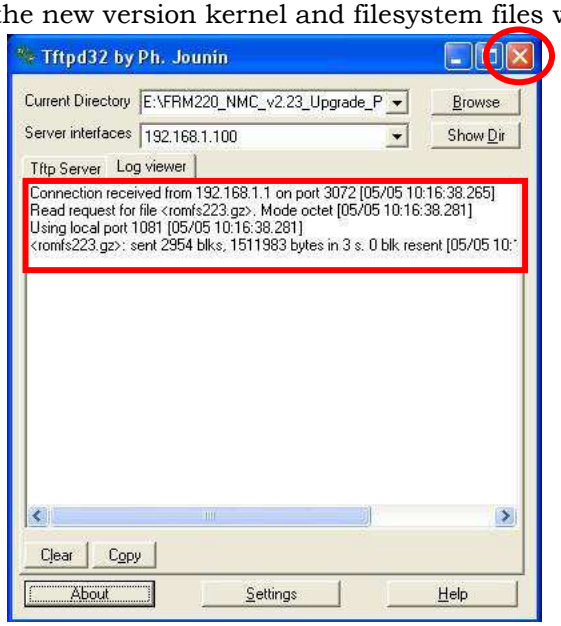
17. Press 'ESC' to the main menu and press 'R' to reboot the NMC with new kernel & filesystem.

```
               ****************************************
               *** CTC UNION TECHNOLOGIES CO., LTD. ***
               *** FRM220 NMC              VER. 1.32 ***
               ****************************************
This Chassis ID:[00]  Cascade:[Yes]    Monitored Chassis ID:[00]
Chassis List:
    #0:[X] #1:[ ] #2:[ ] #3:[ ] #4:[ ] #5:[ ] #6:[ ] #7:[ ] #8:[ ] #9:[ ]

<1>:SLOT #01 > NMC & Chassis          <B>:SLOT #11 > FRM220-10/100I
<2>:SLOT #02 > FRM220-10/100I         <C>:SLOT #12 > FRM220-10/100I
<3>:SLOT #03 > FRM220-10/100I         <D>:SLOT #13 > FRM220-10/100I
<4>:SLOT #04 > FRM220-10/100I         <E>:SLOT #14 > FRM220-10/100I
<5>:SLOT #05 > FRM220-10/100I         <F>:SLOT #15 > FRM220-10/100I
<6>:SLOT #06 > FRM220-10/100I         <G>:SLOT #16 > FRM220-10/100I
<7>:SLOT #07 > FRM220-10/100I         <H>:SLOT #17 > FRM220-10/100I
<8>:SLOT #08 > FRM220-10/100I         <I>:SLOT #18 > Empty
<9>:SLOT #09 > FRM220-10/100I         <J>:SLOT #19 > Empty
<A>:SLOT #10 > FRM220-10/100I         <K>:SLOT #20 > Empty
<->:Monitor previous chassis    <+>:Monitor next chassis
<L>:SNMP System Configuration Setup
<M>:SNMP Manager Configuration Setup
<P>:Password Setup
<R>:Reboot    <Z>:Logout
```

Reflects the previous version before reboot

18. Confirm TFTP transfer was OK by clicking the 'Log viewer' tab and then close the TFTP server application. (should indicate the new version kernel and filesystem files were sent)



19. Reboot the NMC with new kernel and filesystem. Confirm the version is now 2.23.

```
                ****************************************
                *** CTC UNION TECHNOLOGIES CO., LTD. ***
                *** FRM220 NMC              VER. 2.23 ***
                ****************************************
This Chassis ID:[00]  Cascade:[Yes]    Monitored Chassis ID:[00]
Chassis List:
    #0:[X] #1:[ ] #2:[ ] #3:[ ] #4:[ ] #5:[ ] #6:[ ] #7:[ ] #8:[ ] #9:[ ]

<1>:SLOT #01 > NMC & Chassis          <B>:SLOT #11 > FRM220-10/100I
<2>:SLOT #02 > FRM220-10/100I         <C>:SLOT #12 > FRM220-10/100I
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<4>:SLOT #04 > FRM220-10/100I         <E>:SLOT #14 > FRM220-10/100I
<5>:SLOT #05 > FRM220-10/100I         <F>:SLOT #15 > FRM220-10/100I
<6>:SLOT #06 > FRM220-10/100I         <G>:SLOT #16 > FRM220-10/100I
<7>:SLOT #07 > FRM220-10/100I         <H>:SLOT #17 > FRM220-10/100I
<8>:SLOT #08 > FRM220-10/100I         <I>:SLOT #18 > Empty
<9>:SLOT #09 > FRM220-10/100I         <J>:SLOT #19 > Empty
<A>:SLOT #10 > FRM220-10/100I         <K>:SLOT #20 > Empty
<->:Monitor previous chassis    <+>:Monitor next chassis
<L>:SNMP System Configuration Setup
<M>:SNMP Manager Configuration Setup
<P>:Password Setup
<R>:Reboot    <Z>:Logout
```

This completes the successful upgrade of the FRM220 NMC. View the 'release_note.txt' file in this package for changes in this version.

<END>

Fiber Series

CTC Union Technologies Co., Ltd.
Far Eastern Vienna Technologies Center
(Neihu Technology Park)
8F, No. 60, Zhouzi St., Neihu, Taipei, Taiwan
Phone:(886) 2.2659.1021 Fax:(886) 2.2.799.1355
E-mail: support@ctcu.com http://www.ctcu.com