5.4.5 Advanced Radio Setting

More radio parameters can be verified and altered by selecting the **Advanced** icon shown in Figure 15. The parameters are shown in Figure 21.

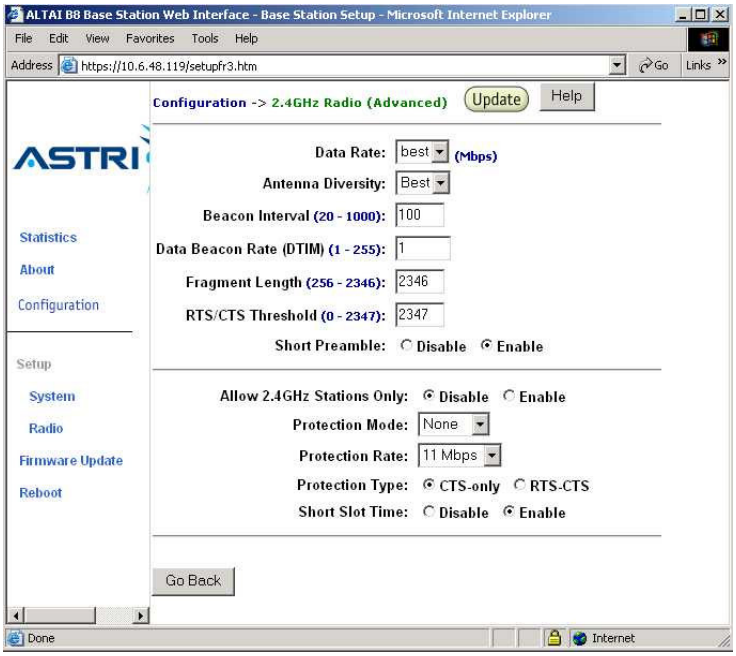

Figure 21. Advanced Radio Setting

5.5 802.11A SETTING IN WEB-ADMIN

The user can enable the 802.11a port by selecting **5GHz Radio** in menu bar, in Figure 22.

The MAC address of the opposite bridge should be added by clicking the icon **Add to List**. Also, both bridges should be set at the same **Radio Frequency**.

The 802.11a output power is set to be maximum in default setting, i.e. **Power Reduction** = 0. The maximum output power is 17dBm. The user could reduce the output power to 0dBm, i.e. set Power Reduction = 17.

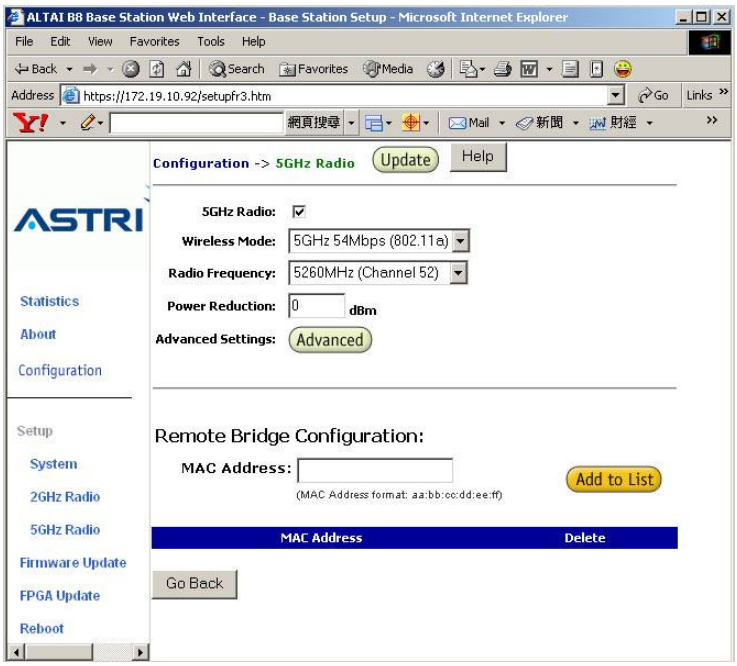

Figure 22. 802.11a Setting in Web-admin

5.6 DEFAULT SETTING IN WEB-ADMIN

The default settings can be restored by clicking the icon "**Reset to Factory Default Setting**" in the **System** menu in Figure 23. Please reboot the BTS afterwards.

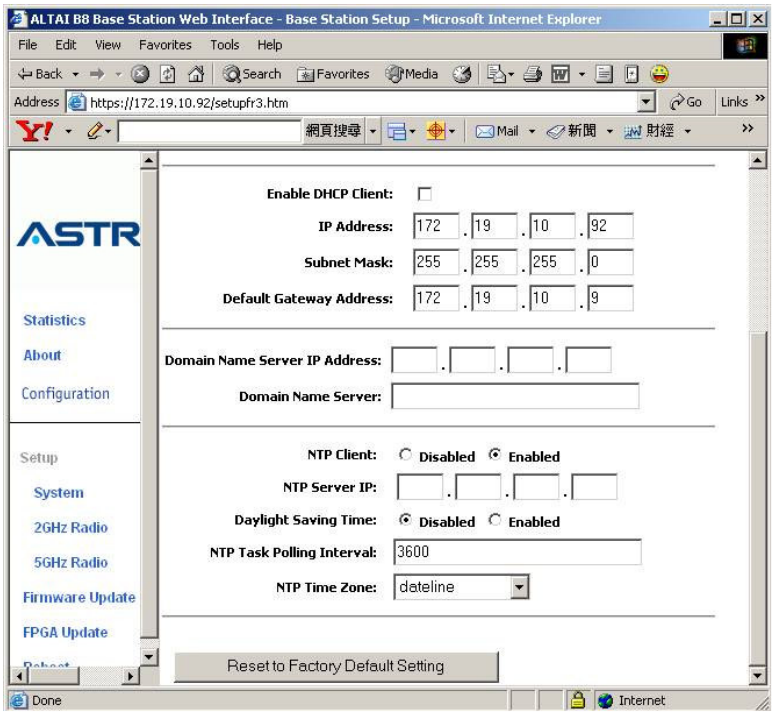

Figure 23. Reset to Factory Default Setting in Web-admin

5.7 REBOOT

The BTS can be rebooted by selecting **Reboot** from the tool bar. The user is required to confirm this command by clicking "**Please click here to reboot the base station**", as shown in Figure 23. It will take around 1 minute for the base station to boot up.

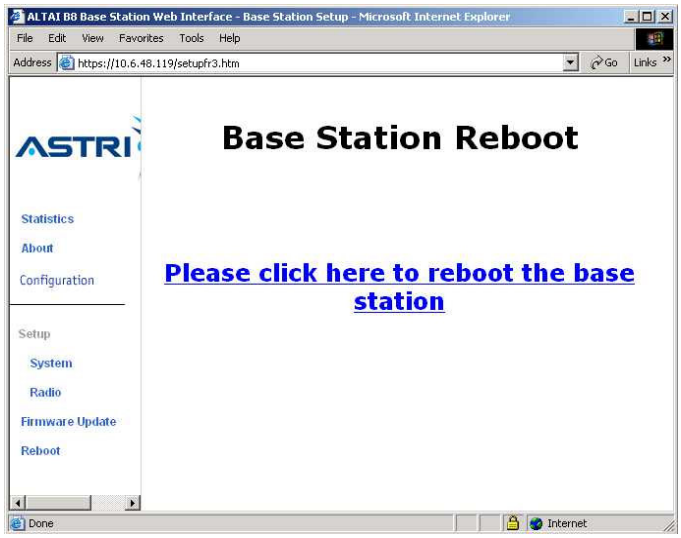

Figure 24. Reboot Window

6 PERFORMANCE MANAGEMENT MONITORING WEB-ADMIN

6.1 STATISTICS

The user can monitor the statistics by selecting **Statistics** in the tool bar. The corresponding statistics per AP can be selected by clicking the related MAC address, as shown in Figure 25 and Figure 26.

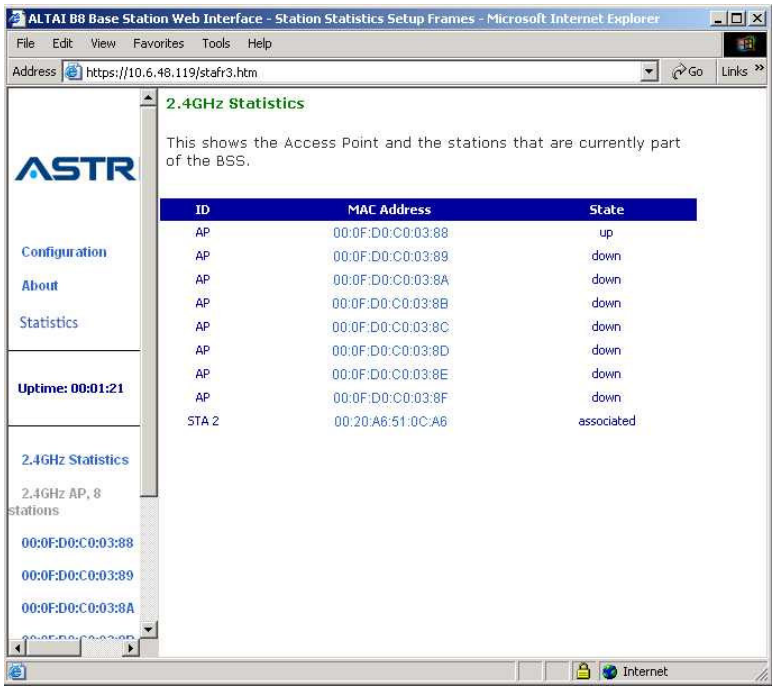

Figure 25. Statistics Menu

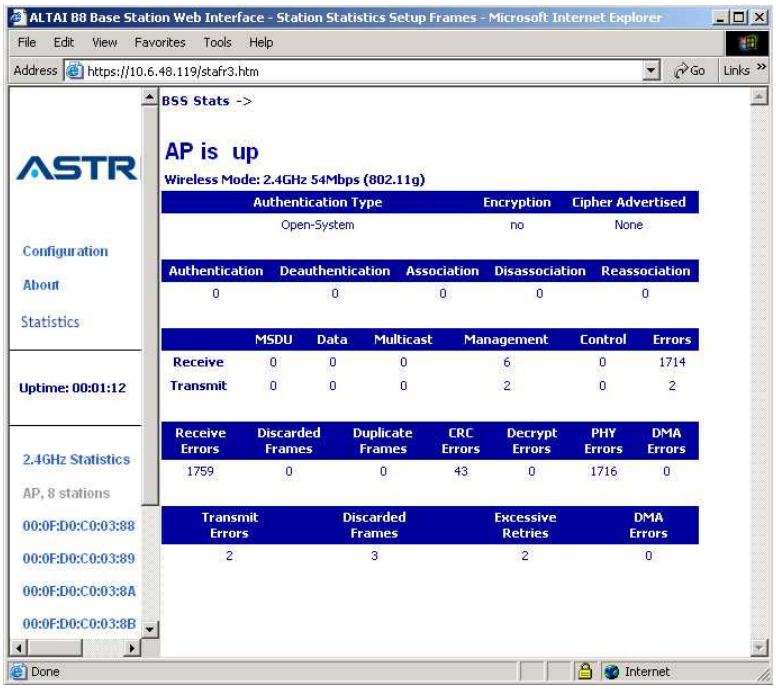

Figure 26. Statistics per VAP

7 SOFTWARE UPGRADE BY WEB-ADMIN

7.1 FIRMWARE UPDATE

The user can upgrade the firmware by selecting **Firmware Update** in the tool bar.

In the **Firmware Update (BASIC)** menu, click the icon **Update Firmware** if the FTP server setting has been defined before, as shown in Figure 27.

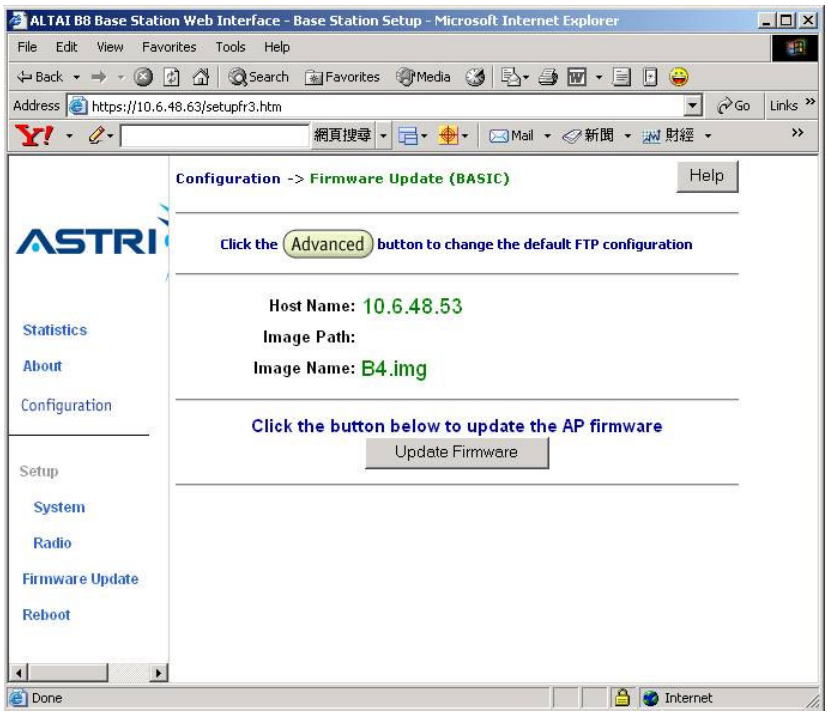

Figure 27. Firmware Update (Basic) – Web-admin

Update the FTP server setting by clicking the **Advanced** icon and perform the following:

1. Update the FTP information, as shown in Figure 28.
   - Host Name : IP address of the FTP server, where the new firmware is stored
   - User Name : The FTP user name
   - Password : The password of the FTP user
   - Image Path : The location of the file in the FTP server
   - Image Name : The new firmware file. It must be **B4.img**.
2. Select **Update Firmware** at the bottom to start uploading the new firmware from the FTP server.
3. If the firmware upgrade is successful, a window will appear as Figure 29. Click the iocn **REBOOT AP** to reboot the A8.
4. Check the firmware version by selecting **About** in the menu bar, as discussed in Section 5.2.

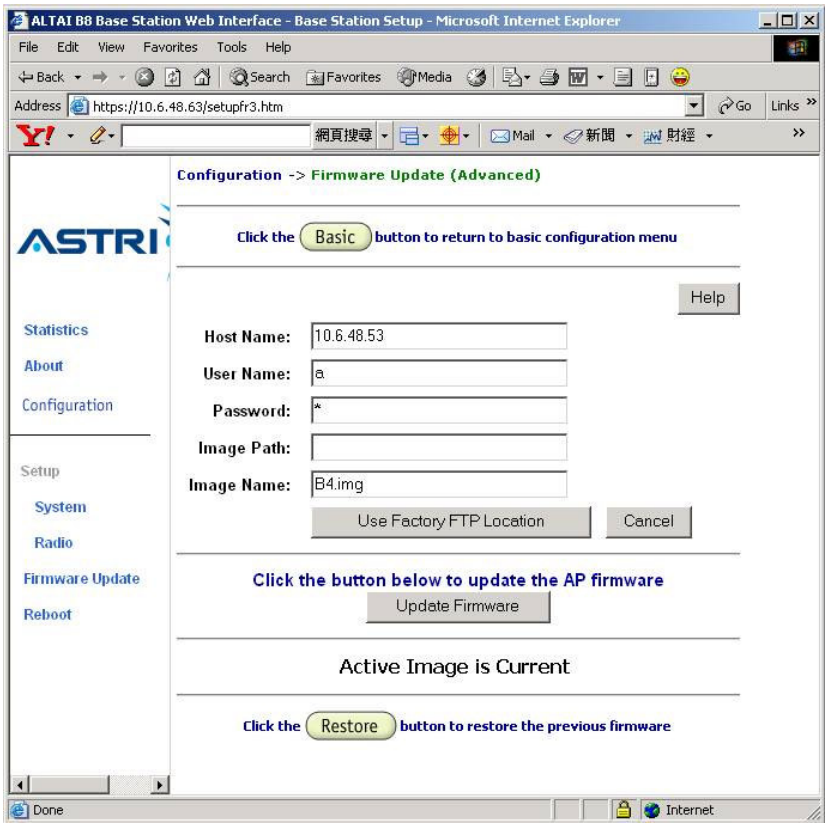

Figure 28. Firmware Update (Advanced) – Web-admin

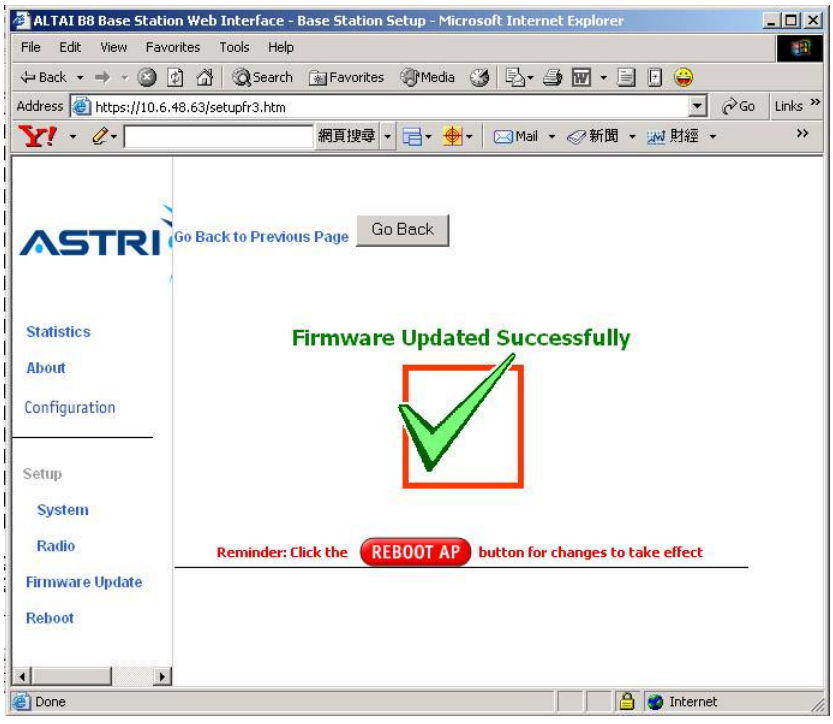

Figure 29. Successful Firmware Update – Web-admin

8 BOOT FROM A FTP SERVER

8.1 BOOT FROM NETWORK

The A8 may be booted from a firmware image located on a remote FTP server. This also provides an alternative method to boot the A8 if there is no available firmware inside the A8.

1. Store the new firmware image in the FTP Server. The name of the new firmware should be **B4.img**.
2. Create a user in the FTP server. Please refer to section 10 if you are not familiar with how to configure a user account on the FTP server.
3. Connect the FTP server and A8 onto the network; check the connection from the FTP server to the A8 using a ping command (or similar).
4. From the A8 CLI (connected through console), reboot the A8. Press any key to stop the reboot when you see the command "**`Press any key to stop auto-boot…`**" in the CLI window. The A8 will go to the BootROM state, as shown in Figure 30.
5. Type "**`c`**" to change the settings in the BootROM, as shown in "bold" letter:

```
- boot device             : ixe
- unit number             : 0
- processor number        : 0
- host name               : host
- file name               : B4.img
- inet on Ethernet (e)    : <your A8 ip address>
- host inet     (h)       : <your ftp server ip address>
- gateway inet (g)        : <gateway ip address>
- user (u)                : <your ftp username>
- ftp password (pw)       : <your ftp password>
- flags (f)               : 0x0
- other (o)               :
- startup script          : factory
```

6. Type "**p**" to check if the settings are correct, as shown in Figure 31.
1. And then, type "@" to reboot the A8 from the BootROM.
2. Check the current firmware version with the command **`version`** in the CLI. You may also check the memory and file size in the flash memory with the command **`ls`** in the CLI.

ATTENTION:

Booting from the network will not download any firmware to the local flash device inside the A8. If you want to boot with the same firmware without booting from network, you must first download the firmware to the A8 Flash memory. Please refer section 4.1 for the details.

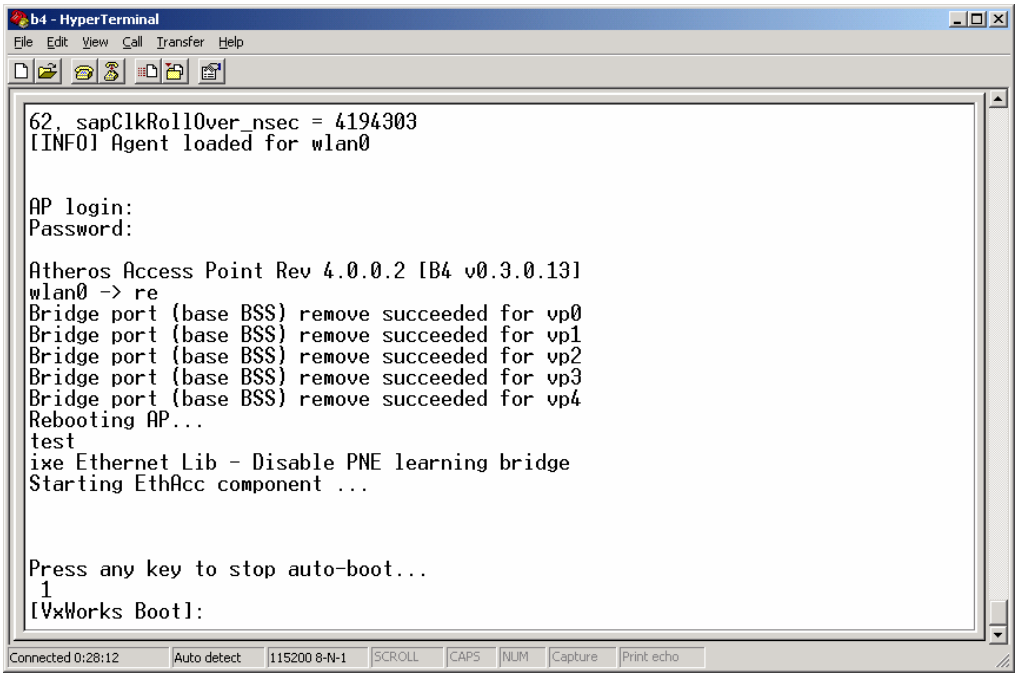

Figure 30. Go to A8 BootROM

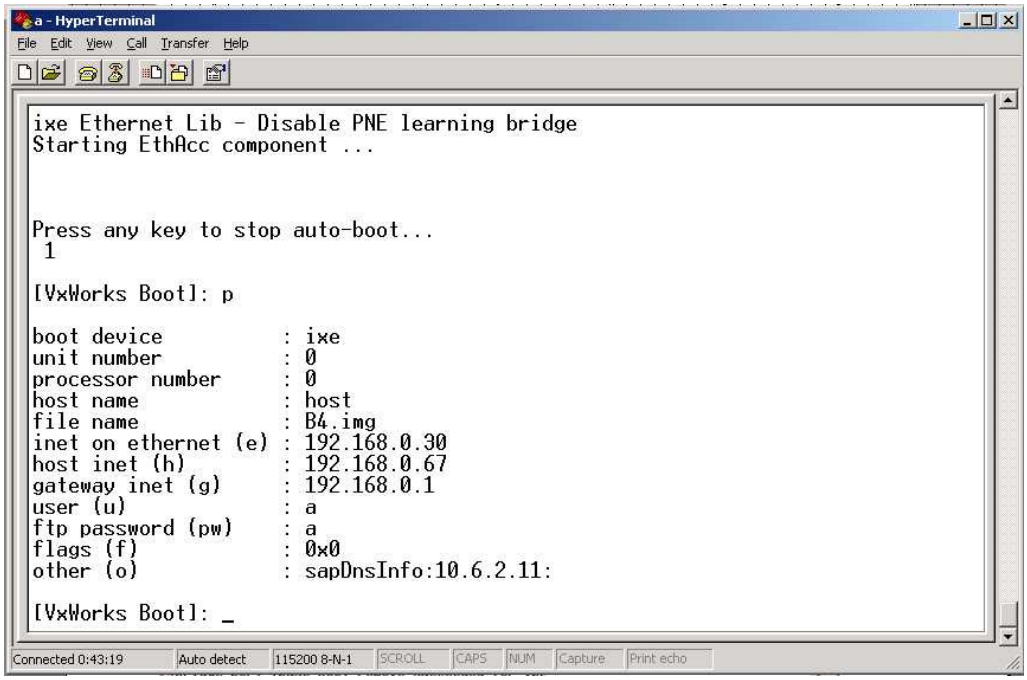

Figure 31. Network Boot Setting in BootROM

8.2 BOOT FROM LOCAL FLASH DEVICE

If there is firmware loaded into the A8 memory and you want to change the booting process from the FTP server to the local memory, you must change the parameters in the BootROM.

1. From theA8 CLI (connected through console), reboot the A8. Press any key to stop the reboot when you see the command "**`Press any key to stop auto-boot…`**" in the CLI window. The A8 will go to the BootROM state.
2. Type "**c**" to change the settings in the BootROM, as shown in "bold" letter:
   - **boot device : tffs:0**
   - unit number : 0
   - processor number : 0
   - host name : host
   - **file name : /fl/B4.img**
   - inet on ethernet (e) : <your A8 ip address>
   - host inet (h) : <your ftp server ip address>
   - gateway inet (g) : <gateway ip address>
   - user (u) : <your ftp username>
   - ftp password (pw) : <your ftp password>
   - flags (f) : 0x0
   - other (o) :
   - startup script : factory
3. Type "**p**" to check if the settings are correct, as shown in Figure 32.
4. And then, type "@" to reboot the A8 from the BootROM.

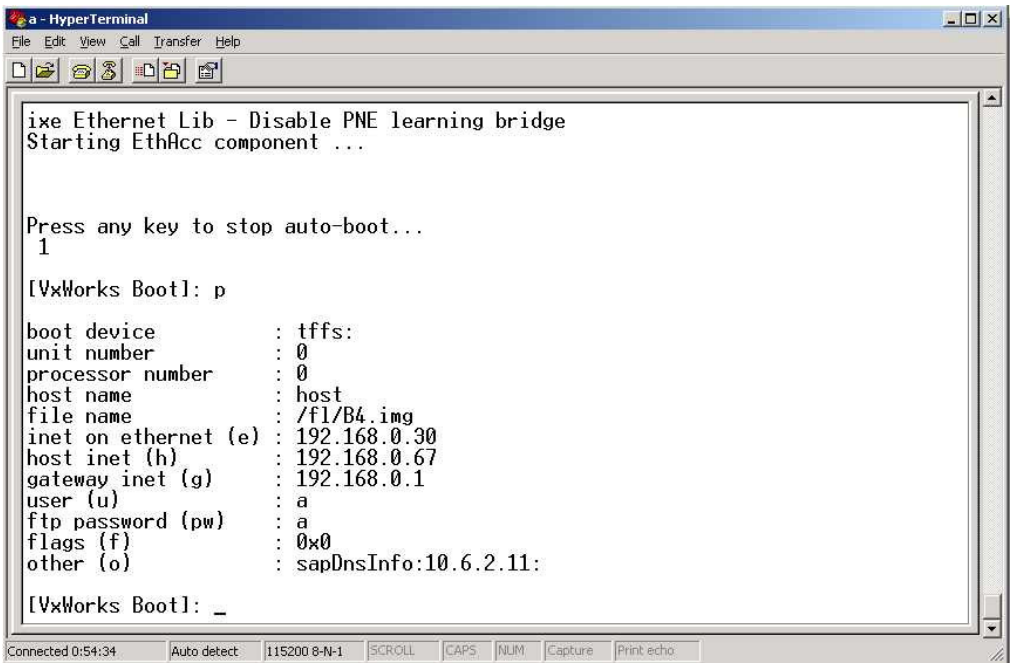

Figure 32. Local Boot Setting in BootROM

9 A8 RECOVERY

9.1 BOOT-UP FROM BOOTROM

If the A8 cannot boot up due to incorrect boot parameters, it can be recovered by booting up to the BootROM asoutline below:

1. Connect to the A8 using a serial console cable.
2. From the A8 CLI (connected to the console), reboot the A8. Press any key to stop the reboot when you see the command "**`Press any key to stop auto-boot…`**" in the CLI window. The A8 will go to BootROM state, as shown in Figure 30.
3. Type "**`c`**" and enter a command "**`factory`**" in the setting "**`startup script`**" in BootROM, as shown in "bold" letters:

```
- boot device             : ixe
- unit number             : 0
- processor number        : 0
- host name               : host
- file name               : B4.img
- inet on ethernet  (e)   : <your A8 ip address>
- host inet     (h)       : <your ftp server ip address>
- gateway inet (g)        : <gateway ip address>
- user (u)                : <your ftp username>
- ftp password (pw)       : <your ftp password>
- flags (f)               : 0x0
- other (o)               :
- startup script          : factory
```

4. Type "**p**" to check if the setting is correct, as shown in Figure 33.
5. And then, type "@" to reboot the A8 from the BootROM. The A8 will boot up with the factory default settings.

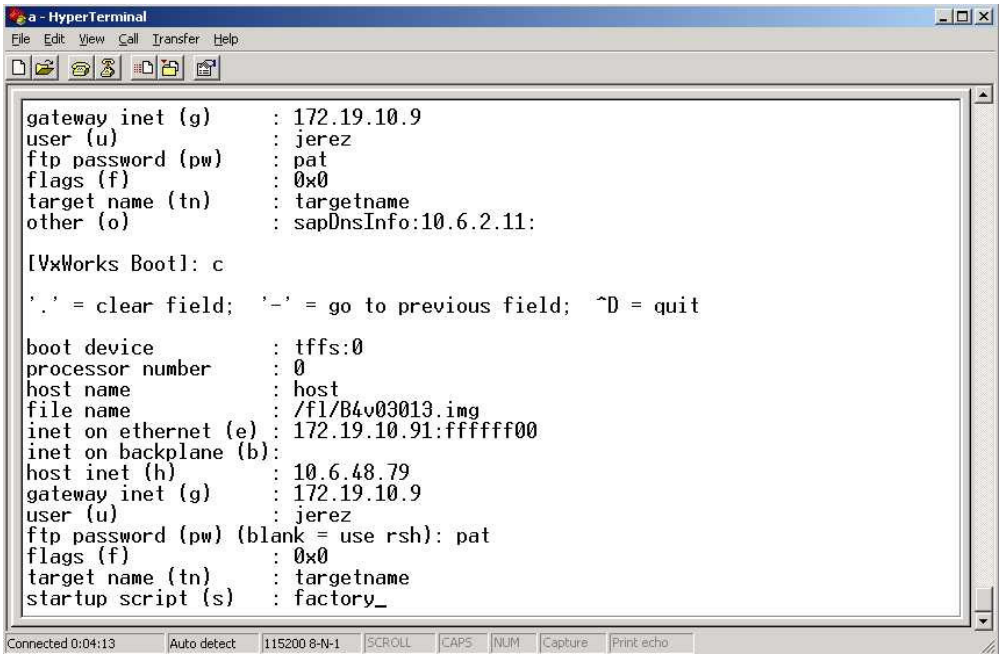

Figure 33. Enter command "**`factory`**" in startup script of BootROM

10 CONFIGURE A USER ACCOUNT IN THE FTP SERVER

This section will show how to configure a user account in the FTP server software. **GuildFTPd FTP Deamon** is used for demonstration purposes.

1. Install the software in the FTP server.
2. Under the **System** → **Group**, create a user account, for example "*ftpuser*", as shown in Figure 34.
3. After the user account is created, select the user account, and then click the icon "**edit user**" in the tool bar. Switch to Advanced Mode by clicking the bottom "**Advanced**" button in the "**edit user**" window, as shown in Figure 35. Press "**Yes**" for confirmation.
4. Select the user account again, and then click the icon "**add path**" in the tool bar. Click the bottom "**Browse…**" buttion, next to "**Local path:**" to select the location where the firmware file is stored.
5. The user account has successfully been created. You may download or upload the firmware using this account.

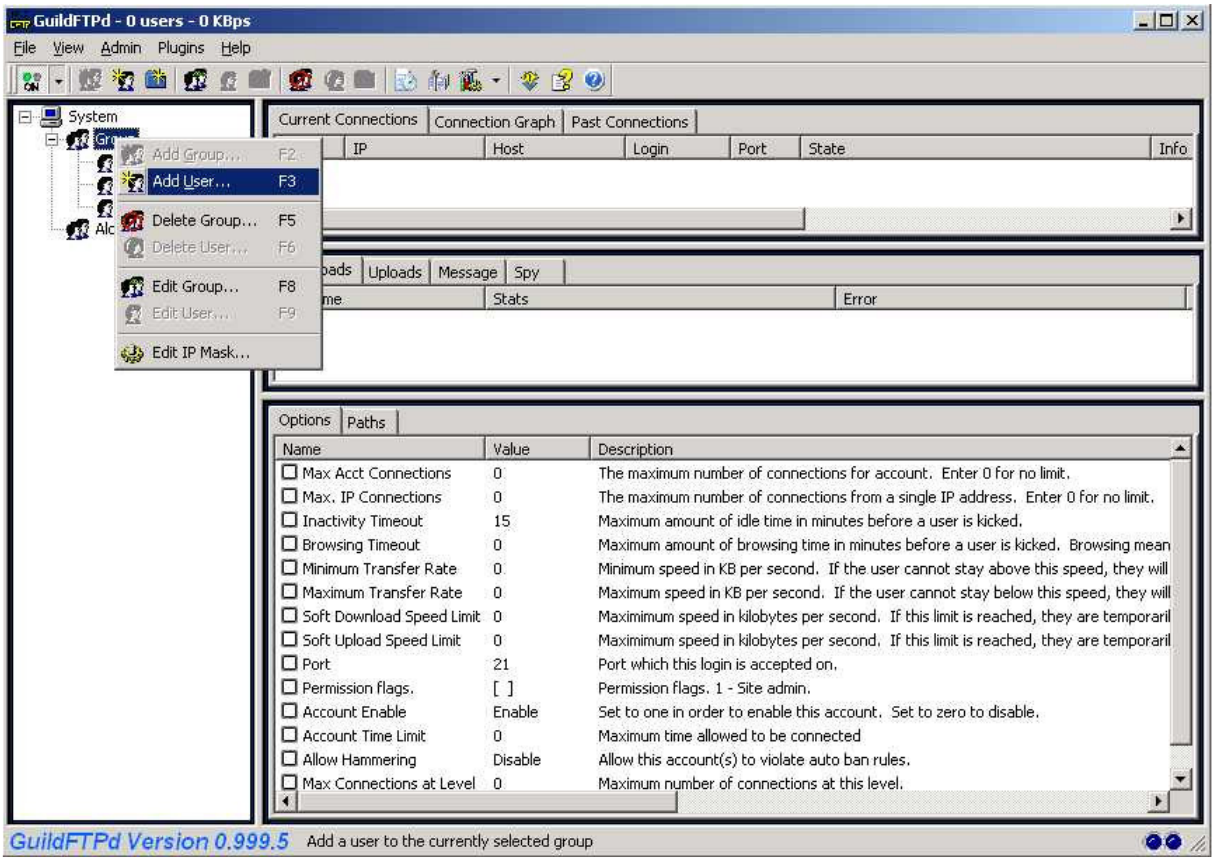

Figure 34. Creating a FTP user account

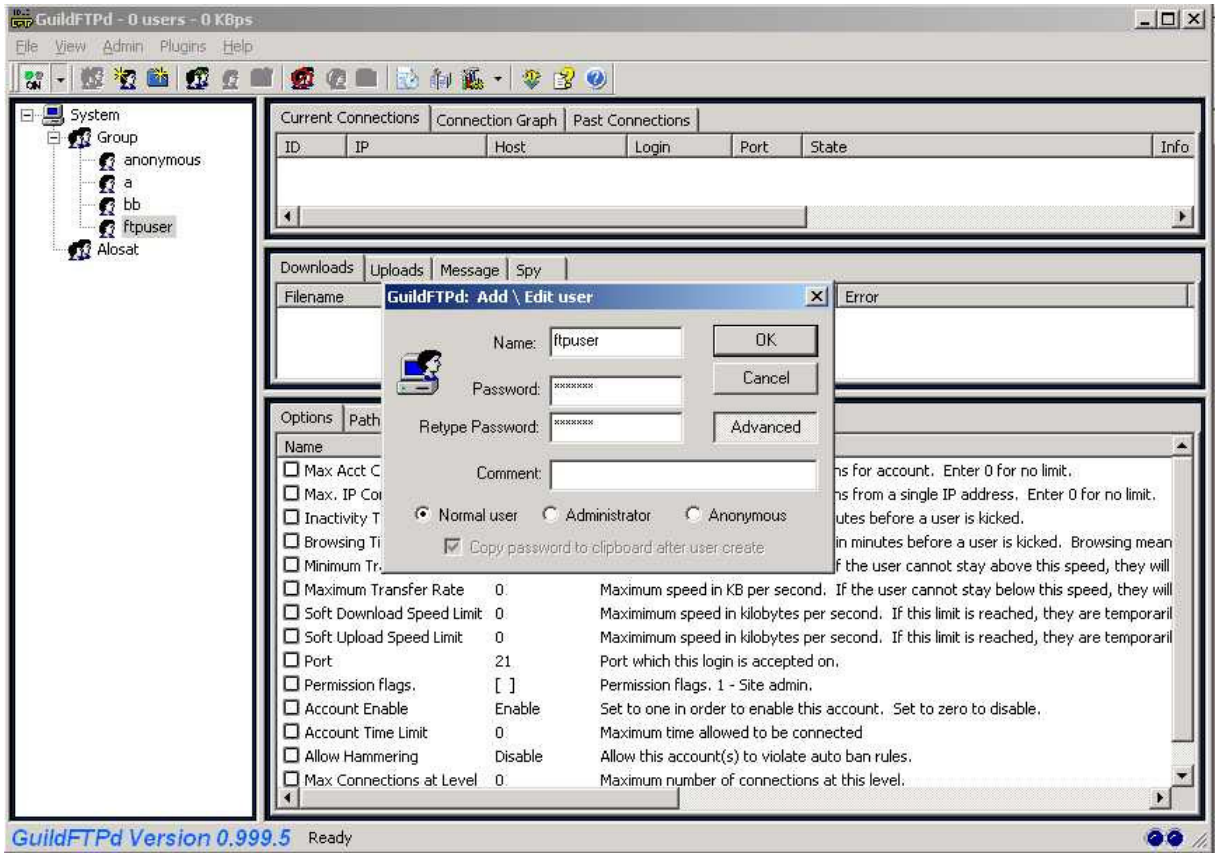

Figure 35. Activate a user account

11 ANTENNA USAGE AND TRANSMIT POWER

In order to comply with the FCC and Industry rules in the USA and other countries, it is required to set the maximum transmit power limits as follows according to the corresponding antenna gain.

		FCC Certified Antenna Configurations		
Wireless Mode	**Antenna Type**	**Maximum Conducted Transmit Power (EIRP Output power)**		
		Channel 1 – Channel 2	**Channel 3 – Channel 9**	**Channel 10 – Channel 11**
802.11b	14 dBi (B8-R2-75mm sector antenna)	17 dBm (31dBm EIRP)	20 dBm (34dBm EIRP)	18 dBm (32dBm EIRP)
802.11g		11 dBm (25dBm EIRP)	21 dBm (35dBm EIRP)	14 dBm (28dBm EIRP)

		FCC Certified Antenna Configurations	
Wireless Mode	**Antenna Type**	**Maximum Conducted Transmit Power (EIRP Output Power)**	
		Channel 52 – Channel 60	**Channel 64**
802.11a	10 dBi Omni	19 dBm (29dBm EIRP)	17 dBm (27dBm EIRP)
	18 dBi Directional	11 dBm (29dBm EIRP)	11 dBm (29dBm EIRP)

		FCC Certified Antenna Configurations	
Wireless Mode	**Antenna Gain**	**Maximum Conducted Transmit Power (EIRP Output Power)**	
		Channel 149 – Channel 161	**Channel = 165**
802.11a	8 dBi Omni	18 dBm (26dBm EIRP)	18 dBm (26dBm EIRP)
	18 dBi Directional Panel	17 dBm (35dBm EIRP)	21 dBm (39dBm EIRP)

12 APPENDIX – DEFAULT SETTING

PARAMETER	DESCRIPTION	DEFAULT VALUE
IPADDR	A8 IP address	192.168.1.222
IPMASK	Subnet mask	255.255.255.0
GATEWAY	Gateway's IP address	192.168.1.1
SSID	Name of SSID	B4_R1 - 0
SSIDSUPPRESS	Suppressing SSID	Disabled
CHANNEL	Operating frequency	6
POWER	RF output power level	21dBm
DHCPC	Get Dynamic IP address from DHCP server	Disabled
SNTPServer	Get clock from NTP server's IP address	(Blank)
TZONE	Relative Time zone of the A8 (GMT)	0
TIME	Get the current date and time of A8 BTS	(Blank)
CONFIG VIRTUAL	Go to configure a certain Virtual AP	0
ACTIVE	Check the status of the VAP	Enable (for VAP 0)
CONFIG WLAN	Go to configure a certain WLAN device	0
WLAN	Check the status of the WLAN device	Enable (for WLAN 0)
POWERREDUCTION	802.11a output power level relative to the maximum value, which is 17dBm	0
ASSOCIATION	Get the AP and Clients associated to the BTS	N/A