

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.

🚰 ALTAI B8 Base Stati	on Web Interface - Base Station Setup - Microsoft Internet Explorer	
File Edit View Fav	orites Tools Help	
Address en https://10.6.	48.119/setupfr3.htm	irks ∾
	Configuration -> 2.4GHz Radio (Advanced) Update Help	_
ASTRI	Data Rate: best 💌 (Mbps)	
	Antenna Diversity: Best 🚽	
	Beacon Interval (20 - 1000): 100	
Statistics	Data Beacon Rate (DTIM) (1 - 255): 1	
About	Fragment Length (256 - 2346): 2346	
Configuration	RTS/CTS Threshold (0 - 2347): 2347	
Satur	Short Preamble: C Disable 📀 Enable	
serup		_
System	Allow 2.4 GHZ Stations Only: O Disable C Enable	
Radio	Protection Mode: None	
Firmware Update	Protection Rate: 11 Mbps	
Reboot	Protection Type: © CTS-only © RTS-CTS	
	Short Slot Time: O Disable 🕐 Enable	
		_
	Go Back	
•		
Done	🔒 🎯 Internet	//

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.

File File lieue Fee	on Web Interface - Base Station Setup - Microsoft Internet Explorer	
Back	onices roois meip	
Address Address //172.	19.10.92/setupfr3.htm	Links
Y! · @.	網頁搜尋 ▼ □ ▼	>>
	Configuration -> 5GHz Radio Update Help	
	SCH2 Padio: 2	-
NSIRI	Wireless Mode: 5GHz 54Mbps (802.11a)	
	Radio Frequency: 5260MHz (Channel 52)	
Statistics	Power Reduction: 0 dem	
About	Advanced Settings: Advanced	
Configuration		_
Setup	Remote Bridge Configuration:	
System	MAC Address:	
2GHz Radio	(MAC Address format: aa:bb:co:dd:ee:ff)	
5GHz Radio	MAF Address Delete	7
Firmer a Hardete		
Firmware Opdate		

Figure 22. 802.11a Setting in Web-admin

5.6 **DEFAULT SETTING IN WEB-ADMIN**

ASTRI

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.

🚰 ALTAI B8 Base Stal	ion Web Interface - Base Station Setup - Microsoft Internet Explorer	<u>- 0 ×</u>
File Edit View Fa	vorites Tools Help	
↔ Back • ⇒ • 🕑	🕼 🐴 🔞 Search 🔝 Favorites 🥹 Media 🍪 🗗 🖕 🎒 🐨 🛨 📴	1
Address en https://172	19.10.92/setupfr3.htm	Links "
Y! - 2-	網頁搜尋 ▼ 📑 ▼ 曼 ▼ 🖂 Mail ▼ 🖉 新聞 ▼ 🔤 財經 ▼	**
_		-
	Enable DHCP Client: 🗌	
ASTR	IP Address: 172 . 19 . 10 . 92	
MJH	Subnet Mask: 255 255 0	
Statistics	Default Gateway Address: 172 . 19 . 10 . 9	
		-
ADOUL	Domain Name Server IP Address:	
Configuration	Domain Name Server:	
Satun	NTP Client: C Disabled @ Enabled	
Setup		
System		
2GHz Radio	Daylight Saving Time: O Disabled C Enabled	
5GHz Radio	NTP Task Polling Interval: 3600	
Firmware Update	NTP Time Zone: dateline	
FPGA Update		
Tohoot F	Reset to Factory Default Setting	*
🕘 Done	🔒 🔮 Internet	1

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

5.7 Rевоот

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.

ALTAI B8 Base Static	on Web Interface - prites Tools Help	Station Statistics Setup Frames - Micr	rosoft Internet Explorer	
Address 🕘 https://10.6.	48.119/stafr3.htm		▼ ∂ ² 60	Links '
ASTR	2.4GHz Statis This shows the of the BSS.	tics • Access Point and the stations	that are currently part	
	ID	MAC Address	State	
	AP	00:0F:D0:C0:03:88	up	
Configuration	AP	00:0F:D0:C0:03:89	down	
About	AP	00:0F:D0:C0:03:8A	down	
	AP	00:0F:D0:C0:03:8B	down	
Statistics	AP	00:0F:D0:C0:03:8C	down	
	AP	00:0F:D0:C0:03:8D	down	
	AP	00:0F:D0:C0:03:8E	down	
Jptime: 00:01:21	AP	00:0F:D0:C0:03:8F	down	
	STA 2	00:20:A6:51:0C:A6	associated	
2.4GHz Statistics				
2,4GHz AP, 8 ations				
00:0F:D0:C0:03:88				
00:0F:D0:C0:03:89				
00:0F:D0:C0:03:8A				
<u>1</u>			🔒 🎯 Internet	

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.

File Edit View Fa	vorites Tools Help			-		
🕁 Back 🔹 🔿 👻 🙆	🗿 🚮 🞯 Search	🐼 Favorites 🛞 Media 🎯 🔂 - 🎒 🖬	7 - 🖃 🕒 😜			
ddress 🙆 https://10.6	5.48.63/setupfr3.htm		. ∂ Go	Links		
¥! • @•		網頁搜尋 🔻 📑 🏾 🕁 🖛 🖂 Mail 🔹 🔗	新聞 🔹 🔤 財經 👻	*		
	Configuration -:	> Firmware Update (Advanced)				
ASTRI	Click the	Basic button to return to basic config	guration menu			
Statistics	Host Name:	10.6.48.53	Help			
About	Hoot Names					
Configuration	User Name:					
configuration	Password:	*				
88 • • • • • • • • • • • • • • • • • • •	Image Path:					
Setup	Image Name:	B4.img				
System Radio		Use Factory FTP Location	Cancel			
Firmware Update Click the button below to update the AP firmware Reboot Update Firmware						
Active Image is Current						
	Click the	Restore button to restore the previ	ious firmware			

Wireless Access Group

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="" address="" ip=""></your>
- host inet (h)	: <your address="" ftp="" ip="" server=""></your>
 gateway inet (g) 	: <gateway address="" ip=""></gateway>
– user (u)	: <your ftp="" username=""></your>
 ftp password (pw) 	: <your ftp="" password=""></your>
- 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

🗞 a - HyperTerminal	_0×
Elle Edit View Call Transfer Help	
ixe Ethernet Lib - Disable PNE learning bridge Starting EthAcc component	
Press any key to stop auto-boot 1	
[VxWorks Boot]: p	
boot device : ixe	
unit number : U	
host name : host	
file name : B4.img	
$1 \text{ net on ethernet } \{e\}$: 192.168.0.30	
(a) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	
user (u) : a	
ftp password (pw) : a	
other (o) : 0x0 : sapDnsInfo:10.6.2.11:	
[VxWorks Boot]: _	
Connected 0:43:19 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo	

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="" address="" ip=""></your>
_	host inet (h)	:	<your address="" ftp="" ip="" server=""></your>
_	gateway inet (g)	:	<gateway address="" ip=""></gateway>
_	user (u)	:	<your ftp="" username=""></your>
_	<pre>ftp password (pw) : <y< pre=""></y<></pre>	ou	r 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.

```
🍓 - HyperTerminal
                                                                                                             - 0 ×
<u>File Edit View Call Iransfer Help</u>
02 28 28
                                                                                                                  .
   ixe Ethernet Lib – Disable PNE learning bridge
  Starting EthAcc component ...
  Press any key to stop auto-boot...
   [VxWorks Boot]: p
  boot device
                                 tffs:
  unit number
                                 0
                                 Ñ
  processor number
  host name
file name
                                 host
                                 /f1/B4.img
192.168.0.30
192.168.0.67
  inet on ethernet (e)
host inet (h)
  gateway inet (g)
user (u)
ftp password (pw)
flags (f)
other (o)
                                 192.168.0.1
                                 а
                                 a
                                 0x0
                                 sapDnsInfo:10.6.2.11:
   [VxWorks Boot]: _
Connected 0:54:34
                  Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print
```

Figure 32. Local Boot Setting in BootROM

Wireless Access Group

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:

_	startup script	:	factory
—	other (o)	:	
_	flags (f)	:	0x0
_	ftp password (pw)	:	<your ftp="" password=""></your>
_	user (u)	:	<your ftp="" username=""></your>
_	gateway inet (g)	:	<gateway address="" ip=""></gateway>
_	host inet (h)	:	<your address="" ftp="" ip="" server=""></your>
_	inet on ethernet (e)	:	<your a8="" address="" ip=""></your>
_	file name	:	B4.img
_	host name	:	host
_	processor number	:	0
_	unit number	:	0
—	boot device	:	ixe

- 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.

Elle Edit View Gall Iransfer Help	
gateway inet (g) : 172.19.10.9 user (u) : jerez ftp password (pw) : pat flags (f) : 0x0 target name (tn) : targetname other (o) : sapDnsInfo:10.6.2.11: [VxWorks Boot]: c '.' = clear field; '-' = go to previous field; ^D = quit	
boot device : tffs:0 processor number : 0 host name : host file name : /fl/B4v03013.img inet on ethernet (e) : 172.19.10.91:fffff00 inet on backplane (b): host inet (h) : 10.6.48.79 gateway inet (g) : 172.19.10.9 user (u) : jerez ftp password (pw) (blank = use rsh): pat flags (f) : 0x0 target name (tn) : targetname startup script (s) : factory_	Ţ

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** \rightarrow **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)				
	Anoma Type	Channel 1 – Channel 3 – Chann Channel 2 Channel 9 Chan		Channel 10 – Channel 11		
802.11b	14 dBi	17 dBm (31dBm EIRP)	20 dBm (34dBm EIRP)	18 dBm (32dBm EIRP)		
802.11g	(B8-R2-75mm) sector antenna)	11 dBm (25dBm EIRP)	21 dBm (35dBm EIRP)	14 dBm (28dBm EIRP)		

		FCC Certified Anten	na Configurations
Wireless Mode Antenna Type		Maximum Conducte (EIRP Outpe	d Transmit Power ut Power)
		Channel 52 – Channel 60	Channel 64
902 11 5	10 dBi Omni	19 dBm (29dBm EIRP)	17 dBm (27dBm EIRP)
002.114	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
800 11 a	8 dBi Omni	18 dBm (26dBm EIRP)	18 dBm (26dBm EIRP)
002.118	18 dBi Directional 17 dBm Panel (35dBm EIRF	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