

Table 8-11 Description for RU Commissioning status

Status		Display	Description
Installed Status	Installed	RU-PCS	Text is black
	Not-Installed	RU-CH7	Text is gray
Commissioning Status	Success	•	Green
Commissioning Status	Fail or not yet	0	Gray

8.2.2.5.3 Alarm

|--|

		Alarm		Severity	Description
	Syst	em	Link Fail	Soft Fail	Present when a module cannot communicate with the
	System	Power Alarm			NWI3
	Link Fail				
	System Halt				System will go into a "System Halt" state when a hard
			System Halt	Hard Fail	fail alarm does not clear after 10 checks. System Halt can only be cleared with a power cycle, reboot, or factory settings.
	Normal Soft Fail	Hard Fail Link Fail			
Γ	Power	Alarm	AC Fail	Soft Fail	AC power is not within parameters.
	System RF A	larm Power Alarm			
	AC Fail		DC Fail	Soft Fail	DC power is not within parameters.
	DC Fall				
	Over Current		Over Current	Hard Fail	Total current of RU is higher than the threshold level for
	Battery Low				over current alarm
	Normal Soft Fail	Hard Fail	Battery Low	Soft Fail	Voltage of battery connected to RU PSU is lower than the defined threshold

8.2.2.6 Status – Remote module







8.2.2.6.1 Band

Display the spectrum that is being used. The band column displays the bandwidth that has been used. The downlink column displays the center frequency of the used downlink band. The uplink column displays the center frequency of the used uplink band.

PCS Band		
Band		
65 MHz	1962. 5 MHz	1882.5 MHz

Figure 8-29 PCS Band Information (Status – Remote Module)

8.2.2.6.2 Power & Gain (Admin/User)

Display the Downlink output, Downlink/Uplink Attenuation, and Uplink Input/output.

PCS	Downlink	Uplink
Input (dBm)		-50.8
ALC Atten [dB]	0.0	0.0
Atten [dB]	6.5	0.0
[M]Output [dBm]	-16.1	-17.8
[H]Output [dBm]	16.8	

Figure 8-30 Power & Gain (Admin)

Power & Gain		
PCS	Downlink	
Input [dBm]		
Atten [dB]	9.0	7.5
Output [dBm]	25.6	

Figure 8-31 Power & Gain (User)

Admin

- Input [dBm]: Displays the RF input level for Uplink only for the Remote Module.
- o ALC Atten [dB]: The amount of attenuation used when ALC is activate.
- Atten [dB]: The amount of attenuation manually set by the user.
- o [M]Output [dBm]: Output power of RF transceiver (1st stage amplification).
- [H]Output [dBm]: Output power of downlink HPA (2nd stage amplification).
- User
- o Input [dBm]: Displays the RF input level for Uplink only for the Remote Module.
- Atten [dB]: The amount of attenuation manually set by the user.
- Output [dBm]: Displays the total composite output power.



8.2.2.6.3 Optic Power (Master-RU Only)

Display the LD Power and PD Power of optic module inside the Master RU.

Optic Power		
Power	0.3	6.9

Figure 8-32 Optic Power (Status – Master RU only)

8.2.2.6.4 Operating Status

Table 8-13 Operating Status (Status – Remote Module)

Alarm		Severity	Description
System	Link Fail	Soft Fail	No communication with NMS.
System RF Alarm Power Alarm	Over Temperature	Hard Fail / Soft Fail	Temperature is higher than the threshold level for over temperature alarm.
Link Fail Over Temperature	Under Temperature	Soft Fail	Temperature is lower than the threshold level for under temperature alarm.
Under Temperature System Halt ORU LD Fail	System Halt	Hard Fail	System halt on either the Master RU or Slave RU. System halt occurs when a hard fail alarm fails to clear after 10 checks.
ORU PD Fail	ORU LD Fail	Soft Fail	LD Fail present in the Master RU's optic unit.
Normal Soft Fail Hard Fail Link Fail	ORU PD Fail	Soft Fail	PD Fail present in the Master RU's optic unit.
RF Alarm System RF Alarm Power Alarm	Input Overload	Hard Fail	Uplink input signal is higher than the defined threshold.
Input overload	Over Power	Hard Fail / Soft Fail	Downlink output signal is higher than the defined threshold by user.
Over Power VSWR	Under Temperature Under Temperature Under Temperature System Halt System Halt ORU LD Fail ORU LD Fail System Halt ORU DP Fail Soft Fail Normal Soft Fail March Fail Link Fail ORU DP Fail Soft Fail LD Fail Soft Fail LD Fail Soft Fail LD Fail Soft Fail Power Alarm Over Power VSWR Soft Fail VSWR Soft Fail Under temperature Uplink input threshold. Over Power Hard Fail VSWR Soft Fail Upper Power Alarm VSWR Soft Fail Hard Fail Power Alarm AC Fail Soft Fail AC power is	Triggered when power is being reflected back to the system, typically due to a loose connector.	
Power Alarm System RF Alarm Power Alarm	AC Fail	Soft Fail	AC power is not operating within parameters.
AC Fail DC Fail	DC Fail	Soft Fail	DC power is not operating within parameters.
Over Current Battery Low	Over Current	Hard Fail	Total current of RU is higher than the threshold level for over current alarm.
Normal Soft Fail Hard Fail Link Fail	Battery Low	Soft Fail	Voltage of battery connected to HE PSU is lower than the defined threshold.

	. FOR SUCCESS	
8.2.3	Control Tab	
8.2.3.1	Control – NMS	
	ADF	Status Control Install System Help Logout
	ADX-H-NMS Site ID : bbbbbbbbbb	Heartbeat Time HE System SNMP Trap On Reboot Factory Setting
	Unlock System Expand All Collapse All	Heartbeat Interval [min] 1.0 NMS
	NMS * [1] RFU-Cell * [2] RFU-PCS * [3] RFU-AWS * [4] RFU-700 * [1] BCU-700	Apply

Figure 8-33 Control - NMS

8.2.3.1.1 Heartbeat Time

Allows the user to enable or disable SNMP traps from being sent out and also specify the Heartbeat interval. Time and date stamps of the last 2 heartbeats will be displayed in the "Last heartbeat sent out" section.

Heartbeat Time	
SNMP Trap On	
Heartbeat Interval [min]	1.0 💌
Last heartbeat sent out :	
	//::
	//
	Apply

Figure 8-34 Heartbeat (Control – NMS)

8.2.3.1.2 HE System

Allows the user to perform a HE system reboot or HE full system factory settings



Figure 8-35 HE System Reboot & Factory Setting (Control – NMS)

8.2.3.1.3 NMS System

Allows the user to perform a NMS Unit reboot or NMS factory settings

5	
Reboot	Factory Setting





8.2.3.2 Control - BCU

IDX-H-BCU-P	Manual ATT Cont	rol						
			PATH A (Carrier A)		PATH B (Carrier B)		PATH C (Carrier C)	
	Downlink	[dB] 3	0.0	•	30.0	•	30.0	
Unlock System	Uplink [dB] 3	0.0	•	30.0	•	30.0	
Expand All Collapse All	DL Output A	LC Level 5	.0	-	5.0	-	5.0	-
	[dBm]			9.8			
[3] RFU-AWS	BCU				Alarm Setting			
[3] RFU-AWS								
[1] BCU-700								
[2] BCU-Cell	Reboot	Fa	ctory Setting		Downlink Input	it Over	load [dBm] 25.0	
[3] BCU-PCS					Downlink Sign	al Low	[dBm] -5.0	
[4] BCU-AWS								
[1] OPT					I Downlink	Input	Overload Alarm On	
[2] OPT					🛞 🗹 [PATH	A]Dov	vnlink Signal Low A	larm (
141 UP1 ()					🕘 🖭 [PATH -	R] Dov	vntink Signal Low A	arm (



8.2.3.2.1 Manual ATT Control

Downlink [dB]	30.0	30.0 💌	30.0
Uplink [dB]	30.0	30.0 💌	30.0
DL Output ALC Level	5.0	5.0 💌	5.0
[dBm]		9.8	

Figure 8-38 Control – BCU Manual ATT Control

- *Downlink*: Allows the user to manually adjust the DL attenuation levels for each RF path. Adjusting these settings is not recommended since it will change the power ratios set by the user.
- Uplink: Allows the user to manually adjust the UL attenuation levels for each RF path. Adjusting these settings is not recommended, unless additional attenuation is needed on the UL path.
- *DL Output ALC Level*: Allows the user to manually set the DL Output ALC Levels for each RF path. Adjusting these settings is not recommended since it will change the power ratios set by the user. These settings are automatically set by the system during the BCU commissioning process. This section also displays the composite DL Output ALC Level which is the value that can be used to commission the RFU.



8.2.3.2.2 Reboot / Factory Setting

Allows the user reboot or restore factory settings of the BCU. $_{\rm BCU}$



Figure 8-39 Control – BCU Reboot/Factory Setting

8.2.3.2.3 Alarm Setting

Downlink Input Overload [dBm]	25.0 💌
Downlink Signal Low [dBm]	-5.0 💌
I Downlink Input Overload Ala	rm On
💿 🗹 [PATH - A] Downlink Signal	Low Alarm On
	Low Alarm On
I PATH - B] Downlink Signal	con marin on
 PATH - B] Downlink Signal PATH - C] Downlink Signal 	Low Alarm On



- Downlink Input Overload: Allows the user to specify the level at which the DL Input Overload alarm is triggered. Values range from 0 dBm to +25 dBm.
- Downlink Signal Low: Allows the user to specify the level at which the DL Signal Low alarm is triggered. Values range from -10 dBm to +20 dBm.
- Downlink Input Overload Alarm On: Allows to user to enable or disable the Input Overload Alarm
- [*Path* A/B/C] Downlink Signal Low Alarm On: Allows the user to enable or disable the DL Signal Low alarm for each RF path.

8.2.3.3 Control - RFU

ADF	Status Control	Install System	n Help Logout	
	General Setting		Manual Atten Control	
ADX-H-RFU-C	Downlink ALC	Unlink ALC	Downlink	
Site is .	Downlink On	Uplink On	Downlink Atten [dB]	10.0 💌
A		Uplink Noise Det	DL Output ALC Level [dBm]	-4.0 💌
Unlock System		Analy	DL Output ALC Offset [dB]	5.0 -
Expand All Collapse All		ubbui	Uplink	
- NMS 🔵			Uplink Atten [dB]	10.0
• [1] RFU - Cell			UL Output ALC Level [dBm]	-4.0
* [3] RFU - PCS			IL Output ALC Offset [dB]	3.0 💌
* [4] RFU - AWS				Analy
* [6] RFU - PCS				whhit
* BCU - 700	RFU		Alarm Setting	
* BCU - PCS				
* BCU - AWS	Reboot	Factory Setting	Downlink Signal Low [dBm]	-5.0 💌
* [7] RFU - PCS 🔵			Downlink Signal	_
* [8] RFU - AWS 🔵	III Noise Detection		Not Detected [dBm]	-10.0
+ OPT - 1	or mose perection		Uplink Overpower [dBm]	0.0
+ OPT - 2	UL Noise Det	J	Coheren euclideanen fermit	0.0
+ OPI-3				

Figure 8-41 Control - RFU



8.2.3.3.1 General Setting

To enable any of the settings, click on the checkbox and click the Apply button.

eneral Setting	
Downlink ALC	Uplink ALC
Downlink On	Uplink On
	Uplink Noise Det
	Apply

Figure 8-42 General Setting (Control – RFU) (Admin)

neral Setting	
Downlink ALC	✓ Uplink ALC
Downlink On	Uplink On
	Uplink Noise Det
	Apply

Figure 8-43 General Setting (Control – RFU) (User)

Table 8-14 Description for General Setting

Name	Description	Available Accounts
Downlink ALC	Enables or disables Downlink ALC	Administrator
Uplink ALC	Enables or disables Uplink ALC	Administrator
Downlink ON	Enables or disables the RFU Downlink path	Administrator, User
Uplink ON	Enables or disables the RFU Uplink path	Administrator, User
Uplink Noise Det	Displays if the module is turned on or off due to the UL Noise Detection Routine	Administrator

8.2.3.3.2 Reboot / Factory Setting

Allows the user reboot or restore factory settings of the RFU.

FU	
Reboot	Factory Setting

Figure 8-44 Reboot & Factory Setting (Control – RFU)

8.2.3.3.3 Uplink Noise Detection (Admin Only)

UL Noise Detection

UL Noise Det	

Figure 8-45 UL Noise Detection (Control – RFU)



The "UL Noise Det" button will take you to the UL Noise Detection page which will allow you to run the UL Noise Detection routine.

ADF	Status Control	Install Syste	m Help Logout		
ADX-H-RFU-C Site ID :	[Cell] UL Noise Det Progress Base UL Noise Level (Al	l RUs turned off)	Check		
Unlock System Expand All Collapse All	Number	Model Name	Path	Description	Detected Detected Level Level - Min Level Level
NMS [1] RFU - Cell [2] RFU - AWS [3] RFU - PCS [4] RFU - AWS [5] RFU - 2WS [5] RFU - 700		Source	search		Download

Figure 8-46 UL Noise Detection - PCS band

The Auto UL noise measurement routine can be run by clicking on the Check button. After all UL noise measurement have been taken, the levels for each UL path will be displayed and along with the difference between minimum detect level and measured detect level.

The user will be able to see which path is generating the elevated UL noise level based on the measured detect level and difference value.

To navigate back to the RFU control page, click on the Control tab again.

8.2.3.3.4 Manual Atten Control



(Admin)

(User)

Figure 8-47 Manual Attenuator Control Setting (Control – RFU)

Table 8-15 Description for Main Gain Control Setting (Control – RFU)

Name	Description	Range	Step	Available Accounts
Downlink Atten	Downlink Attenuator to be adjusted manually	0 ~ 25dB	0.5dB	Administrator, User
Uplink Atten	Uplink Attenuator to be adjusted manually	0 ~ 35dB	0.5dB	Administrator, User
DL Output ALC Level	To set the Max output ALC level	-10 ~ 0dBm	0.5dBm	Administrator
UL Output ALC Level	To set the Max output ALC level	-20 ~ 0dBm	0.5dBm	Administrator, User



DL Output ALC Offset	To set the Max output ALC Offset	-10 ~ 0dBm	0.5dBm	Administrator
UL Output ALC Offset	To set the Max output ALC Offset	-20 ~ 0dBm	0.5dBm	Administrator

8.2.3.3.5 Alarm Setting

Downlink Signal Low [dBm]	-5.0
Downlink Signal Not Detected [dBm]	-10.0
• Uplink Overpower [dBm]	0.0

Figure 8-48 Alarm Threshold Setting (Control – RFU)

Table 8-16 Description for Alarm Threshold Setting (Control – RFU)

Name	Description	Range	Default threshold
Downlink Signal Low	Allows the user to specify the minimum incoming DL input signal level before triggering a "Downlink Signal Low" soft-fail alarm.	-10 ~ 20dBm	-5dBm
Downlink Signal Not Detected	Allows the user to specify the minimum incoming DL input signal level before triggering a "Downlink Signal Not Detected" soft-fail alarm.	-10 ~ 20dBm	-10dBm
Uplink Over Power	Allows the user to specify the how strong the output signal of uplink can be before triggering an "Uplink Over Power" Hard Fail alarm.	-20 ~ 0dBm	0dBm



8.2.3.4 Control - ODU ADF Status Control Install System Help Logout ADX-H-OPT Common Attenuation Site ID : DL UL 5.0 💌 5.0 💌 Remote Unit 8 UL ATT PD Power LD Power PD Power DL ATT LD Pov Unlock System Link 1-1 12.0 💌 6.5 💌 Clink 1-2 6.5 **•** 6.5 **•** 12.5 💌 Expand All Collapse All Link 1-3 12.5 💌 C Link 1-4 11.5 💌 NMS 0 8.5 💌 * [1] RFU - Cell Apply Apply * [2] RFU - AWS * [3] RFU - PCS Common Attenuation * [4] RFU - AWS * [5] RFU - 700 DL UL 5.0 💌 5.0 💌 Remote Unit * [6] RFU - PCS * BCU - 700 LD Power 6.7 7.0 PD Power 1.0 0.9 LD P PD Power UL ATT DL ATT 12.5 V 12.5 V 12.5 V 8.0 × 8.0 × 8.0 × Link 1-5 * BCU - Cell Link 1-6 * BCU - PCS * BCU - AWS Link 1-7 * [7] RFU - PCS * [8] RFU - AWS Link 1-8 8.5 💌 12.5 💌 Apply Apply OPT - 1 RU-Hub - 1 RU-Hub - 2 RU-Hub - 3 RU-Hub - 4 OF -Factory Setting Reboot Figure 8-49 Control – OPT

8.2.3.4.1 Optic Attenuation (Admin Only)



Figure 8-50 Optic Attenuation – OPT



Table 8-17 Description for Optic Attenuation (Control – OPT)

Name	Description	Range	Default threshold
DL/UL common ATT	Allows the user to control overall optic DL/UL path gain.	0 ~ 30dB	5dB
DL ATT	Used to compensate DL optic loss.	0~13dB	13dB
UL ATT	Used to compensate UL optic loss.	0~13dB	13dB

8.2.3.4.2 Reboot/Factory Setting

```
Allows the user to perform ODU reboot or ODU factory settings.
```

OPT

Reheat	Eactory Setting
Repoor	ractory octung

Figure 8-51 Reboot & factory Setting (Control – OPT)

8.2.3.5 Control – RH Hub

ADF	Status Control Install System Help Logout
ADX-DAS-RCU Site ID : adrf	RU System Raboot Factory Setting
Expand All Collapse All	
* RFU - AWS OPT - 1 RU-Hub - 2	
* M-RU - PCS	
+ RU-Hub - 3	
	Figure 8-52 Control – RU Hub

8.2.3.5.1 Reboot/Factory Setting

Allows the user to perform RU Hub reboot or RU Hub factory settings





Figure 8-53 Reboot & Factory Setting (Control – RU Hub)



8.2.3.6 Control – Remote Module (Master or Slave RU)

ADF	Status Control Install System	Help Logout
	General Setting	Manual Atten Control
ADX-R-P30 Site ID :	Downlink ALC	Downlink
	Downlink On Uplink On	Downlink Atten [dB] 6.5
A	Uplink Noise Det	DL Output ALC Level [dBm] 30.0
Unlock System	Anniv	DL Output ALC Offset [dB]
Expand All Collapse All		Uplink
- NMS	RU	Uplink Atten [dB]
* [1] RFU - Cell	Reboot Factory Setting	UL Output ALC Level [dBm] 6.0 ▼
* [3] RFU - PCS	Optic Setting	⑧ UL Output ALC Offset [dB] 3.0 ▼
* [4] RFU - AWS	Downlink Optic Atten [dB]	Apply
* [6] RFU - PCS	PD Power[dBm] 0.6	
* BCU - 700	ID Power[dBm] 6.2	Alarm Securig
* BCU - PCS		Downlink Overpower [dBm]
* BCU - AWS 🔵	Apply	VSWR Alarm On
* [7] RFU - PCS		
* [8] RFU - AWS		Apply
- OPT - 1		

Figure 8-54 Control – Remote Module

8.2.3.6.1 General Setting (Admin/User)

eneral Setting		General Setting	
Downlink ALC	Uplink ALC	Downlink ALC	Uplink ALC
Downlink On	Uplink On	Downlink On	Vplink On
	Uplink Noise Det		Uplink Noise Det
	Apply		Apply
(Ad	min)		(User)

Figure 8-55 General Setting (Control - RU)

Table 8-18 Description for General Setting (Control - RU)

Name	Description	Available Accounts
	This setting allows you to enable or disable the downlink ALC function. When	
Downlink ALC	ALC is enabled, the downlink output power will not exceed the Downlink	Administrator
	Output Level specified in the Manual Atten Control section.	
Downlink On	This setting allows you to enable or disable the Downlink path.	Administrator, User
	This setting allows you to enable or disable the uplink ALC function. When ALC	
Uplink ALC	is enabled, the Uplink output power will not exceed the Uplink Output Level	Administrator
	specified in the Manual Atten Control section.	
Uplink On	This setting allows you to enable or disable the Uplink path.	Administrator, User



8.2.3.6.2 Reboot/Factory Setting

Allows the user to Reboot or restore Factory Settings on the remote module. $$\rm RU$$



Figure 8-56 Reboot & factory Setting (Control - RU)

8.2.3.6.3 Optic Setting (Only Master RU) (Admin Only)

Optic Setting	
 Downlink Optic Atten [dB] 	12.0 💌
PD Power[dBm]	0.6
D Power[dBm]	6.2
	Apply

Figure 8-57 Optic Setting (Control - RU)

Table 8-19 Description for Optic Setting (Control - RU)

Name	Description	Range	Step	Available Accounts
Downlink Optic Atten	RF attenuator to compensate the optic loss of downlink	0~ 13.0 dB	0.5 dB	Administrator
PD Power	Incoming power level from the ODU			Administrator
LD Power	Outgoing power level to the ODU			Administrator

8.2.3.6.4 Manual Attenuator Control

Downlink			
Downlink Atten [dB]	6.5 💌	Manual Atten Control	
DL Output ALC Level [dBm]	30.0 💌	Downlink	
DL Output ALC Offset [dB]	5.0 💌	Downlink Atten [dB]	5
Uplink		DL Output ALC Level [dBm]	3
Uplink Atten [dB]	0.0 💌	DL Output ALC Offset [dB]	5.
IL Output ALC Level [dBm]	6.0 🔻	Uplink	
IL Output ALC Offset [dB]	3.0 💌	Uplink Atten [dB]	7.
	Apply		Арр
(Admin)		(User)	

Figure 8-58 Manual Atten Control (Control - RU)



Name	Description	Range	Default	Available Accounts
			threshold	
Downlink Atten	Allows the user to specify how much attenuation to use.	0 ~ 30dB	30dB	Administrator, User
Uplink Atten	Allows the user to specify how much attenuation to use.	0~25dB	25dB	Administrator, User
DL Output ALC Level	The remote module will prevent the downlink output power from exceeding the specified value.	5 ~ 30dB	30dBm	Administrator, User
UL Output ALC Level	The system will prevent the output power to exceed the specified value.	0 ~ 10dBm	5 or 6dBm	Administrator
DL Output ALC Offset	When the incoming signal level increases, the system will not adjust the gain levels until it reaches the ALC Offset Level.	0~10dB	5dB	Administrator, User
UL Output ALC Offset	When the incoming signal level increases, the system will not adjust the gain levels until it reaches the ALC Offset	0~10dB	3dB	Administrator

Table 8-20 Description for Manual Atten Control (Control - RU)

8.2.3.6.5 Alarm Setting

Alarm Setting

💿 Downlink Overpower [dBm]	30.0 💌
ſ	Apply



- DL Over Power Limit: The overpower alarm threshold can be adjusted from 5~30dBm. +2dB from the DL overpower limit will trigger a soft fail and >2dB will trigger a hard fail alarm
- VSWR Alarm ON : Enable or disables the VSWR Alarm.



8.2.4 Install Tab

8.2.4.1 Install – NMS

E Commissioning S	tatus			ADRF Remote Location	Deration & Management System Info
Commissioned		Not Commiss	oned	Company	
RFU-Cell	RFU-700	BCU-1	OPT-1	Address1	
RFU-AWS	RFU-PCS	BCU-2	OPT-2	Address2	
RFU-PCS	RFU-PCS	BCU-3	OPT-3	City	
RFU-AWS	RFU-AWS	BCU-4	OPT-4	State	Select one
IMP		External Modem B	ox Settings	ZIP Code	
Site ID Manager IP 0.0.0	.0 Set	Repeater IP Subnet Mask Gateway	192.168.63.5 255.255.255.0 192.168.63.254 Set	Installer Company Name Phone	
ocation		Description			
Latitude Longitude	N • + .	Description	Set	Date & T Date Time	Set
		SNMP Agent Fals	e Alarm Test		Set
		Progress			

Figure 8-60 Install - NMS

8.2.4.1.1 HE Commissioning Status

E Commissioning Status				
Commissioned		Not Commissioned		
RFU-PCS		BCU-1	OPT-1	
RFU-Cell			OPT 2	
RFU CH4		BCU 4	OPT 4	

Figure 8-61 HE Commissioning Status (Install – NMS)

Table 8-21 Description for HE Commissioning Status (Install – NMS)

Sta	tus	Display	Description
Installed Status	Physically Installed	RFU-PCS	Text is black
installed Status	Physically Not-Installed	RFU CH5	Text is gray
	Success		Green
Commissioning Status	Fail or not commissioned	0	Gray



8.2.4.1.2 SNMP

Site ID	adrf	
Manager IP	0.0.0	
		Set
	,	

Figure 8-62 SNMP (Install – NMS)

The SNMP section allows you to specify the Site ID and Manager IP. The Site-ID is the code that is used to identify a particular module. The Manager IP field is where the user inputs the IP address of the NOC system that is being used to monitor the SNMP traps.

8.2.4.1.3 Location

This section allows the user to input the latitude and the longitude of the repeater.

Location	
Latitude	N 💌 +
Longitude	E 🔻 +
	Set

Figure 8-63 Location Setting (Install – NMS)

- Select N or S from the dropdown menu for Latitude
- Select E or W from the dropdown menu for Longitude
- Input the first 3 numbers of the latitude/longitude in the text area after the "+" and before the "."
- Input the last 6 numbers of the latitude/longitude in the text area after the "."

8.2.4.1.4 External Modem Box Settings

This section allows the user to specify an alternative IP, Subnet Mask, and Gateway settings. These settings are enabled when the Host/Remote switch is set to the Remote position.

Repeater IP	192.168.70.202
Subnet Mask	255.255.255.0
Gateway	255.255.255.0

Figure 8-64 External Modem Box Setting (Install – NMS)

8.2.4.1.5 Description



This section allows the user to save the description of NMS.

Description	
Description	desp_rfu_700
	Set

Figure 8-65 Description (Install – NMS)

8.2.4.1.6 SNMP Agent False Alarm Test

This section allows the user to generate both soft and hard fail alarms. After alarms are generated, the NOC can poll the ADX to see if alarms are present. All alarms generated during this test are false alarms.

SNMP Agent False Alarm Test

Progress	
	Start

Figure 8-66 SNMP Agent False Alarm Test (Install – NMS)

8.2.4.1.7 Location Info / Installer Info

This section allows the user to specify the address of the repeater and also the information of the installer.

LUCACION	lino		
Company			
Address1			
Address2			
City			
State	Select one	-	
ZIP Code			
Installer I	Info		
Installer Company	info		
Installer Company Name	Info		
Installer Company Name Phone	Info		
Installer Company Name Phone E-mail	Info		
Installer Company Name Phone E-mail	Info		

Figure 8-67 Location Info / Installer Info (Install – NMS)



8.2.4.1.8 Date & Time

This section allows the user to specify the current date and time.

Date & Ti	ime					
Date	12/	09/	2011			
Time	17	•	0	•	32	•
				Se	t	



8.2.4.2 Install – RFU

ADÆ	Status Control Install	System Help Logout
	HE Input Commissioning - Cell	
ADX-H-RFU-C Site ID : bbbbbbbbbb	Current DL Input Level [dBm]	7.9
0	DL Input Commissioning Level [dBm] Commissioning Progress	8.0
Unlock System	Previous DL Commissioning Level [dBm]	8.0
Expand All Collapse All	Last Commissioning Date	09/28/2012
NMS	Last Commissioning Time	05:42:57
* [2] RFU-PCS		Apply
* [3] RFU-AWS		
* [1] BCU-700	Description	SISO/MIMO Assignment
* [2] BCU-Cell * [3] BCU-PCS	Description RFU-cell	© SISO ◎ MIMO - 1 ◎ MIMO - 2
* [4] BCU-AWS		Set Apply
+ [2] OPT		
+ [2] OPT		

Figure 8-69 Install - RFU



8.2.4.2.1 RFU Commissioning

This section allows the user to perform RFU commission. To perform RFU commissioning, select a DL Input Commissioning Level from the dropdown menu and click Apply. The commissioning progress is displayed on the Commissioning Progress bar. Any errors, warnings, and messages will appear via a popup window. Please refer to the ADX Installation Guide to determine the proper RFU commissioning levels.

Current DL Input Level [dBm]	7.9
DL Input Commissioning Level [dBm]	8.0
Commissioning Progress	
Previous DL Commissioning Level [dBm]	8.0
Last Commissioning Date	09/28/2012
Last Commissioning Time	05:42:57

Figure 8-70 RFU Commissioning (Install – RFU)

8.2.4.2.2 Description

This section allows the user to set the description of RFU.

ADT

[1] RFU - Cell [2] RFU - AWS [3] RFU - PCS [4] RFU - AWS [5] RFU - 700 [6] RFU - PCS

Cell PCS

The Signal For Success

0000

Expand All Collapse All

Description	RFU-cell	
		Set

Figure 8-71 Description (Install – RFU)

5.0

8.2.4.3 Install – OPT

Figure 8-72 Install – OPT

Set

8.2.4.3.1 Optic Commissioning

This section will allow the user to perform any optic compensation if it is necessary. The Commissioning button will turn orange if optic compensation is needed.



			Common	Attenuat	ion			
			DL	UL				
			5.0 👻	5.0	Ŧ		Remote L	Jnit
		LD Power	PD Power	UL ATT		LD Power	PD Power	DL ATT
Commissioning	Link 1-1		3.0	6.5	-	6.2	0.6	12.0
Commissioning	Link 1-2	1.2	3.5	6.5	-	6.8	1.0	12.5
Commissioning	Link 1-3		3.6	6.5	Ŧ	6.8	0.9	12.5
Commissioning	Link 1-4		3.6	8.5	v	5.8	0.5	11.5
				Apply				Apply
			Common	Attenuat	ion			
			Common .	Attenuat UL	ion			
			Common DL 5.0	Attenuat UL 5.0	ion v		Remote L	Jnit
		LD Power	Common DL 5.0 💌 PD Power	Attenuat UL 5.0 UL ATT	ion T	LD Power	Remote L	Jnit DL ATT
Commissioning	Link 1-5	LD Power	Common DL 5.0 V PD Power 4.3	Attenuat UL 5.0 UL ATT 8.0	ion V	LD Power 6.7	Remote L PD Power 1.0	Jnit DL ATT 12.5
Commissioning Commissioning	Link 1-5	LD Power	Common DL 5.0 ¥ PD Power 4.3 4.4	Attenuat UL 5.0 UL ATT 8.0 8.0	ion v	LD Power 6.7 7.0	Remote L PD Power 1.0 0.9	Jnit DL ATT 12.5 12.5
Commissioning Commissioning	 Link 1-5 Link 1-6 Link 1-7 	LD Power	Common . DL 5.0 v PD Power 4.3 4.4 4.3	Attenuat UL 5.0 UL ATT 8.0 8.0 8.0	ion	LD Power 6.7 7.0 6.7	Remote L PD Power 1.0 0.9 1.0	Jnit DL ATT 12.5 12.5 12.5

Figure 8-73 Optic control (Control – OPT)

Table 8-22 Description for Optic control (Control – OPT)

Display & Control	Description
•	Optic loss is less than 5dBo
0	Optic loss is more than 5dBo
0	Not connected to a RU
Commissioning	No optic loss compensation is needed.
Commissioning	Optic loss compensation is needed.
Commissioning	Not connected to a RU

8.2.4.3.2 Description

This section allows the user to save the description of OPT.

Description	OPT	
		Set

Figure 8-74 Description (Install – OPT)

8.2.4.4 Install – RU Hub

ADF	Status Control Install	System Help Logout
	RU Commissioning Status	
ADX-R-RU-Hub	Commissioned	Not Commissioned
Site ID :	RU-PCS	
	RU-Cell	
	RU-AWS	
Unlock System	RU-700	
Expand All Collapse All	Description	
- NMS		

Figure 8-75 Install-RU Hub

8.2.4.4.1 RU Commissioning Status

Ro commissioning status		
Commission ed	Not Commissioned	
RU-PCS		
RU-Cell		
RU-AWS		
RU-700		

Figure 8-76 RU Commissioning Status (Install-RU Hub)

Table 8-23 Description for RU Commissioning status

Sta	tus	Display	Description
la stalla d Ctatura	Physically Installed	RU-PCS	Text is black
Installed Status	Physically Not-Installed	RU-CH7	Text is gray
Commissioning Status	Success	\bigcirc	Green
Commissioning Status	Fail or not commissioned	0	Gray

8.2.4.4.2 Description

This section allows the user to save the description of RU Hub.

Description	ru_hub_des	c.
		Set

Figure 8-77 Description (Install-RU Hub)

8.2.4.5 Install – Remote Module (Master or Slave RU)

	ADF	Status Control Install	System Help Logout
		RU Commissioning - PCS	
	ADX-R-P30		
:	Site ID : bbbbbbbbbb	Current DL Output Level [dBm]	16.8
		DL Output Commissioning Level [dBm]	5.0 🔻
	0	Commissioning Progress	
	Unlock System		
		Previous DL Commissioning Level [dBm]	0.0
	Expand All Collapse All	Last Commissioning Date	00/00/0000
-	NMS O	Last Commissioning Time	00:00:00
	* [1] RFU-Cell-M2		
	* [2] RFU-PCS		Apply
	* [3] RFU-AWS		
	* [4] RFU-700		
,	* [1] BCU-700	Description	SISO/MIMO Assignment
	* [2] BCU-Cell		
	* [3] BCU-PCS	Description zzzz	SISO MIMO - 1 MIMO - 2
	* [4] BCU-AWS	S	et Apply
	- [1] OPT		

Figure 8-78 Install-Remote Module

8.2.4.5.1 RU Output Commissioning

This section allows the user to perform RU commission. To perform RU commission, select a DL Output Commissioning Level from the dropdown menu and then click Apply. The commissioning progress is displayed on the Commissioning Progress bar. Any errors, warnings, and messages will appear via a popup window.

urrent DL Output Level [dBm]	16.9
DL Output Commissioning Level [dBm]	5.0 💌
Commissioning Progress	
Previous DL Commissioning Level [dBm]	5.0
Last Commissioning Date	01/15/2000
Last Commissioning Time	00:41:52

Figure 8-79 RU Output Commissioning (Install-RU)



8.2.4.5.2 Description

This section allows the user to save the description of remote module.

escription		
Description	ru_desc.	
		Set



8.2.5 System

The System tab allows the user to perform firmware updates, upload closeout packages, view any changes to the system, backup existing configuration, and add/remove user accounts, and change the login credentials of the Administrator.

8.2.5.1 System: Account

8.2.5.1.1 System: Account - Account Management (Admin Only)

The Account Management section allows the Administrator to delete any user/guest account. Please note that the Account Management section is only available if you are logged into the system as the Administrator. To delete a user/guest account click on the Account Management link and under the Delete column, click on the delete button.

unt Ma	nagement / New a	iccount / Change Pa	assword		
No	Login Name	Password	Status	Last Login	Edit
1	admin	admin	administrator	2012-02-28 18:37:53	-
2	adrf	adrf	user	2012-02-28 00:47:55	delete
3	guest	guest	guest	1970-01-01 00:00:00	delete

Figure 8-81 Account Management

8.2.5.1.2 System: Account - New Account (Admin Only)

The New account section allows the Administrator to create a new user/guest account. Please note that the new account section is only available if you are logged into the system as the Administrator. To create a new user/guest account click on the new account link and fill in the fields highlighted in yellow as shown below.

a coodine manife		
Account Group	user	•
Password		
Confirm password		
	 Account Group Password Confirm password 	Account Group user Password Confirm password

Figure 8-82 New Account



8.2.5.1.3 System: Account - Change Password

The Change Password section allows the current user who is logged into the system to change their login credentials.

ne adn	nin	
d		
password		
Please enter new	password.	
Apply	Cancel	
	e aon j password Please enter new Apply	Please enter new password.



8.2.5.2 System: Logs

8.2.5.2.1 System: Logs - Event Log

This section displays system events that have taken place. The Event Log displays who has made the changes, the time and date of when the event took place, and what changes were made to the system. The System Log tracks the following events:

- System Initiation
- Alarm Set
- Alarm Clear

Seq.	Date / Time	Source	Description	Event	Severity Le
1970	2012-02-16 / 08:27:09	OPT-3	12387	PD Path 8 Fail Alarm Set	minor
1969	2012-02-16 / 08:27:09	OPT-3	12387	PD Path 7 Fail Alarm Set	minor
1968	2012-02-16 / 08:27:08	OPT-3	12387	PD Path 6 Fail Alarm Set	minor
1967	2012-02-16 / 08:27:08	OPT-3	12387	PD Path 5 Fail Alarm Set	minor
1966	2012-02-16 / 08:27:08	OPT-3	12387	PD Path 4 Fail Alarm Set	minor
1965	2012-02-16 / 08:27:07	OPT-3	12387	PD Path 3 Fail Alarm Set	minor
1964	2012-02-16 / 08:27:07	OPT-3	12387	PD Path 2 Fail Alarm Set	minor
1963	2012-02-16 / 08:27:07	OPT-3	12387	PD Path 1 Fail Alarm Set	minor
1962	2012-02-16 / 08:27:06	OPT-2		PD Path 8 Fail Alarm Set	minor
1961	2012-02-16 / 08:27:06	OPT-2		PD Path 7 Fail Alarm Set	minor
1960	2012-02-16 / 08:27:06	OPT-2		PD Path 6 Fail Alarm Set	minor
1959	2012-02-16 / 08:27:05	OPT-2		PD Path 5 Fail Alarm Set	minor
1958	2012-02-16 / 08:27:05	OPT-2		PD Path 4 Fail Alarm Set	minor
1957	2012-02-16 / 08:27:05	OPT-2		PD Path 3 Fail Alarm Set	minor
1956	2012-02-16 / 08:27:04	OPT-2		PD Path 2 Fail Alarm Set	minor
1955	2012-02-16 / 08:27:04	OPT-2		PD Path 1 Fail Alarm Set	minor
1954	2012-02-16 / 08:27:04	OPT-1	ADRF_HQ_H-ODU	PD Path 8 Fail Alarm Set	minor
1953	2012-02-16 / 08:27:03	OPT-1	ADRF_HQ_H-ODU	PD Path 7 Fail Alarm Set	minor
1952	2012-02-16 / 08:27:03	OPT-1	ADRF_HQ_H-ODU	PD Path 6 Fail Alarm Set	minor
1951	2012-02-16 / 08:27:03	OPT-1	ADRF_HQ_H-ODU	PD Path 5 Fail Alarm Set	minor

Figure 8-84 Event Log



8.2.5.2.2 System: Logs - User Log

This section tracks user activity within the system. The User Log displays who has made the changes, the time and date of when the event took place, and what changes were made to the system. The User Log tracks the following items:

- Log in / Log out activity
- Changes to gain/attenuation/output values
- System event generated by user(firmware update, backup/resote, create/delete account)
- DAS Navigation Tree Lock/Unlock
- Description change
- Repeater/installer information change
- Setting date/time

	Status Event Log / User	Control Install	System Help	Logout		ADRF Remote Operation 8. Management Syste
Site ID : ADRF_HQ	Seq.	Date / Time	Source	Description	Username	Log Message
	2	2012-02-16 / 08:31:29	NMS		adıf	Logged-In
	1	2012-02-16 / 08:29:38	NMS		admin	Logged-In
	Copyright © 1999- Toll Free Number	Date 2010 Advanced RF Technol 1-800-313-9345) techsupp	▼ logies, Inc. 3116 Vanowen St * B	1 search urbank, CA 91505 * U.S.	λ.	Download

Figure 8-85 User Log

8.2.5.3 System: Update

• To perform a firmware update, click on the System: Update tab and the following screen will show up.

ADF	Status Control Install System Help Logout
	System Update
ADX-H-NMS Site ID : ADRE HO	
	File Name Browse
	Click Upgrade to update the repeater firmware, or click Cancel to abort the upgrade
	Update Cancel

Figure 8-86 System update

- Click on the 'Browse' button and locate the firmware file.
- Click on the Update button to perform the firmware update.

8.2.5.4 System: System Information

8.2.5.4.1 System: System Information

Advanced RF Technologies, Inc.



				ADRF Remote Operation & Management System
System Infomation Check	Check)		
System Infomation				
Web GUI Version		X0.0.58		
External Modem Box Setting		192.168.63.5 / 255.255.255.0 / 192.168.63	3.254	
Time		01/30/2000 15:52:58		

System Notification

. [OPT-1 / RU-Hub-3 / S-RU-PCS] Multiple (PCS) remote units have been detected. [OPT-2 / RU-Hub-2 / S-RU-PCS] Multiple (PCS) remote units have been detected. [OPT-2 / RU-Hub-2 / S-RU-PCS] Multiple (PCS) remote units have been detected.

0	M								
1	Seq.	Model Name	Source	Serial Number	Firmware Version	Description	Alarm Status	Commissioned	Module Status (DL / UL)
	140	ADX-CELL-S- 30R	OPT-4 / RU-Hub-8 / S- RU-Cell		1.5.63		Normal		On / On
	139	ADX-AWS-S- 30R	OPT-4 / RU-Hub-8 / S- RU-AWS		1.5.63		Normal		On / On
	138	ADX-PCS-S- 30R	OPT-4 / RU-Hub-8 / S- RU-PCS		1.5.63		Normal		On / On
	137	ADX-700-M- 30R	OPT-4 / RU-Hub-8 / M-RU-700		1.5.63		Normal		On / On
	136	ADX-CELL-S- 30R	OPT-4 / RU-Hub-7 / S- RU-Cell		1.5.63		Normal		On / On
	135	ADX-PCS-S- 30R	OPT-4 / RU-Hub-7 / S- RU-PCS		1.5.63		Normal		On / On
	134	ADX-AWS-S- 30R	OPT-4 / RU-Hub-7 / S- RU-AWS		1.5.63		Normal		On / On

• System Information Check

The System Information Check button will check the ADX configuation and report possible discrepancies.

|--|

System Information

This section displays the general system information of the ADX DAS.

System Infomation	
Name	
Web GUI Version	X0.0.49
External Modem Box Setting	192.168.63.44 / 255.255.255.0 / 192.168.63.254
Time	02/16/2012 09:07:35

Figure 8-87 System Information

System Notification

This section is displayed only when the following conditions are present:

- When multiple remote modules with same frequency band exist in a RU.
- When the remote module does not match with the RFU being used.

System Notification

```
[OPT-1 / RU-Hub-3 / S-RU-PCS] Multiple (PCS) remote units have been detected.
[OPT-2 / RU-Hub-2 / S-RU-PCS] Multiple (PCS) remote units have been detected.
[OPT-2 / RU-Hub-2 / S-RU-PCS] Multiple (PCS) remote units have been detected.
```

Figure 8-88 System Notification

• BOM



BOM displays all parts that are connected to the ADX-H-NMS. The BOM can be downloaded as a CSV file by clicking the 'Download' button at the bottom right.

					A.I		Module
Seq.					Status		(DL /
							UL)
16	ADX-AWS-S- 30R		1.5.5D	3rd chassis(bottom)	Normal		On / Off
15	ADX-AWS-S- 30R		1.5.5D	2nd chassis(top)	Normal		Off / Off
14	ADX-700-S-30R		1.5.5D	*****	Normal		Off / On
13	ADX-CELL-S- 30R		1.5.5D	abcde	Normal		Off / Off
12	ADX-AWS-S- 30R		1.5.5D	1st chassis	Normal	-	On / On
11	ADX-700-S-30R		1.5.5D	s-ru-700	Normal		On / On
10	ADX-CELL-S- 30R		1.5.5D	*****	Normal		On / On
9	ADX-PCS-M- 30R		1.5.5D		Normal		On / On
8	ADX-H-OPT		1.5.1C	12387	Normal		-/-
7	ADX-H-OPT		1.5.1C		Normal		-/-
6	ADX-H-OPT		1.5.1C	ADRF_HQ_H-ODU	Normal		-/-
5	ADX-H-RFU-A		1.5.52	ADRF_HQ_H-A	Normal	Not Commissioned	Off / Off
4	ADX-H-RFU-C		1.5.52	ADRF_HQ_H-C	Normal	Not Commissioned	On / On
3	ADX-H-RFU-7		1.5.52	ADRF_HQ_H-7	Normal	Not Commissioned	On / On
2	ADX-H-RFU-P		1.5.52	ADRF_HQ_H-P	Soft Fail	Commissioned	On / On
1	ADX-H-NMS		13000F01002X1017		Normal		-/-
				1			
				-		Dow	nload
		Mod	et Name	search		Dow	moau

Figure 8-89 Bill of material



8.2.5.5 System: Backup/Restore

Click the Backup button to generate file.	a backup kup
tings Restore	
File Name	Choose File No file chosen
V NMS	
[1]RFU - Cell	
[2]RFU - 700	
[3]RFU - AWS	
[4]RFU - PCS	
Unknown - 5	
Unknown - 6	
Unknown - 11	
Unknown - 12	
V OPT - 1	misba
RU-Hub - 6	HUB011A0005
M-RU - PCS	\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$
S-RU - Cell	yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
S-RU - 700	s-ru-700
S-RU - AWS	99999999999999999999999999999999999999
Click R	estore to restore the system-setting
	Restore

• Settings Backup

Clicking the Backup will create a temporary backup file stored inside of the ADX. Once the file is created, it will need to be downloaded to a computer. A download button will appear after the backup file has been created. If the ADX is power cycled or rebooted, then the temporary backup file will be lost. We recommend downloading the backup file immediately after it has been created. Click on the Download button to download the backup file.

Backup	Exports which ca function	the current settings of this system an be restored using the system restore 1.
		Backup
	igure	8-90 Setting Backup (Before
igure 8-90 Setting Backup (Before	tings Ba	ckup
igure 8-90 Setting Backup (Before		
igure 8-90 Setting Backup (Before	Citati Ab	- De alum kutter ta annante a baalum
igure 8-90 Setting Backup (Before tings Backup Click the Backup button to generate a backup file.	Click the	e Backup button to generate a backup



• Setting Restore

Restore function can be used to restore the saved settings from the backup file. Once the backup file is loaded, the tree in the figure below will appear. Check the boxes of the modules that you would like to restore and then click the "Restore" button at the bottom on this section.

We recommend creating a new backup file if adding or removing modules from the ADX. Discrepancies between the backup file and the existing tree could cause restore errors.

🕖 File Name	Browse
NW2	
[1]RFU - PCS	ADRF_HQ_H
[2]RFU - 700	ADRF_HQ_H
📝 [3]RFU - Cell	ADRF_HQ_H
[4]RFU - AWS	ADRF_HQ_H
VPT - 1	ADRF_HQ_H-OD
👿 RU-Hub - 1	
M-RU - PCS	<u> </u>
👿 S-RU - Cell	<u> </u>
🔽 S-RU - 700	s-ru-7
S-RU - AWS	1st chase
S-RU - Cell	abc
🔽 S-RU - 700	<u> </u>
S-RU - AWS	2nd chassis(to
S-RU - AWS	3rd chassis(botto
OPT - 2	
TT OPT 2	123

Figure 8-92 Setting Restore

8.2.5.6 System: SNMP

• SNMP V1/V2

This section allows you to add community strings for SNMP v1 and v2.

MMP V1 / V2 ADD SNMP			
Version	Permission	Community	Command
v2c 🔻	read/write -		add
Active SNMP			
Active SNMP Version	Permission	Community	Command
Active SNMP Version v1	Permission read/write	Community public	Command delete

Figure 8-93 SNMP V1/V2



SNMP V3

This section allows the user to add accounts for SNMP v3.

5NMP V3 ADD SNMP						
User ID	Permission		Auth Algorithm / Password		Privacy Algorithm	Command
	read/writ	e 🔻	MD5	•	None 🔻	add
Active SNMP					L.	
User ID		Auth Algorithm / Password				Command

Figure 8-94 SNMP V3

8.2.5.7 System: Closeout Package

The closeout package section will allow the user to upload documents to the ADX-H-NMS. The maximum file size for each upload is limited to 10 MB. The total amount of space available for uploading document is 100 MB. Please do not use this section as the primary storage location of your documents. Documents may become unavailable if the system goes down.

File Name		Browse		
Description				
Maximum file size is 10 MB				
	Add File (Cancel		
File Name	File Size	Description		
	0.0 M (400 MD (0.0	10/1		

Figure 8-95 System- Closeout Package

To upload documents to the module, click on the "Browse" button and locate the file that you would like to upload, then enter in a Description of the file being uploaded. Afterwards, click on the "Add File" button to upload the file. Below is what you will see after the file upload. To delete the file, click on the delete button located in the last column.

File Name			Browse	
Description				
	Add	aximum file size i:	Cancel	
	Name	File Size	Description	
hile				
Te	st.txt	100 Bytes	Test	delete

Figure 8-96 System- Closeout Package after the file upload



8.2.6 Help

If an internet connection is available, clicking on the Help Tab will redirect the user to our Technical Support page.



8.2.7 Logout

Clicking the Logout button will log the current user off the system.

8.3 Guest Mode

When logging into the system as a guest, the guest will only have read-only privileges and will not be able to make any changes to the system.



9. SYSTEM SPECIFICATION

9.1 Specification for PS78, SMR

Para	ameters		PS78		SMR		
				S8	851-869MHz	_	
Frequency	Downlink	P7	758-775MHz	S9	929-930MHz 935-940MHz	메모 [H5]: 주파수 범위 수정 15/05/19	
				S8	806-824MHz		
	Uplink	P7	788-805MHz	S9	896-901MHz	_	
Input Power R	lange	0~+25dBm		_			
<u>.</u>	Downlink	5~30dB, 0.5	dB step, ATT range: 0~25dB			-	
Gain	Uplink	-5~30dB, 0.5	dB step, ATT range: 0~35dB				
Maximum Output	Downlink at RU	30dBm±2dB					
Power ¹	Uplink at HE	-15dBm±2dB	3			7	
Noise Figure	•	< 10dB@ma	ximum gain				
VSWR		< 1:1.5					
Optical Loss		0~5dBo					
System Delay		< 2us					
Spurious		Meet FCC ru	les, 3GPP TS 36.104, 3GPP2 C.	50010-C			
Nominal	Downlink P			740 704 144	S8	840-880MHz	
Band/BW		P7	749-781 MHZ	S9	925-949MHz		
for Industry	Unlink	07	702 024 MUL	S8	811-834MHz]	
Callaua	Оршик	P7	782-831 WIRZ	S9	887-911MHz	메모 [Y6]: 실제로 측정하셔서	
	Head-End Shelf	19.0 x 14.6 x	x 12.2 inches (482 x 370 x 311 m	וm)		기입요성압니다. 15/02/03	
Dimension	Remote-Unit Shelf	19.0 x 12.9 >	10.5 inches (482 x 328.2 x 266	.5 mm)			
(WXDXH)	Master RU	11.8 x 9.8 x	4.5 inches (300 x 249.6 x 114.5	mm)			
	Slave RU	11.8 x 9.8 x	3.7 inches (300 x 249.6 x 94.5 m	וm)			
	Head-End Shelf	83.7 lbs (38.	0 Kg) @4 RFU, CHC-H, PSU and	NMS			
Weight	Remote-Unit Shelf	61.0 lbs (27.	7 kg) @ 1 master RU, 3 Slave RI				
- 0 -	Master RU	13.2 lbs (6.0	kg)				
	Slave RU	11.7 lbs (5.3	kg)				
Operating Ter	mperature	14-122°F(-1	0-50°C)				
Operating Hu	midity	5~90%RH					
Power Input		110/220V, 5	0-60Hz, 24V or -48V DC(option	al)			
Power	Head-End	52W@4 RFL	J, 1 ODU Rack with 2 ODUs and	NMS			

¹ The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device



consumptio		28W@1 RFU, , 1 ODU Rack with 2 ODUs and NMS		
n	Remote-Unit	60W	53W	
Network Mana	agement System	Ethernet(RJ45)		
RF	Head-End	N-type(Female)		
connector	Remote-Unit	N-type(Female)		
Input/output Impedance		50Ω		

9.2 Specification for VU, BT

Parameters		ВТ	TBD			
Downlink		2496-2690MHz (BRS TDD)				
Frequency	Uplink	2496-2690MHz (BRS TDD)				
Input Power Range -15~+37dBm						
Gain	Downlink	0~52dB, 0.5dB step, ATT range: 0~52dB				
Gain	Uplink	-5~30dB, 0.5dB step, ATT range: 0~35dB				
Maximum Output	Downlink at RU	37dBm±2dB				
Power ²	Uplink at HE	-15dBm±2dB				
Noise Figure		< 10dB@maximum gain				
VSWR		<1:1.5				
Optical Loss		0~5dBo				
System Delay		< 2us				
Spurious		Meet FCC rules, 3GPP TS 36.104, 3GPP2 C.S0010-C				
Dimension	Master RU	11.8 x 9.8 x 4.5 inches (300 x 249.6 x 114.5 mm)				
(WXDXH)	Slave RU	11.8 x 9.8 x 3.7 inches (300 x 249.6 x 94.5 mm)				
Woight	Master RU	13.2 lbs (6.0 kg)				
weight	Slave RU	11.7 lbs (5.3 kg)				
Operating Ter	nperature	14-122°F(-10-50°C)				
Operating Hu	nidity	5~90%RH				
Power Input		110/220V, 50-60Hz, 24V or -48V DC(optional)				
Power	Head-End	52W@4 RFU, 1 ODU Rack with 2 ODUs and NMS				
consumptio	fiead-End	28W@1 RFU, 1 ODU Rack with 2 ODUs and NMS				
n	Remote-Unit	87W				
Network Man	agement System	Ethernet(RJ45)				
RF	Head-End	N-type(Female)				

² The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device



connector	Remote-Unit	N-type(Female)
Input/output	mpedance	50Ω

9.3 FCC Certification

Item	FCC Certification
ADX-R-SMR	Part 20, Part 90
ADX-R-78P	Part 90
ADX-R-BT	Part 20

10. ANTENNA SPECIFICATIONS

10.1<mark>0mni Antenna</mark>

Frequency	698-960MHz 1710-2690MHz		
Polarization	Vertical		
Gain	2dBi 3dBi		
VSWR	<1.7:1 <1.5:1		
Impedance	50Ω		
Power Rating	50W		

메모 [Y8]: 안테나 규격 추가

메모 [Y7]: FCC part 명기

15/02/03

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Note.

Please note that integrators, end-users or installers should not use the antenna with more gain than 3dBi(For Model: ADX-R-BT), 2dBi (For Model: ADX-R-SMR, ADX-R-78P) to meet the RF exposure requirement.

Part 90.635 requirement

Antennas must be installed in accordance with FCC 90.635. With 2 dBi gain antennas the height of the antenna above average terrain (HAAT) is permitted over 1372m. For different gain antennas refer to the relevant rules.

Part 90.219 requirement

The radiated power must be limited to 1W. Therefore, this device meet the 90.219 (e)(1) 5W ERP limitation requirement.

Prior to equipment use the service must be registered with the FCC. This can be done through the FCC's website at https://signalboosters.fcc.gov/signal-boosters



11. MECHANICAL DRAWING







Figure 11-2 RFU Drawing for SMR/PS



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Figure 11-4 RFU Drawing for BT







Figure 11-6 Master RU Drawing for BT







Figure 11-8 Slave RU Drawing for VU



