

COMMISSIONING GUIDE



M2

MID POWER

4T4R Digital Radios 37dBm Output Power 5G NR Compliant Passive Cooling Outdoor Rated



Revision History

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		Update Operation Bar Content	

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MID POWER

4 x 37dBm Output 5G NR Compliant

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Pre-Commissioning

Before starting the commissioning process, verify the status of the equipment as follows:

Access Unit (A2)

- 1 . Verify that the correct band-specific Active Combiner modules are installed.
- 2 . Ensure the RF cables between the BTS and modules are connected as designed.
- 3 . Ensure the fibers are connected to the proper optical ports as designed.
- 4 . Check LED of Status and Optical ports.

Expansion Unit (EU-O/E2-O)

- 1. Ensure the optical transceivers are inserted and fibers are connected to the proper optical ports as designed.
- 2 . Check LED of Status and Optical ports.

Remote Unit (M2RU)

- 1 . Verify that the correct band-specific PA modules are installed.
- 2. Ensure the RF cables from each PA module are connected tightly (If using M2RU with external antennas).
- 3. Ensure the optical transceivers are inserted and fibers are connected to the proper optical ports as designed.
- 4 . Check LED of Status and Optical ports.

Optical Indicator Descriptions

Each pair of optical interface indicators shows the operating status of an optical module, as shown in Figure 2.



Figure 1. Optical Indicator 1







Optical Indicator	Description
Green	Normal
Red	The optical path is not synchronized.
Blank	The Optical module is not plugged in

Figure 2. Optical Indicators 2

Status Indicator Descriptions

Each element has its own LED STATUS indicator to show its operating status.



Figure 3. Status Indicator

Status Indicator	Description
Flash Green	Element is working without an alarm
Solid Green	Software is crashed, but it will reboot automatically in 3 mins
Flash Red	Element is working but with alarm
Solid Red	Software is crashed (with alarm), but it will reboot automatically in 3 mins
Flash Orange	Software is upgrading
Solid Orange	Element is booting





System Overview

CrossFire M2 (Mid Power Remote Unit 2nd Generation) system is a distributed antenna system (DAS). It consists of Access Unit (A2), Expansion Unit (E2-O), and Remote Unit (M2). The Expansion Unit is an optional unit that can expand the system capacity.

System Connection

A typical CrossFire M2 system connection is shown in Figure 4.





- CrossFire supports 1 Master A2 and 2 Slave A2
- Cascading up to 5 levels of E2-O
- Cascading up to 6 levels of E2-O + M2RU





Operation and Maintenance Terminal

The Operations and Maintenance Terminal (OMT) software runs on all devices in the CrossFire system. WebOMT is the interface for OMT. WebOMT is based on a web browser and is compatible with most common browsers such as IE and Google Chrome. WebOMT is customized for CrossFire to query, debug, and configure parameters on devices.

The Master A2 is generally set as the Host of the system. Meanwhile, technicians can access the whole system through the WebOMT of any device (Master or Slave A2, E2-O and M2RU) connected in the system.

Access to the OMT on the Master A2

In the CrossFire system, the Master A2 is defined as Host. The default IP address of the A2 is https://10.7.3.200.

To set up wired access to the OMT:

- 1. Connect a PC to the Master A2 with a network cable in the CONSOLE port on the front panel.
- 2. Change the TCP/IP properties (see Figure 5):
 - a. Click Network Connections
 - b. Click Local Area Connection Properties
 - c. Click TCP/IP Properties
 - d. Change parameters as indicated:

IP address: 10.7.3.1 (the last number is changeable except for 10.7.3.200)

Subnet mask: 255.0.0.0

Default Gateway: 10.7.3.200 (IP address of Master A2)

- 3. Check the status of the Local Area Connection and confirm the connection.
- 4. Open a browser window and enter the default gateway in the navigation bar to access the WebOMT page. Figure 6 shows an example using https://10.7.3.200 as the default gateway.





	LUI SHE
ternet Protocol (TCP/IP) P	roperties
General	
You can get IP settings assigned this capability. Otherwise, you need the appropriate IP settings.	automatically if your network, supports ed to ask your network, administrator fo
Obtain an IP address autom	aicely
O Use the following IP address	·
IP address:	10 7 3 1
Subnet mask.	255.0.0.0
Default gateway	10 7 3 200
C Ditar DIS serve attent	atmich
() Use the following DNS serv	er addressez
Preferred DN5 server:	
Alternate DNS server.	1 1 2 2 2 1 1
Alternate DNS server.	1 1 1 1 1 1 1

Figure 5. Wired Connection to the OMT on the Master $\mbox{A2}$

-	The second second second second		
¢)(¢	🗃 https://	10.7.3.200	
New ta	de	×	

Figure 6. Web Browser OMT Connection for Wired Access





Access to the OMT on the Slave Devices

In the CrossFire system, E2s and M2RU as well as the Slave A2s, are defined as Slaves. They have no fixed IP address. The IP addresses are assigned by the host automatically, based on the network topology.

To set up wired access to the OMT:

- 1. Connect a PC to the slave device with a network cable in the CONSOLE port on the front panel.
- 2. Change the TCP/IP properties:
 - a. Enable Obtain an IP address automatically by clicking the check box.
 - b. Enable Obtain DNS server address automatically by clicking the check box.
- 3. Check the status of the Local Area Connection and confirm the connection.
- 4. Open a browser window and enter the default gateway in the navigation bar to access the WebOMT page. The default fixed IP address is https://12.7.1.1 as the default gateway.

🛓 Local Area Connection Properties 🛛 😰 🔀	
General Authentication Advanced	
Internet Protocol (TCP/IP) Properties	8
General Alternate Configuration	
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	Local Area Connection Connected, Frewaled Broadcom Net/Itreme 57
Obtain an IP address automatically	lon
O Use the following IP address:	- State to
P office	
Subject mails	
Defail press	
Obtain DNS server address automatically	
O Use the following DNS server addresses	
Performed DNS server	
Adversary CHG-server	
Advanced.	

Figure 7. TCP/IP Properties Configuration – Slave devices





Vetwork Connection Details			
Network Connection Detail	r		
Property	Value	٨	
Connection epecific DN			
Description	Reatek PCIe GbE Family Controller		
Physical Address	A8-1E-84-A0-8E-88		
DHCP Enabled	Yes		
(Pv4 Address	127.1.2		
IPv4 Subnet Mask	255.255.0.0		
Lease Obtained	Monday, November 25, 2018 11:18:0		
Lease Expires	Monday, November 25, 2010 12:10:0		
IPv4 Default Gateway	12,7.1.1		
IPv4 DHCP Server	12711		
IPv4 DNS Server			
IPv4 WINS Server			
NetBIOS over Topip En.	Yes		
Link-local IPv6 Address	le00_cd2d 9ld4 4lde d4ad1(21	121	
IPv5 Default Gateway			
IPv6 DNS Servers	fec0.0.0.111,1%1	¥	
e			

Figure 8. Wired Connection to the OMT on the Master A2

0-		
(\$)@	🕃 https://12.7.1.1	
Securit	ty Settings at Risk 🛛 🖄	0

Figure 9. Web Browser OMT Connection for Wired Access





User Login

- 1. Enter the IP address of the OMT you are trying to access.
- 2. Type the username and password in the field.

		Master A2	!
*	Usemame		
ê	Password		
		Login in	

Figure 10. Login Screen

Account	Password	Access Level
admin	admin (default)	Fully administration permissions. (User Management)
Others	(null)	Installer, configuration, monitoring

Note: Only the **admin** account has the permission of user management, including creating a user profile, changing password.





Homepage and Basic Functions



Figure 11. WebOMT Homepage

The OMT homepage includes System Topo, tabs, and fields (refer to corresponding numbers in Figure 11):

- 1. **Device Info:** After clicking to select the element's icon in DAS Topo, it shows Element Type, Element ID, Internal IP address, Location and status
- 2. Jump Button: After clicking to select the element's icon in DAS Topo, click Jump Button to switch to the element's OMT in the new tab.

<u>Note</u>: A common issue is that internet browsers cannot transfer to other devices from current OMT when your laptop is multi-connected to device and wireless network at the same time. Use **Port Jump** to skip this issue.

- 3. Icon Explanation: Shows that device icons in the topology have 3 colors to display different statuses.
- 4. **Element Configuration:** Tabs that access the page for parameter configuration and query.
- 5. Logs: Records the operating status of the devices. The logs can be downloaded and deleted on the Logs page.
- 6. **Upgrade:** Used to upgrade the software.
- 7. Configuration: Used to save and load factory or engineering configuration.
- ScreenShot: One step to download all current parameters, information, and device operating status. When Sunwave assistance is required to troubleshoot the system, it will be helpful to send the ScreenShot files(.json) to Sunwave technicians.
- 9. User: Account management and logout
- 10. Remove Slave: used to remove all slave devices in Topo.
- 11. Refresh: refresh DAS Topo





System Topology

System Topology is set as the default homepage of OMT. Using the following steps to display the System Topology:

- 1. Select the DAS Topo tab.
- 2. Click Refresh to display Topology.

The system topology is shown in Figure 12. The Master A2 icon is on the left of the frame as host. Lower level elements are placed as a tree structure based on the physical optical connections. Except for the Master A2, all other slaves are named after the optical port they are connected to.

1 DAS Tapo	IE 00 5 Logs 6 Upgrade 7 0	onfiguration + 8 s	icreenshot = 9 User =
() Sellings	00	0	1
0	10	11	Device Info
U Auris		Name	Menter A2
Maintenance		Device name	. 0
		10:	0
		Route:	0000
	📇 Master A2	IP:	91.7.5.5
		Location:	0
		Alarre:	No
	🚓 N2 801	Version:	1.7
		Element mod	NR Ø
		2 Route Ju	np Port.Jung
		le	3 on Explanation
			D
		Alam	A: Normal A: Office

Figure 12. Displaying the System Topology

Device icons in the topology have 3 colors — green, Grey and red:

Green icon a with green box line: indicates this element is connected and online without alarm.

Grey icon $\stackrel{\sim}{\to}$ with grey box line: indicates this element was once connected but is currently disconnected.

Red icon ^a with red box line: indicates this element has an alarm.

The device icons with purple box line indicates which element's OMT user is logged in.

When a grey icon shows up, check whether this device exists or not. If the device does not exist anymore, delete the device in the DAS Topo page.

<u>Note</u>: deleting one device or all slave devices must be under Factory Mode. Access Factory Mode through Maintenance -> Factory Command -> Factory Mode. Enable the mode and click Set to validate it.





Operation Bar

OMT has an Operation Bar on each page for configuration and query.

Utipenanter) 2198-e		Lope	Separate Configuration	tary . Subservited .	ilter
Insurant investments		-			
	Bulterren			the set of	
(descent Manter Aspenger				and the second second	
Consult String Section.	- 189			1.0.00	
Scherer (Franci	44				
States of	1000001		instance .	-	
10x4x fail-0	1. C		and states		
instantial (animate) also	-		10 (Sec. 10)		
Inclure.	a (group out)		10.04434		
2010 Same	-				
Date by		10			
Automa lane and lane	THE REAL PROPERTY AND				

Figure 13. Operation Bar





Network & Communicating Settings

The CONSOLE port of the Master A2 is pre-assigned from the factory with the default IP address – 10.7.3.200. To enable local/remote access to the system, you must assign a unique routable address within the domain of the local/wide-area-network.

Configure the IP address of the CONSOLE port as follows:

- 1. Log in the Master A2 OMT, and go to the LAN Connectivity section.
- 2. Go to the IP Settings section and assign the following fields as appropriate:

<u>Protocol</u> - The CrossFire system supports SNMP (Get & Set, Trap, etc.) and SUNWAVE NMS for remote monitoring.

Device IP Addr - address assigned to the A2 for local and remote access

Subnet Mask

Default gateway

Device Recv Port (UDP) - The Port number assigned for communication with SUNWAVE NMS.

<u>Heartbeat Interval</u> - The interval in which the Master A2 sends a heartbeat to the surveillance server.

3. Click Set to save the setting.

	CONDOLE Planting		.um.	1000H
	Person	LOP .		
	Pernary NUIS IP Address	10.7.3,100		
	Secundary MARS #F Address	10,7,3,501		
	Prinary MMS Port Nanzer	80		
	Securdary NMS Fort Number	85		
	Device#Add	10.7.3.198		
	Bubnet Mask	256.258.259.0		
	Dateut Gateway	107.0.3		
=	Device Renz PortfoldP)	100		
	Heatbeal Clock	00		

Figure 14. IP Address Configure





NMS Configuration

SUNWAVE Network Management System (NMS) is a software system to achieve remote monitoring, alarm reporting, and remote configuration of all the devices.



Figure 15. NMS System Architecture

Use the following steps to configure NMS IP settings.

- 1. Log in the Master A2 OMT, and go to the LAN Connectivity section.
- 2. Go to the IP Settings section and select UDP protocol, as shown in Figure 14.
- 3. Locate the fields and set the appropriate values:

NMS IP Address (1~2) - The target IP address of NMS Server.

<u>NMS Port Number</u> - The target port of NMS Server (default defined port of 80).

4. Click Set to save the setting.

GONFOLE IP setting		junit.	range
Potent	UDP U		
Primary NMU IP Address			
Secondary NMS (P-Address			
Penary MMS Port Number			
Securitary NAS Purt Number			

Figure 16. NMS Configuration





SNMP Configuration

The Master A2 generates SNMP traps and delivers them through the CONSOLE Ethernet interface.

The CrossFire system supports SNMP V2 and V3 in this current version.

To configure SNMP settings:

- 1. Log in the Master A2 OMT, and go to the SNMP Configuration section.
- 2. Go to the IP Settings section and select the SNMP protocol, as shown in Figure 16.
- 3. Click Set to save the setting.
- 4. Go to the SNMP Configuration section and select the appropriate SNMP Trap Protocol.

<u>SNMP Trap Protocol</u> - The trap protocol to send the SNMP trap.

Trop Swittings.		weit -	sange
Protocox	SAMP		
STANAP Trop Protocol	SHMPVE		
Ting IP Addense 1	1100PV2		
Top # Addisso 2	SNMPV3		

Figure 17. SNMP Trap Protocol

5. Locate the fields and set the appropriate values:

For SNMP V2

Trap IP Address (1~2): Up to 2 target IP address of SNMP trap receiver.

<u>Trap Port</u>: The target port of the SNMP trap (default defined port of 162).

For **SNMP V3** (See Figure 17 for details)

Reset USM - USM Reset

Security User Name - Security User Name

Authentication Protocol - Authentication Protocol

Authentication Password - Authentication Password

Privacy Protocol - Privacy Protocol

Privacy Password - Privacy Password

Edit User Confirm - Edit User Confirm

Trap IP Address (1~2) - Up to 2 target IP address of SNMP trap receiver.





Trap Port - The target port of SNMP trap (default defined port of 162).

<u>Trap IP Addr Security EngineID</u> - The Security EngineID of target Trap IP address.

· · ·	SNMPV3 USM Reset		
0	Reset UDM	Reset	
0	RAMPY2 URM Edit		
	Security User Name	encadmin	
0	Authentication Protocol	Name	
0	Authentication Password	passaord	
<u> </u>	Privacy Protocol	None	
0	Privacy Pastword	password	
0	Bell User Confirm	Confirm	
0	Trap Bellings		
0	Trap Bellings Protocol	SVEP	
0	Trap Reflings Protocol GNMP Trap Protocol	SHIMP SHIMPV3 V	
	Trap Retlings Protocol SNAP Trap Protocol Trap IP Address 1	5NMPV5 ~	
	Trap Reflargs Protocol GRAMP Trap Protocol Trap IP Address 1 Trap IP Address 2	SNBP SNMPV3 ~ 192.194.1.6 192.194.1.21	
	Trap Retirings Pratocol Environ Enviro	SHIMP SAMPVS ~ 192.168.1.6 192.168.1.221 1947	
	Trap Pettings Protocol EWAP Trap Protocol Trap IP Address 1 Trap Pol Trap Pol Trap Pol Trap Pol	SNBP SNMPV3 182.168.1.421 1847 8000952301040783	
	Trop Retirings Protocol BrildP Trop Protocol Trop IP Address 1 Trop IP Address 2 Trop IP Address 1 Security Engine ID Trop IP Address 2 Security Engine ID Trop IP Address 3 Security Engine ID	SHIMP SHIMPVS	

Figure 18. SNMP V3 Configuration

6. Go to the Trap Resend section at the bottom of the page.

<u>Trap Resend Enable</u>: **On / Off** to enable / disable trap resend.

Trap Resend Interval: The interval time to resend the SNMP trap.

Community: Community Identifier.

Delete History Alarm: Click Confirm to delete history alarms.

7. Click Save to save the settings.

Trap Reserve		write	(range
Resend Elsable			
Tenand Inferval	30MIN V		
Calminizity	public		20 characters
Dowle History Atarm	Cantan		

Figure 19. Trap Resend

Note that the Write/Read Community in SNMP server to communicate with CrossFire Device is 'Community + Device Sub ID'. For example, the defaut community is 'public' and the Device Sub ID of Master A2 is '0'. SNMP Server must use 'public0' to communicate with Master A2.





Additional Settings

Site Info

- 1. Log in the Master A2 OMT, and go to the Overview.
- 2. Locate the fields and set the appropriate values:

Device ID - Unique hexadecimal number used to identify the site, default 00000000.

Device Sub ID - Device number in a single system, auto-assigned by Master A2 or manually set by the user.

<u>Device Location</u> - The detailed device installation location.

<u>Site ID</u> - Indicates the details of the current site.

3. Click Set to save the setting.

🚦 DAS Topo	≣ 0		Logs	Upgrade Configurat	
Satings ^		Element Identification		unit	range
Overview		Vendor	sativave		
		Element Model Number	0		
Band Configuration		Element Serial Number	120123		
TDD Configuration		Software Version	1.4.112		
Radio Signal Information		SNMP Version	1.0		
		Device ID	0000000		hexadecimal
Radio Interface Modules		Device Sub ID	•		decimatism
Optical Module Information		Installed Location Label	•		20 characters
LAN Connectivity		Site Name	0		100 characters
SNMP Configuration		Device Name	0		40-characters

Figure 20. Site Info Configuration

Note: The Installed Location and Site Name labels cannot contain the following special characters: %, &, ', ", \

Time Synchronization

The Master A2 synchronizes time to NTP time servers when NTP Switch is on .

- 1. Log in the Master A2 OMT, and go to Settings ->LAN Connectivity
- 2. Go to the NTP section and Turn on the NTP Switch
- 3. Input NTP Update Interval in certan time horizon and select the appropriate Time Zone
- 4. Input NTP IP Adress and Click Set to save the settings.





A x 37dBm Output 5G NR Compliant

E DAS Tapo	≣ A	2[master] 23F-t	E Altmanter 25F4				Configuration +	Screenshot+	UMP*
0.000		Server IP Address (SFTP)	167.3.09						
· ····		Server Peri Kunter (UPTP)							
Overview		SFTP Account Username	her				•	-	
franc Configuration		SPTP Account Paccount	surration(2)						
TDD-Configuration		Ferrivaria Upgradie Fliegadh	Note-Indexed				0.00	ang sali	
Radio Securi Information		Fermane Uppade Filerane	6A4,60,630,9144,6710,8046264p						
Natal agest manuals		SFIP File Transfer Control	Net topole 🗸						
Rado Interface Modules									
Optical Mobile Information		10				range			
LAN Connectivity		ATP Solution			1004.0	inter MTP is all			
1MMP Configuration		NTP Update Interval	8	hear		24-98			
		Time Zone	VID4 ~						
Anterna -		NTP IP Address I	UTE-2						
E Maintenance ·		NTP IP Address2	UTC+0						
			UTC+4						
			UTC+5						
			UTE+6						
			010+7						
			0104						

Figure 21. NTP Configuration

The CrossFire system also uses a local timeclock on Master A2 to create time stamps for locally generated alarms when not connected to the NTP Server.

- 5. Log in the Master A2 OMT, and go to the Overview.
- 6. Go to the Date and Time section at the bottom of the page and click Query to check the current setting.
- 7. Click now to synchronize the system time with the local PC time.

Ωute And Time	
Bystem Date And Time	2025-10-53 16:48:18

Note: If the NMS is connected to the NTP server, the CrossFire system time is updated automatically and periodically.





System Configuration

A2 Band Configuration

According to the different base station operating frequency bands for each operator, select the passive RF modules for the A2 and active RF modules for the M2RU with the corresponding frequency band and set the Band properties in the OMT of the Master A2. The limits of the uplink and downlink operating frequency bands correspond to the effective RF range of the selected RF modules.

To set the Band properties:

- 1. Open the Master A2 OMT.
- 2. Go to Settings -> Band Configuration.
- 3. Check the Info Check to see if the module is valid in **#1**.
- 4. For modules 1~ 4, set the Uplink and Downlink Centre Frequencies and the Digital Signal Bandwidth in #2.

Note: The maximum bandwidth per operating band should not exceed 100MHz.

- 5. Click Set in operation bar.
- In In-Service Bandwidth frame, click Update button of Band Configuration Update to update band configuration (See #3). Then click Query all to ensure the value of Module 1~4 Info Check is valid in #1.

🛱 DAS Topo	1D 0	0				Logs	Upgrade	Configuration +	Screenshot+	User=
0 mmp -	0	Radio Modulo 1			-		in the	0 0	Hery .	
Overview		Inth Check	Weite					•	-	
	0	UL Propency Start - End	2000	3400	Mille					
thand Correspondition	0	OL Prequency Mart - End	1500	3400	MHL.				10 M	
TDD Configuration		Digital Signal Bandwidth	100		MNU.					
Radio Signal Information	0	UL Centre Frequency 2	2200		894					
Gardin belieflerer Merkelen	\sim	OL Centre Preparecy	2104		8842					
1000 110100 000000	0	BM Occupied in Filter	100	-	MHz					
Optical Module Information	0	Transmission-Allocation in Fiber Core	Filter-Care A				1-40M 1-403-000			
LAN Connectivity										
888 Carborder		In Service Rendwidth			and		range			
SPARP Comparison	0	Band Configuration Update 3	Update							
Alama -	0	Ciement Signal Bandwidth	-		10.12					
	0	Deneri Tunonsson Banderdh	-		1014					
(5 Mantenance -	0	System Signal Bandwidth	-		1012					
	0	System Transmission Bandwidth	-		10.14					
	0	System Bandwidth Docuped in Fiber	-		194					
	0	P Tanonasian Tanànah Tanàn								
	0	2024/More								

Figure 23. Band Properties





5G TDD Configuration

To configure 5G TDD properties:

- 1. Open the A2 OMT.
- 2. Go to Settings -> TDD Configuration.
- 3. Turn on the **TDD Switch** in **#1**.
- 4. Select the corresponding TDD modules in **#2**.
- 5. Input the 5G SSB Type in **#3**. CrossFire is supporting Case A and Case C.
- 6. Input whole 20 Slots Format for DL-UL configuration in #4.
- 7. Input Special Slot Format for DL-UL symbols configuration in #5.
- 8. Input SSB ARFCN in #6.
- 9. Select all TDD configurations and click **Set** in operation bar to validate them all.

Note: CrossFire supports the same TDD configuration for enabled modules in one system.

10. Click Query All to check if Sync Status is turning green to see if the module is configured to be paired to TDD signal.



Figure 24. TDD Configuration





4G TDD Configuration

To configure 4G TDD properties:

- 1. Open the A2 OMT and go to Settings -> TDD Configuration.
- 2. Turn on the TDD Switch in #1 and select the corresponding TDD modules in #2.
- 3. Select the UL-DL configuration in **#3** and Select the Special Subframe Configuration in **#4**.
- 4. Select all TDD configurations and click **Set** in operation bar to validate them all.

Note: CrossFire supports the same TDD configuration for enabled modules in one system.

5. Click Query All to check if Sync Status is turning green to see if the module is configured to be paired to TDD signal.



Figure 25. TDD Configuration





Module Gain Adjustment (Attenuation)

In CrossFire, the downlink input power of the A2 is specified as 0dBm, and the maximum allowable input power is 15dBm. CrossFire has an automatic level control (ALC) function to maintain the input power around 0 at the A2 input port. What's more, the A2 and M2 digital board have attenuation configuration for Gain Adjustment.

Gain Adjustment on A2 (Active Combiner)

- 1. Open the Master A2 OMT.
- 2. Go to Settings -> Radio Interface Modules -> General.
- 3. Dropdown Attenuation Control Mode and select Manual/Automatic mode as designed.

Automatic Mode: The internal ALC function is working when the peak input power exceeds 0 dBm.

Manual Mode: Reduce the input power by setting the attenuation manually.

Adjust Interval: The interval time to automatically reduce the attenuation in 2dB step when the peak input power decrease in Automatic Mode.

Combiner Att Reset: Reset all the attenuation values.

4. Click the checkbox to select this parameter and click Set to validate it.

E DAS Tapo	표 0				Logs U	pgrade Configuration	on = Screenshol = User =
© Sellings -		General			unt	range	C) querge
Overview		Attenuation Control Node	Manual V				• ••
Read Configuration		Automatic Lawel Interval	Bhur V				0 cear
Control Control garager		Attenuation Level Reset	Fleset				C every all
TDD Configuration							
Radio Signal Information	0	Radie Module 1			unit	range	
	0	Power Switch					
Radio Interlace Modules	0	UL Prequency Start - End	1868	1015	MPG:		
Optical Module Information	0	DL Frequency Start - End	1808	1005	MHz		
		Pol1 Input Power			1011	-20-10	
LAN Connectivity	0	Port2 Input Power	-		dðm	-20-15	
SNMP Configuration		Put3 Input Power			din	20-15	



5. Go to Settings -> Radio Interface Modules -> Radio Module

6. Locate the field and set the appropriate values:

Manual Mode: Set the appropriate value in the field of Port Attenuation Value.

for example: if Port 1 input power is 5.5dBm / Port 2 input power is 9.0dBm and the composite output power is divided by fifty-fifty, set 8.5 dB (5.5dB + 3dB) in Port 1 Attenuation Value and 12.5 dB (9.0dB + 3dB) in Port 2 Attenuation Value.

Note: Extra 3dB attenuation is used for power distribution.





Automatic Mode: Set the appropriate value (%) in the field of Port Power Distribution for power distribution.

Note: The input power is reduced to 0dBm automatically then it is calculated for distribution.

- 7. Set the operator information in the field of Port 1 ~4 Label (Operator/Service).
- 8. Click the checkbox to select these parameters and click **Set** to validate them.

11 lan her	E (an Angente	Configuration of	Semight -	3987
	handower of			140				
Permeter	Page land						-	
and the second second	In Property Part 197	100					-	
	do Charmen Sant (Inte	100	1400					
the company of	1 Halling Proc			-	10.0			
National Street	THE PART AND			-	10.00			
	Part Frank Press			-				
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der Committee	Processon and Pr	24			4.0			
the state of the s	man and a second s	1.1						
	ingli i denomente							
	Berly Prese Distance							
-	Ingl Proce Stations	1			4-94			
	Pairies Interim	14			1.0-10			
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	and is participations.				A desider.			
	And a case of particular law rate				(- Canada and			

Figure 27. Attenuation in Radio Interface Module





Gain Adjustment on A2 (Digital Board)

1. Go to Settings -> Radio Signal Information -> Radio Module.

- 2. Input attenuation value in **UL and DL Attenuation**.
- 3. Click the checkbox to select these parameters and click Set to validate them.

11 DAS Topo	≣ 0			Logs	Upgrade Configurat	ion * Screenshol * User *
() Setlings ·		Radio Module 1		unt	range	C) query
Overview	0	RF Signal Active				0 set
8		UL Attenuation	•		0-10	O dear
Band Configuration		DL Attenuation			0-10	O guen at
TDD Configuration		Digital Filter Bandwidth	41	MH2		
Radio Signal Information		UL Centre Prequency	1862,500	Large		
Contraction Internation		DL Centre Frequency	1942.500	10112		
Pladio Interface Modules		UL Baseband Output power	41.4	4000		
Optical Module Information		DL Baseband Input-power	-41.5	dilm		
LAN Connectivity		Partie Markets I				
State Contractory		PERSONAL PROPERTY AND INCOME.		211	1000	
over conguston		to allow stress	•			

Figure 28. Attenuation in Radio Signal Information

Gain Adjustment on M2RU

To set attenuation in M2RU:

- 1. Jump to M2RU OMT.
- 2. Go to Settings -> Band Configuration.
- 3. Input attenuation value in **UL and DL Attenuation**.
- 4. Click the checkbox to select these parameters and click Set to validate them.

11 GAS Tape	IE AJ	(master) 23F-1			Le	ps Upgrade	Configuration +	Screenshot+	User-
0 54990 -		Factor Module 1			unit	Tanga	a .	Lan y	
Deervere		UL Propency Gart - End	5748	1785	MP4g		•	-	
		DL Propency Blart - End	-	-	10.4			teur -	
Band Configuration		RF Signal Active							
Radio Signal Information		UL Alternation				1-15	ייי ר	63 M	
Theoretical Gain		DL Attenuation		1 C C C C C C C C C C C C C C C C C C C		1-15			

Figure 29. Gain Adjustment on RU WebOMT





Alarm

Alarm Severity

The CrossFire System supports four different alarm levels - Warning, Minor, Major, and Critical.

Use the following steps to set up the appropriate alarm severity.

- 1. Log in the WebOMT, and go to the Alarms section.
- 2. Select the appropriate severity in the drop-down box for the alarm in use.
- 3. Click **Set** to save the settings.
- 4. Wait 3 minutes after completing the setup, then query to see if there is an alarm.
 - Blank Indicator means alarm disabled;
 - Green color means no alarm;
 - **Red** color means the alarm is triggered.

Note: All alarms are default disabled at the factory. Disable the alarms not in use to avoid false alarms.

Note: Power Interruption Alarm and Battery Failure Alarm can NOT be enabled if there is no accumulator installed.

O Bellogs	Aism	
Ø Alema	Memorane Marine	Distan
	Open Cale Risers	Onathe
Corner Charten	Over Temperature Alert	Oxable
DL INSK Prever Alertes	Research Address (COLAUX Closer Ranges Address	Oxatin
Americ Trespitation	Partie Mohav 2 (0, M.S. Gver Hange Admin	Daatte
Edwine Nemis	Plants Module 3 DL ALC Over Ramps Addres	Maarisings
NUMBER OF STREET	Ram Hotan (D.A.C.Ove-Range Kan)	Admini
S Menners	OPI Toyuntae Palae Aars	Nape
	OF 2 Transmer Falles Agent	OILE

Figure 30. Alarm Severity Setup

Alarm Threshold

To set up the alarm threshold:

- 1. Log in the OMT, and go to the Alarm Thresholds section.
- 2. Locate the fields and set the appropriate values.
- 3. Click **Set** to save the settings.





MID POWER

4 x 37dBm Output 5G NR Compliant

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Dr. Island Planner Alamoni	Annu tantas a spect three power Newsman		-	21-21
Gam Thursdaints	Radia Median I Report Over preven Threadman	10	vites	10-00
External Alarma	Russes Montane () trajust Cover preview Terminality		dire	31-01
-	Nada: Ministra & Inguel Oyen primer Threading		iller.	10-00
C) Mediarance	Fadar Intelan & Parat Over present Trivestade	19	000	20-20
	C One Sequentian Desident		190	

Figure 31. Alarm Threshold Setup

External Alarm

The CrossFire system supports external alarms inputs that as UPS failure, condition of air, entrance guard, etc.

External Alarm of A2

The external alarms are input to a DB9 dry contact interface in the front panel of A2. See the details of the pin in Figure 32. The external alarms can be monitored as normally closed or normally open

Use the following steps to view and configure the external alarms.

- 1. Log in the A2 OMT, and go to the Element Alarms section.
- 2. Select the appropriate alarm level for external alarm in use at the bottom of the page.
- 3. Click **Set** to save the settings.
- 4. Go to the External Alarms section
- 5. Type External alarm name and select Normally closed or Normally open mode.
- 6. Click Set to save the name.





Figure 32. Pins Description

Elemenar 1 Alarma	Deaders	
Enternal 3: Avern	Desekie	
Tommer) Alem	Desides	
Comprised & Asserts	Disable	

Figure 33. External Alarms on A2 OMT

11 DAS Topo	≣ 4	1553939000000000000000000000000000000000	000000000000000000000000000000000000000	Logs	Upgrade Configuratio	on * Screenshot * User *
O before V	0	External Alarm		unit	range	0
C. comp		External Input Alarm 1 Mode Select	Normally closed 🗠			
Airms	0	External Input Alarm 2 Mode Select	Normally open \sim			O set
Element Alarms		External Input Alarm 3 Mode Select	Normally open 💛			O clear
Di. Input Power Alarma		External Input Alarm 4 Mode Select	Normally open			C gany at
	0	External Input Alarm 1 Label	nut		20 characters	
Alarm Thresholds		External input Alarm 2 Label	nut.		20 characters	
External Alarms	0	External Input Alarm 3 Label	nut		20 characters	
🗵 Maintenance 🔍		External Input Alarm 4 Label	nut		20 characters	
		External Output Alarm(warning) Mode Select	Normally closed \sim			
		External Output Alasm(minur) Mode Select	Normally closed \sim			
		External Output Alamphagur) Mode Select	Normally closed \sim			
	0	External Output Alarm(critical)-Mode Select	Normally closed \sim			
		External Output Alarm(warning)	•			
		External Output Alarm(minor)	•			
		External Output Alarm(mapir)	•			
		External Culput Alarmic/tical-				

Contact us today: www.sunwave.com cf_support@sunwave.com Figure 34. External Alarms Name and mode

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External Alarm of E2-O

The external alarms are input to a RJ45 interface located on the front panel of E2-O. See Figure 35 for the detailed PIN configuration of this connector. The external alarms can be monitored as normally closed or normally open.

Use the following steps to view and configure the external alarms.

- 7. Log in the E2-O OMT, and go to the Element Alarms section.
- 8. Select the appropriate alarm level for external alarm in use at the bottom of the page.
- 9. Click **Set** to save the settings.
- 10. Go to the Alarm Thresholds section
- 11. Type External alarm name and select Normally closed or Normally open mode.
- 12. Click **Set** to save the name.





Figure 35. RJ45 Pins Description





MID POWER

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External Alarm 1		Warning ~	
External Alarm 2	1 🖬 1	Warning	
External Alarm 3		Warning 💛	
External Alarm 4		Warning 😔	

Figure 36. External Alarms on E2 OMT

Enternal Input Alarm 1 Mode Select	Normally open	
Esternal Input Alarm 2 Mode Select	Normally open	
Enternal input Alarm 3 Mode Select	Normally open	
Enternal input Alarm 4 Mode Telect	Normally open	
Esternal input Alarm 1 Label	null	20 characters
Elsiemat Input Alarm 2 Label	Iture	30 sharacters
External Input Alarm 3 Label	null	20 characters
External input Alarm 4 Label	Ilun	29 characters
Estamal Output Alarm(warning) Mode Salept	Normally closed	
External Output Alarm(micor) Mode Select	Normally closed	
Esternal Output Alarm(maps) Node Select	Normally closed	
Estamal Output Alarm(initial) Mode Select	Normally closed	
Esternal Output Alarm(warning)	•	
External Output Alarm(mnor)		
External Oulput Atarm(major)		
Esternal Output Alamontical)	•	

Figure 37. External Alarms Name and mode in E2-O

External Alarm of M2RU

The external alarms are connected to the M2RU using a RJ45 dry contact interface located on the front panel of the M2RU (2 inputs and 2 outputs). See Figure 38 for detailed PIN configuration of this connector. The external alarms can be monitored as normally closed or normally open.

Use the following steps to view and configure the external alarms.





- 1. Log in the M2RU OMT, and go to the Element Alarms section.
- 2. Select the appropriate alarm level for external alarm in use at the bottom of the page.
- 3. Click Set to save the settings.
- 4. Go to the External Alarm section
- 5. Type External Alarm Label, External Alarm Level and select Normally closed or Normally open mode.
- 6. Click **Set** to save the name.



Figure 38. RJ45 Pins Description



Figure 39. External Alarm Port (RJ45) in M2RU

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 inert for	
 International Property	

Figure 40. External Alarms on M2 OMT





MID POWER 4 x 37dBm Output

5G NR Compliant

II DAS Topo	E A2[master] 23F-t		Logs Upgr	rede Configuration	 Screenshot - Use
() Setlings ·	External Alarm		unit	range	Q query
O Aarrs ^	External Input Alarm 1 Mode Select	Normally closed \sim			o ut
Element Margar	External Input Alarm 2 Made Select	Normally closed \sim			© dear
Element Additio	External Input Alarm 1 Label	nd .		20 characters	O query all
Alarm Thresholds	External Input Alarm 2 Label	nd .		20 characters	
External Alarms	External Output Alarm 1 Mode Select	Normally slosed 💎			
🗵 Maintenance 🗠	External Output-Alarm 2 Mode Select	Normally closed			
	External Output Alarm 1 Level	Disable V			
A Management ···	External Output Alarm 2 Level	Disable 🗸			
	External Output Alarm 1 Indication	•			
	External Output Alarm 2 Indication	•			

Figure 41. External Alarms Name and mode





Advanced Activities

Mapping Configuration

The CrossFire M2 system can comprise many M2 to achieve extensive area coverage. CrossFire maintains the mapping mechanism between the A2 and M2, so all M2 units in the system can transmit the signal as long as M2 is correctly mapped to A2. Generally, the original mapping order is set automatically via the module sequence as the physical device assembly $(A2_1 - A2_2 - A2_3 - A2_4)$.

Note: If A2 modules do not have configured band properties(invalid), modules are not able to be mapped.

If there are two same band modules (Module 3 and Module 4) on an M2 and two corresponding band modules (Module 1 and Module 2) in A2, the mapping information is M2-Module3 to A2-Module1 and M2-Module4 to A2-Module2.

If there are two same band modules (Module 3 and Module 4) on an M2 but only one corresponding band module (Module 2) in A2, the mapping information is M2-Module3 to A2-Module2 and M2-Module4 to null.

To check the mapping information:

1. Jump to M2 OMT

2. Go to Settings -> Band Configuration -> Module Mapping

11 GAS Topo	E A	2(master) 23F-t			Log	s Upgrade	Configuration +	Screenshot+	User=
	1.0	UL Attenuation			-	0-15	_		
0.54940	0	DL. Alteruation			-	0-15	0.00	**	
Overview							• •		
	0	Radio Module 3			unit	range		-	
Band Configuration	0	UL Proparry Start - End	4246	1785	1012				
Radio Signal Information	0	Di, Preparroy Biari - Erol	-	1000	1014		0 ee		
Theorem 10 million	0	RF Signal Active							
	0	UL Alternation	1 C			0-15			
Optical Hodule Information	0	DL Alteruation			-	0-18			
Airm									
-	0	Radie Module 4			unit	range			
🗵 Mantenance 🗠	0	UI, Proparry Sart - End	0.0	196	1014				
O Henry	0	DL Prequency Start - End	-	1000	1014				
	0	RF Signal Active							
	0	UL Alternation	1 C		-	0-10			
	0	DLAtteruation				0-10			
	0	Workshe Wagsping (with Access Unit Radio Workshe)			and a	range			
	0	Rado Notule 1 (ULOL)	1710.8-1705.01005.0-1000.8	AL.J					
	0	Radio Notule 2 (JUDL)	174L0-1785.0180L0-188L0	A2,4					
	0	Rado-Woluw 3 (ALDL)	1710-1705-01001-0001	NULL					
	0	Rado Notule 4 (ULOL)	1710.8-1705.01001.0-1001.0	NOL.					

Figure 42. Mapping Information





The CrossFire provides Service Management to configure the mapping information with different orders according to the various situations, swap the mapping of M2 modules, M2-Module3 to A2-Module2 and M2-Module4 to A2-Module1.

To manage the mapping:

- 1. Jump to the M2 OMT
- 2. Go to Management -> Service Configuration -> Allocation Switch
- 3. Turn the Capacity Allocation Switch on in #1 and click Set to validate it
- 4. Click QueryAll to check the A2 Operator/Service Configuration in #2 and M2 Module Information in #5
- 5. Dropdown the Capacity Group to select the group in #4
- 6. Select the A2 module which is required for mapping in the RF Module Mapping Configuration in #6
- 7. Select all checkbox of RF module Mapping Configuration Capacity Group, Radio Module mapping and Update
- 8. Click Set and then Update to validate the mapping
- 9. Click QueryAll to check RF Module Mapping in #3

B (A2[master] 257-t				Logs Tpgrade	Configuration + Screenahol +
1 A 1	Capacity Alexandree Switch			-	1 mga	0 000
- 1 - - -	Capacity Alexandre Dankie					• -
0	AD Operator Denter Configuration				1 mage	·
	Waster AJ Harls Motors 1 (AUDL)	2007-2016	2000-2008	Marker 1		D aread
• 1 D	Rate 42 Rate Notes 2 (AUD.)	208-020	1200-1200	104		
-	Martine Ad Planto Monton 2 (AUDA)	010-038	100-100	1010		
-	Tame Al Tale Notes FLOCEL	1110-1205	1007-1009	1014		
•	Tel Dave KD Reits Media 1 (JUDA)	**		1010		
	147 Date 1(27a0) Million 2 (1070)	2	**	tating:		
	Tel Dave AC/Reits Web/H 3 (JUDU)	**	**	10142		
	hat Base 10 Parts Module 4 (ALDA)	**	••	1010		
	Dist Stave AD Radio Module 1 (ULDU)			10142		
	Desi Daren KD Ranto Medicile D (JUDU)	••	H	1010		
	Inclusion All Party Media II (ALDA)			tating:		
	Del Tana 40 Rado Moste 4 (ULDU)	14	14	104		
10	17 Bodok Bapping			-	1 mga	
	dmari	MULT MULT MULT MULT				
	Small .	NOL: NOL: NOL: NOL				
	Grad	MALENAL MALENAL		_		
			9213			
	IF Bolah Repring Configuration		942104		1 million	
	General Constant	ingt v	642.2.2			
	Redor/Hellule 1 (ULOL)	17 M ()- 17 M () 1004 ()- 1004 ()	8422.3			
	Party (Match 2 (11.01)	5 CH1-CH1-0H1-0H1	6 942,4			
	Reductional (10.00)		NOT A			
	Party (Matche 4 (12-02))	010-000-000	NIL -	_		
	10.00	Texture .				

Figure 43. Service Configuration





- 10. Go to Management -> Service Group Scheduling
- 11. Dropdown Service Group (Working Hours) and Service Group (Non-Working Hours) to select the Group for RF test so that the mapping will not be changed during the test.

II (H) has	E A	Qmaster(25F-t			Loga 18	grade Configuration + Novembol +
0 545 4 V		family .			 	-0 eee
•		Hering House Dark End (241)				
		Dense Drug (Refrig Hurs)	Bread			· · · · ·
Managements -		Service Disaption Honorganization	Brough	-		C served
Mexagement -	10	Renta			 	
Banka Carligasian	0	Wetting Price Dark Dist (241)				
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		Tarolog			 10.00	
		Westing House Dark (Del (244)		*		
		Denia Drug(Heling/Hum)	Broad			
		Service Designed Advergences	Second Second			

Figure 44. Service Group Scheduling

Radio Module Test Signal

CrossFire M2RU system provides the Radio Module Test Signal function for M2RU to transmit a CW signal to test the coverage.

Use the active button in A2 to enable all modules mapped to AU-AC in RU to transmit CW signal for pre-test the coverage without BTS feeding.

To active the Radio Module Signal in A2:

- 1. Log to the A2 OMT, and go to Maintenance -> Engineering -> RU Radio Module Signal Test Active.
- 2. Select the status button.
- 3. Click **Set** to active/deactive radio test signal.
- 4. After the test, turn off the switch or reboot the A2 to disable the function.

Note: After RU Radio Module Signal Test Active is enabled, the unit will send CW signal at "the module physical center frequency" + 2 MHz.

Note: The CW signal power level is the maximum output power of the unit without any attenuation in OMT. The digital attenuation of A2 and RU can correspondingly reduce DL CW singal level.

For example, the A2 module Band 1 (DL 2110-2170 MHz) under test is enabled without any attenuation. Then module Band 1 in M2RU will transmit 37dBm DL output power at 2142MHz.





4 x 37dBm Output

5G NR Compliant

Master/Slave A2 Transition

Slave A2 is used for expanding the system up to 12 band modules to support more band inputs or MIMO scenarios. Master and Slave A2 have the same hardware and software. The A2 is default as Master, and it can change between Master and Slave via OMT.

- 1. Open A2 OMT and check Device Info about the A2
- 2. Go to Maintenance -> Engineering -> Advanced Command
- 3. Select the required type in Master/Slave A2
- 4. Wait 2 minutes for A2 rebooting
- 5. Open A2 OMT and recheck Device Info to see if the A2 is changed to the required one

II DAS Topo	A2[master] 23F-t		Logs	Upgrade Configuration •	Screenshol + User +
() Settings ·	Radie Module 2 DL ALC Working				C query
Aarms ~	Radio Module 3 DLALC Working	•			e set
	Radie Module 4 DL ALC Working	•			8 dear
Maintenance ^	Auto Protection		unit	range	C query all
Optical Info	Auto Protection Status	•			
Engineering	CP Info		unit	range	
Firmware Status	Sync Loss Counter Reset	Renet			
Factory Command					
	Advanced Command		unit	range	
	Dement Role	Master A2 A			
	Hardware Reset	Anster A2			
	Alarm Initialization	Stave A2			
	Alarm Mode Select	Normal Mode 2min 🔍			

Figure 43. Master / Slave A2 Transition





Devis	ce mio
Name:	[OP7]-Slave A21
Device name:	0
ID:	2
Route:	7000
IP:	11.7.70.1
Location:	0
Alarm:	No
Version:	1.7
Element model:	0
Route Jump	Port Jump

Figure 44. Device Type Check

System Delay Configuration

CrossFire provides 3 methods to balance the system delay - Automatic, Manual, and Triggered.

Automatic: The system adjusts the delay automatically.

Manual: Delay value can be customized equal to or larger than max delay value.

Triggered: Click the Confirm button to adjust the system delay or set the max delay value automatically per minute.

To set the system delay procedure:

- 1. Open A2 OMT
- 2. Go to Setting -> Band Configuration -> System Delay
- 3. Select the required method in Delay Adjustment Method
- 4. Click Set to validate.

System Cetty			unt	ange
Debey Adjustment Method	Automatic	- Automotic		
Max Creiny Volue Necessrot	1.22	Trupper	14	
tikar Demy Value Adjust	0	Manual	in .	
Treggerinit Dalay Activation	Carthre			
Castonia: Deley Villan	4		144	1





Figure 45. System Delay Configuration

Auto Logout Time

The OMT has an auto-logout function in case of no operation in a period. The auto-logout time can be configured from 5 to 60 minutes.

To set up the OMT logout time:

- 1. Log to the A2 OMT.
- 2. Go to Settings -> LAN Connectivity.
- 3. Input the period in the field of OMT Logout Time.
- 4. Click **Set** to validate it.

# DAS Topo	臣 4	1553939000000000000000000000000000000000		Logs	Upgrade Configurat	ion * Screenshot *	User +
		Femware Upgrade Filepath	(home-double)				
O Settings ~		Fernware Upgrade Filename	dating_up.th			C query	
Overview		SFTP File Transfer Control	Start Upgrade 🗸 🗸			6 set	
Band Configuration						G dear	
		NTP		und	range	C query at	
TDD Configuration		NTP Balloh			Time synchronizes to LMS when NTP is off		
Radio Signal Information		NTP-Update Interval	н.	hour	24-96		
Radio Interlace Modules		Time Zone	UTC+8 ····································				
Optical Module Information		NTP-IP-Address1	69.69				
LAN Connectivity		NTP-IP-Address2	60.00				
SNMP Configuration		GWTLepeut		uni	range		
Airms		ONFT Lagout Time	80	Min	5-60		

Figure 46. Logout Time

Local Debug Port Control

CrossFire has enhanced security functions that disable the A2 AP USB port and other elements' console port.

To control the AP USB port and other elements' console port:

- 1. Log to the Master A2 OMT.
- 2. Go to Settings -> LAN Connectivity.
- 3. Enable/disable the port access in Local Debug Port Control.
- 4. Click **Set** to validate it.





MID POWER 4 x 37dBm Output 5G NR Compliant

11 DAS Tapo	12 4	1553939000000000000000000000000000000000	000000000000000000000000000000000000000	Logs	Upgrøde Configurat	ion = Screenshot = User =
	1.1	Farmware Upgrade Filepath	/home/dashpr			
O Settings ^	0	Parmiare Opgrade Pilename	debug_up.sh			C dreat
Overslew		SFTP-File Transfer Control	Start Upgrade 🗸 🗸			• set
Band Configuration						0 dear
Carl Conganio		879		unit	sange	C query all
TDD Configuration	0	MTP Switch			Time synchronizes to LMS when NTP is off	
Radio Signal Information		NTP Update Interval	н	hour	24-96	
Radio interface Modules	0	Time Zone	UTE=6 ~			
Optical Module Information		NTP IP Address1	80.80			
LAN Connectivity		NTP IP Address2	80.80			
SNMP Configuration	0	OMT Lagout		unit	range	
Alarns ~		CMT Logoul Time	28	Min	1-10	
🖾 Meintenance 🗠 🗠		Local Debug Port Centrol		una	range	
	0	Master A2 AP USB Port				
		Slave Local Debug Pot				

Figure 47. Local Debug Port Control

Screenshot

CrossFire OMT supports a one-click screenshot which is saved as .pdf file.

To get a screenshot for all page:

- 1. Click ScreenShot button in the upright of the OMT GUI
- 2. Click export all and wait a moment. The Screenshot function goes through all pages to collect all parameters
- 3. When all parameters are captured, the screenshot .pdf file could be downloaded automatically
- 4. Click save current page to capture the specified page and click export save to download

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Figure 48. Screenshot Steps

Backup/Restore Configuration

To back up element's configuration:

- 1. Click the Configuration button in the upright of the OMT GUI.
- 2. Click open configuration and Check boxes for the parameters you want to back up.
- 3. Check boxes for the parameters you want to back up.

<u>Note:</u> The **Port Att** is used for manual mode but the **Port Power Distribution** is used for auto mode. Do **Not** to select the **Port ATT** and **Port Power Distribution** at same time on **Radio Interface Modules** on A2/SA2. Otherwise loading configuration will fail if the file has both of **Port Att** and **Port Power Distribution**.

4. Click export Configuration button to download all saved configuration in a .json file



Figure 49. Create a back-up file

. IDAS_A302_Configuration_A302_2021_10_13.json

Figure 50. Create a backup file successfully

To restore the element's configuration:

- 1. Click the Configuration button in the upright of the OMT GUI
- 2. Click the Load Configuration button
- 3. Upload the .json file and click the Load button to restore the configurations.





MID POWER

4 x 37dBm Output 5G NR Compliant

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Figure 51. Restore Configuration

Software Upgrade

The Master A2 consolidates the management of software upgrades for the entire system and saves the last software package information for A2, E2-O, and M2RU. Slave devices will compare the local software with the latest information saved in Master A2 by checking CRC at run time. If the CRC is different, slave devices will be synchronized via the current software package from Master A2. Therefore, when a slave device is replaced, its software will be upgraded automatically without any additional operation.

<u>Note</u>: If it is the Master A2 to be replaced in a system, check the software version of the new Master A2 before connecting it to the system. If the software version is not the latest, upload the latest software packages to the new Master A2.

Local Upgrade

The CrossFire system supports local sync-upgrade. There are two steps for the system software local sync-upgrade. First, upload the software package to the Master A2. Second, slave devices are synchronized automatically via the Master A2 if the CRC is different. Please make sure the upgrading from the lowest level device to the highest level device (M2RU -> E2 -> A2). The A2 must be the last one to be upgraded.

As an example, to do an M2RU or E2 local upgrade:

1. Log into the OMT on the Master A2. Click the **Upgrade** button on the main page to navigate to the software upgrade page. See Figure 52.





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II: A2[master] 23F-t		Logs Upgrade	Configuration * Screenshot * User *
File Name	File Size	Date	0
648,3080,301,911,1,207,201108.20	10728 KB	2025-11-6 12-46	0
CA6_H3RU_R3H_V1.1_125E_2031000 ap	10625 KD	2021-10-14 10:25	0
CAR, AU, A02, V1.7, 568, 2021080.3p CAR, HORU, RUT, V1.01, Field, 20210916.au	12748 KB	2021-10-14 10:20	0
CA6, N270, R10, V14, R001, 28211012.20	10375 KB	2000-1-4 20:16	0
BA6_AU_A300_V1.6.10_80296_00210916.20	12742 KB	2000-1-1-00-03	0
UpLand*	II debte	± download	1 upgrade 🗸 check version 🔹 forced upgrade
	E A2(master) 23F4 Fre Name 0.06./0.00./0.01./0.1.01.29F7.2021108.20 0.06./0.00./0.01./0.1.01.29F7.2021008.20 0.06./0.00./0.1.21.010.2020.00 0.06./0.00./0.1.7.1000.20210010.20 0.06./0.00./0.1.21.010.2020.00 0.06./0.00./0.1.2.100.20210010.20 0.06./0.001.000.20210010.20 0.06./0.00./0.1.0.10.000.20210010.20 0.06./0.001.000.201.0010.20 0.06./0.000.201.000.20210010.20 0.06./0.001.000.201.0010.20	Fielder Fielder 0.46,1080,001,011,011,0297,000108.00 0003.00 0.46,1080,001,011,011,0297,000108.00 0003.00 0.46,1080,001,011,011,0297,000108.00 0003.00 0.46,400,000,017,1088,00008.00 0003.00 0.46,400,000,017,1088,00008.00 0003.00 0.46,400,000,017,01680,00008.00 0003.00 0.46,400,000,017,016,000,00008.00 0003.00 0.46,400,000,011,016,000,00008.00 0003.00 0.46,400,000,011,016,000,00008.00 0003.00 0.46,400,000,016,000,00008.00 0003.00 0.46,400,000,016,000,00008.00 0003.00 0.46,400,000,016,000,00008.00 0003.00 0.46,400,000,016,000,00008.00 0003.00 0.46,400,000,016,000,00008.00 0003.00 0.46,400,000,016,000,000,00008.00 0003.00 0.46,400,000,016,000,000,000,000,000,000 0003.00 0.46,400,000,016,000,000,000,000,000,000,000,0	E Ažįmasterį 23F4 Log Upgrade

Figure 52. Software Upgrade 1

2. On the software upgrade page, as shown in Figure 53, click the **Upload** button to upload the M2RU, E2 software package file.

11 DAS Topo	E 41553939000000000000000000000000000000000		Logs Upgrade Configur	ation • Screenshot • User •
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O Alerres	CALUSEL_COLUMN _ 1,108,300000.ap	10625 KB	2000-1-1-03.19	0
	EA8_AU_AS0_V17_TBER_20010100.30	121108-000	2000-1-1 03 01	0
Mantenance ~				
	UpLand *	utua 8 anno	A download D upgrade	🖉 check version 🔹 locced upgrade

Figure 53. Software Upgrade 2

Note: The Master A2 software storage is currently limited to 100MB. Please be aware of not exceeding the limitation and check that the software package size is as large as the correct size after uploading. Uploading and upgrading software packages will fail if there is no more storage. Delete some packages with the old version to continue the upgrade.





3. After the software is uploaded successfully, select the file that was just uploaded and click the **Upgrade** button to complete the software upgrade, as shown in Figure 54 for an M2RU upgrade.

	2 minut	R inter	te ± download	2 igignete	- Chrok version	E torced appraise
6.zp		02742.635	0075-3-4-00.02	0	3	
4.pp		10412.000	2010-11-10.01-12	1	2	
1114.200	日止	1010030	2019-11-10.11-14	0	2	
		File Stre	Data		0	

Figure 54. Software Upgrade 3

4. After the upgrade has been completed and devices reset, log in to the devices' OMT and go to Maintenance -> Software Package to confirm that the software version is correct as shown in Figure 55.

II DAS Topo	10 D	Logs	Upgrade Configuration * Screenahot * User *
() Sellings			С фину
	Tetate	495	delate
	EA8_AU_A302 V17 15E8_20210830.20	081583	data
Mantenance ^	IGAR_H0911_3011_311_101208_30210100.ap	081208	dolote
Optical Info			
Engineering			
Factory Command			
	1		

Figure 55. Software Version Check 1





5. Then go to Settings -> Overview to confirm that the software matches the version in the upgrade package as shown in the red frame of Figure 56.



Figure 56. Software Version Check

Note: If the software version is not incompatible, please upgrade the same software again to make the upgrade completed.





FCC Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation. Part20 Warning :

WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.

FCC Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Part20 Warning :

Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

