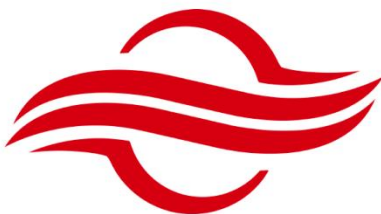


SUNWAVE

COMMISSIONING GUIDE



CROSSFIRE

M2

MID POWER

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



Revision History

Revision Number	Revision Date	Summary of Changes	Author
1.0.0	5 th October 2020	Initial Release	Shuochao Zheng
1.0.1	2 nd December 2020	Radio CW Function Update; Optical Indicator Change	Shuochao Zheng
1.0.2	14 th Decemeber 2020	Add Network Settings; Update wired access to slave device	Shuochao Zheng
1.0.3	25 th Decemeber 2020	Add External Alarm of RU	Shuochao Zheng
1.0.4	5 th January 2021	Content Minor Edits	Shuochao Zheng
2.0.0	15 th November 2021	Upgrade System to Support 800MHz Mode	Shuochao Zheng
2.0.1	9 th December 2021	Update Radio Module Test Signal	Shuochao Zheng
2.1.0	7 th April 2022	Update External Alarm of E2-O Update SNMP Community Content Update Operation Bar Content	Shuochao Zheng

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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.

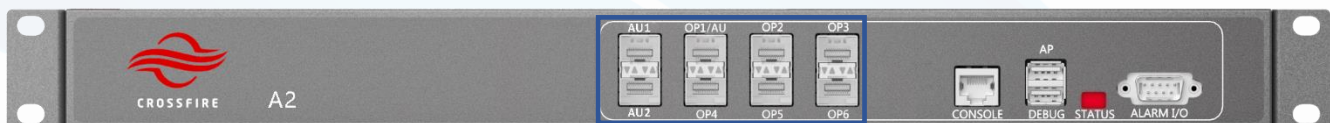


Figure 1. Optical Indicator 1

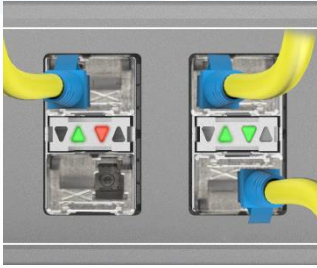


Figure 2. Optical Indicators 2

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

Status Indicator Descriptions

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

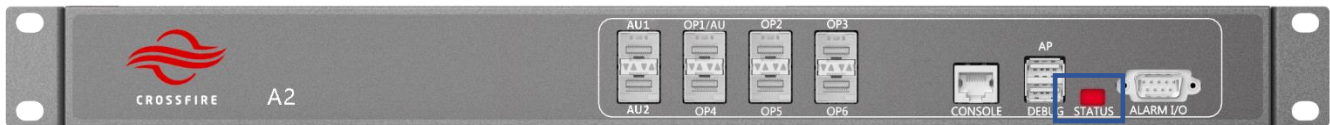


Figure 3. Status Indicator

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 (M2RU). 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.

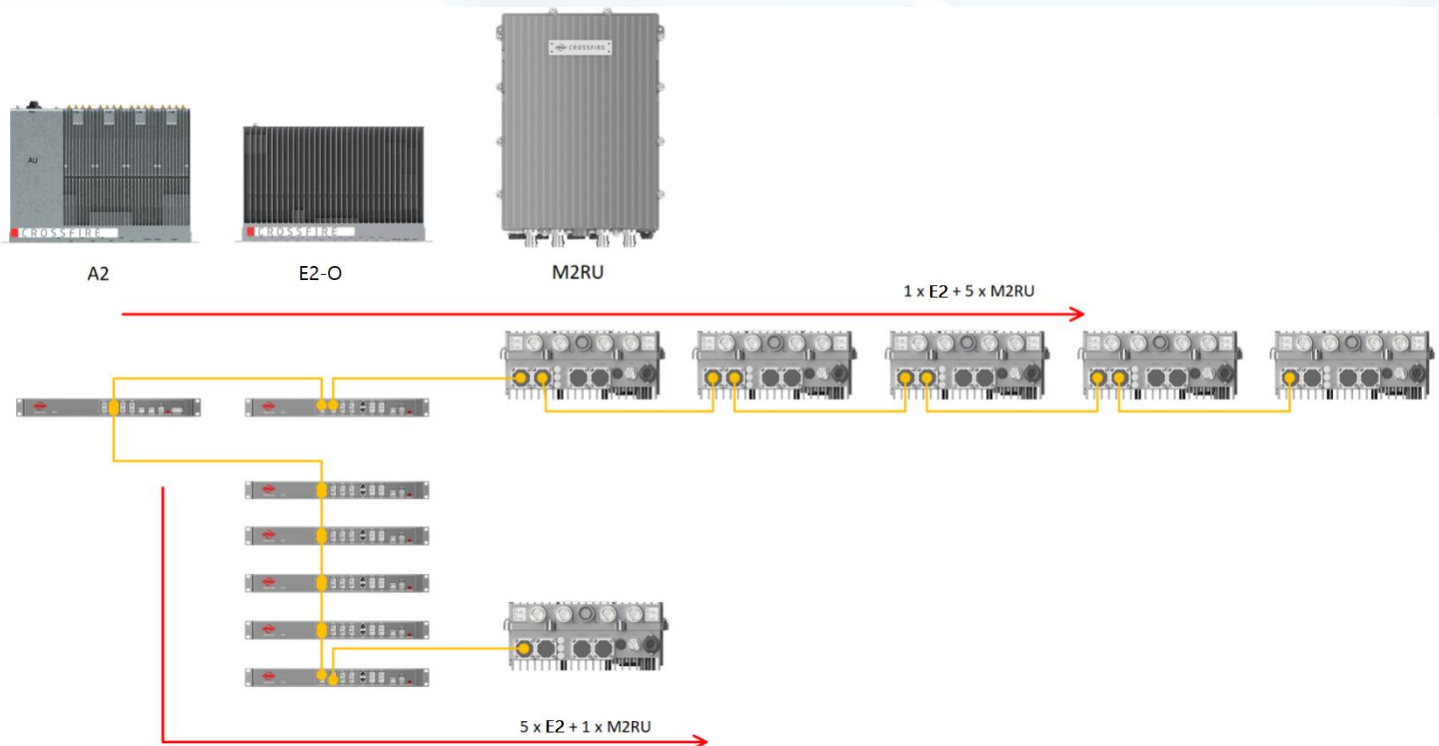


Figure 4. System Connection

- 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.

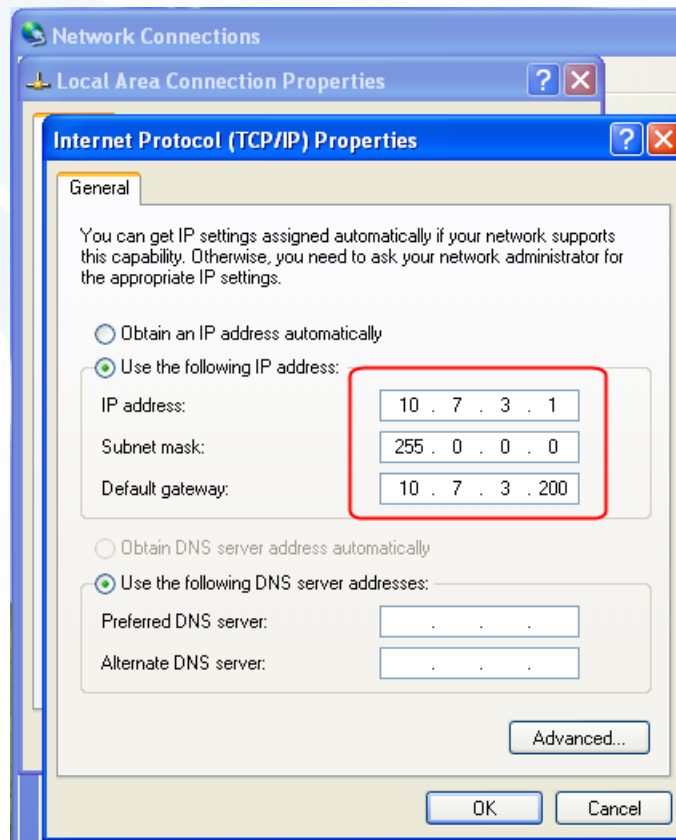


Figure 5. Wired Connection to the OMT on the Master A2



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.

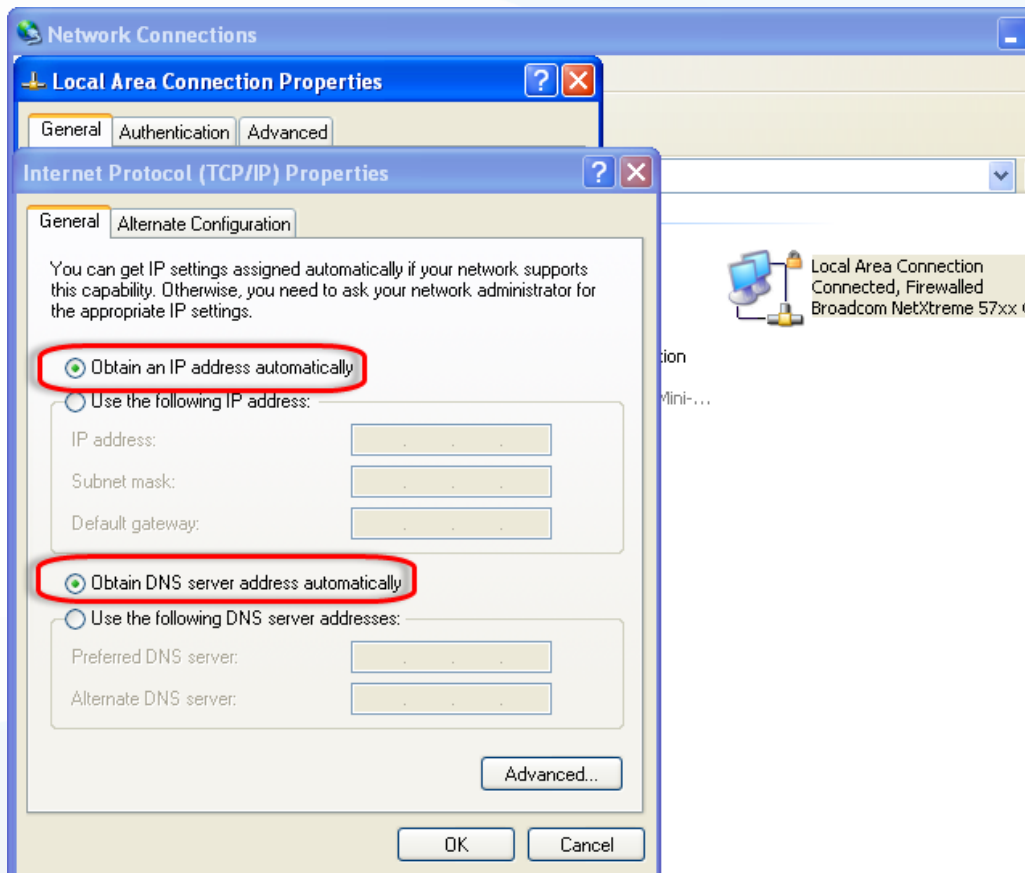


Figure 7. TCP/IP Properties Configuration – Slave devices

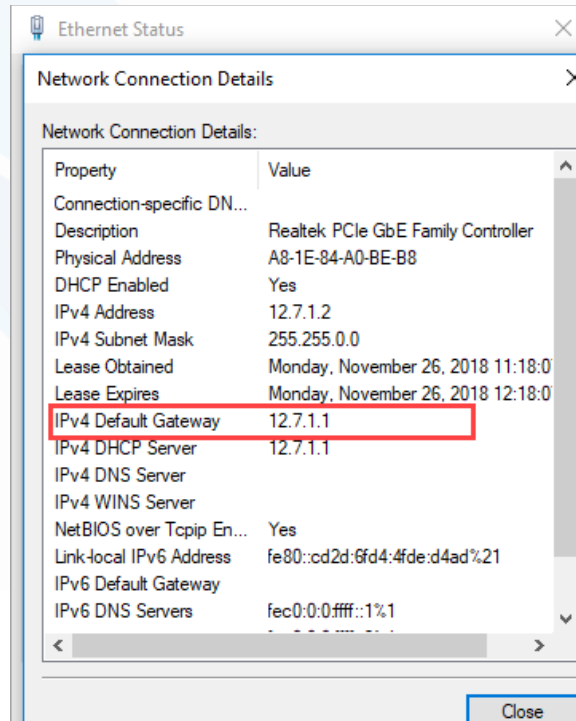


Figure 8. Wired Connection to the OMT on the Master A2



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.

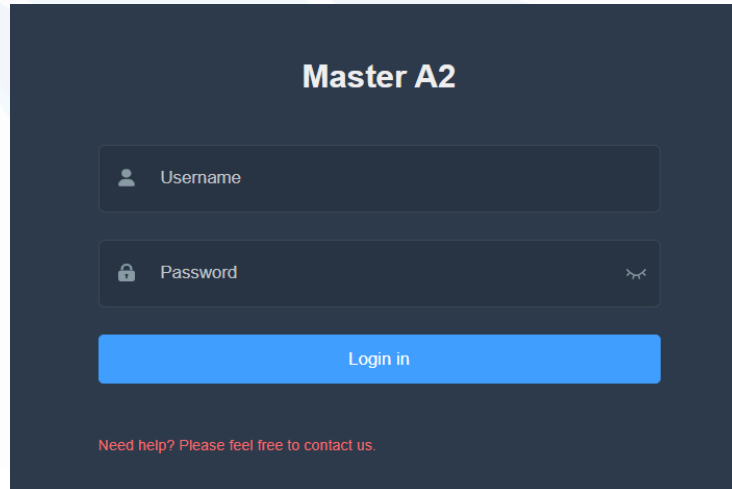


Figure 10. Login Screen

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

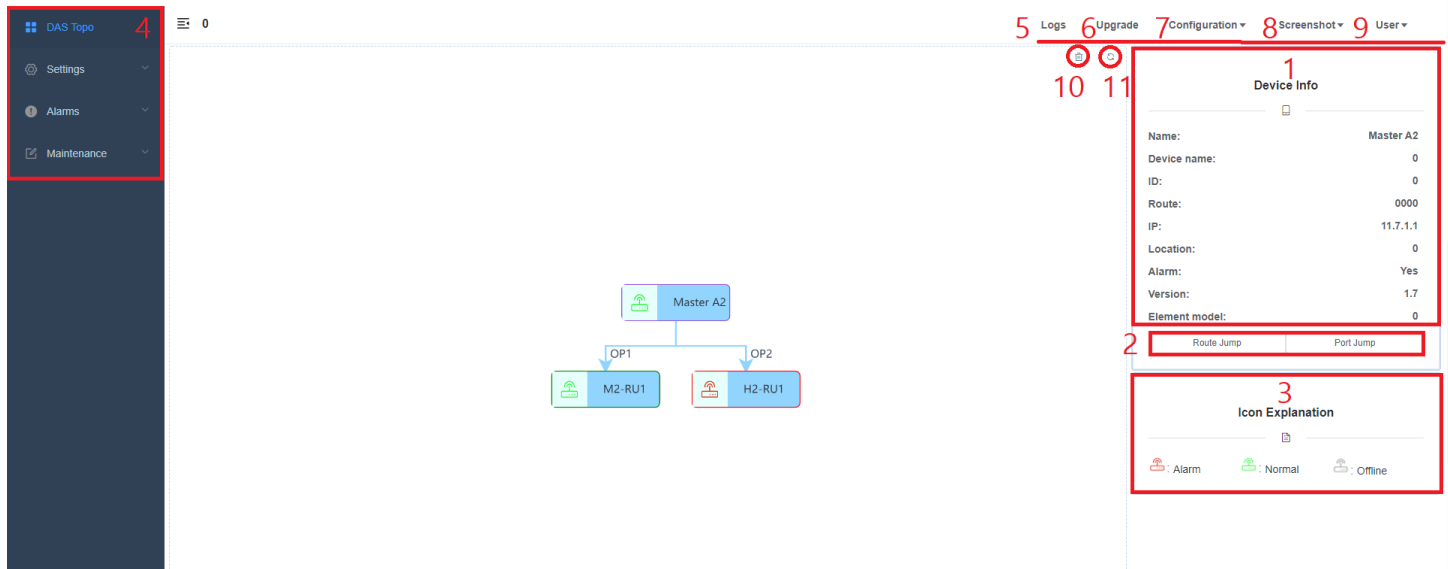


Figure 11. WebOMT Homepage

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.

Note: 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.
8. **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.

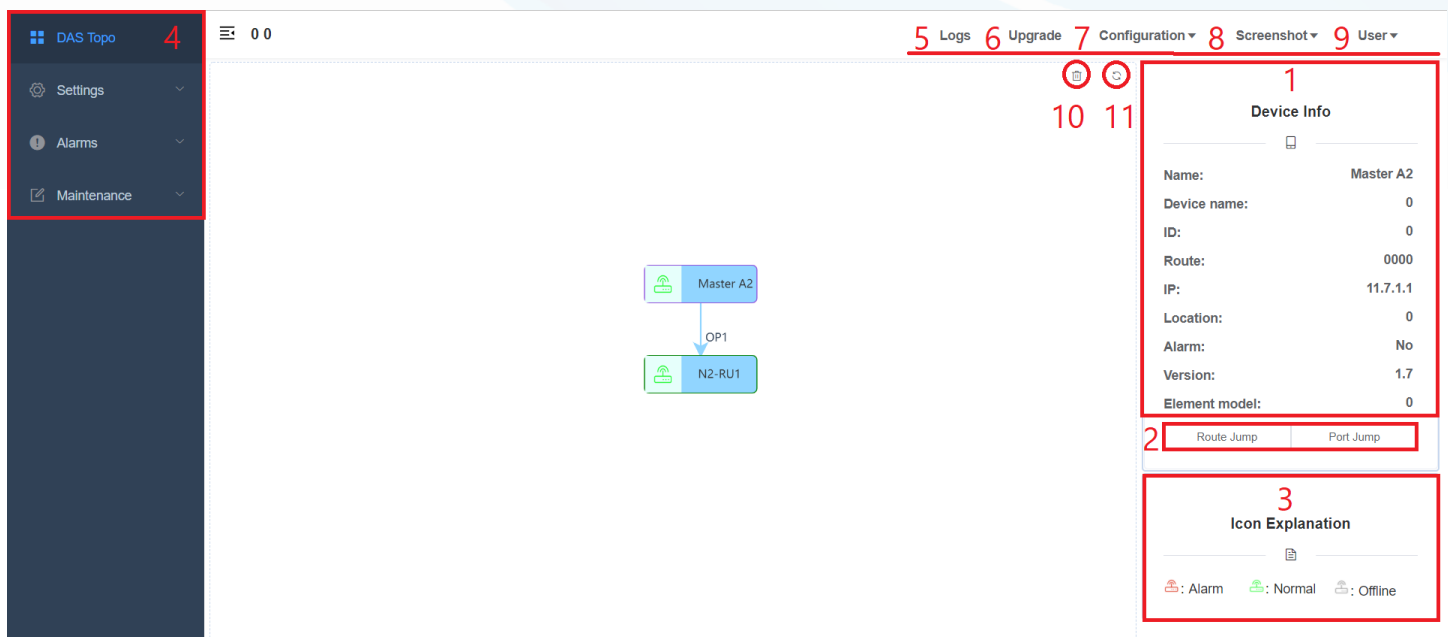



Figure 12. Displaying the System Topology

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

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

Grey icon  **with grey box line:** indicates this element was once connected but is currently disconnected.

Red icon  **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.

Note: 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.

A2[master] 23F-t Logs Upgrade Configuration Screenshot User

<input type="checkbox"/>	Element Identification		unit	range	<div style="border: 2px solid red; padding: 5px;"> <input type="button" value="query"/> <input type="button" value="set"/> <input type="button" value="clear"/> <input type="button" value="query all"/> </div>
<input type="checkbox"/>	Vendor	Sunwave			
<input type="checkbox"/>	Element Model Number	0			
<input type="checkbox"/>	Element Serial Number	123			
<input type="checkbox"/>	Software Version	1.1			
<input type="checkbox"/>	Device ID	A2000001		hexadecimal	
<input type="checkbox"/>	Device Sub ID	3		decimalism	
<input type="checkbox"/>	Installed Location Label	NA		20 characters	
<input type="checkbox"/>	Site Name	A2[master]		100 characters	
<input type="checkbox"/>	Device Name	NA		40 characters	
<input type="checkbox"/>	Date And Time		unit	range	
<input type="checkbox"/>	System Date And Time	2000-01-04 21:17:54			

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:

Protocol - 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.

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

3. Click Set to save the setting.

<input type="checkbox"/>	CONSOLE IP setting		unit	range
<input type="checkbox"/>	Protocol	UDP		
<input type="checkbox"/>	Primary NMS IP Address	10.7.3.100		
<input type="checkbox"/>	Secondary NMS IP Address	10.7.3.101		
<input type="checkbox"/>	Primary NMS Port Number	80		
<input type="checkbox"/>	Secondary NMS Port Number	80		
<input checked="" type="checkbox"/>	Device IP Addr	10.7.3.198		
<input checked="" type="checkbox"/>	Subnet Mask	255.255.255.0		
<input checked="" type="checkbox"/>	Default Gateway	10.7.0.1		
<input checked="" type="checkbox"/>	Device Recv Port(UDP)	100		
<input checked="" type="checkbox"/>	Heartbeat Clock	30	s	

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.

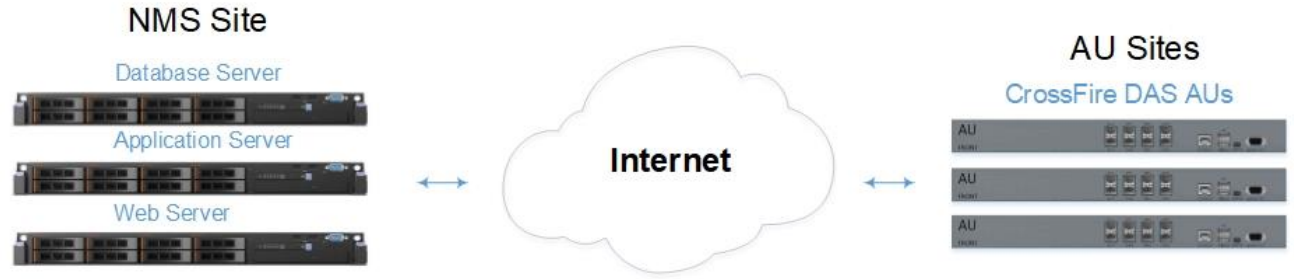


Figure 15. NMS System Architecture

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.

NMS Port Number - The target port of NMS Server (default defined port of 80).

4. Click Set to save the setting.

<input type="checkbox"/>	CONSOLE IP setting		unit	range
<input type="checkbox"/>	Protocol	<input type="text" value="UDP"/>		
<input type="checkbox"/>	Primary NMS IP Address	<input type="text"/>		
<input type="checkbox"/>	Secondary NMS IP Address	<input type="text"/>		
<input type="checkbox"/>	Primary NMS Port Number	<input type="text"/>		
<input type="checkbox"/>	Secondary NMS Port Number	<input type="text"/>		

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.

SNMP Trap Protocol - The trap protocol to send the SNMP trap.

<input type="checkbox"/>	Trap Settings		unit	range
<input type="checkbox"/>	Protocol	SNMP		
<input type="checkbox"/>	SNMP Trap Protocol	SNMPV2		
<input type="checkbox"/>	Trap IP Address 1	SNMPV2		
<input type="checkbox"/>	Trap IP Address 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.

Trap Port: 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.

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

Trap IP Addr Security EngineID - The Security EngineID of target Trap IP address.

<input type="checkbox"/>	SNMPV3 USM Reset	
<input type="checkbox"/>	Reset USM	<input type="text" value="Reset"/>
<input type="checkbox"/>	SNMPV3 USM Edit	
<input type="checkbox"/>	Security User Name	<input type="text" value="cmcadmin"/>
<input type="checkbox"/>	Authentication Protocol	<input type="text" value="None"/>
<input type="checkbox"/>	Authentication Password	<input type="text" value="password"/>
<input type="checkbox"/>	Privacy Protocol	<input type="text" value="None"/>
<input type="checkbox"/>	Privacy Password	<input type="text" value="password"/>
<input type="checkbox"/>	Edit User Confirm	<input type="text" value="Confirm"/>
<input type="checkbox"/>	Trap Settings	
<input type="checkbox"/>	Protocol	<input type="text" value="SNMP"/>
<input type="checkbox"/>	SNMP Trap Protocol	<input type="text" value="SNMPV3"/>
<input type="checkbox"/>	Trap IP Address 1	<input type="text" value="192.168.1.6"/>
<input type="checkbox"/>	Trap IP Address 2	<input type="text" value="192.168.1.221"/>
<input type="checkbox"/>	Trap Port	<input type="text" value="1967"/>
<input type="checkbox"/>	Trap IP Address 1 Security Engine ID	<input type="text" value="80000523010A0703"/>
<input type="checkbox"/>	Trap IP Address 2 Security Engine ID	<input type="text" value="80000523010A0703"/>

Figure 18. SNMP V3 Configuration

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

Trap Resend Enable: **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.

<input type="checkbox"/>	Trap Resend		unit	range
<input type="checkbox"/>	Resend Enable	<input type="checkbox"/>		
<input type="checkbox"/>	Resend Interval	<input type="text" value="30MIN"/>		
<input type="checkbox"/>	Community	<input type="text" value="public"/>		20 characters
<input type="checkbox"/>	Delete History Alarm	<input type="text" value="Confirm"/>		

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 default 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:

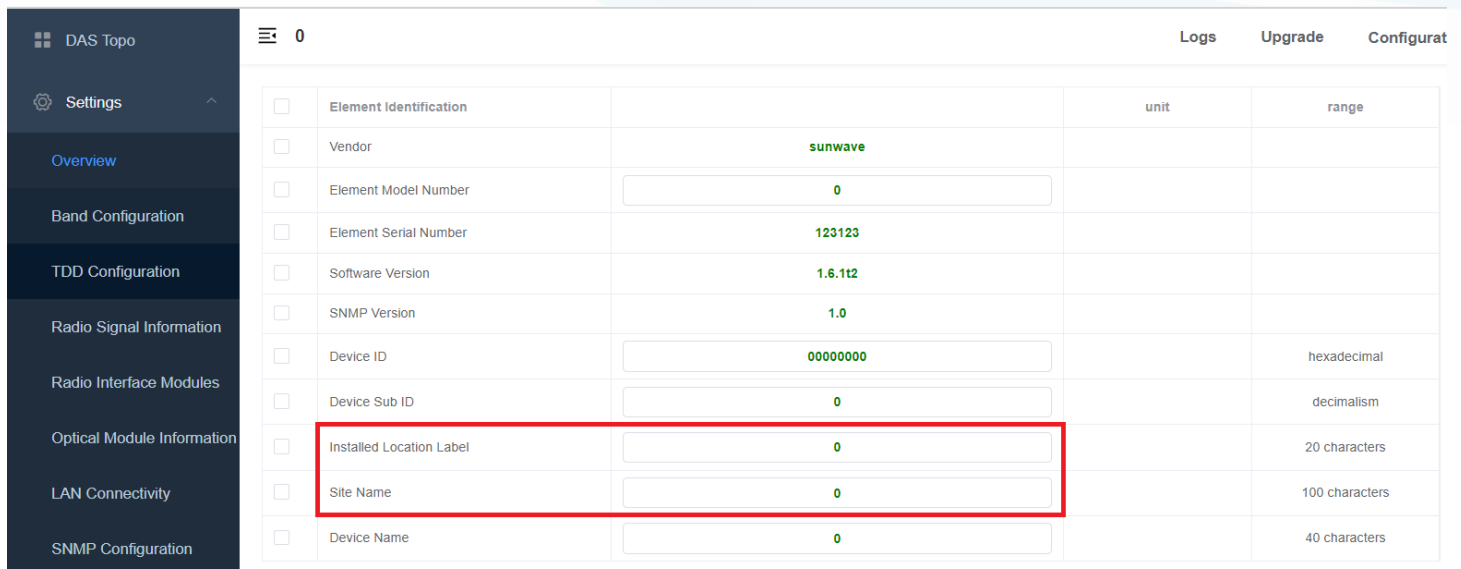
Device ID - Unique hexadecimal number used to identify the site, default 00000000.

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

Device Location - The detailed device installation location.

Site ID - Indicates the details of the current site.

3. Click Set to save the setting.



	Element Identification		unit	range
<input type="checkbox"/>	Vendor	sunwave		
<input type="checkbox"/>	Element Model Number	0		
<input type="checkbox"/>	Element Serial Number	123123		
<input type="checkbox"/>	Software Version	1.6.1t2		
<input type="checkbox"/>	SNMP Version	1.0		
<input type="checkbox"/>	Device ID	00000000		hexadecimal
<input type="checkbox"/>	Device Sub ID	0		decimalism
<input type="checkbox"/>	Installed Location Label	0		20 characters
<input type="checkbox"/>	Site Name	0		100 characters
<input type="checkbox"/>	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 certain time horizon and select the appropriate **Time Zone**
4. Input **NTP IP Address** and Click Set to save the settings.

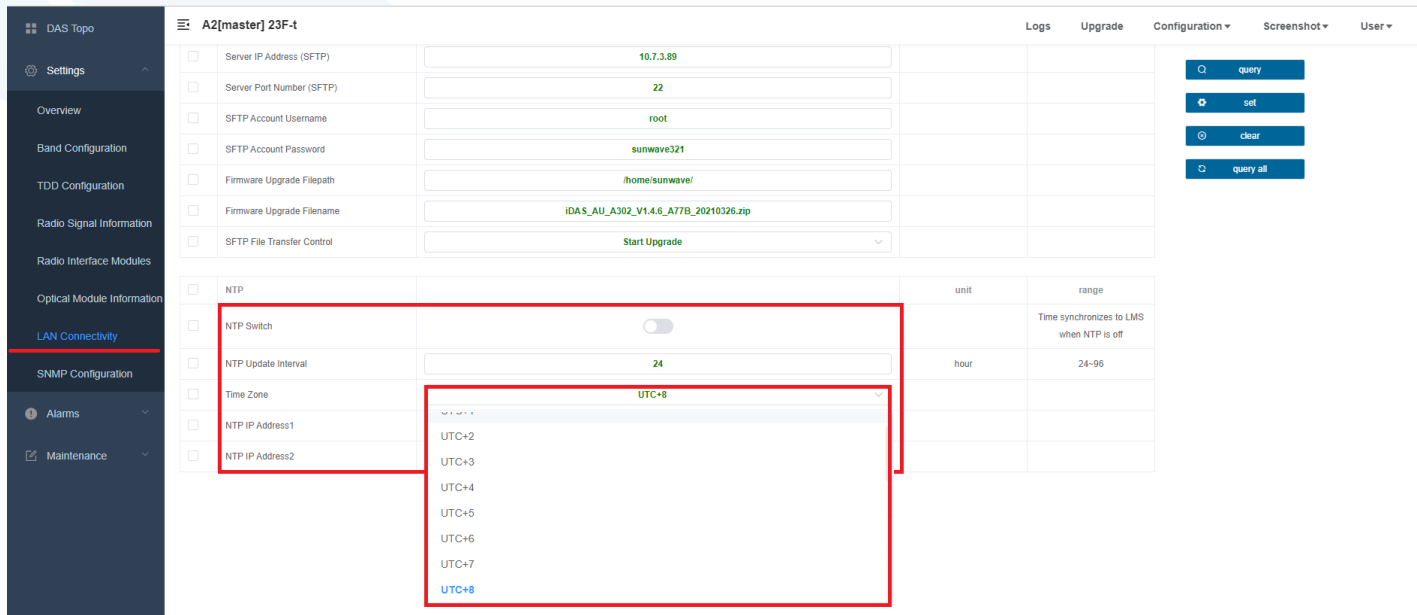


Figure 21. NTP Configuration

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.

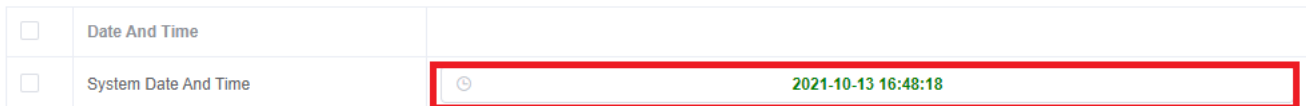


Figure 22. Time Synchronization

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

System Configuration

A2 Band Configuration

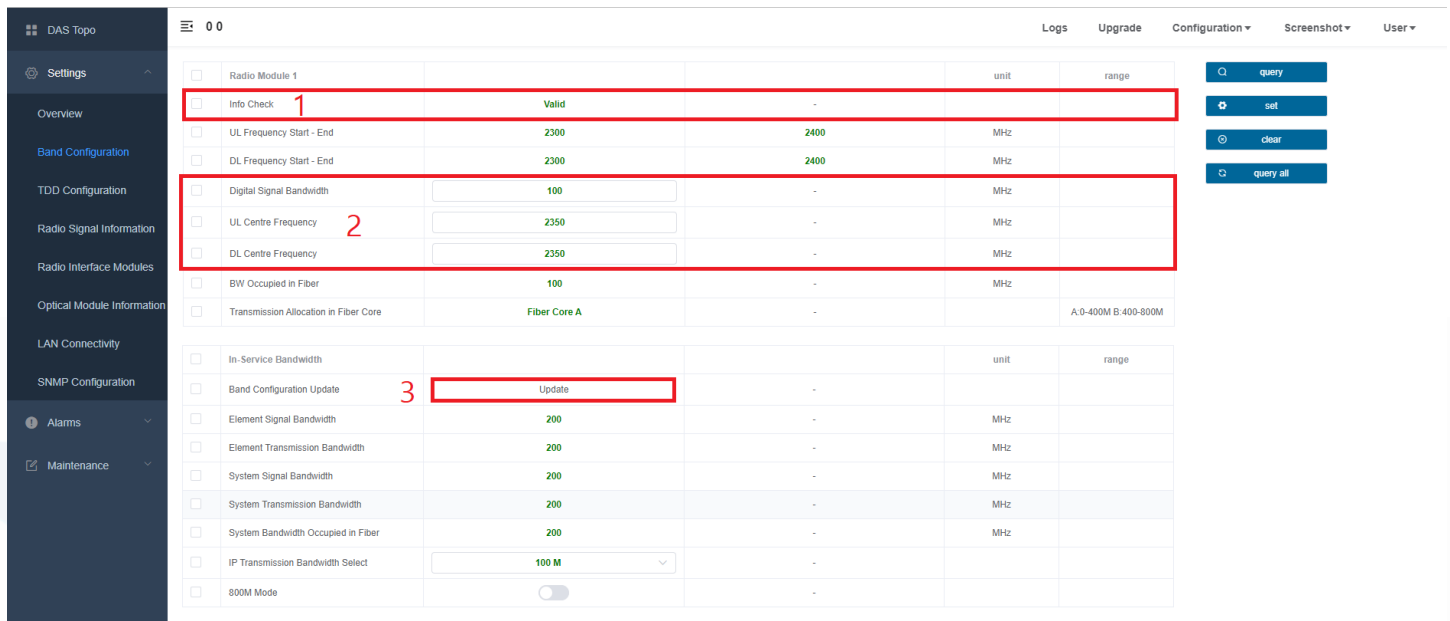
According to the different base station operating frequency bands for each operator, select the passive RF modules for the A2 and active RF modules for the M2RU with the corresponding frequency band and set the Band properties in the OMT of the Master A2. The limits of the uplink and downlink operating 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.
6. 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**.



Radio Module 1	unit	range
Info Check 1	Valid	-
UL Frequency Start - End	2300	2400 MHz
DL Frequency Start - End	2300	2400 MHz
Digital Signal Bandwidth	100	MHz
UL Centre Frequency 2	2350	MHz
DL Centre Frequency	2350	MHz
BW Occupied in Fiber	100	MHz
Transmission Allocation in Fiber Core	Fiber Core A	A:0-400M B:400-800M
In-Service Bandwidth		unit range
Band Configuration Update 3	Update	-
Element Signal Bandwidth	200	MHz
Element Transmission Bandwidth	200	MHz
System Signal Bandwidth	200	MHz
System Transmission Bandwidth	200	MHz
System Bandwidth Occupied in Fiber	200	MHz
IP Transmission Bandwidth Select	100 M	-
800M Mode	<input type="checkbox"/>	-

Figure 23. Band Properties

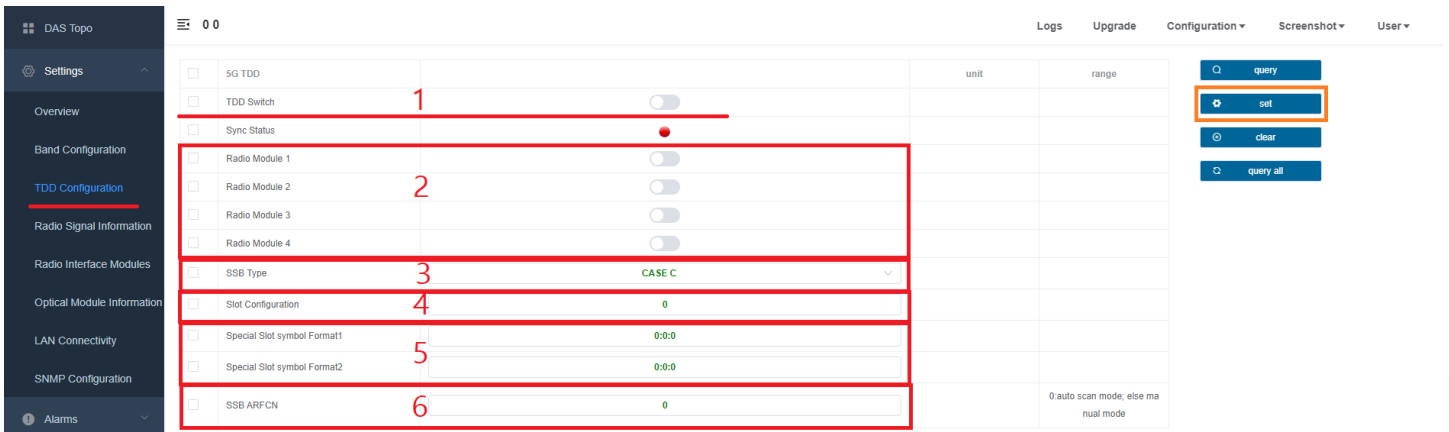
5G TDD Configuration

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.



Item	Unit	Range
<input type="checkbox"/> 5G TDD		
<input type="checkbox"/> TDD Switch		
<input type="checkbox"/> Sync Status		
<input type="checkbox"/> Radio Module 1		
<input type="checkbox"/> Radio Module 2		
<input type="checkbox"/> Radio Module 3		
<input type="checkbox"/> Radio Module 4		
<input type="checkbox"/> SSB Type	CASE C	
<input type="checkbox"/> Slot Configuration	0	
<input type="checkbox"/> Special Slot symbol Format1	0:0:0	
<input type="checkbox"/> Special Slot symbol Format2	0:0:0	
<input type="checkbox"/> SSB ARFCN	0	

Figure 24. TDD Configuration

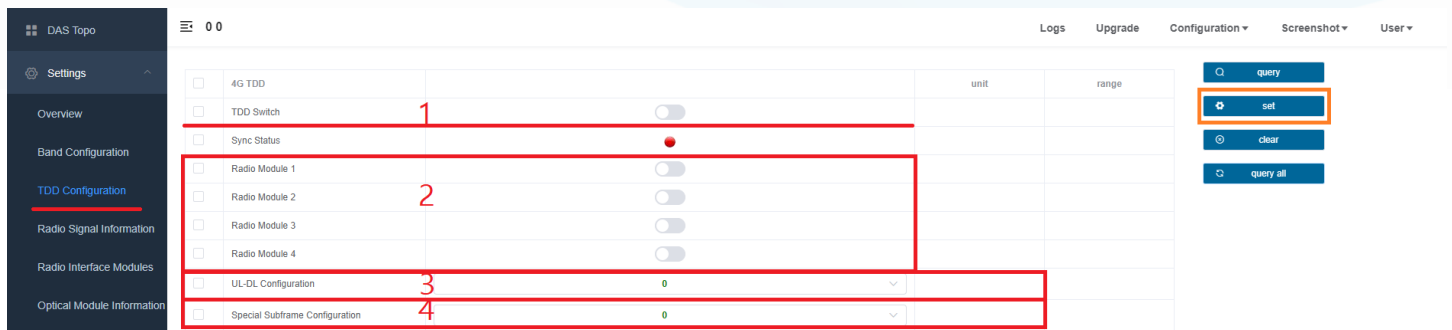
4G TDD Configuration

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.



	unit	range
<input type="checkbox"/> 4G TDD		
<input type="checkbox"/> TDD Switch		
<input type="checkbox"/> Sync Status		
<input type="checkbox"/> Radio Module 1		
<input type="checkbox"/> Radio Module 2		
<input type="checkbox"/> Radio Module 3		
<input type="checkbox"/> Radio Module 4		
<input type="checkbox"/> UL-DL Configuration		
<input type="checkbox"/> Special Subframe Configuration		

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.

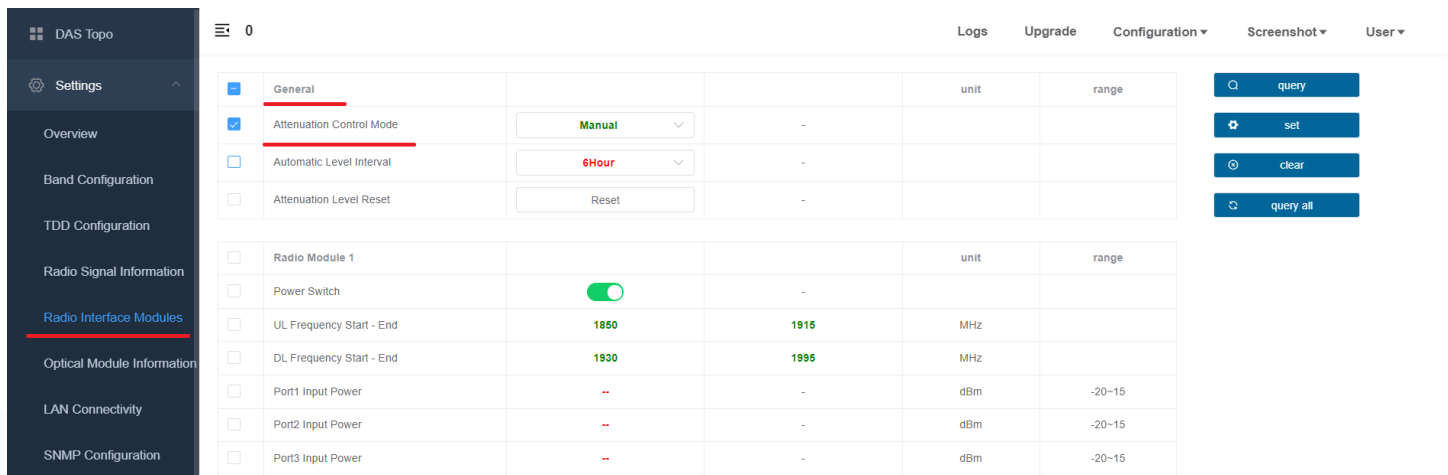
Automatic Mode: The internal ALC function is working when the peak input power exceeds 0 dBm.

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.



The screenshot shows the 'Radio Interface Modules' configuration page. The 'General' tab is selected, and the 'Attenuation Control Mode' is set to 'Manual'. The 'Automatic Level Interval' is set to '6Hour'. The 'Attenuation Level Reset' button is visible. Below this, the 'Radio Module 1' section is expanded, showing various parameters like Power Switch, UL Frequency Start - End, DL Frequency Start - End, and Port1-3 Input Power.

Parameter	Value	Unit	Range
Attenuation Control Mode	Manual	-	-
Automatic Level Interval	6Hour	-	-
Attenuation Level Reset	Reset	-	-
Power Switch	On	-	-
UL Frequency Start - End	1850 - 1915	MHz	-
DL Frequency Start - End	1930 - 1995	MHz	-
Port1 Input Power	--	dBm	-20~15
Port2 Input Power	--	dBm	-20~15
Port3 Input Power	--	dBm	-20~15

Figure 26. Attenuation Control Mode

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**.

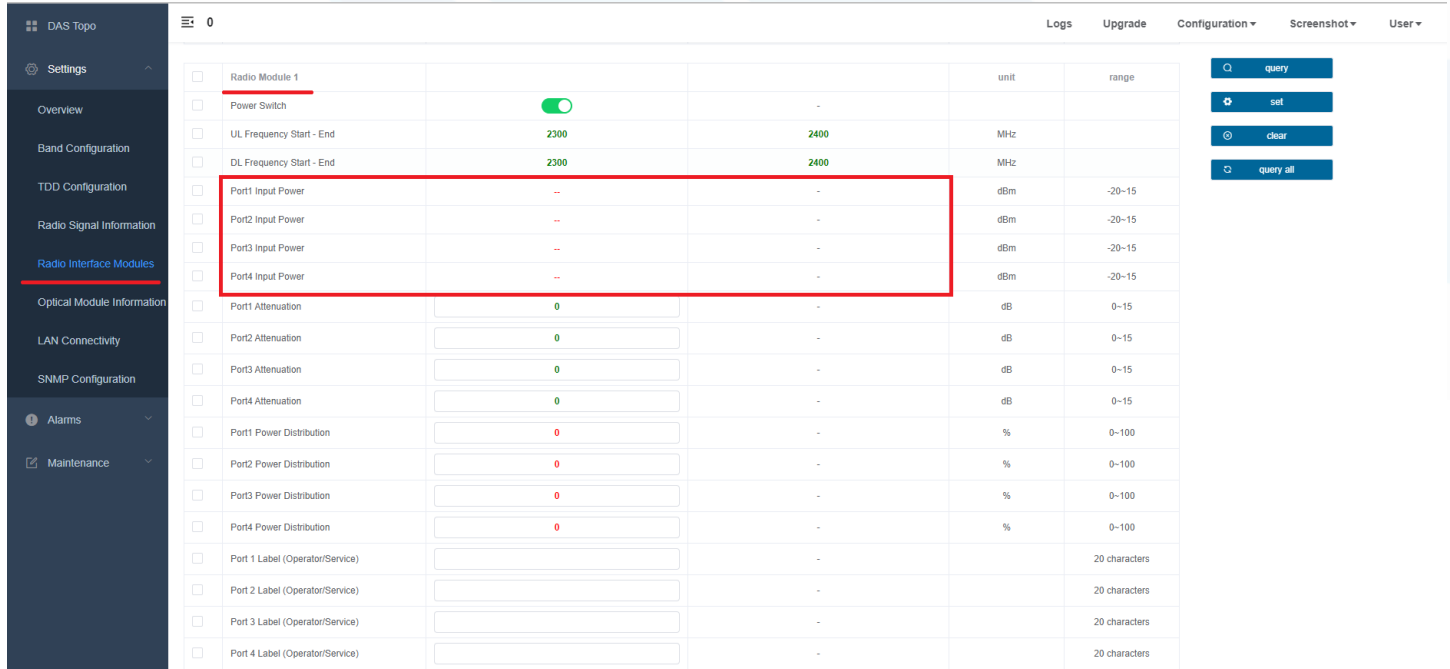
for example: if Port 1 input power is 5.5dBm / Port 2 input power is 9.0dBm and the composite output power is divided by fifty-fifty, set 8.5 dB (5.5dB + 3dB) in Port 1 Attenuation Value and 12.5 dB (9.0dB + 3dB) in Port 2 Attenuation Value.

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.

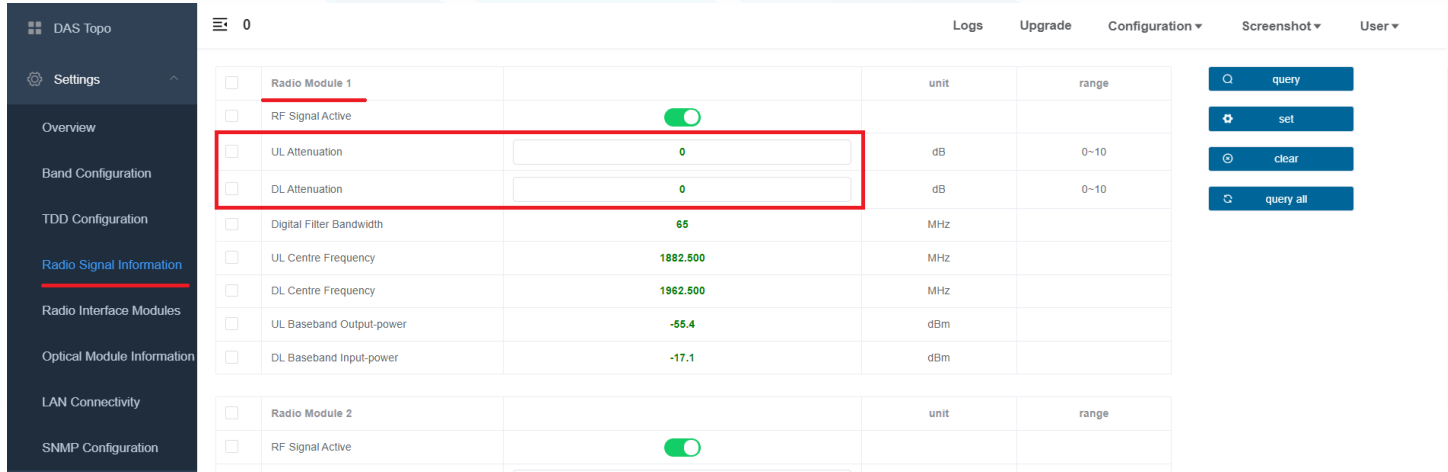


checkbox	Parameter	Value	Unit	Range
<input type="checkbox"/>	Radio Module 1		unit	range
<input type="checkbox"/>	Power Switch	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	UL Frequency Start - End	2300	2400	MHz
<input type="checkbox"/>	DL Frequency Start - End	2300	2400	MHz
<input type="checkbox"/>	Port1 Input Power	--	--	dBm -20~15
<input type="checkbox"/>	Port2 Input Power	--	--	dBm -20~15
<input type="checkbox"/>	Port3 Input Power	--	--	dBm -20~15
<input type="checkbox"/>	Port4 Input Power	--	--	dBm -20~15
<input type="checkbox"/>	Port1 Attenuation	<input type="text" value="0"/>	--	dB 0~15
<input type="checkbox"/>	Port2 Attenuation	<input type="text" value="0"/>	--	dB 0~15
<input type="checkbox"/>	Port3 Attenuation	<input type="text" value="0"/>	--	dB 0~15
<input type="checkbox"/>	Port4 Attenuation	<input type="text" value="0"/>	--	dB 0~15
<input type="checkbox"/>	Port1 Power Distribution	<input type="text" value="0"/>	--	% 0~100
<input type="checkbox"/>	Port2 Power Distribution	<input type="text" value="0"/>	--	% 0~100
<input type="checkbox"/>	Port3 Power Distribution	<input type="text" value="0"/>	--	% 0~100
<input type="checkbox"/>	Port4 Power Distribution	<input type="text" value="0"/>	--	% 0~100
<input type="checkbox"/>	Port 1 Label (Operator/Service)	<input type="text"/>	--	20 characters
<input type="checkbox"/>	Port 2 Label (Operator/Service)	<input type="text"/>	--	20 characters
<input type="checkbox"/>	Port 3 Label (Operator/Service)	<input type="text"/>	--	20 characters
<input type="checkbox"/>	Port 4 Label (Operator/Service)	<input type="text"/>	--	20 characters

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.



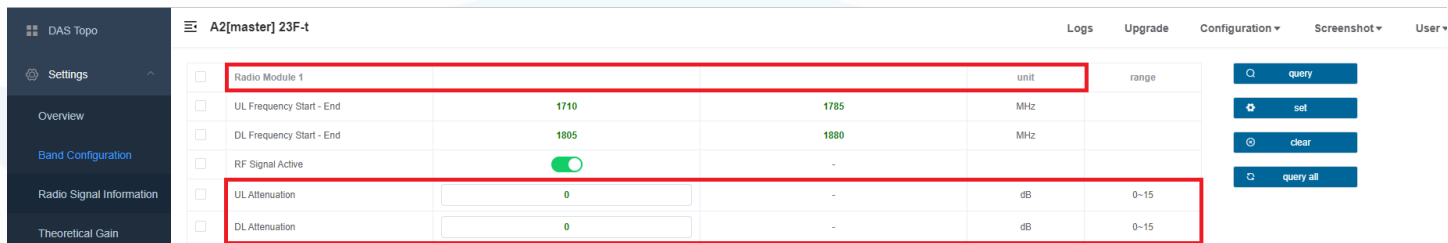
Radio Module 1	unit	range
<input type="checkbox"/> RF Signal Active		
<input type="checkbox"/> UL Attenuation	dB	0-10
<input type="checkbox"/> DL Attenuation	dB	0-10
<input type="checkbox"/> Digital Filter Bandwidth	MHz	65
<input type="checkbox"/> UL Centre Frequency	MHz	1882.500
<input type="checkbox"/> DL Centre Frequency	MHz	1962.500
<input type="checkbox"/> UL Baseband Output-power	dBm	-55.4
<input type="checkbox"/> DL Baseband Input-power	dBm	-17.1

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.



Radio Module 1	unit	range
<input type="checkbox"/> UL Frequency Start - End	MHz	1710 - 1785
<input type="checkbox"/> DL Frequency Start - End	MHz	1805 - 1880
<input type="checkbox"/> RF Signal Active		
<input type="checkbox"/> UL Attenuation	dB	0-15
<input type="checkbox"/> DL Attenuation	dB	0-15

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.

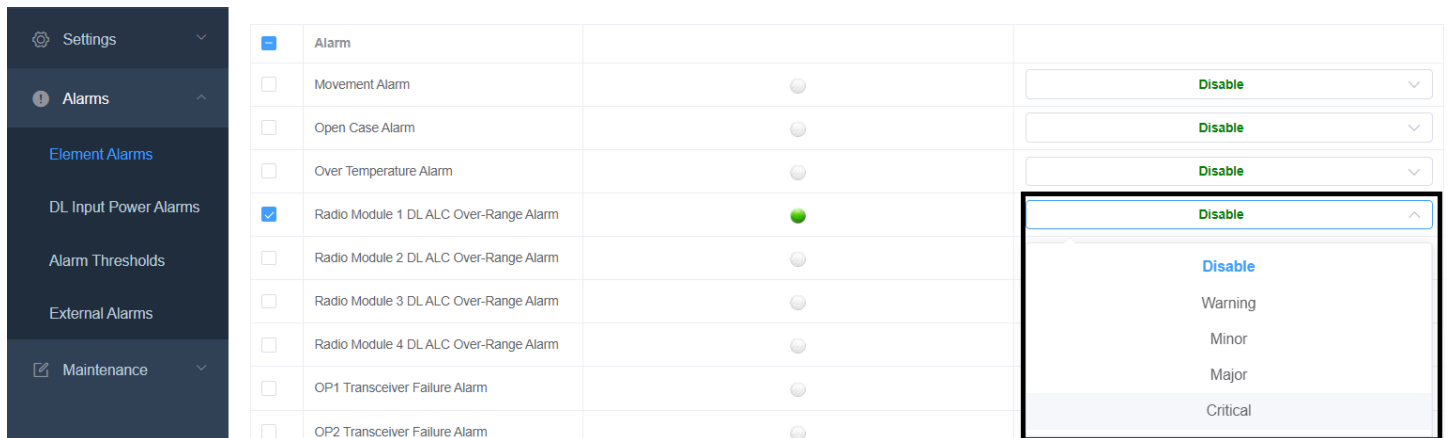


Figure 30. Alarm Severity Setup

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.

- ☰ DAS Topo
- ⚙️ Settings
- 🚨 Alarms
- Element Alarms
- DL Input Power Alarms
- Alarm Thresholds
- External Alarms
- 📝 Maintenance

☰ 0

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	Alarm Threshold		unit	range
<input type="checkbox"/>	Radio Module 1 Input Under-power Threshold	--	dBm	-20~20
<input type="checkbox"/>	Radio Module 2 Input Under-power Threshold	--	dBm	-20~20
<input type="checkbox"/>	Radio Module 3 Input Under-power Threshold	--	dBm	-20~20
<input type="checkbox"/>	Radio Module 4 Input Under-power Threshold	--	dBm	-20~20
<input type="checkbox"/>	Radio Module 1 Input Over-power Threshold	10	dBm	-20~20
<input type="checkbox"/>	Radio Module 2 Input Over-power Threshold	10	dBm	-20~20
<input type="checkbox"/>	Radio Module 3 Input Over-power Threshold	10	dBm	-20~20
<input type="checkbox"/>	Radio Module 4 Input Over-power Threshold	10	dBm	-20~20
<input type="checkbox"/>	Over Temperature Threshold	85	°C	

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.

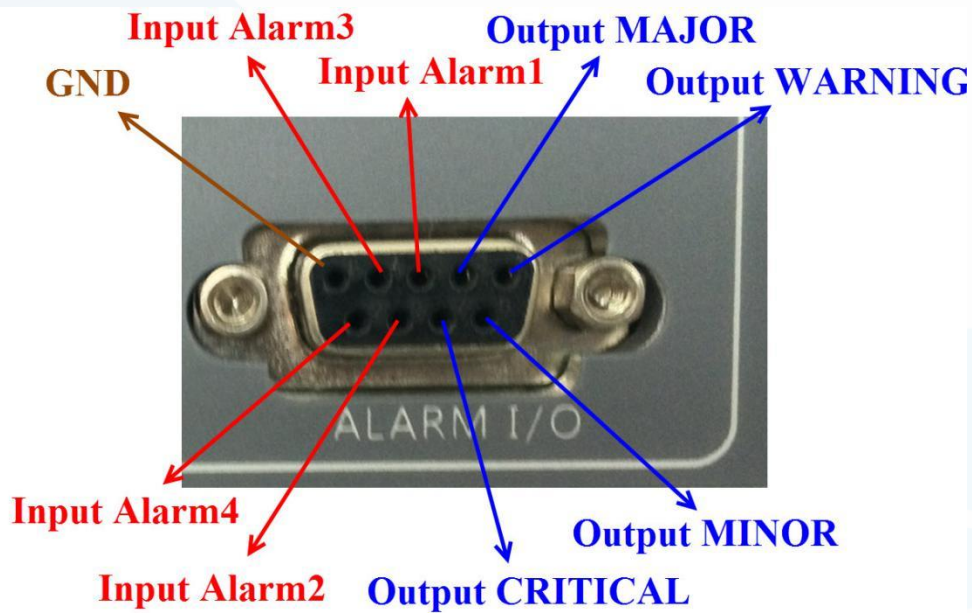
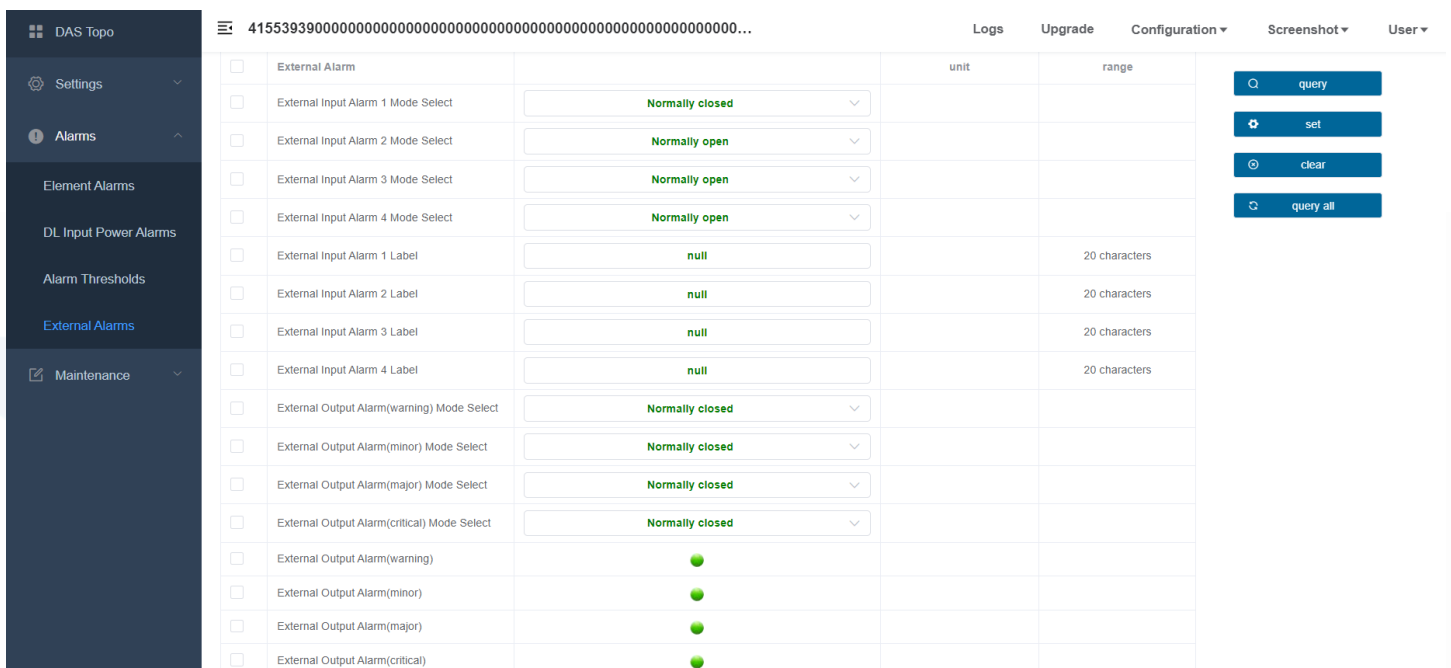


Figure 32. Pins Description

<input type="checkbox"/>	External 1 Alarm	<input type="radio"/>	Disable
<input type="checkbox"/>	External 2 Alarm	<input type="radio"/>	Disable
<input type="checkbox"/>	External 3 Alarm	<input type="radio"/>	Disable
<input type="checkbox"/>	External 4 Alarm	<input type="radio"/>	Disable

Figure 33. External Alarms on A2 OMT



	unit	range
<input type="checkbox"/> External Alarm		
<input type="checkbox"/> External Input Alarm 1 Mode Select	Normally closed	
<input type="checkbox"/> External Input Alarm 2 Mode Select	Normally open	
<input type="checkbox"/> External Input Alarm 3 Mode Select	Normally open	
<input type="checkbox"/> External Input Alarm 4 Mode Select	Normally open	
<input type="checkbox"/> External Input Alarm 1 Label	null	20 characters
<input type="checkbox"/> External Input Alarm 2 Label	null	20 characters
<input type="checkbox"/> External Input Alarm 3 Label	null	20 characters
<input type="checkbox"/> External Input Alarm 4 Label	null	20 characters
<input type="checkbox"/> External Output Alarm(warning) Mode Select	Normally closed	
<input type="checkbox"/> External Output Alarm(minor) Mode Select	Normally closed	
<input type="checkbox"/> External Output Alarm(major) Mode Select	Normally closed	
<input type="checkbox"/> External Output Alarm(critical) Mode Select	Normally closed	
<input type="checkbox"/> External Output Alarm(warning)	●	
<input type="checkbox"/> External Output Alarm(minor)	●	
<input type="checkbox"/> External Output Alarm(major)	●	
<input type="checkbox"/> External Output Alarm(critical)	●	

Figure 34. External Alarms Name and mode

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.

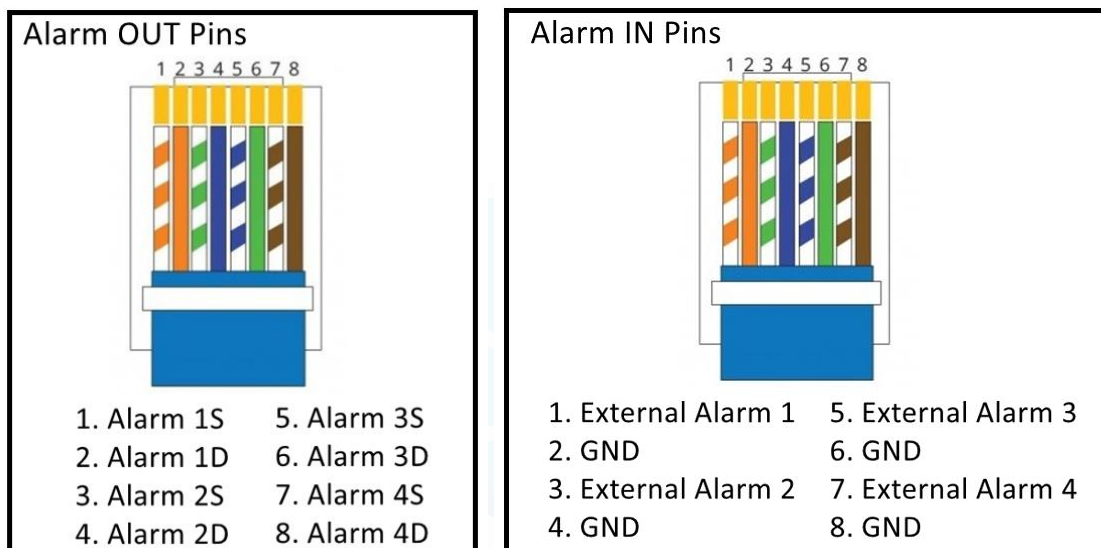
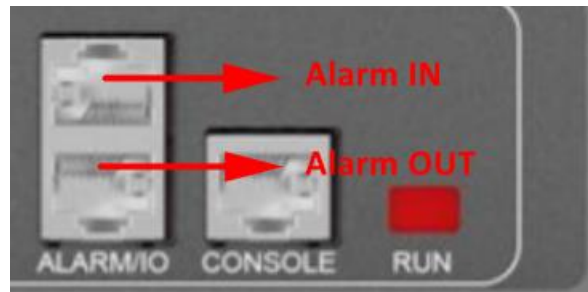


Figure 35. RJ45 Pins Description









<input type="checkbox"/>	External Alarm 1		Warning 		
<input type="checkbox"/>	External Alarm 2		Warning 		
<input type="checkbox"/>	External Alarm 3		Warning 		
<input type="checkbox"/>	External Alarm 4		Warning 		

Figure 36. External Alarms on E2 OMT













External Input Alarm 1 Mode Select	Normally open 		
External Input Alarm 2 Mode Select	Normally open 		
External Input Alarm 3 Mode Select	Normally open 		
External Input Alarm 4 Mode Select	Normally open 		
External Input Alarm 1 Label	null		20 characters
External Input Alarm 2 Label	null		20 characters
External Input Alarm 3 Label	null		20 characters
External Input Alarm 4 Label	null		20 characters
External Output Alarm(warning) Mode Select	Normally closed 		
External Output Alarm(minor) Mode Select	Normally closed 		
External Output Alarm(major) Mode Select	Normally closed 		
External Output Alarm(critical) Mode Select	Normally closed 		
External Output Alarm(warning)			
External Output Alarm(minor)			
External Output Alarm(major)			
External Output Alarm(critical)			

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.

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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.

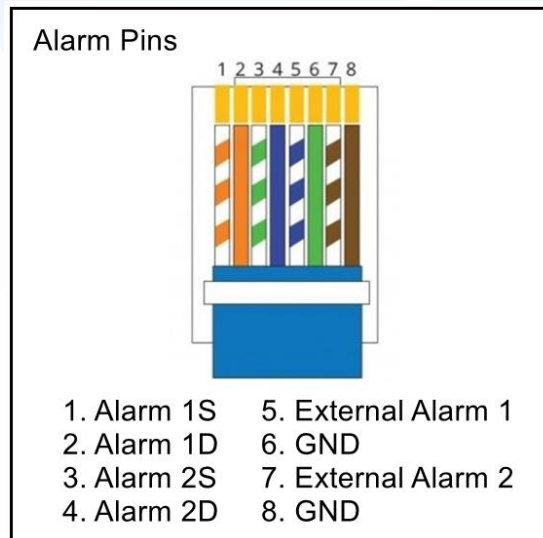


Figure 38. RJ45 Pins Description

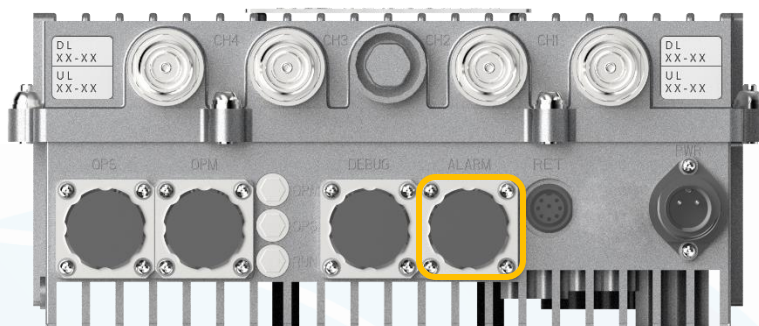


Figure 39. External Alarm Port (RJ45) in M2RU

<input type="checkbox"/>	External 1 Alarm	<input type="radio"/>	<input type="text" value="Disable"/>
<input type="checkbox"/>	External 2 Alarm	<input type="radio"/>	<input type="text" value="Disable"/>

Figure 40. External Alarms on M2 OMT

- ☰ DAS Topo
- ⚙️ Settings
- 🚨 Alarms
- Element Alarms
- Alarm Thresholds
- External Alarms
- 🔧 Maintenance
- 📁 Management

A2[master] 23F-t

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[User](#)

	External Alarm		unit	range	
<input type="checkbox"/>	External Alarm				<input type="button" value="query"/>
<input type="checkbox"/>	External Input Alarm 1 Mode Select	Normally closed			<input type="button" value="set"/>
<input type="checkbox"/>	External Input Alarm 2 Mode Select	Normally closed			<input type="button" value="clear"/>
<input type="checkbox"/>	External Input Alarm 1 Label	null		20 characters	<input type="button" value="query all"/>
<input type="checkbox"/>	External Input Alarm 2 Label	null		20 characters	
<input type="checkbox"/>	External Output Alarm 1 Mode Select	Normally closed			
<input type="checkbox"/>	External Output Alarm 2 Mode Select	Normally closed			
<input type="checkbox"/>	External Output Alarm 1 Level	Disable			
<input type="checkbox"/>	External Output Alarm 2 Level	Disable			
<input type="checkbox"/>	External Output Alarm 1 Indication	●			
<input type="checkbox"/>	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).

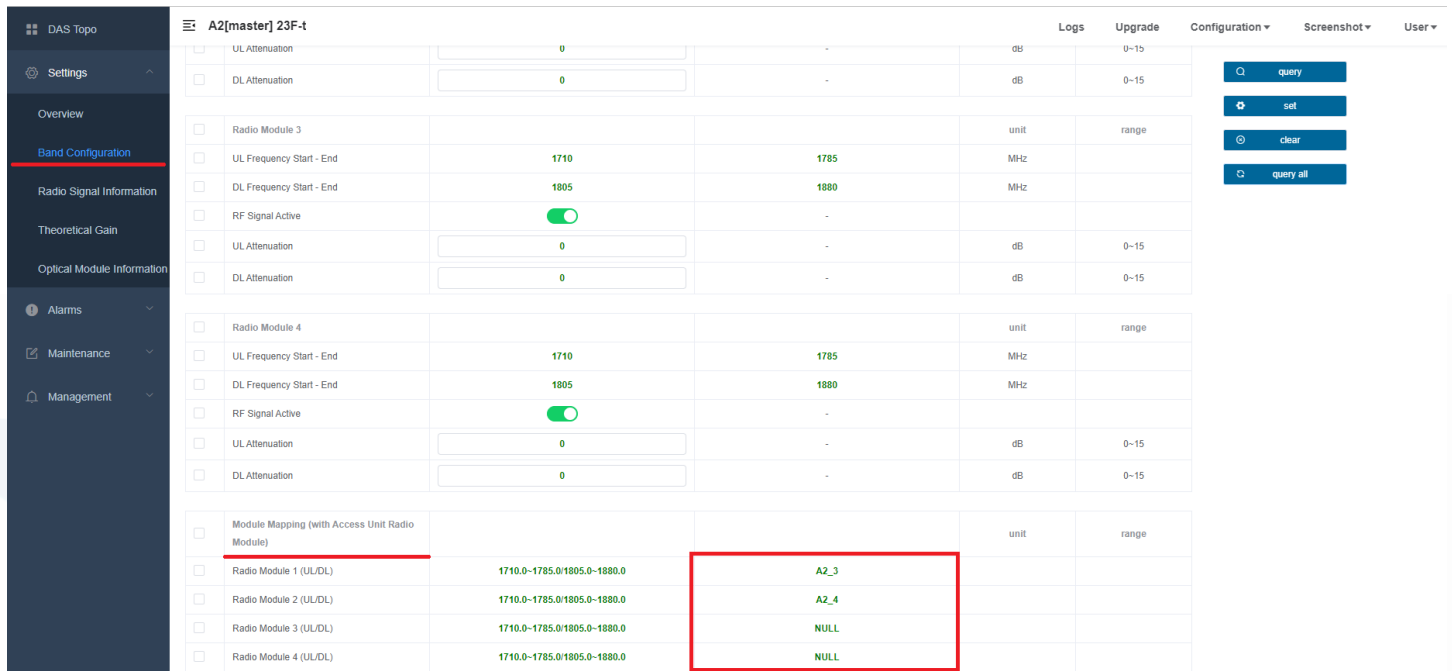
Note: If A2 modules do not have configured band properties(invalid), modules are not able to be mapped.

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**



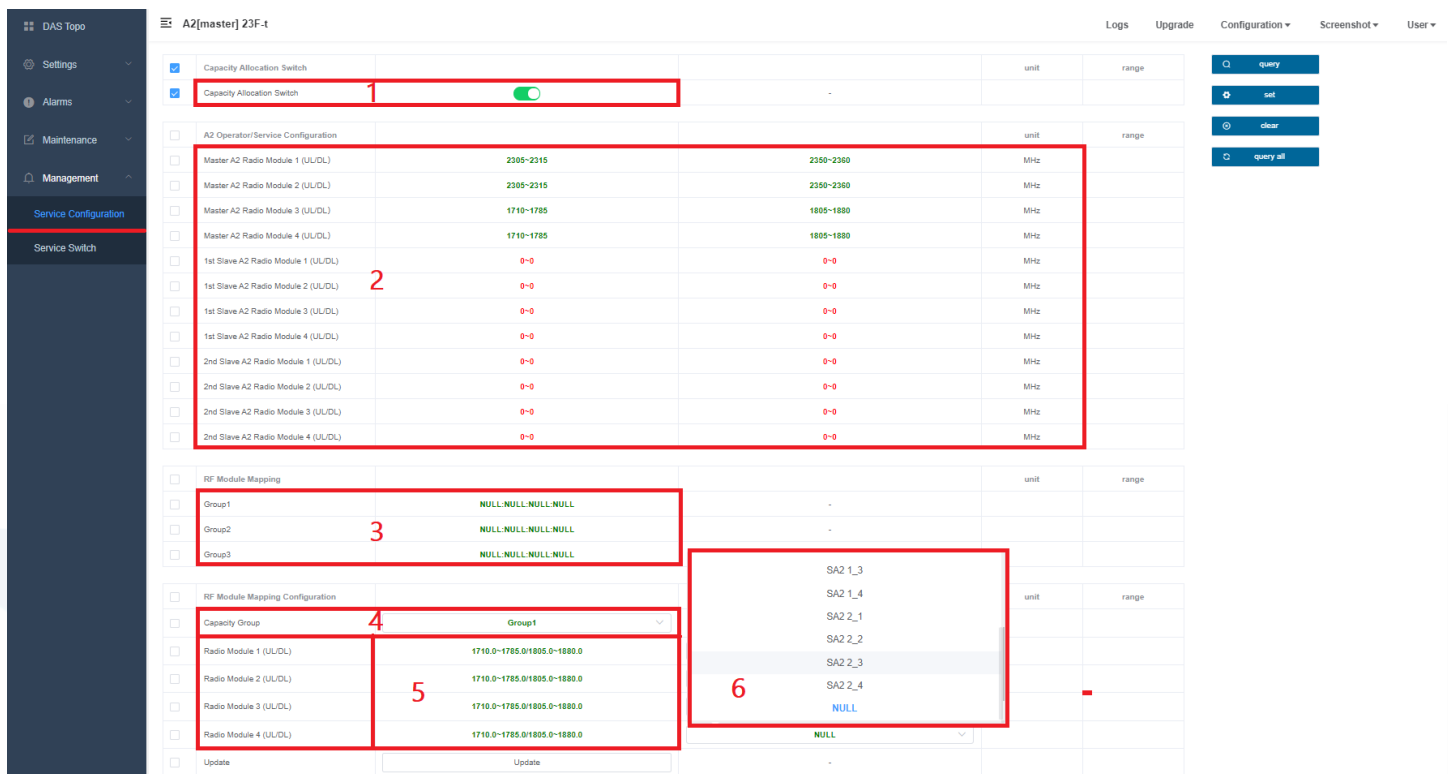
Radio Module (UL/DL)	Frequency Range	Mapping Target
Radio Module 1 (UL/DL)	1710.0-1785.0 1805.0-1880.0	A2_3
Radio Module 2 (UL/DL)	1710.0-1785.0 1805.0-1880.0	A2_4
Radio Module 3 (UL/DL)	1710.0-1785.0 1805.0-1880.0	NULL
Radio Module 4 (UL/DL)	1710.0-1785.0 1805.0-1880.0	NULL

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



The screenshot shows the 'Service Configuration' page for 'A2[master] 23F-t'. The interface includes a sidebar with 'Management' > 'Service Configuration' > 'Service Switch' selected. The main content area has several sections:

- Capacity Allocation Switch:** A toggle switch is turned on (indicated by a red box and '1').
- A2 Operator/Service Configuration:** A table with columns for radio modules and frequency ranges. A red box highlights the '1st Slave A2 Radio Module 2' row (indicated by '2').
- RF Module Mapping:** A table with columns for groups and frequency ranges. A red box highlights the 'Group2' row (indicated by '3').
- RF Module Mapping Configuration:** A table with columns for capacity groups and radio modules. A red box highlights the 'Capacity Group' dropdown set to 'Group1' (indicated by '4'). Another red box highlights the 'Radio Module 1' row (indicated by '5').
- SA2 Mapping:** A table with columns for SA2 modules and frequency ranges. A red box highlights the 'SA2 2_4' row (indicated by '6').

On the right side, there are buttons for 'query', 'set', 'clear', and 'query all'.

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.

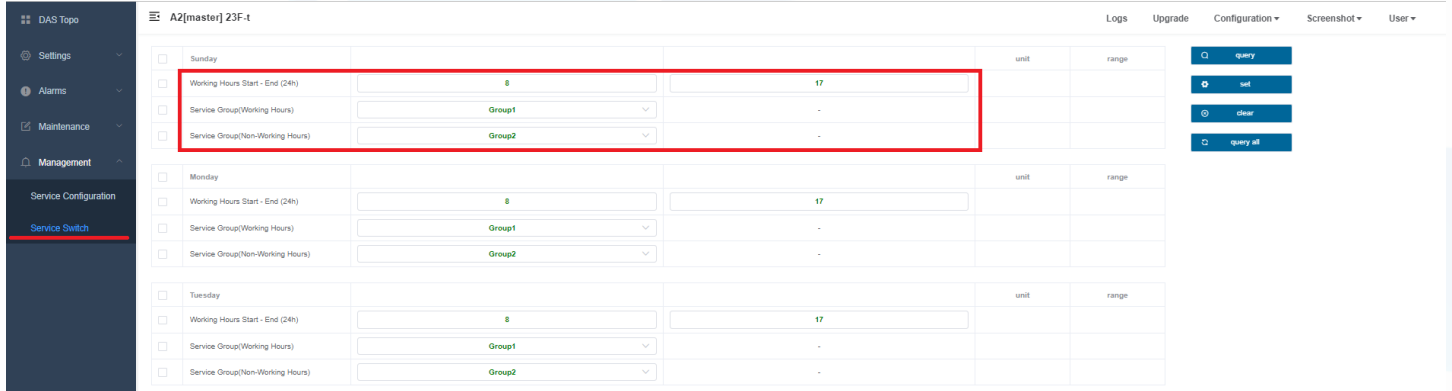


Figure 44. Service Group Scheduling

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 signal 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.

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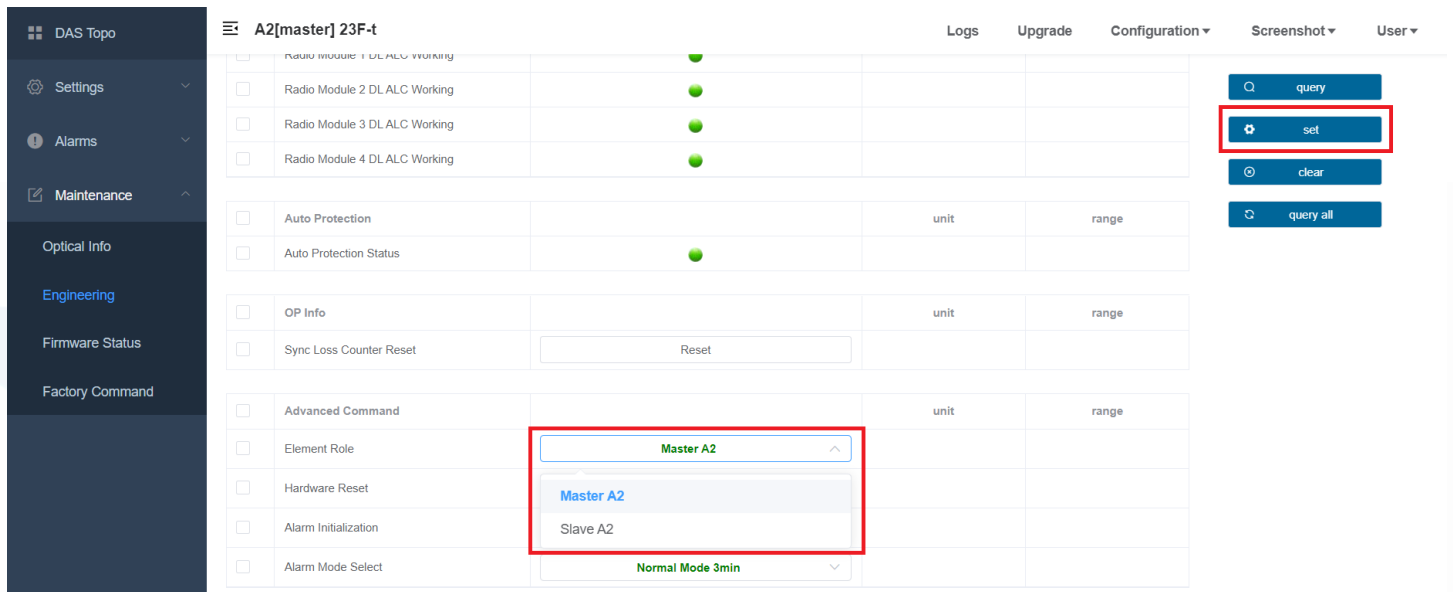
<input type="checkbox"/>	RU Radio Module Signal Test Active		unit	range
<input type="checkbox"/>	RU Radio Module Signal Test Active	<input type="checkbox"/>		

Figure 45. Test Signal Switch in A2

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



The screenshot shows the OMT interface for A2[master] 23F-t. The 'Advanced Command' section is highlighted with a red box, showing a dropdown menu with 'Master A2' selected. The 'set' button is also highlighted with a red box.

Figure 43. Master / Slave A2 Transition

Device Info

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

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.

<input type="checkbox"/>	System Delay			unit	range
<input type="checkbox"/>	Delay Adjustment Method	Automatic	Automatic		
<input type="checkbox"/>	Max Delay Value Measured	1.22	Trigger	us	
<input type="checkbox"/>	Max Delay Value Adjust	0	Manual	us	
<input type="checkbox"/>	Triggered Delay Activation	Confirm	-		
<input type="checkbox"/>	Customize Delay Value	4	-	us	

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.

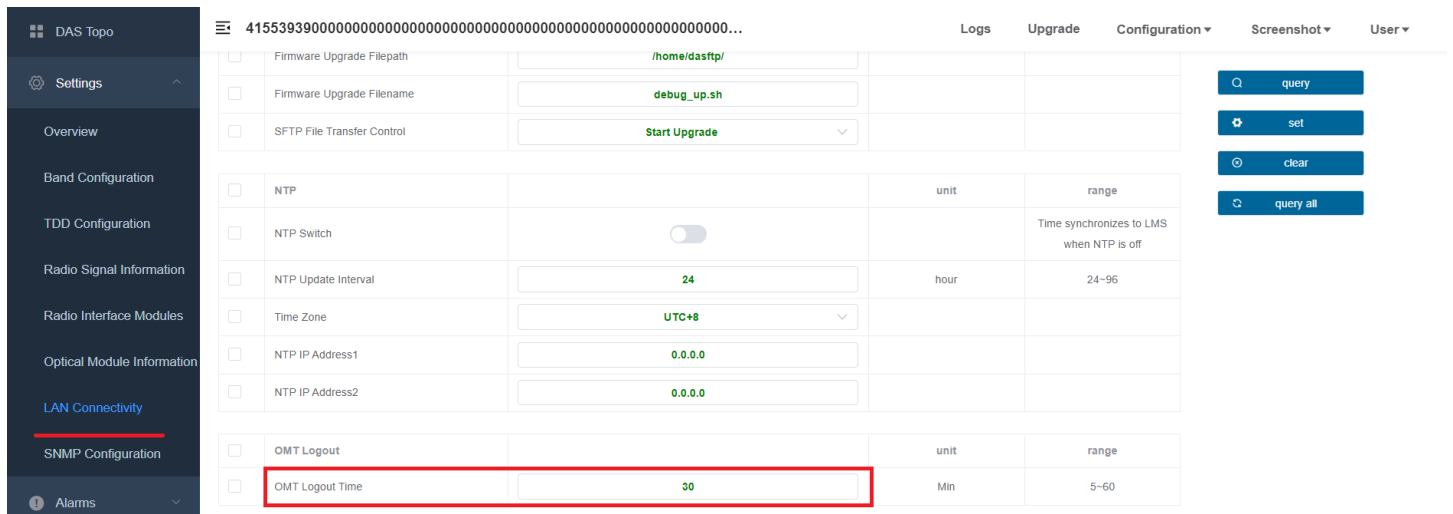


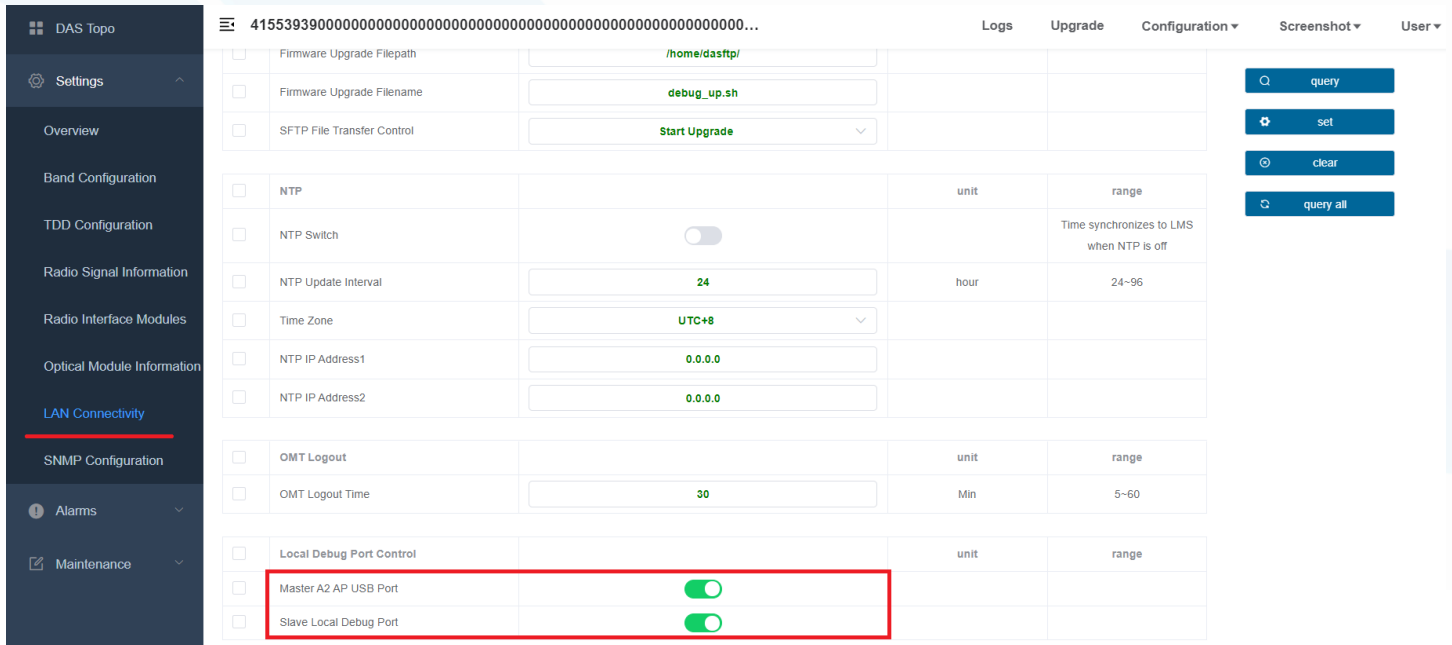
Figure 46. Logout Time

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.



The screenshot shows the OMT GUI with a sidebar on the left containing menu items like 'Settings', 'Overview', 'Band Configuration', etc. The main area displays configuration parameters for a device. A red box highlights the 'Local Debug Port Control' section, which includes 'Master A2 AP USB Port' and 'Slave Local Debug Port', both of which are currently turned on (indicated by green toggle switches).

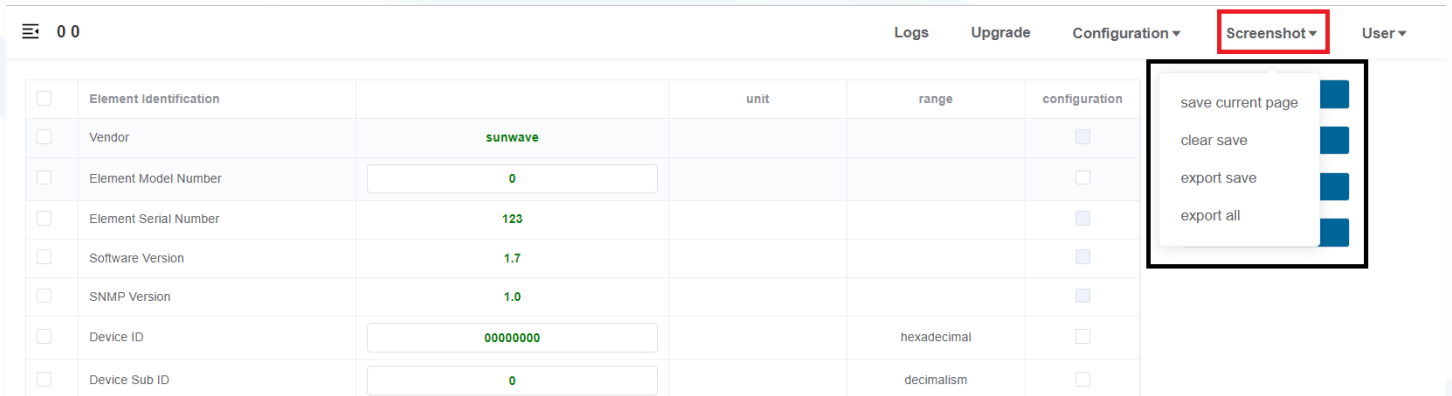
Figure 47. Local Debug Port Control

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



The screenshot shows the OMT GUI with the 'Screenshot' dropdown menu open. The menu options are 'save current page', 'clear save', 'export save', and 'export all'. A black box highlights these options. The background shows a configuration table with fields like 'Element Identification', 'Vendor', 'Element Model Number', etc.

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.

Note: 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

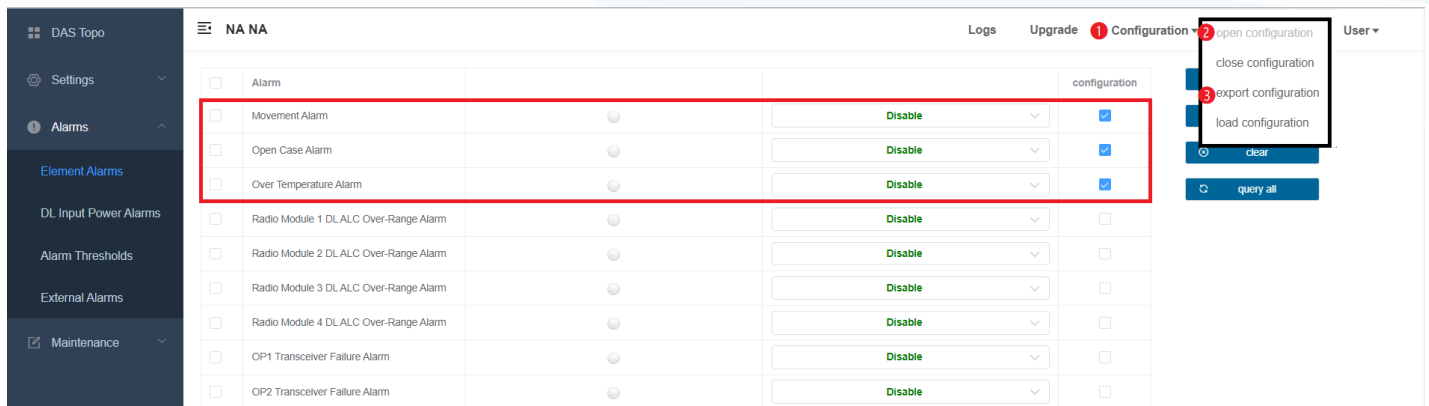




Figure 49. Create a back-up file


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.

File Name	File Size	Date		
 IDAS_A302_Configuration_5746_2021_9_30.json	336 KB	2000-1-5 06:09	<input type="checkbox"/>	







 refresh
  delete
  download
  load

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.

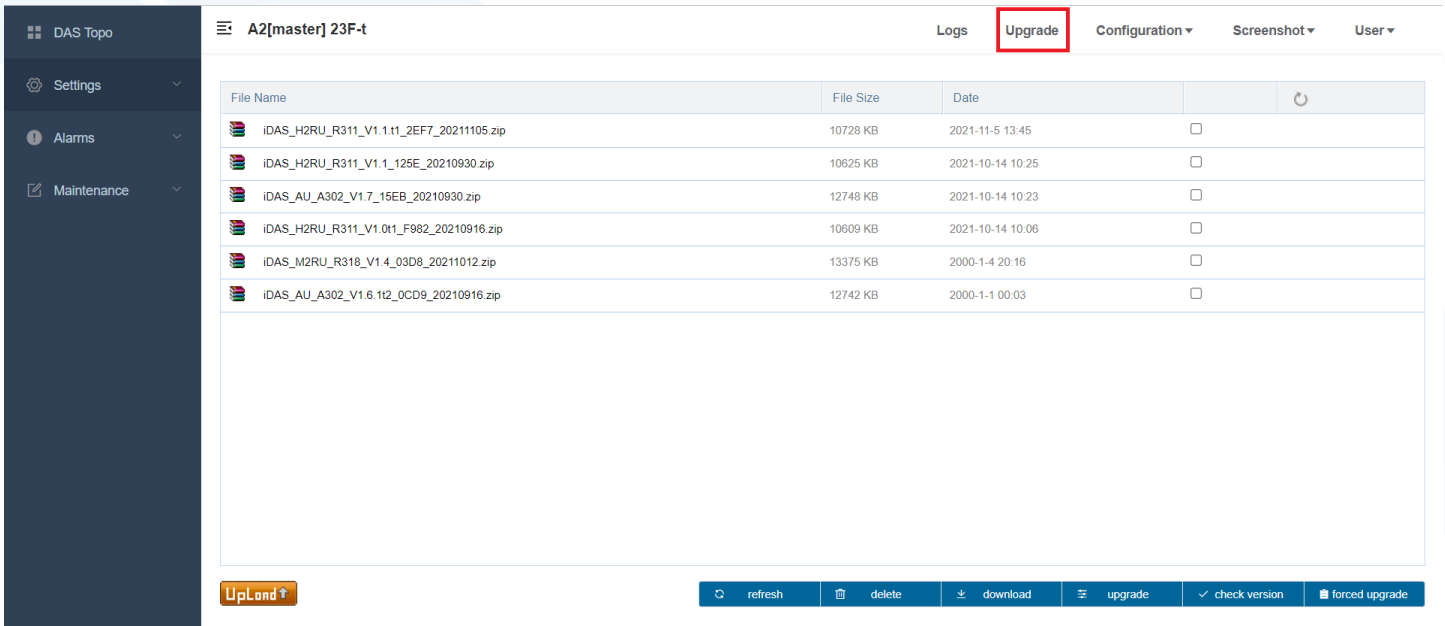
Note: If it is the Master A2 to be replaced in a system, check the software version of the new Master A2 before connecting it to the system. If the software version is not the latest, upload the latest software packages to the new Master A2.

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:

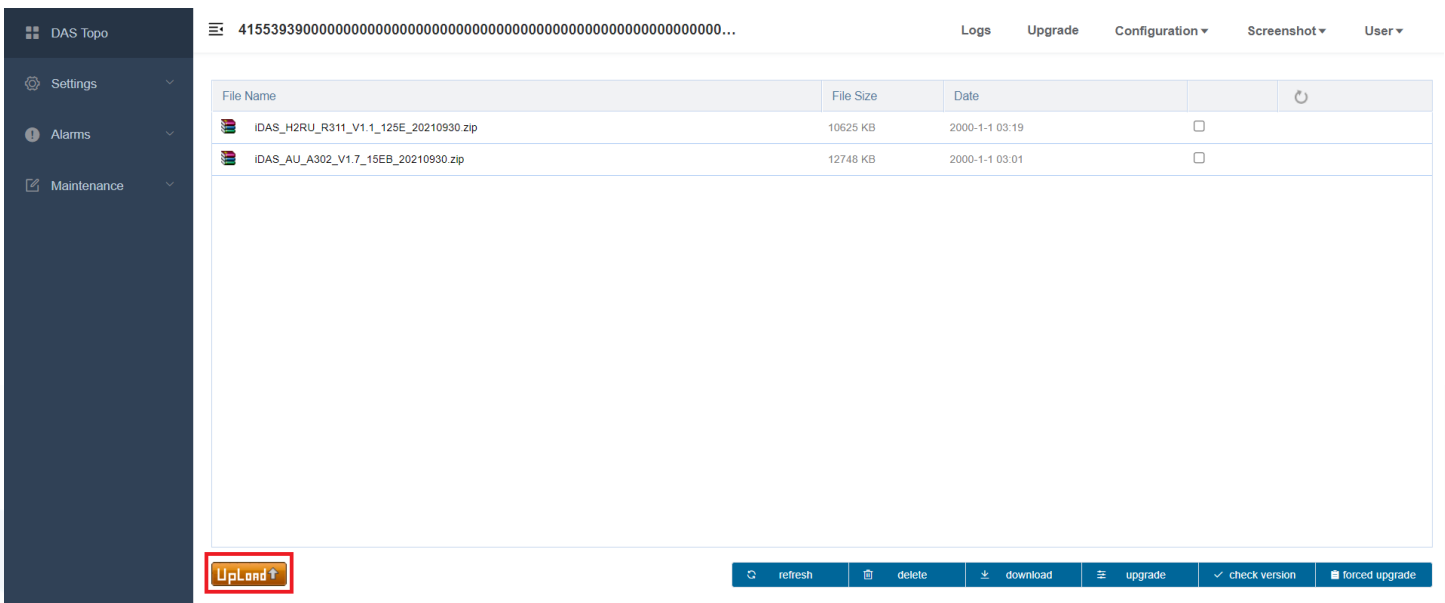
1. Log into the OMT on the Master A2. Click the **Upgrade** button on the main page to navigate to the software upgrade page. See Figure 52.



File Name	File Size	Date		
iDAS_H2RU_R311_V1.1.t1_2EF7_20211105.zip	10728 KB	2021-11-5 13:45	<input type="checkbox"/>	
iDAS_H2RU_R311_V1.1_125E_20210930.zip	10625 KB	2021-10-14 10:25	<input type="checkbox"/>	
iDAS_AU_A302_V1.7_15EB_20210930.zip	12748 KB	2021-10-14 10:23	<input type="checkbox"/>	
iDAS_H2RU_R311_V1.0.t1_F982_20210916.zip	10609 KB	2021-10-14 10:06	<input type="checkbox"/>	
iDAS_M2RU_R318_V1.4_03D8_20211012.zip	13375 KB	2000-1-4 20:16	<input type="checkbox"/>	
iDAS_AU_A302_V1.6.1t2_OCD9_20210916.zip	12742 KB	2000-1-1 00:03	<input type="checkbox"/>	

Figure 52. Software Upgrade 1

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



File Name	File Size	Date		
iDAS_H2RU_R311_V1.1_125E_20210930.zip	10625 KB	2000-1-1 03:19	<input type="checkbox"/>	
iDAS_AU_A302_V1.7_15EB_20210930.zip	12748 KB	2000-1-1 03:01	<input type="checkbox"/>	

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.

- 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.

	File Size	Date	
31114.zip	13135 KB	2019-11-18 11:14	<input checked="" type="checkbox"/>
14.zip	13412 KB	2019-11-18 11:13	<input type="checkbox"/>
116.zip	12742 KB	1970-1-1 00:02	<input type="checkbox"/>

refresh
delete
download
upgrade
check version
forced upgrade

Figure 54. Software Upgrade 3

- 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.

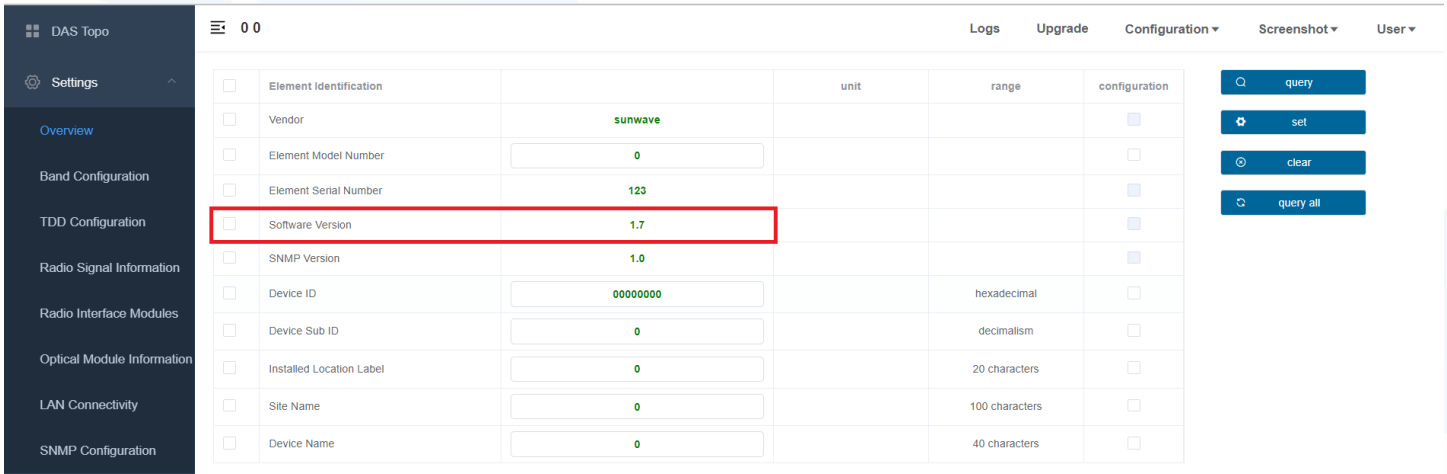
- DAS Topo
- Settings
- Alarms
- Maintenance
- Optical Info
- Engineering
- Firmware Status
- Factory Command

0
Logs Upgrade Configuration Screenshot User

filename	crc	delete
IDAS_AU_A302 V1.7 15EB_20210930.zip	0X15EB	<input type="button" value="delete"/>
IDAS_H2RU_R311_V1.1_125E_20210930.zip	0X125E	<input type="button" value="delete"/>

Figure 55. Software Version Check 1

- 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.



	unit	range	configuration
<input type="checkbox"/> Element Identification			
<input type="checkbox"/> Vendor	sunwave		<input type="checkbox"/>
<input type="checkbox"/> Element Model Number	0		<input type="checkbox"/>
<input type="checkbox"/> Element Serial Number	123		<input type="checkbox"/>
<input type="checkbox"/> Software Version	1.7		<input type="checkbox"/>
<input type="checkbox"/> SNMP Version	1.0		<input type="checkbox"/>
<input type="checkbox"/> Device ID	00000000	hexadecimal	<input type="checkbox"/>
<input type="checkbox"/> Device Sub ID	0	decimalism	<input type="checkbox"/>
<input type="checkbox"/> Installed Location Label	0	20 characters	<input type="checkbox"/>
<input type="checkbox"/> Site Name	0	100 characters	<input type="checkbox"/>
<input type="checkbox"/> Device Name	0	40 characters	<input type="checkbox"/>

Figure 56. Software Version Check

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



MID POWER

4 x 37dBm Output
5G NR Compliant

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.

Contact us today:

www.sunwave.com
cf_support@sunwave.com

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