



DIFFERENT BY DESIGN™

JMA DAS Platform Local Commissioning User Guide

DAS Supervision Version: 4.3.8

Document Version: 9

Date: November 2024

jmawireless.com

Legal Notices

© 2024 John Mezzalingua Associates, LLC dba JMA Wireless. All rights reserved.

This document may contain confidential and/or proprietary information. All company names, brands, and logos are trademarks of holders JMA Wireless or its affiliates. All specifications are subject to change without notice.

World Headquarters

JMA Wireless

140 Cortland Ave.

Syracuse, NY 13202

+1 888 201-6073

customerservice@jmawireless.com

For additional contact information, see the JMA Wireless website:

www.jmawireless.com

Table of Contents

About this Guide	5
What's New	5
Commissioning the DAS	6
Accessing the DAS Supervision Module Web Interface Locally	8
Discovering the DAS Components	10
Modifying the System Name and Description	12
Assigning Names to the DAS Components	13
Setting the TDD Sync Module	14
Selecting the NG OTRX Simulcast Configuration	17
Enabling and Disabling Dense Wavelength Division Multiplexing (DWDM)	19
Selecting the Dual-band NG PtoP Secondary Simulcast Configuration	21
Adjusting the Next Generation Point-to-Point Link RF Gain	22
Adjusting the Point-to-Point Link RF Gain	23
RF Commissioning of Points of Interface and Remote Units	24
Commissioning TAPOIs	26
Commissioning TLPPOIs	28
Commissioning LP POI MB	30
All LP POI MB Models (IY7E8E19AF23D21, IY7E8E19AFD21, IY19AF25D21)	30
Additional Settings for the IY19AF25D21 Model	32
Commissioning TDTPOIs	34
Commissioning TCPRIPOIs	37
Commissioning POI ORAN	38
Commissioning Remote Units	39
RF Commissioning of Donor Front Ends (TDFEs)	41
Enabling Downlink RF Power Alarms	43
Enabling and Disabling Alarms	43
Setting External Alarms and Relays	44
External Alarms	44
Relays	45
Supervision Module (TSPV)	45
Remote Units	46
Setting Alarm and Heartbeat Notifications	47
Enabling SNMP Traps	47
Setting Heartbeat Notifications	47
Setting Alarms and Heartbeat Trap Destinations	48

Setting SMS Notifications	49
Setting the Maximum Number of Alarms to Display in the Alarm Log Table	51
Setting the Network Security	52
Setting a Secure Network	52
Setting the System Date and Time	53
Setting Options for Testing the Network Connection	54
Setting the Supervision Module Communication Interface for Remote Management	55
Setting the WAN Interface	55
Setting the Wireless WAN Interface (Modem)	56
Setting the VPN	57
Managing Users	58
Editing and Deleting Existing Accounts	58
Adding a New User	58
Password Requirements	59
Creating and Managing Inventory Lists	60
Creating an Inventory List of the DAS Current Configuration	60
Selecting an Inventory List	60
Downloading Inventory Lists (csv Format)	61
Downloading Inventory Lists (Web Pages)	61
Getting Help: Technical Support Contact Information	62
Abbreviations	63

About this Guide

The DAS (Distributed Antenna System) supervision module web interface allows the monitoring, configuration, and commissioning of all the components managed by the DAS supervision module.

This document guides users with **admins** capabilities through the commissioning process of JMA distributed antenna systems (DAS).

Refer to the *JMA DAS Platform Remote Monitoring and Management User Guide* for detailed descriptions of the DAS supervision module web user interface, monitoring features, and configuration options.

What's New

This revision (rev.9) of the *JMA DAS Platform Local Commissioning User Guide* describes release 4.3.8 of the DAS supervision module, which adds support for the following new product:

- IAW6T1, Next Generation High Power Low Passive Intermodulation (PIM) Point of Interface.

Release 4.3.8 of the DAS supervision module also introduces:

- The *Configuration file corrupted* alarm for the following next generation DAS components:
 - Single-band Optical Transceivers (NG OTRX).
 - Single-band Upgradable 10/20/40W, MIMO, Next Generation, Software Defined Remote Units (SDRU).
 - Single-band MIMO, Next Generation Remote Units (NG RU).

Refer to the *JMA DAS Platform Troubleshooting Charts* for details about the alarm.

- Support for configurable Dense Wavelength Division Multiplexing (DWDM) on the optical link connecting optical transceivers (NG OTRX) and remote units (NG RU and NG SDRU). See ["Enabling and Disabling Dense Wavelength Division Multiplexing \(DWDM\)" on page 19](#).
- Improvements to highlight topology differences between the *Previous Tree* and *New Tree* at Discovery. In the *JMA DAS Platform Remote Monitoring and Management User Guide*, refer to *Identifying the Components for Already Discovered Systems* for details.

This revision of the of the *JMA DAS Platform Local Commissioning User Guide* also provides instructions for adjusting the attenuation of the TDD sync module, when the DAS includes IY19AF25D21 Next Generation RF Multi-band Points of Interface, which are set to operate in *Configuration 2*. See ["Setting the TDD Sync Module" on page 14](#).

Commissioning the DAS

Before commissioning, complete the DAS installation and power-up, as described in the JMA DAS Platform installation guides:

- *JMA DAS Platform Master Unit Installation Guide*
- *JMA DAS Platform Remote Units Installation Guide*
- *JMA DAS Platform Next Generation Remote Units Installation Guide*

Note: If the supervision module is equipped with the optional wireless modem, before start-up, insert the SIM card, enabled for data transfer and preferably unlocked (PIN code disabled).

The following are the steps required in the commissioning process:

1. Access the DAS web interface locally.

See ["Accessing the DAS Supervision Module Web Interface Locally"](#) on page 8.

Note: When the DAS includes next generation point-to-point links, the DAS components installed at the master unit location and the DAS components installed at the remote location are managed by two separate supervision modules. You need to connect to the supervision modules separately to complete the commissioning of the entire DAS.

2. Find and identify the DAS components.

See ["Discovering the DAS Components"](#) on page 10.

3. Modify the system name and description and assign descriptive names to the DAS components to make management easier.

See ["Modifying the System Name and Description"](#) on page 12 and ["Assigning Names to the DAS Components"](#) on page 13.

4. In TDD networks, set the frame structure of the TDD sync module according to the base station TDD configuration.

See ["Setting the TDD Sync Module"](#) on page 14.

5. Select the proper NG OTRX simulcast configuration according to the system design.

See ["Selecting the NG OTRX Simulcast Configuration"](#) on page 17.

6. Enable or disable Dense Wavelength Division Multiplexing (DWDM) over the optical link that connects the next generation optical transceiver (NG OTRX) to the next generation remote units (NG RUs and NG SDRUs). See ["Enabling and Disabling Dense Wavelength Division Multiplexing \(DWDM\)"](#) on page 19.

7. Select the proper simulcast configuration for the Dual-band NG PtoP Secondary according to the system design.

See ["Selecting the Dual-band NG PtoP Secondary Simulcast Configuration"](#) on page 21.

8. If required by the system design, set the Point-to-Point link RF gain.

See ["Adjusting the Point-to-Point Link RF Gain"](#) on page 23 and ["Adjusting the Next Generation Point-to-Point Link RF Gain"](#) on page 22.

Commissioning the DAS

- 9.** Set the parameters for the RF commissioning of points of interface (POIs) and remote units.
See ["RF Commissioning of Points of Interface and Remote Units" on page 24.](#)
- 10.** Check that all downlink RF power alarms are enabled.
See ["Enabling Downlink RF Power Alarms" on page 43.](#)
- 11.** Set external alarms and relays.
See ["Setting External Alarms and Relays" on page 44.](#)
- 12.** Set heartbeats and alarm notifications.
See ["Setting Alarm and Heartbeat Notifications" on page 47.](#)
- 13.** Set the maximum number of alarms to be recorded and displayed in the **Alarm log Table**.
See ["Setting the Maximum Number of Alarms to Display in the Alarm Log Table" on page 51.](#)
- 14.** Configure the following:
 - Network security. See ["Setting the Network Security" on page 52.](#)
 - DAS date and time. See ["Setting the System Date and Time" on page 53.](#)
 - Options for testing the network connection. See ["Setting Options for Testing the Network Connection" on page 54.](#)
- 15.** Configure the supervision module remote communication interface to allow remote management of managed components.
See ["Setting the Supervision Module Communication Interface for Remote Management" on page 55.](#)
- 16.** Change the factory-set passwords and manage user accounts.
See ["Managing Users" on page 58.](#)
- 17.** Create an inventory list to back up the current DAS configuration.
See ["Creating and Managing Inventory Lists" on page 60.](#)

Commissioning the DAS

Accessing the DAS Supervision Module Web Interface Locally

1. Connect your laptop to the **LAN** port, available on the front panel of the DAS supervision module.



Note: When the DAS includes next generation point-to-point links, the DAS components installed at the master unit location and the DAS components installed at the remote location are managed by two separate supervision modules:

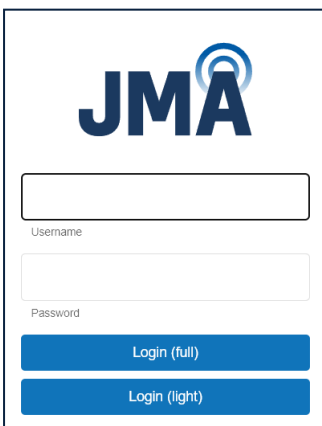
- The supervision module, which manages the DAS components installed at the Master Unit location, including the next generation point-to-point master component.
- The remote supervision module, which manages the DAS components installed at the remote location, including the next generation point-to-point secondary component, distant optical transceivers, and all connected remote units.

You need to connect to the supervision modules separately to complete the commissioning of the entire DAS.

2. Check that your laptop is configured to automatically obtain the IP address from the supervision module's built-in DHCP server.
3. Start a web browser.

Note: In the web browser options it is advisable to set the security level to medium (or lower) and disable the pop-up blocker, to correctly display the web interface.

4. In the URL bar, type the factory-set local DAS IP address: **192.168.1.100**.
5. Click **Enter** for login.



Commissioning the DAS

6. Enter the factory-set username and password of the **admins** account:

User name: **admin**

Password: **Password1**

7. Click **Login (full)**.

› **Access Denied**

If access is denied, check the username and password spelling, then log in with the correct details.

Note: Username and **Password** fields are case-sensitive. Make sure to type the username and password with correct upper-case and lower-case letters.

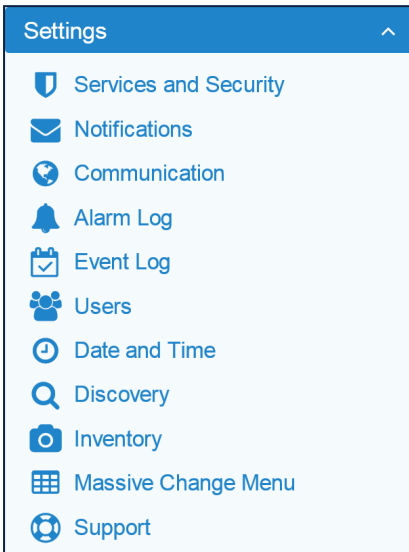
› **Successful Login**

After successful login, the user interface opens with the **System** panel displayed.

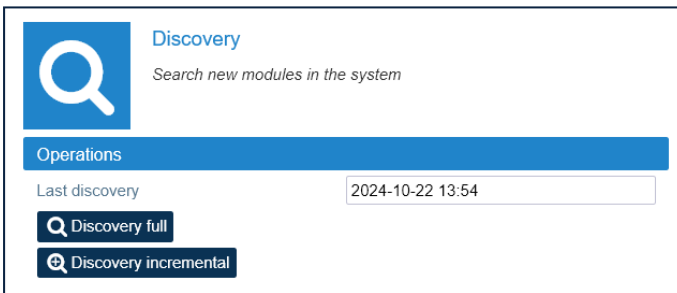
Discovering the DAS Components

To manage the physical components connected to the supervision module they must first be identified.

1. In the **Settings** menu, select **Discovery** to open the **Discovery** panel.



2. In the **Discovery** panel, click **Discovery full**.



3. In the **Please Confirm** dialog box, click **Proceed**.

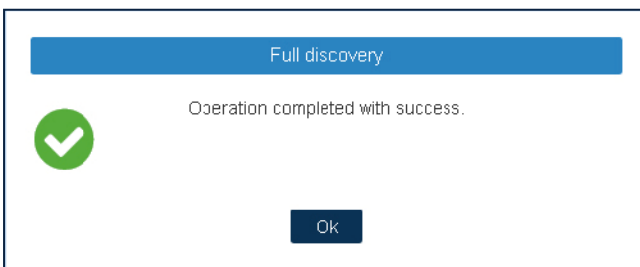
If the discovery process is successful, the hierarchical architecture of the DAS components displays in the **New Tree** pane.

4. Verify that all expected components are listed in the tree.

If not all expected devices are found by the discovery, check connections and power supply, then repeat the discovery.

5. Click **Accept discovery** to accept the discovery.

The supervision module uploads the names of all the detected components and the **Full discovery** dialog box displays.



Commissioning the DAS


6. In the **Full discovery** dialog box, click **Ok** to complete the discovery.

Note:

- If a previous discovery already exists, the **Discovery full** tool updates the entire DAS architecture. When the new full discovery is accepted, **all existing configuration data, inventory lists, and alarm logs are cleared. Components that are not communicating with the DAS supervision module are removed.**
- The discovery must be accepted to unlock the supervision system. Only after the full discovery is accepted, inventory lists and alarm logs, if any, are cleared, and the supervision module starts collecting the DAS alarms.

The discovered DAS physical components are populated in the **Physical Tree** only after the discovery is accepted. A progress bar below the **Physical Tree** indicates the progress of the operation.

Modifying the System Name and Description

1. Select the root node at the top of the **Physical Tree** to open the **System** panel.
The root node is identified by this icon: .

2. In the **System Description** pane, enter the new name and description.

System description	
Name	<input type="text" value="SystemName"/>
Description	<input type="text" value="System-Description"/>

The following characters are allowed:

- Lowercase letters (a through z)
- Uppercase letters (A through Z)
- Base 10 digits (0 through 9)
- Hyphen (-) and underscore (_)

The application input validation feature warns users if invalid characters are entered and details what input is expected for the field.

The **Save** tool in the toolbar and the background of modified fields turn yellow to highlight unsaved changes.

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to assign the new name and description to the DAS. The new system name is displayed in the **Physical Tree**.

Commissioning the DAS

Assigning Names to the DAS Components

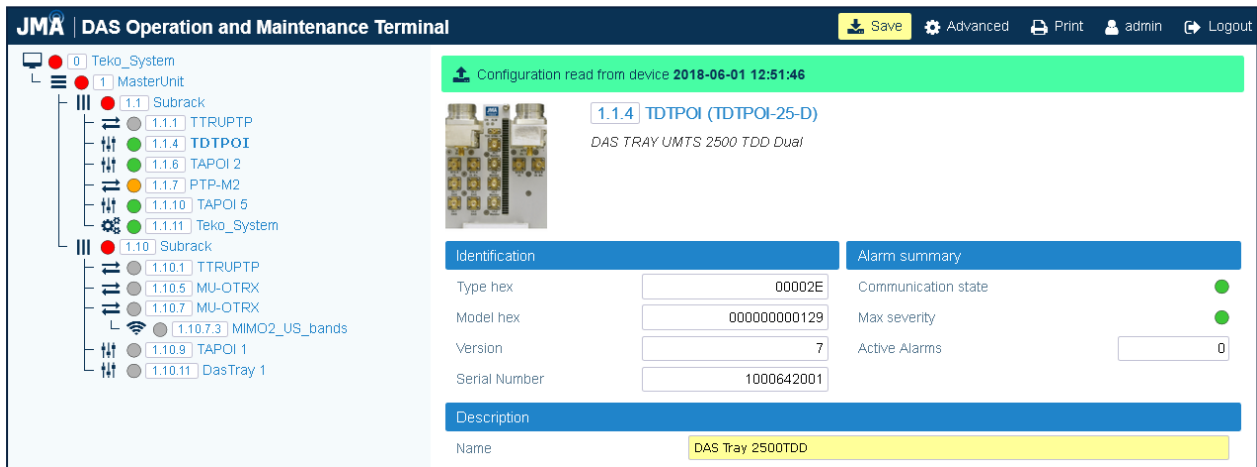
1. In the **Physical Tree**, select the component to display its details panel.
2. In the **Name** field, type a descriptive name for the node.

The following characters are allowed:

- Lowercase letters (a through z)
- Uppercase letters (A through Z)
- Base 10 digits (0 through 9)
- Hyphen (-) and underscore (_)

The application input validation feature warns users if invalid characters are entered and details what input is expected for the field.

The **Save** tool in the toolbar and the background of modified fields turn yellow to highlight unsaved changes.



3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to assign the new name to the DAS component. The name assigned to the component is displayed in the **Physical Tree**.

Note: The names of active points of interface (POIs) and remote units can be set either individually, in each component panel, or globally, accessing the Massive Change Menu. See ["RF Commissioning of Points of Interface and Remote Units"](#) on page 24.

Setting the TDD Sync Module

Note: The proper setting of the TDD sync module frame structure is crucial to optimal DAS performance in TDD networks.

1. In the **Physical Tree**, select the TDD sync module to display its details panel.
2. **TSYNC, TSYNC-N, and TSYNC-C** modules: In the **Parameters** pane, verify that the *Polarity 1* and *Polarity 2* icons are green. If the color of the *Polarity 1* or *Polarity 2* icon is orange, contact Technical Support. See ["Getting Help: Technical Support Contact Information"](#) on page 62.

3. Configure the frame structure as follows:

▪ 4G Systems (TSYNC Module)

In the **Sync Frame Structure** pane, select *Configuration* and *Special Frame*, **according to the BS TDD configuration**:



Sync Frame Structure		
TDD device version	1.4	Configuration
	3	Special Frame
		8

- **Configuration.** Select the TDD downlink-uplink configuration (0-6), which defines how subframes are distributed between uplink and downlink, and the switch-point periodicity.
 - **Special Frame.** Select the subframe configuration (0-8), which defines the length of the Guard period, Downlink Pilot Time Slot, and Uplink Pilot Time Slot.
- #### ▪ 5G Systems (TSYNC-N, TSYNC-C Modules)
- In the **5G/NR Frame Structure** pane, set the 5G/NR frame structure, **according to the BS TDD configuration**:
 - Select the **Subcarrier spacing [kHz]**: 15kHz, 30kHz, or 60kHz.
 - Select the **SSB Position**, that is the position in time of the SSB (Synchronization Signal Block) Carrier. Only one SSB Position per Pattern1+Pattern2 is supported.
 - Optional: Enable **Pattern 2**. Pattern 1 is enabled by default. An additional synchronization pattern (Pattern 2) can be enabled.
 - Select the duration (**DL/UL Pattern 1 duration, DL/UL Pattern 2 duration**).
 - Set the number of downlink slots per pattern (**Nbr of DL slots Pattern 1, Nbr of DL slots Pattern 2**). **Note:** Each slot is made of 14 symbols in time domain.
 - Set the number of DL symbols defined in the Special Slot Format (**Special slot DL symbols Pattern 1, Special slot DL symbols Pattern 2**). Refer to ETSI TS 38.213 Release 15, Table 11.1.1-1 for details.
 - Set the **Holdover time [minutes]**, that is the time for which the TSYNC module will remain in a sync status even if the signal from the BS is absent.
Note: At least 10 minutes of past lock are required.

Commissioning the DAS

- Set the **SSB filter width**.

The Standard 3GPP indicates that the SSB (Synchronization Signal Block) spans across four OFDM symbols in the time domain (default SSB filter width=4). If the CSI-RS (Channel State Information Reference Signal) period and position are the same as the SSB, by using a Spectrum Analyzer in the time domain, you will see a CSI-RS symbol close to the SSB, which is interpreted as the fifth symbol. So, for SSB period and CSI-RS period equal to 20ms, you must set the SSB filter width to 5. If you see more symbols close to the SSB, you must set a higher value.

5G/NR Frame Structure			
TDD device version	<input type="text" value="4.6"/>	SSB filter width	<input type="text" value="4"/>
Subcarrier spacing [kHz]	<input type="text" value="15"/>	Holdover time [minutes]	<input type="text" value="5"/>
SSB position	<input type="text" value="0"/>		
Pattern 1 enabled	<input checked="" type="checkbox"/>	Pattern 2 enabled	<input type="checkbox"/>
DL/UL Pattern 1 duration [ms]	<input type="text" value="10"/>	DL/UL Pattern 2 duration [ms]	<input type="text" value="10"/>
Nbr of DL slots Pattern 1	<input type="text" value="6"/>	Nbr of DL slots Pattern 2	<input type="text" value="4"/>
Special slot DL symbols Pattern 1	<input type="text" value="11"/>	Special slot DL symbols Pattern 2	<input type="text" value="0"/>

- If required by the system design, in the **Parameters** pane, from the *Search Start Level* drop-down list, select the level of the input power required for the module to start searching for a valid TDD signal. The default value is -40dBm.

Parameters			
Temperature [°C]	<input type="text" value="36"/>	Curr 28V [mA]	<input type="text" value="49"/>
Low Temperature	<input checked="" type="checkbox"/>	Mains Fault	<input checked="" type="checkbox"/>
High Temperature	<input checked="" type="checkbox"/>	TDD Unlock	<input checked="" type="checkbox"/>
		Polarity 1	<input checked="" type="checkbox"/>
		Polarity 2	<input checked="" type="checkbox"/>
		Search Start Level [dBm]	<input type="text" value="-40"/>
<input type="button" value="TDD Device Reset"/>			

4. In the **Attenuations** pane, adjust the attenuation for each channel to compensate for the reference output signal path losses.

The **Attenuations** pane is available for the **TSYNC**, **TSYNC-N**, and **TSYNC-X** modules.

Attenuations			
Att Channel 1	<input type="text" value="19.25"/>	Att Channel 3	<input type="text" value="19.25"/>
Att Channel 2	<input type="text" value="19.25"/>	Att Channel 4	<input type="text" value="19.25"/>

The **TSYNC** and **TSYNC-X** module factory-set attenuation is 19dB. The **TSYNC-N** module factory-set attenuation is 26dB.

The attenuation to be removed is related to the insertion loss of the DAS passive components, which are installed between the TDD sync module and the optical transceiver (**MU-OTRX** or **NG OTRX**).

Note: When the LP POI MB model IY19AF25D21 is operating in *Configuration 2*, consider 9dB of additional insertion loss.

Commissioning the DAS

5. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page.

Selecting the NG OTRX Simulcast Configuration

1. In the **Physical Tree**, select the NG OTRX to display its details panel.

Configuration read from device 2023-08-23 09:05:30

1.2.1 NG OTRX (ED35BD)
Optical Transmitter/Receiver for Master Unit, Auction 110, MIMO 2x2, 4 Sectors 8OUT, WDM

Identification		Alarm summary	
Type hex	00005C	Communication state	●
Model hex	000000000002	Max severity	●
Version	1.2.0.58	Active Alarms	2
Serial Number	1043643004		

Parameters			
Board Temperature [°C]	40	Low Temperature	●
Core Temperature [°C]	67.3	High Temperature	●
		Mains Fault	●
		TDD Unlock	●
		Clock Distributor Unlock	●
		Init Failure	●

RF Path Mapping

Configuration: Configuration 1

A1 - 1.2.1.1

A1		A2	
Opt. Link state	LC fiber	Rx Optical Low A1	●
SFP Temperature [°C]	54.4	Loss of Sync A1	●
Opt. Power Tx [dBm]	-0.3	RU Type Mismatch A1	●
Opt. Power Rx [dBm]	-3.6	RU1 addr.	fe80::1a45:b3ff:fe90:71e
		Alarm summary RU1	●
		Opt. Link state	Absent
		Rx Optical Low A2	●
		SFP Temperature [°C]	-128
		Loss of Sync A2	●
		Opt. Power Tx [dBm]	-70
		RU Type Mismatch A2	●
		Opt. Power Rx [dBm]	-70

RF Path A

A		B	
Attenuation UL1 [dB]	0	Attenuation DL1 [dB]	0
RMS Power Max A UL1	●	Overdrive A DL1	●
Current A UL1	●	RMS Power Max A UL2	●
		Overdrive A DL2	●
		Current A UL2	●

B1

B1		B2	
Opt. Link state	Absent	Rx Optical Low B1	●
SFP Temperature [°C]	-128	Loss of Sync B1	●
Opt. Power Tx [dBm]	-70	RU Type Mismatch B1	●
Opt. Power Rx [dBm]	-70		
		Opt. Link state	Absent
		Rx Optical Low B2	●
		SFP Temperature [°C]	-128
		Loss of Sync B2	●
		Opt. Power Tx [dBm]	-70
		RU Type Mismatch B2	●
		Opt. Power Rx [dBm]	-70

RF Path B

B		D	
Attenuation UL1 [dB]	0	Attenuation DL1 [dB]	0
RMS Power Max B UL1	●	Overdrive B DL1	●
Current B UL1	●	RMS Power Max B UL2	●
		Overdrive B DL2	●
		Current B UL2	●

2. In the **RF Path Mapping** pane, select the proper simulcast configuration from the **Configuration** drop-down list or choose a diagram. The diagram describes how RF signal is distributed to the connected remote units (RF path mapping).

When you select a configuration from the drop-down list, the diagram that corresponds to the selected configuration is highlighted. You can choose between eight different simulcast configurations.

Note: Refer to the system design to select the appropriate configuration.

Configuration 1 is the default factory configuration. If *Configuration 1* (default) is selected, the highlighted *Conf. 1* diagram shows that the signal from four different MIMO 2x2 cells will be simulcast by the NG OTRX transceivers (A, B, C, D) to four different pairs of remote units, connected to the NG OTRX optical ports (A1, A2, B1, B2, C1, C2, D1, D2).

Commissioning the DAS

Note: Changing the simulcast configuration has no impact on the RF link: no attenuation adjustment is needed.

In the *JMA DAS Platform Master Unit Installation Guide*, refer to *Connecting the Next Generation Optical Transceiver to the Next Generation Remote Units* for details about remote units and NG OTRX (Next Generation Optical Transceiver) connection.

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to apply the selected configuration.

Enabling and Disabling Dense Wavelength Division Multiplexing (DWDM)

You can enable or disable DWDM (Dense Wavelength Division Multiplexing) over the optical link that connects the next generation optical transceiver, NG OTRX, to the next generation remote units, RUs and SDRUs.

When the DWDM is enabled, you can use the JMA optional DWDM kits and Dense Wavelength Multiplexers/Demultiplexers to connect the next generation optical transceiver to multiple next generation remote units, using a single optical fiber.

In the *JMA DAS Platform Master Unit Installation Guide*, refer to *Connecting the Next Generation Optical Transceiver to Multiple Next Generation Remote Units using a Single Optical Fiber (DWDM)* for details about components and connections.

Note: DWDM is enabled by default. The ED35ID optical transceiver is delivered with the DWDM option disabled by default. The ED35TD and ED35BD optical transceivers do not support DWDM.

You can enable or disable DWDM over the optical link from the detail panel of the next generation optical transceiver (NG OTRX) as follows:

1. In the **Physical Tree**, select the NG OTRX to display its details panel.

The screenshot displays the configuration interface for the NG OTRX 2B (ED35B35TD) device. The top section shows the device title and a brief description: "Optical Transmitter/Receiver for Master Unit, 35B (3450-3550MHz)/35T (3700-3980MHz), MIMO 2x2, 4 Sectors 8OUT, WDM".

The interface is divided into several sections:

- Identification:** Fields for Type hex (000064), Model hex (000000000001), Version (1.2.0.38), and Serial Number (1044145001).
- Alarm summary:** Communication state (green), Max severity (orange), and Active Alarms (2).
- Parameters:** Board Temperature [°C] (36), Core Temperature [°C] (69.7), and various status indicators for Low/High Temperature and Mains Fault.
- DWDM Link:** A checkbox for "DWDM enable" is checked, with a "DWDM Wrong Configuration" indicator (green dot).
- RF Path Mapping - Simulcast:** A diagram showing eight configurations (Conf. 1 to Conf. 8) with ports A1, A2, B1, B2, C1, C2, D1, D2.
- A1 - 1.4.1.1:** Configuration for Remote Unit 1, including Opt. Link state (LC fiber), SFP Temperature [°C] (43.9), Opt. Power Tx [dBm] (-0.1), Opt. Power Rx [dBm] (-1.1), and RU1 addr (fe80::1a45:b3ff:fe90:2d3e).
- A2 - 1.4.1.2:** Configuration for Remote Unit 2, including Opt. Link state (LC fiber), SFP Temperature [°C] (44.9), Opt. Power Tx [dBm] (-1.2), Opt. Power Rx [dBm] (-8), and RU2 addr (fe80::1a45:b3ff:fe90:2dde).

2. In the **DWDM Link** pane, select the **DWDM enable** check box to enable DWDM support over the optical link that connects the optical transceiver to the remote units. Clear the check box to disable DWDM.

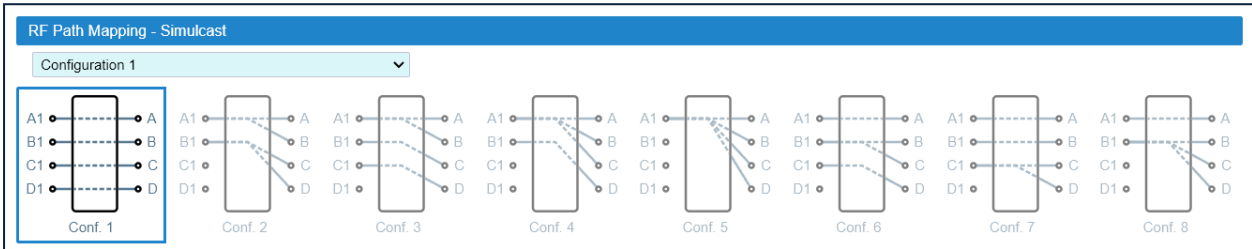
Commissioning the DAS

In the optical port panes of connected remote units, the **DWDM Link enable** check boxes are set accordingly, so that DWDM is consistently set at both ends of the link.

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to apply changes.

Selecting the Dual-band NG PtoP Secondary Simulcast Configuration

1. In the **Physical Tree**, select the dual-band Next Generation Secondary Point-to-Point Component (NG PtoP Secondary) to display its details panel.
2. In the **RF Path Mapping - Simulcast** pane, select the proper simulcast configuration from the **Configuration** drop-down list or choose a diagram. The diagram describes how RF signals are distributed.



Configuration 1 is the default factory configuration. When you select a configuration from the drop-down list, the diagram that corresponds to the selected configuration is highlighted. You can choose between eight different simulcast configurations.

Note:

- Refer to the system design to select the appropriate configuration.
- Changing the simulcast configuration has no impact on the RF link: no attenuation adjustment is needed.

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to apply the selected configuration.

Adjusting the Next Generation Point-to-Point Link RF Gain

For each RF path (A, B, C, D), the overall RF gain of the Point-to-Point link is 0dB at default attenuation settings. The following table details the Next Generation Point-to-Point link default attenuation settings:

Next Generation Point-to-Point Component	Default Downlink Attenuation for each RF Path, MIMO1 layer	Default Downlink Attenuation for each RF Path, MIMO2 layer	Default Uplink Attenuation for each RF Path, MIMO1 layer	Default Uplink Attenuation for each RF Path, MIMO2 layer
NG PtoP Master	0dB (Attenuation Tx1)	0dB (Attenuation Tx2)	0dB (Attenuation Rx1)	0dB (Attenuation Rx2)
NG PtoP Secondary	14dB (Attenuation Rx1)	14dB (Attenuation Rx2)	7dB (Attenuation Tx1)	7dB (Attenuation Tx2)

If required by the system design, you can increase the Point-to-Point link RF gain as follows:

1. In the **Physical Tree**, select the Next Generation Secondary Point-to-Point Component (NG PtoP Secondary).

The following figure shows a detail of the NG PtoP Secondary panel with default RF attenuation settings:



2. To increase the downlink RF gain for a specific RF path, reduce the *Attenuation Rx1* and *Attenuation Rx2* in the appropriate **RF Path** pane (RF Path A, RF Path B, RF Path C, RF Path D).
3. To increase the uplink RF gain for a specific RF path, reduce the *Attenuation Tx1* and *Attenuation Tx2* in the appropriate **RF Path** pane (RF Path A, RF Path B, RF Path C, RF Path D).
4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Adjusting the Point-to-Point Link RF Gain

- TTRUPTP Master (TTRUPTPMx-S) connected to a TTRUPTP Secondary **with** built-in splitter/combiner (TTRUPTPSx-S)

In this application, the overall RF gain of the Point-to-Point link is 0dB at default attenuation setting. The following table details the default attenuation settings for the Point-to-Point link:

Point-to-Point Component	Default Downlink Attenuation	Default Uplink Attenuation
TTRUPTPMx-S	0dB (Att TX)	5dB (Att In=0dB, Att Out=5dB)
TTRUPTPSx-S	0dB (Att In=0dB, Att Out=0dB)	10dB (Att TX)

If required by the system design, you can adjust default attenuations to increase the Point-to-Point link RF gain.

- TTRUPTP Master (TTRUPTPMx-S) connected to a TTRUPTP Secondary **without** built-in splitter/combiner (TTRUPTPSx-S-1)

In this application, the overall RF gain of the Point-to-Point link is 7dB at default attenuation setting. The following table details the default attenuation settings for the Point-to-Point link:

Point-to-Point Component	Default Downlink Attenuation	Default Uplink Attenuation
TTRUPTPMx-S	0dB (Att TX)	5dB (Att In=0dB, Att Out=5dB)
TTRUPTPSx-S-1	0dB (Att In=0dB, Att Out=0dB)	10dB (Att TX)

If RF gain is not required for the system, you can set the Point-to-Point link RF gain to 0dB as follows:

- In the **Physical Tree**, select the Master Point-to-Point Component (TTRUPTP Master) to display its details panel. In the **Receiver** pane, set the receiver uplink attenuation to 7dB (*Att In, Att Out*).
- In the **Physical Tree**, select the Secondary Point-to-Point Component (TTRUPTP Secondary without 4-way Splitter/Combiner, TTRUPTPSx-S-1) to display its details panel. In the **Receiver** pane, set the receiver uplink attenuation to 7dB (*Att In, Att Out*).

RF Commissioning of Points of Interface and Remote Units

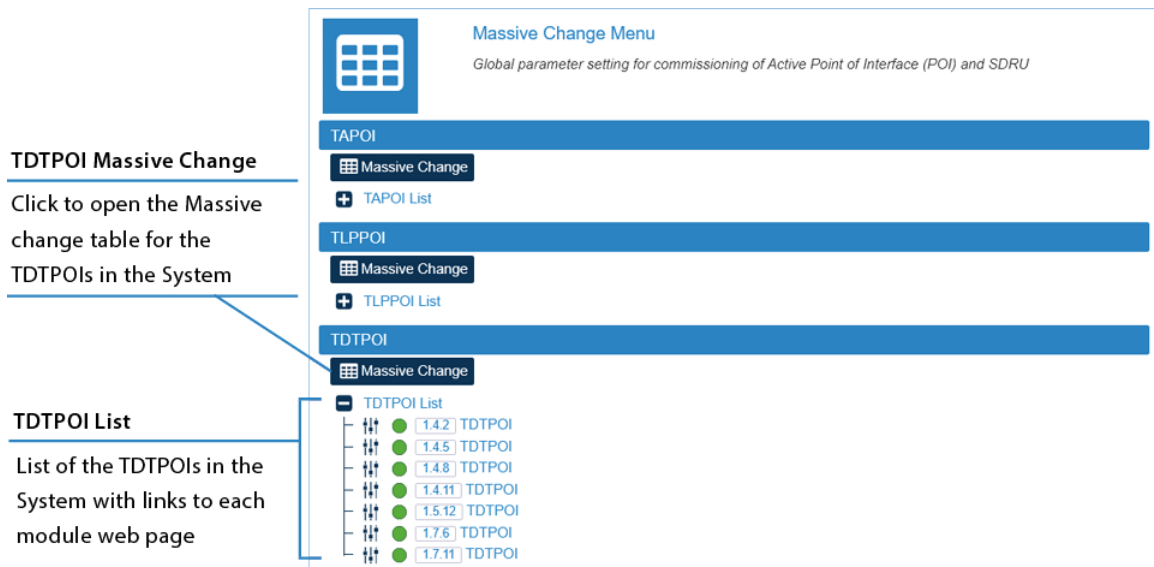
The parameters for the commissioning of points of interface (POIs) and remote units can be set either individually, in each component panel, or globally, accessing the **Massive Change Menu**.

Setting Parameters Individually for Each Component

1. In the **Physical Tree**, select the component to display its details panel. Fields that can be edited by users have a light-blue background.
2. Modify parameters.
The **Save** tool in the toolbar and the background of modified fields turn yellow to highlight unsaved changes.
3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Setting Parameters with the Massive Change Menu

1. In the **Settings** menu, select **Massive Change Menu**. In the **Massive Change Menu** panel, active POIs and remote units are grouped by type. A **Massive Change** button is available for each type.



2. Click the **Massive Change** button to display the Massive Change table for all the components of the same type.

Note: A pop-up, indicating the progress of the loading process, may display.

If the process completes successfully, the pop-up closes and the Massive Change table is displayed.

If the pop-up reports errors, click **Ok**. The Massive Change table is displayed, but changes to the components listed in the pop-up are disabled. Click the **Reload** button to reload information and enable changes.

Commissioning the DAS

Massive Change for TAPOI
Massive Change for TAPOI

Modules

Address	Code	Name	DL att [dB]	UL att [dB]	DL RMS power [dBm]	DL RMS min [dBm]	DL RMS max [dBm]	Pwr Limiter mode	Hysteresis [dB]	Save	Reload
1.2.6	TAPOI-DCS-F	TAPOI-DCS-F	24	20	-7.7	10	27	10 dB plus	1		
1.10.5	TAPOI-AWF-F-4	TAPOI-AWF-F-4_58	30	30	-9.7	-4	11	10 dB isolated	2		
1.10.6	TAPOI-AWS	TAPOI-AWS_59	31	31	-9.9	-5	10	10 dB plus	1		
1.10.11	TAPOI-6-F-4	TAPOI-6-F-4_27	30	30.5	-6.3	-10	27	10 dB plus	1		
1.11.12	TAPOI-9PP-F-4	TAPOI-9PP-F-4_17	14	28	-7.5	-5	35	10 dB isolated	5		
1.12.12	TAPOI-SMR700H-F-4	TAPOI-SMR700H-F-4	30	44	-14.9	-15	20	10 dB plus	3		

- Set configuration and parameters for each component.
- Click the yellow save icon to save all changes for the module or place the cursor in any position in the row and press the **Enter** key on your keyboard.

Note: Changes must be saved for each module. A save icon is available for each row.

Massive Change for TDTPOI
Massive Change for TDTPOI

Modules

Address	Code	Preset	Name	Path	DL att mecc BTS [dB]	DL att dig BTS in [dB]	DL att dig DAS out [dB]	UL att dig BTS Main [dB]	UL att dig BTS Div [dB]	UL att dig DAS in [dB]	DL RMS power [dBm]	DL min RMS thrs [dBm]	DL max RMS thrs [dBm]	Pwr Limiter mode	Histeresys [dB]	Save	Reload
1.1.2	TDTPOI-23...	Dual SISC	DAS Tray	1	0	0	0	0	0	0	-13	-10	36	10 dB plus	2		
				2	15	0	0	0	0	0	-16.2	0	36				

Address

Component position in the DAS and link to the component web page

Modified setting

Yellow background: not yet saved changes

Yellow Save icon

There are unsaved changes to the module settings. If you exit the page changes will be ignored. Click the icon to save changes

Commissioning the DAS

Commissioning TAPOIs

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **TAPOI** pane, click the **Massive Change** button to display the Massive Change table for TAPOIs.

Address	Code	Name	DL att [dB]	UL att [dB]	DL RMS power [dBm]	DL RMS min [dBm]	DL RMS max [dBm]	Pwr Limiter mode	Hysteresis [dB]	Save	Reload
1.2.6	TAPOI-DCS-F	TAPOI-DCS-F	24	20	-7.7	10	27	10 dB plus	1	↓	↻
1.10.5	TAPOI-AWF-F-4	TAPOI-AWF-F-4_58	30	30	-9.7	-4	11	10 dB isolated	2	↓	↻
1.10.6	TAPOI-AWS	TAPOI-AWS_59	31	31	-9.9	-5	10	10 dB plus	1	↓	↻
1.10.11	TAPOI-6-F-4	TAPOI-6-F-4_27	30	30.5	-6.3	-10	27	10 dB plus	1	↓	↻
1.11.12	TAPOI-9PP-F-4	TAPOI-9PP-F-4_17	14	28	-7.5	-5	35	10 dB isolated	5	↓	↻
1.12.12	TAPOI-SMR700H-...	TAPOI-SMR700H-F-4	30	44	-14.9	-15	20	10 dB plus	3	↓	↻

3. In the Massive Change table, configure each TAPOI as follows:

- a Assign a name to the component.
- b Adjust uplink (UL) and downlink (DL) attenuation.

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provide by JMA, to calculate uplink and downlink attenuation to be set.

Description	Massive change label	Default setting (maximum level)
Digital Attenuation DL	DL Att	31dB
Digital Attenuation UL	UL Att	31dB

- c Adjust the maximum and minimum input power thresholds for peak and rms detectors: DL RMS min and DL RMS max.

Refer to the following table for the relationship between the maximum input power and the minimum downlink attenuation to be set for the module.

Maximum input power	Minimum attenuation setting (DL Att)
26dBm	1dB
27dBm	2dB
28dBm	3dB
29dBm	4dB
30dBm	5dB
31dBm	6dB
32dBm	7dB
33dBm	8dB

Commissioning the DAS

- d Select the power limiter mode to protect the module.

The following options are available in the **Pwr Limiter mode** drop-down list:

- *Disabled*: The power limiter is disabled.
- *10dB isolated*: When the Power Limiter Mode is set to *10dB isolated* and the downlink input signal exceeds the user-set maximum input signal threshold (*Max Peak Power* or *Max Rms Power*, depending on the threshold set in the Power Limiter drop-down list), the module enters auto power-off.
- *10dB plus*: When the Power Limiter Mode is set to *10dB plus* and the downlink input signal exceeds the user-set maximum input signal threshold, the signal is 10dB attenuated.

- e Set the Power Alarm **Hysteresis** to avoid repeated power alarm reports.

If the input power (DL RMS power) exceeds the input power threshold set for the path (DL RMS max), the power limiter alarm is triggered.

The alarm is cleared when: $DL\ Rms\ Pwr\ [dBm] = DL\ RMS\ max\ [dBm] - Hysteresis\ [dB]$.

4. Click the yellow save icon to save changes for each module.

Commissioning the DAS

Commissioning TLPPPOIs

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **TLPPPOI** pane, click the **Massive Change** button to display the Massive Change table for TLPPPOIs.

Address	Code	Name	Path	Att mec DL	Att dig DL [dB]	Att dig UL [dB]	Rms IN Pwr DL [dBm]	Min Rms IN Pwr DL [dBm]	Max Rms IN Pwr DL [dBm]	Enable Power Amp.	Enable LNAin UL	Enable LNAout UL	Pwr Limiter mode	Histeresys [dB]	Save	Reload
1.10.12	TLPPPOI-VB-MS	TLPPPOI-VB-MS_03	1	10	5	5	-22.9	-30	15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10 d...	3		
			2	10	20	20.25	-21.7	-30	25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10 d...	3		
1.12.9	TLPPPOI-LB-M...	TLPPPOI-LB-MSE_16	1	10	25	20	-25.5	-99	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10 d...	2		
			2	10	15	20	-25.3	-26	10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10 d...	2		

3. In the Massive Change table, configure each TLPPPOI as follows:

- a Assign a name to the component.
- b Adjust uplink and downlink attenuation for each path.

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provide by JMA, to calculate uplink and downlink attenuation to be set.

The following table details the default attenuation settings:

Description	Massive change label	Default setting (maximum)
Mechanical Attenuation BS (Base Station) Side	Att mec DL	0dB
Digital Attenuation - Downlink path	Att dig DL	20dB
Digital Attenuation - Uplink path	Att dig UL	20dB

- c Adjust maximum and minimum input power thresholds for each path: *Min Rms IN Pwr DL* and *Max Rms IN Pwr DL*.
- d If you need to turn on the downlink power amplifier to meet the downlink commissioning target, select the *Enable Power Amp.* check box for the specific path.

Note:

- There are limitations for the downlink power amplifier activation. The following table details the conditions that must be met to successfully enable the downlink power amplifier:

TLPPPOI model	Condition to meet
TLPPPOI-LB-MSE, TLPPPOI-HB-MSE	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 11dBm
TLPPPOI-VB-MSE, TLPPPOI-35T-MSE	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 9dBm

Commissioning the DAS

When you select the *Enable Power Amp.* check box, if the conditions are not met, an error message displays and the power amplifier will not be enabled. To successfully enable the power amplifier, adjust the parameters to meet the conditions.

- When you enable the downlink power amplifier, the downlink attenuations for the path are automatically set as detailed in the following table:

Description	Massive change label	Default setting with Power Amplifier ON
Mechanical Attenuation BS (Base Station) Side	Att mec DL	10dB
Digital Attenuation - Downlink path	Att dig DL	15dB
Digital Attenuation- Uplink path	Att dig UL	15dB

The re-commissioning of the path is required.

- e If you need to enable the uplink low noise amplifiers to compensate for high losses in the DAS MU and /or passive network, select the *Enable LNA out UL* check box and/or the *Enable LNA in UL* check box for the specific path.

Note: There are no limitations for the LNAs activation.

- f Select the power limiter mode to protect the module.

The following options are available in the **Pwr Limiter Mode** drop-down list:

- *RF OFF.* If the Power Limiter Mode is set to *RF OFF*, when the rms downlink input power exceeds the user-set maximum input signal threshold (*Max Rms IN Pwr DL*) for the path (1 or 2), the *Pwr Limiter DL* (1 or 2) alarm is triggered and the path is switched off, until the alarm condition ceases (auto power-on).
- *10dB plus.* If the Power Limiter Mode is set to *10dB plus*:
 - When the rms downlink input power exceeds the user-set maximum input signal threshold (*Max Rms IN Pwr DL*) for the path (1 or 2), the *Pwr Limiter DL* (1 or 2) alarm is triggered and the path input power is reduced by 10dB, until the alarm condition ceases.
 - When the rms downlink input power (path 1 or 2) exceeds either the user-defined maximum input signal threshold (*Max Rms Power DL*) +10dB, or the allowed Absolute Maximum Input Power, the path (1 or 2) is switched off by the overdrive protection and the *Pwr Overdrive DL* (1 or 2) alarm is triggered.

Note: The overdrive alarm needs to be cleared: when the alarm ceases, click the **Clear Overdrive** button to reset the path. The path is restored @ max attenuations (*Mec DL* and *Dig DL*) and the re-commissioning of the path is required.

- g Set the Power Alarm **Hysteresis** to avoid repeated power alarm reports.

If the input power (Rms IN Pwr DL) exceeds the maximum input power threshold set for the path (Max Rms IN Pwr DL), the power limiter alarm (Pwr Limiter DL) is triggered.

The alarm is cleared when: Rms IN Pwr DL [dBm] = Max Rms IN Pwr DL - Hysteresis.

4. Click the yellow save icon to save changes for each module.

Commissioning the DAS

Commissioning LP POI MB

All LP POI MB Models (IY7E8E19AF23D21, IY7E8E19AFD21, IY19AF25D21)

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **LP POI MB** pane, click the **Massive Change** button to display the Massive Change table for the components.

The screenshot shows the 'Massive Change for LP POI MultiBand' interface. It features a table with columns for Address, Code, Name, Path, Att mec DL [dB], Att dig DL [dB], Att dig UL [dB], RMS IN Pwr DL [dBm], Min RMS IN Pwr DL [dBm], Max RMS IN Pwr DL [dBm], Enable Power Amp., Enable LNAin UL, Enable LNAout UL, Pwr Limiter mode, Histeresys [dB], Save, and Reload. The table lists various paths like FN (Path 1), 700L (Path 1), 800/850 (Pa...), PCS (Path 1), AWS (Path 1), and WCS (Path 1) with their respective attenuation and power settings.

Address	Code	Name	Path	Att mec DL [dB]	Att dig DL [dB]	Att dig UL [dB]	RMS IN Pwr DL [dBm]	Min RMS IN Pwr DL [dBm]	Max RMS IN Pwr DL [dBm]	Enable Power Amp.	Enable LNAin UL	Enable LNAout UL	Pwr Limiter mode	Histeresys [dB]	Save	Reload
1.3.1	IY7E8E19AF2...	IY7E8E19AF23D21 - ATT - ...	FN (Path 1)	0	0	0	-1.1	-20	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10 dB p...	2		
			FN (Path 2)	0	0	0	-22.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
			700L (Path 1)	10	18	18	-18.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RF OFF			
			700L (Path 2)	10	18	18	-22.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
			800/850 (Pa...)	10	18	18	-18.7	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RF OFF			
			800/850 (Pa...)	10	18	18	-22.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
			PCS (Path 1)	10	18	18	-17.6	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RF OFF			
			PCS (Path 2)	10	18	18	-22.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
			AWS (Path 1)	10	18	18	-22.2	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RF OFF			
			AWS (Path 2)	10	18	18	-17.9	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
			WCS (Path 1)	10	18	18	-22.1	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RF OFF			
			WCS (Path 2)	10	18	18	-17.7	-20	35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

3. In the Massive Change table, configure each LP POI MB as follows:
 - a Assign a name to the component.
 - b Adjust uplink and downlink attenuation for each band (Path 1 and Path 2).
After successful completion of relevant training courses, use the commissioning tool spreadsheet, provided by JMA, to calculate uplink and downlink attenuation to be set.

The following table details the default attenuation settings:

Description	Massive change label	Default setting (maximum)
Mechanical Attenuation BS (Base Station) Side	Att mec DL	10dB
Digital Attenuation - Downlink path	Att dig DL	18dB
Digital Attenuation- Uplink path	Att dig UL	18dB

- c Adjust maximum and minimum input power thresholds for each band (Path 1 and Path 2): *Min RMS IN Pwr DL* and *Max RMS IN Pwr DL*.

Note: Refer to the following table for the relationship between the maximum input power threshold and the minimum mechanical downlink attenuation to be set for each band (Path 1 and Path 2):

Commissioning the DAS

Maximum Input Power Threshold (Max RMS IN Pwr DL)	Minimum Mechanical Downlink Attenuation (Att mec DL)
25–35dBm	10dB
<25dBm	0dB

- d If you need to turn on the downlink power amplifier to meet the downlink commissioning target, select the *Enable Power Amp.* check box for the specific band/path.

Note:

- There are limitations for the downlink power amplifier activation. The following table details the conditions that must be met to successfully enable the downlink power amplifier:

LP POI MB model	Band	Condition to meet
IY7E8E19AFD21	700H, 800/850, PCS, AWS	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 11dBm
IY7E8E19AF23D21	FN, 700L, 800/850, PCS, AWS	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 11dBm
	WCS	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 14dBm
IY19AF25D21	PCS, AWS	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 11dBm
	25TDD	Max RMS IN Pwr DL [dBm]-Att DL (mec+dig)[dB] ≤ 14dBm

When you select the *Enable Power Amp.* check box, if the conditions are not met, an error message displays and the power amplifier will not be enabled. To successfully enable the power amplifier, adjust the parameters to meet the conditions.

- When you enable the downlink power amplifier, default downlink attenuations for the path are restored (see [default attenuation settings](#) on [page 30](#)) and the re-commissioning of the path is required.
- e If you need to enable the uplink low noise amplifiers to compensate for high losses in the DAS MU and /or passive network, select the *Enable LNA out UL* and/or the *Enable LNA in UL* check box for the specific band/path.

Note: There are no limitations for the LNAs activation.

- f For each band, select the power limiter mode to protect the module.

The following options are available in the **Pwr Limiter Mode** drop-down list:

- RF OFF.** If the Power Limiter Mode is set to *RF OFF*, when the rms downlink input power exceeds the user-set maximum input signal threshold (*Max Rms IN Pwr DL*) for the path (1 or 2), the *Pwr Limiter DL* (1 or 2) alarm is triggered and the path is switched off, until the alarm condition ceases (auto power-on).
- 10dB plus.** If the Power Limiter Mode is set to *10dB plus*:
 - When the rms downlink input power exceeds the user-set maximum input signal threshold (*Max Rms IN Pwr DL*) for the path (1 or 2), the *Pwr Limiter DL* (1 or 2) alarm is triggered and the path input power is reduced by 10dB, until

Commissioning the DAS

the alarm condition ceases.

- When the rms downlink input power (path 1 or 2) exceeds either the user-defined maximum input signal threshold (*Max Rms Power DL*) +10dB, or the allowed Absolute Maximum Input Power, the path (1 or 2) is switched off by the overdrive protection and the *Pwr Overdrive DL* (1 or 2) alarm is triggered.

Note: The overdrive alarm needs to be cleared: when the alarm ceases, click the **Clear Overdrive** button to reset the path. The path is restored @ max attenuations (*Mec DL* and *Dig DL*) and the re-commissioning of the path is required.

- g Set the Power Alarm **Hysteresis** to avoid repeated power limiter alarm reports.

If the input power (Rms IN Pwr DL) exceeds the maximum input power threshold set for the path (Max Rms IN Pwr DL), the power limiter alarm (Pwr Limiter DL) is triggered. The alarm is cleared when: $\text{Rms IN Pwr DL [dBm]} = \text{Max Rms IN Pwr DL} - \text{Hysteresis}$.

4. Click the yellow save icon to save changes.

Additional Settings for the IY19AF25D21 Model

▪ Setting the RF Path Mapping

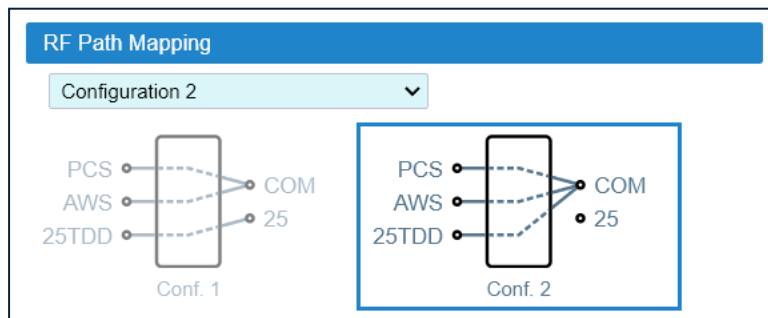
You can choose between two different configurations of the IY19AF25D21.

If required by the system design, you can select the proper configuration for the equipment as follows:

1. In the **Physical Tree**, select the LP POI MB component (IY19AF25D21) to display its details panel.

Configuration 1 is the default factory configuration. When *Configuration 1* is selected, the IY19AF25D21 combines the PCS and AWS bands to provide two separate output signals (FDD and 25TDD).

2. From the drop-down list in the **RF Path Mapping** pane, you can select *Configuration 2* for the IY19AF25D21 to combine the PCS, AWS, and 25TDD bands into a single synchronized output signal. When you select *Configuration 2* from the drop-down list, the diagram that corresponds to the selected configuration is highlighted:



Commissioning the DAS

In the *JMA DAS Platform Master Unit Installation Guide*, refer to *IY19AF25D21 Front Panel Description* for descriptions of the ports used in the different configurations.

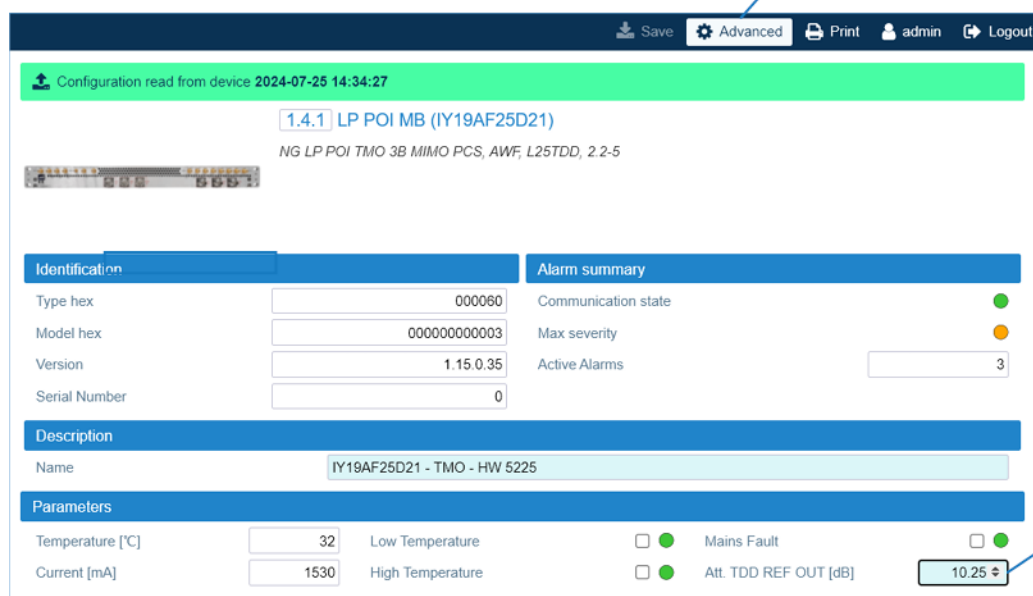
3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

▪ Adjusting the Digital Attenuation for the TDD REF OUT Signal

If necessary, adjust the attenuation for the TDD REF OUT signal (*Att. TDD REF OUT*) as follows:

1. In the **Physical Tree**, select the LP POI MB component (IY19AF25D21) to display its details panel. The *Att. TDD REF OUT* field is available in the **Parameters** pane.
2. From the **Toolbar**, at the top of the supervision module UI, select the **Advanced** tool. The *Att. TDD REF OUT* field background turns light-blue.

Advanced tool
Select the **Advanced** tool to enable changes to the *Att. TDD REF OUT* field.



The screenshot shows the configuration interface for the LP POI MB component (IY19AF25D21). The toolbar at the top includes 'Save', 'Advanced', 'Print', 'admin', and 'Logout'. The 'Advanced' tool is selected, and the 'Att. TDD REF OUT [dB]' field in the 'Parameters' section is highlighted in light blue. The 'Parameters' section includes fields for Temperature [°C] (32), Current [mA] (1530), Low Temperature, High Temperature, Mains Fault, and Att. TDD REF OUT [dB] (10.25). The 'Alarm summary' section shows 'Communication state' (green), 'Max severity' (orange), and 'Active Alarms' (3). The 'Description' section shows the name 'IY19AF25D21 - TMO - HW 5225'.

Editable Att. TDD REF OUT field

3. Set the required attenuation.

4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Commissioning the DAS

Commissioning TDTPOIs

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **TDTPOI** pane, click the **Massive Change** button to display the Massive Change table for TDTPOIs.

Address	Code	Name	Preset	Path	DL att mecc BTS [dB]	DL att dig BTS in [dB]	DL att dig DAS out [dB]	UL att dig BTS Main [dB]	UL att dig BTS Div [dB]	UL att dig DAS in [dB]	DL RMS power [dBm]	DL min RMS thrs [dBm]	DL max RMS thrs [dBm]	Pwr Limiter mode	Histeresys [dB]	Save	Reload
1.1.6	TDTPOI-35T...	DAS TRAY 25_35LL	MI...	1	15	10	0	10		10	-17.2	0	40	RF ...	2	↓	↻
				2	15	17	0	20		0	-22.1	-20	36				
1.13.10	TDTPOI-19-S	TDTPOI-19-S	Sin...	1	15	15	0	25	25	0	-11.8	-10	30	RF ...	2	↓	↻
				2	15	17	0	25	25	0	-11.6	-20	36				

3. In the Massive Change table configure each TDTPOI as follows:

- a Assign a name to the component.
- b Adjust uplink and downlink attenuation for each path.

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provide by JMA, to calculate uplink and downlink attenuation to be set.

Description	Massive change label	Default setting (maximum)
Mechanical Attenuation BS (Base Station) Side	DL att mecc BTS	15dB
Digital Attenuation BS Side	DL att dig BTS in	17dB
	UL att dig BTS Main	25dB
	UL att dig BTS Div	25dB
Digital Attenuation DAS Side	UL att dig DAS in	0dB
	DL att dig DAS out	0dB

- c Adjust maximum and minimum input power thresholds for each path: DL min RMS thrs and DL max RMS thrs.

Refer to the following table for the relationship between the maximum input Power and the minimum downlink attenuation to be set for the path.

Minimum Downlink attenuation Mechanical	Maximum Input Power (no damage)		
	DAS Tray		Low Loss DAS Tray
	@40°C (+104°F) (*)	@55°C (+131°F) (*)	@55°C (+131°F) (*)
15dB	49dBm	47dBm	40dBm
10dB	46dBm	46dBm	36dBm
5dB	41dBm	41dBm	31dBm
0dB	36dBm	36dBm	26dBm

(*) DAS Tray operating temperature

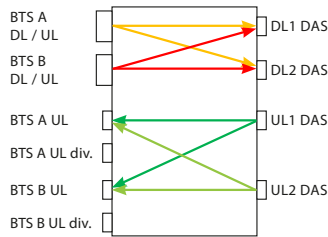
Commissioning the DAS

d Select the TDTPOI operation mode from the **Preset** drop-down list.

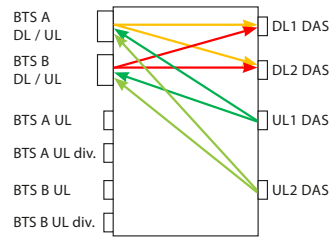
The Preset options set the module operating mode as detailed in the diagrams below:

▸ Dual SISO

Simplex Base Station without Diversity:

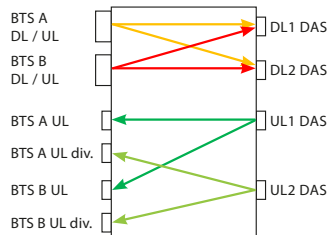


Duplex Base Station without Diversity

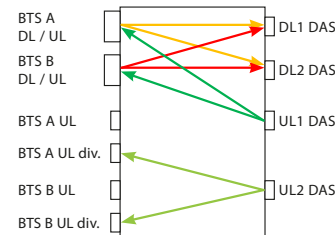


▸ UMTS Div

Simplex Base Station with UMTS Diversity:

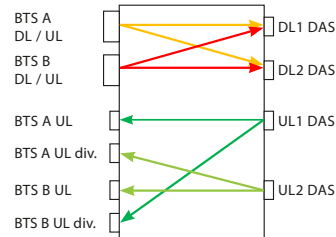


Duplex Base Station with UMTS Diversity:

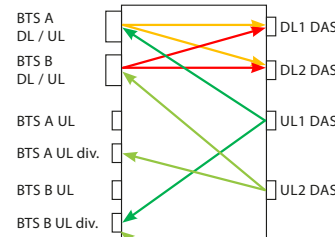


▸ GSM Div

Simplex Base Station with GSM Diversity:

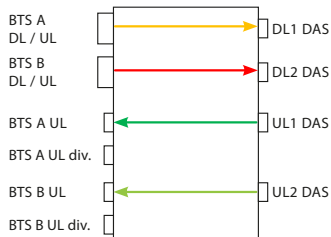


Duplex Base Station with GSM Diversity:

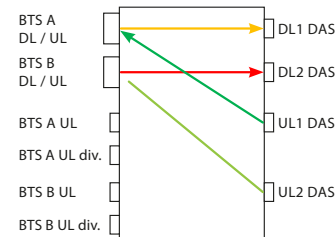


▸ MIMO 2x2

Simplex Base Station with GSM Diversity



Duplex Base Station with GSM Diversity



e Select the power limiter mode to protect the module.

The following options are available in the **Pwr Limiter mode** drop-down list:

- **RF OFF:** If the Power Limiter Mode is set to *RF OFF*, when the rms downlink input power exceeds the user-set maximum input signal threshold for the path (1 or 2), the Pwr Limiter DL (1 or 2) alarm is triggered and the path is switched off, until the alarm condition ceases (auto power-on).

Commissioning the DAS

- *10dB plus*: If the Power Limiter Mode is set to *10dB plus*, when the rms downlink input power exceeds the user-set maximum input signal threshold for the path (1 or 2), the Pwr Limiter DL (1 or 2) alarm is triggered and the path input power is reduced by 10dB, until the alarm condition ceases.

Note: When the rms downlink input power (path 1 or 2) exceeds either the user-defined maximum input signal threshold +10dB, or the allowed Absolute Maximum Input Power, the path (1 or 2) is switched off by the overdrive protection and the Pwr Overdrive DL (1 or 2) alarm is triggered.

The overdrive alarm needs to be cleared: when the alarm ceases, click the **Clear Overdrive** button to reset the path.

The path is restored @ max attenuations (Mec DL and Dig DL) and the re-commissioning of the path is required.

- f Set the Power Alarm **Hysteresis** to avoid repeated power alarm reports.

If the input power exceeds the maximum input power threshold set for the path, the power limiter alarm is triggered.

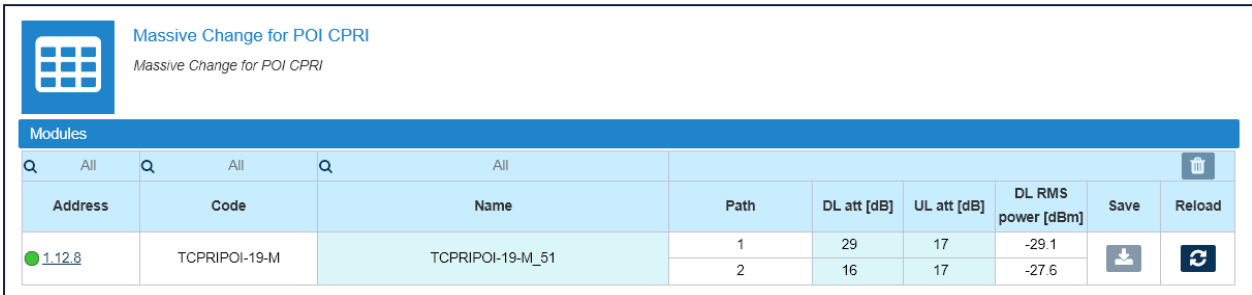
The alarm is cleared when: DL RMS power [dBm] = DL max RMS thrs - Power Alarm Hysteresis

4. Click the yellow save icon to save changes for each module.

Commissioning the DAS

Commissioning TCPRIPOIs

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **POI CPRI** pane, click the **Massive Change** button to display the massive change table for TCPRIPOIs.



The screenshot shows a web interface titled "Massive Change for POI CPRI". Below the title is a "Modules" section with a search bar and a table. The table has the following columns: Address, Code, Name, Path, DL att [dB], UL att [dB], DL RMS power [dBm], Save, and Reload. The first row of data shows a green dot next to the address "1.12.8", a code of "TCPRIPOI-19-M", and a name of "TCPRIPOI-19-M_51". There are two rows for the "Path" column, with values 1 and 2. The "DL att [dB]" values are 29 and 16, "UL att [dB]" values are 17 and 17, and "DL RMS power [dBm]" values are -29.1 and -27.6. There are "Save" and "Reload" icons in the bottom right of the table.

Address	Code	Name	Path	DL att [dB]	UL att [dB]	DL RMS power [dBm]	Save	Reload
1.12.8	TCPRIPOI-19-M	TCPRIPOI-19-M_51	1	29	17	-29.1	Save	Reload
			2	16	17	-27.6		

3. In the Massive Change table configure each TCPRIPOI as follows:

- a Assign a name to the component.
- b Adjust uplink and downlink attenuation for each path.

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provide by JMA, to calculate uplink and downlink attenuation to be set.

Massive change label	Default setting (maximum)
UL att	25dB
DL att	30dB

4. Click the yellow save icon to save changes for each module.

Commissioning the DAS

Commissioning POI ORAN

1. In the **Settings** menu, select **Massive Change Menu**.
2. In the **POI ORAN** pane, click the **Massive Change** button to display the Massive Change table for the components.

Address	Code	Name	Path	Ch Name	Enable RF	DL Att [dB]	UL Att [dB]	DL RMS power [dBm]	Save	Reload
1.9.1	N.A.	POI-ORAN-SNMP	1	CH1-SNMP	<input type="checkbox"/>	3.5	4.5	0		
			2	CH2	<input type="checkbox"/>	1	0.75	0		
			3	CH3	<input type="checkbox"/>	1.5	0.75	0		
			4	CH4	<input type="checkbox"/>	0	0	0		
			5	CH5-test5	<input type="checkbox"/>	0	0	0		
			6	CH6	<input type="checkbox"/>	0	0	0		
			7	CH7	<input type="checkbox"/>	0	0	0		
			8	CH8	<input type="checkbox"/>	0	0	0		

3. In the Massive Change table, configure each **POI ORAN** as follows:
 - a Assign a name to the component.
 - b Assign a name to each channel.
 - c Adjust uplink and downlink attenuation for of each channel.

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provided by JMA, to calculate uplink and downlink attenuation to be set.

The following table details the default attenuation settings:

Description	Massive change label	Default setting (maximum)
Downlink Attenuation	DL Att	30dB
Uplink Attenuation	UL Att	25dB

- d If you need to enable the uplink low noise amplifier to compensate for high losses in the DAS MU and /or passive network, select the *Enable LNA UL* check box for the specific channel.

Note: The *Enable LNA UL* check box is available on the POI ORAN panel only.

When you enable the uplink low noise amplifier, the attenuations for the path are automatically set as detailed in the following table:

Description	Massive change label	Default setting (maximum)
Downlink Attenuation	DL Att	30dB
Uplink Attenuation	UL Att	20dB

The re-commissioning of the path is required.

- e Enable RF
4. Click the yellow save icon to save changes.

Commissioning the DAS

Commissioning Remote Units

1. In the **Settings** menu, select **Massive Change Menu**. In the **Massive Change Menu** panel, remote units are grouped by type.
2. Click the **Massive Change** button to display the Massive Change table for the remote units of the same type.

Note: The operating bands and output power of Software Defined Remote Units (SDRU) are tied to license keys, which can be managed remotely using the *JMA Wireless SDRU Panel* software.

In the Massive Change table for SDRUs, unlicensed channels are locked. If not all the expected channels and output power levels are available for commissioning, verify the activation of purchased features. Refer to the *JMA DAS Platform SDRU Panel User Guide* for details.

3. In the Massive Change table configure each remote unit as follows:
 - a Assign a name to the remote unit.
 - b Check the downlink output power (*DL Pwr*).
 - c If necessary, increase the DAS attenuation.
 - d Enable RF.
 - e Enable Downlink power alarms.

4. Repeat steps 2 and 3 for all the types of remote units installed in the DAS.

5. Click the yellow save icon to save changes for each unit.

Note: The Massive Change table for medium power (1.25W-to-2W) Software Defined Remote Units (SDRUs) provides additional tools to temporary unlock unlicensed bands for RF testing purposes.

Commissioning the DAS

Massive Change for Medium Power Software Defined RU

Massive Change for Medium Power Software Defined RU

Channel Status Legend

- Unlicensed channel - Temporary DL mode (@ max output power)
- Unlicensed channel - Temporary UL mode
- Unlicensed channel

Action on all SDRU

↓ DL Unlock

↑ UL Unlock

⌛ DL/UL Restore

Modules

Address	Code	Name	RF enable	Channel	Enabled output pwr [dBm]	DL att [dB]	UL att [dB]	DL pwr [dBm]	DL pwr low	DL pwr high	Timer (hh:mm)	Actions	Save	Reload
1.11.1.3	TRX7C8918212...	TRX7C89182126AT_		700EU + LT...	OFF						00:00	<div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↓ DL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↑ UL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">⌛ DL/UL Restore</div>		
1.11.3.1	TRX7C8918212...	TRX89182126AT	<input type="checkbox"/>	EGSM900	30	10	15	-19.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	<div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↓ DL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↑ UL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">⌛ DL/UL Restore</div>		
1.12.1...	TRX7C8918212...	TRX7C89182126AT	<input type="checkbox"/>	700EU + LT...	30	0	0	-18.7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	<div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↓ DL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">↑ UL Unlock</div> <div style="background-color: #337ab7; color: white; padding: 2px 5px; text-align: center;">⌛ DL/UL Restore</div>		

You can apply the temporary unlock to either a single SDRU (buttons in the **Actions** column of the Massive Change table) or to all the SDRUs listed in the Massive Change table (buttons in the **Action on all SDRU** pane).

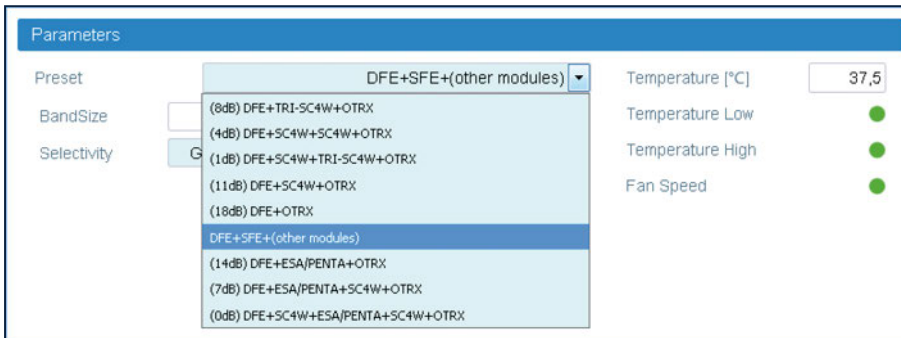
- Click **UL Unlock** to activate the UL path for unlicensed bands.
In the Massive Change table, the row background color of unlicensed channels turns blue and the **Timer** displays the time elapsed since unlock.
- Click **DL Unlock** to activate the DL path for unlicensed bands (@ maximum output power).
In the Massive Change table, the row background color of unlicensed channels turns orange and the **Timer** displays the time elapsed since unlock.
- Click **DL/UL Restore** to restore original licenses configuration and reset the timer.
The row background color of unlicensed channels turns gray.

Note: The temporary unlock can be repeated.

RF Commissioning of Donor Front Ends (TDFEs)

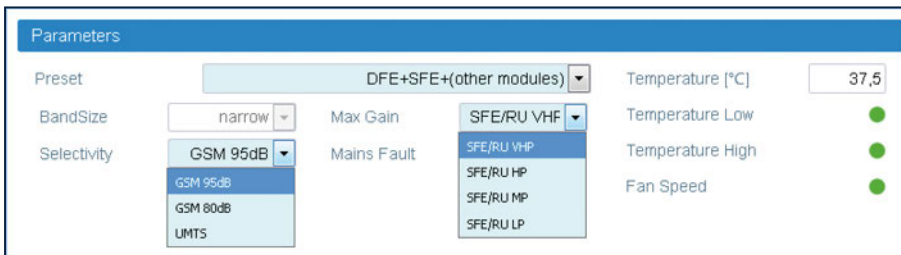
The parameters for the commissioning of Donor Front Ends (TDFEs) must be set individually for each component.

1. In the **Physical Tree**, select the Donor Front End to display its details panel.
2. Assign a name to the Donor Front End.
3. In the **Parameters** pane:
 - a. Select the *Preset* corresponding to the DAS configuration for automatic gain setting.



- b. Select the Digital Filter *Selectivity* (Standard TDFE modules only).

The *Selectivity* options allow the filter to be optimized either for low delay (*UMTS*) or for high selectivity (*GSM 95dB*).



The following options are available:

- *GSM 95dB* is the most selective filter.
- *GSM 80dB* is a less selective filter, introducing little bit less delay, as compared with the *GSM 95dB* option.
- *UMTS* is optimized for introducing the lowest delay.

- c. Select the SFE/RU output power in the *Max Gain* drop-down list to display the proper downlink diagram in the Spectrum panel

4. In the **Common-Uplink** and **Common-Downlink** panes, adjust Uplink (UL) and Downlink (DL) attenuation for each path.

Commissioning the DAS

Common - Uplink		Common - Downlink	
Pwr Out UL [dBm]	-26,7	Pwr In DL [dBm]	-81,6
Att Module UL [dB]	30	Att Module DL [dB]	0
Pwr Out UL	●	Pwr Out DL	●
Peak Pwr + OFA UL	●	Peak Pwr + OFA DL	●
Lock Detect UL	●	Lock Detect DL	●
ALC On UL	●	ALC On DL	●
Pwr In UL	●	Pwr In DL	●

After successful completion of relevant training courses, use the commissioning tool spreadsheet, provide by JMA, to calculate uplink and downlink attenuation to be set.

Description	Web page label	Default setting
Uplink Digital Attenuation	Att Module UL	30dB
Downlink Digital Attenuation	Att Module DL	30dB

5. In each sub-band pane:

- a Adjust Uplink and Downlink attenuations (Att Module UL and Att Module DL).
- b Set the Uplink Frequency band center (Frequency UL) and Bandwidth for each sub-band to be enhanced.
- c Enable Uplink and Downlink for the sub-band.

Sub-band 1 Uplink		Sub-band 1 Downlink	
UL Enabled	<input checked="" type="checkbox"/>	DL Enabled	<input checked="" type="checkbox"/>
Pwr Out UL [dBm]	-18,9	Pwr In DL [dBm]	-51,3
Att Module UL [dB]	0	Att Module DL [dB]	15
Pwr Out SB1 UL	●	Pwr In SB1 DL	●
		Pwr Min SB1 DL	●
Frequency UL [MHz]	1947		
Bandwidth [MHz]	0,2		
Frq Range [MHz]	1946.90 - 1947	Frq Range [MHz]	2136.90 - 2137
Filter ID	0		

6. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page.

Enabling Downlink RF Power Alarms

After completing the previous steps, it is strongly recommended to check that all the Downlink RF power alarms are enabled.

Enabling and Disabling Alarms

Alarms can be enabled or disabled in the detail panel of each component as follows:

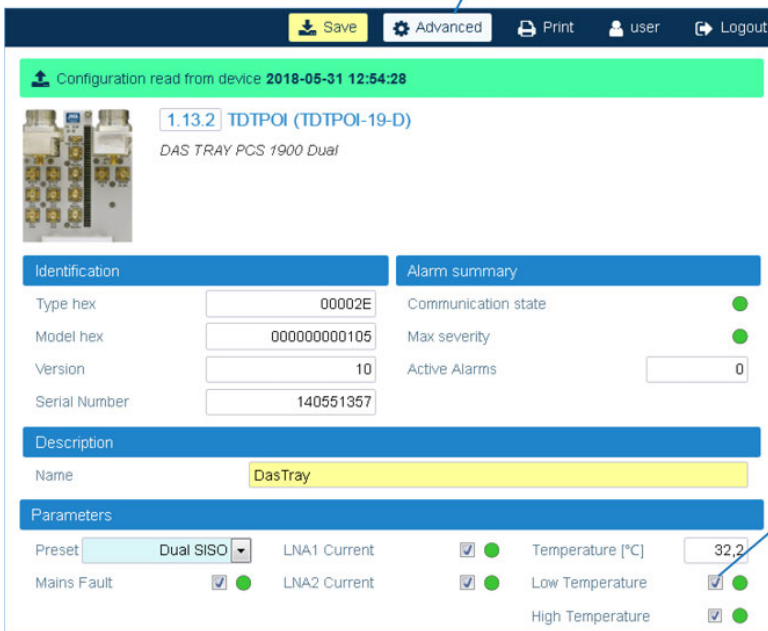
1. In the **Physical Tree**, select the DAS component to display its details panel.
2. In the **Toolbar**, select the **Advanced** tool to display check boxes next to the alarm icons.
3. Select the check box next to an alarm to enable the alarm. To disable an alarm, deselect the check box. The **Save** tool in the toolbar turns yellow.

Note: If an alarm is disabled, the icon is always green.

4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Advanced tool

When selected, enabled/disabled checkboxes are displayed next to alarm icons.



Enable/disable checkbox

When selected, the alarm is enabled. If the alarm is disabled the icon is always green

Setting External Alarms and Relays





External Alarms

Alarms generated by external devices can be connected to the external alarms input connector (EXT IN), available on the following DAS components:

- Supervision module (**TSPV**)
- Alarm Board
- Remote units (**RU**)
- Next Generation remote units (**NG RU** and **NG SDRU**)

Configure and enable monitoring of external alarms as follows:

1. In the **Physical Tree**, select the DAS component to display its details panel.
2. In the **External alarms** table, assign names, severity (*Critical, Major, Minor, Warning*), and polarity (*active-high* or *active-low*) to the alarms.

External alarms					
Name	Enable	Severity	Polarity	State	
Ext. name 1	<input checked="" type="checkbox"/>	warning ▼	active-low ▼		
Ext. name 2	<input checked="" type="checkbox"/>	warning ▼	active-low ▼		
Ext. name 3	<input checked="" type="checkbox"/>	warning ▼	active-low ▼		
Ext. name 4	<input checked="" type="checkbox"/>	warning ▼	active-low ▼		

3. Select the **Enable** check box to enable monitoring of configured external alarms.
4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page.

Commissioning the DAS

Relays

The EXT OUT connector is available on the following DAS components:

- Supervision module (TSPV)
- Remote units (RU)

Configure the logic of the relays in the **Relays** pane, available on the supervision module (TSPV) and remote units detail panels.

Supervision Module (TSPV)

The screenshot shows the 'Relays' configuration pane. A dropdown menu is open, listing various policy options. The options are categorized into 'Manual operation' and 'Automatic options'. The 'Manual operation' option is selected. Below the menu is a table with columns for 'Name', 'NC/NO', and 'State'. The table contains four rows, all with 'Manual' in the 'Name' column and 'OPEN' in the 'State' column.

Name	NC/NO	State
Manual	▼	OPEN ▼
Manual	▼	OPEN ▼
Manual	▼	OPEN ▼
Manual	▼	OPEN ▼

1. In the **Physical Tree**, select the supervision module to display its details panel.
2. In the **Relays** pane, assign a descriptive name to the relay.
3. From the **Policy** menu, select either the *Manual* or an automatic mode.
 - *Manual*: The relay is switched manually by the operator.
 - a Select the relay status, *Open* or *Closed*.

Commissioning the DAS

- Automatic mode: The relay is triggered automatically by alarms occurring in the DAS.
 - a Select one automatic option from the list of predefined triggering alarm events:
When the *CRT+MJR+MIN+WRN All* option is selected, alarms are not filtered: the relay is triggered when an alarm arises in any component of the DAS.
The other predefined triggering events filter alarms by device type and alarm severity:
Alarm severity filter:
 - CRT+MJR+MIN* (Critical + Major + Minor) – The relay is triggered when an alarm with a severity level equal to, or higher than Minor arises.
 - CRT+MJR* (Critical + Major) – The relay is triggered when an alarm with a severity level equal to, or higher than Major arises.
 - CRT* (Critical) – The relay is triggered when an alarm with a severity level equal to Critical arises.Device type filter:
 - only master* – The relay is triggered when an alarm arises in any component of the master unit.
 - only remote* – The relay is triggered when an alarm arises in a remote unit.
 - b Set the relay status (NC/NO):
NO: the relay closes when the alarm condition selected in the Policy menu occurs.
NC: the relay opens when the alarm condition selected in the Policy menu occurs.

4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Note: The policy and relay state are applied after the relay is triggered by an alarm.

Remote Units

Relays		
Name	Policy	State
	Manual ▼	CLOSED ▼
	Manual ▼	CLOSED ▼
	Manual ▼	CLOSED ▼
	Manual ▼	CLOSED ▼

You can manually switch the external outputs of remote units as follows:

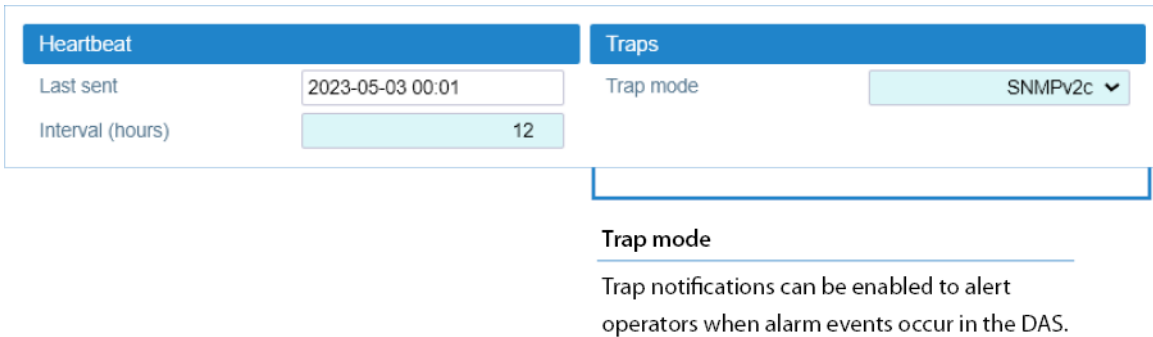
1. In the **Physical Tree**, select the remote unit to display its details panel.
2. In the **Relays** pane, assign a descriptive name to the relay.
3. From the **State** drop-down list, select *Open* or *Closed*.
4. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page.

Setting Alarm and Heartbeat Notifications

SNMP traps and SMS alerts can be forwarded to periodically test the system availability and to alert operators when alarm events occur in the DAS.

Enabling SNMP Traps

1. In the **Settings** menu, select **Notifications** to access the **Notifications** panel.
2. From the **Trap mode** drop-down list, in the **Traps** pane, select either *SNMPv2c* or *SNMPv3* to enable alarm notifications to be sent out.



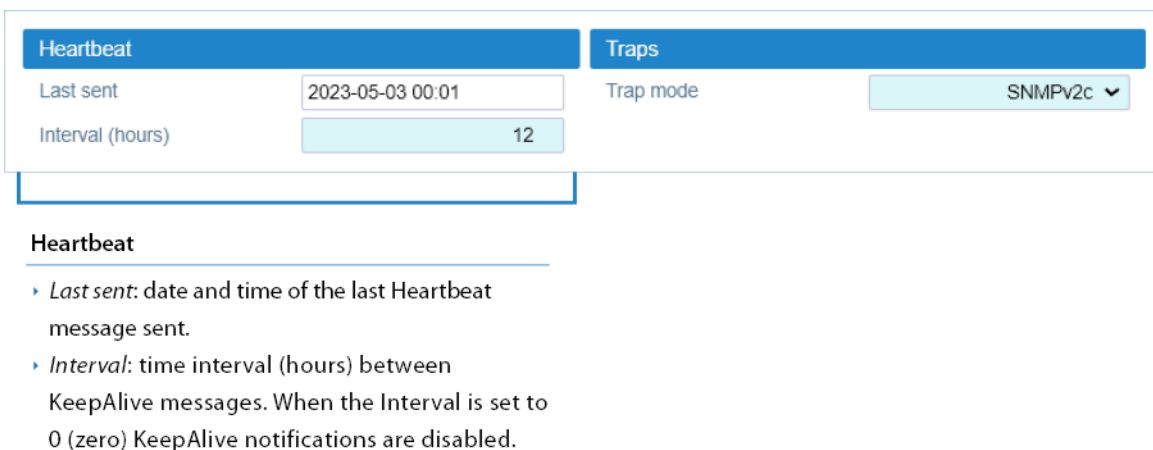
The screenshot shows two panels: 'Heartbeat' and 'Traps'. The 'Heartbeat' panel has 'Last sent' set to '2023-05-03 00:01' and 'Interval (hours)' set to '12'. The 'Traps' panel has 'Trap mode' set to 'SNMPv2c'. Below the panels is a section titled 'Trap mode' with the text: 'Trap notifications can be enabled to alert operators when alarm events occur in the DAS.'

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Setting Heartbeat Notifications

1. In the **Heartbeat** pane, set the time **Interval (hours)** between heartbeat notifications.
2. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Note: When the heartbeat interval is set to 0 (zero) heartbeat notifications are disabled.



The screenshot shows two panels: 'Heartbeat' and 'Traps'. The 'Heartbeat' panel has 'Last sent' set to '2023-05-03 00:01' and 'Interval (hours)' set to '12'. The 'Traps' panel has 'Trap mode' set to 'SNMPv2c'. Below the panels is a section titled 'Heartbeat' with the following list items:

- ▶ *Last sent*: date and time of the last Heartbeat message sent.
- ▶ *Interval*: time interval (hours) between KeepAlive messages. When the Interval is set to 0 (zero) KeepAlive notifications are disabled.

Setting Alarms and Heartbeat Trap Destinations

In the **Trap notifications** table, you can set up to five trap destinations to receive SNMP notifications.

1. Add each trap receiver as follows:
 - a Set the **IP address** and **Port** of the SNMP trap destination.

Note: When the DAS is part of a Network managed via JMA Operation Management Centre (OMC), the OMC Server IP address can be set as one of the recipients of the SNMP trap notifications, in order to optimize the alarm monitoring of the DAS. Refer to the *DAS Operation and Maintenance Center (OMC) User Guide*.
 - b Select the **User/Community** that is sending the trap (SNMPv3 Trap Mode only).
 - c From the **Alarm severity** drop-down list, select the minimum alarm severity for notifications to be sent out. Only the events of equal or higher severity level cause the trap notification to be sent out.
 - d Select the **Alarm** check box to enable SNMP traps to be forwarded to the trap destination.
 - e Select the **Heartbeat** check box to enable heartbeat notifications to be forwarded to the trap destination.

TRAP notifications					
IP address	Port	User	Alarm	Alarm severity	Heartbeat
0.0.0.0	162	admin	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
0.0.0.0	162	admin	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
0.0.0.0	162	admin	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
0.0.0.0	162	admin	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
0.0.0.0	162	admin	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
IP address	Port	User	Alarm	Alarm severity filter	Hearbeat
IP Address and port of each SNMP trap destination		User that is sending the trap (SNMPv3 Trap Mode)	Enable/disable alarm notifications	A minimum alarm severity level can be associated with each notification: only the alarms of equal or higher severity level cause the notification to be sent out.	Enable/disable heartbeat notifications

2. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Setting SMS Notifications

In the **SMS notifications** table, you can set up to five operators' phone numbers to receive SMS alarm and heartbeat notifications.

1. In the **Settings** menu, select **Notifications** to access the **Notifications** panel.


SMS notifications			
Operator number	Alarm	Alarm severity	Heartbeat
+393249500000	<input checked="" type="checkbox"/>	warning ▼	<input checked="" type="checkbox"/>
+000000000000	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
+000000000000	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
+000000000000	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>
+000000000000	<input type="checkbox"/>	warning ▼	<input type="checkbox"/>

Preferences			
Operator number	Alarm	Alarm severity filter	Heartbeat
Phone numbers set as SMS recipients for alarm notifications	Enable/disable SMS notifications check box	A minimum alarm severity level can be associated with each notification: only the alarms of equal or higher severity level cause the SMS notification to be sent out	Enable/disable heartbeat notifications

2. Add each SMS recipient as follows:
 - a In **Operator number**, insert the recipient's phone number.
 - b From the **Alarm severity** drop-down list, select the minimum alarm severity for SMS notifications to be sent out. Only the events of equal or higher severity level cause the notification to be sent out.
 - c Select the **Alarm** check box to enable SMS notifications.
 - d Select the **Heartbeat** check box to enable heartbeat notifications.
3. Click the **Preferences** button to select information to be included in the SMS (*Notification fields*) and to select the SMS notification format preferences (*Notification format*).

Commissioning the DAS

SaveAdvancedPrintadminLogout



SMS Notifications Preferences

Manage SMS notifications configuration

Notification fields

Field	Display on active	Display on ceased
System name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Module type	<input type="checkbox"/>	<input type="checkbox"/>
Module type name	<input type="checkbox"/>	<input type="checkbox"/>
Module address	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Module name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Module description	<input type="checkbox"/>	<input type="checkbox"/>
Alarm name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alarm id	<input type="checkbox"/>	<input type="checkbox"/>
Alarm severity name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Alarm severity id	<input type="checkbox"/>	<input type="checkbox"/>
Alarm start/end time	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Notification format

Multiple notifications per sms Field separator

Field header

- Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

JMA DAS Platform - Local Commissioning User Guide

This document contains JMA Wireless proprietary and/or confidential information.

50

Setting the Maximum Number of Alarms to Display in the Alarm Log Table

1. In the **Settings** menu, select **Alarm Log**.
2. In the **Summary and Settings** pane, from the **Max number of alarms** drop-down list, select the maximum number of alarms, 500, 1000, or 2000, to be recorded and displayed in the **Alarm log Table**.

Note: When you set a lower number of alarms to be recorded, the oldest recorded logs are cleared from the list.

The screenshot shows the 'Alarm Log' interface. At the top left is a bell icon and the text 'Alarm Log' and 'Alarm system information'. Below this are two main sections: 'Filters' and 'Commands'. The 'Filters' section has 'Active alarms (4)' and 'Ceased alarms (499)', both with checked checkboxes. The 'Commands' section has buttons for 'Clear ceased alarms', 'Clear all alarms', 'Download alarms', 'Resync active alarms', and 'Resync all alarms'. Below these is the 'Summary and Settings' section, which includes 'Total alarms' (503), 'Max number of alarms' (2000), and 'Max severity' (indicated by a red dot). At the bottom is the 'Alarm log Table' with a table of alarm records. The table has columns for Address, Module Type, Alarm Id, State, Severity, Start Time, and End Time. The first row is highlighted in red, indicating an active alarm.

Address	Module Type	Alarm Id	State	Severity	Start Time	End Time
1.1.6	TAPOI-DCS	Communication	Active	Critical	2024-07-25 17:23:59	
1.1.6	TAPOI-DCS	Communication	Ceased	Critical	2024-07-25 14:05:12	2024-07-25 17:21:56
1.1.8	TLPPOI	Communication	Active	Critical	2024-07-25 14:05:12	
1.1.8	TLPPOI	Communication	Ceased	Critical	2024-07-25 10:52:25	2024-07-25 10:52:30
1.1.6	TAPOI-DCS	Communication	Ceased	Critical	2024-07-25 10:52:17	2024-07-25 13:26:24
1.1.6	TAPOI-DCS	DL Power IN Low	Ceased	Major	2024-07-25 10:52:01	2024-07-25 10:52:17

3. Click the yellow **Save** tool or press the **Enter** key on your keyboard to save settings.

Setting the Network Security

1. In the **Settings** menu, select **Services and Security**.
2. Enable or disable network services to set the appropriate security level for the supervision module communication interfaces.

In the **Services** table, colored icons indicate the security level of each service:

- Orange: unsafe service.
- Cyan: safe but not necessary service.
- Green: safe service.

In the **Security overview** pane, the color-coded icon provides an at-a-glance view of the network security status.

3. Enable or disable incoming ping for the supervision module communication interfaces.
4. Click the yellow **Save** tool or press the **Enter** key on your keyboard to save all the changes in the page.

Setting a Secure Network

1. For a secure network, configure services as shown in the following figure:

Services and Security
Firewall, network services and ports configuration

Firewall active ● Security overview ● Current situation

Service	Protocol	Port	Security
File Transfer	SFTP	22	●
Shell mode	SSH	22	●
Web access	HTTPS	443	●
SNMP	SNMPv3	161	●
Tunnel	Tunnel	5556	●

Incoming Ping

Interface	Allowed
WAN	<input type="checkbox"/>
LAN	<input checked="" type="checkbox"/>
VPN	<input type="checkbox"/>

SNMP
Alarm table entries Active + Ceased

2. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Note:

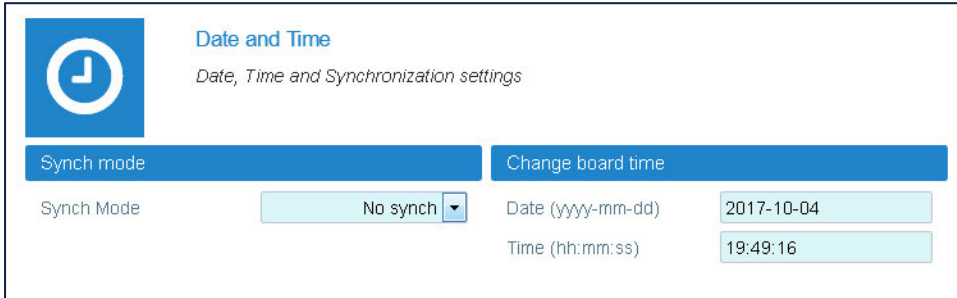
If the *Tunnel* is disabled (OFF), the DAS cannot be managed via JMA OMC nor can Software Defined Remote Units (SDRUs) feature configuration and licensing be performed via the SDRU Panel.

The web server accepts only Secure HTTP (HTTPS) connections: make sure to use port 443 to communicate with the supervision module.

Setting the System Date and Time

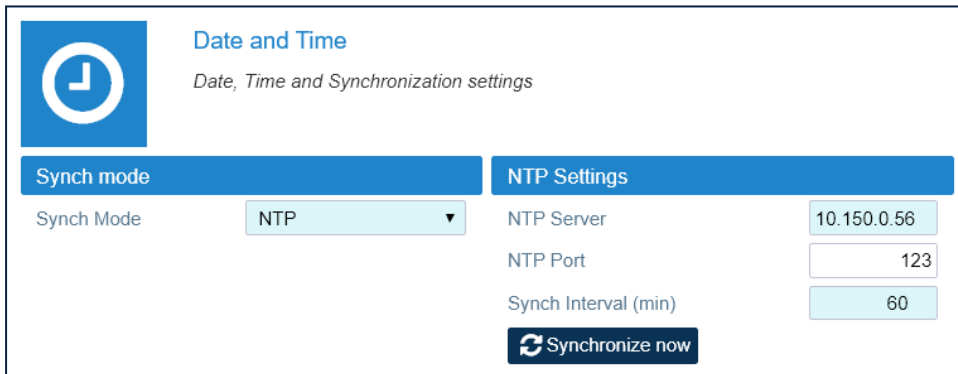
1. In the **Settings** menu, select **Date and Time**.
2. From the **Synch Mode** drop-down list, select the synchronization mode:
 - a. Select *No synch* to manually set the DAS date and time.

In the **Change board time** pane, enter the board date and time in Local Time Standard.



The screenshot shows the 'Date and Time' settings interface. At the top left is a clock icon. The title is 'Date and Time' with the subtitle 'Date, Time and Synchronization settings'. Below this are two tabs: 'Synch mode' and 'Change board time'. The 'Change board time' tab is active. Under this tab, there are two input fields: 'Date (yyyy-mm-dd)' with the value '2017-10-04' and 'Time (hh:mm:ss)' with the value '19:49:16'. To the left of these fields, the 'Synch Mode' is set to 'No synch' in a dropdown menu.

- b. Select *NTP* to enable and configure the automatic clock synchronization service.
 - Enter the NTP Server IP address in the **NTP Server** field.
 - In the **Synch Interval** field, set the time interval (minutes) between automatic time synchronization.
 - Click **Synchronize now** to check the NTP Server availability.



The screenshot shows the 'Date and Time' settings interface with the 'NTP Settings' tab active. The 'Synch Mode' dropdown is now set to 'NTP'. The 'NTP Settings' section includes three input fields: 'NTP Server' with the value '10.150.0.56', 'NTP Port' with the value '123', and 'Synch Interval (min)' with the value '60'. At the bottom of this section is a 'Synchronize now' button with a refresh icon.

3. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Setting Options for Testing the Network Connection

You can set up to five IP Addresses to periodically test the network connection as follows:

1. In the **Settings** menu, select **Communication**.
2. In the **Ping settings** pane, set the **Ping interval** between ping attempts.
Note: The ping interval is set as a global ping configuration option.
3. In the **Ping Address Table**, select the connection to be tested from the **Interface** drop-down list.
4. Set the **IP Address** for the network connectivity test.
5. Select the **Enabled** check box.
6. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Note: JMA recommends that you set at least one IP address always available because if the ping test fails, the network interface will be restarted.

An example of the **Ping Address Table** with configured IPv4 addresses is shown in the following figure:

The screenshot shows the 'Ping settings' configuration page. At the top, there is a blue header 'Ping settings'. Below it, the 'Ping interval (minutes)' is set to 1. The main section is the 'Ping Address Table', which contains the following data:

Ip Address	Interface	Enabled
10.150.5.171	wan	<input type="checkbox"/>
192.168.0.5	wan	<input type="checkbox"/>
192.168.1.123	wan	<input type="checkbox"/>
8.8.8.8	wwan	<input type="checkbox"/>
192.168.0.5	wwan	<input type="checkbox"/>

An example of the **Ping Address Table** with configured IPv6 addresses is shown in the following figure:

The screenshot shows the 'Ping settings' configuration page. At the top, there is a blue header 'Ping settings'. Below it, the 'Ping interval (minutes)' is set to 10. The main section is the 'Ping Address Table', which contains the following data:

Ip Address	Interface	Enabled
2002:c000:203::4	eth0	<input type="checkbox"/>
2002:c000:203::5	eth0	<input type="checkbox"/>
::	eth0	<input type="checkbox"/>
::	eth0	<input type="checkbox"/>
::	eth0	<input type="checkbox"/>

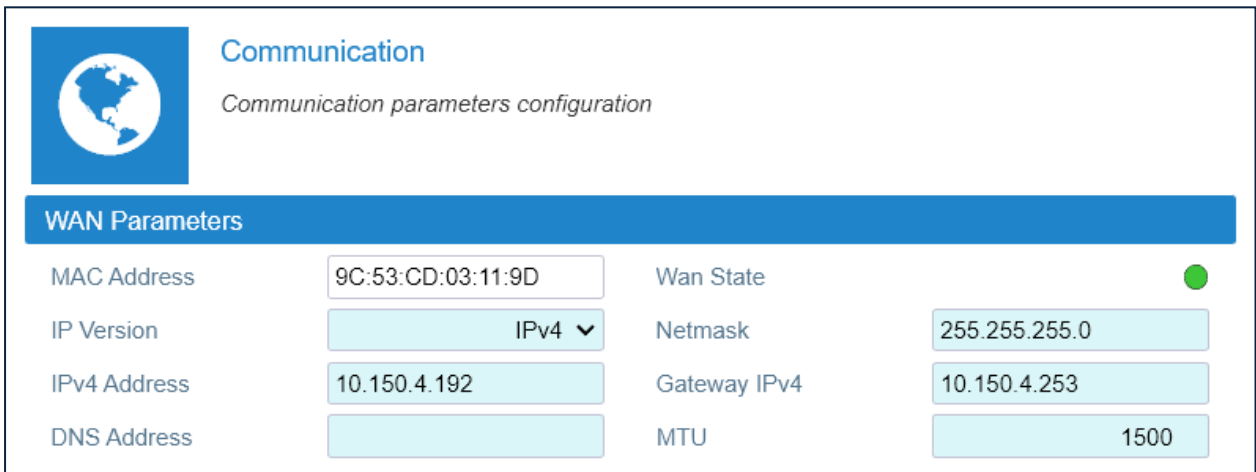
Setting the Supervision Module Communication Interface for Remote Management

After the commissioning of the DAS is complete, configure the DAS communication interface for remote management.

Setting the WAN Interface

1. Contact the Network Administrator to get the parameters for the configuration of the supervision module WAN interface.
2. In the **Settings** menu, select **Communication**.
3. In the **WAN Parameters** pane, select the IP (Internet Protocol) version, IPv4 or IPv6, from the *IP version* drop-down list.

Note: To avoid connection issues, JMA strongly recommends to switch from IPv4 to IPv6, or vice versa, only when connected locally to the supervision module LAN port.



WAN Parameters			
MAC Address	9C:53:CD:03:11:9D	Wan State	●
IP Version	IPv4	Netmask	255.255.255.0
IPv4 Address	10.150.4.192	Gateway IPv4	10.150.4.253
DNS Address		MTU	1500

4. Enter the information provided by the Network Administrator to configure the connection.
5. Set the WAN *MTU*, Maximum Transmission Unit size, if necessary.
6. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page and allow redirection to the new IP address.
7. Connect the Wide Area Network (WAN) to the supervision module WAN port, to allow the remote management of the DAS.



Commissioning the DAS

Caution: Never connect the Wide Area Network to the LAN port. The DHCP server, running on the LAN port, may cause connectivity issues in the Wide Area Network.

Setting the Wireless WAN Interface (Modem)

1. In the **Settings** menu, select **Communication**.
2. In the **Modem Parameters** pane, select the **Modem preferences** button to access the modem configuration parameters.

Note: To reboot the modem and restart the WWAN connection, click the **Modem commands** button. A simple terminal for sending AT commands to the modem is also available.

3. Configure the wireless connection and APN preferences.

Modem Preferences
Manage modem configuration

SIM card settings

IMSI: 222015704125498 **Lock SIM**

ICCID: 89390100002242746893

Mobile connection settings

Data connection enabled MTU: 1500

APN profile: Operator Use IPv4 only

APN preferences Long SMS allowed

Service mode: Auto WWAN Internet test

Preferred technology: 3GPP WWAN Internet test time peri...: 300

4. Select the **Data connection enabled** check box to enable the wireless connection.
5. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save changes.

Commissioning the DAS

Setting the VPN

The VPN Client available on the supervision module allows a secure access to the DAS over unsecured networks (such as the Internet).

VPN Parameters			
VPN enabled	<input checked="" type="checkbox"/>	VPN State	●
Server IPv4 address	46.44.238.53	IPv4 Address	10.96.0.3
Server port	1196	Netmask	255.255.0.0
VPN Device	tun0	MTU	1500
<input type="button" value="Upload VPN keys"/>			

1. In the **Settings** menu, select **Communication**.
2. Select the **VPN Device** type (Tap or Tun).
3. Enter the VPN server IPv4 address and port.
4. Set the VPN MTU, Maximum Transmission Unit size, if necessary.
5. Upload VPN keys (Certification Authority, Client Certificate, Client Key), if needed.
6. Select the **VPN enabled** check box to enable the VPN connection.
7. Click the yellow **Save** tool in the toolbar or press the **Enter** key on your keyboard to save all the changes in the page and apply the new VPN settings.
8. Check that the **VPN State** icon turns green within a few seconds.

Note: The IP Address allocated by the VPN Server to the VPN Client is displayed in the IPv4 Address field.


Managing Users

Users with **admins** role permissions can manage their own account and other user accounts.

Editing and Deleting Existing Accounts

1. In the **Settings** menu, select **Users** to open the **Users** panel.
2. In the **User table**, click **Edit** to edit accounts.
3. Click **Delete** to delete accounts.

NOTE: At least one account with administrative permissions (admins role) must be present and cannot be deleted.



Users

List all information about the users of the system

User information
Your name:
Your role:

Commands

User table

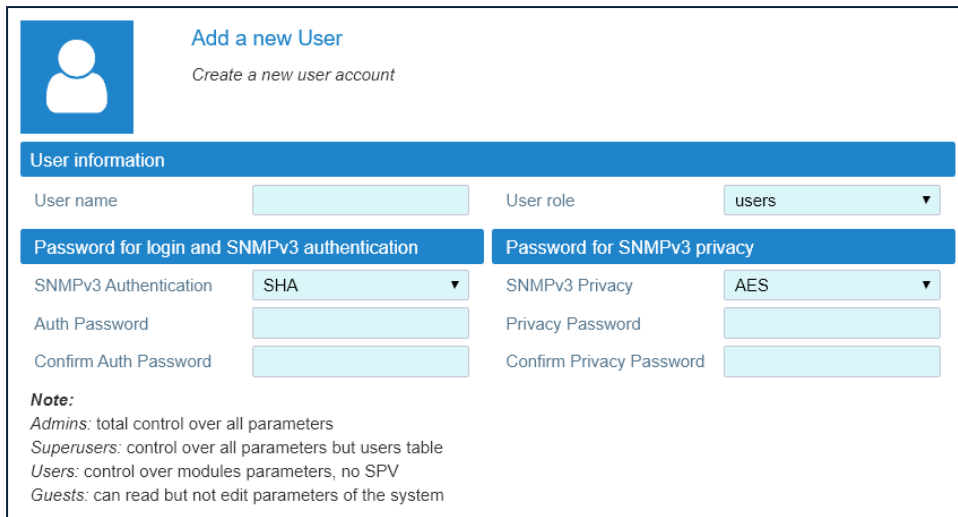
Username	Community	SNMPv3 Authentication	SNMPv3 Privacy	Edit	Delete
admin	admins	SHA	AES	<input type="button" value="Edit"/>	
guest	guests	SHA	AES	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
superuser	superusers	SHA	AES	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
user	users	SHA	AES	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Info
Admins: total control over all parameters
Superusers: control over all parameters but users table
Users: control over modules parameters, no SPV
Guests: can read but not edit parameters of the system

Adding a New User

1. In the **Settings** menu, select **Users** to open the **Users** panel.
2. In the **Commands** pane, click **Add new user**.
3. Enter the new user name in the **User name** field.

Commissioning the DAS



Add a new User
Create a new user account

User information

User name User role

Password for login and SNMPv3 authentication | **Password for SNMPv3 privacy**

SNMPv3 Authentication | SNMPv3 Privacy

Auth Password | Privacy Password

Confirm Auth Password | Confirm Privacy Password

Note:
Admins: total control over all parameters
Superusers: control over all parameters but users table
Users: control over modules parameters, no SPV
Guests: can read but not edit parameters of the system

4. Select a role for the new user from the **User role** drop-down list.

The following table lists the capabilities associated with each role and the factory-set username and password for each role:

User Role (Community)	Factory-set Username and Password	Capabilities
admins	User name: admin Password: Password1	Total control over all parameters.
superusers	User name: superuser Password: Password1	Control over all parameters except users table.
users	User name: user Password: Password1	Control over modules parameters, no supervision (SPV).
guests	User name: guest Password: Password1	Can read but not edit parameters of the system (read-only user).

5. Enter the user's password for login and SNMPv3 authorization twice, both in the **Auth Password** field and in the **Confirm Auth Password** field.

Password Requirements

Passwords must be at least eight characters long and must contain characters from the following categories:

- lowercase letters (a through z)
- uppercase letters (A through Z)
- base 10 digits (0 through 9)

The user's input validation feature warns users if invalid characters are entered and details what input is expected for the field.

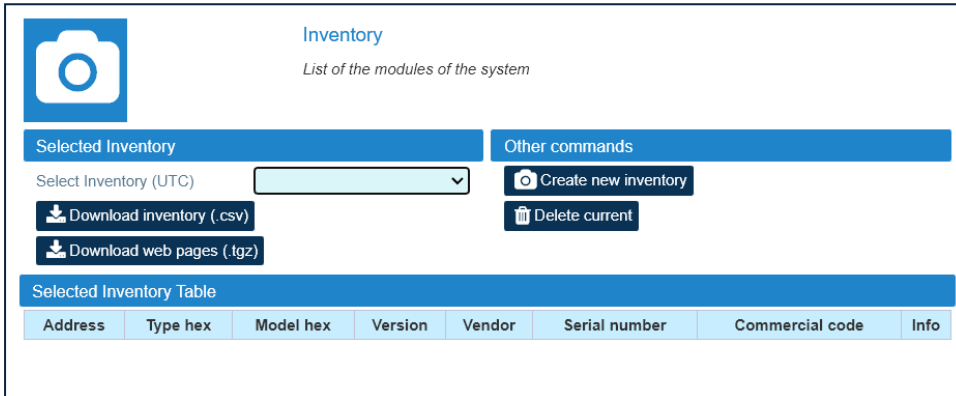
Creating and Managing Inventory Lists

When commissioning is complete, JMA strongly recommends that you create an Inventory list to back up the DAS configuration.

Note: Existing inventory lists are cleared when a new **Discovery full** is accepted. See "Discovering the DAS Components" on page 10.

Creating an Inventory List of the DAS Current Configuration

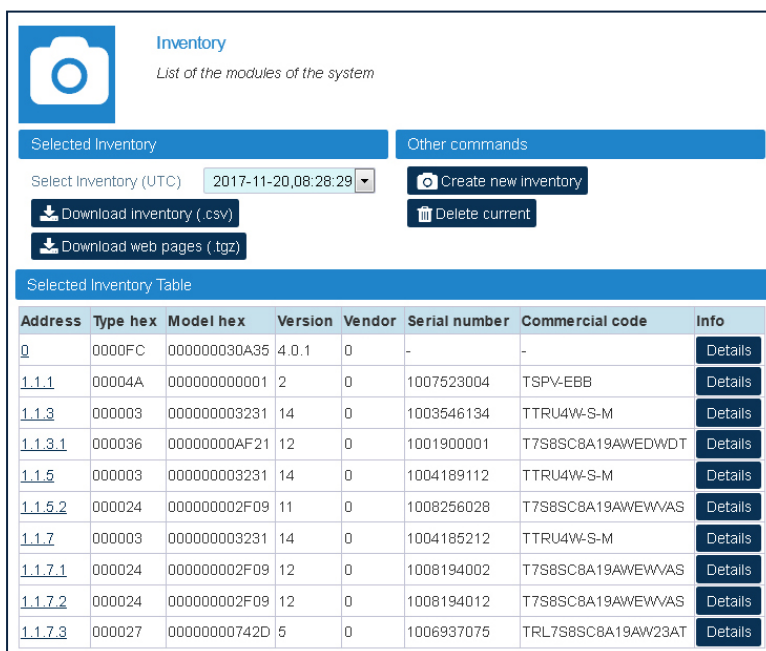
1. In the **Settings** menu, select **Inventory**.
2. In the **Other Commands** pane, click **Create new inventory**.



Note: Inventory tasks, or web pages download, made by a user are shared with the other connected users, whose activity will stall until the operation is complete.

Selecting an Inventory List

1. In the **Settings** menu, select **Inventory**.
2. In the **Selected Inventory** pane, select a list from the **Select Inventory (UTC)** drop-down list. The selected inventory list displays in the **Selected Inventory Table**.



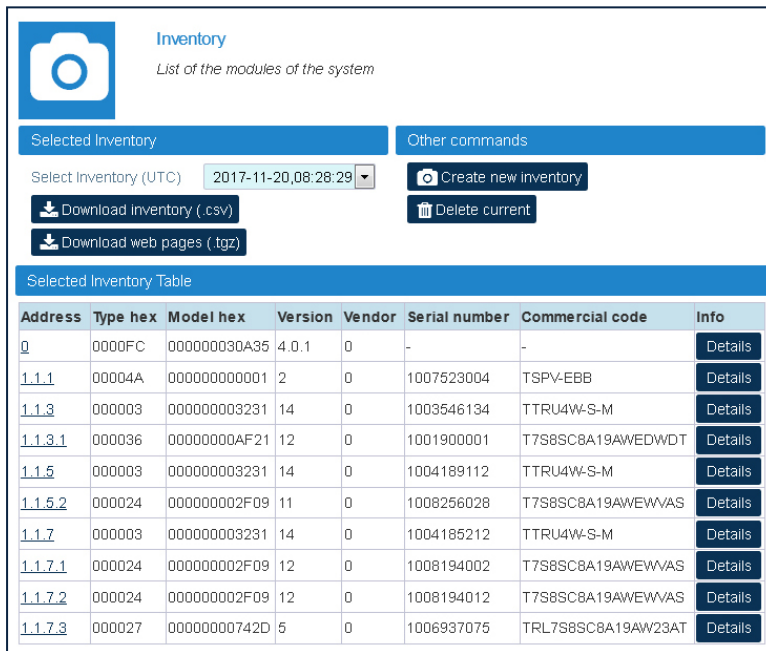
Commissioning the DAS

After an inventory is selected:

- You can click **Download inventory (.csv)** to download the selected inventory list in csv (Comma Separated Value) format.
- You can click **Download Web Pages (.tgz)** to download a compressed file (.tgz format), containing the selected inventory list web pages. Extract files to a folder to browse offline web pages.
- In the green bar at the top of each device main panel, the **Inventory** button is available for authorized users to restore the device configuration from the selected inventory list. In the *JMA DAS Platform Remote Monitoring and Management User Guide*, refer to *Loading Device Configuration from Inventory* for details.

Downloading Inventory Lists (csv Format)

1. When different inventory lists are available, select an inventory list from the **Select Inventory (UTC)** drop-down list. The selected inventory displays in the **Selected Inventory Table**.



The screenshot shows the 'Inventory' section of a web interface. It includes a camera icon, the title 'Inventory', and a subtitle 'List of the modules of the system'. Below this are two main sections: 'Selected Inventory' and 'Other commands'. The 'Selected Inventory' section features a dropdown menu for 'Select Inventory (UTC)' with the value '2017-11-20,08:28:29', a 'Create new inventory' button, and two download buttons: 'Download inventory (.csv)' and 'Download web pages (.tgz)'. The 'Other commands' section has a 'Delete current' button. Below these is the 'Selected Inventory Table' with the following data:

Address	Type hex	Model hex	Version	Vendor	Serial number	Commercial code	Info
0	0000FC	0000000030A35	4.0.1	0	-	-	Details
1.1.1	00004A	0000000000001	2	0	1007523004	TSPV-EBB	Details
1.1.3	000003	000000003231	14	0	1003546134	TTRU4W-S-M	Details
1.1.3.1	000036	00000000AF21	12	0	1001900001	T7S8SC8A19AWEDWDT	Details
1.1.5	000003	000000003231	14	0	1004189112	TTRU4W-S-M	Details
1.1.5.2	000024	000000002F09	11	0	1008256028	T7S8SC8A19AWEWVAS	Details
1.1.7	000003	000000003231	14	0	1004185212	TTRU4W-S-M	Details
1.1.7.1	000024	000000002F09	12	0	1008194002	T7S8SC8A19AWEWVAS	Details
1.1.7.2	000024	000000002F09	12	0	1008194012	T7S8SC8A19AWEWVAS	Details
1.1.7.3	000027	00000000742D	5	0	1006937075	TRL7S8SC8A19AW23AT	Details

2. Click **Download inventory (.csv)** to download the selected inventory list in csv (Comma Separated Value) format.

Downloading Inventory Lists (Web Pages)

1. When different inventory lists are available, select an inventory list from the **Select Inventory (UTC)** drop-down list. The selected inventory displays in the **Selected Inventory Table**.
2. Click **Download Web Pages (.tgz)** to download a compressed file (.tgz format), containing the selected Inventory list web pages.
3. Extract files to a folder to browse offline web pages.

Getting Help: Technical Support Contact Information

- JMA International
+1 315 431-7100
+1 888 201-6073
customerservice@jmawireless.com
- JMA United States
Toll Free +1 888 201-6073, Outside US +1 315-431-7100
techsupport@jmawireless.com
- JMA Italy - BTC
+39 051 6946811
VAS-techsupport@jmawireless.com

Abbreviations

AGC

Automatic Gain Control

APN

Access Point Name

BS

Base Station

CPRI

Common Public Radio Interface

CSI-RS

Channel State Information Reference Signal

CSV

Comma Separated Value

DAS

Distributed Antenna System

DHCP

Dynamic Host Configuration Protocol

DL

Downlink

DWDM

Dense Wavelength Division Multiplexing

EU

European Union

FQDN

Fully Qualified Domain Name

HTTP

Hypertext Transport Protocol (<http://>)

HTTPS

secure Hypertext Transport Protocol (<https://>)

Abbreviations

IPv4

Internet Protocol version 4

IPv6

Internet Protocol version 6

ITE

Information Technology Equipment

LAN

Local Area Network

LMT

Local Maintenance Terminal

MIMO

Multiple Input, Multiple Output

MU

Master Unit (modular headend)

NEM

Network Element Manager

NG

Next Generation

NTP

Network Time Protocol

O-RAN

Open Radio Access Network

PDU

Power Distribution Unit

PIM

Passive Intermodulation

PSU

Power Supply Unit

PTP

Precision Time Protocol

Abbreviations

RAL

Restricted Access Location

RF

Radio Frequency

RU

Remote Unit

SDRU

Software Defined Remote Unit

SISO

Single Input, Single Output

SMS

Short Message Service

SNMP

Simple Network Management Protocol

SSB

Synchronization Signal Block

Syslog

System Logging Protocol

TCP

Transmission Control Protocol

TDD

Time Division Duplex

TDFE

Digital Donor Front End

UDP

User Datagram Protocol

UI

User Interface

UK

United Kingdom

Abbreviations

UL

Uplink

UPS

Uninterruptible Power Supply

UTC

Universal Time Coordinated

VPN

Virtual Private Network

WAN

Wide Area Network

WDM

Wavelength Division Multiplexing

WWAN

Wireless Wide Area Network