

technetix

AIMA3000.RPAS

RF Return Path Amplifier - Standard

Product User Manual



AIMA3000.RPAS

RF Return Path Amplifier - Standard

Product User Manual

Contents

1	About This Manual	5
1.1	Chapter Overview	5
1.2	Related Documentation	5
1.3	Document Conventions	6
1.4	Technical Support	6
2	Precautions	7
3	Overview	8
3.1	Product Description	8
3.2	Product Key Features	8
3.3	Specifications	9
3.4	Block Diagram	10
3.5	Order Details	11
4	Module Characteristics	12
4.1	Module Appearance and Port Layout	12
4.1.1	Overview	12
4.1.2	Front Panel Layout	13
4.1.3	Rear Panel Layout	15
5	Installation	17
5.1	Preparatory Work for Installation	17
5.2	Unpacking	17
5.3	Module Installation	18
5.4	Check Module LEDs	19
5.5	Test the RF Input Signal	19
6	Module Configuration & Alarm setup	20
6.1	Port Configuration screen	20
6.2	Alarms Monitoring	22
6.2.1	Alarm Status Pages	22
6.2.2	Module operating voltage and temperature alarm	23

6.2.3	Module Port Alarms.....	24
6.2.4	Alarm Monitoring Configuration.....	25
6.3	Input / Output Status Monitoring.....	26
6.4	Logs Management.....	27
6.5	Device Upgrade.....	28
6.6	Restoring Factory Defaults	29
6.7	Reboot.....	31
7	Troubleshooting.....	32
8	Declaration of Conformity	33
	Appendix A: Default Alarm Limit Settings	34
	Appendix B: Factory Default Settings.....	35

1 About This Manual

1.1 Chapter Overview

1. About This Manual: Preface
2. Precautions
3. Overview: Application module overview, including the module features, technical specifications, and ordering information.
4. Module Characteristics: The appearance of the equipment, port and introduction of other components
5. Installation procedure
6. Module Configuration & Alarms: Web management configuration instructions.
7. Troubleshooting
8. Product Warranty
9. Declaration of Conformity.

Appendix A: Default Alarm Limit Parameters

Appendix B: Factory Default Settings

1.2 Related Documentation

The following documents may be used in conjunction with this manual:

- Technetix.AIMA3000 - Product User Manual
- Technetix.AIMA ASMM - Product User Manual
- AIMA3000 NMS Web Management System Product User Manual
- Technetix.NMS3-EPSM - Basic Inventory Management
- Technetix.NMS3-EPSM - Basic Alarm Management
- Technetix.NMS3-EPSM - Basic System Management
- Technetix.NMS3-EPSM - Basic Template Management

1.3 Document Conventions

Before you use the manual, please familiarise yourself with the format used in this manual.

‘*’ Asterisk: Points marked with an asterisk means there is a corresponding note on the page

1.4 Technical Support

If you need help in the process of setting up and maintaining an RPAS, please contact Technetix’s technical support staff:

Europe:

Technetix BV
Kazemat 5
NL-3905 NR Veenendaal
P.O. Box 385
NL-3900 AJ Veenendaal
The Netherlands

Phone: +31 318 58 59 59

Email: customer.service.vdl@technetix.com

2 Precautions



WARNING!

This equipment is intended for indoor applications. To prevent fire or electrical shock, or damage to the equipment, do not expose units to water or moisture.

- You should carefully read and thoroughly understand the contents of the manual before installing and using this equipment.
- At any time, there may be dangerous voltage inside the device.
- Do not power up before the cover and the panels of the equipment are installed and the enclosure is closed.

Cleaning

Only use a damp cloth for cleaning the front panel. Use a soft dry cloth to clean the top of the unit.

DO NOT use any spray cleaners or chemicals of any kind.

Outage or overload requiring service and repairs

Unplug the unit and refer the servicing to Technetix qualified service personnel only.

Servicing and repairs

DO NOT attempt to service this unit yourself. Refer all servicing needs to Technetix qualified service personnel only.

3 Overview

3.1 Product Description

The RPAS, RF Return-Path Amplifier - Standard series, is designed to plug into Technetix latest generation Advanced Intelligent Multi-services Access Platform - the AIMA3000. The RPAS has two independent amplifier circuits and it accepts return-path RF signals from 5 MHz to 200 MHz through the two RF input ports. The module has an adjustable gain of 10 dB to 30 dB and has dual output ports. Electronic gain and slope controls allow the module to be customised for many different configurations. Microprocessor-based status monitoring and control is available locally and remotely through a web interface or by using Technetix NMSE (network management software). All module settings are retained in non-volatile memory to ensure hassle free operation.

3.2 Product Key Features

- Plug-and-play with the AIMA3000 platform
- Return path amplifier (5 MHz to 204 MHz) supports both analogue and digital signal sources
- High linearity, superior low noise profile, and minimal distortion
- Manual gain control (MGC)(1)
- Electronic gain and slope control
- User configurable alarm threshold levels
- Alarm monitoring
- Broadband GaAs amplifier technology
- Remote firmware upgrade and auto upload/download of configuration files through ASMM web interface or using Technetix NMSE
- FCC, CE, and RCM(2) complaint

(1)It is recommended that the device only uses manual gain control in return path configurations.

(2)See Declaration of Conformity for current status.

3.3 Specifications

RF Performance

RF bandwidth	5 ~ 200 MHz
RF flatness	± 0.5 dB
Noise coefficient	≤ 9 dB
RF Input level	10 dBmV ~ 30 dBmV per channel
RF Output level	50 dBmV
Gain	10 dB ~ 30 dB
Gain adjustment	0 dB ~ 10 dB (input gain control) 0 dB ~ 10 dB (output gain control)
Slope adjustment	0 dB ~ 5 dB
RF impedance	75 Ω
RF return loss	>16 dB
RF test point relative to RF output port	-20 dB ±1 dB
Isolation between RF inputs	50 dB
RF connectors	4 x GSK-type female
RF test points	4 x mini-SMB
Alarm and status	Front-panel LEDs, SNMP traps

Link Performance (1)

CNR	> 50 dB
IMD2	< -60 dBc

Notes:

(1) Measured in a typical system with 4 channels signal source (11.5 MHz, 26.5 MHz, 45.5 MHz and 58.5 MHz).

General

Power supply	Powered via AIMA3000 backplane
Power consumption	< 10.0 W
Operating temperature	-5 ~ 55 °C
Operating humidity	90 % (Non-condensing)
Storage temperature	-25 ~ 70 °C
Storage humidity	90 % (Non-condensing)
Dimensions (W*D*H)	24.6 * 410 * 152.5 mm
Weight	0.88 kg
Network management	Technetix NMSE or through ASMM's Web Interface

3.4 Block Diagram

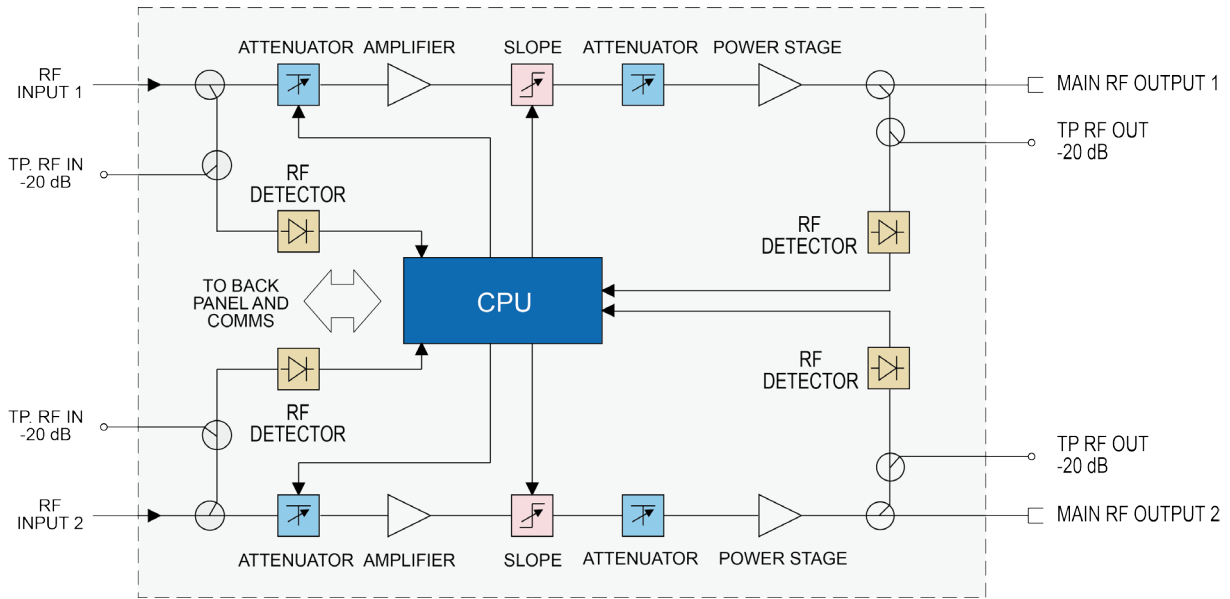


Table 3-1 RPAS Block Diagram Glossary

Parameters	Glossary
RF IN	RF Input
TP RF IN -20 dB	RF -20 dB Input Test point
MAIN RF OUT	RF Output
TP RF OUT -20 dB	RF -20 dB Output Test point
PRE AMPLIFIER	Pre-Amplifier Module
MID AMPLIFIER	Mid-Amplifier Module
TO BACK PLANE AND COMMS	Data Bus
TOTAL OMI	Total Modulation (OMI) at laser
CPU	Central Processing Unit

1.1 Order Details

A-RPAS-[Y]-[Z] RF Return Path Amplifier – Standard Module

Options:

Y Number of RF Ports
D Dual
Z Bandwidth
20 5~200 MHz

4 Module Characteristics

4.1 Module Appearance and Port Layout

4.1.1 Overview

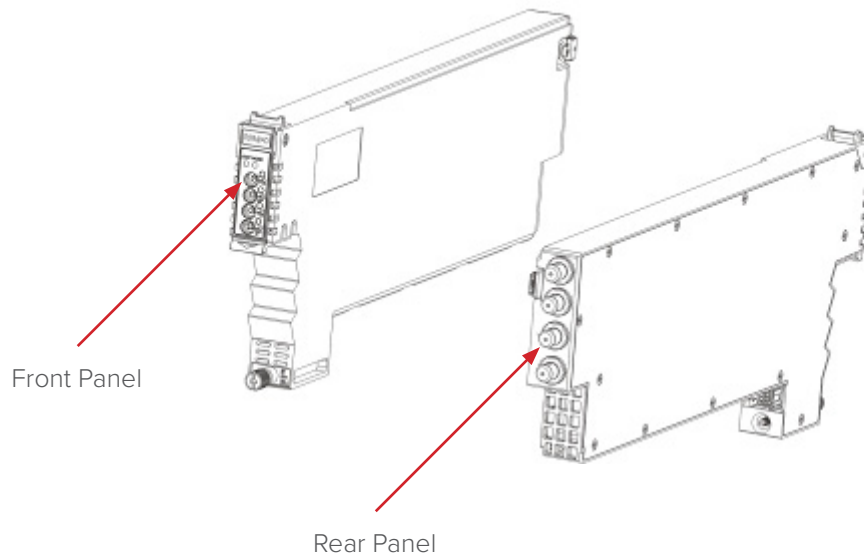


Figure 4.1 Module Appearance

4.1.2 Front Panel Layout

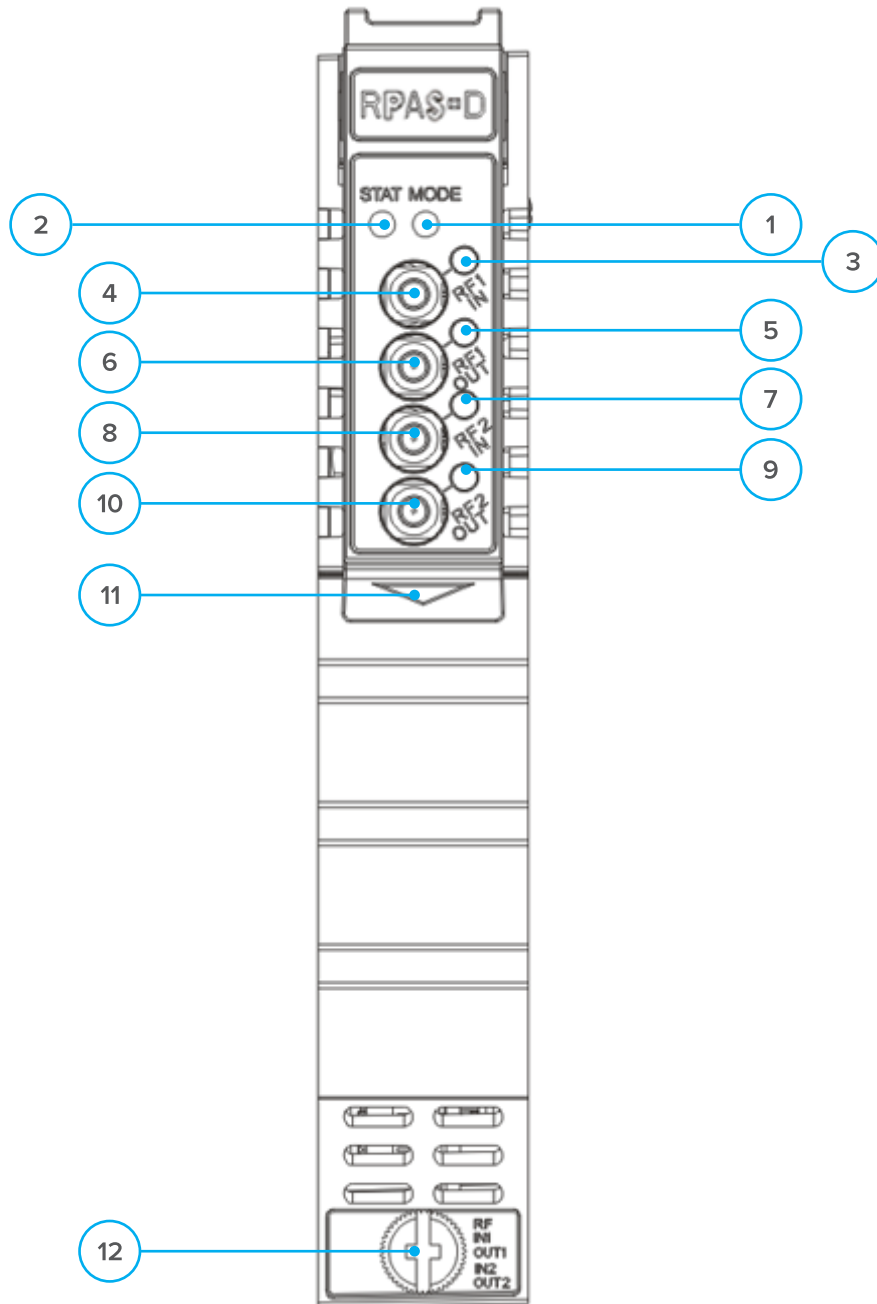


Table 4 1 RPAS Front Panel Functions

Item Number	Item	Description
1	MODE LED	Module Gain Control Mode Indicator MGC: Green Light Blinking AGC: Green
2	STATUS LED	Module Alarm Indicator Normal: Green Minor Alarm: Amber Major Alarm: Red
3	RF 1 IN LED	RF Input Normal: Green Minor Alarm: Amber Major Alarm: Red
4	RF 1 IN TP	RF Input Test Point
5	RF 1 OUT LED	RF Output Indicator Normal: Green Minor Alarm: Amber Major Alarm: Red
6	RF 1 OUT TP	RF Output Test Point
7	RF 2 IN LED	RF Input Normal: Green Minor Alarm: Amber Major Alarm: Red
8	RF 2 IN TP	RF Input Test Point
9	RF 2 OUT LED	RF Output Indicator Normal: Green Minor Alarm: Amber Major Alarm: Red
10	RF 2 OUT TP	RF Output Test Point
11	Orange tab-retaining clip	Used to plug and anchor the module The tab-retaining clip will pop-up after pressing the release and plug module.
12	Mounting Screw	Module fastening screw

CAUTION!
“OPT OUT” emits a non-visible laser radiation when working.

4.1.3 Rear Panel Layout

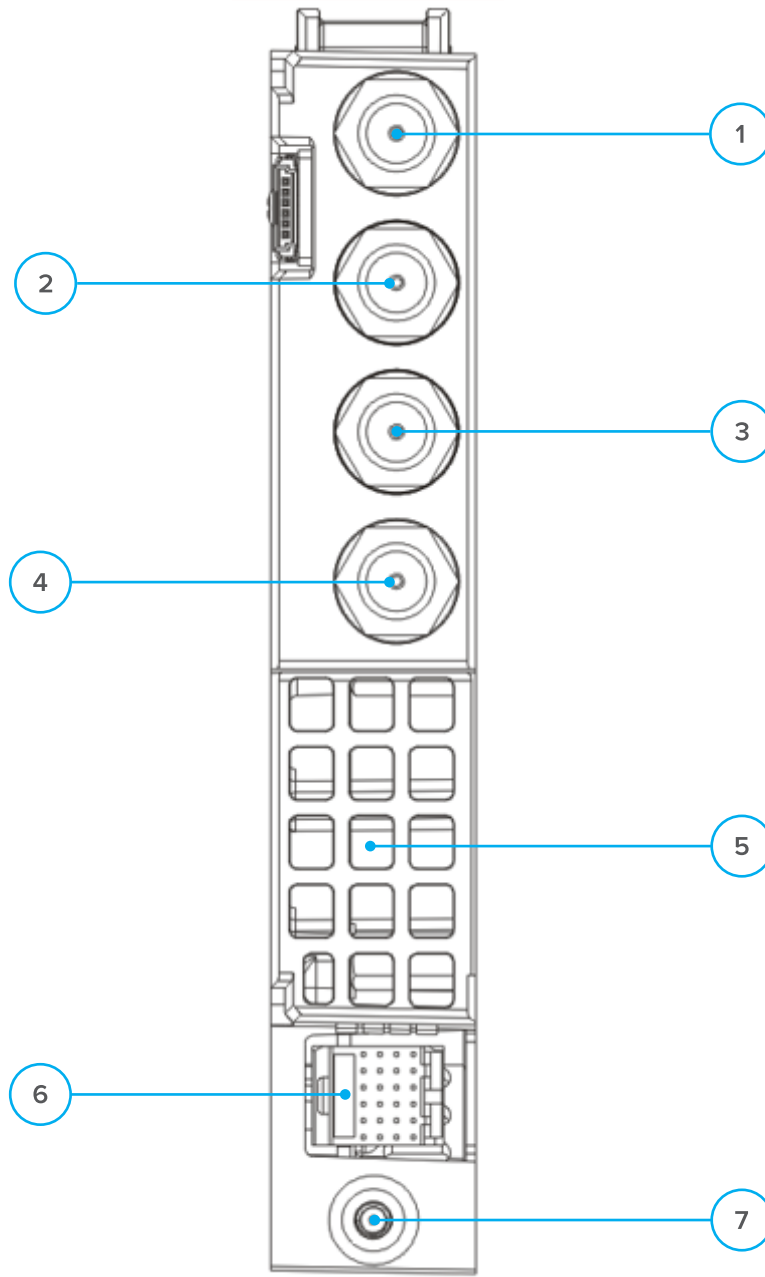


Figure 4.3 Rear Panel Layout

Table 4 2 RPAS Rear Panel Functions

Serial Number	Item	Description
1	RF 1 IN	RF 1 Input
2	RF 1 OUT	RF 1 Output
3	RF 2 IN	RF 2 Input
4	RF 2 OUT	RF 2 Output
5	Air Vent	Air vent allowing air to flow out of the module
6	Multi-pin connector	Power and communication port
7	Placement Pin	Used to position the module in the chassis

5 Installation

5.1 Preparatory Work for Installation

Before installing this device, you must ensure that the unit is intact and ready for installation.

Unpack and check the unit: Open the box to check for any damage that may have occurred during shipment.

If damage is found, please contact a Technetix customer support representative.

Necessary equipment and tools for installation:

Table 5.1 Necessary equipment and tools for installation

Tools/Modules	Description
Phillips screwdriver PH1/PH2	Used with the AIMA3000 chassis
RPAS Module	The module to install into the AIMA3000 chassis

5.2 Unpacking

Unpack the module. Keep the packaging materials for future transport needs.

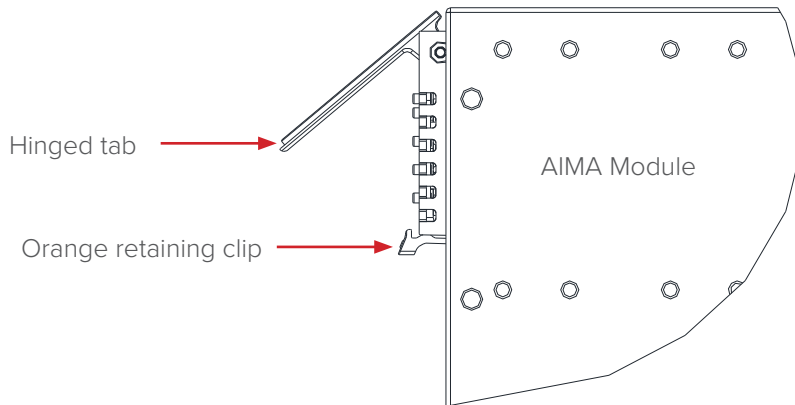
Check the package manifest, record the product module type, serial number, purchase date, and any other relevant information to facilitate later management and maintenance.

Table 5.2 Packing Manifest

No.	Description	Qty
1	RPAS module	1
3	Individual test sheet (Certificate of Performance)	1

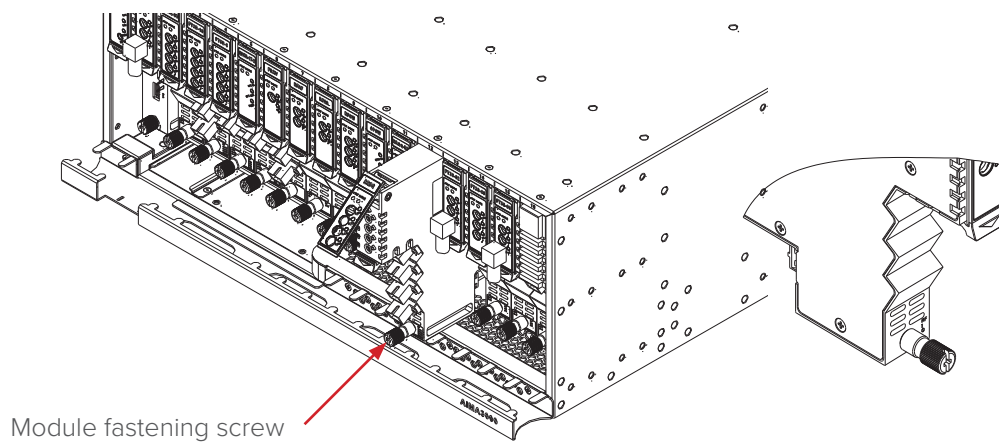
5.3 Module Installation

1. Gently depress the orange retaining clip and release the hinged tab



2. Hold the AIMA module casing upright, align it with the AIMA3000 slide rails for the correct slot, and insert the module until it reaches the multi-pin connector.

DO NOT use excessive force when inserting the module, but ensure the RF connectors at the rear of the module are securely connected with the chassis's RF connectors.



CAUTION!

The module **MUST** be installed correctly to ensure a proper connection of the module's multi-pin connector and the backplane.

Tip:

When inserting the module into the guide rails, vertically tilt the module slightly to check that the guides are properly seated on the rails. The module is guided to the correct position using the large metal fastening screw on the lower part of the front panel.

3. After the module is inserted, gently push the hinged tab until it snaps into the orange retaining clip. While pushing down on the hinged tab, the AIMA module will mate with the power bus and will lock in into the chassis

CAUTION!

If force is required to insert a module, then it may not be correctly seated on the slide rails, or the mounting screw may be misaligned.

4. When the module is fully seated within the chassis, on the bottom of the AIMA module, fasten the spring-loaded mounting screw. **Only use fingers to fasten the mounting screw. DO NOT use a screwdriver.**

5.4 Check Module LEDs

When the module has been installed, if the chassis is powered, all LED indicators on the front panel will show a blinking green light, indicating the module is initiating.

If the input and output signals are normal, the "STAT" LED indicator will cease to blink in about 5 seconds and remain constant green afterwards. At the same time, the "RF IN" and "RF OUT" LED indicators will also remain constant green when the signals are normal.

If the input signal is out of the expected range, the "STAT" and "RF IN" LED indicator will show constant orange or red. If the output signal is out of the expected range, the "STAT" and "RF OUT" LED indicator will show constant orange or red.

5.5 Test the RF Input Signal

When setting up the transmitter for final deployment, the RF input levels must not exceed 20 dB.

6 Module Configuration & Alarm setup

The module configuration settings can be configured using the web interface and Technetix NMSE (network management software). This manual only provides details on the web interface. For login details and network setup, please refer to the AIMA-ASMM user manual. If the same module is reinserted in the same slot, the ASMM will restore the previous settings if the module is set to **“Auto Download”** the configuration.

6.1 Port Configuration screen

After logging in to the AIMA ASMM controller, select the **“Modules”** tab and then the **“RPAS”** to configure one of the RPAS modules. After selecting the **“RPAS”**, the **“Port 1”** and **“Port 2”** options will appear.

The screenshot displays the web interface for configuring an RPAS module. On the left is a navigation menu with the following items: All Modules, 0 ASMM-A, 1 FPAS 77CH analog, 2 FPAS 歌华 signal, 3 FPAS QAM signal, 4 RFSW A-77CH B-歌华, 5 RFSW A-2.0 B-3.0, 6 FT3S-D-10, 7 FT5S-D 1-CMTS 2-QAM, 8 EDF A-1-15-G, 9 OPSW 1-1550 2-1310, 10 RRAS-Q 2-2.0 3-3.0, 11 RT5S-D 1-2.0 2-3.0, 12 RPAS-D 1-2.0 2-3.0 (highlighted), Port 1, Port 2, 13 RRAS-Q 2-2.0 3-3.0, 14 FRAS-S, 15 RFSW, 16 FT5E-S-10, PS1, PS2, and FAN.

The main content area has tabs for System, Modules, Alarms, Logs, and Upgrade. The 'Modules' tab is active, showing the configuration for the selected RPAS module. The configuration is organized into four sections:

- Module Information:** Model: A-RPAS-D-20, Serial No: 15045527, HW Assembly No: A05045_1, FW Part No: S08919, FW Version: V01.00.06a. A 'Refresh' button is present.
- Configuration:** Alarm Control is set to 'Enable' (dropdown), and Module Alias is 'RPAS-D 1-2.0 2-3.0'. A 'Submit' button is present.
- Alarm Settings:** A table with columns: Parameter, Current Value, HiHi, Hi, Lo, LoLo, and Deadband.

Parameter	Current Value	HiHi	Hi	Lo	LoLo	Deadband
Temperature(°C)	25.4	<input checked="" type="checkbox"/> 70.0	<input checked="" type="checkbox"/> 65.0	<input checked="" type="checkbox"/> 0.0	<input checked="" type="checkbox"/> -5.0	2.0
+12V Input Voltage(V)	11.8	<input checked="" type="checkbox"/> 13.5	--	--	<input checked="" type="checkbox"/> 10.5	0.1
+5V Input Voltage(V)	4.9	<input checked="" type="checkbox"/> 6.0	--	--	<input checked="" type="checkbox"/> 4.4	0.1

 A 'Submit' button is present at the bottom right of this section.
- Commands:**
 - Factory Defaults: Warning: Applying factory defaults will erase all configuration and restore factory defaults. The module will reboot after applying default values.
 - Reboot: Warning: Rebooting the module will take approx. 20 seconds.

Figure 6.1

After selecting “Port 1” or “Port 2”, the RF configuration screen will appear for the designated transmitter.

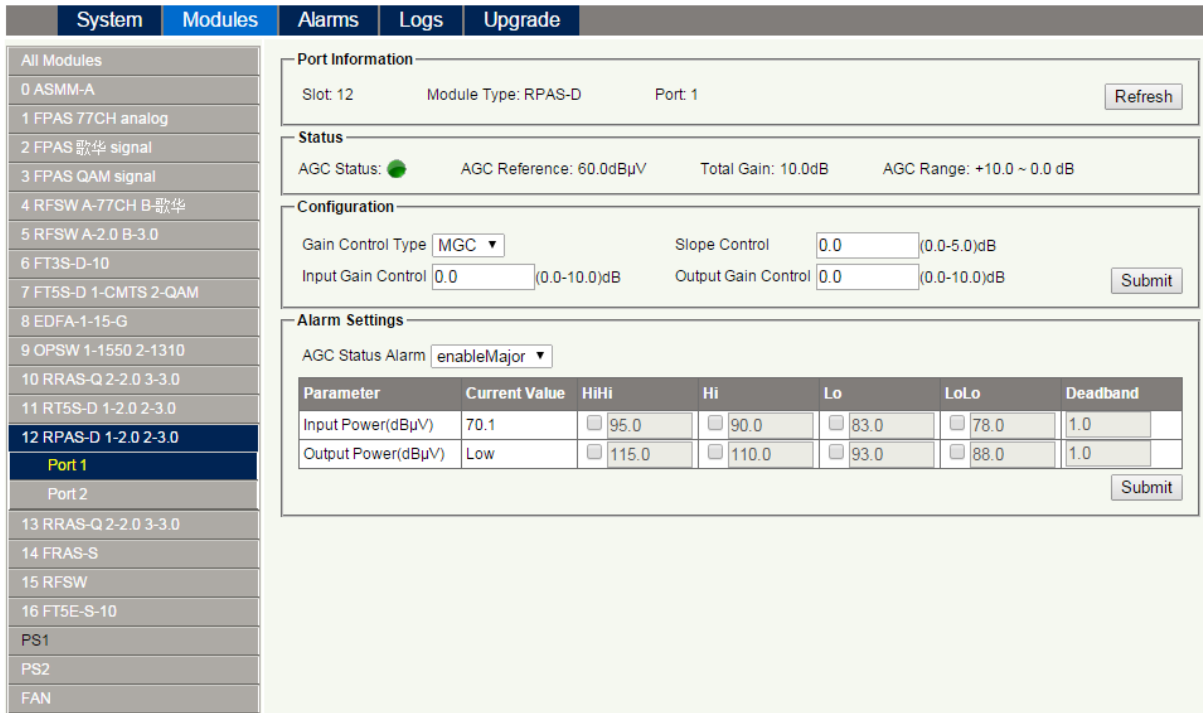


Figure 6.2

In the RPAS "Port 1" or "Port 2" configuration screen “Output Gain Control”, “Slope Control”, “Input Gain Control”, “Gain Control Type”, and “Alarm Settings” become available.

When operating the RPAS in a return path configuration, it is recommended that the unit only operate in MGC mode.

Parameter	Units	HIHI	HI	Normal	LO	LOLO	DeadBand	Threshold changeable by user	Default Alarm Enable
Input power	dBmV	35	30	-	23	18	1	Y	OFF
Output power	dBmV	55	50	-	33	28	1	Y	OFF

Alarm Control	Factory Default Setting (bold) and range if applicable
AGC Status Alarm	Enable Major Enable Minor Disable

6.2 Alarms Monitoring

All alarm information is monitored by the ASMM module. If an alarm occurs, the operator can view the associated module page to find more detailed alarm information.

6.2.1 Alarm Status Pages

Click the "Alarms" tab on the top menu bar to display an overview of the alarm status of all the installed modules as shown in **Figure 6-3** below.

The module row has alarm status indicator used to show:

- Normal operation: Green
- Major Alarm: Red

System	Modules	Alarms	Logs	Upgrade
All Modules				
0	ASMM-A	0	ASMM-A	
1	FPAS 77CH analog	1	FPAS-S	
2	FPAS 歌华 signal	2	FPAS-S	
3	FPAS QAM signal	3	FPAS-S	
4	RFSW A-77CH B 歌华	4	RFSW	
5	RFSW A-2.0 B-3.0	5	RFSW	
6	FT3S-D-10	6	FT3S-D-10	
7	FT5S-D-10	7	FT5S-D-10	
8	EDFA-1-15-G	8	EDFA-1-15-G	
9	OPSW	9	OPSW	
10	RRAS-Q	10	RRAS-Q	
11	RT5S-D-10	11	RT5S-D-10	
12	RPAS-D	12	RPAS-D	
13	RRAS-Q	13	RRAS-Q	
14	FRAS-S	14	FRAS-S	
15	RFSW	15	RFSW	
16	FT5E-S-10	16	FT5E-S-10	
PS1	--		--	
PS2	PS		PS	
FAN	FAN-A		FAN-A	

Figure 6.3

6.2.2 Module operating voltage and temperature alarm

Click on the corresponding module, as shown in the following figure, to view the module alarm information. By clicking on “RPAS”, under “Modules” tab, the operator can view the module temperature and power supply voltage alarms. The operator can utilise the status indicators to judge whether the module is working properly.

The status has three conditions:

- Normal: Green
- Minor Alarm: Amber
- Major Alarm: Red

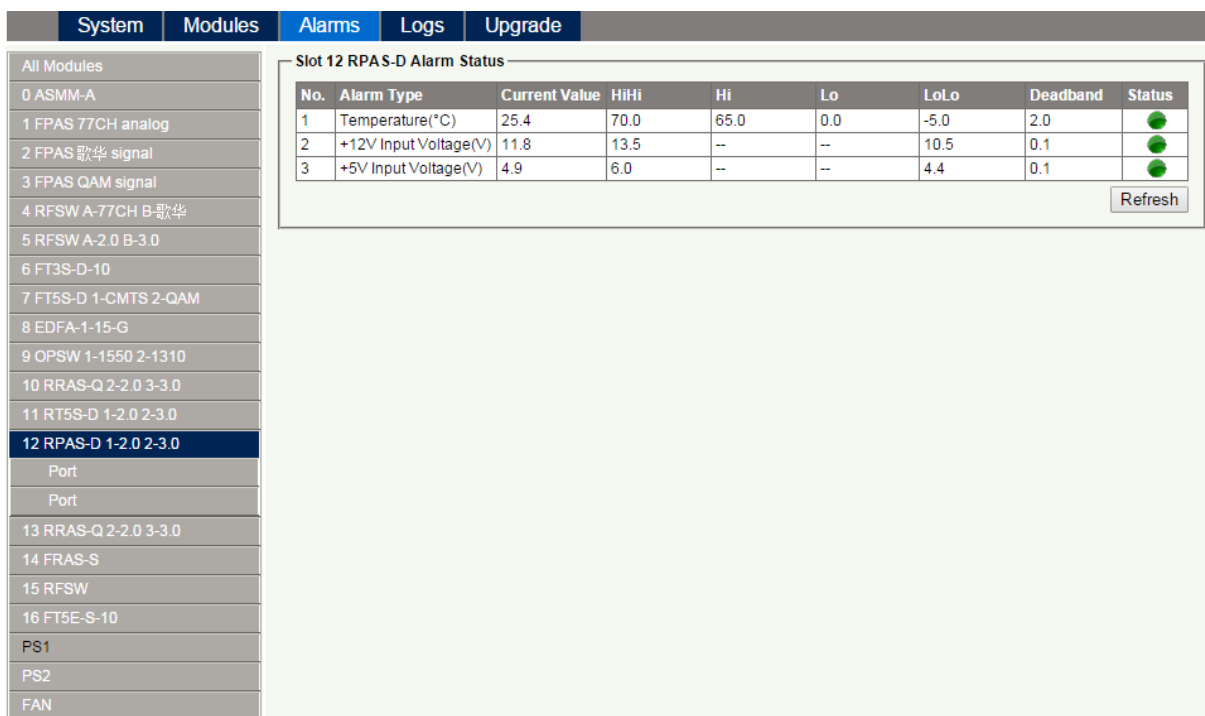


Figure 6.4

Use the status indicators to determine if the module is working properly. If the device is replaced or reset, click on "Refresh" to update the alarm information.

6.2.3 Module Port Alarms

Click on the "Port 1" or "Port 2" label under the selected module on the left column, as shown in **Figure 6-5**. Then an operator can view the "Total Input Power", "Output Power", and the "AGC Status" alarms:

Status has three conditions:

- Normal: Green
- Minor Alarm: Amber
- Major Alarm: Red

No.	Alarm Type	Current Value	HiHi	Hi	Lo	LoLo	Deadband	Status
1	Input Power(dBµV)	70.3	--	--	--	--	--	
2	Output Power(dBµV)	Low	--	--	--	--	--	
3	AGC Status	Normal	--	--	--	--	--	

Figure 6.5

Alarm Monitoring Configuration

Monitoring Function ON / OFF

In the Configuration section, on the "Modules" page, click "Alarm Control" to toggle the Monitoring Function.

6.2.4.1 Temperature, +12V, +5V Voltage Alarm Levels Management

By default, temperature, +12 V, +5 V, - 5V voltage alarms are all set to ON. The check box as shown in **Figure 6.6** toggles detection. When the check box is checked (detection ON), the text in the text box will be solid black. When a check box is NOT checked, (detection OFF), the text in the text box will be light grey and cannot be changed. The parameters instructions are shown in **Figure 6.6** and **Table 6.1** below.

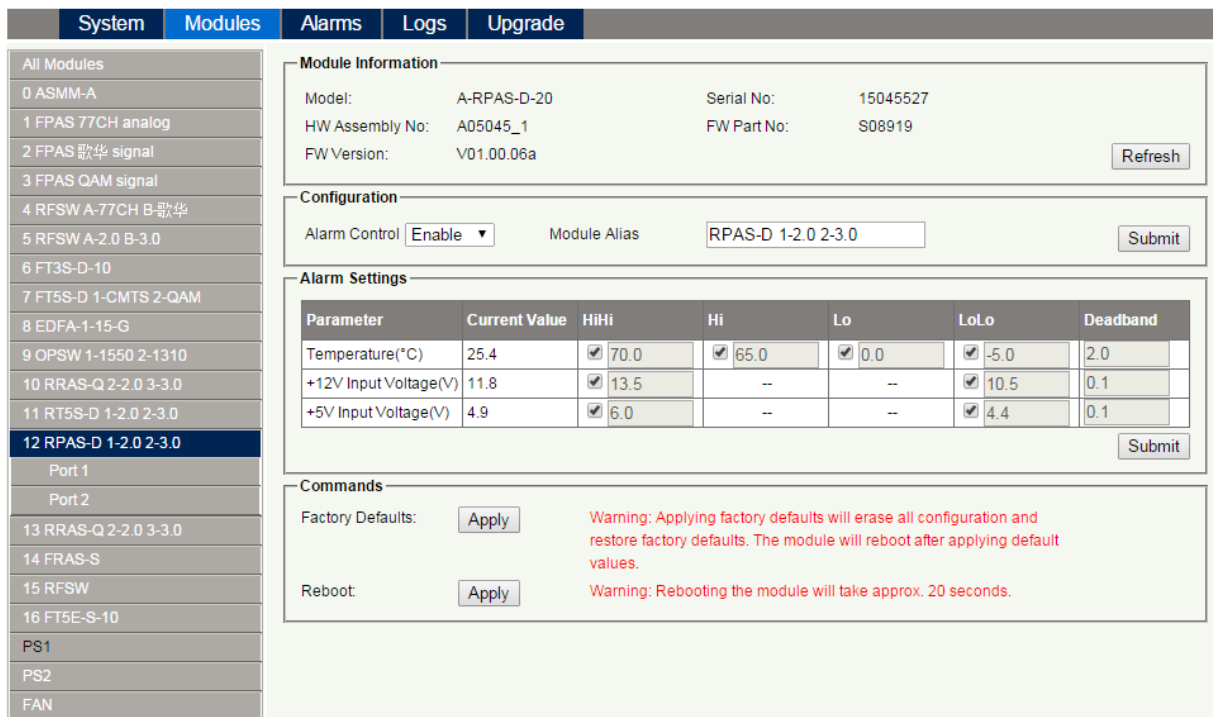


Figure 6.6

Table 6 1 Modules Page Alarms Threshold Parameters Instruction

Parameter	Units	HIHI	HI	Normal	LO	LOLO	DeadBand	Threshold changeable by user	Default Alarm Enable
Temperature	°C	70	65	-	0	-5	2	N	ON
+12V Input voltage	Vdc	13,5	-	12	-	10,5	0,1	N	ON
+5V Input voltage	Vdc	6	-	5	-	4,4	0,1	N	ON

6.3 Input / Output Status Monitoring

To setup Input / Output status monitoring, select the “Port 1” or “Port 2” label from the left menu under the desired module, and then the monitoring parameters will be listed in the “Alarm Settings” section, click on to toggle the alarms. Customers can change the monitoring parameters. See **Figure 6.7**.

ON / OFF

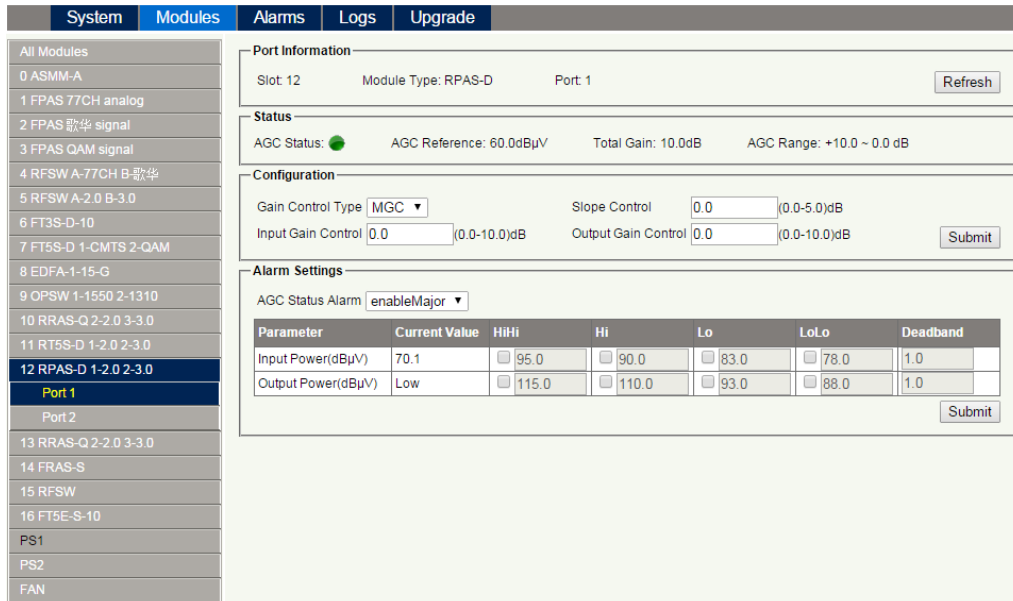


Figure 6.7

Module Alarm Indicator Definitions

Table 6 2 Module Alarm Indicator Definitions

Parameters (Common)	Description	Definitions	Related Indicators	LED Indicators
Power OFF	Power OFF	Power OFF	All	All OFF
Initiating AM	Power ON	During Module Power ON	All	Green (2 times / sec)
No Alarm	Normal operation	Normal	All	Green
Upgrading AM Firmware	AM Upgrading	Module upgrade	MODE	
AM-Critical-ALM	Critical Alarm		STAT	Red
AM-Minor-ALM	Warning Alarm		STAT	Orange
AGC / MGC	AGC / MGC Mode Control	AGC/MGC Mode Control	MODE	MGC Blinking (1 times / sec), AGC Green always

6.4 Logs Management

The operator can view all the alarms of the modules in the chassis on the logs management page. Click “**Logs**” to enter the logs management page. Refer to **Figure 6.8** below:

System	Modules	Alarms	Logs	Upgrade			
All Logs							
No.	Slot	Port	Type	Alarm Value	State	Time	Content
1	7	2	RF Input Power	81.4dBμV	Lo	2016-05-17 15:57:58	BC Input Power Alarm
2	7	1	RF Input Power	79.7dBμV	Lo	2016-05-17 15:57:57	BC Input Power Alarm
3	6	2	RF Input Power	80.3dBμV	Lo	2016-05-17 15:57:56	BC Input Power Alarm
4	6	1	RF Input Power	79.8dBμV	Lo	2016-05-17 15:57:56	BC Input Power Alarm
5	14	1	Output Power	104.3dBμV	Lo	2016-05-17 15:57:53	RF Output Power Alarm
6	7	2	RF Input Power	78.1dBμV	LoLo	2016-05-17 15:48:17	BC Input Power Alarm
7	7	1	RF Input Power	76.6dBμV	LoLo	2016-05-17 15:48:17	BC Input Power Alarm
8	6	2	RF Input Power	77.1dBμV	LoLo	2016-05-17 15:48:16	BC Input Power Alarm
9	6	1	RF Input Power	77.0dBμV	LoLo	2016-05-17 15:48:16	BC Input Power Alarm
10	7	2	RF Input Power	80.6dBμV	Lo	2016-05-17 15:48:03	BC Input Power Alarm
Total Pages: 3 Current Page: 1 First Page Page Up Page Down Last Page Goto: <input type="text" value="1"/> <input type="button" value="Delete All"/>							

Figure 6.8

6.5 Device Upgrade

The module supports the firmware upgrade function. To upgrade the firmware first upload the firmware file, and then click "Start Upgrade" to begin with the upgrade process. At the same time, you will be automatically redirected to the network management page. The upgrade operation is then complete.

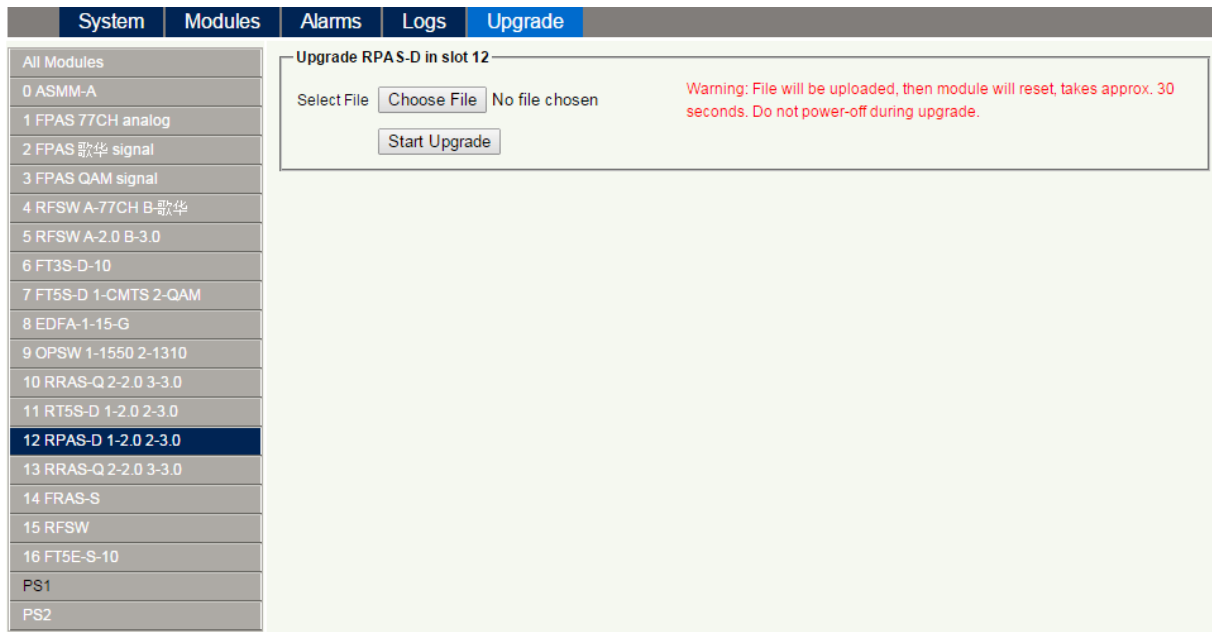


Figure 6.9

* The upgrade file needs to be located in the PC that is connecting to ASMM

* The Web GUI above only supports the manual operation from a local PC.

* The RPAS supports automated firmware updates and automatic backup & restore features via TFTP when managed via Technetix NMSE management software. Please refer to the NMSE Product User Manual for more information.

6.6 Restoring Factory Defaults

Loading the factory defaults can restore the device to the original factory settings.

Detailed operations:

Click the **"Modules"** tab on the top menu and click the module to be configured on the left menu as the page shown in **Figure 6.10**. Click the **"Apply"** button in the "Factory Defaults" section. When finished, the device configuration will be reset. For more detailed factory reset information, please refer to the factory restore and upgrade configuration parameters table as in **Table 6.3**.

Note:

All the powers displayed on the web page are total power.

The screenshot shows the configuration page for module 12 RPAS-D 1-2.0 2-3.0. The interface includes a top navigation bar with tabs for System, Modules, Alarms, Logs, and Upgrade. On the left, a sidebar lists various modules, with '12 RPAS-D 1-2.0 2-3.0' selected. The main content area is divided into several sections:

- Module Information:** Model: A-RPAS-D-20, Serial No: 15045527, HW Assembly No: A05045_1, FW Part No: S08919, FW Version: V01.00.06a. A Refresh button is present.
- Configuration:** Alarm Control: Enable (dropdown), Module Alias: RPAS-D 1-2.0 2-3.0. A Submit button is present.
- Alarm Settings:** A table with columns: Parameter, Current Value, HIHi, Hi, Lo, LoLo, Deadband.

Parameter	Current Value	HIHi	Hi	Lo	LoLo	Deadband
Temperature(°C)	25.4	<input checked="" type="checkbox"/> 70.0	<input checked="" type="checkbox"/> 65.0	<input checked="" type="checkbox"/> 0.0	<input checked="" type="checkbox"/> -5.0	2.0
+12V Input Voltage(V)	11.8	<input checked="" type="checkbox"/> 13.5	--	--	<input checked="" type="checkbox"/> 10.5	0.1
+5V Input Voltage(V)	4.9	<input checked="" type="checkbox"/> 6.0	--	--	<input checked="" type="checkbox"/> 4.4	0.1

 A Submit button is present at the bottom right of this section.
- Commands:** Factory Defaults: Warning: Applying factory defaults will erase all configuration and restore factory defaults. The module will reboot after applying default values. Reboot: Warning: Rebooting the module will take approx. 20 seconds.

Figure 6.10

Table 6-3 Factory default and upgrade configuration parameters table

Parameters	Configuration	Factory default value	After software upgrade
Alarm Control	ON / OFF	ON	Retained
TxUnitControl	ON / OFF	ON	Retained
AGC Mode	ON / OFF	OFF	Retained
Broadcast MGC (dB)	-10 ~ +5	0	Retained
Narrowcast MGC (dB)	-15 ~ 0	0	Retained
Laser Output Control	ON / OFF	ON	Retained

6.7 Reboot

The module can be made to reboot remotely, as shown in **Figure 6.11** below.

Detailed operations:

Click the **"Modules"** tab on the top menu, the click the corresponding RPAS module from the left menu, and click the **"Apply"** button in **"Reboot"** section. Next, click on **"Submit"** to confirm, and then the module will automatically restart. The configuration of the module will not be lost after rebooting.

The screenshot displays the 'Modules' tab in the system management interface. On the left, a list of modules is shown, with '12 RPAS-D 1-2.0 2-3.0' selected. The main panel is divided into several sections:

- Module Information:** Shows details for Model: A-RPAS-D-20, Serial No: 15045527, HW Assembly No: A05045_1, FW Part No: S08919, and FW Version: V01.00.06a. A 'Refresh' button is present.
- Configuration:** Features an 'Alarm Control' dropdown set to 'Enable' and a 'Module Alias' field containing 'RPAS-D 1-2.0 2-3.0'. A 'Submit' button is located at the bottom right.
- Alarm Settings:** A table with columns for Parameter, Current Value, HiHi, Hi, Lo, LoLo, and Deadband.

Parameter	Current Value	HiHi	Hi	Lo	LoLo	Deadband
Temperature(*C)	25.4	<input checked="" type="checkbox"/> 70.0	<input checked="" type="checkbox"/> 65.0	<input checked="" type="checkbox"/> 0.0	<input checked="" type="checkbox"/> -5.0	2.0
+12V Input Voltage(V)	11.8	<input checked="" type="checkbox"/> 13.5	--	--	<input checked="" type="checkbox"/> 10.5	0.1
+5V Input Voltage(V)	4.9	<input checked="" type="checkbox"/> 6.0	--	--	<input checked="" type="checkbox"/> 4.4	0.1

 A 'Submit' button is at the bottom right of this section.
- Commands:** Contains two options:
 - Factory Defaults:** An 'Apply' button with a red warning: 'Warning: Applying factory defaults will erase all configuration and restore factory defaults. The module will reboot after applying default values.'
 - Reboot:** An 'Apply' button with a red warning: 'Warning: Rebooting the module will take approx. 20 seconds.'

Figure 6.11

7 Troubleshooting

Indicator for determining faults

If there is a fault, the operator can use the status LEDs to determine the location and condition of the fault. Please see **Table 7.1** below:

Table 7-1 Fault Judgment Table

Alarm Indicator status	Common Faults	Trouble Shooting
RF is amber	BC input signal is lower or higher.	Adjust input signal or adjust MGC to an appropriate value.
BC status is red	BC input signal is too high or no input.	Adjust input signal
STAT is red	The output optical power is abnormal or bias current is abnormal.	Please contact Technetix technical support.
	Power failure	Please contact Technetix technical support.
	Operating environment temperature is too high.	Lower the room temperature. If the temperature is normal, please contact Technetix technical support.

8 Declaration of Conformity

According to ISO/IEC Guide 22 and EN45014

Manufacturer's Name: Technetix

Manufacturer's Address: Technetix Ltd, Innovation House, Technetix Business Park,
Albourne, West Sussex, BN6 9EB

Product Name: RF Return-Path Amplifier - Standard series

Conforms to the following standards:

FCC: FCC Part 15 Subpart B: 2012

CE: EN 50083-2: 2012; EN 5504: 2010; EN 61000-3-2: 2006+A1: 2009+A2: 2009;
EN55022:2010; EN 61000-3-3: 2008

RCM: AS/NZS CISPR22: 2009+A1: 2010 (Pending)



Appendix A: Default Alarm Limit Settings

Parameter	Units	HIHI	HI	Normal	LO	LOLO	DeadBand	Threshold changeable by user	Default Alarm Enable
Temperature	°C	70	65	-	0	-5	2	N	ON
+12V Input voltage	Vdc	13,5	-	12	-	10,5	0,1	N	ON
+5V Input voltage	Vdc	6	-	5	-	4,4	0,1	N	ON

Appendix B: Factory Default Settings

Parameters	Conditions	Factory Default Value	After Software Upgrade
Alarm Detection Control	ON / OFF	ON	Retained
Output Control	ON / OFF	ON	Retained
Output Gain Type	MGC / AGC	MGC	Retained
Output RF Pad Level (dB)	0 ~ 20	10	Retained
Remote Node Control	ON / OFF	OFF	Retained

