AIMA3000

Advanced Intelligent Multi-Service Headend Platform

Product User Manual

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1 About This Manual

1.1 Chapter Overview

This manual contains the following chapters:

1. About this Manual: Preface
2. Precautions
3. Overview
4. Chassis Characteristics
5. Installation
6. Chassis Configuration & Alarms
7. Common Faults
8. Product Warranty
9. Declaration of Conformity

Appendix A: Factory Default Settings

Appendix B: Default Alarm Limit Settings

1.2 Related Documentation

Documents listed below can be used in association with this Manual:

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

The document can be found at the download section of PBN's corporate website: http://www.pbnglobal.com/en/support/downloads/manuals. A registered account is required.

1.3 Technical Support

Please contact the technical support team at PBN if you have any problems during AIMA3000 chassis installation or maintenance.

Australia:
Suite 15, Building 3
195 Wellington Road
Clayton, VIC 3168, Australia
Phone: +61-3-8561-1400
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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.

- Ensure the unit adequately cooled and ventilated
- The product user manual should be read and understood before units are put into use.
- Dangerous voltages are present within the unit at all times.
- Do not run electrical cables outside.
- Always replace protective caps on optical connectors when not in use.
- The typical connectors fitted are SC/APC 8°. **Note**: 8° angle polished optical connectors must be used.

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 only to Pacific Broadband Networks' qualified service personnel.

Servicing and repairs

Do not attempt to service this unit yourself. Refer all servicing needs to Pacific Broadband Networks' qualified service personnel only.

WARNING!

Exposure to class 1M laser radiation is possible. Access should be restricted to trained personnel only. Do not view exposed fiber or connector ends when handling optical equipment.

3 Overview

3.1 About the Product

The AIMA3000 platform is PBN's newly developed high-density, low power consumption headend platform that enables MSOs to build or upgrade their networks to meet the demands of today as well as future multi-services access requirements.

The AIMA3000 simplifies the transition to IP Networks by providing a complete range of intelligent, interoperable, RF and optical modules for HFC, RFoG, PON video overlay, and other applications.

The design employs a 19" rack of 4RU height, with 17 slots for high density application modules and integrated front and rear fiber access panel for easy fiber management. Slot 0 is used for a System

Management Module (ASMM). In total, one 4RU AIMA3000 chassis allows for configurations of up to 64 forward-path laser transmitters or 64 return path receivers.

3.2 Typical Application

The AIMA3000 is designed to seamlessly fit into all common service scenarios. In a traditional headend deployment with optical transmitters and receivers, the AIMA3000 leads with lowest in industry per-port power consumption as well as having a highly dense amount of receiver ports.

While FTTx technologies are making their way into traditional cable MSO networks, the AIMA3000 supports a range of RFoG modules such as the RRAG to ease the transition to full-blown PON/P2P.

For networks with FTTx technologies already in place, delivering high speed data and voice services, the AIMA3000 is geared to provide a full-spectrum CATV overlay using transmitters and EDFA modules.

A wide variety of complementary modules such as externally modulated transmitters, amplifiers, and switches meet the needs of even the most specialized and unique network architectures.

3.3 Features

- 1 GHz Advanced Intelligent Multi-Service Headend Platform (AIMA3000)
- Highest density-16 single, dual, or quad application modules in one 4RU headend platform
- Efficient low power consuming modules reduces operating expenditures
- Hot-swappable application modules with auto-configuration feature through the management module
- Integrated front and rear fiber- access panel for easy fiber management
- Reliable, fully redundant, dual hot-swappable power supplies
- Intelligent management system with an integrated SNMP agent and web server (HTTP) through the front and rear-mounted RJ45 Ethernet ports, for system-wide network management and local configuration
- HMS standards compliant
- Firmware management from centralized TFTP server (In combination with PBN NMSE network management software)

3.4 Specifications

Chassis (ACHA)

Module slots	17 slots for AIMA3000 plug-and-play modules. Slot 0 is used for the System Management Module (ASMM). Slots 1~16 are used for any of the Application Modules.
Alarms	Requires an ASMM module in slot 0. Alarms are available via SNMP traps to multiple destinations*, via a voltage-free NO/NC alarm contact, via SNMP polling, or via HTTP polling.
Monitoring and control	Requires an ASMM module in slot 0. The chassis can also be controlled through a web browser connected to one of the Ethernet ports or by and mobile device supporting USB host mode through the USB port on the AIMA3000's ASMM module. All module settings are retained in non-volatile memory to ensure trouble-free operation.

*Up to 5 SNMPv2c trap addresses per ASMM

Power (APSA & APSD)

Power supply modules	The chassis supports up to two hot-swappable power supply modules in the AIMA3000 chassis. Any one power supply can handle a fully-loaded chassis. Two power supplies provide load sharing when more than 12 V / 10 A (120 W) is being consumed by modules, and redundancy in the event of a single power supply failure. Both universal mains (APSA) and battery (APSD) models are available. It is possible to use one mains module and one battery module in the same chassis.
Power input	**Universal mains (APSA):** 90 Vac to 260 Vac, 50/60 Hz, maximum output power 460 W
DC powering	**Battery (APSD): -**48 Vdc (-75 ~ -36 Vdc), maximum output power 460 W or 580 W
Efficiency	> 85 %
Cooling	Integrated variable-speed cooling fan with on-board microcontroller
Protection	Field-replaceable fuse (AC only). Overload (AC only), over-voltage (AC only), and temperature sensors. Load-share functions for +12 Vdc power rail.
Interface	LED status indicators
Internal power rails*	12 Vdc, 33 A 5 Vdc, 6 A -5 Vdc, 6 A

*Measured with 460 W APSA

General

Operating temperature	-5 ^{o}C to +55 ^{o}C
Operating humidity	Max. 90% RH (non-condensing)
Storage temperature	-25 ^{o}C to +70 ^{o}C
Storage humidity	Max. 90% RH (non-condensing)
Cooling	Cooling fans in the power supply modules and the 8 fan units mounted in the chassis. Multiple AIMA3000 chassis can be mounted on top of each other without needing ventilation space.
Dimensions	
Overall width	482.6 mm (including flanges)
Overall depth	500.5 mm (including handles)
Overall height	175.0 mm
Packaging dimensions (W x D x H)	600 × 600 × 400 mm
Net weight	Empty chassis: 15 kg Fully loaded: 40.5 kg

3.5 Order Details

AIMA3000 Chassis

A-ACHA-4U	AIMA3000 Chassis, 4RU, 16+1 slots, 19 inch, fans included, power supply not included
A-APSA-460-XX	Power Supply Module with fan for mains 90~260 Vac 50/60 Hz, 460 W. XX: AU, CN, CH, EU, UK, US
A-APSD-460	Power Supply Module with fan for battery -48 Vdc, 460 W
A-APSD-580	Power Supply Module with fan for battery -48 Vdc, 580 W
A-ASMM-A	System Management Module, version A
A-BP	Single Slot Blank Panel Cover Insert
A-FAN	Replacement Module Fan
A-FANTRAY	8 Replacement Module Fans in Fan Bracket

Application Modules

A-FT3S	1310 nm Forward Transmitter - Standard
A-FT5S	1550 nm Forward Transmitter - Standard
A-FT5E	1550 nm Forward Transmitter - Enhanced
A-FT5X	1550 nm Forward Transmitter - Externally Modulated
A-FRAS	Analog Forward Receiver - Standard
A-RRAS	Analog Return Receiver - Standard
A-EDFA	Erbium Doped Fiber Amplifier
A-FPAS	RF Forward Path Amplifier - Standard
A-RFSW	RF A/B Protection Switch
A-OPSW	Optical A/B Protection Switch
A-RT3S	1310 nm Return Transmitter - Standard
A-RT5S	1550 nm Return Transmitter - Standard
A-RPAS	RF Return Path Amplifier - Standard
A-FRAE	Analog Forward Receiver - Enhanced

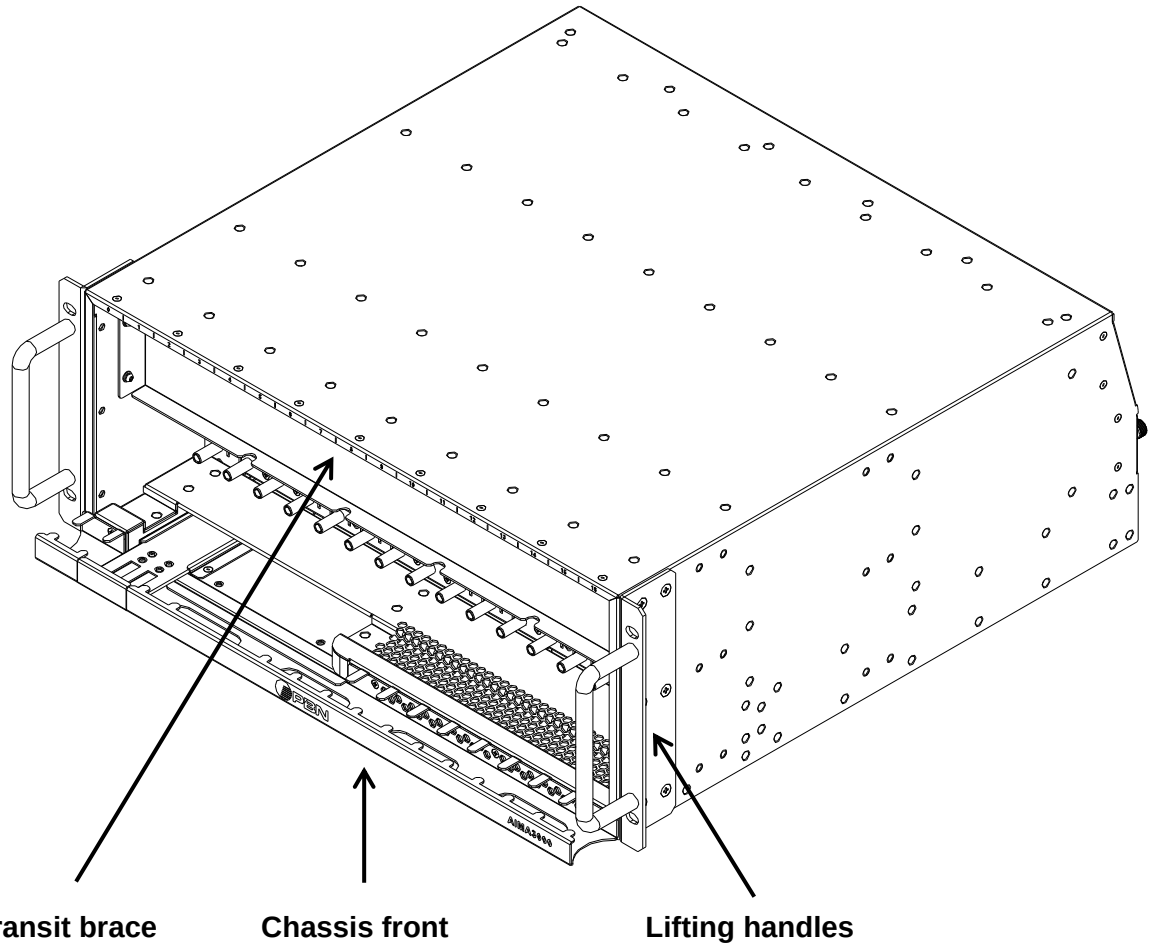
Accessories

Accessories *A-RCBL*	Redundancy Cable, available in various lengths
Spare Parts	
S07999 _1	RF test lead
S08194_0	Fan for Power Supply Module

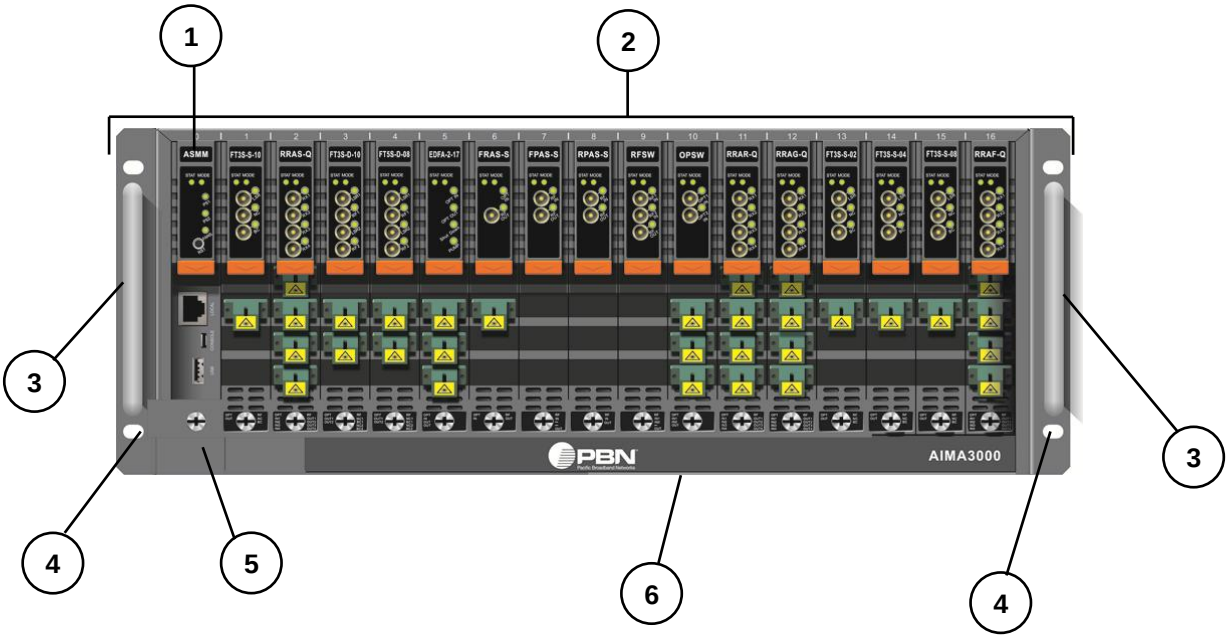
4 Chassis Characteristics

4.1 Chassis Appearance

4.1.1 Overview

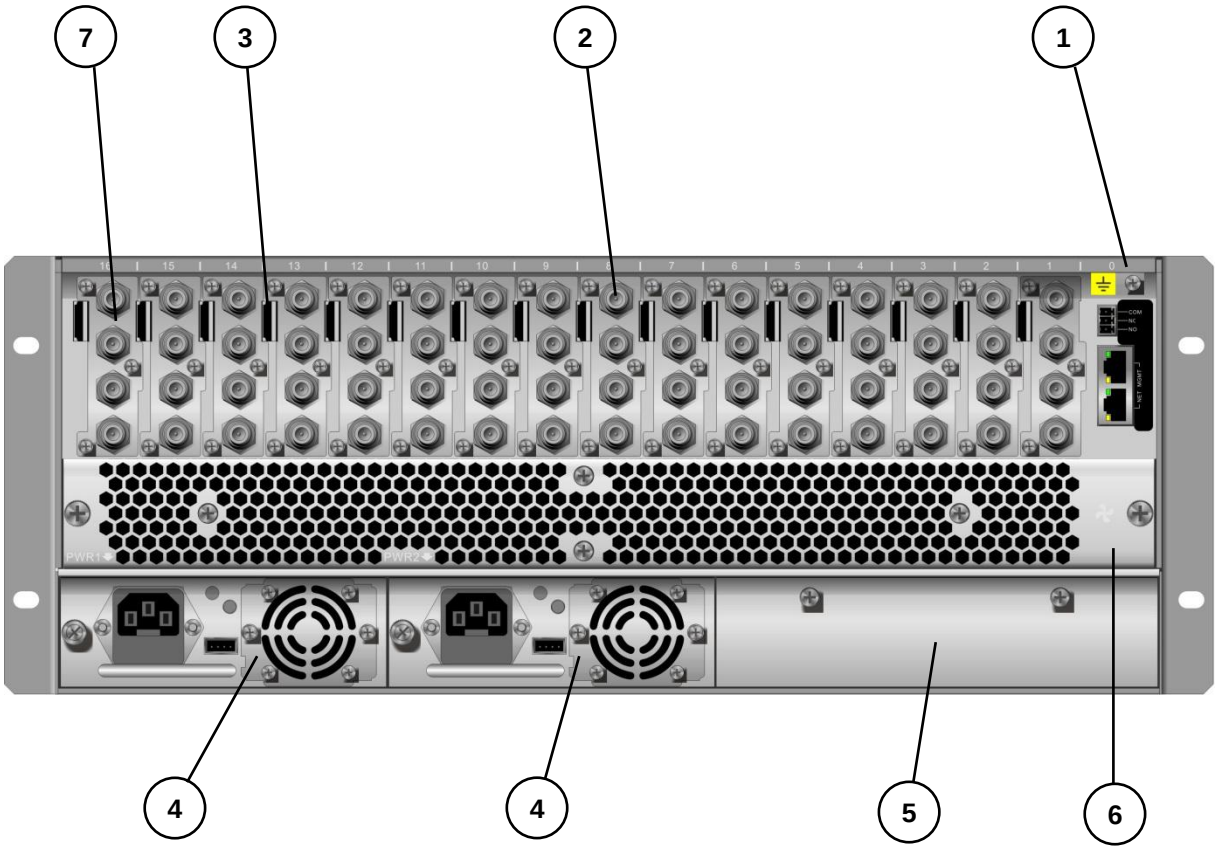


4.1.2 Front Chassis View



Item	Description
1	ASMM module in slot 0
2	Various application modules in slots 0 ~ 16
3	Lifting handles (2)
4	Rack mounting holes (4)
5	Sliding fiber guide (to feed optical cables through from rear of chassis)
6	Fiber tray

4.1.3 Rear Chassis View



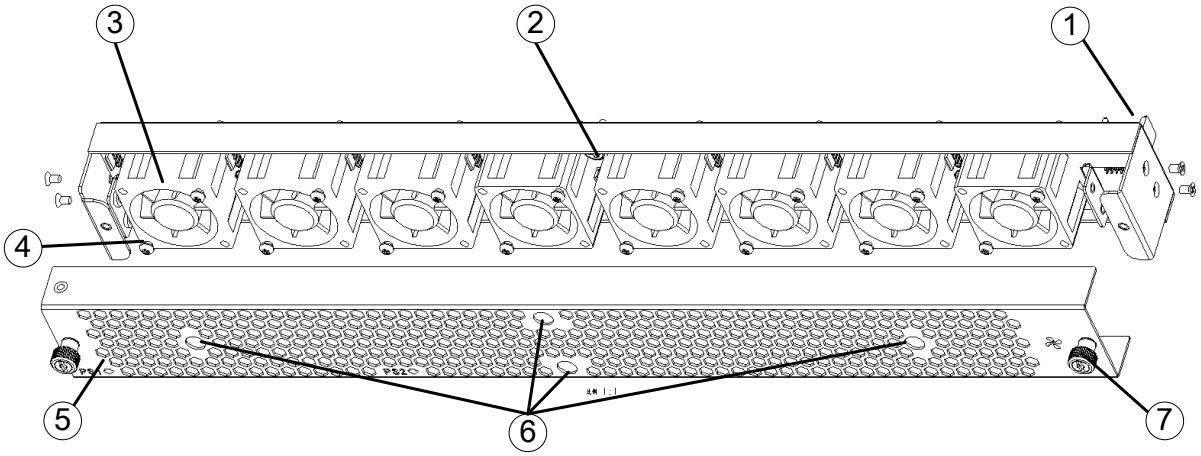
Item	Description
1	Chassis grounding terminal
2	Chassis RF connectors
3	Redundancy cable connector location
4	Power supply modules (up to 2)
5	Fiber tray cover
6	Fan module cover (8 individual fans are installed)
7	RF panel (4 RF connectors on 1 panel)

4.2 Chassis Components

The packaged chassis includes a fan module and two power supply modules, which are described below.

4.2.1 Fan Module

The fan module comprises eight individual fans, powered in parallel; a single fan failure does not affect the other fans. The ASMM system management module monitors the rotational speed of each fan. The fan module also supports hot swapping.



Item	Description
1	External power-input connector and fan module communications interface
2	Module securing screws
3	Individual fan unit, rotational speed automatically controlled by ASMM module Each fan unit can be replaced whilst the chassis is powered on
4	Fan unit securing screws
5	Fan module dustproof cover
6	Screwdriver access holes
7	Fan module cover screws

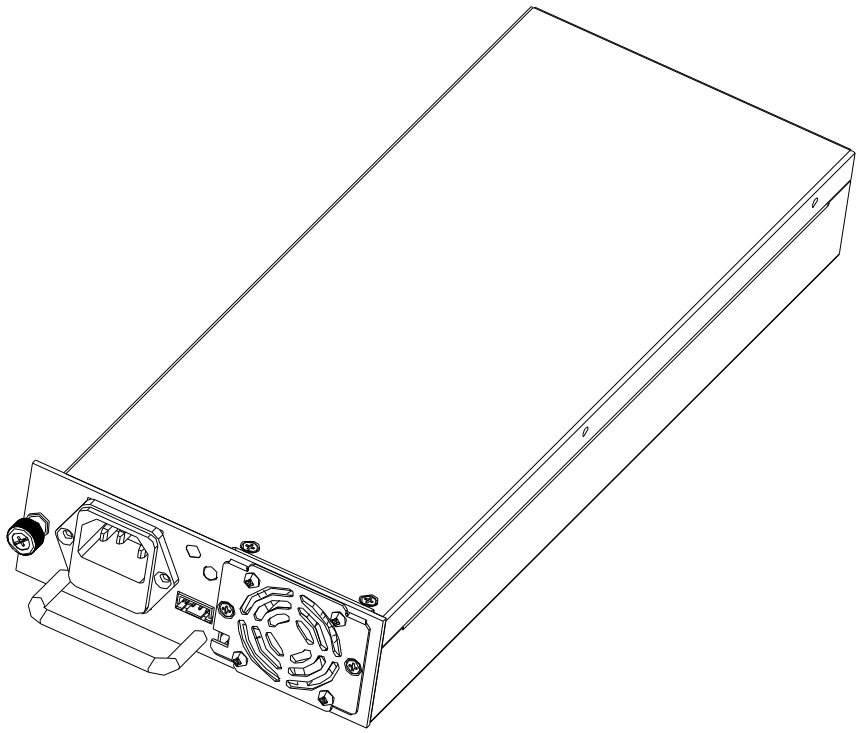
4.2.2 Power Supply Modules

AIMA3000 power supply modules are hot swappable and support load balancing. Up to two power supplies can be used in the same chassis, and are available in different configurations:

- AC power supply module, input voltage of 90 ~ 260 Vac (50/60 Hz)
- DC power supply module, input voltage -48 Vdc

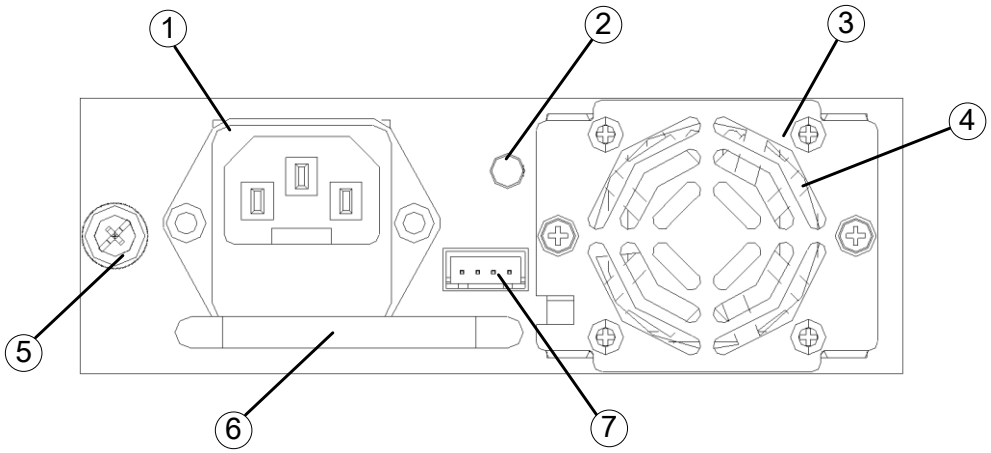
The power supply module output voltages include:

- +12 Vdc, 33 A
- +5 Vdc, 6 A
- -5 Vdc, 6 A



External view

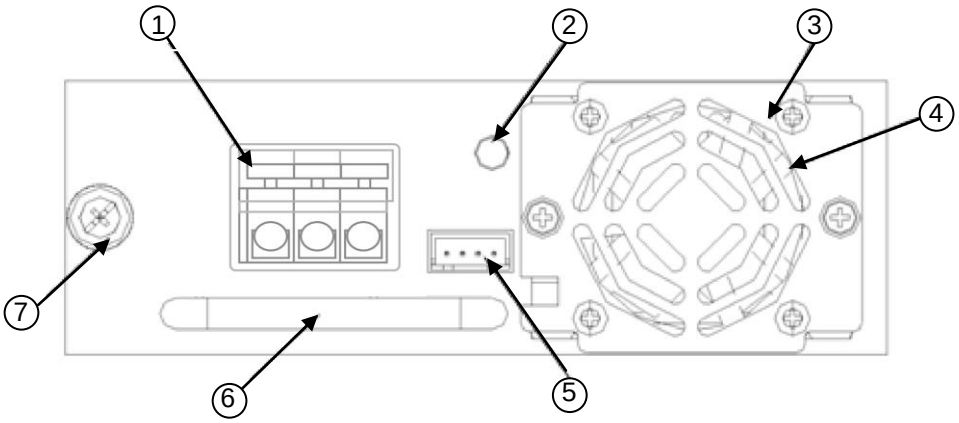
4.2.3 AC Power Supply



Front panel view for AC power supply

Item	Description
1	External power-input connector
2	Status LED: **Green** – normal operation; **Red** – alarm condition
3	Fan unit cover
4	Fan unit (supports hot-swapping)
5	Power supply module securing screws
6	Lifting handle
7	Fan unit power connector

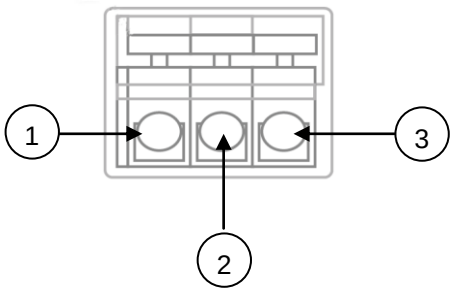
4.2.4 DC Power Supply



Front panel view for DC power supply

Item	Description
1	External power-input connector
2	Status LED: **Green** – normal operation; **Red** – alarm condition
3	Fan unit cover
4	Fan unit (supports hot-swapping)
5	Fan unit power connector
6	Lifting handle
7	Power supply module securing screws

4.2.5 DC Connector Layout



DC Connector Layout

Item	Description
1	-48v
2	Battery Ground
3	Rack Ground

5 Installation

5.1 Equipment Inventory

On receiving the new AIMA3000, carefully unpack and examine the contents for loss or damage that may have occurred during shipping. Refer to guarantee registration if loss or damage has occurred. The AIMA3000 should consist of the following:

Qty	Description
1	AIMA3000 Chassis (including fan modules and 2 power supply modules)
2	Chassis lifting handles
12	M4 screws for securing lifting handles to chassis (6 screws each)
1	Sliding fiber guide
1	Fiber tray (for front of chassis)
4	M3 screws for securing fiber tray to chassis
1	Product User Manual CD
1	Individual Test Sheet (Certificate of Performance)

5.2 Packaging and Transportation

Keep all packing boxes and packaging of the AIMA3000 for future transport.

Use only the original packaging of the AIMA3000 when transporting. This packaging has been specifically designed to protect the equipment.

> **Note:**
>
> Use the lifting handles provided when moving the chassis.

5.3 Power and Cooling Requirements

The AIMA3000 requires at least one power supply module, supplied by PBN. One power supply module can provide enough power to operate a chassis with all 17 slots in use. A second power supply module may be installed for redundancy. The power supply module feeds the chassis power bus, which in turn provides power to each of the module slots.

The AIMA3000 is designed for operating between -5 °C ~ +55 °C. Fans in the power supply module and in the separate fan module cool the chassis. These fans are monitored by the ASMM system and an alarm is raised under certain failure conditions.

Free ambient air should be maintained around all sides of the unit. Care should be taken to ensure that the airflow around the unit is unrestricted.

Avoid installing the AIMA3000 in dusty locations, as this can also adversely affect the unit's reliability.

WARNING!

Do not install or operate the AIMA3000 unit outdoors.

5.4 Installation Overview

5.4.1 Tools required

You will need a Phillips head screwdriver to secure the screws.

5.4.2 Installation sequence

To install the AIMA3000 chassis:

1. Unpack and inspect the chassis components
2. Assemble the chassis
   a) Removing the transit brace
   b) Attaching the fiber tray and the chassis lifting handles
   c) Fitting the sliding fiber guide
   d) Installing and removing the fan module
   e) Installing and removing individual fan units
   f) Installing and removing power supply modules
   g) Removing and installing a power supply fan unit
3. Install the chassis
4. Connect the chassis ground
5. Connect chassis electrical supplies
6. Perform a power-on test
7. Install the system management module and application modules

5.5 Chassis Installation

5.5.1 Initial Checks

Unpack the chassis. Visually check that the multi-pin connectors on the backplane are not damaged or otherwise deformed.

Examine the chassis casing for any obvious damage, and ensure no screws are missing or loose.

Check that the PBN chassis label is present. Make a note of its serial number.

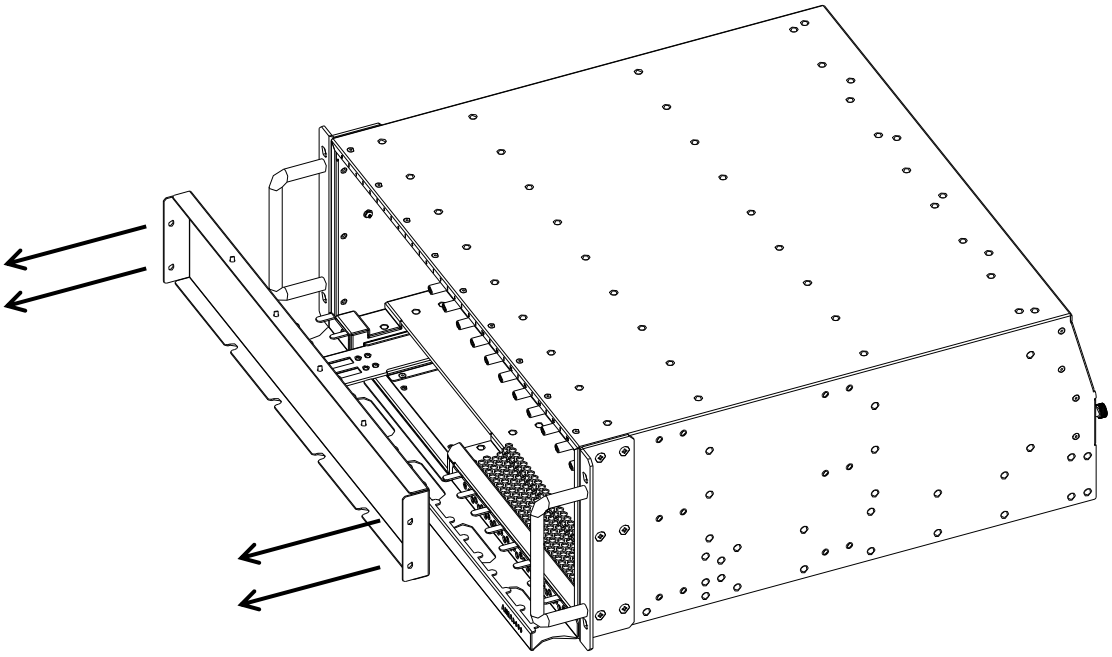
If any problems are found, contact PBN Support for assistance.

5.5.2 Assembling the Chassis

> **Note:**
>
> The fan module and power supply modules are already installed in the supplied chassis; installation and removal instructions for these modules are provided for future reference.

5.5.2.1 Removing the transit brace

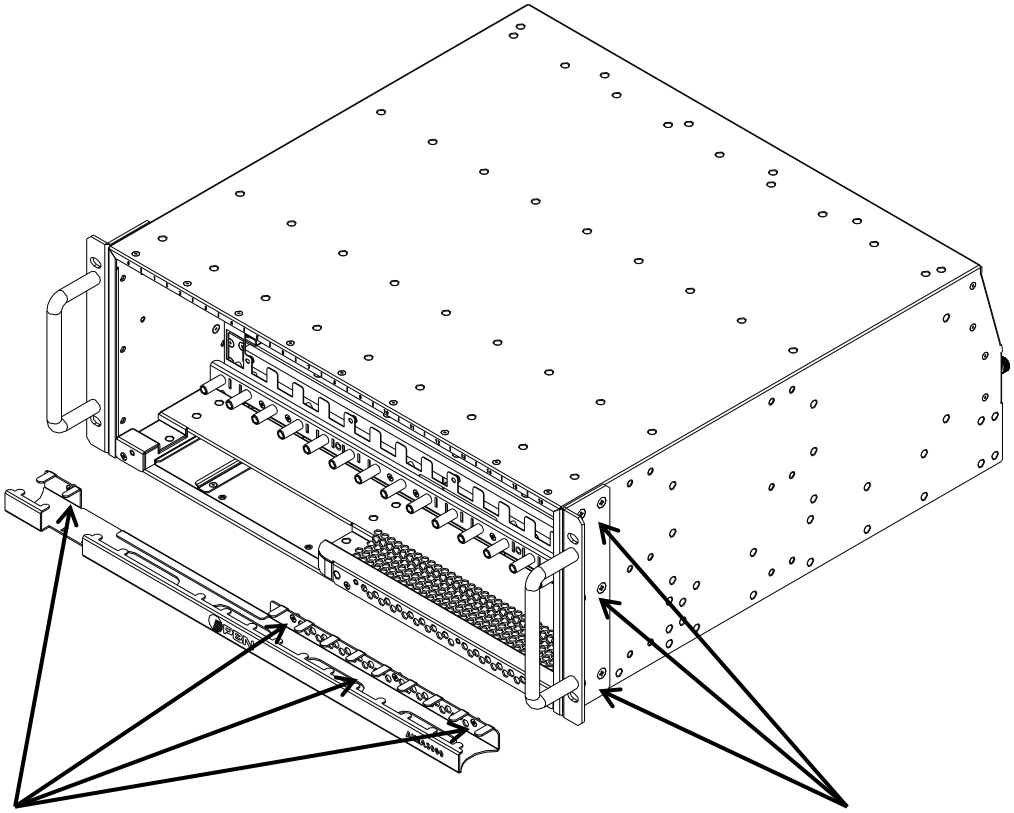
The AIMA3000 chassis is supplied with an internal transit brace fitted, which must be removed before you attempt to assemble any other parts.



Remove the 4 screws that secure the transit brace to the chassis, and then remove the transit brace from the chassis. Store the removed items for future use if required.

Also, remove the fiber tray cover from the rear of the chassis (item 5 in **4.1.3 Rear Chassis View**)

5.5.2.2 Attaching the fiber tray and the chassis lifting handles



Fiber tray securing screws (4) **Lifting handle securing screws (6 each side)**

Use four M3 screws to secure the fiber tray to the chassis front.

Use six M4 screws to attach each lifting handle to the side of the chassis.

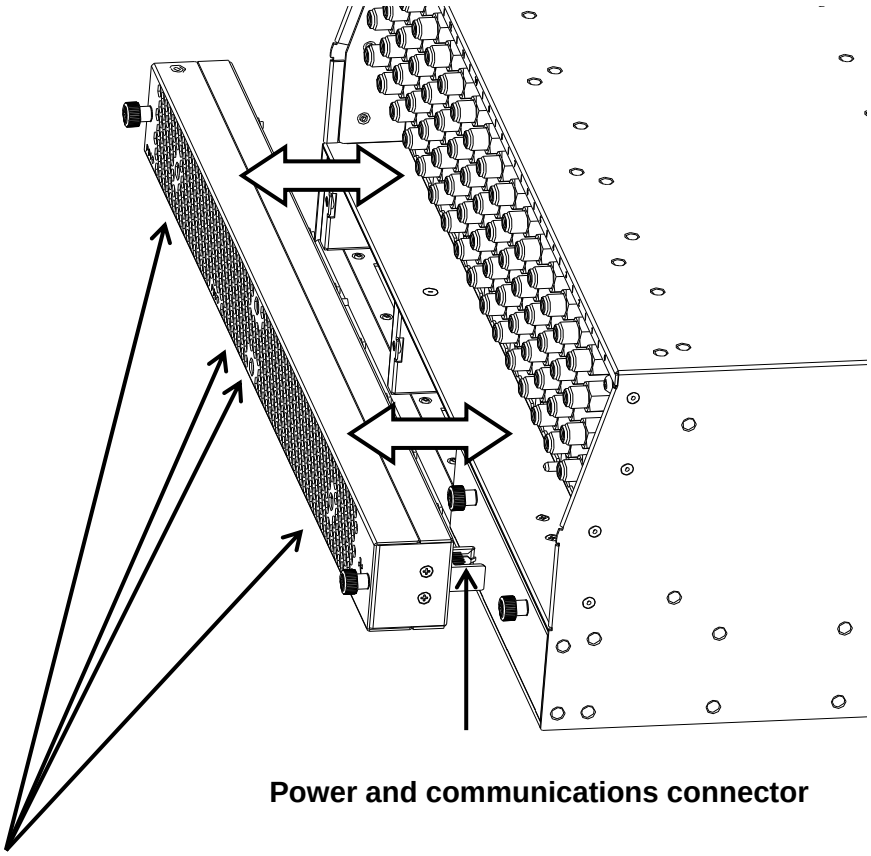
> **Note:**
>
> The lifting handles must be fitted so that the side plates are leveled with the top and bottom of the chassis.

5.5.2.3 Installing and removing the fan module

CAUTION!

When installing the fan module into the chassis, ensure that the power and communications connector on the module aligns correctly with the corresponding connector in the chassis, to avoid damage.

Carefully insert the fan module into the rear of the chassis, correctly aligning the power and communications connector.



Power and communications connector

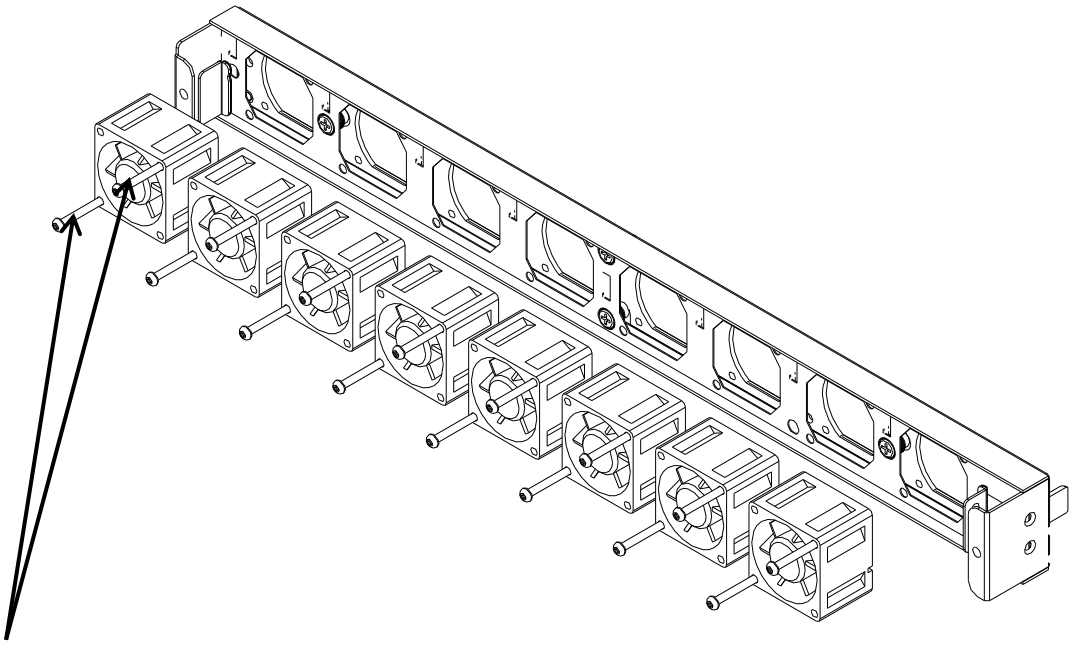
Use a Philips cross-headed screwdriver through the access holes to tighten the 4 fan module securing screws.

To remove the fan module, unfasten the 4 securing screws and carefully withdraw the fan module from the rear of the chassis.

CAUTION!

If you need to remove the fan module while the AIMA3000 chassis is operating, ensure that you refit or replace the fan module with minimum delay, to avoid overheating and possible damage to the equipment.

5.5.2.4 Installing and removing fan units



Each fan unit has 2 securing screws

To install a fan unit, first insert the white cable connector into the correct socket in the fan module body, at the left-hand side of the fan unit's location.

> **Note:**
>
> The cable connector is shaped so that it cannot be incorrectly inserted into the socket.

Carefully place the fan unit into the fan module body, aligning the 2 screw holes.

Fit and tighten the 2 securing screws to fasten the fan unit in position.

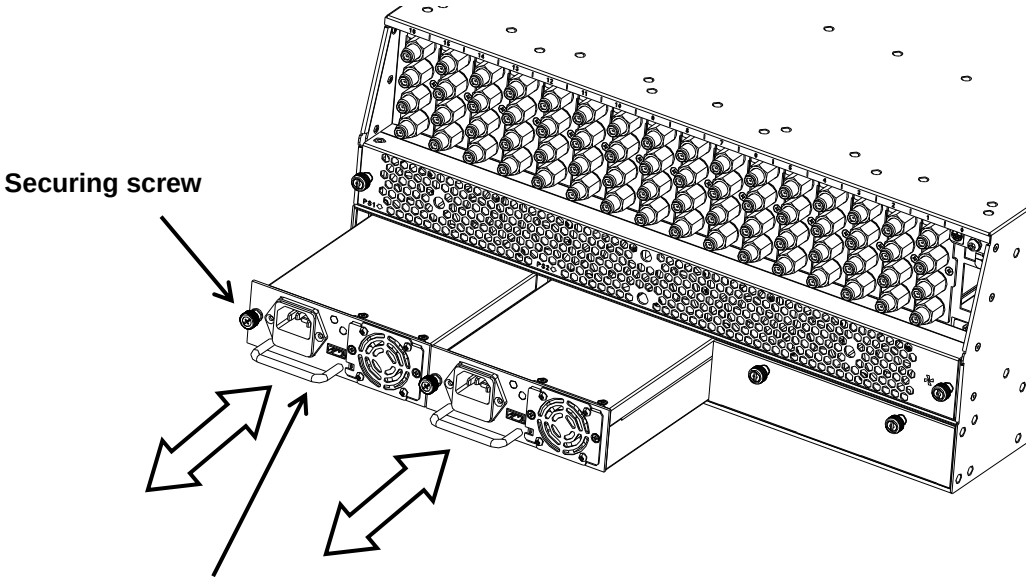
To remove a fan unit, first unfasten and remove the 2 securing screws.

Carefully remove the fan unit so that you can access the white cable connector, and then withdraw the connector from the socket.

CAUTION!

Do not pull on the cables when withdrawing the connector – this may cause damage. Hold the white connector between your thumb and forefinger and then pull on the connector itself.

5.5.2.5 Installing and removing power supply modules



Use the handle on the power supply module

To install a power supply module, align it squarely with the recess in the chassis, and then use the handle to slide the module in until the module's PCB connector engages with the chassis connector.

Continue to push the module until it is fully inserted into the chassis.

CAUTION!

Do not use excessive force when inserting the power supply module – this may cause damage. If you cannot easily insert the module, remove it and then check the module's PCB connector to ensure it is in good condition.

Tighten the securing screw to hold the power supply module in position.

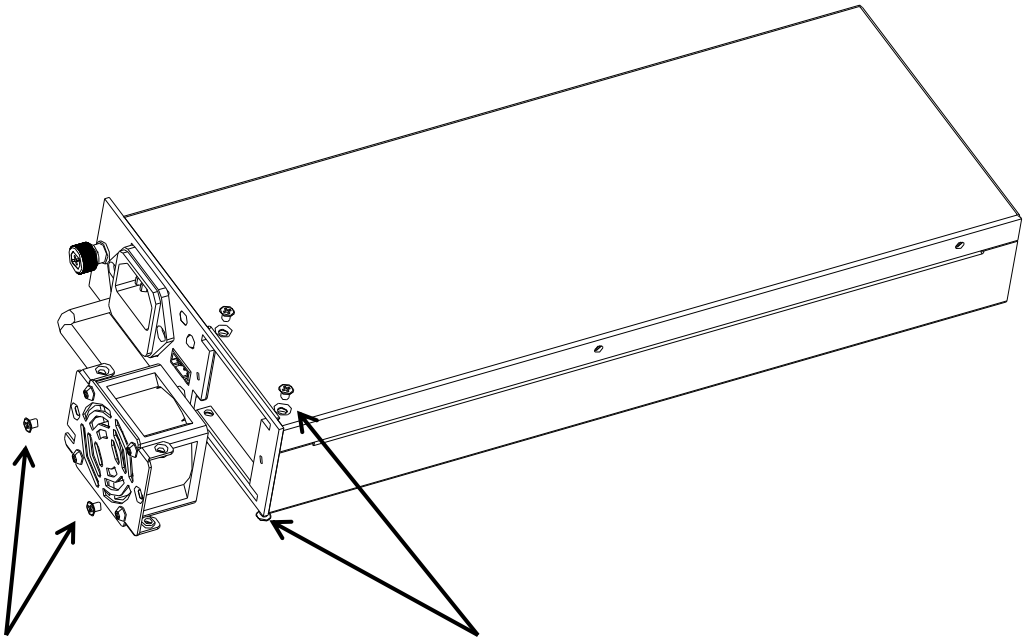
To remove a power supply module, first unfasten the securing screw.

Carefully pull on the module's handle to withdraw the module from the chassis. Slightly more force will be initially required to disengage the module's PCB connector.

CAUTION!

Remove the module squarely from the chassis. Take care not to damage the module's PCB connector.

5.5.2.6 Removing and installing a power supply fan unit



Endplate screws (2) **Lower & upper screws (4)**

To remove the power supply fan unit, first disconnect the white cable connector from the FAN socket in the module.

CAUTION!

Do not pull on the cables when withdrawing the connector – this may cause damage. Hold the white connector between your thumb and forefinger and then pull on the connector itself.

Unscrew and remove the 4 lower & upper screws from the module casing, and then remove the 2 endplate screws.

Withdraw the fan unit from the casing (you may need to use a thin, flat-bladed screwdriver between the endplate and module casing to carefully free the fan unit from its location).

To install the fan unit, first insert it (with the cables located in the cut-out at the left-hand side of the endplate) into the power supply module and align the fixing holes.

CAUTION!

Do not allow the cables to become trapped between the endplate and module casing when you insert the fan unit.

Fit and tighten the 2 endplate screws and the 4 lower & upper screws.

Insert the white cable connector into the power supply module's FAN socket.

Note:

The cable connector is shaped so that it cannot be incorrectly inserted into the socket.

5.5.3 Installing the Chassis

The AIMA3000 is designed to be installed in a standard 19-inch rack, which must be of good quality and robust construction due to the heavy weight of a fully populated AIMA3000 chassis. Slide rails or a support tray in the rack is recommended.

The rack must be level and stable on its foundations, and must be located indoors in a non-dusty environment, with adequate clearance for ventilation and sufficient access for maintenance purposes.

DO NOT fit any of the separately supplied application modules into the AIMA3000 chassis at this stage.

Ensure that front and rear screw fixings are in the correct positions in the rack, relative to the mounting holes in the AIMA3000 chassis.

PBN recommends that two persons lift the AIMA3000 chassis during installation. Use the lifting handles provided.

Keep the AIMA3000 level whilst inserting it into the rack. Check for any obstructions that could prevent correct installation.

When the AIMA3000 is fully inserted into the rack, install the fixing screws and tighten securely.

5.5.4 Connecting the chassis ground

WARNING!

This equipment must be properly grounded before use, in accordance with local safety standards.

Connect a grounding cable to the chassis grounding terminal on the rear of the AIMA3000 chassis. Securely tighten the terminal fixing screw.

5.5.5 Connecting the Chassis Electrical Supplies

Connect -48 Vdc power source or 90 ~ 260 Vac power source as configured.

Note:

All AIMA electrical connections (excluding 90 ~ 260 Vac) must remain in the building.

Connections must only be made to the equipment on wiring certified as SELV as per EN 60950.

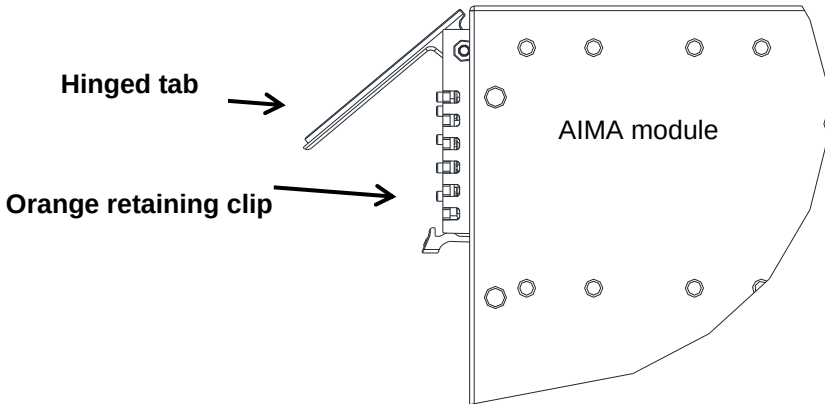
5.5.6 Performing a Power-on Test

Switch on the power supply to the chassis. Check that the LED on each power supply is green.

If the LED is red, contact PBN technical support for advice.

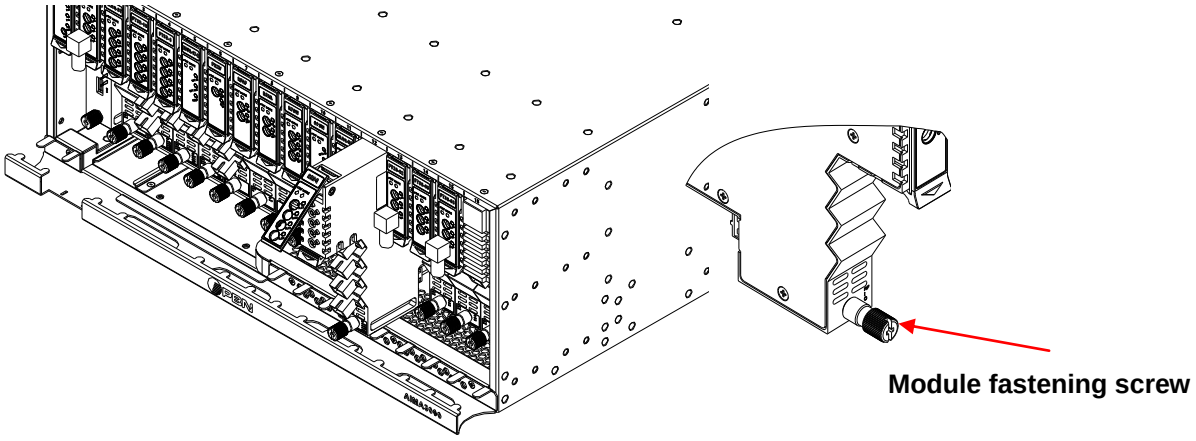
5.5.7 Installing the system management module and application modules

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 of the AIMA module, fasten the spring-loaded mounting screw. **Only use fingers to fasten the mounting screw. DO NOT use a screwdriver**

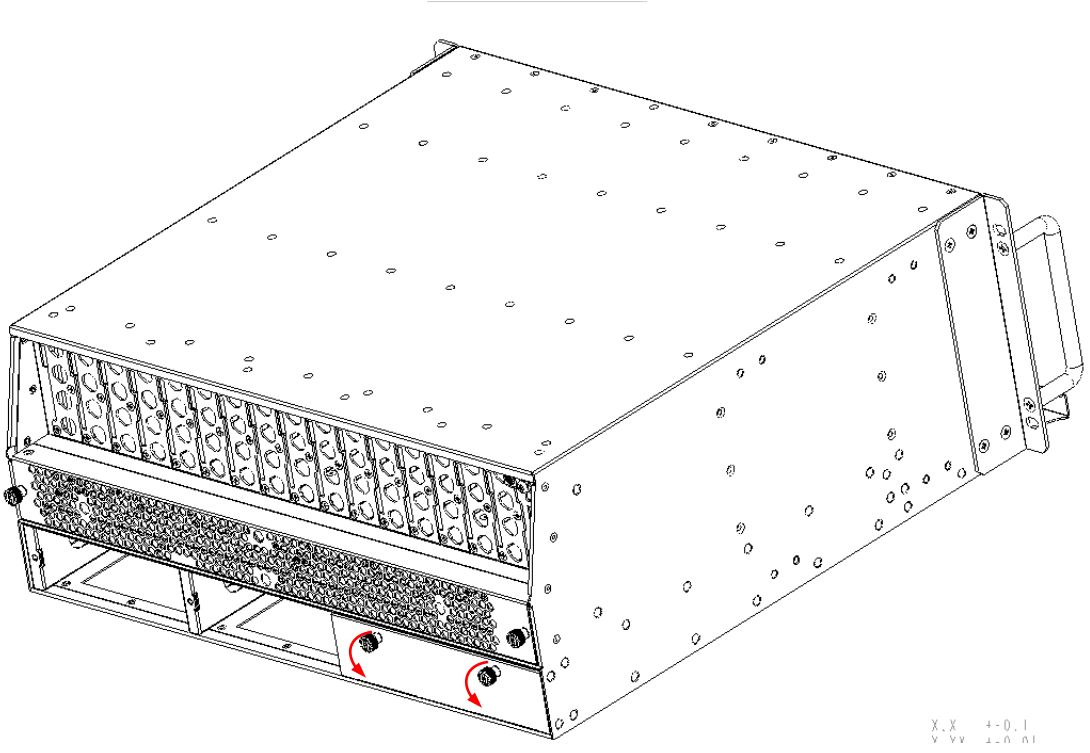
5.6 Connecting Optical Cables

For the convenience of the user, the AIMA3000 Chassis has a Sliding Fiber Guide to help the operator to arrange the cables.

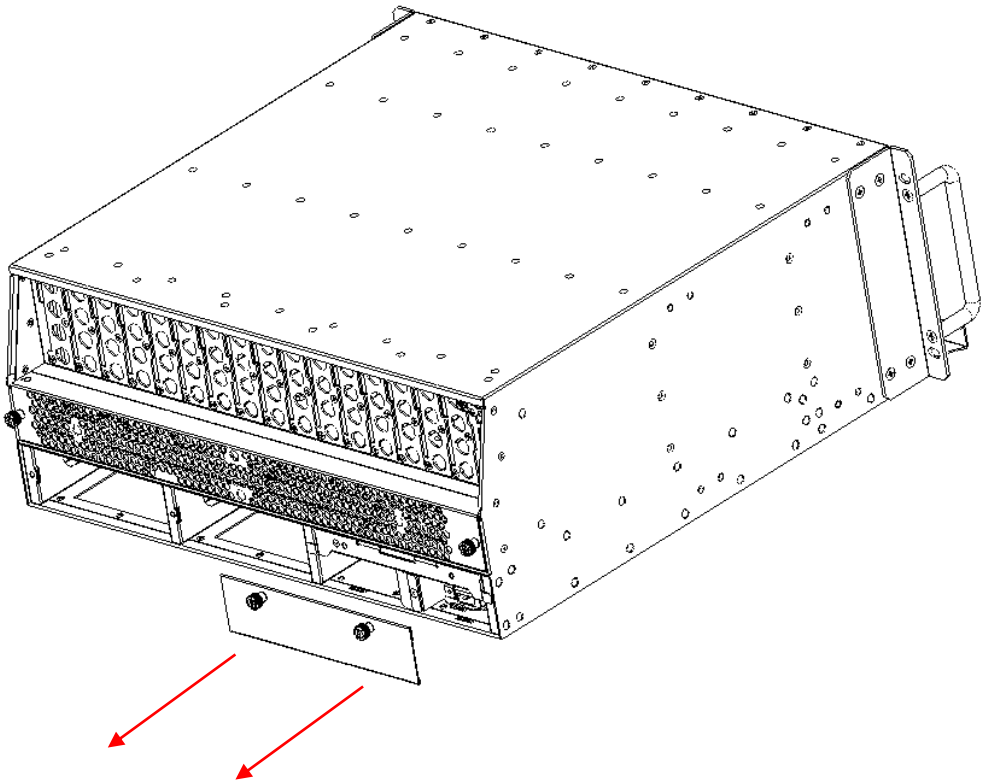
5.6.1 Using the Sliding Fiber Guide

The sliding fiber guide is located in the lower-left corner of the chassis if looking at the front of the chassis, and is designed to help installation of the optical fiber cabling. To access the sliding fiber guide you will need to first remove the rear panel located on the back of the chassis.

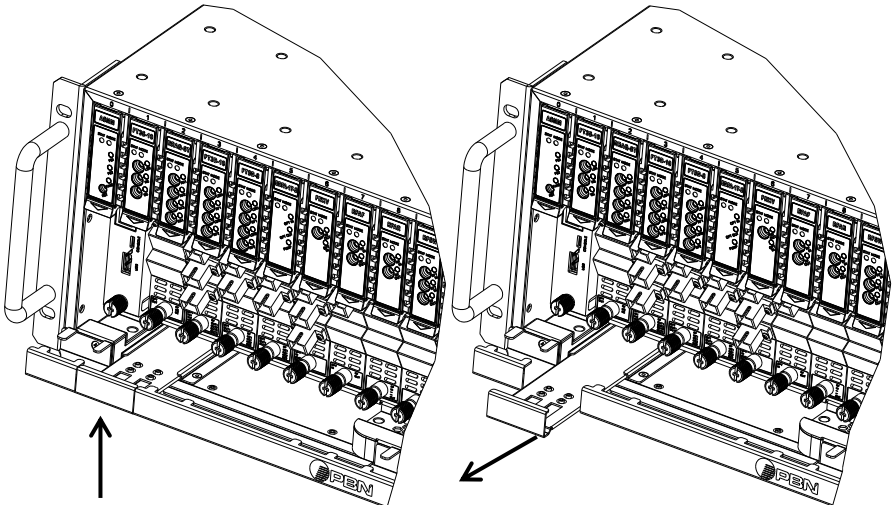
1. Unscrew the two thumbscrews on the rear panel.



2. Then, pull the panel forward.

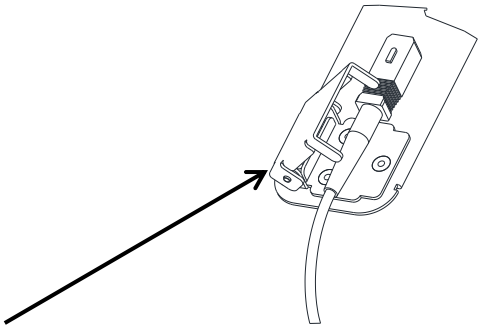


3. Then lift up the handle and slide the fiber guide out of the front of the chassis.



DO NOT remove the dust cap from the fiber connector until right before connecting it to the input port.

4. Raise the clip, insert the fiber connector, and then lower the clip over the connector.



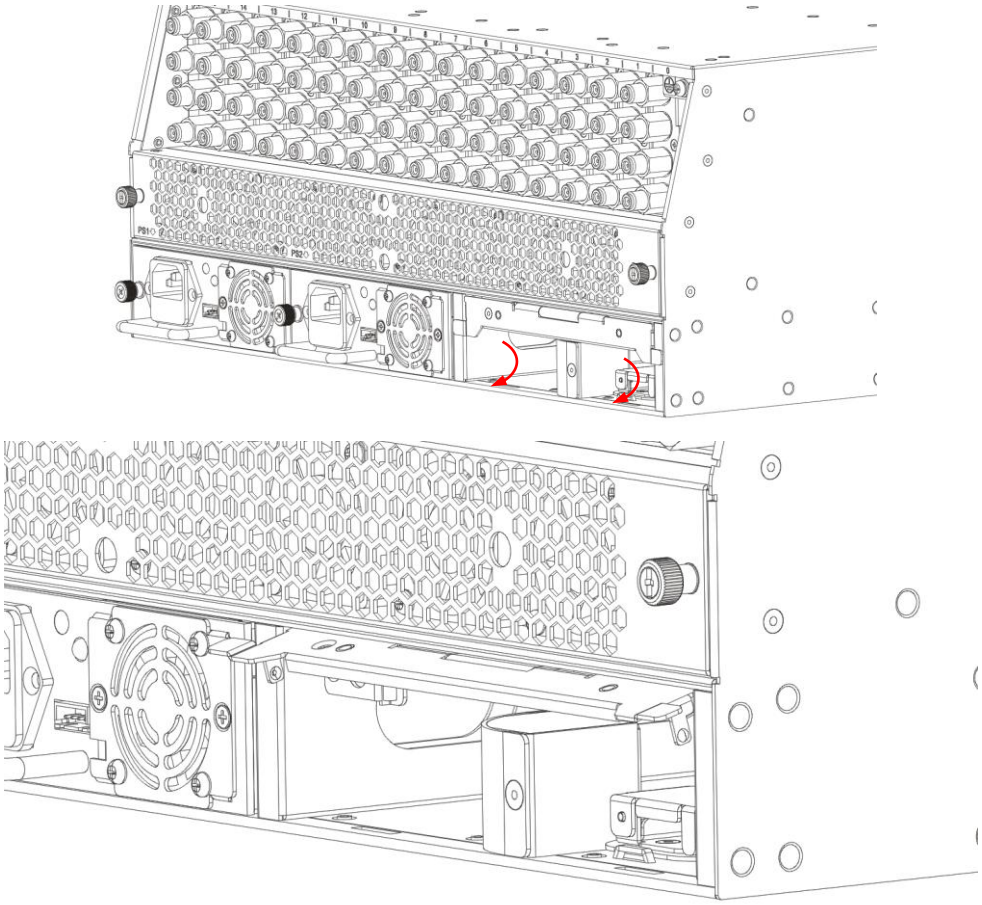
When using the sliding guide, put the fiber connector in the clip and slide it in from the rear to the front, through the chassis. Ensure that the optical fiber tail does not become trapped or pulled tightly.

Fiber clip (at rear, for up to two connectors) **Handle (at front)**

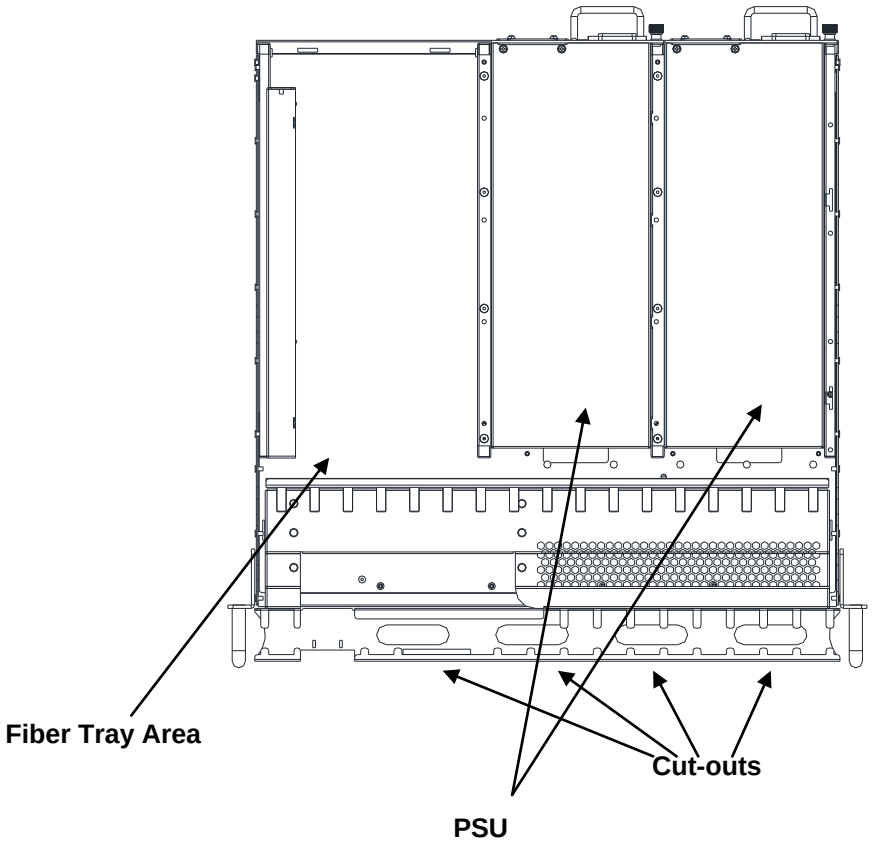
5.6.2 Using the Fiber Tray

All optical fibers must be organized in a tidy manner in the chassis's fiber tray, which provides enough space for up to 64 optical fibers. This allows for easy positioning and future replacement of optical fibers. Along the front of the chassis, there are cut-outs for keeping the optical fibers in position.

1. When organizing the optical fibers, lift up the metal flap at the rear of the panel above the sliding guide. This will allow fiber cables to be moved away from the sliding guide rails.

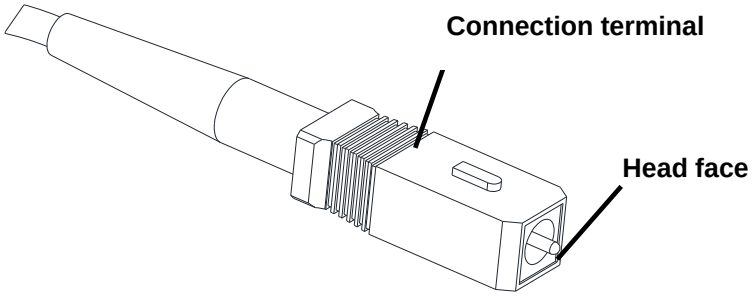


2. Use the Fiber Guide Tool to organize the cables and wires in the fiber tray to prevent tangles and the blocking of the guide rails.



5.6.3 Cleaning the Fiber Connector Ends and Front-panel Optical Ports

To obtain a good quality optical input signal, optical fiber input ports and fiber connector ends must be carefully cleaned.



When cleaning the optical fiber-connector end, remove the dust cap and then use a lint-free cloth dampened with a static dissipative solvent to clean the angled surface. Dry the surface using a dry lint-free cloth.

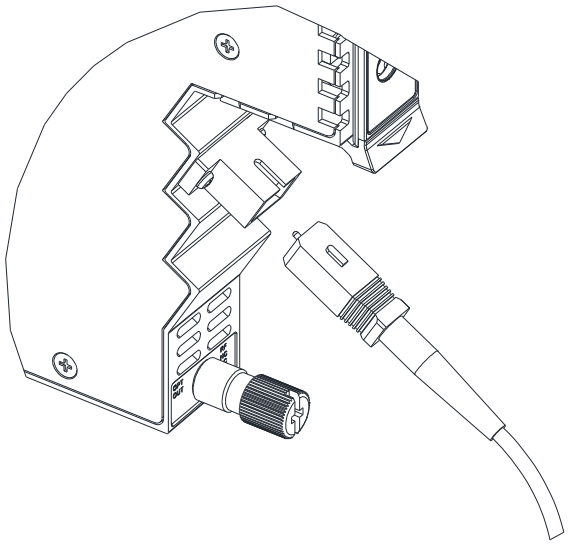
To clean the front-panel optical port, use a special lint-free swab that is designed for this purpose. Dampen it with a static dissipative solvent. Apply slight pressure to the internal angled surface of the optical port, while rotating the swab 90 degrees back and forth. You may need to remove excess solvent using a dry lint-free swab. Alternatively, a cleaning pen such as the one click cleaner can be used.

SC one click cleaning pen

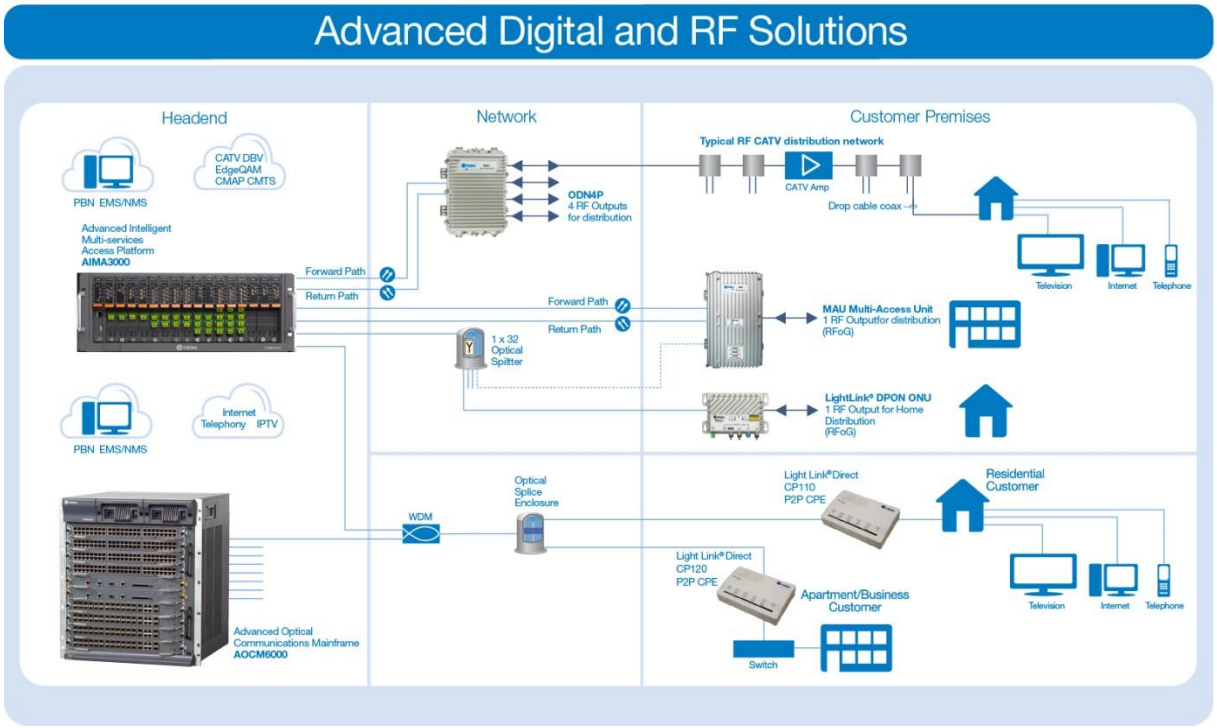
www.oneclickcleaner.com

5.6.4 Connecting the Optical Fibers

Carefully lift up the hinged cover of the optical input port, align the raised tab on the connector with the slot in the port. Insert the connector until the connector is securely held in place indicated by a clicking sound.



5.7 Typical Application Diagram



6 Chassis Configuration & Alarms

Configure the AIMA3000 chassis either via a web interface, or by using PBN's NMSE; only the web interface method is described in this manual. For the PBN NMSE please refer to the NMSE network management configuration manual.

6.1 Login to System Management Web Page

All application module configuration settings and alarms are managed by the ASMM module.

Establish network connectivity by through the **RJ-45 Ethernet Port 0** on the rear panel of the ASMM. Connect to a local network switch on the same subnet for network management.

6.1.1 Configuration using a laptop PC

1. Manually configure your network interface card to have an IP address on the 192.168.25.x block with the subnet mask of 255.255.255.0.
2. Connect an Ethernet cable between the ASMM's front **LOCAL** RJ-45 Ethernet port and the laptop PC.
3. Use a web browser to open the AIMA3000 web configuration interface via the default IP address of **192.168.25.168**
4. Enter the default Username (admin) and Password (PBN) to log in to the AIMA3000 system configuration web interface.

Default user name: admin

Default password: PBN

If you manually change the ASMM's IP address and forget it, you can still connect to the backup IP address at 10.10.10.10. The IP of the client PC must be set to 10.10.10.9 and the front RJ-45 Ethernet port should be used to access the web interface. The Backup IP is only supported by hardware version HW_A04259_4 and firmware version FW_S08471 01.01.16 or higher.

6.1.2 Configuration using an Android device

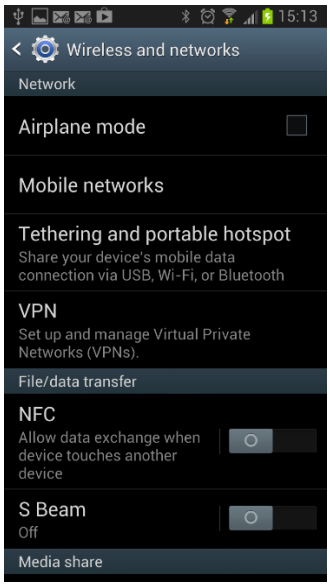
The Android application may not be compatible with all Android devices. The app was developed by PBN to be used in conjunction with a Lenovo Ideapad A1 07 running Android 2.3.4 Gingerbread. Before installing the application, the installation of unknown sources must be enabled by going to settings -> security -> and check the box next to "Unknown Sources."

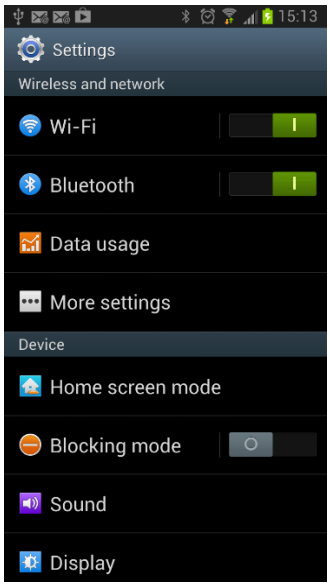
1. Install the application:

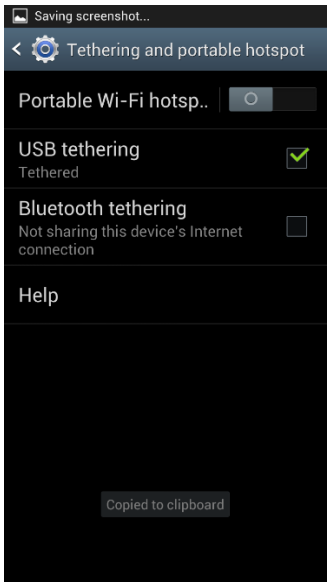
   To obtain a copy of the Android application contact a PBN sales representative.
2. Turn off Wi-Fi on the Android device.
3. Go to the Android settings menu. In the "Wireless and Network" settings menu select "More Settings". On some newer Android devices, there will be a dedicated tethering or hotspot menu and this step can be skipped.
4. Select the "Tethering and portable hotspot".

a. Get to Android settings. Select "More Settings" in "wireless and Network" settings and select "Tethering and portable hotspot" and "USB tethering". After selecting USB Tether, the indicator "tethered" needs to show up.

> **Note :**
>
> The operator should connect a USB cable to Android device again after each time the module or computer is reset.





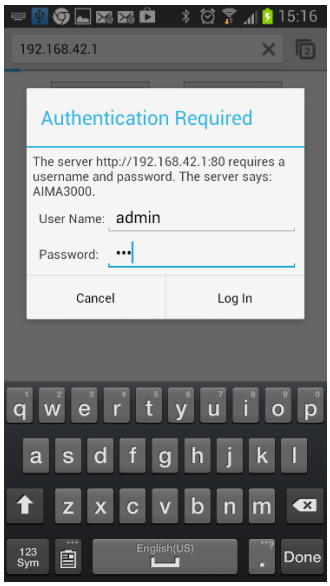


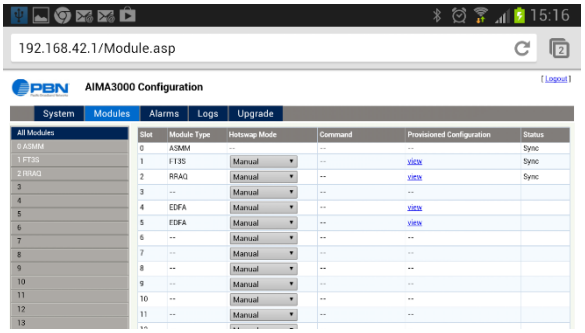
b. Open up your internet browser on your Android device. Then type in 192.168.42.1, the AIMA-ASMM login page will show up.

Finally enter the default information, and then the ASMM's web interface will open up.

Default user name: **admin**

Default password: **PBN**





Note:

The default IP of ASMM is 192.168.42.1 because the default IP of Android system is 192.168.42.129 usually.

6.2 Alarm Monitoring

The fan module and power supply support alarm monitoring and management via the ASMM system management module.

6.2.1 Fan Module

Alarms related to the fan module depend on the relationship between an individual fan unit's speed, current, and temperature. This relationship cannot be changed by the user; however, various fan unit controls and alarm status settings can be individually toggled.

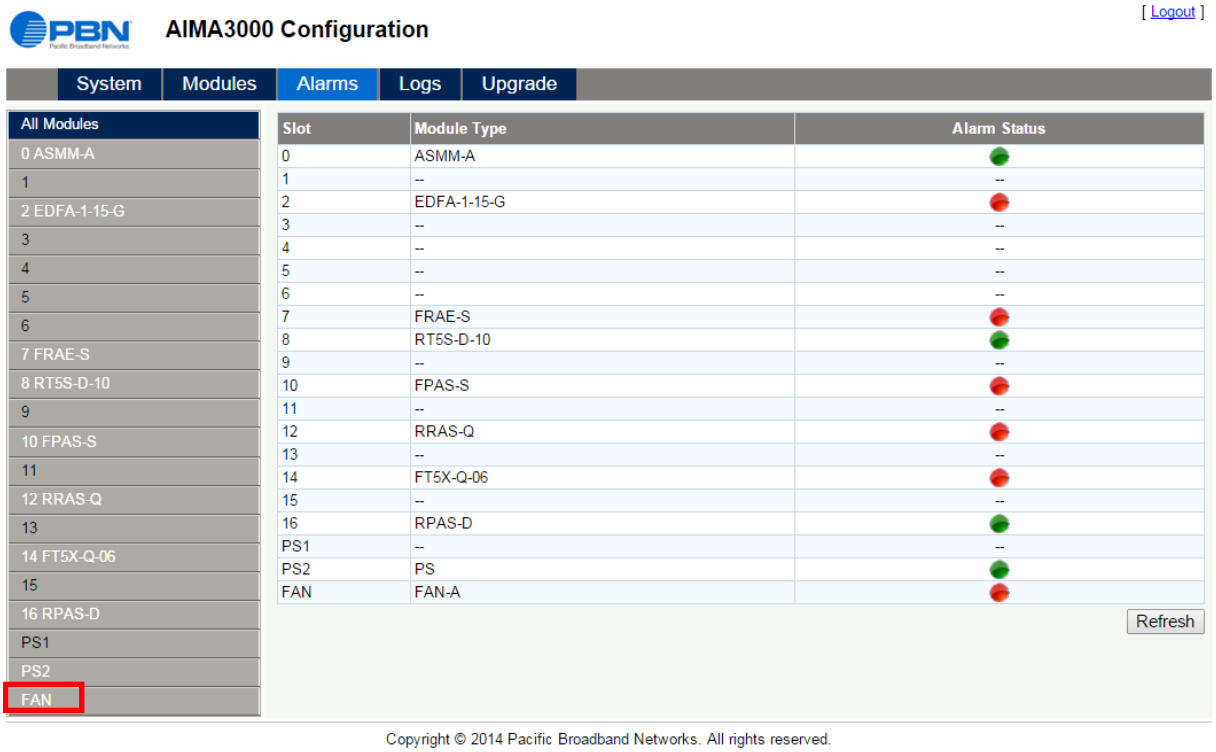
You can:

- Toggle detection of any fan unit alarms
- Toggle detection of only major fan unit alarms (default), or also minor alarms
- Set the fan unit speed control to automatic (default) or manual mode
- Toggle detection of individual major fan status alarms (default) or minor alarms

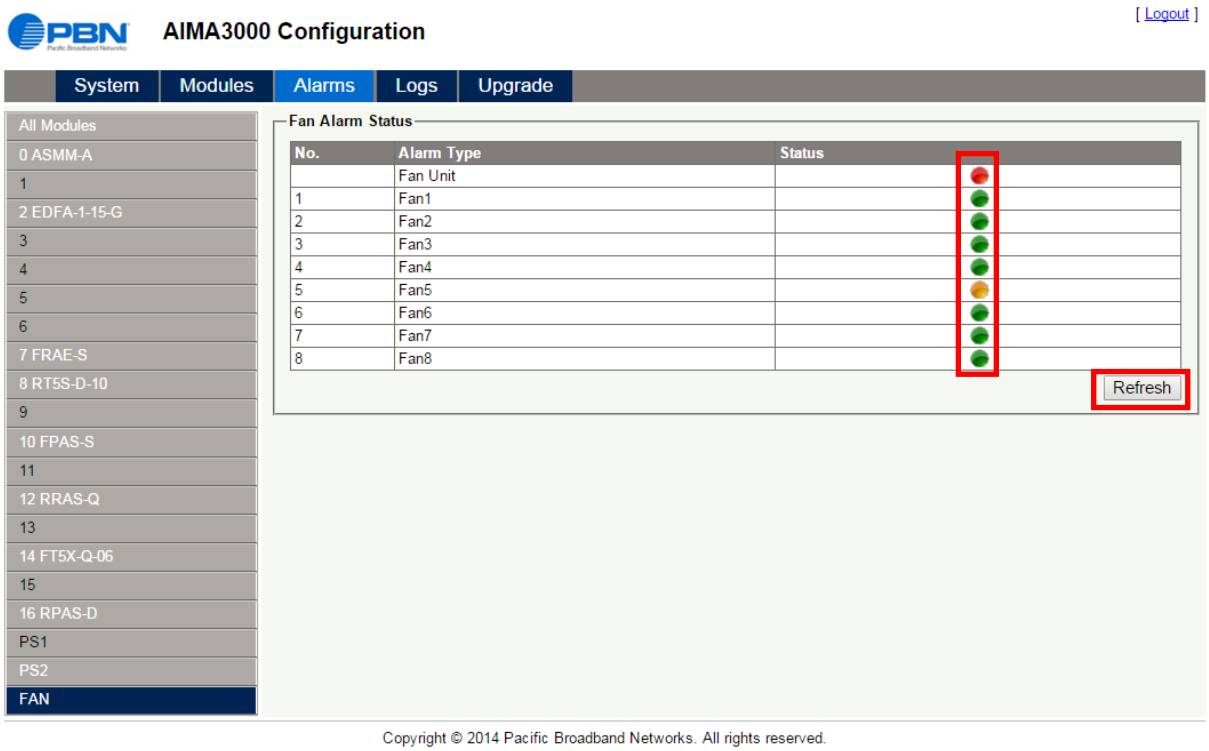
> **Note:**
>
> There are 8 fan units, numbered #1 to #8.

Alarm Status Pages

Click the "**Alarms**" tab on the menu bar to display an overview of the alarm status of all installed modules (normal: **green**; alarm: **red**).



For more detailed alarm information, click "**AFAN**" from the left column of the "**Alarms**" page. This page shows the alarm status of individual fan units.

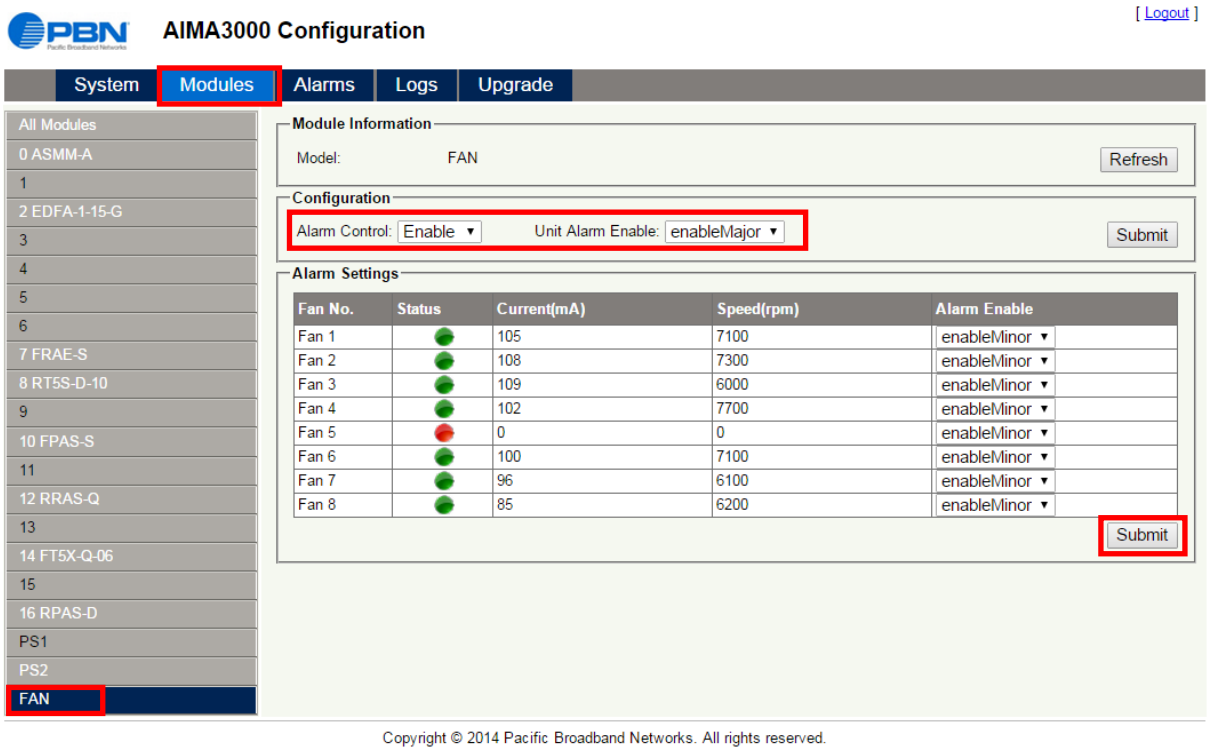


Click "**Refresh**" to update the information.

Alarm Settings Configuration

Click the "**Modules**" tab on the top menu bar.

Click "**AFAN**" in the left column of the "**Modules**" page.



Module Information (read only)

Click "**Refresh**" to update the information.

Configuration

- Alarm Control (Enable / Disable)
- Unit Alarm Enable (Enable Major / Enable Minor / Disable)

Choose the settings from the drop-down menus, and then click "**Submit**" to confirm changes.

Alarm Settings

This section displays each of the 8 fan unit's operational status (green or red), the Current (mA) and Speed (rpm). Shown in **Table 6-1**.

The operator can toggle major, minor, or fan alarms. Choose the settings from the drop-down menus, and then click "**Submit**" to confirm changes.

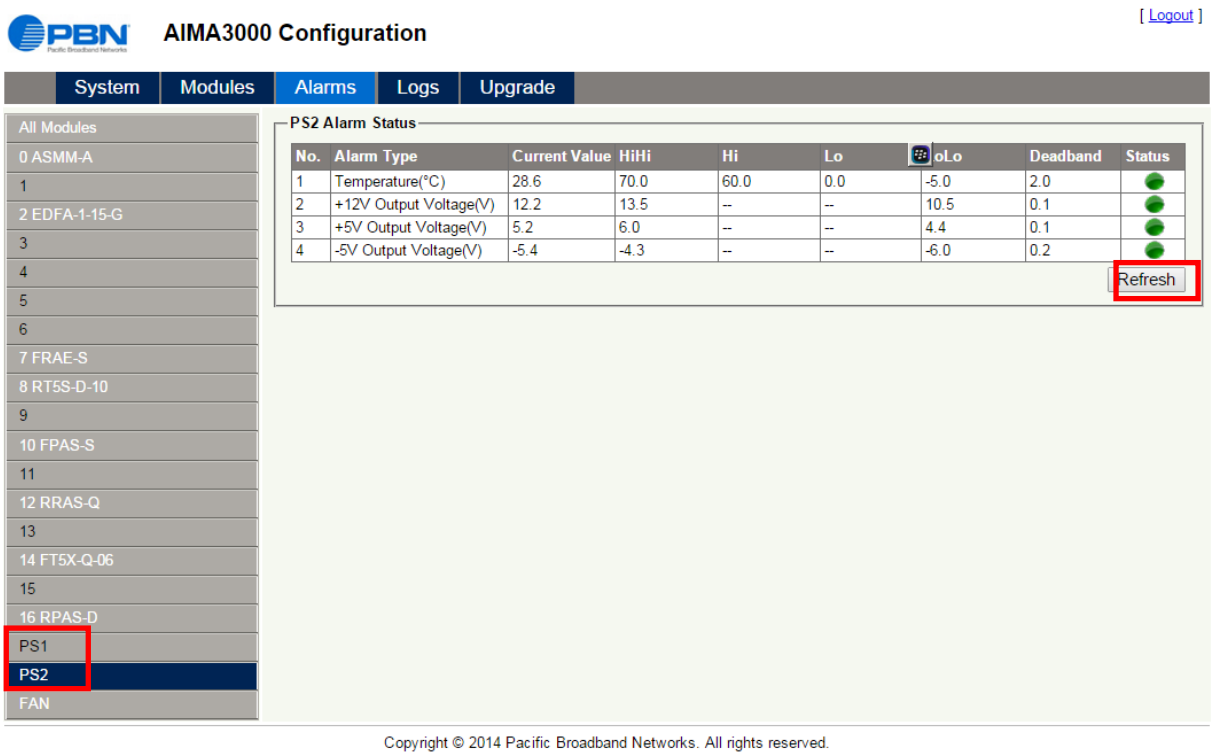
Table 6-1

Parameter	Units	Alarm	Normal	Deadband	Note
Current	mA	<75 or >225	150	15	
Speed	rpm	N/A	8400		Temp<=45°C
		N/A	11000		Temp>45°C

6.2.2 Power Supply Modules

For more detailed alarm information, click **PS1** or **PS2** in the left-hand column of the **Alarms** page.

This page shows temperature and output voltage rail alarms.

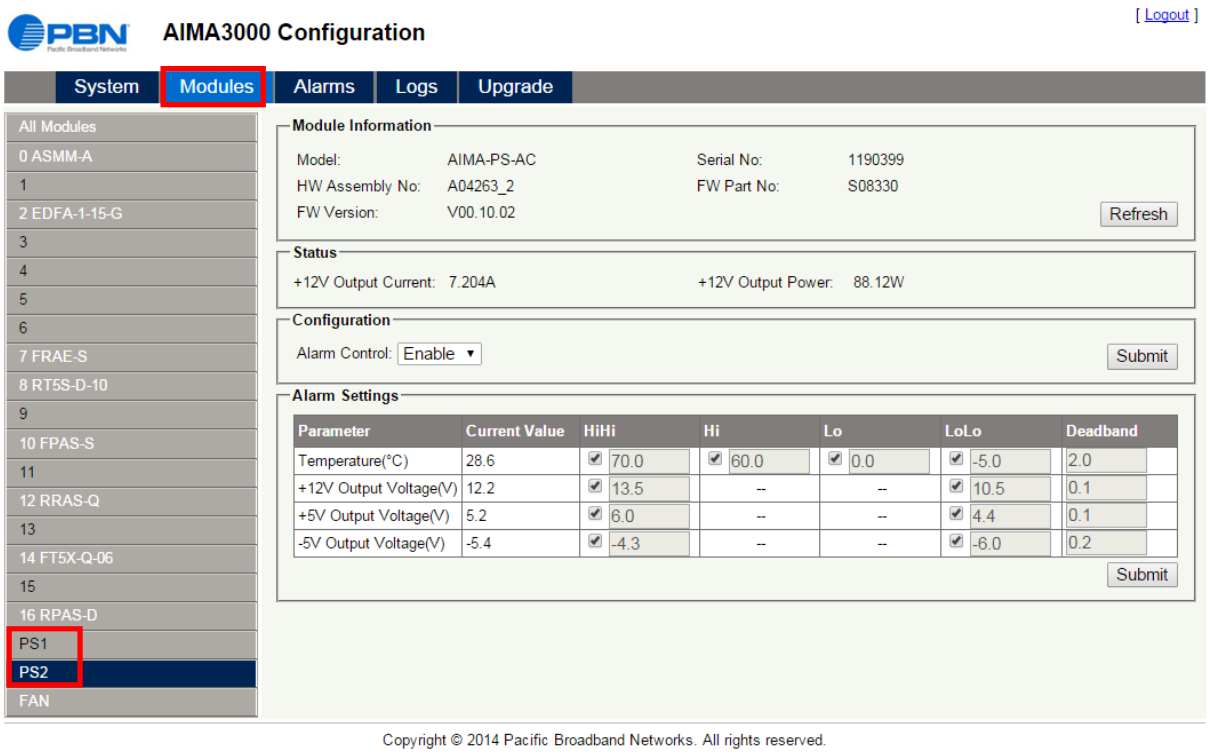


Click "**Refresh**" to update the information.

Alarm Settings Configuration

Click the "**Modules**" tab on the top menu bar.

Click "**PS1**" or "**PS2**" in the left column of the "**Modules**" page.



Module Information (read only)

Model, Serial No., HW Assembly No., FW Part No., FW Version

Click "**Refresh"** to update the information.

Status (read only)

+12V Output Current, +12V Output Power

Configuration

Alarm Control (Enable / Disable)

Choose the setting from the drop-down menu, and then click "**Submit**" to confirm changes.

Alarm Settings

The operator can enable or disable individual Temperature and Output Voltage alarms by checking or unchecking the associated boxes. Click "**Submit**" to confirm changes.

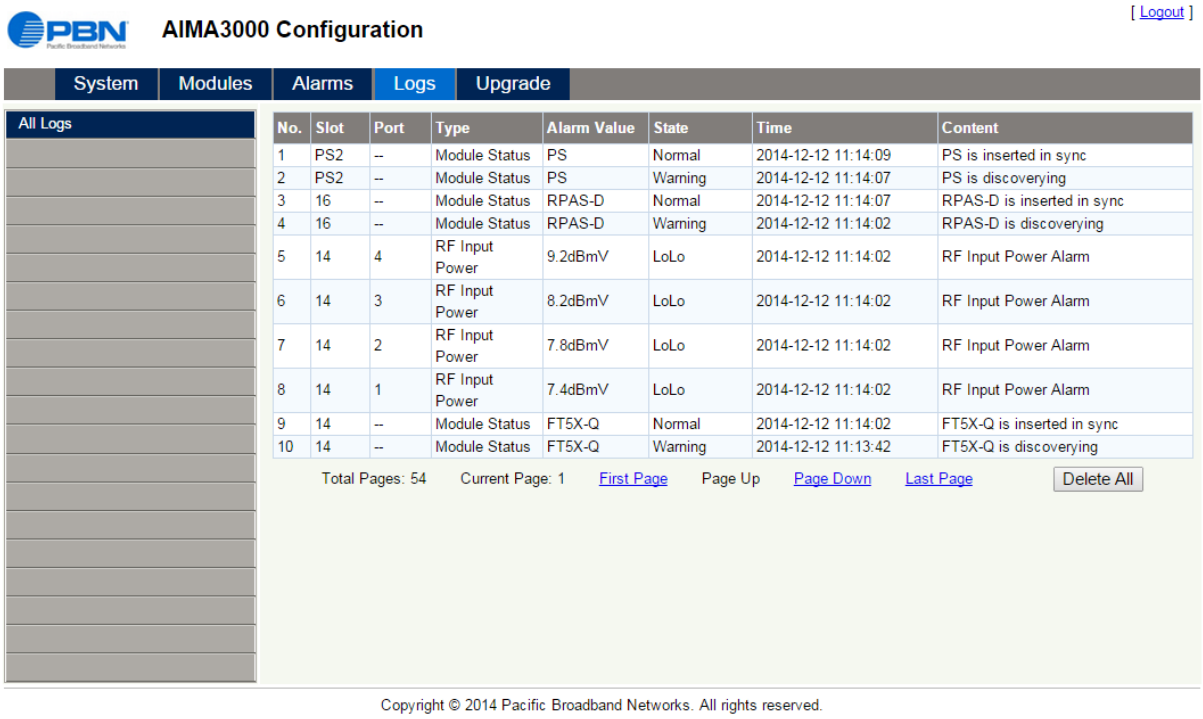
> **Note:**
>
> The user cannot change temperature and Output Voltage alarm parameter values.

Factory default alarm settings are shown below.

Parameter	Units	HIHI	HI	Normal	LO	LOLO	DeadBand	Threshold changeable by user	Default Alarm Enable
Temperature	°C	70	60	-	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
-5V Input voltage	Vdc	-4,3	-	-5	-	-6	0,2	N	ON

6.3 Log Management

Click the "**Logs**" tab on the top menu bar to display an event history (up to 1000 events) of all recorded alarms for all the installed modules.



If there is more than one page of events to display, the operator can display other pages using the links below the currently displayed list.

To clear all existing events from the log, click "**Delete All**". This action must be confirmed by clicking "**OK**" or aborted by clicking "**Cancel**" from the pop-up dialog box.

7 Troubleshooting

7.1 Status LED Fault Indications

Observe the LEDs on installed power supply modules to determine possible faults:

LED Status	Common Fault	Possible Solution
One power supply LED shows red.	Abnormal power output from power supply module	Repair / replace power supply module (contact PBN support)
Both power supply LEDs show red	Application module power failure	Locate the faulty application module (remove modules until the power supply LEDs show green). Contact PBN support

7.2 Common Faults – Resultant LED Status

The common faults listed will cause the following LED indications:

Common Fault	LED Status	Possible Solution
Abnormal power output from power supply module	One power supply LED shows red.	Repair / replace power supply module (contact PBN support)
Application module power failure	Both power supply LEDs show red	Locate the faulty application module (remove modules in turn until the power supply LEDs show green). Contact PBN support

8 Product Warranty

Pacific Broadband Networks warrants its equipment to be free of manufacturing defects in material and workmanship for a period of one year from the date of shipment, provided it is installed and operated in accordance with the factory recommendations.

The liability of Pacific Broadband Networks under this warranty is solely limited to repairing, replacing or issuing credit provided that:

1. The warranty registration has been completed and received by Pacific Broadband Networks.
2. Pacific Broadband Networks' helpdesk is promptly notified in writing or by telephone that a failure or defect has occurred.
3. A return authorization number is obtained from Pacific Broadband Networks' helpdesk and clearly marked on the outside of the shipping container and all the documents.
4. The customer is responsible for all the shipping and handling charges. C.O.D. and freight collection will not be accepted without prior approval from Pacific Broadband Networks' helpdesk.
5. The equipment (at PBN's sole discretion) has not been abused, misused, or operated under conditions outside the manufacturer's specifications.

The warranty does not cover the following:

1. Products purchased from someone other than an authorized Pacific Broadband Networks dealer.
2. Damage caused by accident, negligence, misuse, abuse, improper operation, or failure to operate the equipment according to the manufacturer's specifications.
3. Damage caused by fluctuation in electrical current, lightning, power surges, etc.
4. Damage resulting from overhaul, repair or attempt to repair caused by someone other than Pacific Broadband Networks' qualified service personnel.
5. Any product where the serial number has been defaced, modified, or removed.
6. Any product that has been opened or modified without prior written permission from PBN.
7. Replacement of parts necessitated by normal wear and tear.
8. Any consequential or implied damage.
9. Pacific Broadband Networks will not be liable for DFB Laser failure after 90 days from receipt of item. Any claim for DFB Lasers will be presented to the laser vendor for replacement. Pacific Broadband Networks will make every effort to replace faulty lasers although the ultimate decision is at the laser vendor's discretion. Pacific Broadband Networks will cover all the labor costs associated with the replacement of the laser within the one-year warranty period.

9 Declaration of Conformity

According to ISO/IEC Guide 22 and EN45014

Manufacturer's Name:	Pacific Broadband Networks
Manufacturer's Address:	Suite 15, 1st Floor, Building 3, 195 Wellington Road, Clayton, Victoria 3168, Australia
Declares, that the product Product Name:	AIMA3000 – Advanced Intelligent Multi-services Access Platform
Conforms to the following standards:	
Safety:	EN 80083-1, EN 60950, IEC 950, AS/NZS 3260:1993, EN-60825-1, IEC 825-1, AS/NZS 2211.1 Laser Safety
EMC:	EN 50083-2, EN-55022:1994, IEC/CISPR 22:1993, AS/NZS CISPR 22:2006
CATV/HFC:	EN-50083
For Compliance Information ONLY, contact:	
Australia:	Pacific Broadband Networks Suite 15, 1st Floor, Building 3, 195 Wellington Road, Clayton, Victoria 3168, Australia Phone:+61-3-8561-1400, Fax +61-3-9562-2957 Email: sales@pbn.com.au
Europe:	Pacific Broadband Networks Phone: +31-36-536-8011, Fax: +31-36-536-4367 Email: sales@pbneurope.eu
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Americas:	Pacific Broadband Networks Americas LLC Phone: +1-888-339-8805 Email: sales@pbnamericas.com

Appendix A: Factory Default Settings

Fan Module

Name	Option	Factory Default
Alarm Control	Enable / Disable	Enable
Unit Alarm Enable	Enable Major / Enable Minor / Disable	Enable Major
Alarm Enable (Fan Units #1 ~ #8)	Enable Major / Enable Minor / Disable	Enable Minor

Appendix B: Default Alarm Limit Settings

Power Supply Modules

Parameter	Units	HIHI	HI	Normal	LO	LOLO	DeadBand	Threshold changeable by user	Default Alarm Enable
Temperature	°C	70	60	-	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
-5V Input voltage	Vdc	-4,3	-	-5	-	-6	0,2	N	ON

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