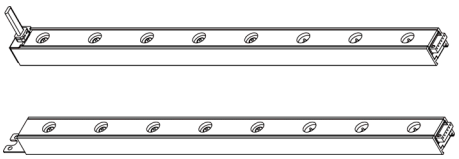


Raritan AMS Series

Intelligent Electronic Asset Management

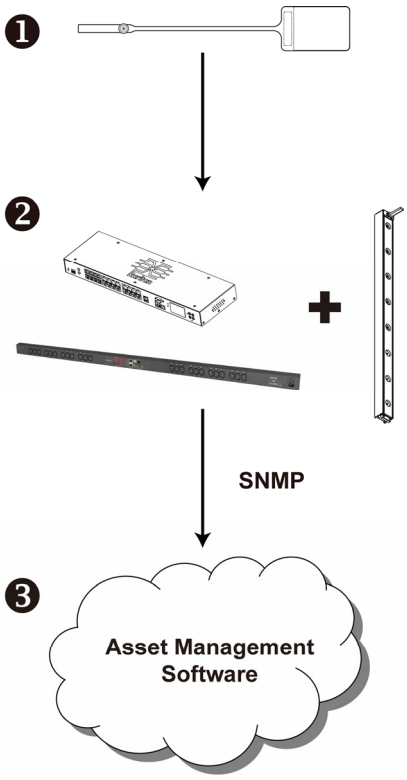
Quick Setup Guide

Thank you for purchasing Raritan AMS asset management sensors (asset sensors), which can be used with the Raritan EMX or specific Raritan PX models for providing the asset management solution. Raritan's asset management solution is capable of tracking the locations of tens or hundreds of IT devices in the data center and server room.

This Quick Setup Guide explains how to install and configure the asset sensors. For additional information on the asset management operation, see the Raritan EMX or PX User Guide, which are available in the Firmware and Documentation section (http://www.raritan.com/support/firmware-and-documentation/) or the Product Online Help section (http://www.raritan.com/support/online-help/) on the Raritan website.

An Overview of the Asset Management Solution

The asset management solution involves using diverse Raritan asset management devices and a Raritan or third-party asset management software.



Number	Description
❶	Raritan asset management tags (AMT), each of which has a unique asset ID (identical to the barcode)
❷	Raritan asset management gateway where the asset sensors are physically connected
❸	Raritan or third-party asset management software, such as Raritan dcTrack

A Raritan or third-party asset management software can access the Raritan asset sensors through a Raritan asset management gateway via SNMP.

The following table lists Raritan models and firmware versions that can function as the SNMP gateway for asset management.

Products	Models	Firmware versions
Raritan EMX	All	All
Raritan PX	Only the products whose model names begin with PX2	Version 2.2 or later

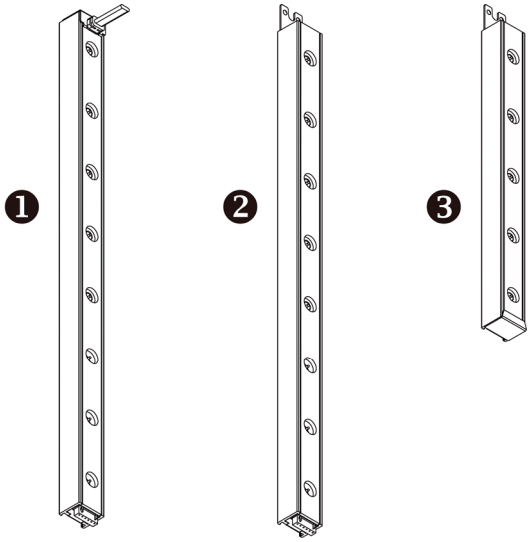
The Configuration Management Database (CMDB) where asset IDs are associated with assets is stored in a network drive. You can use an asset management software to access this database.

Combining Asset Sensors

Each tag port on the asset sensors corresponds to a rack unit and can be used to locate the IT devices on a specific rack (or

cabinet). For each rack, you can attach asset sensors up to 64U long, consisting of one MASTER and multiple SLAVE asset sensors. The difference between the master and slave asset sensors is that the master asset sensor has an RJ-45 connector while the slave one does not.

The following diagram illustrates some asset sensors. Note that Raritan provides more types of asset sensors than the diagram.

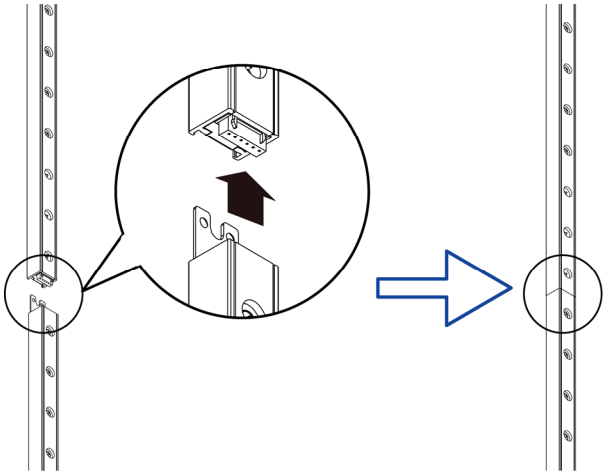


Number	Item
❶	8U MASTER asset sensor with 8 tag ports
❷	8U SLAVE asset sensor with 8 tag ports
❸	5U "ending" SLAVE asset sensor with 5 tag ports

Note: Unlike regular slave asset sensors, which have one DIN connector respectively on either end, the ending slave asset sensor has one DIN connector on only one end. An ending asset sensor is installed at the end of the asset sensor assembly.

To assemble asset sensors:

1. Connect a MASTER asset sensor to an 8U SLAVE asset sensor.
   - Plug the white male DIN connector of the slave asset sensor into the white female DIN connector of the master asset sensor.
   - Make sure that the U-shaped sheet metal adjacent to the male DIN connector is inserted into the rear slot of the master asset sensor. Screw up the U-shaped sheet metal to reinforce the connection.



2. Connect another 8U slave asset sensor to the one being attached to the master asset sensor in the same manner as Step 1.
3. Repeat the above step to connect more slave asset sensors. The length of the asset sensor assembly can be up to 64U.
   - The final asset sensor can be 8U or 5U, depending on the actual height of your rack.
   - Using the "ending" asset sensor as the final asset sensor is strongly recommended.
4. Vertically attach the asset sensor assembly to the rack, next to the IT equipment, making each tag port horizontally align with a rack unit. The asset sensors are automatically attracted to the rack because of magnetic stripes on the back.

Note: The asset sensor is implemented with a tilt sensor so it can be mounted upside down.

Connecting Asset Sensors to the Raritan SNMP gateway

Raritan EMX and PX devices can function as a Raritan SNMP gateway for asset management after connecting asset sensors. See ***An Overview of the Asset Management Solution*** (on page 1) for Raritan models supporting this function.

You need both of asset sensors and asset tags for tracking IT devices. Asset tags, which are affixed to IT devices, provide an ID number for each IT device, while the asset sensors transmit ID numbers and positioning information to the connected Raritan SNMP gateway device.

The following diagram illustrates an asset tag.

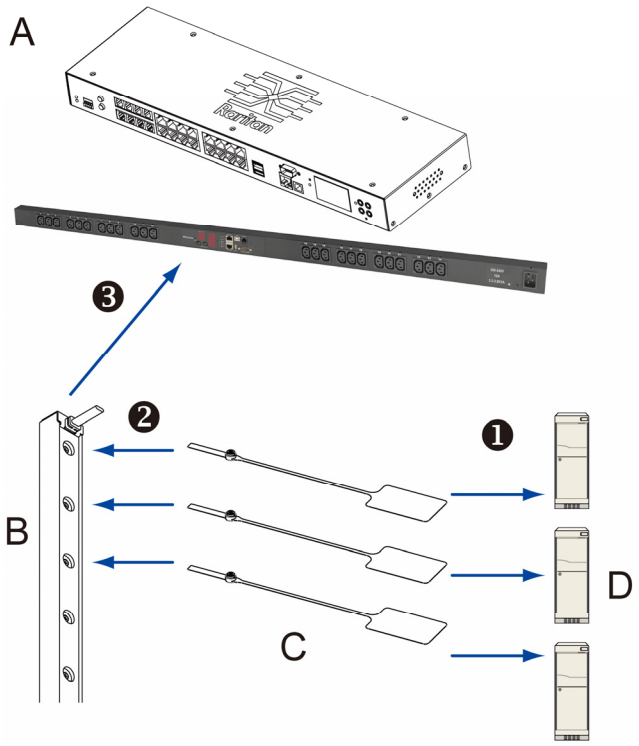
Letter	Item
A	Barcode (ID number), which is available on either end of the asset tag
B	Tag connector
C	Adhesive area with the tape

Note: The barcode of each asset tag is unique and is displayed in the Raritan SNMP gateway web interface so it can easily be identified.

To connect asset sensors to the Raritan SNMP gateway device:

1. Affix the adhesive end of an asset tag to each IT device through the tag's tape.
2. Plug the connector on the other end of each asset tag into the corresponding tag port on the asset sensor.
3. Connect the asset sensor assembly on the rack to the Raritan SNMP gateway device by following this procedure:
   a. Connect one end of the Category 5e/6 cable to the RJ-45 connector on the MASTER asset sensor.
   b. Connect the other end of the cable to the FEATURE port on the Raritan SNMP gateway device.

   The Raritan SNMP gateway device supplies power to the asset sensor assembly through the Category 5e/6 cable. All LEDs on the asset sensor assembly may cycle through different colors during the power-on process if the asset sensor's firmware is being upgraded by the Raritan SNMP gateway device. After the power-on or firmware upgrade process completes, the LEDs show solid colors. Note that the LED color of the tag ports with asset tags connected will be different from the LED color of the tag ports without asset tags connected.



Letter	Item
A	The Raritan SNMP gateway device: Raritan EMX or PX
B	Asset sensors
C	Asset tags
D	IT devices, such as servers

Note: The supported maximum cabling length differs depending on the model of the Raritan SNMP gateway device you purchased. See the User Guide for your Raritan SNMP gateway device.

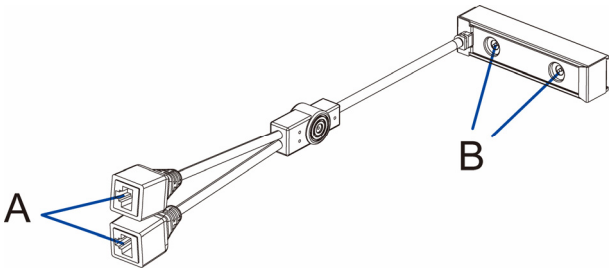
4. If the Raritan SNMP gateway device has more than one FEATURE port, repeat the above steps to connect additional asset sensors to the rest of FEATURE ports.

Connecting AMS-M2-Z Asset Sensors (Optional)

The AMS-M2-Z is a special type of asset sensor that functions the same as regular MASTER asset sensors with the following differences:

- It provides two RJ-45 connectors.
- Multiple AMS-M2-Z asset sensors can be daisy chained.
- Only two tag ports are available on each AMS-M2-Z so only two asset tags can be connected.

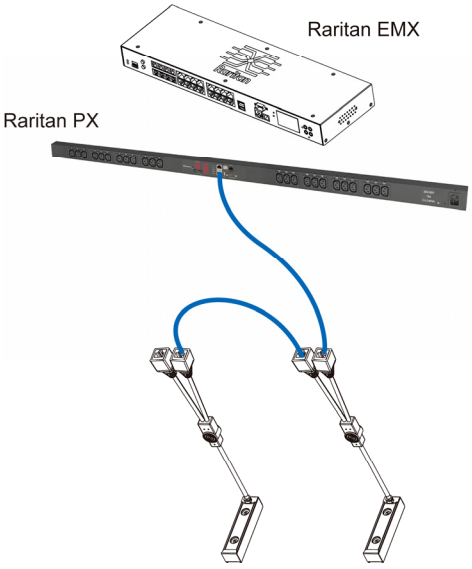
This product is especially useful for tracking large devices such as SAN boxes in the cabinet.



Item	Description
A	RJ-45 connectors
B	Tag ports

To connect the AMS-M2-Z asset sensors to the Raritan SNMP gateway:

1. Connect the AMS-M2-Z to the Raritan SNMP gateway via a Category 5e/6 cable.
   a. Connect one end of the cable to the RJ-45 port labeled "Input" on the AMS-M2-Z.
   b. Connect the other end of the cable to the FEATURE port on the Raritan SNMP gateway.
2. Affix an asset tag to the IT device and connect this asset tag to the AMS-M2-Z by plugging the tag connector into the tag port on the AMS-M2-Z. See ***Connecting Asset Sensors to the Raritan SNMP gateway*** (on page 2) for details.
3. If necessary, daisy chain multiple AMS-M2-Z to track more than two IT devices via this Raritan SNMP gateway.
   a. Verify that the Category 5e/6 cable length is within the limitation. See ***AMS-M2-Z Daisy-Chain Limitations*** (on page 4) for the cable length limitations.
   b. Connect one end of the Category 5e/6 cable to the RJ-45 connector labeled "Output" on the AMS-M2-Z being connected to the Raritan SNMP gateway.
   c. Connect the other end of the cable to the RJ-45 connector labeled "Input" on another AMS-M2-Z.
   d. Repeat the above steps to daisy chain additional AMS-M2-Z. See ***AMS-M2-Z Daisy-Chain Limitations*** (on page 4) for the maximum number of AMS-M2-Z asset sensors supported in the chain.
   e. It is highly recommended using the cable ties to help hold the weight of all connecting cables.



4. Repeat Step 2 to connect IT devices to the other AMS-M2-Z's in the chain via the asset tags.

AMS-M2-Z Daisy-Chain Limitations

There are some limitations when daisy chaining the AMS-M2-Z asset sensors. The limitations vary according to the Raritan product model connected to the first AMS-M2-Z.

Models	Daisy-chain limitations
All PDUs whose model names begin with PX2	• Up to 2 AMS-M2-Z can be daisy chained. • The maximum cable length between each AMS-M2-Z in the chain is 2 meters.
EMX2-111	• Up to 2 AMS-M2-Z can be daisy chained. • The maximum cable length between each AMS-M2-Z in the chain is 2 meters.
EMX2-888	• Up to 6 AMS-M2-Z can be daisy chained. • The maximum cable length between each AMS-M2-Z in the chain is 3 meters.

Connecting Blade Extension Strips

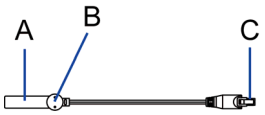
For blade servers, which are contained in a single chassis, you can use a blade extension strip to track individual blade servers.

Raritan's blade extension strip functions similar to a Raritan asset sensor but requires a tag connector cable for connecting to a tag port on the regular asset sensor or AMS-M2-Z. The

blade extension strip contains 4 to 16 tag ports, depending on which model you purchased.

The diagram illustrates a tag connector cable and a blade extension strip with 16 tag ports.

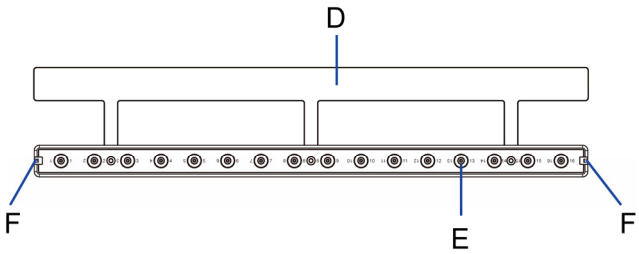
Tag connector cable



Item	Description
A	Barcode (ID number) for the tag connector cable
B	Tag connector
C	Cable connector for connecting the blade extension strip

Note: A tag connector cable has a unique barcode, which is displayed in the Raritan SNMP gateway's web interface for identifying each blade extension strip where it is connected.

Blade extension strip

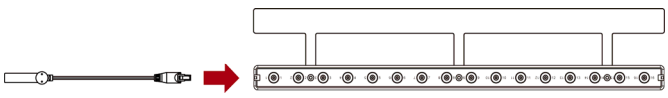


Item	Description
D	Mylar section with the adhesive tape
E	Tag ports
F	Cable socket(s) for connecting the tag connector cable

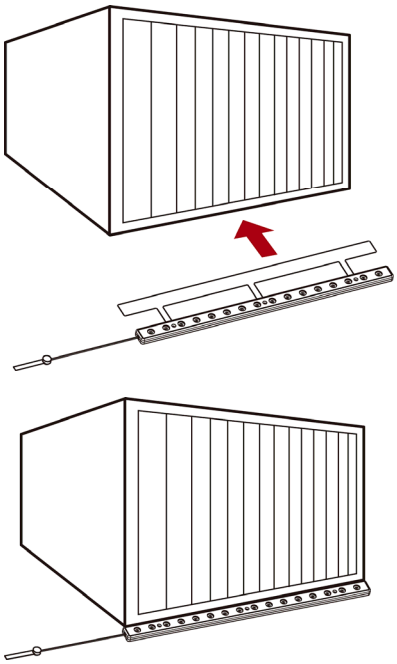
Note: Each tag pot on the blade extension strip is labeled a number, which is displayed as the slot number in the Raritan SNMP gateway's web interface.

▶ To install a blade extension strip:

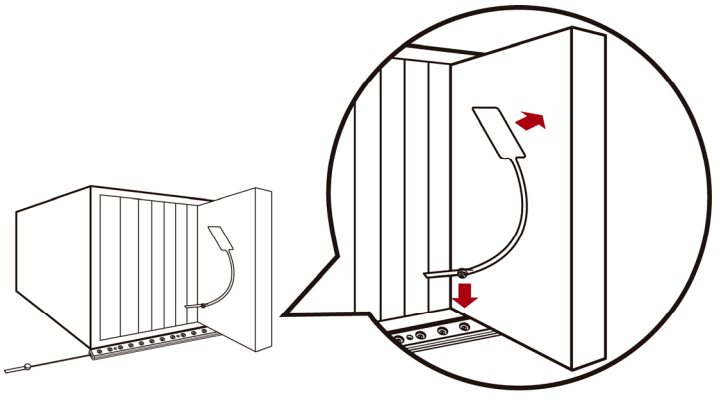
1. Connect the tag connector cable to the blade extension strip.
   - Plug the cable's connector into the socket at either end of the blade extension strip.



2. Move the blade extension strip toward the bottom of the blade chassis until its mylar section is fully under the chassis, and verify that the blade extension strip does not fall off easily. If necessary, you may use the adhesive tape in the back of the mylar section to help fix the strip in place.

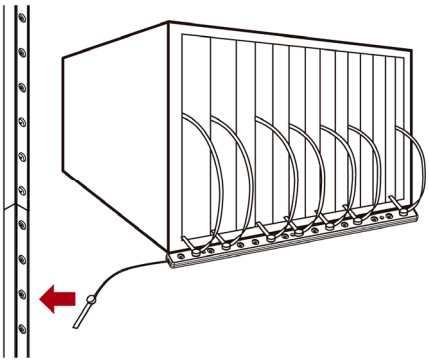


3. Connect one end of an asset tag to a blade server and connect the other end to the blade extension strip.
   a. Affix the adhesive part of the asset tag to one side of a blade server through the tag's tape.
   b. Plug the tag connector of the asset tag into the tag port on the blade extension strip.



4. Repeat the above step until all blade servers in the chassis are connected to the blade extension strip via asset tags.

5. Plug the tag connector of the blade extension strip into the closest tag port of the asset sensor assembly or the AMS-M2-Z asset sensor on the rack.



Note: If you need to temporarily disconnect the tag connector of the blade extension strip, wait at least 1 second before connecting it back, or the Raritan SNMP gateway may not detect it.

What to Do Next

1. From a computer connected to your LAN, open a browser and point it at the IP address of the Raritan SNMP gateway device.
2. When prompted for a user name and password, enter *admin* and the new password you assigned during the initial configuration of the Raritan SNMP gateway device. See the Quick Setup Guide accompanying your Raritan SNMP gateway device.

   Note: The default password for the admin user is *raritan*. You should have been prompted to change the password at the initial login.

3. The web interface page of the Raritan SNMP gateway device opens.
4. Configure each asset sensor assembly in the web interface.
   a. Locate the Feature Ports folder in the left pane, which contains a list of asset sensor icons.

      Note: If there is only one FEATURE port on your Raritan SNMP gateway device, only one asset sensor icon is available.

   b. Click the desired asset sensor icon in the left pane.
   c. Click Setup in the right pane. The setup dialog for the selected asset sensor assembly appears.
   d. Provide necessary information, including the desired name for the asset sensor assembly, the total number of rack units (tag ports), orientation of the asset sensor assembly and so on.
5. Asset sensors are sent from the factory with all LEDs set to the Automatic Operation mode. The LED color on the asset sensor changes according to whether an asset tag is detected. You can configure the LED color settings from the web interface:
   a. Click the desired asset sensor icon in the left pane.
   b. Select the desired rack unit (tag port) of the selected asset sensor in the right pane.
   c. Click Configure Rack Unit to configure the rack unit settings, including the LED mode and colors.

Note: Detailed instructions are available in the User Guide for your Raritan SNMP gateway device.

Additional Information

For more information about the Raritan SNMP gateway™ and the entire Raritan product line, see Raritan's website (www.raritan.com). For technical issues, contact Raritan Technical Support. See the Contact Support page in the Support section on Raritan's website for technical support contact information worldwide.

Raritan's products use code licensed under the GPL and LGPL. You can request a copy of the open source code. For details, see the Open Source Software Statement at (http://www.raritan.com/about/legal-statements/open-source-software-statement/) on Raritan's website.

Safety Certifications

The following lists the certifications Raritan has obtained for AMS series products except for AMS-M2-Z.

FCC

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

1. This device may not cause harmful interference, and
2. This device must accept interference received, including interference that may cause undesired operation.

VCCI

この装置は，クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI－A

Canada ICES-003

This device complies with Canada ICES-003, Class A.