AsantéHub 2072 BNC Module Installation Guide

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Introducing the BNC Module

The Asanté 2072 BNC multiport repeater module is a single-slot card that plugs into any slot in the AsantéHub 2072 chassis. As a separate repeater/retiming unit, this module continues to function even if other modules malfunctions in the same chassis.

The BNC module has the following features:

- ❏ AUI connector, which can serve as the 13th port for uplinking to an Ethernet backbone
- ❏ Hot swap capable
- ❏ Partition, Link/Receive LEDs display link status for each of the ten ports
- ❏ Full compliance with IEEE 802.3 Ethernet specifications for 10Base2

Figure 1 shows the BNC module, single-slot.

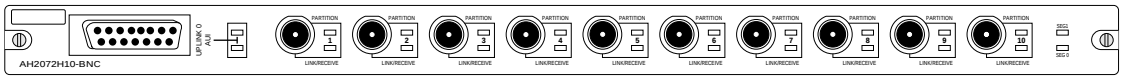

Figure 1 The Asanté BNC Module (Ten-Port, Single-slot)

The BNC module can be assigned to either of the chassis' two Ethernet segments or it can remain isolated from a segment for testing or balancing traffic. You can connect to other devices, such as computers and printers, using thin Ethernet.

You can access individual port information through the Network Management Module by running AsantéView's In-Band and or Out-of-Band network management software.

❖ **Important:** All BNC ports are terminated internally by a 50 ohm resistor. ❖

Installation

The BNC module installation consists of a few basic steps:

- ❏ Grounding yourself
- ❏ Checking the package contents
- ❏ Installing the module and checking the LEDs
- ❏ Connecting the module to other devices

Grounding Requirements

Before unpacking or handling the module, you must attach the grounding strap provided to your wrist and then touch the rack mount or a piece of metal to discharge static electricity from your body or clothes.The chassis should already be grounded.

Checking Package Contents

The BNC Module package includes:

- ❏ BNC Module in anti-static packaging
- ❏ This installation guide
- ❏ Warranty card
- ❏ Grounding strap

Required Tool

While you can hand-tighten the screws to fasten the module to the chassis, it is recommended that you use #1 slot screwdriver.

Installing the BNC Module

This installation assumes that you have already installed the 2072 chassis.

To install the 2072 BNC Module, do the following steps:

1 Make sure the Asanté 2072 Hub's power is turned on. Having the power already turned on allows the LEDs on the module to light when installed.

2 Observing the anti-static procedures, remove the module from its anti-static packing.

- ❖ Note: Handle the module only by its edges. Do not touch chips or connectors.❖
- ❖ **Warning:** Do not force the module into a slot. Forcing the module into a slot can damage the backplane.❖

3 Align the module to the inside edges of the card guides to any available slot in the chassis. Gently slide the module in until you can begin tightening the screws. See Figure 2.

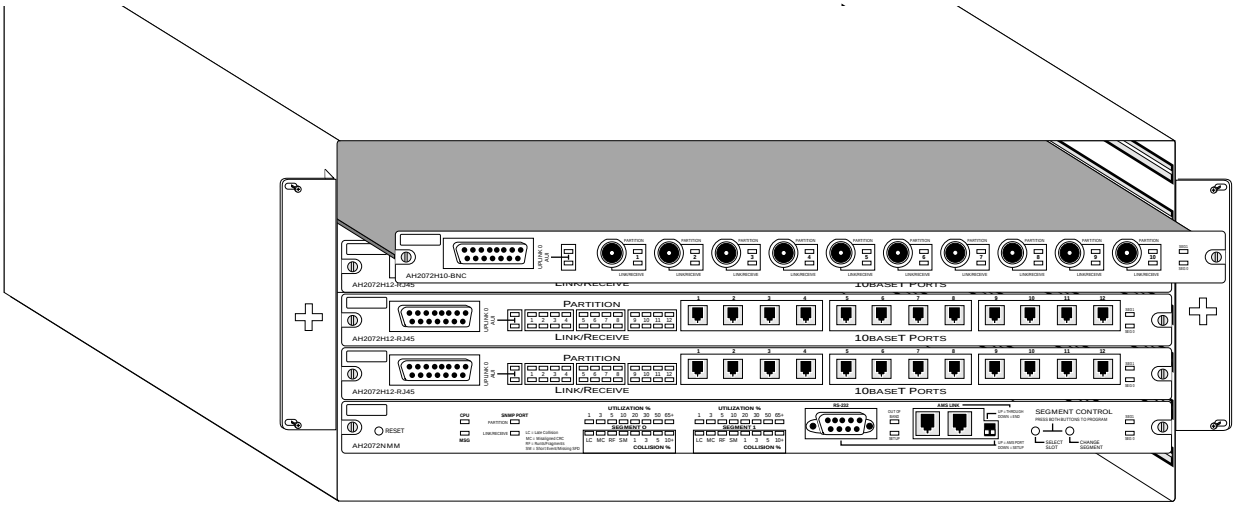

Figure 2 Installing the BNC Module

4 Whether you use your screwdriver or hand-tighten the module to the chassis, make sure you fasten both screws in unison and apply the same amount of torque so that the module attaches evenly to the chassis.

5 Make sure that one of the green segment LEDs lights. This indicates that the module has been properly connected to the backplane and is attached to one of the two segments. (As a default, Segment 1 LED will light.)

The Front Panel

The BNC Module front panel provides the following LEDs and connectors:

- ❏ AUI connector
- ❏ AUI Uplink LEDs
- ❏ Ten 10Base2 connectors
- ❏ Link/Receive LEDs
- ❏ Segment LEDs (1 and 2)

Figure 3 illustrates the BNC Module front panel;Table 1 lists and defines the BNC module LEDs and connectors.

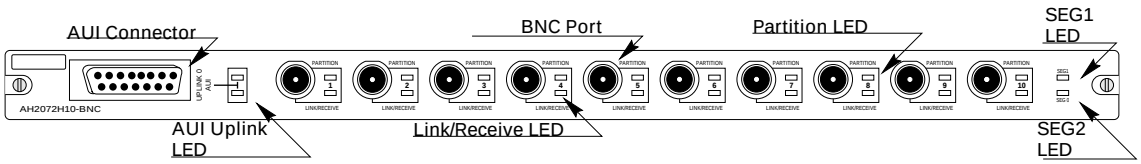

Figure 3 BNC Module Front Panel

Table 1 BNC Module Front Panel Controls and Indictors

Name	Function
AUI Connector	Serves as the uplinking port to a network backbone.
Recessed mini MAU slot	Functions as a compartment for housing the recessed mini MAU.
BNC Connectors	Ten ports; each can be connected to a network device or to other hubs for daisy chaining via a MAU.
AUI Uplink LED	If active MAU is attached, this LED remains lit, indicating that the link is enabled.
Partition LEDs	Ten LEDs indicating partitioning ports on the module.
Link/Receive LEDs	Ten LEDs indicating link connection and traffic passing over the port.
Segment 1 LED Segment 2 LED	Remains lit to display which backplane a segment (Seg1 or Seg2) the module is currently connected to. Neither segment LEDs light if module is not connected to any of the backplanes, however, the module still functions as an active repeater.

Interpreting the LEDs

The LEDs give information about the status of a particular unit or function. Each 2072 BNC Module has a set of 10 link/partition LEDs which display port status.

In addition, there are two LEDs which represent AUI Port Link and Partition status, and two LEDs used to indicate on which Ethernet segment the repeater card is configured.

LEDs can be categorized into the following four groups:

- ❏ AUI port partition, link/receive
- ❏ Port-by-port partition
- ❏ Port-by-port link/receive
- ❏ Segment configuration

Table 2 lists and defines the module LEDs.

Table 2 LEDs and Their Meanings

LED	Color/State	Meaning
AUI Uplink PARTITION LED	Amber, Blinking	Indicates hub has autopartitioned the uplink; possibility of high collision rate.
	Amber, On	Operator has manually partitioned the uplink or a trap has been sent.
	Off	Uplink not partitioned.
AUI Uplink LINK LED	Green, On	Link or link integrity is disabled.
	Green, Blinking	Traffic over the uplink.
PARTITION 10 LEDs	Amber, Off	Indicates normal port operation.
	On, Steady	Indicates that the slot has been manually partitioned by an administrator or by a trap.
	Blinking	Indicates autopartitioning.
LINK/RECEIVE 10 LEDs	Green, On	Link is present.
	Blinking	Traffic is passing over this port.
	Off	Link is not present.
SEG1 and SEG2 2 LEDs	Green, On	Indicates on which segment Ethernet is configured.
	Gray, Off	Indicates board is not seated properly or both LEDs could be intentionally set off by operator. Note that even though a backplane connection may not exist, the repeater still functions as a full repeater.

Cable Connections to Other Devices

The BNC Module provides two types of connectors for attachment to other devices, such as other hubs, PCs, and Macs:

- ❏ AUI connector for attachment to the backbone and other hubs (recessed mini- MAU included with double-slot version
- ❏ BNC connectors (ten 10Base2 ports) for attachment to network devices

Using the AUI to Connect to the Backbone

The AUI port (DB15 pin connector) is typically used to interconnect hubs using an Ethernet backbone. The AUI port can also be used to interconnect hubs using a variety of media, such as fiber optics, unshielded twisted-pair. The media type used determines the type of external transceiver that is required.

To connect to the backbone of your network using the AUI, attach a MAU such as the Asanté Mini MAU to the AUI port on the module's front panel, and then connect the MAU to the backbone. See Figure 4.

❖ Note: Make sure SQE (Signal Quality Error) is disabled on the MAU when it is attached to the AUI port.❖

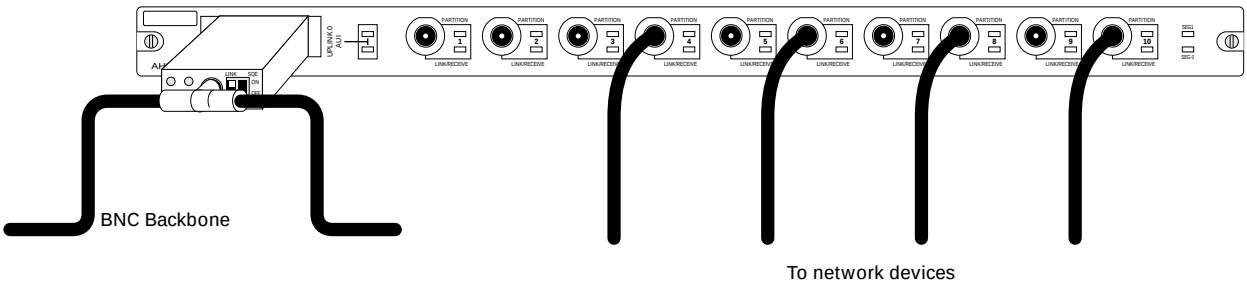

Figure 4 Using the AUI to Connect to the Backbone

Shown here is a BNC (thin Ethernet) connection. You can use any media compatible with the MAU connected to the module AUI port. Asanté offers Mini MAUs supporting 10BaseT, 10Base2, and fiber media.

Using the AUI to Interconnect Hubs

You can interconnect hubs using the AUI Uplink port located on the module's front panel. Asanté provides an RJ45, BNC, and 10BaseF Mini MAU to accommodate your backbone cabling scheme.

To interconnect hubs using the AUI Uplink port, attach a MAU to the AUI port on the module's front panel of the first hub. Attach a cable appropriate for the MAU you are using. Attach another MAU to the AUI port on the second hub. Figure 5 shows a BNC module in the first hub connected to a BNC module in the second hub using BNC MAUs and BNC cabling as the backbone.

❖ Note: Make sure SQE (Signal Quality Error) is disabled on the MAU when it is attached to the AUI port.❖

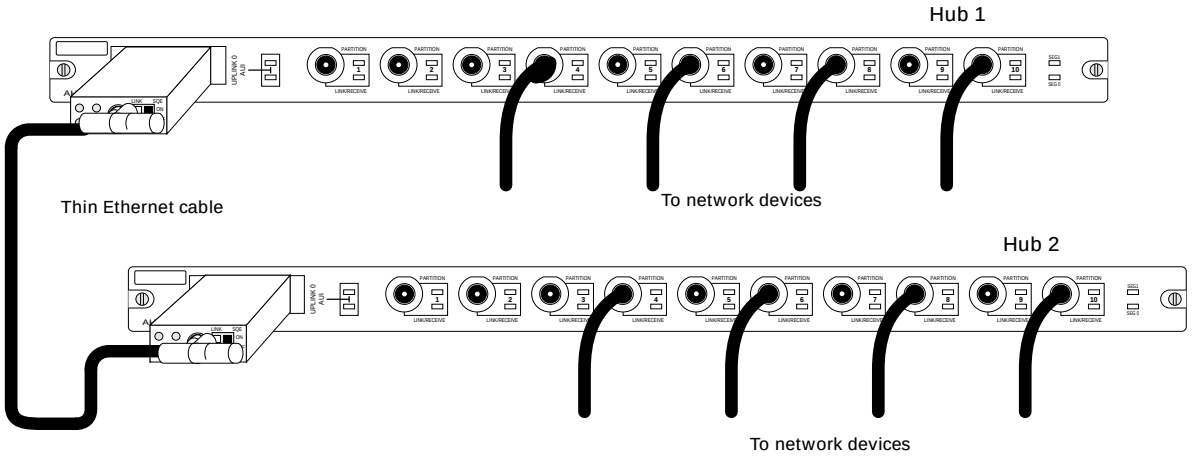

Figure 5 Using the AUI to Interconnect Hubs

❖ Note: Use Asanté Mini MAUs that are appropriate for your backbone cabling type when interconnecting hubs on the same backbone.

❖ Note: The BNC Mini MAU can be manually terminated by setting the switch located on the side of the MAU.❖

Using the BNC to Connect to a Management Station

To connect the BNC Module to a network management station (PC or Mac) for an in-band connection, attach one end of a thin Ethernet cable to a BNC port on the module's front panel. Connect the other end of the thin Ethernet cable to a T-connector, and then connect the T-connector to either a PC or Mac. See Figure 6.

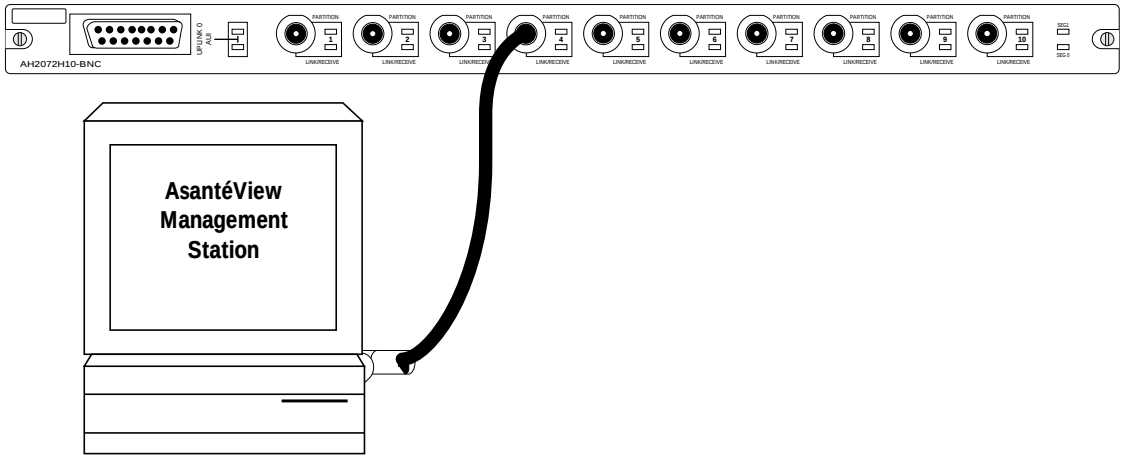

Figure 6 Using the BNC to Connect to a Management Station (PC or Mac)

Technical Specifications

The BNC Module technical specifications are as follows:

Standards Supported:

IEEE 802.3 Ethernet specifications for thin Ethernet (10Base2) media.

Data Rate:

10 Mbps

Maximum Cable Distances:

10Base2 (thin) -- 185m (605 ft.)

This maximum distance is on a per port basis. Each of the ten ports supports up to 29 devices on a total cable length of up to 185 meters.

Power Requirements:

Input Voltage: 90-230 VAC, 50-60Hz Single phase; continuous voltage input range

Input Current: 3A @ 100 VAC (maximum)

Safety:

Designed in accordance with UL,CSA,TUV/IEC requirements.

Physical Dimensions:

Single-slot: 17" x 0.9" x 12"

Double-slot: 17" x 1.8" x 12"

Weight:

Approximately 2 lbs.

Environmental:

Operating Temperature: 0° to 40° C ambient

Operating Humidity: 5 to 85% noncondensing

Operating Altitude: 10,000 ft. (3,048m) maximum

Storage Temperature: -30° to 80° C

Storage Humidity: 5 to 90% noncondensing

Storage Altitude: 25,000 ft. (7,620m) maximum

AUI (DB-15) Pinouts

Table 3,"AUI (DB-15) Pinouts," on page 12 lists the pin, circuit, and signal name for the AUI pins.

Table 3 AUI (DB-15) Pinouts

Pin	Circuit	Signal Name
03	DO+	Data Out positive
10	DO-	Data Out negative
11	DO S	Data Out circuit Shield
05	DI+	Data In circuit positive
12	DI-	Data In circuit negative
04	DI S	Data In circuit Shield
07	CO+	Control Out positive (optional)
15	CO-	Control Out negative (optional)
08	CO S	Control Out Shield (optional)
02	CI+	Control In positive
09	CI-	Control In negative
01	CI S	Control In Shield
06	VC	Voltage Common
13	VP	Voltage Plus
14	VS	Voltage Shield
Shell	PG	Protective Ground

Cabling Limitations

Table 5 lists the IEEE standards used to determine how networks should be configured when using coaxial cable connections.

Table 4 IEEE 802.3 Ethernet Standards

	10Base5 Ethernet (Thick)	10Base2 Thin Coax (Standard)	10Base2 Thin Coax (Extended)	10BaseT
Data rate	10 Mbits	10 Mbits	10 Mbits	10 Mbits
Cable length per trunk segment	500m	185m	300m	100m
Nodes per trunk segment	100	30	100	1
Min. distance between nodes	2.5m	.5m	.5m	n/a
Max. number of trunk segments	5	3 (+ 2 repeater only)	3 (no repeater only)	n/a
Max. network trunk length	2500m	925m	900m	n/a
Cable type	dbl. shield.4" coax	sgl. shield.2" coax	sgl. shield.2" coax	solid conductor
Transceiver type	external with drop cable	recessed or external	recessed or external	n/a
Connector	clamp-on	BNC	BNC	RJ-45

❖Note: Extended Length networks **cannot** contain any repeater-only segments.❖

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