Gigabit Ethernet Access Module
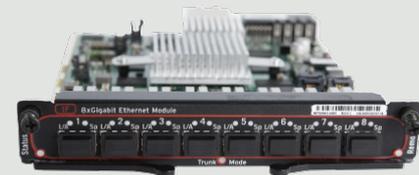
Metro Ethernet access for the Nimbra 600 MSR

The 8-port Gigabit Ethernet Access Module is a high capacity Metro Ethernet interface for seamless integration of IP based services into a Nimbra MSR media network.

With the 8 x Gigabit Ethernet Access Module, it is possible to combine the cost-efficient high-speed data transport associated with Gigabit Ethernet, with the guaranteed Quality of Service and bandwidth-on-demand characteristics of the Nimbra MSR solution.

True multiservice networking
The Nimbra MSR platform provides an infrastructure for high quality transport of data, video, and voice services in one single network. In combination with the Nimbra 600 series MSRs, the Gigabit Ethernet Access Module provides a transparent layer-2 Ethernet service for secure QoS data outside the local loop.

The Ethernet transport service allocates secure point-to-point or point-to-multipoint channels with configurable bandwidth to guarantee zero packet loss and very low packet jitter, even at 100% network utilization.

The module features advanced fault- and performance management functionality per ETS connection. Defect indication together with ITU-T G.826 performance monitoring of errored seconds in 15min/24h bins gives a consolidated overview of the connection status and facilitates easy trouble shooting.

MODULE

The 8-port Gigabit Ethernet Access Module enables secure Ethernet transport, with zero packet loss and very low packet jitter, over a Nimbra multi-service network.

Distributed Ethernet switching
Optionally, the Gigabit Ethernet Access Module implements on-board layer-2 switching. Up to eight separate switches can be enabled on a single board, providing distributed Ethernet switching between 255 Ethernet ports across the Nimbra network, to form Ethernet networks of unprecedented granularity for aggregation or distribution.

Unprecedented availability
Availability is a key requirement for all professional video applications. With built-in support for automatic network restoration, the Gigabit Ethernet Access Module offers a flexible and comprehensive protection solution. The module also optionally supports seamless and hitless protection switching. By supporting both seamless and hitless protection switching within the same functionality a large spectrum of redundancy options may be utilized for different applications.

The Gigabit Ethernet Access Module is designed to meet NEBS level 3 specifications for trouble-free operation, support for In-service swap and remote upgrade options enables carrier class availability.

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KEY FEATURES

Pluggable optics.
The 8 x GbE ports are equipped with Small Form Factor Pluggable (SFP) ports that can be fitted with SFP modules for different distances and fiber media.

ETS capable.
Supports Nimbra Ethernet Transport Service for channelized QoS transport and QoS multicast of Ethernet streams.

Guaranteed quality of service.
The GbE Access Module meets the highest demands in the market, suitable for all types of real-time services such as video and voice due to an unique resource allocation scheme, based on hard resource allocation for each ETS connection.

QoS Multicast support.
Supports Ethernet multicasting, with guaranteed QoS for all receivers. This makes it the perfect choice for distribution of video content in for example IPTV streaming solutions, and for other application with tight QoS specifications.

Very high utilization.
The network can be loaded >95% with Ethernet traffic without performance penalties, due to the unique Nimbra switching mechanism.

Enhanced functionality.
In addition to standard Ethernet functionality the module also supports value added functionality, such as per stream (VLAN) resource allocation for guaranteed QoS, multicast to any number of receivers, and jumbo frame support.

Carrier class.
The Nimbra 600 series and its modules are designed to meet NEBS level 3 specifications for trouble-free operation. In-service swap and remote upgrade options enables carrier class availability.

Compatibility.
The 8 x GbE module is backwards ETS compatible with all the Ethernet boards/ports in the Nimbra One/300 series.

Ease of handling.
Managed by CLI, Web GUI or SNMP, or by Nimbra Vision™ NMS.

TECHNICAL SPECIFICATIONS

Form factor: Plug-in unit for Nimbra 600 series, uses 1 slot Selectable 5 or 10 Gbps backplane allocation.

Interface options:

Small Form-factor Pluggable (SFP)	1000BASE-SX (MM, 850 nm, 550 m)
	1000BASE-LX (SM, 1310 nm, 10 km)
	1000BASE-ZX (SM, 1550 nm, 70 km)
	1000Base-T (UTP, Cat 5, 100m)

Mapping:

DTM:	ETSI ES 201 803-11
QoS channelization:	ETS (Ethernet Transport Service) according to ETSI ES 201 803-7, supporting up to 248 ETS channels per board.
ETS Channel cap:	n x 512 kbps (n = 1 to 19512)

Supported standards:

IEEE 802.1Q	Virtual LANs
IEEE 802.1D-1998	Ethernet Precedence
RFC2474	Diffserv Precedence
IEEE 802.1D-2004	MAC Bridges*

* NPM0020-6001 feature license required

Frame storage:

Packet memory:	128 MB
Max frame size:	9208 B (jumbo frames)

Fault management:

Communication/Equipment alarms	
Defects:	LOS, RBR, AIS, DEG

Performance management:

ITU-T G.826 based	
Bins:	24h, 15min
Parameters:	ES, SES, BBE, UAS

Maintenance:

Hardware:	Hot swap
Firmware:	Remote upgrade

Power consumption: <50W

Management:

SNMP:	v1/v2c/v3
Element Manager:	Web GUI, CLI
Network Manager:	Nimbra Vision

Environmental conditions:

Operating temp:	5 to 40 °C (41 to 104 °F)
(short term):	-5 to 55 °C (23 to 131 °F)
Storage temp:	-40 to 70°C (-40 to 156 °F)
Relative humid:	10% to 90% (non-condensing)

Regulatory compliance:

Safety:	IEC/EN 60950-1
CE marking:	93/68/EEC
EMC:	ETSI EN 300 386
FCC:	Part 15 sub-part B
Laser safety:	CFR 21 1040.10/11
Environmental:	RoHS directive 2002/95/EC

Ordering information:

NPS0043-6001	8 x Gigabit Ethernet Access Module
NPA0012-S011	SFP Module GbE-SX (500m)
NPA0012-L101	SFP Module GbE-LX (10 km)
NPA0012-V701	SFP Module GbE-ZX (70km)
NPA0040-T001	SFP Module GbE-T (100m)
NPM0020-6001	Ethernet Switching Feature License for Nimbra 600
NPM0035-ESH6	Hitless ETS 1+1 Protection Switching Feature License for Nimbra 600
NPM0035-ESH3	Hitless ETS 1+1 Protection Switching Feature License for Nimbra 300

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