COMPACT ACCESS/EDGE SWITCH FOR ADVANCED MEDIA AND DATA SERVICES

Nimbra 360

is a super-charged multi-service access and switching device, for demanding video and data applications.

Applications range from high-end video services such as studio production and contribution, to broadcast distribution in IPTV/Cable TV or DVB-T networks, and as integrated business access. With a built-in Gigabit Ethernet port and 4 SFP trunk ports, for transport over either SDH/Sonet/Optical or IP/MPLS/Ethernet networks, and with two slots free for any of the plug-in units in the Nimbra 300 Series, Nimbra 360 will be a perfect fit in most access/edge applications.

Four OC-3/STM-1 trunk ports are included in the base unit. If needed the unit can optionally be upgraded remotely to use these ports as either 4 x OC-12/STM-4, 2 x OC-48/STM-16 and, from hardware revision B of the base unit, also as 2 x 10/100/1000 IP/Ethernet. This gives the Nimbra 360 an unprecedented flexibility and cost-effectiveness.

Nimbra 360 is fully interoperable with the larger Nimbra One and Nimbra 600 Series of products for central office applications. Like these, its optical control plane supports automated end-to-end provisioning (uni/multicast) and re-routing resilience against network faults.

With its support for IP/Ethernet trunks[1] it can benefit from the availability of cost effective Ethernet last mile connections for the transport of multiple services, with the same ease as for last mile optical/SDH/Sonet connections.

The Nimbra 360 can optionally be augmented by a unique Time Transfer functionality (SDH/Sonet trunks only) in order to provide near-GPS quality timing via fiber for reliable and independent timing support for Single Frequency Networks. This makes the Nimbra 360 especially suitable for distribution of Digital Terrestrial Television. With up to 16 ASI ports and a Gigabit Ethernet port, support for any topology QoS multicast and with a carrier class optical control plane it is ready to take on the task of nationwide DVB-T (MFN or SFN) distribution.

The functionality is housed in a slim 2 RU device that can be installed in either a standard 19'' rack or stand-alone. Redundant -48VDC direct feeding or optional 115/230VAC power supplies ensures reliable and trouble-free operation, both in telco central offices or PoPs or in studio/post production offices environments.

Nimbra 360 represents a quantum leap in advanced media/data transport solutions housed in a small outline for advanced media networking applications, for transport of virtually any service over any media.

“Quantum leap... ...any service over any media”

COST-EFFECTIVE MULTISERVICE ACCESS/EDGE SWITCH OPTIMIZED FOR PROVIDING AN ALL-IN-ONE MEDIA DISTRIBUTION SOLUTION

(Picture displays Nimbra 360 with two optional 8 x ASI Transport Access Modules inserted)
[1]) IP/Ethernet trunks supported in HW revision B of the base unit

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KEY FEATURES

The most important characteristics of the Nimbra 360 are:

- **Multi-service.** The Nimbra 360 supports a broad range of services, such as studio and broadcast video, data, and voice on the same platform.
- **Bandwidth management.** The Nimbra 360 handles bandwidth for services with unsurpassed flexibility. Services such as Ethernet or ASI can have bandwidth allocated with strict quality-of-service in increments of 0.5 Mbps.
- **Guaranteed QoS.** Services enjoy guaranteed quality of service, independent of network load. This translates to much higher utilization of the infrastructure, without loss of QoS.
- **Enhanced Ethernet functionality.** Nimbra 360 supports the Ethernet Transport Service that channelizes the Gigabit Ethernet interface into a configurable number of independent channels, each with strict bandwidth management and guaranteed QoS. Each channel can be independently destined to any node in the network.
- **Switching capability.** The Nimbra 360 supports switching and can thus be configured in any network topology, such as point-to-point, rings and mesh. They can be networked by themselves or together with the other switches in the Nimbra series.
- **Carrier class.** The Nimbra 360 is designed to meet demanding operator requirements on availability and ease of handling. It thus has flexible options for protection switching, extensive fault and performance monitoring and hot swap of interfaces.
- **Extensive management options.** The Nimbra 360 can easily be managed by CLI, Web GUI or optional Nimbra Vision™ or 3rd party NMS.

IP/Ethernet Trunk Option:

- **Enhanced QoS.** FEC (Forward Error Correction), buffers and play-out functions are implemented to minimize potential Quality of Service degradations caused by the underlying packet network.

TECHNICAL SPECIFICATIONS:

Dimensions (HxWxD)	88mm(3.5'')x445mm(17.5'')x240mm(9.4''), IEC 60297 (19''), ETSI EN 300 119 compatible
Number of slots:	2, can be fitted freely with the plug-in modules specified below
Fixed accesses/trunks:	
1 x Gigabit Ethernet (access)	SFP port, channelized with QoS BW mgmt, 802.1Q/1p support, QoS multicast support
4 x multirate SONET/SDH (trunk; OC-3/STM-1 included default)	4 SFP ports, STS-3c (ANSI T1.105)/STM-1 (ITU-T G.707) framing, STS-3c SPE /VC-4 Synchronous (ETSI ES 201 803-4) mapping. Other rates optional, see Ordering information.
Or	
2 x IP/Ethernet (trunk)	2 SFP ports, supporting 1000BASE-T (10/100/1000) or 1000BASE-SX/LX (optical) SFPs (Optional, see Ordering information)
Switch capacity:	5 Gbps
Power:	
Power inlet	2 x -48 VDC (115/230VAC with external converter)
Dissipation	<80W fully equipped
Synchronization:	
Input:	2.048 MHz (1.544 Mhz) ITU-T G.703 §13
Output:	2.048 MHz
Internal osc.	Stratum 3, (optionally low phase noise (LPN) version available)
Time Transfer option	2 x 1 PPS + 2 x 10 Mhz 50 Ohm BNC, configurable in/out
Performance management:	Based on ITU-T G.826, ES/SES/UAS/BBE/SS 15min/24h bins
Management:	
Element Mgmt	Command Line Interface (CLI), Web GUI
Network Mgmt	SNMP v1/v2c/v3, Nimbra Vision™ or 3rd party NMS

Environmental conditions:	
Operating temp.	5 to 40 ºC (41 to 104 ºF)
(short term)	-5 to 55 ºC (23 to 131 ºF)
Storage temp.	-40 to 70ºC (-40 to 156 ºF)
Relative humid.	10% to 90% (non-condensing)
Regulatory compliance:	
Safety	UL60950-1 EN60950-1
Laser safety	CFR 21 1040.10/11
EMC	FCC 15 Class A EN 300 386
CE marking	93/68/EE

Available plug-in units:

Accesses:	Trunks:
2 + 2 x SDI Video Access	2 x OC-48c/STM-16c
8 x ASI Transport Access	2 x OC-12c/STM-4c
1 x Gigabit Ethernet	4 x OC-3c/STM-1
8 x Fast Ethernet	2 x OC-3c/STM-1 with FEC
4 x OC-3/STM-1	4 x DS3/E3
4 x DS3/E3	1 x 1 Gbps Optical
8 x PDH E1	
8 x PDH T1	
8 x AES/EBU	

Ordering information:

NPQ0013-DW01	Nimbra 360 Base Unit, including 4 x OC-3/STM-1 firmware
NPQ0013-DWG1	Nimbra 360 Base Unit, LPN oscillator option
NPM0016-3004	4 x OC-12/STM-4 firmware for Nimbra 360
NPM0016-3016	2 x OC-48/STM-16 firmware for Nimbra 360
NPM0016-3ET2	2 x IP/Ethernet Trunk firmware (Requires HW revision B or later of the base unit)
NPM0017-36T1	Time Transfer firmware for Nimbra 360
NPA0031-3401	AC/DC Converter
SFP modules:	See SFP modules product data sheet

NET INSIGHT - FOR SCALABLE MULTISERVICE NETWORK SOLUTIONS

Net Insight delivers the world's most efficient and scaleable optical transport solution for Broadcast and Media, Digital Terrestrial TV, Mobile TV and IPTV/CATV networks.

Net Insight products truly deliver 100 percent Quality of Service with three times improvement in utilization of bandwidth for a converged transport infrastructure. Net Insight's Nimbra™ platform is the industry solution for video, voice and data, reducing operational costs by 50 percent and enhancing competitiveness in delivery of existing and new media services.

World class customers run mission critical video services over Net Insight products for more than 100 million people in more than 30 countries. Net Insight is quoted on the OMX Nordic Exchange Stockholm. For more information, visit: **www.netinsight.net**

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