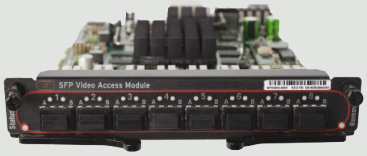
SFP Video Access Module J2K

Video Access and Processing for the Nimbra 600 MSR

MODULE



The SFP access module allows flexible addition of value-added services through intelligent SFPs as well as efficient aggregation of lastmile optical connections.

The SFP Video Access Module features electrical and optical SFP based video interfaces for transport of uncompressed or JPEG2000 compressed 3G/HD/SD-SDI, ASI and SMPTE 2022 IP with industry's highest video quality and guaranteed QoS.

SFP Based Video Interface

The SFP based front-end provides both optical and electrical video interfaces and with support for intelligent SFPs, the SFP Video Access Module enables a cost-efficient approach to integrate value added video processing services into the Nimbra transport solution.

Analogue/digital conversion, DVI/HDMI conversion, as well as an integrated video frame synchronizer is supported today, and the generic iSFP interface allows customers to benefit from future intelligent SFP development to open up for integration of new applications as they become available.

Flexible multi-purpose video interfaces

The board transparently transports up to eight independent 3G/HD/SD-SDI, ASI or SMPTE 2022 IP streams, in any mix and in any direction. In addition it is possible to enable up to four JPEG2000 encoders or decoders for flexible transport of both compressed and uncompressed video. The SFP Video Access Module is a perfect match to the Nimbra 140 series
for aggregation and long-haul transport of optical first/last mile connections.

High capacity transportation

Each SFP Video Access Module is capable of transporting up to 10+10 Gbps uncompressed or JPEG2000 compressed video.

The module supports 4K and even 8K stream synchronization for trouble free, low bandwidth operation

A Nimbra 600 series MSR can be equipped with up to 15 modules, which makes the Nimbra 600 series switches a true carrier-class media transport platform. Scalable configuration and pricing enables cost efficient solutions for live event contribution, inter-studio connect and remote production.

Unprecedented Quality of Service

Availability is a key issue for all professional media applications. With the Nimbra unique lossless routing over SDH/Sonet and IP/Ethernet together with built-in network restoration and integrated hitless 1+1 protection, a robust and flexible protection switching solution is offered. The SFP Video Access Module is hotswappable and can be configured for various interface and hardware redundant options. Network management features include end-to-end service provisioning, performance management, as well as flexible monitoring and loopback capabilities.

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KEY FEATURES

8 SFP ports.
8 ports for electrical and optical SFPs are accommodated on a single board. Each port can be configured as ASI, 3G/HD/SD or SMPTE 2022 IP, JPEG2000 compressed or uncompressed, within the total bandwidth limits.

Support for Intelligent SFPs.
The SFP ports can accommodate both optical and electrical VSFPs as well as intelligent SFPs. Intelligent SFPs enable new value-added services, such as E/O conversion, analogue/digital conversion, and DVI/HDMI conversion.

Low-latency JPEG2000 compression.
ISO/IEC 15444-1 compliant encoding/decoding of up to four streams. Support for compression of 3G/HD/SD-SDI with very low encoding/decoding latency.

Quality of service protected transport.
Implements Nimbra MSR QoS and re-clocking mechanisms for lossless media transport over both SDH/Sonet and IP/Ethernet.

Autosense support.
The board supports automatic detection and forwarding of 3G/HD/SD-SDI, ASI or SMPTE 2022 IP signals.

Integrated video frame synchronizer.
Up to 7 individual video frame synchronizers enable synchronous playout of SDI streams aligned to an external synch reference or studio clock.

Extremely low jitter and wander.
The module utilizes the unique synchronous timing performance of the Nimbra switches in order to deliver video streams with extremely low jitter, wander and latency.

4K / 8K
The module supports synchronized 4K or 8K streams by simply adding a SW license, thereby eliminating the need for a troublesome forklift upgrade of network equipment.

Service-centric performance monitoring.
Standard performance metrics to ITU-T G.826 both at each video input interface and for individual services end-to-end.

Hitless 1+1 protection.
Supports multiple protection options, configurable per service, including hitless 1+1 protection (JPEG2000, ASI), standby 1+1 protection (all services).

TECHNICAL SPECIFICATIONS

Form factor: Plug-in unit for Nimbra 600 Series switches, 1 interface slot

Interface, common:
Ports: 8 x SFP, configurable 3G/HD/SD-SDI or ASI, In/Out/Monitor
Return loss: >10 dB @ 3G, >15 dB @ HD, > 20 dB @ SD

Interface, 3G SDI:
Standard: SMPTE 424M 3 Gbps SDI
Frequency: 2.97 or 2.97/1.001 Gbps

Interface, HD SDI:
Standard: SMPTE 292M HD-SDI, SMPTE 348M HD-SDT, SMPTE 297-2006I
Frequency: 1.485 or 1.485/1.001 Gbps

Interface, SD SDI:
Standard: SMPTE 259M SD-SDI, SMPTE 305M SD-SDTI, SMPTE 297-2006
Frequency: 270 Mbps

Interface, ASI:
Standard: DVB-ASI, CENELEC EN 50083-9
Frequency: 270 Mbps

Interface, SMPTE 2022 IP:
Standard: SMPTE 2022-6

JPEG2000:
Standard: ISO/IEC 15444-1
Capacity: Sum of compressed streams < 1000 Mbps
Ranges: SD-SDI: 10 – 50 Mbps (max 4 streams)
HD-SDI: 10 – 250 Mbps (max 4 streams)
3G-SDI: 10 – 500 Mbps (max 2 streams)

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

Management:
SNMP: v1/v2c/v3
Element Manager: Web GUI, CLI

Maintenance:
Hardware: Hot-swap
Firmware: Remote download

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: UL60950
EN60950
EMC: FCC 15 Class A
EN 300 386
CE marking: 93/68/EE
Environment: RoHS directive 2002/95/EC

Ordering Information:
NPS0054-6F01 IF624 - SFP Video Access Module J2K
NPM0037-64VF Video Port Feature License
NPM0031-6H1F J2K Processing Feature License
NPM0021-6FSF Frame Synchronizer Feature License
NPM0048-4KF1 4K Feature license (incl NPM0021-6FSF)
NPM0035-EH6F Hitless 1+1 Feature License

SFPs are ordered separately. See Video SFP data sheet.

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