



flexiHaul™

Flexible Fronthaul and Backhaul Solution for 4G and Beyond

HSN-8500 PRODUCT OVERVIEW

HSN-8500 is the largest member of the cost-effective and highly scalable flexiHaul™ product line. This unit is usually deployed in central offices or BBU hotels. Like the other units in the flexiHaul product line, HSN-8500 has a flexible, pay-as-you-grow architecture with plug-in service cards, thereby allowing the customer the ability to choose any combination of supported services as well as facilitate easy operation and maintenance. This 5U unit includes twenty service slots used to transport different Fronthaul services via CWDM / DWDM over dark fiber.

HSN-8500 serves as an aggregator for the full flexiHaul line-up where the following units serve as remote terminals: HSN-8300, HSN-8100 and HSN-8110.

HSN-8500 supports point to point, ring and linear chain are supported with ring protection. In addition, HSN-8500 is efficiently managed by EMS, which provides the necessary tools for both traffic provisioning and overall system monitoring.

Primary Applications

- . CPRI /OBSAI fronthaul interface in C-RAN architecture between BBU and RRHs
- . Ethernet backhaul interface for distributed RAN architecture
- . TDM backhaul interface for 2G BTS
- . G-PON backhaul for small cells such as Femto and Wi-Fi
- . Wavelength switching, grooming and aggregation

Enabling the C-RAN fronthaul and small cell backhaul in a single box



[HSN-8500]

Key Features

- . CPRI (option 2, 3, 5, 7), OBSAI (3.072, 6.144 Gbps), GbE, G-PON, E1, STM-1
- . Multi-protocol support
- . Supports 1 or 2 rings
- . 4 x CPRI muxing into a 10 Gbps line
- . CPRI delay (one-way) : transponder < 1 μ s, muxponder < 3 μ s
- . Jitter : less than \pm 2 ppb
- . Ring protection less than 50 ms
- . FEC (Forward Error Correction) support
- . Topology : point to point, ring, linear chain

Architecture

- . High scalability (Max. 88 ports CPRI)
- . Plug-in architecture: any module in any slot

OAM and maintainability

- . Local / remote logical loopbacks
- . Connectivity, signal level, delay, distance measurement
- . Alarms, statistics, performance monitoring
- . Remote management via optical supervisor channel (OSC)

HSN-8500 SYSTEM SPECIFICATION

System Capacity

Service slots	22
CPRI capacity	Up to 88 channels
CWDM / DWDM	ITU-T G.694.1, ITU-T G.694.2
Transmission distance	Up to 20 km

Channel Interface

Service interface	CPRI (option 2, 3, 5, 7), OBSAI (3.072, 6.144 Gbps), GbE, G-PON, E1, STM-1
Optical connector type	LC / APC, LC / PC, SC / APC

Muxponder / Multi-rate transponder

Muxponder	4 ports CPRI (option 2, 3) / OBSAI (3.072 Gbps) 2 ports CPRI (option 5) / OBSAI (6.144 Gbps)
Multi-rate transponder	4 ports CPRI (option 3, 5, 7) / OBSAI (3.072, 6.144 Gbps)

Configurations / Power / Environmental

Point-to-Point	Hub and spoke configuration
Ring	Up to 2 rings
Power	- 42 to - 60 VDC
Environmental	Operating : - 20 °C to 60 °C Humidity : 10 % to 90 %

Protection / Switching

Switching time	< 50 ms
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OAM

Fault control	Alarm severity : critical, major, minor, warning
Classification level	Unit, module, port
Performance monitoring	15 min, past day
Line/ CPRI error monitoring	BIP, CV, ES, SES, UAS, Input / Output power of CPRI / OBSAI channels
Test function	Local / remote loopback Delay time
Ext. equipment control	12 port open / closed external equipment warnings
Visual LED Indicators	System activity, system failure, ACO, alarms status (critical, major, minor)

Network Management

Operation	EMS (server, client), Craft Terminal Interface
Protocols	TL-1
Physical interface	10 / 100 / 1000Base-TX

Physical Characteristics

Dimension	19" 220 (H) x 483 (W) x 435 (D) mm
Power consumption	770 W (Fully loaded)

Supported Service Modules

OTU3F

Type	3 ports CPRI / OBSAI Transponder
Protocols	CPRI (option 3, 5), OBSAI (3.072, 6.144 Gbps)
Client / WDM ports	3/3
FEC support	non
CPRI dealy(one-way)	< 1 μ s

ATU3F

Type	3 ports CPRI / OBSAI Transponder
Protocols	CPRI (option 3, 5), OBSAI (3.072, 6.144 Gbps)
Client / WDM ports	3/3
FEC	support
CPRI dealy(one-way)	< 1 μ s (without FEC)

OTU4G

Type	4 ports CPRI or 3 ports CPRI + 1 port GbE Transponder
Protocols	CPRI (option 3, 5, 7), GbE
Client / WDM ports	4/4
FEC	support
CPRI dealy(one-way)	< 1 μ s (without FEC)

604TU

Type	Ethernet Transponder
Protocols	4 ports GbE
Client / WDM ports	4/4
FEC	non

OTU10G

Type	4 ports CPRI Muxponder
Protocols	Client side : CPRI (option 2, 3) WDM side : 10 Gbps
Client / WDM ports	4/1
FEC	non
CPRI delay (one-way)	< 3 μ s

ATU10G

Type	4 ports CPRI Muxponder or 2 ports CPRI + 2 ports GbE
Protocols	Client side : CPRI (option 2, 3, 5), GbE WDM side : 10 Gbps
Client / WDM ports	4/1
FEC	non
CPRI delay (one-way)	< 3 μ s