flexiHaul™

Flexible Fronthaul and Backhaul Solution for 4G and Beyond

HSN-8300 PRODUCT OVERVIEW

HSN-8300 is a member of the cost-effective and highly scalable flexiHaul™ product line. At 3U in height, HSN-8300 is also compact.
Like the other units in the flexiHaul product line, the HSN-8300 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 unit includes eight service slots used to transport service via CWDM/ DWDM over dark fiber.

HSN-8300 supports point to point, ring and linear chain are supported with ring protection. In addition, HSN-8300 is efficiently managed by EMS, which provides the necessary tools for both traffic provisioning and overall system monitoring.

Dual Purpose Configuration

A unique feature of HSN-8300 is that it can serve two different purposes in C-RAN and small cell networks. It can function as either of the following:
. A Mid-sized Aggregation Unit - In this type of configuration, HSN-8300 can be deployed in central offices or BBU hotels and would interface with the remote units, HSN-8100 and HSN-8110.
. A Remote terminal for HSN-8500 aggregator - In this configuration, HSN-8300 is placed in a remote location near to RRHs it is servicing.

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

[HSN-8300]

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 10 Gbps line
. CPRI delay (one-way) : transponder < 1 μs, muxponder < 3 μs
. Jitter : less than ± 2 ppb
. Ring protection less than 50 ms
. FEC (Forward Error Correction) support
. Topology : point to point, ring, linear chain

Architecture

. High scalability (Max. 36 ports CPRI)
. Plug-in architecture: any module in any slot

OAM and maintainability

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

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

HFR, Inc. *for* Mobile Internet

HSN-8300 SYSTEM SPECIFICATION

System Capacity

Service slots	9
CPRI capacity	Up to 36 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

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", 134 (H) x 483 (W) x 435 (D) mm
Power consumption	339 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 μs

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 μs (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 μs (without FEC)

GO4TU

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 μs

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 μs

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