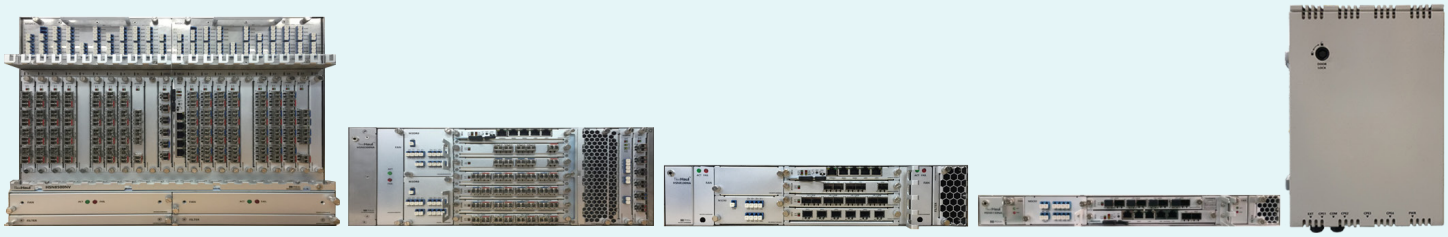
flexiHaul C-RAN 8000 Solutions

HSN8000 Series: Pay-As-You-Grow Architecture for Optimal Performance, Rapid Service Deployment, and Cost Effective Operations



HSN8500 ***HSN8300*** ***HSN8100*** ***HSN8130*** ***HSN8120***

Flexible xHaul Solution for 4G and 5G

HFR Networks' flexiHaul C-RAN 8000 xHaul solutions offer a complete portfolio of CPRI and Ethernet over WDM solutions for cost effective and high performance transportation of mobile traffic and Carrier Ethernet offerings. These field proven WDM solutions support CPRI transport with low latency, minimal jitter, and unparalleled flexibility across active or passive WDM. HFR Networks' solutions have been proven in large scale customer deployments at leading global tier one mobile operators. These C-RAN solutions enable service providers to rapidly expand mobile services, especially when fiber is constrained and it is imperative to quickly to add capacity to create new revenue streams.

Feature Rich, Pay-as-You-Grow Architecture

The flexiHaul C-RAN 8000 series is a highly scalable solution portfolio built on a flexible, pay-as-you-grow architecture to achieve cost effective CAPEX/OPEX and an optimal return on investment. Utilizing a diverse set of plug-and-play service cards, the flexiHaul 8000 series allows a carrier to choose any combination of supported services and facilitates easy operation and maintenance.

Integrated Carrier-Class Element Management System: Greatly Simplifies Network Operations

The flexiHaul C-RAN 8000 series is efficiently managed by HFR Networks' flexiHaul Element Management System (EMS) which provides the necessary tools for effortless set-up, traffic provisioning, integrated test measurement, and ongoing system monitoring. The flexiHaul EMS offers full visibility and operational control into remotely deployed RAN transport and Ethernet access equipment. Pre-integrated with HFR Networks' solutions, this highly scalable, carrier-class software solution runs on commercial off-the-shelf hardware or in a cloud instance. It ensures operators can quickly install new services while maintaining higher performance in order to exceed their customers' service level agreements (SLAs). Highly intuitive, the flexiHaul EMS helps optimize operations across a range of xHaul and Ethernet access service use cases, including mobile fronthaul/ backhaul applications and converged Carrier Ethernet offerings.

Key Features

- Proven CWDM/DWDM supports CPRI transport with low latency and reduced jitter
- Enables the expansion of mobile services quickly, especially when fiber is constrained
- Maximizes fiber efficiency while supporting a mix of mobile and Ethernet services
- Delivers increased performance to meet timing requirements for mobile applications
- Offers field tested interoperability across leading RAN vendors and Carrier Ethernet OEMs
- Provides centralized components and lowers OPEX with rich OAM features
- Integrated EMS enables full visibility, control, and monitoring for effortless operations

flexiHaul C-RAN 8000 Series Portfolio

The flexiHaul C-RAN 8000 series is comprised of a variety of models, each with a particular form factor designed to address the specific application needs of mobile networks.

- **The flexiHaul HSN8500** serves as an aggregator for the full flexiHaul series in instances when the HSN8300 and HSN8100 serve as remote terminals. It supports point to point, linear chain, point to multi-point and ring with ring protection.
- **The flexiHaul HSN8300** supports point to point, linear chain, point to multi-point and ring with ring protection.
- **The flexiHaul HSN8100** supports point to point, linear chain, point to multi-point and ring with ring protection.
- **The flexiHaul HSN8130** supports point to point and linear chain topologies.
- **The flexiHaul HSN8120 Pole Mount Transport** is used to transport CPRI and GbE services from a small cell site as a remote terminal for the following models: HSN8500, HSN8300 or HSN8100 aggregator. It supports point to point and linear chain topologies.

		HSN8500	HSN8300	HSN8100	HSN8130	HSN8120
Fronthaul Transport at 4G and 5G Cell Sites		✓	✓	✓	✓	✓
Ethernet Midhaul and Backhaul Integrated Solution		✓	✓	✓	✓	N/A
Wavelength Aggregation		✓	✓	✓	✓	✓
Physical Characteristics	Dimensions	355(H) X 481(W) X 300(D) mm	177(H) X 483(W) X 298(D) mm	88(H) X 483(W) X 300(D) mm	44(H) X 483(W) X 300(D) mm	376(H) X 276(W) X 159(D) mm
	Weight	27.1 kg (59.6 lbs)	11.3 kg (24.9 lbs)	6.8 kg (14.9 lbs)	4.0 kg (8.8 lbs)	13.0 kg (28.7 lbs)
	Mounting Type	19” or 23” Rack Mount				Wall or Pole
System Capacity	Service Slots	20	6	2	1	N/A
	Chassis Capacity	80 Channels	24 Channels	8 Channels	4 Channels	4 Channels
	CWDM/DWDM	ITU-T G.694.1, ITU-T G.694.2				
	Distance	Up to 40 km				Up to 15 km
Channel Interfaces	Service Interfaces	CPRI: 2/3/4/5/7/10, OBSAI 3G/6G, eCPRI/RoE/xRAN up to 25Gbps, GbE, 10GbE, 25GbE				CPRI: 2/3/4/5/7/8, GbE, 10GbE
	Connector Type	LC/UPC				
Transponder Options	CPRI	4 Ports: CPRI 2/3/4/5/7/8 3 Ports: CPRI 10				4 Ports: CPRI 2/3/4/5/7/8
	OBSAI	4 Ports: 3G/6G				N/A
	Ethernet	4 Ports: GbE, 10GbE				
	eCPRI/RoE/xRAN/ Ethernet	3 Ports: eCPRI/RoE/xRAN up to 25G, 25GbE				N/A
Service Modules	Supported Transponders	RoE3J: 3 Port 25G Transponder				N/A
		ETU4G: 4 Port Ethernet Transponder				N/A
		OTU4G: 4 Port Enhanced Transponder				N/A
		OTU4X: 4 Port Universal Transponder				
Main Control Unit	Type	Main Control Process Unit				Main Control Unit for Outdoor
	Console Port	RS-232C x 1 Port				RS-232C x 1 Port (via RJ-45)
	Management Ports	100/1000 Base-TX x 2 Ports (WAN)	100/1000 Base-TX x 2 Ports (WAN)	100/1000 Base-TX x 2 Ports (WAN)	10/100 Base-TX x 1 Port (WAN)	10/100 Base-TX (via RJ-45)
	Local Management Ports	100/1000 Base-TX x 2 Ports (LAN)	100/1000 Base-TX x 2 Ports (LAN)	100/1000 Base-TX x 2 Ports (LAN)	10/100 Base-TX x 1 Port (LAN)	N/A
Regulatory & Compliance		FCC Part 15 Class A , CE Mark , UL 60950-1, IEC 60950-1				
		IC (Canada EMI), CB, NEBS Level 3, Class 1				IC (Canada EMI), CB, NEBS Level 3, Class 4, Enclosure Protection IP65
		ATT-TP-76200, Issue 19, June 2014				
		VZ TPR 9205, Issue 5, October 2011				

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