flexiHaul Packet M6208E TSN Switch for Hardened Environments

Compact Self-contained Solution Provides Flexibility Serving Challenging Sites

Blends xHaul Services Across:

4G/LTE
5G
Ethernet

HFR Networks' M6208E Packet TSN Solution

The M6208E, HFR Networks' flexiHaul packet M-Series solution for hardened environments, is a scalable TSN switch that delivers superior economics combining RAN transport with other traffic types such as Ethernet services. The M6208E's state-of-the-art, high performance design enables advanced mobile networking architectures and applications.

The M6208E, an intelligent platform with a rich software feature set, blends xHaul services across 3G, 4G, LTE, 5G and Ethernet at the remote radio heads (RRHs). Within a compact hardened form factor, the M6208E is ideal for rural or space-constrained environments (such as venues or along railway lines) and fixed wireless access since it saves valuable space to enable economical and rapid site deployments.

The M6208E connects radios with ultra low latency using Common Public Radio Interface (CPRI) and eCPRI supporting modern centralized or cloud-based architectures. Encapsulating CPRI traffic, the M6208E utilizes IEEE 1914.3 compliant Radio over Ethernet mappers with integrated timing synchronization to provide higher performance, simplified operations and significant cost savings. Extending fiber capacity, HFR Networks' M6208E speeds time to market, ensures a smooth evolution to 5G, creates additional revenue streams by enabling new services.

Key Benefits:

- Significantly lowers the total cost of ownership (TCO) for fronthaul service, increases turn-up time savings, and simplifies spares inventory management.
- Supports 400 Gbps-scale non-blocking performance aggregating and switching radio traffic fronthaul links. Preemption enables the support of mixed Ethernet services with mobile traffic.
- Enables multiple carrier isolation using a shared infrastructure with independent carrier services and structure agnostic mapping mode for encapsulation and transport of radio traffic.
- Provides an open, standards-based solution to normalize operations across leading 3rd party RAN suppliers – ending vendor lock-in and eliminating interoperability problems in mixed CPRI implementations.
- Allows better utilization of deployed fiber infrastructure for remote radio head connectivity thus reducing costs and delays associated with additional fiber investments.

System Characteristics

Dimensions (H x W x D)	457.9mm x 457.1mm x 340.1mm
Weight	27.61 kg
Power Consumption	449 W (Fully Loaded)
Mounting Type	Wall/Pole Mount
Port Configuration	2 Ports x 100G, 8 Ports x 25G
Switching Capacity	400 Gbps

Interfaces

SFP+/SFP28 Ports	8 Ports Up to 25GbE, 10G/25G eCPRI, CPRI 3/5/7/8/10
QSFP28 Port	2 Ports 100GbE, 25GbE
Management Port	100/1000 Mbps Ethernet RJ-45
Console Port	RS-232C RJ-45

Power/Environmental

DC Power Supply Unit	
Power Requirements	–48V DC (-40 to -56V DC)
Environmental	Operating: -40 °C to 70 °C ER-3018 Class 4: -40 °C to 46 °C with Solar Loading Humidity: <5 to 100% RH

Network Management

Operating	EMS (Server, Client), Local Craft Terminal
Protocols	NETCONF/YANG, SNMP Trap

L2 Features

Double Tagging	802.1Q and QinQ
VLAN Translation	VLAN Translation
H-QoS	Three-level H-QoS
Link Aggregation	LACP, Static LAG
Jumbo Frame	9K Bytes

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Radio over Ethernet

Structure Agnostic	IEEE 1914.3: Radio over Ethernet Encapsulations w/Structure Agnostic Mode
Tunneling	IEEE 1914.3: Radio over Ethernet Encapsulations w/Tunneling Mode
Structure Aware	IEEE 1914.3: Radio over Ethernet Encapsulations w/Structure Aware Mode

Time Sensitive Network

IEEE 802.1CM	Time-Sensitive Networking for Fronthaul
IEEE 802.1Qbu	Frame Preemption
IEEE 802.3br	Interspersing Express Traffic

Time Synchronization

Precision Timing Protocol	IEEE 1588v2 BC/OC G.8273.2 Class C/D
PTP Profile	G.8275.1: PTP Telecom Profile for Phase/Time Synchronization with Full Timing Support from the Network
Synchronous Ethernet	G.8262: Timing Characteristics of a Synchronous Ethernet Equipment Clock G.8263: Timing Characteristics of Packet-based Equipment Clocks G.8264: Distribution of Timing Information Through Packet Networks

OAM

Ethernet OAM	IEEE 802.3ah, TWAMP Reflector
Fault Control	Alarm Severity: Critical, Major, Minor
Classification Level	Unit, Module, Port
Performance Monitoring	15 MIN/24 HR
Telemetry	Telemetry Streaming gRPC
Loopback	Local / Remote
Authentication	RADIUS

Regulatory & Compliance

FCC 47 CFR Part 15 Class A, CE Mark, UL 60950-1, IEC 60950-1
IC (Canada EMI), CB, NEBS Level 3, Class 4, Enclosure Protection IP65
VZ TPR 9205, Issue 5, October 2011
ATT-TP-76200, Issue 19, June 2014

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