

# HARMONY HUB 800

ADAPTABLE MULTI-SERVICE NODAL SWITCH



**DESIGNED FOR BOTH SMALL AND LARGE MICROWAVE HUBS, THE HARMONY HUB 800 PROVIDES ADVANCED MULTI-SERVICE AGGREGATION AND ETHERNET SERVICES.**

Part of DragonWave's Harmony backhaul solution, the Harmony Hub 800 is a compact indoor unit which provides maximum flexibility for 2G, 3G and LTE traffic aggregation. The Harmony Hub 800 is the perfect backhaul node for Harmony Radio systems, with 16 Gbps switching capacity, and support for up to 12 radio directions in a single unit.

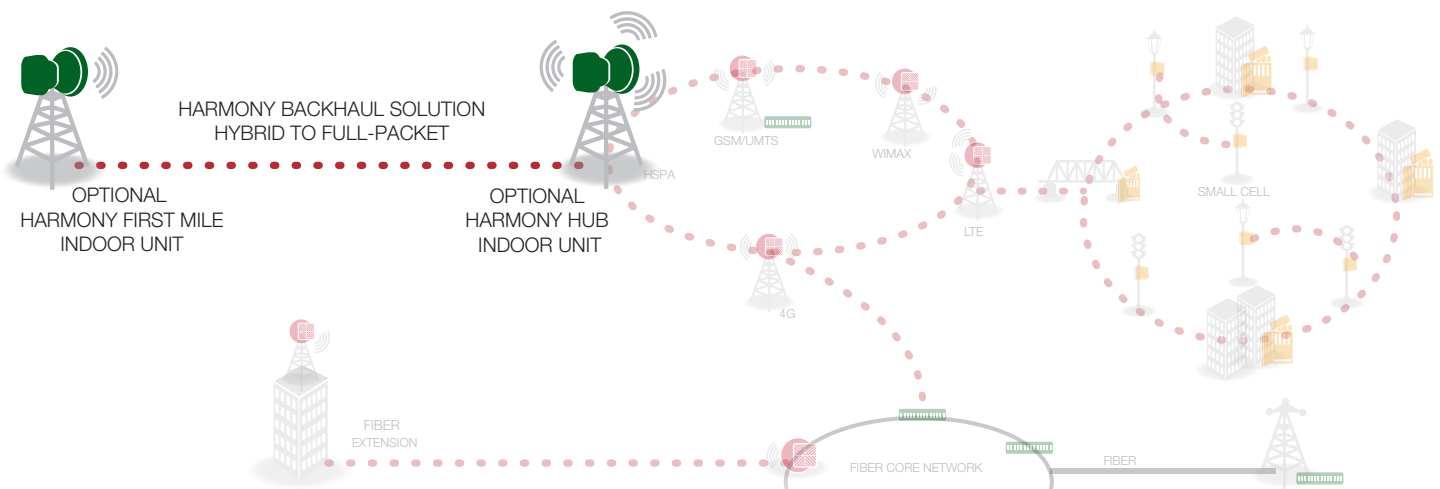
In addition to supporting advanced Ethernet processing features, the Harmony Hub 800 can carry TDM traffic natively or via circuit emulation – a simple and cost effective solution for operators moving to converged packet networks.

Optimized for mobile network evolution, the Harmony Hub 800 supports advanced clock synchronization and recovery mechanism including Synchronous Ethernet, IEEE 1588v2 (Master, Slave and Boundary clock functionality) and Differential Clock Recovery (DCR).

The Harmony Hub 800's high density TDM and Ethernet access interfaces include Fast and Gigabit Ethernet, E1/T1, and channelized STM-1, as well as two expansion slots.

**SOLUTION HIGHLIGHTS**

- High density node supporting up to 12 directions and 16 Gbps switch throughput
- 802.1ad provider bridging
- E-LINE and E-LAN services with MEF9 and MEF14 certification
- Advanced QoS with 8 priority queues, policing, Simple Random Early Detection/Discard (SRED)
- Ethernet OAM: 802.1ag, 802.1ah and ITU-T Y.1731
- Advanced clock synchronization with SyncE and 1588v2
- Multi-service platform with CESOP, SATOP, MLPPP termination and Ethernet over SDH
- Power-plus-Ethernet support for Harmony Radio
- Multiple protection configurations such as 1+1 and 2+0
- RSTP/MSTP, G.8031, G.8032 Network protection and CES Linear Protection
- Up to 48 x E1/T1 and 2 x STM-1 TDM ports
- 12 x 100/1000BaseT and 2 x SFP Ethernet interfaces



**SWITCHING CAPACITY**

16 Gbps

**ETHERNET PORTS (MAIN BOARD)**

4 x 10/100/1000 Base-T, two of which have embedded power (Power over Ethernet)

2 x SFP (can be configured as 1000 Base-Fx or STM-1)

**TDM PORTS (MAIN BOARD)**

16 x E1/T1/J1

2 x SFP (can be configured as 1000 Base-FX or STM-1)

**EXPANSION SLOTS**

4-port GE card (optical or electrical)

16 x E1/T1/J1 CES/MLPPP card

2-port STM-1; supports STM-1 EoS and STM-1 Clear Channel CES

2-port Power Injector card (providing 2 x P+E ports)

2-port FlexBus card

**SYSTEM PORTS**

1 x 10/100/1000 Base-T out-of-band management port

1 x 10/100/1000 Base-T DCN management port

1 x dry contact (2-in and 2-out)

1 x 1pps clock and ToD output port

**SERVICES**

E-Line and E-LAN service

E1/T1/J1 CESoPSN (RFC5086)

E1 SAToP (RFC4553)

STM-1 SAToP

STM-1 clear channel CES

nx64Kbps grooming for E1 CES

**NETWORK TYPES**

Packet-based microwave

Hybrid microwave

TDM and packet transport networks

**BRIDGING AND VLAN MANIPULATION**

IEEE802.1ad provider bridging

MAC table size: 16K

Support for Static MAC

VLAN insertion and translation

**PERFORMANCE MONITORING**

Packet counters according to RFC2819 RMON MIB, RFC2863

Y.1731 performance measurement

**QUALITY OF SERVICE (QoS)**

Traffic classification and mapping based on port, MAC, VLAN ID, VLAN priority bits, IP address, DSCP, etc.

Policing on port, service, and queue

8 priority queues per port

Scheduler: Strict Priority, WDRR, WRR

Congestion Control: sRED

Per-port and per-queue traffic shaping

Frame coloring per 802.1ad PCP

**FAULT DETECTION**

Y.1731/802.1ag

**PROTECTION**

xSTP based network protection

Link Protection Group (LPG) for 1+1 and 2+0

LAG

G.8031, G.8032

50ms CES 1+1 linear protection

Dual-IDU redundancy

**CLOCK SYNCHRONIZATION**

Differential Clock Recovery (DCR)

Synchronous Ethernet with and without SSM

IEEE 1588v2 Master, Slave, and Boundary Mode

Clock sources: Network clock via DCR and 1588v2  
Line clock from any E1/T1 port  
Synchronous Ethernet SSM  
Internal free-run clock  
GPS (Global Positioning System)

**SUPPORTED ODU CONFIGURATIONS**

1+0

1+1 space diversity/frequency diversity, 1+1 HSBY

2+0 FD/XPIC (with load sharing), 2+0 drop/insert and forwarding

**POWER**

Supply: -40.5 to -57.6 VDC (two inputs)

Consumption: Typical: 35W, Maximum 45W

**ENVIRONMENTAL**

Operating Temperature Range: -5°C to + 55°C / 23°F to 131°F

**DIMENSIONS & WEIGHT**

44 cm x 24 cm x 4.45 cm; 2.3 kg

17.3" x 9.4" x 1.75"; 5.1 pounds