

Wharf Switch (DAAS)

DISTRIBUTED ACCESS ARCHITECTURE



The Wharf is a high-performance, multi-function router that provides enhanced connectivity for residential broadband, enterprise-class data services, and long-range optical transport.

Wharf simplifies planning, design, implementation, and operation of complex outside plant optical distribution networks used by broadband providers. The multi-purpose device functions as an aggregation point within the network for fiber-to-the-anything (FTTx) applications, business-service internet, backhaul for cell towers, and extension of distributed access architecture networks that link to nodes for cable broadband.

Wharf is qualified for an extended temperature range to enable operators to leverage outdoor cabinets and indoor closets traditionally unsuitable for critical network equipment. Long-haul coherent optics and OpenZR+ provide connectivity at ranges up to 300km/184mi, extending an operator's reach without building construction.

The Wharf is integrated into Harmonic's cOS ecosystem as both a Distributed Access Architecture Switch (DAAS) and Top of Rack (TOR) switch. Wharf offers 1.6 Terabits of packet processing power and a wide array of interface types and speeds, including two 100/400G long-range ports, two 40/100G flexible-use ports, and 24 10/25G high-speed ports. Each 10/25G interface can connect Harmonic's Fin Remote Optical Line Terminals (R-OLT) or Harmonic's Pebble Remote PHY Devices (RPD) further extending network reach another 80 km to deliver high-speed broadband services to tens of thousands of end users.

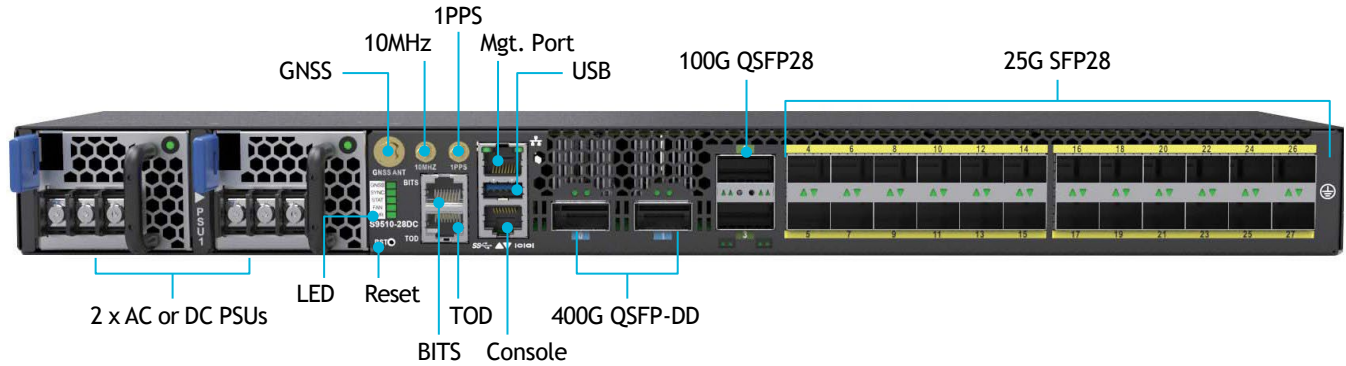
FlexE provides more efficient LAG implementation and reduced latency for latency sensitive applications. The Wharf also supports full timing features of IEEE 1588v2 and Synchronous Ethernet (SyncE) and is compliant with Time-Sensitive Networking (TSN) to ensure efficient, Class C timing accuracy with standards-based reliability.

Key Benefits

- Compatible with open networking standards for highly reliable composable networks.
- Future-proof for 5G with ultra-low forwarding latency, high precision frequency and phase timing synchronizations.
- Temperature hardened to offer more flexibility to deploy outside plant cabinets for cell site backhauls.
- Suitable for WAN and long-haul applications, supports OpenZR+ for metro and regional aggregation.
- Simplified maintenance operations with redundant, hot-swappable components.

- Supports full SyncE and IEEE 1558v2 (T-GM, T-BC/OC, T-TC)
- Integrated Stratum 3E OCXO with optional hold over performances
- Supports Time Sensitive Networking (TSN) for low packet loss and low delay variation
- Supports FlexE for flexible bandwidth utilization
- Class C timing accuracy support
- Rich timing interfaces: 10MHz, 1PPS, ToD, and BITS
- Internal GNSS receiver for master clock implementations
- Supports 10/25/40/100/200/400G
- Hot swappable power supplies with 1+1 redundancy support
- Hot swappable fan modules with 4+1 redundancy support
- OIF FlexE version 11 and 2.0 compliant and support 400G total bandwidth

HIGHLIGHTS



SPECIFICATIONS

PHYSICAL

- 2 x 100/400G QSFP-DD ports with FlexE and OpenZR+ support
- 2 x 40/100G QSFP28 ports
- 24 x 10/25G SFP28 ports
- 1x RJ45 serial console port
- 1x 100/1000M RJ45 management port
- 1x USB 3.0 Type-A port

Processor	Intel Denverton-NS 4-Core @ 1.6GHz (Standard) Intel Denverton-NS 8-Core @ 1.7GHz (Premium)
Memory	8GB DDR4 (Standard) 16GB DDR4 (Premium)
Storage	32GB SSD (Standard) 128GB SSD (Premium)
BMC	AST2620
ASIC	Broadcom Qumran2a BCM88483
Timing Interfaces	1x GNSS input SMA 1x 10MHz input/output SMB 1x 1PPS input/output SMB 1x ToD input RJ45 1x BITS input/output RJ48
Timing Support	Stratum 3E OCXO ITU-T Synchronous Ethernet (SyncE) IEEE 1588v2 (Default, G.8265.1 G8275.1, G.8275.2), T-GM, T-BC/OC, T-TC Time Sensitive Networking (TSN)
Chassis (WxDxH)	1RU, 440 x 302 x 43.5mm or 17.32" x 11.89" x 1.713" Weight: 4.9kg or 10.80lb
Redundancy	Hot swappable, 1+1 redundant PSU Hot swappable, 4+1 redundant Fans

ENVIRONMENTAL

Power Specs.	AC input: 100 to 240V, 6A DC input: -36 to -75V, 16A Typical power: 105 Watts (no transceiver)
Max. Operating Specs.	Operating temperature: -40°C to 65°C (-40°F to 149°F) Operating humidity: 5% to 85% (RH), non-condensing
Max. Non-Operating Specs.	Storage temperature: -40°C to 70°C (-40°F to 158°F) Storage humidity: 5% to 93% (RH), non-condensing

PERFORMANCE

Switching Capacity	800Gbps
Deep Buffer	2GB
Safety	UL 62368-1 IEC 62368-1 BSMI
Environment	WEEE RoHS
EMC	FCC Part 15, Subpart B, Class A ICES-003, Class A EN 55032, Class A EN 55035 EN 62479 EN 50663 EN 300 386 EN 301 489 EN 303 413 BSMI VCCI CISPR 32, Class A AS/NZS CISPR 32, Class A IEC 61850-3 IEEE 1613 EN 50121-4 IEC 62236-4

ACCESSORIES

Compatible Transceiver Types

Fin SFP+ 10G OLT, 400G QSFP-DD SR4, 400G QSFP-DD LR4, 400G QSFP-DD FR4, 400G QSFP-DD ZR4, 400G QSFP-DD OpenZR+, 100G QSFP28 SR4, 100G QSFP28 LR4, 100G QSFP28 ER4, 25G SFP28 SR, 25G SFP28 LR, 25G SFP28 ER, 10G SFP+ SR, 10G SFP+ LR, 10G SFP+ ER, 10G SFP+ ZR

Compatible Timing Cable Types

50 ohms SMA coaxial cable with 1/4-36UNS-2B connector for GNSS
50 ohms SMB coaxial cable with 10-32UNF-2A connector for 1PPS and 10MHz
Shield cable with RJ45 for ToD
Shield cable with RJ48 for BITS

Available to Order

Power Supply Types

PSU-401-DISB-1, 400W DC, intake air flow
PSU-401-AISB, 400W AC, intake air flow

Fan Types

FAN-402825-HD, exhaust air flow

