

# C1216LO



## Mobile Fronthaul Gateway

The C1216LO is a unique, outside plant Ethernet switch and mobile fronthaul gateway

### Features & Benefits

- + Outside plant high-capacity Ethernet switch
- + eCPRI fronthaul gateway
- + Network Interfaces:
  - 9 ports of 10/25GE (SFP+/SFP28)
  - 3 ports of 1/10GE (SFP/SFP+)
  - 2 ports of 25/50GE (SFP28/DSFP28)
  - 2 ports of 100GBase-R(QSFP28)
- + IP65 rated, no fans
- + Time-sensitive networking features
- + High capacity, very low latency
- + Operates as Timing Grand Master with integrated GNSS Receiver
- + NETCONF/YANG

The C1216LO is a high-performance outside plant Ethernet switch that has been optimized for eCPRI fronthaul transport. The C1216LO supports the high bandwidth, low latency, and synchronization requirements of 5G fronthaul and midhaul networks in a unique outside plant IP65 configuration.

The C1216LO provides 9x10GE (SFP+)/25GE (SFP28) and 3x1GE (SFP)/10GE(SFP+) access Ethernet ports, and 2x25/50GE (SFP28/DSFP28), and 2x100GE (QSFP28) access or line Ethernet ports.

The C1216LO has a multitude of critical network timing features. With its integrated GPS/Galileo receiver, the C1216LO can operate as a PTP Grand Master when connected to an external GNSS antenna. With external timing, it can function as a high-precision PTP Class C Boundary Clock with SyncE support.

The compact IP65 outside plant design of the C1216LO supports DC power, and can be pole or wall mounted.

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## Enabling non-traditional cell sites

5G is driving a large increase in non-traditional cell site deployments across the world. These deployments have many drivers including new ORAN architectures, innovative new service providers, and increased density requirements from higher 5G frequencies. The C1216LO unique combination of low-latency TSN switching, eCPRI gateway functionality, integrated Grand Master Timing, and IP65 outside plant design is enabling service providers to deploy these non-traditional cell sites in a cost-effective manner. The C1216LO is designed to be “everything you need at a non-traditional cell site except the radios”. For network synchronization, the C1216LO has an integrated GNSS receiver and can act as a PTP Telecom Grand Master. It can also receive external PTP timing for primary or secondary timing purposes and operate as a Class C PTP T-BP/TC. SyncE is also supported. The C1216LO provides 800 Gb/s of low-latency TSN switching within its IP65 outside-plant chassis that operates without a fan.

## Easy installation and management

The C1216 product line has been deployed across tens of thousands of non-traditional cell sites. Given the large number of coverage and capacity cell sites needed by some service providers for 5G, there is a need for low cost, fast initial deployment, turn-up, and remote troubleshooting. The C1216LO supports Zero Touch Provisioning for installation and turn-up, and Y.1731/802.1ag OAM. It also supports NETCONF/YANG management for rapid configuration automation. Each port has an independent, waterproof gland enabling additional ports to be added easily, without exposing the entire system to the elements like a clam-shell design requires. It operates without a fan, thus eliminating noise, issues with air filters and fan failures requiring truck rolls.

## A unique asset to wireless operators

As one of the only outside plant 100G Ethernet switches available on the market, the C1216LO is a unique asset for operators. It enables innovative cell site deployments that do not require air-conditioned huts or even cabinets. It is an extremely cost-effective option to deliver high-bandwidth switching and optional Grand Master or boundary clock timing to a remote location without the need for any ground space usage or infrastructure development. The C1216LO can be pole-mounted or wall-mounted, and consumes only 130 Watts when fully configured.

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## Product Specifications

### Base Features

- + Outdoor, IP65 Design
- + 800 Gb/s Switching Capacity
- + DC Power, non-redundant

### Interfaces

- + 9 ports for 10/25G (SFP+/SFP28)
- + 3 ports for 1G/10G (SFP/SFP+)
- + 2 ports for 50/100G (QSFP28)
- + 1 port for 1GE out-of-band Management
- + 1 port for GNSS Antenna Input (N-type RF)
- + 1 port for Alarm Input (4x2-wire)

### Clock Synchronization

- + IEEE1588v2
- + Integrated Grand Master with internal GNSS receiver
- + Class C T-BC/TC
- + Synchronous Ethernet

### Physical and Environmental

- + Dimensions:
  - 305 mm x 155 mm x 410 mm (12 in. x 6 in. x 16 in.)
- + Weight: 11 kg (24 lb)
- + Operating Temperature:
  - 40 to 149°F (-40 to 65°C)
- + Storage Temperature:
  - 40 to 158°F (-40 to 70°C)
- + Operating humidity:
  - 5 to 95% non-condensing
- + IP Rating: IP 65
- + DC power: -48VDC (reverse polarity protection)
- + Maximum power consumption: DC: 130W

### Layer 2 Capabilities

- + Standard Ethernet Bridging SVL/IVL
- + Per port/VLAN MAC limit
- + Per port L2 protocol packet processing
- + 4K active VLANs for 802.1q tagged frame
- + Port/Subnet/Protocol/MAC-based VLAN
- + VLAN translation on ingress and egress.
- + 802.1D (STP), 802.1W (RSTP), 802.1s (MSTP)
- + LAG, LACP
- + Jumbo frames up to 9KB
- + 802.1q /Q-in-Q tunneling
- + L2 Multicast
- + Storm control
- + Time Sensitive Networking (TSN) 802.1AS, 802.1Qbv

### Quality of Service

- + Policy-based and Class-based QOS
- + SP and WRR Scheduling

### Security

- + Storm control for broadcast, multicast and unknown unicast packets
- + Out of band management
- + Secure Shell (SSH)

### Management

- + NETCONF/YANG
- + Serial/Telnet (CLI)
- + SNMPv1/v2/v3
- + RMON
- + RADIUS/TACACS+
- + DHCP client, relay
- + SYSLOG
- + Link layer discovery protocol (LLDP)
- + Software Download/Upgrade

### OAM / Protection

- + Ethernet OAM (LMEP/RMEP)
- + Y.1731/802.1ag
- + Y.1564
- + TWAMP Reflector

# Ordering Information

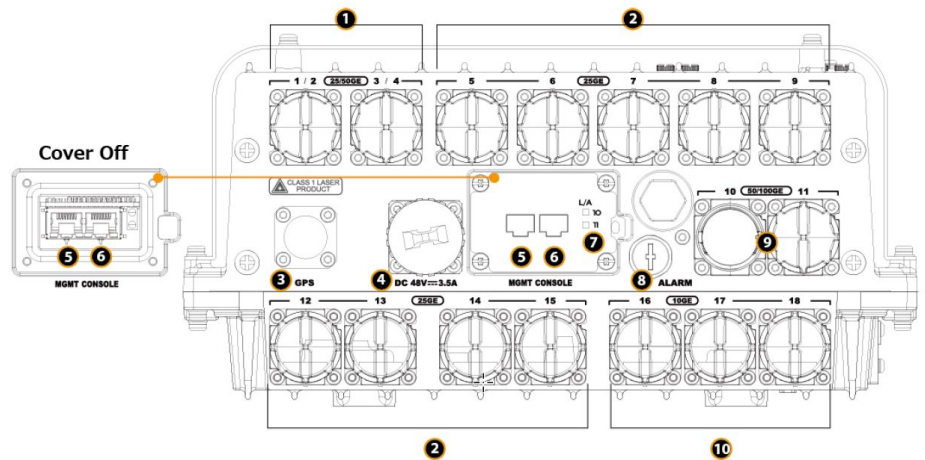
## Base DC Unit

<b>DZS-G-M-1216LO-G0</b>	9-port 10G(SFP+) or 25G (SFP28) 3-port 1G/10G (SFP/SFP+) 2-port 25/50G (SFP28, DSFP28) 2-port 50/100G (QSFP28) DC Power
<b>DPW-G-O-12SFPG-G0</b>	Waterproof Gland/Plug, 1 needed for each traffic port in use
<b>DPW-G-O-12APCL-G1</b>	Alarm Plug and Cable – 5 Meters

## Software Licenses

<b>C1200-SW-BASE</b>	Required Base Software License
<b>FHG-GNSS-ACTIVATION</b>	Optional Software License to Activate Grand Master Timing (GPS input)

## Bottom View



Name	Description
① 25/50GE Port	The number of logical ports varies depending on the module type. - 2 x 25/50GBase-R (Port 1,3 with SFP28) - 4 x 25/50GBase-R (Port 1,2,3,4 with DSFP)
② 25GE Port	9 x 25GBase-R (SFP28)
③ GPS Port	The GPS receives timing signals to synchronize the clock of the unit.
④ DC Power Terminal	Connects DC power cable.
⑤ MGMT Port	Out-of-band TMN-OS-Interface.
⑥ Console Port	CLI access port to configure the functions for system operation.
⑦ 50/100GE LED	Link Status of the 50/100GBase-R interface.
⑧ ALARM	Alarm In/Out Terminal.
⑨ 50/100GE Port	2 x 50/100GBase-R (QSFP28) cable pass through.
⑩ 10GE Port	3 x 10GBase-R (SFP+) cable pass through.

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