

C1216RO



Mobile Fronthaul Gateway

The C1216RO is a unique, outside plant Ethernet switch and mobile fronthaul gateway

Features & Benefits

- + Outside plant high-capacity Ethernet switch
- + CPRI fronthaul gateway
- + Network Interfaces:
 - 9 ports of 10/25GE (SFP+/SFP28)
 - 2 ports of 25/50GE (SFP28/DSFP28)
 - 2 ports of 100GBase-R(QSFP28)
 - 3 ports of CPRI (SFP+)
- + 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 C1216RO is a high-performance outside plant Ethernet switch that has been optimized for eCPRI fronthaul transport and CPRI-to-eCPRI conversion. The C1216RO supports the high bandwidth, low latency, and synchronization requirements of 5G fronthaul and midhaul networks in a unique outside plant IP65 configuration.

The C1216RO provides 9x10GbE (SFP+)/25GE (SFP28) access Ethernet ports, and 2x25/50G (SFP28/DSFP28), and 2x100G (QSFP28) access or line Ethernet ports. Additionally, the C1216RO has 3x10GbE CPRI ports with an internal gateway function to convert CPRI into packetized eCPRI for termination at a packet-based DU.

The C1216RO has a multitude of critical network timing features. With its integrated GPS receiver, the C1216RO can operate as a PTP Grand Master. 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 C1216RO supports DC power, and can be pole or wall mounted.

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Enabling non-traditional cell sites

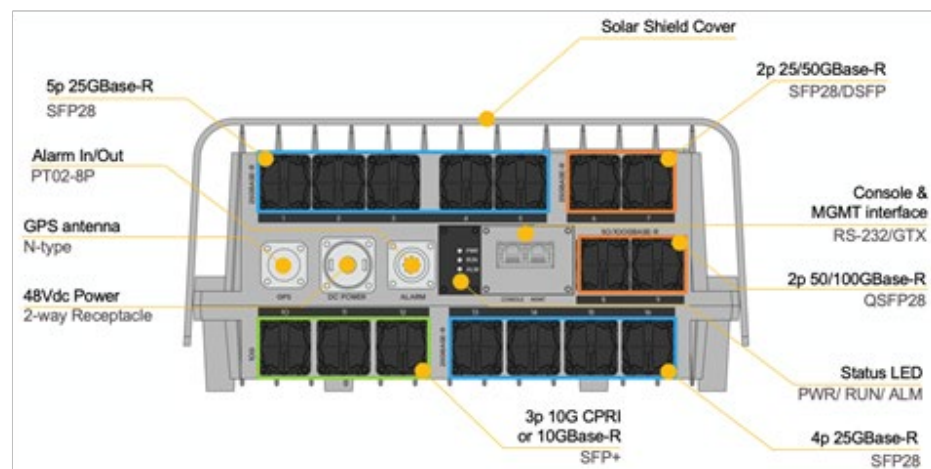
5G is driving a large increase in non-traditional cell site deployments across the world. These deployments have many drivers including new ORAN architectures, innovative new service providers, and increased density requirements from higher 5G frequencies. The C1216RO unique combination of low-latency TSN switching, CPRI 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 C1216RO is designed to be “everything you need at a non-traditional cell site except the radios”. For mixed cell sites with legacy CPRI-based radios, the C1216RO performs CPRI-to-eCPRI conversion. For network synchronization, the C1216RO 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 C1216RO 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 C1216RO 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 C1216RO 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 C1216RO 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 C1216RO 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 10G CPRI (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

CPRI Gateway functionality

- + CPRI-to-eCPRI conversion
- + 3x10G CPRI Ports

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

C1216RO-DC	9-port 10G(SFP+) or 25G (SFP28) 3-port 10G CPRI (SFP+) 2-port 25/50G (SFP28, DSFP28) 2-port 50/100G (QSFP28) DC Power
C1216RO-FIBER-PLUG	Waterproof Gland/Plug, 1 needed for each traffic port in use
C1216RO-ALARM-PLUG-3M	Alarm Plug and Cable – 3 Meters
C1216RO-ALARM-PLUG-5M	Alarm Plug and Cable – 5 Meters
FHG-GNSS-ACTIVATION	Software License to Activate Grand Master Timing (GPS input)



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