

AVIAT CTR 8300 MICROWAVE ROUTER

The CTR 8300 is super-compact microwave router, which can pack up to a full 1 Gbit/s of data throughput in a single radio channel. The CTR 8300 is designed for easy deployment in access applications at or near the network edge where space is a premium, but high capacity and advanced networking features are still a must.



Combining Multiple Products in One Tiny Package

The CTR 8300 consolidates the features and functions of multiple devices into a single ultra-compact unit, including a microwave indoor unit (IDU), an advanced Carrier Ethernet switch, a TDM Pseudowire adapter, and an IP/MPLS Router. CTR 8300 has the flexibility to be deployed in a wide variety of backhaul or enterprise access applications with microwave/millimeter-wave or fiber connectivity, all optimized for lowest possible CAPEX and OPEX.

Small, yet Powerful

Never before has so much functionality been supported in such a small package. The CTR 8300 supports integrated microwave and networking features normally found in much larger and more expensive aggregation devices. Advanced microwave features include modulations up to 1024QAM with Adaptive Coding and Modulation (ACM), co-channel operation with XPIC, and dual-ODU support.

Industry Leading Density and Flexibility

The Aviat CTR 8300 is available in two variants. The CTR 8311 supports the connection of one Aviat Outdoor Unit for 1+0 non-protected terminal/link applications, while the CTR 8312 has two radio connections, allowing for dual 1+0 (repeater) nodes, 1+1 hot standby protection with or without space diversity path protection, and 2+0 double capacity links with optional XPIC for co-channel operation. Each unit supports 4 x 10/100/1000 Ethernet interfaces, 16 E1/T1 ports and management ports as standard, all within a miniscule half-rack width, 1RU high chassis.

Service and Deployment Flexibility for a Safe Investment

The CTR 8300 offers advanced networking options and flexibility to address evolving services needs, by combining the latest in Carrier Ethernet switching, Ethernet Pseudowires, Ethernet OAM, and packet-based synchronization, along with software programmable capacity scalability.

In addition, CTR 8300 can be deployed as a cell site router, with or without MPLS, to enable consolidation of cellsite traffic or to provision enterprise services. CTR 8300 works seamlessly with the Aviat CTR 8540 Microwave Router, enabling full end-to-end provisioning and control of L2- or L3-based services, all without the need to install a separate switch/router.

KEY FEATURES

- Ultra-compact half-rack width 1RU design, with convection cooling (no fans);
- QPSK to 1024QAM Adaptive Modulation for maximum channel efficiency;
- Co-channel operation with XPIC enables up to 1 Gbit/s capacity links;
- High interface port density - up to 4x GigE ports and 16xT1/E1 interfaces;
- Layer 2 Ethernet Services: 802.1ad (QinQ), L2 VPN, STP/MSTP, L2LA (802.1AX), LACP, ERP (G.8032);
- Advanced Traffic Management: L2/L3 QoS, Ingress Policing, Shaping, Buffering, Multiple Class scheduling;
- Advanced Ethernet OAM, including IEEE 802.1ag, 802.3ah and ITU-T Y.1731;
- Multiple Synchronization options including T1/E1, IEEE 1588v2 and Synchronous Ethernet (SyncE);
- TDM over packet transport using CESoEthernet (MEF-8);
- Multi-Level Header Compression for improved throughput¹
- Microwave configurations supported include 1+0, 1+0 repeater, 1+1 MHSB (radio only) and 2+0 with optional XPIC;
- End-to-end Network Management and Craft Interfaces including Aviat ProVision support;
- Wall mounting option for non-rack based installation including rooftop enclosures and street side cabinets.

CTR 8300 Specifications

Base Hardware chassis:

- Single RU height – ½ width chassis includes:
 - -48 V DC power supply
 - Convection cooling (no fans)
 - Mounting brackets, with earth stud

User Interfaces:

- 2x 10/100/1000Base-T (RJ-45) ports
- 2x 10/100/1000Base-X (SFP) ports:
 - Single-mode -LX (1310nm), -ZX (1550nm) optical
 - Multimode -SX (850nm) optical
 - 1000Base-T (RJ-45) electrical
- Sixteen T1/E1 ports (2 x 8 HDR connectors)
- Console Maintenance Ports (RJ-45, USB-Micro-B)
- Dry contact Alarm I/O (RJ-45)¹

Networking System Specifications

Radio Networking

- Up to 2-way IF connections per CTR 8300:
 - CTR 8311 – one IF connection (SMA)
 - CTR 8312 – two IF connections (SMA)
 - Support for Aviat split-mount outdoor and indoor radio units - ODU600, ODU600sp, ODU300hp, IRU600¹
- All-outdoor radios (ODR), via any fixed Ethernet interface (Aviat WTM 3000 or 3rd party), and using external PoE or DC supply
- Fixed or Adaptive Coding and Modulation (ACM)
 - QPSK or 16, 32, 64, 128, 256, 512, 1024 QAM
- 2+0 Radio Channel Aggregation – L1LA-Lite
- 1+0, 1+1 Hot-Standby Radio with/without Space Diversity
- 2+0 Co-Channel Operation with/without XPIC

Synchronization

- Ethernet and PDH clock source and delivery options
- Synchronous Ethernet (ITU-T G.8262)
- ESMC/SSM (ITU-T G.8264)
- Precision Time Protocol (IEEE 1588v2)
- TDM G.823

Circuit Emulation/Pseudowire Services

- Supported on all T1/E1 interfaces
- CES over Ethernet (MEF 8)

Carrier Ethernet (Layer 2) Services

- Multi-QoS, Policing, Storm Control, Scheduling, Shaping
- QoS: 8 COS, Scheduling, Policing, Storm Control, Shaping

- QoS mapping via PCP (802.1p), DSCP, and MPLS Exp
- VLANs (IEEE 802.1q) and Q-in-Q (IEEE 802.1ad)
- Rapid and multiple spanning tree protocols (RSTP, MSTP)
- L2 Link Aggregation (802.1AX)
- Ethernet Ring Protection (G.8032v2)
- Ethernet Linear Protection Switching (G.8031)¹
- Ethernet OAM
 - 802.1ag / Y.1731 CC, LB & LT
 - 802.3ah ETH-AIS & ETH-RD
 - Y.1731 PM

IP/MPLS (Layer 2.5/3) Services

- IPv4 and IPv6
- Unicast and multicast routing
- OSPF, IS-IS, BGP
- Label Distribution Protocol (LDP)
- RSVP-TE²
- L2VPN services
 - Virtual Private LAN Service (VPLS)
 - Virtual private wire service (VPWS)
- MPLS Fast Re-route (FRR)
 - 1:N facility backup with Link protection
- MPLS-TP¹

Element and Network Management

- Configuration via CLI or CTR Portal GUI
- Aviat ProVision EMS
- RMON1, RMON2, and port mirroring¹
- SNMP v1/v2 (v3¹)
- RADIUS client¹

Operating Environment and Power

- Operating Temperature: -5° to +55°C (23° to 131°F)
- Extended Operating temperature: -10° to +65°C (14° to 149°F)
- Humidity: 0 to 93%, non-condensing
- Altitude: 4,500 meters (15,000 ft.)
- Input voltage: -48 VDC (SELV), nominal
- Input voltage range: -40.5 VDC to -60 VDC
- Power consumption: typically < 30W

Mechanical³

- Dimensions: 43 mm (1RU) x 224 mm (W) x 200 mm (D),
- Weight: 1.9 kg

¹ To be enabled in a future software release

² RSVP-TE with OSPF only

³ Excluding rack mounting hardware



Aviat CTR 8312

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