AVIAT NETWORKS

CTR 8740 TRANSPORT ROUTER

The CTR 8740 from Aviat Networks is the next generation purpose built IP-SDN Converged Transport Router. CTR 8740 drastically lowers the cost of routing for microwave, milli-meter wave and/or fiber transport applications. CTR 8740 is 5G-ready, with native NETCONF/YANG management and SDN automation simplify deployment and lower OPEX.

HIGHLY INTEGRATED WIRELESS/FIBER TRANSPORT SOLUTION

The cost and complexity of deploying stand-alone routers has been too high for too long. With its state-of-the-art hardware and off the shelf and open source software, CTR 8740 delivers significantly lower cost than comparably equipped transport routers, and with the integration of RF/modem technology, CTR 8740 removes the need for an extra indoor unit to further lower CAPEX and OPEX costs.

DESIGNED FOR EASE OF USE

CTR 8740 is designed to simplify transport networks. With its robust IP/MPLS feature set, CTR 8740 enables a single low-cost solution for both fiber and microwave transport sites to reduce the number and types of solutions required.

CTR 8740 provides a single box solution for all radio architecture deployments including all-indoor, split-mount and trunking deployments. A high-capacity switching fabric allows deployment in access, pre-aggregation or aggregation segments of the network, in a variety of topologies. With fewer parts specific to transport applications, CTR 8740 enables simplified ordering and sparing.

MORE CAPABLE AND RELIABLE FOR WIRELESS TRANSPORT NETWORKS

CTR 8740 delivers an amazing array of wireless transport related capabilities in a single rack unit. Nodal support for up to 8x IF, plus 12 Ethernet-connected radios (up to 20 Gbps of aggregate capacity), 12x 1GE and 3x 10 GE Ethernet interfaces, and high availability redundancy support.

CTR is fully compatible with Aviat IRU600 (5.8-11GHz) all-indoor, ODU600 (6-42GHz) outdoor units and WTM4000 all-outdoor radios, including Aviat's STR 4500 New Trunking solution. CTR also supports the latest microwave transport features, such as up to 4096QAM ACM, co-channel operation with XPIC, space-diversity, Adaptive Dual Carrier and 4X4 MIMO to deliver high capacity, ultra-reliable microwave paths.

PREPARED FOR 5G

One of the biggest challenges operators face is to understand their transport needs of the future, especially for 5G. CTR 8740 offers capacity and software modularity to safeguard your investment, ensuring you have platform that scales as network demands grow.

CTR is also equipped with the latest NETCONF/YANG management interfaces for native SDN support and automation of network deployment and operations. Features, like IP/MPLS, can be added through simple software upgrades, only when and as needed.

KEY FEATURES

- Compact 1RU carrier-class design with optional redundant power
- High density non-blocking switch architecture with 4 x GigE RJ-45, 8x GigE SFP, 3x 10GigE SFP+ front panel ports & 4x modular plug-in slots
- Modular slots support IF and Ethernet Radio Access Cards (RAC), Power-over-Ethernet (PoE) and Redundant power supply options
- Advanced microwave functions: up to 4096 QAM (ACM), 1+1 HSB, 2+0 (XPIC), space diversity and N+0 Trunking with Layer 1 Link Aggregation (L1LA)
- High Availability: Redundant Data plane and Control plane option through 1+1 Stacking
- Carrier Ethernet: 802.1q & 802.1ad (QinQ) VLAN, STP/MSTP, L2LA (802.1AX), LACP, ERP (G.8032)
- IP/MPLS: IPv4, IPv6, Static and Dynamic IP Routing; MPLS LDP and RSVP-TE; L2 VPN (VPLS, VPWS) & L3 VPN services
- Advanced Traffic Management: L2/ L3 QoS, Ingress Policing, Shaping, Buffering, Multiple Class scheduling, H-QoS
- Advanced Ethernet OAM, including IEEE 802.1ag and ITU-T Y.1731
- Multiple Synchronization options including PPS/ToD, T1/E1, IEEE 1588v2 (TC & BC) and Synchronous Ethernet (SyncE)
- End-to-end Network Management and Craft Interfaces including Aviat ProVision+, NETCONF/YANG & SDN

HARDWARE PLATFORM

BASE HARDWARE CHASSIS:

- 1 RU height chassis includes:
  - -48 V DC power supply – Dual Input
  - Local Management & Console Ports (RJ-45 and USB-C)
  - 2x USB-3 port (USB-C) including support for Wireless Bluetooth/Wifi Dongle, config backup via memory stick & 10 Watts cellphone charging
  - Ethernet User Interfaces (details below)
  - 10GE Stacking Protection and Radio Diversity Ports
  - ToD/PPS/T1/E1 Sync I/O (2 x RJ point five)
  - Four Universal Plug-In Module Slots (details below)
  - Removable Fan Module

USER INTERFACES:

- Four 1000BASE-T (RJ-45)
- Eight 1000Base-X (SFP) unpopulated ports:
  - Single-mode -LX (1310nm), -ZX (1550nm) optical
  - Multimode -SX (850nm) optical
  - 1000Base-T (RJ-45)
  - STM-1 & STM-4 (1310nm) Optical TSOP
- Three 1000/2500/10GBase-X (SFP+ unpopulated)

PLUG-IN MODULES (OPTIONAL):

- RACx1: Single IF radio interface
- RACx2: Dual IF radio interface
- SFP+x2: Dual SFP+ 1000/2500/10GBase-X (SFP+ unpopulated)
- PoEx2: Dual Power over Ethernet interface *
- PWR: Power Supply Module for redundancy (Slot 1)

RADIO AND NETWORKING

RADIO NETWORKING

- Up to 8-way nodal IF links per CTR using RACx1 or RACx2:
  - Split-mount ODUs (Aviat ODU 600)
  - All-indoor radios (Aviat IRU 600)
- All-outdoor radios via SFP+x2, PoEx2 or any fixed Ethernet interface:
  - Aviat WTM 4000 and STR 4500 series or 3rd party Ethernet Radios
- Fixed and Adaptive Coding and Modulation (QPSK, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096 QAM)
- L1 link aggregation – 1x8+0 or 2x 4+0/4x 2+0 across ODU/IRU or WTM radios.
- 1+0, 1+1 Hot-Standby, Space Diversity, N+0 Trunking
- Co-channel operation with XPIC
- Adaptive Dual Channel, A2C (WTM 4100)
- 4x4 LOS MIMO (WTM 4200)
- Bandwidth Acceleration:
  - Inter-Frame Gap and Pre-Amble Suppression
- AES256 Payload Encryption

SYNCHRONIZATION

- Internal Stratum-3 clock as standard optional high accuracy Stratum-2 clock
- Synchronous Ethernet (ITU-T G.8262)
- ESMC/SSM (ITU-T G.8264)
- Precision Time Protocol (IEEE 1588v2) – TC & BC
- Ethernet, TDM, BITS, PPS or ToD clock source and delivery options

CARRIER ETHERNET/L2 SERVICES

- Non-blocking switch
- QoS: 8 COS, Scheduling, Policing, Storm Control, Shaping
- QoS mapping: PCP (802.1p), DSCP. H-QoS
- 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 OAM (IEEE 802.1ag, ITU-T Y.1731)
- Congestion Avoidance : RED and WRED
- Jumbo frames to 10k bytes

IP/MPLS SERVICES

- IPv4 and IPv6
- Unicast routing
- IS-IS, OSPF, OSPFv3 & BGP
- Label Distribution Protocol (LDP)
- RSVP-TE
- L2 VPN (VPLS, VPWS) & L3 VPN
- LSP Protection with BFD
- VRF & LSP Ping and Traceroute

ELEMENT AND NETWORK MANAGEMENT

- Local Configuration via CLI or Web GUI
- Aviat ProVision+ EMS
- RMON1, RMON2, and port mirroring
- NETCONF/YANG
- SNMP v2c / v3 * MIB support (read only)
- HTTPS, SSH & TACACS+ client
- SNTPv4, embedded real time clock

OPERATING ENVIRONMENT AND POWER

- Operating Temperature: -5º to +55ºC / -14º to +122ºF
- Humidity: 5 to 93%, non-condensing
- Altitude: 4,500 m/15,000 ft.
- Base chassis input voltage range : -40 VDC to -57 VDC
- Power consumption: 45-200 W (loading dependant)
- PoE++ interface output power: Up to 90 W per PoE port *

MECHANICAL

- Chassis: 44 mm (1RU) x 445 mm x 240 mm / 1RU x 19 in x 9.4 in
- Plug-In Module: 18.27 mm x 104.3 mm x 230 mm / 0.72in x 4.1 in x 9.0 in
- Chassis weight: 4.8 kg / 10.6 lb

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ISO 9001 - ISO 14001
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Certification

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