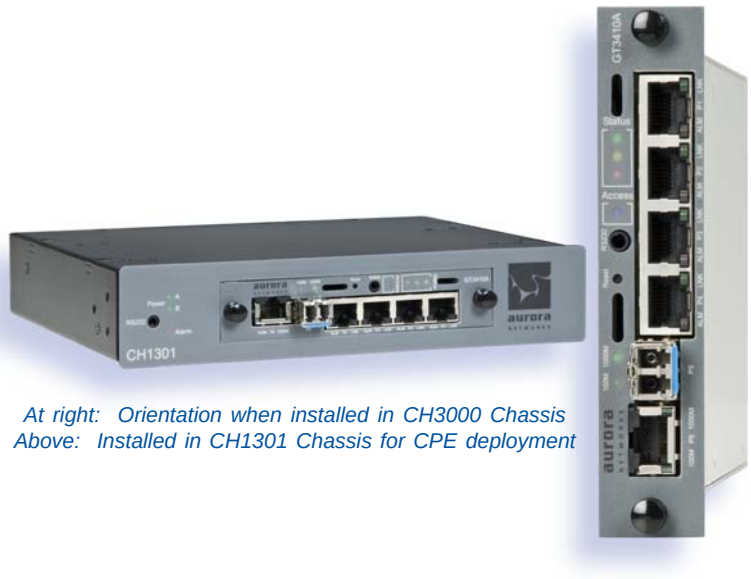
aurora NETWORKS

GT3410A

T1/E1 Access Module

Features

- Provides an inter-working function capability between the TDM and Metro Ethernet clouds (networks)
- Suitable for Circuit Emulation Services (CES) such as cell tower backhaul or PBX interconnect
- Five local ports (four T1/E1 TDM interfaces with RJ48C connectors, and one auto-negotiating 10/100/1000Base-T with RJ45 connector)
- One network optical port (software programmable for operation at 100 or 1000 Mbps) using SFP plug-in transceivers
- Employs industry-standard CESoETH protocol to packetize TDM data
- Certified for compliance with MEF 9, MEF 14, and MEF 18
- Compatible with Aurora's Fiber on Demand™ and SMART Media Converter™ solutions for node-based Ethernet backhaul
- Integrated web server
- Managed via Aurora's Opti-Trace™ EMS software or any industry-standard SNMP-compliant NMS
- Hot plug in/out



At right: Orientation when installed in CH3000 Chassis
Above: Installed in CH1301 Chassis for CPE deployment

Aurora's GT3410A is a T1/E1 access module that provides inter-working functionality between TDM and Metro Ethernet networks and is suitable for a variety of applications including circuit emulation service for cellular or PBX backhaul. The GT3410A can also function as a voice/data convergence access device for SMB applications (performing Layer 2 switching functions between the 10/100/1000 copper interface and the Metro Ethernet fiber interface).

The SFP facility can be used to backhaul over CWDM SMART Media Converter™ or Aurora's Fiber on Demand™, as well as basic point-to-point architecture. A copper RJ-45 interface allows a simple customer demarcation point and can be used for Internet access or transparent VLAN service as well as daisy-chaining of additional GT3410A modules.

The module supports flexible clock synchronization options, with clocking signals seamlessly transported over the packet Metro Ethernet interface. The GT3410A is engineered for delay-sensitive TDM traffic with low jitter and minimal frame delay and frame delay variation, meeting the stringent MEF 18 requirements.

The standard operating temperature range of the GT3410A (–20º to +65ºC) allows service in difficult environments. This high density, single-width, half-depth module can be mounted in the CH3000 chassis (at Headend or Hub) or in the compact CH1301 chassis (a wall- or 19" rack-mountable CPE enclosure), and either chassis selection offers redundant powering options. A "butterfly" configuration of multiple 1RU CH1301 chassis can be used to host up to 8 T1/E1 interfaces (in two adjacent modules), while the high density CH3000 chassis can support up to 20 modules (80 T1/E1 interfaces).

GT3410A Product Specifications

Physical:

- Dimensions:
  6.5" D x 4.3" H x 1.0" W (3RU) (16.5 cm x 10.9 cm x 2.5 cm)
- Weight: 1.0 lb (0.45 kg)

Environmental:

- Operating temperature range: –20º to +65ºC (–4º to 149ºF)
- Storage temperature range: –40º to +85ºC (–40º to 185ºF)
- Humidity: 5% to 95% non–condensing

Power Requirements:

- Input voltage (from chassis mid-plane): 12 V_{DC} (900 mA)
- Power consumption: 10.8 W

General:

- Hot plug–in/out
- Optical interface: LC duplex (on pluggable SFP transceiver)
- Optical transmission bit rate: 100 or 1000 Mbps (programmable)

Switch Ports:

- Local Ports 1 – 4: T1/E1 TDM, full duplex, with RJ48C connectors
- Local Port 6: Auto-negotiating 10/100/1000Base-T with RJ45 connector
- Network Port 5: 100BaseFX or 1000Base-X with SFP transceiver

Optical:

The network optical port can be populated with a variety of 125 Mbps (Fast Ethernet) or 2.125 Gbps (GbE) SFP (plug-in) transceivers depending on the network application. Please refer to the appropriate data sheets for the selected transceiver for detailed specifications. Following is a summary of available transceiver options (model numbers and brief descriptions) for this port.

125 Gbps SFP Transceiver Options

- TFA1310-TL29 (125 Gbps, transmit at 1310nm, 29 dB link budget, duplex LC connector)
- TFA1310-TF17 (125 Gbps, transmit at 1310nm, 17 dB link budget for links up to 20 km, simplex SC/UPC connector)
- TFB1550-TF17 (125 Gbps, transmit at 1550nm, 17 dB link budget for links up to 20 km, simplex SC/UPC connector)
- TFC*xxxx*-TL29 (125 Gbps, transmit at CWDM wavelength of *xxxx* = 1270, 1290, . . ., 1350, or 1430, 1450, 1470, . . ., 1610 nm; 29 dB link budget; duplex LC connector)

2.125 Gbps SFP Transceiver Options

- TR4000-PI (transmit at 1310nm for links up to 10 km)
- TR4040-PI (transmit at 1310nm for links up to 40 km)
- TR4540-0000-PI (transmit at 1550nm for links up to 40 km)
- TR4440B-*xxxx*-PI (transmit at CWDM wavelength of *xxxx* = 1270, 1290, . . ., or 1430, 1450, 1470, . . ., 1610 nm for links up to 40 km)

Front Panel Status Indicators and Controls:

- Module "Status" LEDs:
  Green = OK
  Yellow = non-service-affecting alarm (or alarm history present)
  Red = service-affecting alarm
- Blue "Access" LED: Communications with chassis mid-plane
- RJ48C (Local Port) status indicators (2 LEDs per port, 4 sets):
  LNK Illuminated green when link OK
  ALM Off = no alarm, Yellow = non-service-affecting alarm, Red = service-affecting alarm
- RJ45 (Local Port 6) status indicators (2 LEDs):
  LINK Green = link OK, Blink = activity, Off = no link
  SPEED 3 blinks = 1000M, 2 blinks = 100M, 1 blink = 10M, Off = no link
- SFP status indicators (2 LEDs):
  100M Green = link OK, Yellow lit = SFP detected, Yellow blinks = optical input detected, Off = no SFP detected
  1000M Green = link OK, Yellow lit = SFP detected, Yellow blinks = optical input detected, Off = no SFP detected
- Recessed RESET pushbutton: Resets the module
- RS232: Craft port interface for CLI monitoring/management

Alarms:

Major/Minor/Off (user-selectable): DC voltages, fan failure, internal temperature >85ºC, T1 interface

Standards Supported:

MEF 8 CESoEth, IEEE 802.3, T1.403, T1.408, G.703, G.823, G.824

Ordering Information

G	T	3	4	1	0	A

T1/E1 Ethernet Switch

Transceiver Plug-in Module

An SFP module for the network port must be ordered separately. Please refer to the above list of available transceivers and appropriate data sheets for specific complete model numbers and ordering information.

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