

GW7900 Series ATM Ethernet Gateway



- ATM pseudowire support
- Ethernet over ATM bridge
- Converts ATM DSLAMS to Gigabit Ethernet
- Converts ATM wireless base stations to Gigabit Ethernet
- Monitor STM-1 traffic using fibre splitter and forward to server
- Dual 1000BASE-X Ethernet
- Local Exchange/CO or CP deployment

Overview

ATM services are still in use worldwide for a range of applications. Over the years, many customers have made significant investments in equipment and processes that depend on the specific features that ATM offers, making it difficult or disruptive for them to move to alternative services. Meanwhile, telecommunications operators want to move to an NGN/IP network as the support costs for maintaining equipment grows and service quality is difficult to guarantee on older networks. The GW7900 resolves this conflict by allowing operators to maintain ATM service over a fully supported NGN infrastructure, thereby eliminating customer disruption.

The GW7900 supports Ethernet bridging over ATM networks. This enables the transport of Ethernet traffic over existing ATM networks at wire-speed. Dual tagged VLANs are supported.

The GW7900 Series has several interface options with either a dual/quad OC-3/STM-1 WAN interface or a single OC-12/STM-4 interface.

High availability can be provided through two separate Gigabit Ethernet links.

The GW7900 Gateways are rack-mountable and incorporate integral AC or DC power supplies for data centre environments. Optionally, dual power supplies can be supported.

STM-1 Data Monitoring & Capture

The GW7900 can be used together with optical splitters to capture STM-1 ATM data. The data can be encapsulated in IP/Ethernet and forwarded to a server for decoding, analysis and storage. The device can be configured to capture all traffic on the links, or it can identify and capture specific traffic types only.

ATM to Pseudowire Conversion

- The GW7900 encapsulates ATM in IP using PWE3 encapsulation and sends it over the Gigabit Ethernet interface to the destination Gateways.
- Each ATM Virtual Path or Virtual Circuit can be routed to separate remote access lines.
- The destination Gateway removes the encapsulation and sends the data out over the ATM interface to the customer's equipment.

Ethernet over ATM Bridging

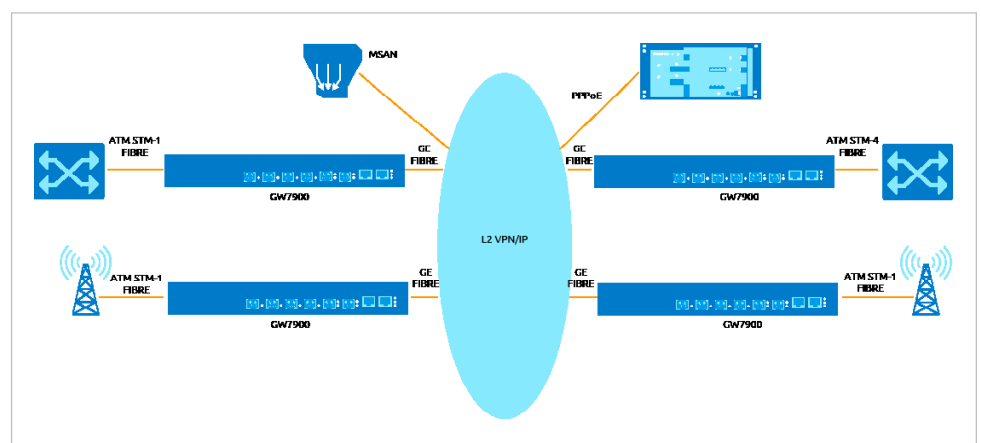
- Mac bridge as per IEEE 802.1D
- VLAN bridge as per IEEE 802.1Q
- Provider bridge as per IEEE 802.1ad
- MAC-learning with configurable MAC aging times
- MAC pinning
- Split horizon groups
- Up to 256 VLANs supported
- Double tagged Ethernet frames (C- and S- tags)

ATM to Native IP Conversion

- The Gateway extracts the packet data.
- Encapsulates the data in the relevant aggregation protocol such as PPPoE.
- Sends the data to its destination Access Server over an IP network.
- The destination Access server will process the packet data from the DSLAM in the same manner as a DSLAM with an Ethernet interface.

Applications

- 2G or 3G mobile and DSLAM backhaul over Packet Switched Network (PSN).
- Maintain existing profitable ATM services over a cost-effective Ethernet backbone.
- Converge mission critical and multimedia applications.
- Convert ATM DSLAMs to emulate IP DSLAMs.



Software Features

Management

- SNMP v1, v3
- Telnet Server
- SSH Server

ATM Encapsulation Modes

- ATM PWE3 1-to-1 encapsulation as specified by draft-ietf-pwe3-atm-encap-10
- MPLS labels used as the PW demultiplexor
- PWE3 circuits can be created, one per ATM Virtual Path or Virtual Circuit
- PWE3 circuit can specify cell concatenation value.
- Each PWE3 circuit must specify MPLS label
- Each PWE3 circuit must specify egress IP tunnel
- Full ATM QoS supports Virtual Path or Virtual Circuit shaping and policing
- Each IP tunnel must specify source and destination IP address
- ATM AAL-0 mode forwards by cell with timer option
- ATM AAL-5 mode forwards by AAL-5 frame, SAR function included

Ethernet Bridging

- Mac bridge as per IEEE 802.1D
- VLAN bridge as per IEEE 802.1Q
- Provider bridge as per IEEE 802.1ad
- A bridge can either be VLAN aware or VLAN unaware
- Broadcast frames will be forwarded to all other ports on the bridge.
- VLANs must be supported as per IEEE 802.1Q-2005 Clause 9. No support for Clause 9.7 E.RIF will be provided.
- Customer and service VLANs must be supported as per IEEE 802.1ad Clause 9.
- MAC-learning (both Shared VLAN Learning and Independent VLAN Learning) with configurable MAC aging times
- MAC pinning
- 64K MAC table size
- Split horizon groups
- Up to 256 VLANs supported
- Double tagged Ethernet frames (C- and S-tags) are supported
- Priority tagging of untagged frames on a per-interface basis
- Configurable priority mapping for each S-VLAN (either fixed or copied from the C-tag). Untagged frames can be prioritised based on IP DSCP bits

ATM OAM Support

- OAM cells terminated or generated locally
- OAM cells passed through transparently

Hardware Features

SONET/SDH Interface

- Two OC-3/STM-1 SFP ports; Quad OC-3/STM-1 SFP ports or Single OC-12/STM-4 SFP port

Ethernet Interfaces

- Two Gigabit Ethernet SFP ports
- Supports copper or fibre SFPs

Management Interface

- Single 10/100 Mbps Ethernet port

Console

- Single RS-232 RJ-45 port

External Clock

- Supports external telecom clock input and output

Clock Recovery

- Clock generation using IEEE1588 or Synchronous Ethernet ITU G.8264

Error Correcting Code Memory

- ECC memory is used on all internal DDR memory buses to ensure data integrity

Approvals and Certificates

- EN60950 safety approval
- EN55022 and EN55024 EMC

Power

- 100V-240V AC, 30 watts
- IEC mains connector
- Dual AC power input option available

DC Power Input Option

- 36-72V DC isolated inputs
- Screw terminals
- Dual DC power input option available

Physical and Environmental

- Unit size 325W x 210D x 44Hmm
- Weight 2Kg
- Operating temperature 0°C to 55°C
- Storage temperature -40°C to 70°C

GW7900 Series Model Table

Model	STM-1	STM-4	GE
GW7902	2		2
GW7904	4*	1*	2

*Model GW7904 supports 1 STM-4 or up to 4 STM-1 links