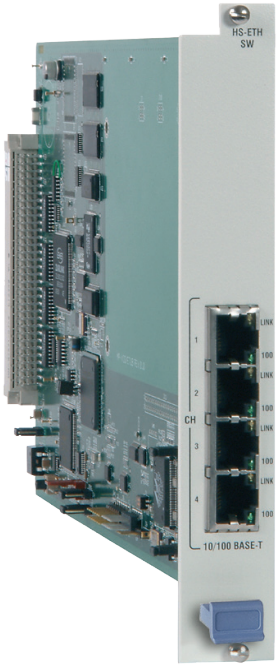
Data Sheet

Megaplex-2100/2104

HS-ETH/SW

4-Port 10/100BaseT Ethernet Bridge Module with Layer-2 Switch



- Built-in Ethernet switch complying with IEEE 802.3/Ethernet V.2 standards
- Port-based and IEEE 802.1Q tag-based VLANs, with parameters configurable per port
- User-set bandwidth allocation per port: n x 64 kbps, up to 1536 kbps for T1 links or 1984 kbps for E1 links (up to 4 Mbps per module)

HS-ETH/SW provides the Megaplex system with four 10/100BaseT Ethernet LAN ports that use auto-negotiation for plug-and-play Ethernet connectivity.

With each LAN port operating independently of the other ports (when receiving VLAN-tagged frames), a single HS-ETH/SW module can simultaneously provide several bridging connections, each supported by one of 16 internal WAN ports (timeslot bundles). HS-ETH/SW can also be used in Layer-3 routing applications, such as grooming management data generated by modules from multiple locations.

The main link bandwidth assigned to each internal WAN port can be selected in 64 kbps steps, to accommodate the volume of traffic expected between the nodes attached to two LANs. The allocation of main link bandwidth per port can be up to 1536 kbps for T1 links, and 1984 kbps for E1 links. Total WAN capacity per HS-ETH/SW module is 3968 kbps.

Extends LAN over WAN to multiple locations

RAD data communications
The Access Company

HS-ETH/SW
4-Port 10/100BaseT Ethernet Bridge Module with Layer-2 Switch

The LAN ports are connected to an internal Ethernet switch in full compliance with IEEE 802.3/Ethernet V.2 standards. The switch supports both port-based and IEEE 802.1Q tag-based VLANs, with characteristics configurable on a per-port basis. The switch operates in the IEEE 802.1Q shared VLAN learning mode (SVL). The maximum frame size supported by the switch is 1536 bytes.

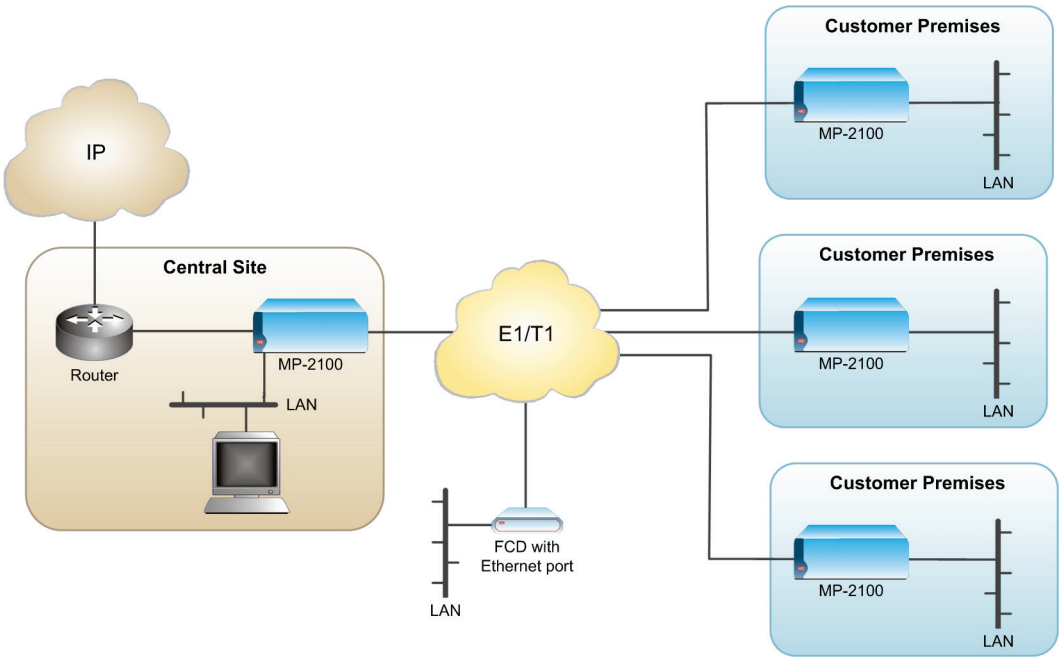
The packet processor can also provide Layer-3 subnet switching for any WAN port. The port used for reaching a specific subnet is configured by means of static routes. (Up to 100 routes can be defined, with each route associated with a specific port of HS-ETH/SW modules installed in the chassis.)

A default gateway can also be defined, together with default ports for sending traffic to destinations for which the path is unknown.

HS-ETH/SW is fully compatible with other bridges/routers that support the HDLC protocol on the WAN.

Any of the following forwarding methods can be selected specifically for each WAN port for passing the packet traffic:

- **Bridge** – forwarding in accordance with the MAC bridge rules.
- **Bridge + STP** – the Spanning Tree Protocol (STP) is also activated on the port; rapid STP protocol can be used instead
- **L3 Subnet Switching** – packets are routed to their destination subnet according to static routes specified in the switching table.



LAN Extension over TDM Network

Specifications

LAN PORTS

Interface
4 x 10/100BaseT interfaces with auto-negotiation and automatic MDI/MDIX crossover

Operation
Half-duplex/full duplex

Connectors
RJ-45 per port

Compatibility
Relevant sections of IEEE 802.3u, 802.3x, 802.1p and 802.1Q

Maximum Frame Size
1536 bytes

Internal LAN Traffic Processing
Ethernet switch with:
- 4 external ports
- 1 port for traffic toward the WAN ports

Packet Forwarding Modes
User-selectable per internal port:

Bridge

Bridge + STP/Rapid STP

L3 Subnet switching

Bridge LAN Table
1024 MAC addresses with configurable automatic aging

STP Version
User-set STP version and parameters:
- STP per IEEE 802.1D
- RSTP per IEEE 802.1W

VLAN
Port-based VLANs

Tag-based VLAN switching

Per-port user-selectable ingress and egress tagging policy

Indicators
LINK (yellow) – On when Ethernet link integrity signal is detected; Flashes when activity is detected

100 (green) – On when link is operating at 100 Mbps

INTERNAL WAN PORTS

Number of WAN Ports (Timeslot Bundles)
16 (each internal port can be connected to a different main link)

Bandwidth Allocation on Links
User-set bandwidth per internal WAN port: *n* x 64 kbps, where *n* is 1 to 31 (30 for G.732S framing) for E1 links, or 1 to 24 for T1 links
(actual maximum depends on the number of timeslots available on the link)

Maximum capacity per module is 3,968 kbps (62 timeslots)

GENERAL

Timing Mode
Timing derived from Megaplex nodal clock

Management Access
Any LAN port can be configured to connect the management for the Megaplex node

Buffer
100 frames

Configuration
Programmable by the Megaplex system management

Diagnostics
Pings to both LAN and WAN side

Ethernet performance statistics per individual external LAN and internal WAN ports

Power Consumption
5W max (1A from +5 VDC)

Environment
Operating temperature: -10°C to 55°C (14°F to 131°F)
Storage temperature: -20°C to +70°C (-4°F to +158°F)
Humidity: up to 95%, non-condensing

Table 1. Megaplex Ethernet Interface Modules

Feature	HS-ETH/B	HS-ETH/F	HS-ETH/R	HS-ETH/V	HS-ETH/SW
Speed	10BaseT	10/100BaseT	10BaseT	10BaseT	10/100BaseT
Number of Ports	1 / 2 / 4	1 / 2 / 4	1 / 2 / 4	1 / 2 / 4	4
Bridge	Y	Y	Y	Y	Y
VLAN	N	Y	N	Y	Y
Router	N	N	Y	N	N
Switch	N	N	N	N	Y

Data Sheet

HS-ETH/SW

4-Port 10/100BaseT Ethernet Bridge Module with Layer-2 Switch

Ordering

MP-2100M-HS-ETH/SW/UTP/4

International Headquarters
24 Raoul Wallenberg Street
Tel Aviv 69719, Israel
Tel. 972-3-6458181
Fax 972-3-6498250, 6474436
E-mail market@rad.com

North America Headquarters
900 Corporate Drive
Mahwah, NJ 07430, USA
Tel. 201-5291100
Toll free 1-800-4447234
Fax 201-5295777
E-mail market@radusa.com

www.rad.com

Order this publication by Catalog No. 803687

RAD data communications
The Access Company