Megaplex-2200

Modular Integrated Access Node

Megaplex-2200B

Megaplex-2200F

FEATURES

- Integrated access platform for deployment of multiple services to residential and business customers
- PSTN, ISDN and data services supported, either directly or through built-in 2-wire “U” interface modems
- Main link modules with four E1 or T1 links, featuring built-in programmable, non-blocking, DS0 cross-connect for better bandwidth utilization
- V5.1 support for standard POTS and ISDN interfaces, to local exchange
- Wide range of I/O modules support up to 120 POTS, ISDN or data subscribers
- Optional redundant configuration supports critical business applications
- Supports alternate routing in case of trunk failure
- 1:1 protective switching for E1/T1 main links within 50 msec
- Built-in HDSL modems for ranges up to 4.8 km (3.0 miles) reduce deployment and maintenance costs
- Broadcast support
- Management through ASCII terminal or SNMP
- RADview SNMP management system with graphical user-interface, running on PC or HP OpenView UNIX platform
- Telnet support
- Non-volatile, Flash memory for software upgrade and configuration download
- Supports standard management protocols: SLIP, PPP, PPPHDLC, IP over Frame Relay (RFC 1450) and RIP2
- TFTP support for Common Logic software upgrade

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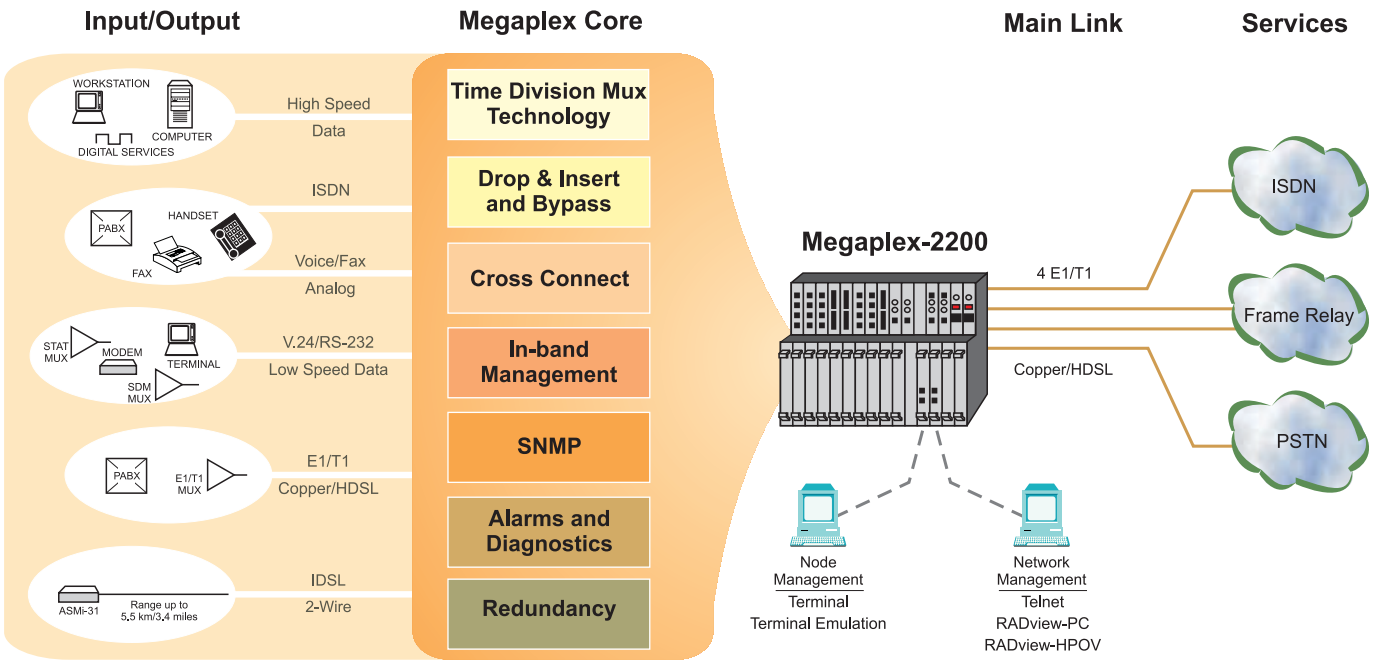
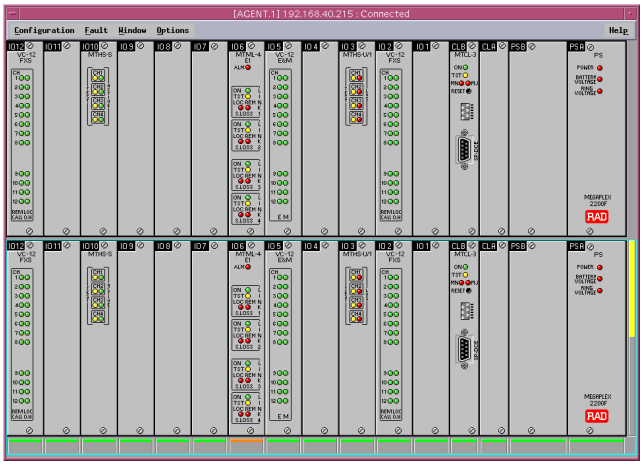
DESCRIPTION

- Megaplex-2200 is a flexible modular TDM integrating access node, supporting up to 120 n x 64 kbps channels. PSTN, ISDN, and data services are supported, either directly, or via built-in IDSL modems compatible with RAD's ASMi-31. Megaplex-2200 enables integration of multiple dedicated, voice, ISDN, video and LAN channels onto four E1/T1 links.
- The built-in cross-connect matrix enables Megaplex-2200 to split the voice and data channels and redirect the traffic to separate trunks. Each trunk can then be connected directly to the appropriate service, maximizing efficiency.
- The modular Megaplex-2200 is especially suitable for use as an economical, compact access node. It is ideal for serving small communities, providing mixed services for both business and residential customers. Megaplex-2200 can be deployed both at the exchange, at the point-of-presence, or at the remote distribution node location (such as in a building's basement telecommunication cabinet).
- Megaplex-2200 can be mounted in 19" racks for carrier and service provider environments. Two chassis variants are available:
  - **Megaplex-2200B** (6U high) with connectors on back (ANSI standard) for the North American market;
  - **Megaplex-2200F** (10U high) with connectors on chassis front (ETSI standard) for the European market.

  Both Megaplex-2200B and Megaplex-2200F chassis variants have 12 slots to support up to 11 I/O modules, in addition to the first main link module. Both allow for hot-swapping modules without disconnecting cables.
- Megaplex-2200 is standards-based, ensuring compatibility in multi-vendor environments worldwide. The E1 and T1 G.704 framing and signaling, PCM voice coding, ISDN and data interfaces, all conform to international standards.
- The Megaplex-2200 with the V5.1 main link interface, facilitates the connection of PSTN and ISDN residential and SOHO users to V5.1 Local Exchanges. V5, the ETSI interface standard, operates between the access network and the switch for basic telephony, ISDN, and semi-permanent leased lines. The V5 standard effectively opens the access network to competition and allows operators to deploy optimal access technology.
- Extensive network management is provided on multi-vendor management platforms via the use of standard SNMP protocol. Megaplex-2200 provides the control and monitoring required in large networks by means of standard UNIX management platforms, such as HP OpenView. For smaller networks, a PC-based SNMP platform is available.





RADview Network Management System

Megaplex-2200

Modular Integrated Access Node

SYSTEM RELIABILITY

- The modular, distributed architecture of the Megaplex-2200 enables redundancy at different levels of the network and provides a system with no single point of failure.
- System hardware redundancy is provided through optional redundant power supply and common logic modules. This, together with main link and I/O module redundancy, provides protection against hardware failures.
- 1:1 protection switching on the network (main link) modules protect against network or cable failure.
- In addition, Megaplex-2200 enables alternate routing in case of any network event or link failure. This feature is achieved by storing up to 10 different configuration databases and switching between them in case of any network event.

COMMON LOGIC MODULES

- The Common Logic module stores up to 10 databases for independent configurations and events information. It communicates (via a SLIP/PPP or TCP/IP connection) with the management station by means of an SNMP agent. Flash EPROM for software download, Telnet and ASCII terminal are also supported.
- Two dedicated ports on the common logic module are available for management purposes. The first port has a 9-pin DCE interface. The second management port can be ordered with one of the following options:
  - V.24/RS-232 DTE
  - Ethernet 10BaseT (UTP)
  - Ethernet 10Base2 (BNC).

MAIN LINK MODULES

- The four-E1/T1 trunk main link module stores the matrix information between the I/O channels and each of the four E1 or T1 links. The module supports non-blocking cross-connect for any n x 64 kbps timeslot coming from the links.
- The **ML-4** modules' E1/T1 main links can provide 1:1 protective switching between trunks, within 50 msec of a link failure.
- Unique **MLH-4** main link modules with built-in HDSL modems, with range up to 4.8 km (3.0 miles), aim to reduce the cost of local loop solutions by lowering equipment deployment and maintenance costs
- Four timing options are available:
  - Receive clock from each link
  - Internal crystal oscillator
  - Clock from any high speed module
  - Station clock.

  Any clock source can be set as the fallback in the event of a primary clock source failure.

I/O MODULES

HIGH SPEED DATA MODULES

- **HS-12** high speed synchronous data interface modules, operating at multiples of 56 kbps and 64 kbps up to 2.048 Mbps, enable connection to routers, bridges, vocoders, and other high speed devices.
- **HSH-4** data modules with built-in HDSL modems, enable cost-effective long range (up to 4.8 km/3.0 miles) deployment of high speed services over 2-wire or 4-wire copper lines.
- ISDN BRI modules enable extension of ISDN services over non-ISDN facilities, supporting data, voice and video applications. **HS-U** and **HS-U-12** "U" interface modules include IDSL technology for "last mile".

LOW SPEED DATA MODULES

- **LS-12** sub-rate multiplexer modules support up to 12 sync/async V.24/RS-232 low speed data channels. Each channel can be independently set for data rates from 2.4 to 64 kbps. LS-12 modules support end-to-end control signaling and BERT. Channels are bundled into two groups, each of which can be directed to a different main link.

VOICE MODULES

- **VC-12** voice modules with 12 PCM voice channel interfaces. Each interface can connect directly to analog lines for direct telephone connection, public payphones connection with pulse metering, PBX extension connection, or 2/4-wire E&M connection. Loop-start, as well as wink-start with battery polarity reversal, signaling methods are supported.

MANAGEMENT

- Network management provides centralized control of all network nodes, including interfaces configuration, connection setup, alarm and management.
- All parameters are user programmable for up to 10 independent configurations (databases). All configurations are saved in non-volatile memory.
- Alarm status and system configurations are available at all times. Multiple Megaplex-2200 hubs can be controlled from a single PC or UNIX workstation.
- Programming and setup of a remote Megaplex-2200 is accomplished either:
  - Via timeslot 0, or FDL bits;
  - Through the supervisory port of the remote unit, over a modem link or over a FRAD;
  - Over a full in-band dedicated timeslot, supporting PPP, FR encapsulation, and RIP2 standard protocols.

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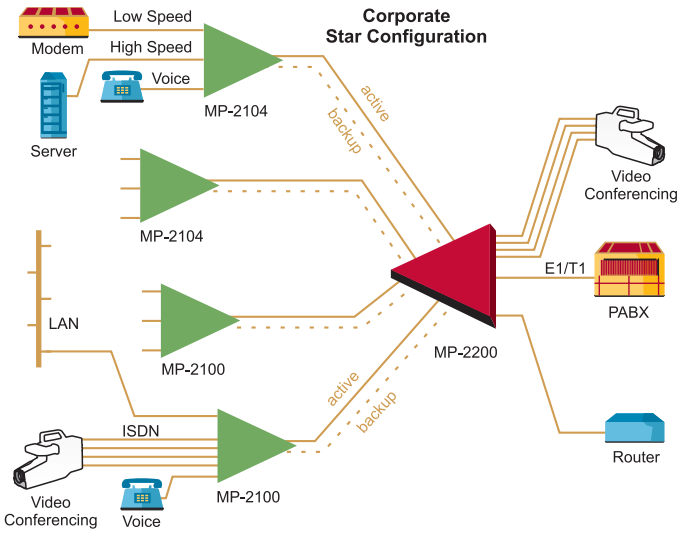
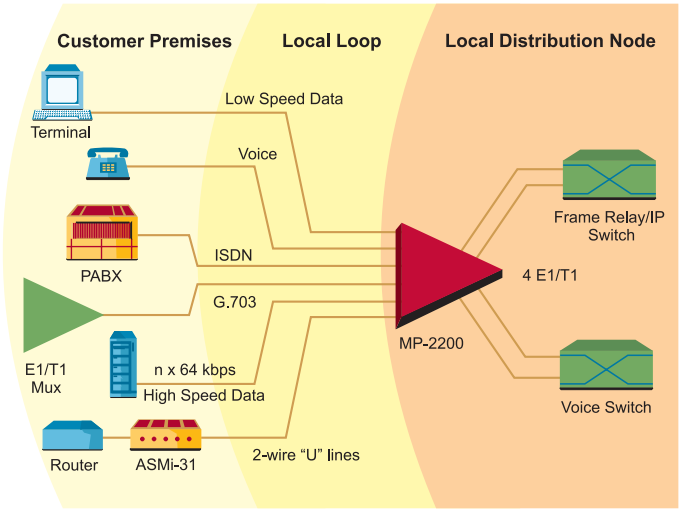
APPLICATIONS

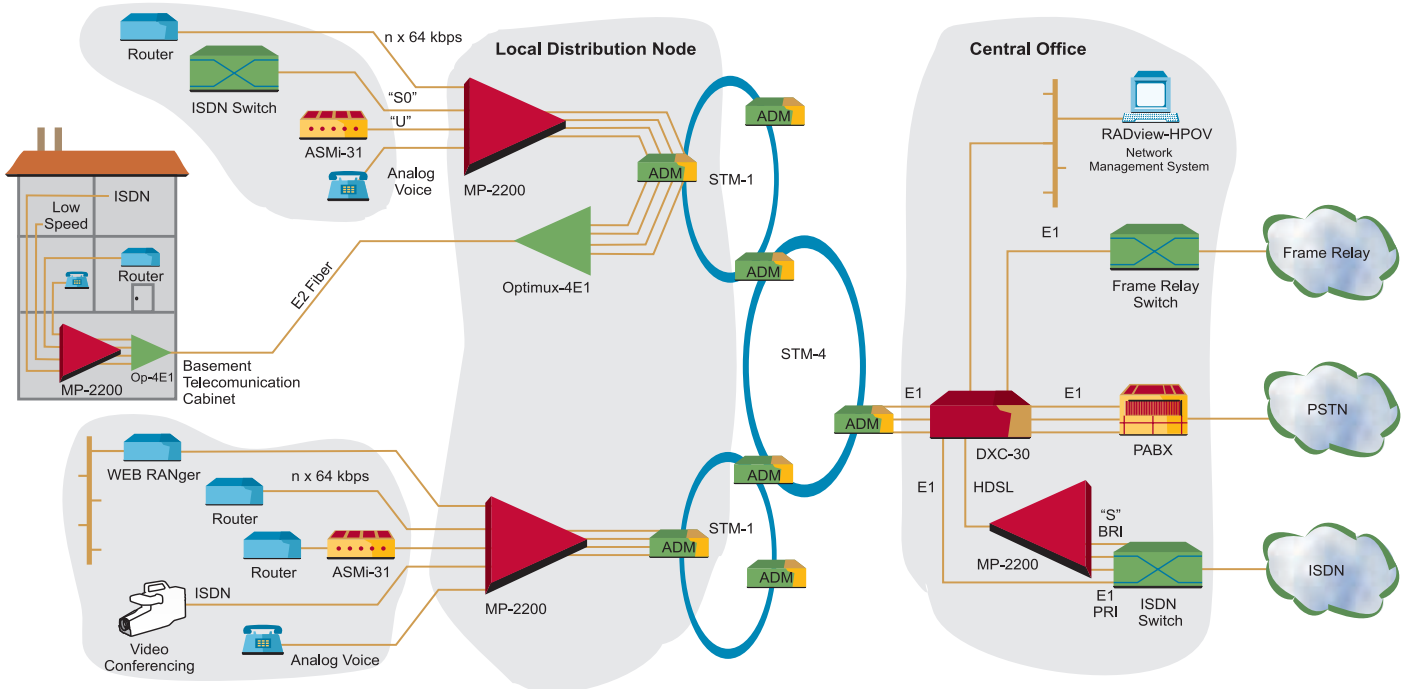
The flexibility of Megaplex-2200 enables it to be used in a wide range of applications and environments, from a campus application to a countrywide network for distribution of carrier bandwidth.



A central Megaplex-2200 in a star corporate network, provides flexible routing of timeslots from remote Megaplex-2100/2104 units to the central HQ. In this application, the Megaplex-2200 consolidates all the corporate network traffic, grooming the various traffic types, and redirecting them over to the appropriate external network switch.



Megaplex-2200 traffics various customer Voice, ISDN and Data services over 2-wire copper lines or through HDSL modems, to the appropriate network switches.



Solution for SDH Access network

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DIAGNOSTICS

- Megaplex-2200 incorporates test features for rapid fault detection and easy maintenance. Upon power-up, all system and I/O modules perform self-testing. Any problems are reported to the management system. Local and remote loops may be performed on any channel or main link.

ALARMS

- Alarm information is stored in the common logic module. Alarms are automatically read by the management system from any node. Up to 256 alarms can be stored in a queue. Up to 1024 alarms can be stored in a file on the PC, to be read by the management system.

SPECIFICATIONS

- **Main Link and I/O Modules**
  See accompanying data sheets
- **Chassis**
  16-slot card cage with:
  - 2 power supply slots
  - 2 common logic slots
  - 12 slots for I/O and main link modules
- **Power**
  AC: 115 or 230 VAC; 100 or 180W
  DC: -24 or -48 VDC; 160 or 180W (-48 VDC only)
- **Physical**
  MP-2200B
  Height: 27 cm / 11 in (6U)
  Width: 44 cm / 17 in
  Depth: 33 cm / 13 in
  Weight: less than 18 kg / 40 lbs
  MP-2200F
  Height: 45 cm / 18 in (10U)
  Width: 44 cm / 17 in
  Depth: 26 cm / 10 in
  Weight: less than 20 kg / 44 lbs
  (Weights are for fully loaded units)
- **Environment**
  Temperature:
  Operating: 0 to 45°C (32 to 113°F)
  Storage: -20 to 70°C (-4 to 160°F)
  Humidity: Up to 90%, non-condensing

ORDERING

BASIC UNITS

Megaplex-2200 systems are comprised of a **Basic Unit**, as well as **Main Link** and **I/O modules** that are ordered separately.

Basic unit includes chassis, single common logic module, single power supply, and power supply cables.

See *separate module data sheets* for main link and I/O module details and ordering information.

MP-2200B/*/^/&/#
ANSI standard 6U-high chassis with 12 I/O slots

MP-2200F/*/^/&/#
ETSI standard 10U-high chassis with 12 I/O slots

SYSTEM MODULES

System modules can be ordered separately for redundancy or special requirements.

MP-2200$-CL/#
Common Logic module

MP-2200$-PS100/*
100W AC Power Supply module

MP-2200$-PS160/*
160W DC Power Supply module

MP-2200$-PS180/*
180W AC Power Supply module

MP-2200$-PS180/*
180W DC Power Supply module (available for -48 VDC input only)

ORDERING OPTIONS

* Specify power supply voltage:
115 for 115 VAC
230 for 230 VAC
48 for -48 VDC
24 for -24 VDC

^ Specify **HP** for MP-2200 with 180W power supply (N/A for -24 VDC).
Default is 100W for AC, 160W for DC

& Specify system module redundancy:
R for full (2 x PS, 2 x CL)
RP for partial (2 x PS, 1 x CL)
Default is for 1 x PS, 1 x CL

Specify common logic second management port interface
(in addition to standard 9-pin DCE port):
UTP for Ethernet 10BaseT (UTP)
BNC for Ethernet 10Base2 (BNC)
Default is for 25-pin V.24/RS-232 DTE

$ Specify chassis type for modules:
BM for MP-2200B chassis
FM for MP-2200F chassis

RAD
data communications
http://www.rad.com

Corporate Headquarters
12 Hanechoshet Street
Tel Aviv 69710, Israel
Tel: (972) 3-6458181
Fax: (972) 3-6498250, 6474436
Email: rad@rad.co.il

U.S. Main Office
900 Corporate Drive
Mahwah, NJ 07430
Tel: (201) 529-1100
Fax: (201) 529-5777
Email: market@radusa.com

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