

# Megaplex-2100/2104

## Modular Integrated Access Multiplexers



- Multiple n x 64 kbps, E1/T1 or fractional E1/T1 main links, with combined TDM capacity of up to 8 Mbps (124 timeslots)
- 10/100-Mbps IP access link for transparent circuit extension over IP, employing RAD's TDMoIP technology
- Self-healing TDM E1/T1 rings and Resilient Fast Ethernet Ring (RFER) technology (under 50 msec switchover protection)
- Wide range of I/O modules for ISDN, voice, low-speed, high-speed, teleprotection, Ethernet, ISDN and more

Sub-DS0 multiplexer providing voice, data, Ethernet, and other unique services (teleprotection, omnibus)

MP-2100/2104 is a modular integrated access TDM multiplexer, which integrates multiple dedicated data, voice, ISDN and LAN channels over multiple main (network) links. MP-2100/2104 equipped with 8-port main link modules in conjunction with 12-port high-speed modules provides a traffic payload capacity of up to 248 DS0 timeslots.

The flexible, modular MP-2100/2104 with a wide choice of I/O (user interface) modules was designed for applications ranging from small campus networks to multi-site corporate networks or extensive carrier access solutions.

The equipment conforms to international standards, ensuring compatibility in multi-vendor environments worldwide.

### MARKET SEGMENTS

Megaplex-2100/2104 can be used in the following applications:

- Megaplex provides multiservice access for utility and transportation companies, to reduce the number of units needed to collect all the traffic, low speed, high speed, teleprotection, voice, teleconference and more (see *Figure 1* and *Figure 2*)
- Megaplex can be used to keep the huge installed base by maintaining

legacy and special services while enabling carrier network migration to NGN/PSN. It can be deployed at the carrier's point-of-presence, in the exchange, or at an organization's central office, as well as remote sites, (see *Figure 3* for carrier extension over copper lines).

Megaplex enables carriers to successfully deploy bundled services, ISDN services and Internet access. The integration of a broad range of services makes Megaplex a cost-effective access device, with reduced deployment and maintenance costs.

Megaplex with TDMoIP technology provides a cost-effective, versatile and modular solution for transmitting legacy TDM traffic over IP networks. This is especially suitable for large corporations, utilities or power companies that are seeking a future-proof migration path to IP networks.

### INTEROPERABILITY

Megaplex-2100/2104 is interoperable with Megaplex-4100, ASMi, IPMUX, DXC and FCD devices, and can interwork with third-party devices or networks complying with PDH and Ethernet standards.

**ACCESS<sup>+</sup>**

**TDMoIP  
Driven<sup>®</sup>**

**RAD**

data communications

The Access Company

### Applications

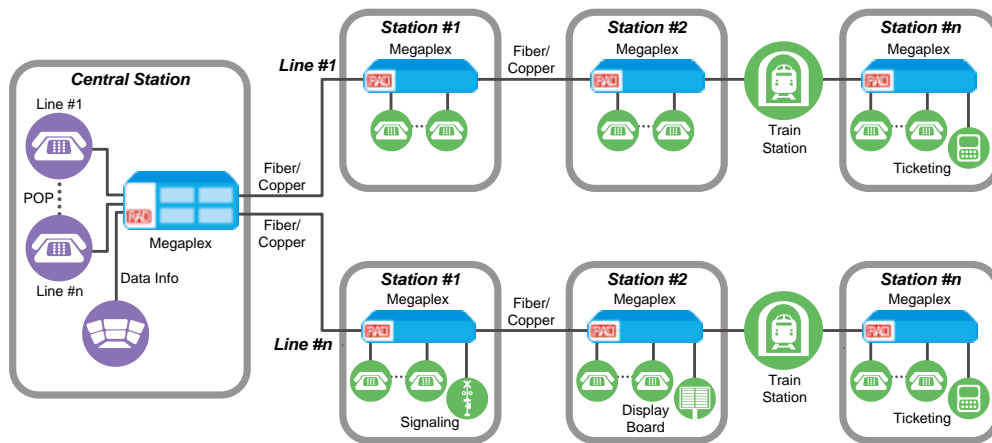


Figure 1. Omnibus Teleconference Voice Application for Railway Connectivity

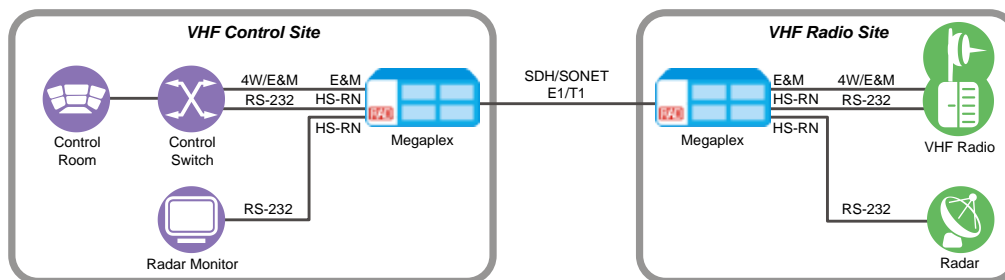


Figure 2. Air Traffic Control using VC-4/E&M/POS Modules

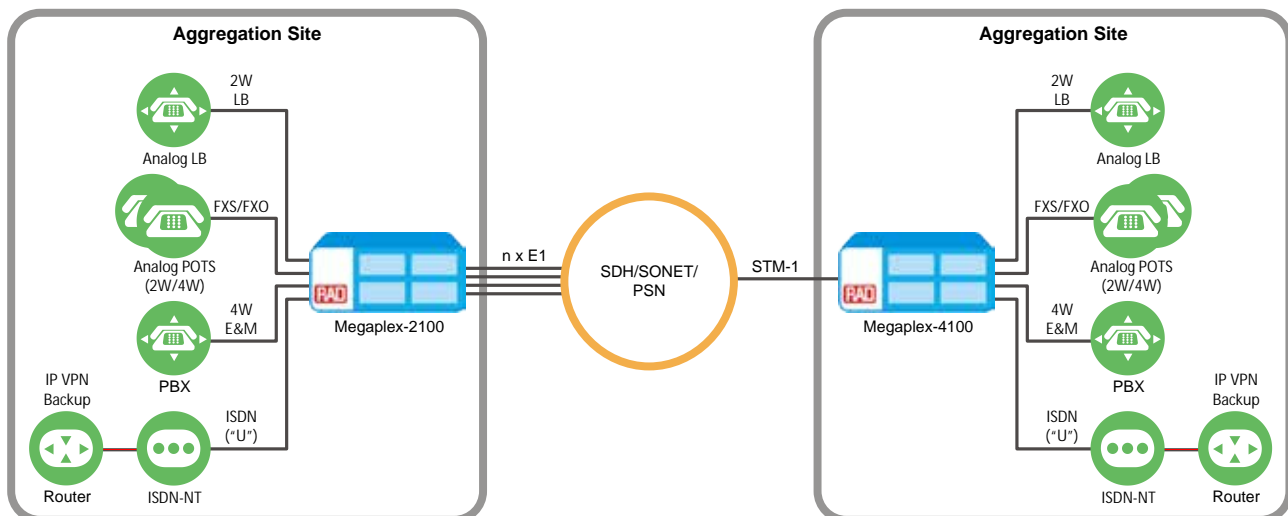


Figure 3. Carrier Network Migration

## Specifications

### Compliance

E1: ITU-T Rec. G.704 and G.706, G.736  
 T1: AT&T TR-62411, ANSI T1.403-1989  
 ITU-T Rec. G.703, G.704, and G.733  
 Ethernet : IEEE 802.3, 802.1p, 802.1Q,  
 802.3U

### MANAGEMENT

#### Control Port

Interface: RS-232 sync DCE port  
 Data Rate: 0.3, 1.2, 2.4, 4.8, 9.6, 19.2,  
 38.4, and 57.6 kbps  
 Connector: 9-pin D-type female

#### Ethernet Management Port

Type: 10BaseT  
 Connector: 8-pin RJ-45

#### Management Options

Menu-driven interface with  
 password-protected access, authorization  
 levels, Telnet, RADview-EMS, SNMPv2:

- Out-of-band
- Inband, via the TDM main link ports  
 using frame overhead or over a  
 dedicated timeslot

### DIAGNOSTICS

#### Tests

Local main link loopback  
 Local main link loop towards remote unit  
 Local and remote BERT on channels, ports,  
 bundles, individual timeslots and  
 individual bits in a timeslot  
 Local and remote loopbacks on channels,  
 ports, and timeslots  
 Forward and remote tone injection in  
 individual timeslots (voice channels  
 only)  
 IP connectivity check (ping)

#### Alarms

Time and date stamped  
 Last 256 alarms stored in RAM on CL  
 module, readable by management  
 system or terminal  
 Current alarms status

#### Statistics

AT&T statistics when using ESF framing  
 for T1 trunks, or CRC-4 multiframing  
 for E1 trunks  
 Performance statistics for bundles and  
 LAN ports

### GENERAL

#### 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  
*Note: Actual operating temperature range is  
 determined by the specific modules installed in the  
 chassis, and might require special ordering options.*  
*For extended operating temperature ranges,  
 contact your local RAD Business Partner.*

#### Physical

##### MP-2100 (4U-high)

2 power supply module slots  
 2 CL module slots  
 12 slots for I/O and ML modules  
 Height: 18 cm (7 in) (4U)  
 Width: 44 cm (17 in)  
 Depth: 33 cm (13 in)  
 Weight (fully loaded): less than 17 kg  
 (37 lb)

##### MP-2104 (2U-high)

Built-in power supply (optional built-in  
 voice ringer or ISDN power feeder is  
 available)  
 1 CL module slot  
 5 slots for I/O and ML modules  
 Height: 9 cm (3.5 in) (2U)  
 Width: 44 cm (17 in)  
 Depth: 33 cm (13 in)  
 Weight (fully loaded): less than 6 kg  
 (13 lb)

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## Modular Integrated Access Multiplexers

### Power

#### Power Supply Input

110/115 VAC (85 to 150 VAC), 50/60 Hz  
 220/230 VAC (150 to 264 VAC), 50/60 Hz  
 -48 VDC (-36 to -57 VDC)  
 -24 VDC (-18 to -40 VDC)  
 24 VDC with floating ground (18 to 40 VDC)

#### MP-2100 (without Ringer)

Maximum Output Power:

- AC: 250W
- DC: 250W

Maximum Input Power:

- AC: 250W
- DC: 315W

**Note:** Maximum power consumption for a system with redundant power supplies is 250W.

#### MP-2104

Maximum Output Power

- AC: 120W
- DC: 120W
- AC w/Ringer: 300W
- DC w/Ringer: 290W

Maximum Input Power:

- AC: 160W
- DC: 160W
- AC w/Ringer: 300W
- DC w/Ringer: 350W

### Ordering

*Basic unit includes a chassis, single common logic module, single power supply and power supply cables. Main link and I/O modules are ordered separately (see separate module data sheets for details and ordering information).*

#### RECOMMENDED CONFIGURATIONS

##### MP-2100/115/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, 115 VAC, 10BaseT management port

##### MP-2100/115/R/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, 115 VAC, redundant power supply and common logic, 10BaseT management port

##### MP-2100/230/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, 230 VAC, 10BaseT management port

##### MP-2100/230/R/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, 230 VAC, redundant power supply and common logic, 10BaseT management port

##### MP-2100/48/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, -48 VDC, 10BaseT management port

##### MP-2100/48/R/2UTP

Modular integrated access multiplexer, 4U chassis with 12 module slots and CL.2 common logic module, -48 VDC, redundant power supply and common logic, 10BaseT management port

##### MP-2100M-CL.2/UTP

Common Logic 2 for MP-2100, 10BaseT UTP Ethernet management port

##### MP-2104/115/2UTP

Modular integrated access multiplexer, 2U chassis with 5 module slots and CL.2 common logic module, 115 VAC, 10BaseT management port

##### MP-2104/230/2UTP

Modular integrated access multiplexer, 2U chassis with 5 module slots and CL.2 common logic module, 230 VAC, 10BaseT management port

##### MP-2104/48/2UTP

Modular integrated access multiplexer, 2U chassis with 5 module slots and CL.2 common logic module, -48 VDC, 10BaseT management port

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