

• **IMUX WAN Router with Four Integrated E1 DSU/CSUs** •

• MPEG Video Distribution • Branch Office Connectivity • Education District Networking

**IP•Express GE1** is a high performance, bandwidth scalable, IP WAN router with 4 E1 ports offering a standards based inverse multiplexing (N x E1) capability. The 4 E1 ports are able to connect to 4 remote locations or optionally to be N x E1 inverse packet multiplexed to remote locations from 4 to 8 Mbps. Standards based WAN protocols, PPP, Multilink PPP, and Frame Relay, ensure interoperability.

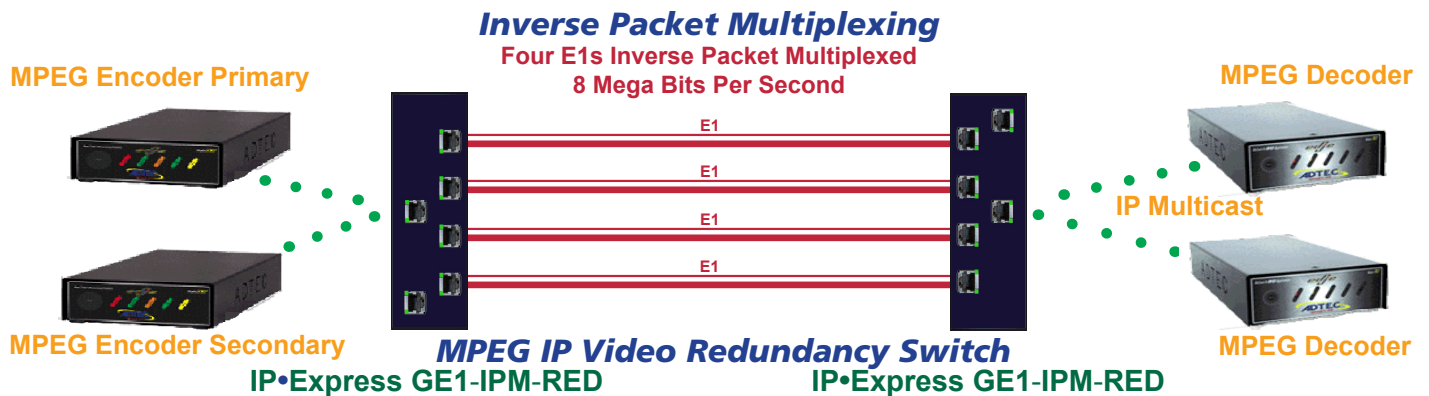
The **IP•Express GE1** interconnects remote LANs and addresses the large market for connectivity in the multi-megabit bandwidth range such as high quality MPEG Video delivery.

The Integration of the E1 CSUs provides for a complete solution with a straight forward configuration.



• **Four E1 Inverse Packet Multiplexor** •

**Inverse Packet Multiplexing** is an option of the **IP•Express GE1**. **IPM** delivers 4 to 8 Megabits of interconnectivity over 2,3,4 Dedicated E1 WANs. IETF approved RFC 1990 Multilink PPP protocol bonds multiple E1s into a high-speed link that has built-in redundancy. E1 line fault detection provides resilient connectivity for Mission Critical Interconnects.



**MPEG IP Multicast Streaming Video**

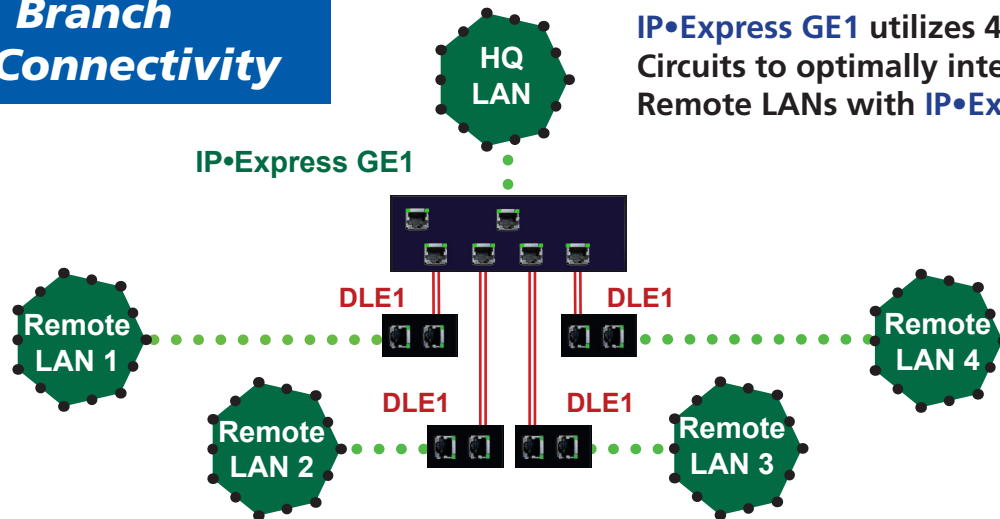
**IP•Express GE1-IPM** models deliver **MPEG IP Streaming Video** over Inverse Packet Multiplexed E1s. The Inverse Packet Multiplexor provides the bandwidth necessary for the delivery of 2 broadcast quality video feeds or to deliver near Contribution quality for a single MPEG Video. **IP Multicast** is a standard feature of the **IP•Express GE1** and is utilized to distribute MPEG video simultaneously to multiple decoders.

**MPEG IP Video Redundancy Switch**

**REDundant IP Video** configuration automatically switches from the Primary to a Secondary Encoder's IP Video Stream for mission critical broadcasts and is available with the **IP•Express GE1-IPM-RED**. A one second absence of IP packets from the Primary Encoder results in the switch to the Secondary Encoder. The WAN bandwidth is reserved for a single feed.

## E1 Branch Office Connectivity

IP•Express GE1 utilizes 4 E1 Telco Circuits to optimally interconnect 4 Remote LANs with IP•Express DLE1s.



## IP•Express GE1 Technical Specification

### LAN Network Interface:

- 10/100 BaseT Ethernet Port
- Auto-negotiate or Configured Speed/Duplex

### LAN Network Protocols Supported:

- IP, TCP, UDP, RIP, ICMP
- IP Multicast support
- IP Video Stream Redundancy (Optional)

### WAN Network Interfaces:

- Four E1/FracE1 CSU/DSU ports
- Inverse Packet Multiplexing (Optional)

### WAN Network Protocols Supported:

- PPP (RFC 1548, RFC 1332, RFC 1334, PAP)
- Multilink PPP (RFC 1990)
- Frame Relay (ANSI ANNEX D, LMI, RFC 1420)

### Routing Protocols Supported:

- RIPv1, Static

### E1/Fractional E1 Specifications:

- Framing - CRC4 or FAS or UNFRAMED
- Coding - HDB3 or AMI
- Supports DS0 assignments from 1 to 32 (64Kbps to 2.048Mbps)

### E1 Diagnostic:

- Loopback Test Network, Internal, Framing, Payload
- Bert Tests 2E07,2E11,2E15,QRSS

### TFTP Online Upgrade Capable

- Fully operational during upgrade

### Network Security:

- Full On Source, Destination Address; Port and Flag IP Packet filtering
- Network, Device and Application Layers.

### Dimensions:

- 9" (L) x 7.3" (W) x 1.50" (H)
- 4 E1 Wan Connectivity in 1/2 of a 19" rack

### Management:

- Telnet support with Edit and Paste Templates
- Console Port for Out of Band Management
- SNMP support (MIB I, MIB II)
- Remote configuration, monitoring, & reset

### Regulatory:

- Safety -IEC60950
- EMC - CFR 47 Part 15 Sub Part B:2002 EN55022:1994+A1&A2 EN55024, ICES-003 1997 CISPR 22 Level A
- Telecom TBR12, TBR13
- CE

### Power:

- Locking Power Connector
- 12-24 VDC 1.0A Ships with Universal Adapter
- Optional -48V 0.25 Amp
- Hot Standby with 2nd Power Module

## How to Order — IP•Express GE1

Part No.	Description	Notes
085-2048-0x	IP•Express GE1, xE1 (x=1 - 4 Ports)	Base Model Specify # of E1 Ports Enabled
U85-2048-0x	IP•Express GE1 E1 Port Upgrade	Enable Additional E1 Ports (up to 4)
Base Options		Specify as suffix
-IPM	Inverse Multiplexor Option	IPM 4 to 8 Mbps Interconnect over 2,3,4 Dedicated E1 WANs
-RED	MPEG IP Video REDundancy Switch	Secondary Encoder Traffic passed on failure of Primary Encoder
Power Options		Specify as suffix
-DCMOD	Power 12/30 VDC w LOCKING CONNECTOR	Ships with Universal Adapter 90/240 50/60
-WIREDC	Power 12/30 VDC Stripped Wire Screw	
-N48VDC	Power Supply Module Negative 48 Volt DC	Isolated Negative 48 Volt Power Hot Standby
Rack Mount Option		Specify as suffix
-RACKMNT	19" Wide Rack Mount Brackets	Enclosure Nut Serts Installed