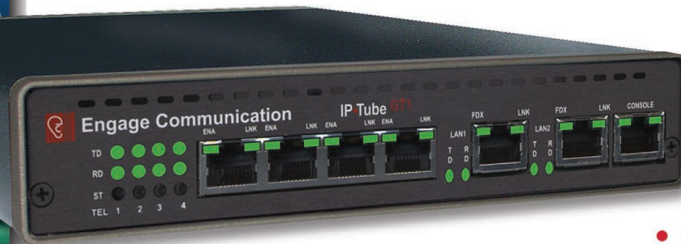




SS7 Over IP

- Exploits Efficiency and Flexibility of Packet Networks
- Reduces Transport Costs
- Facilitates New Revenue Opportunities



SS7 Signaling Circuit Extension Over IP

The **IP•Tube GE1 SS7 SIG** delivers SS7 signaling over cost effective IP networks without costly replacement of existing equipment. Benefits are realized immediately, simple installation emulates existing point to point circuits without reconfiguration of the MSC, STP or HLR. The **IP•Tube GE1 SS7 SIG** encapsulates the SS7 Message Signal Units (MSUs), Link Status Signal Units (LSSUs), and optionally Fill-In Signal Units (FISUs) into IP packets from the E1 interfaces of:

- Telco Switches
- Mobile Switching Centers
- Signal Transfer Points
- Home Location Registers

The **IP•Tube GE1 SS7 SIG** transparently transports SS7 messages over IP networks. SS7 signaling network elements such as local and tandem switches, Mobile Switching Centers, Signal Transfer Points and Home Location Registers that are interconnected to remote network elements by **IP•Tube GE1 SS7 SIGs** are able to transmit their signaling messages over cost effective and flexible IP networks.



Reduced Transport Costs

Carriers significantly reduce SS7 transport costs by replacing expensive long-haul dedicated signaling links with very competitively priced IP connectivity between network elements.

Long Haul SS7 Traffic via IP Networks

Low Cost IP Services, such as xDSL, have sufficient bandwidth to deliver the SS7 Over IP packets. SS7 Over IP network bandwidth utilization is limited to SS7 MSUs and LSSU.

Deployment Flexibility

Widely available commercial and private IP networks provides the SS7 network designer with competitive options for interconnecting the signaling points.

New Revenue Opportunities

Cost-effective IP transport technology and service-rich SS7 applications enables operators to quickly integrate enhanced services and capture new revenue.

IPTube GE1 SS7 SIG

Pay-As-You-Grow Field Upgrades

The **IP•Tube GE1 SS7 SIG** has configurations with 1 to 4 integrated E1 interfaces each of which supports 1 to 31 SS7 Communication links. The **IP•Tube GE1 SS7 SIG** is designed for Pay-As-You-Grow expansion.

Customers can elect to economize initial installation by purchasing a single active E1 port, and then enabling an additional SS7 DS0s or an E1 port via an option license key.

Industry Standard SS7 Framer

The **IP•Tube GE1 SS7 SIG** uses an industry standard SS7 Framer to receive and transmit SS7 messages. Minimal IP bandwidth is required to deliver SS7 since only Message Signal Units (MSUs), Link Status Signal Units (LSSUs) SS7 frames are encapsulated into IP packets.

Rack Mount Kit

Central office or data center rack support for 19" and 23".

IPTube GE1 SS7 SIG Optional Features

E1 Drop and Insert OPTION -D&I

The 2nd E1 Interface can be activated to provide a Drop and Insert interface for direct inline connection to the SS7 DS0.

Protector OPTION -PRO

The protector option utilizes the second LAN interface as a redundant path for the SS7 packets.

E1 Multiplexor OPTION -MUX

The **IP•Tube GE1 SS7 SIG** with the MUX option has the ability to support remote SS7 messaging taps from 31 SS7 timeslots.

Technical Specifications

E1/Fractional E1 Specifications:

- 1-4 Integrated G.703 Port 120/75 ohm Models with -36dB sensitivity
- Framing - CRC4 or FAS • Coding - HDB3 or AMI
- Supports DS0 assignments from 1 to 31 • 56K or 64K SS7 Data Rates
- Mux Mode - Non Contiguous Configuration x-y,z Supported

SS7 Over IP Protocol:

- SS7 Frame UDP encapsulation with Assured Delivery
- Transmission Control Protocol (TCP)
- Network Transparent - no point code required
- Type of Service and Mac layer 802.1p/q QOS

LAN Network Interface:

- Two 10/100BaseT Full/Half Ethernet
- Auto negotiation or Configured Speed and Duplex

LAN Network Protocols Supported:

- IP, TCP, UDP, ICMP, SCTP
- Telnet

TFTP Online Upgrade Capable (FLASH ROMs)

- IP•Tube GE1 SS7 SIG is fully operational during upgrade

Dimensions:

- Dimensions: 9" (L) x 7.3" (W) x 1.50" (H): 1/2 Rack Wide 1U High

Environmental:

- 0° to 132° F (-10° to 50°C) operating temperature
- Up to 90% operating humidity (non-condensing)
- Optional Extended Temperature Range available

Regulatory:

- CE • 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

Management:

- Telnet support with Edit and Paste Template Files
- Console Port for Out of Band Management
- SNMP support (MIB I, MIB II) with configured traps
- Remote config., monitoring, & reset
- Telco Diagnostics: Local Loop, Remote Loop

Power:

- 12-30 VDC, 1.0A. Locking Connector

How To Order - IPTube GE1 SS7 SIG

Part No.	Description	Notes
307-2048-0x-yy	IP•Tube GE1 SS7 SIG	Models with 1-4 E1 Ports 0x; 1-31 SS7 DS0s yy
-PRO	Protector Option	Fault Tolerant Network Interconnect
-D&I	Drop and Insert Option	Provides in line access to SS7 timeslot(s)
-MUX	Multiplexor Option	Support for 31 SS7 DS0s to 1 E1
Power Options		Specify as suffix - Combine 2 for Hot Standby
-DCMOD	Power Module 12/26 VDC/AC ADAPTER	Ships with Universal Adapter 100/240 50/60
-WIREDC	Power Supply Module 12/26 VDC Screw Term	
-N48VDC	Power Supply Module Negative 48 Volt DC	Isolated Negative 48 Volt Power
Rack Mount Option		Specify as suffix
-RACKMNT	19/23" Wide Rack Mount Brackets	Enclosure Nut Serts Installed