GEM-Lightning

GEM-Lightning is a **low-cost**, handheld device for monitoring and testing (BERT) of T1 and E1 interfaces present in telecom central offices and test labs. GEM-Lightning is an essential tool for switch technicians and customer service personnel attempting to identify problematic circuits in the field. The portability GEM-Lightning makes it a must for the technician on the move while its remote logging capability allows the capture of information for later analysis.

Features:

- Self-contained, portable, low-cost, handheld unit.
- Monitoring up to two DS1s or E1s per handheld unit.
- DS1/E1 monitor shows current status and counts of the following items: LOS, LOF, AIS, RAI, ES, positive slip, negative slip, CRC failure, and CVC.
- Standard DS1 and E1 frame and line formats.
- Tools provided for monitoring real-time data link, customer line, DS1/E1 line and CAS signaling bit statuses.
- Speaker and head-set jack for audio testing.
- DTMF and MF detection and generation including ANI.
- **Ethernet LAN** for optional connection to remote PC for **"pay as you go"** high-level analysis of the following protocols:
  o GR-303 – EOC, TMC, and ABCD bit signaling.
  o V5.1/2 – Control, PSTN, Link, BCC and Protection data links, and E1 SA7 bits.
  o ISDN PRI – Q.921 and Q.931 messaging on E1/DS1-based ISDN PRI links.
  o E1/DS1 CAS.
  o DS1/E1 SS7.

- Monitoring of attenuated DS1/E1 (up to 20dB) signals.
- RJ-45 ethernet and DS1/E1 connectors. Bantam cables optional.
- Uses standard AA batteries for convenient operation or standard DC adaptor for extended use.

The BERT testing function can generate and detect pseudorandom and repeating bit patterns. It is used to test and stress data communication links, and it is capable of generating and detecting the following patterns:

- The pseudorandom patterns 2E7, 2E11, 2E15, and QRSS.
- A repetitive pattern from 1 to 32 bits in length.
- Alternating (16-bit) words that flip every 1 to 256 words.
- Daly pattern.