Datum Systems manufactures highly versatile and efficient satellite modems. Our high performance 70/140 MHz Satellite Modem, the PSM-500, is the industry’s most reliable & flexible modem in its class and is unmatched by any other modem for BER performance, fast acquisition, low latency and total power/bandwidth optimization. The PSM-500 can be configured in mod and demod-only modes to support point-to-multipoint architectures at a hub or gateway site.

**Advanced FlexLDPC** – With unparalleled configuration flexibility and superior coding gain, FlexLDPC takes FEC technology innovation to the next level, bringing strong economic advantages to satellite service providers and their customers. Granular code rates and block sizes get you the most out of your available satellite bandwidth and spectral power, while keeping processing latency at the desired level. Other optional FEC types include Viterbi, Trellis, Reed Solomon and Turbo Product Codes.

**SCPS TCP/IP Acceleration** – Datum Systems provides an embedded protocol acceleration option based on the Space Communication Transport Specification (SCPS-TP). Our integrated optimization software provides increases in IP packet throughput over TCP/IP links via our Ethernet IP interface option.

**Backward Compatibility** - Datum System’s PSM-500 implementation represents state of the art enhancements to the popular legacy PSM-4900 series of modems, while being completely backward compatible.

**Easy Feature Unlocks** – The PSM-500LT can be easily upgraded via front panel key codes. Upgrades are simple to implement and are available in preconfigured software versions, offering a variety of options for modulation, FEC and data rates up to 29.5Mbps.

**Redundancy** Built-in 1:1 redundancy comes standard on the PSM-500LT and supports BUC/LNB power and reference switching. It can be enabled through the front panel and requires only a few external cables and power splitters.
**System Specifications:**

**External Reference:**
- 1, 2, 5 or 10 MHz input on rear panel

**Internal Stability:**
- 1 x 10^-6 TCXO (Standard)

**Data Clock Sources:**
- Internal, Terminal Timing, External, Rx Recovered

**Carrier on/off Isolation:**
- > 60 dB

**Output Spurious:**
- < -55 dBc/4 kHz, Typical < - 65 dBc/4 kHz

**Level Accuracy:**
- Accurate ±0.5 dB, 50 to 90 MHz or 100 to 180 MHz

**Level Stability:**
- ±0.5 dB, 0 ~ 50°C, MHz at 25°C

**Output Phase Noise:**
- Better than Intelsat by 6 dB typical, 4 dB min

**Rx Acquisition Range:**
- Programmable from ± 100 Hz to ± 1.25 MHz

**Descrambler Types:**
- IBS, V.35, IESS, TPC, RS, LDPC, EFD

**Fast Receive Lock Performance:**
- Example: FEC 1/2, EB/No = 9.6 dB, Acquisition Range of ± 30 kHz
  - 315 ms at 9.6-kbps BPSK
  - 71 ms at 64-kbps QPSK

**Plesioschronous or Doppler Buffer Store:**
- Receive Buffer Range: 4 bits to 524,280 bits, in 1 bit steps or delay time
- Receive Clock Options: Internal, External, Mod Clock, Receive Clock

**Terrestrial Interfaces:**
- Standard Synchronous: Serial RS232, RS422, V.35, V.36, EIA-530(A)
- Optional: HSSI
- Ethernet IP 10/100 Base-T (Bridge & Router, QoS)
- SCP6 TCP/IP Acceleration (Software Only)
- Supports Up to 5 Mbps Aggregate throughput and 200 Continuous Sessions

**Loopback Modes:**
- IF, bi-directional terr and sat data loopback

**Diagnostics:**
- Loopback Modes: IF, bi-directional terr and sat data loopbacks
- BER Test Pattern: 2047 or 2 23-1
- BERT: Built-in bi-directional bit error rate test set
- Carrier: Pure carrier and sideband
- Form C Relays: Assignable faults to Form C rear alarm connector

**Environmental and Physical:**
- Prime Power Input: 90 to 264 VAC, 50/60 Hz or -48 VDC (HW Option), < 30 watts
- Operating Conditions: 0 to 50°C, 95% humidity, non-condensing
- Storage Temperature: -20 to +70°C, 99% humidity, non-condensing
- Size: Rack mount - 1 RU (19"W x 12"D x 1.75"H)
- Weight: Approximately 7 lbs fully configured

**Certifications and Compliance:**
- CE Certified for: EN30022 Class B (Emissions)
- EN30088-2 Part 1 (Immunity)
- Can/CSA C22.2 No. 950-95 (Safety)
- UL-1950 (Safety)
- RoHS Compliant: Meets RoHS lead-free standards