GENERAL DYNAMICS Mission Systems

guarDSMan™

High-Rate Modem for DVB-S2 Satellite Communications



Digital Architecture for Pooled Resource Management

Eliminates Dependence on Custom Hardware

Industry Standard Interfaces (REST API & GEMS)

Flexible Deployment Options

Cost Effective COTS Hardware

Overview

guar**DSM**an[™] is the latest generation, SW-defined modem, supporting full-duplex space-ground communications at data rates up to 2 Gbps. Our flexible SW implementation is field-upgradeable to extend a wide range of waveforms (in addition to DVB-S2, including modulation and coding) and can be hosted on on-premise COTS x86 server technology, or alternatively, in a remote cloud hosting environment. Signal interface is compliant with Digital IF industry-standard VITA-49 transport protocol. A typical installation includes Commercial-Off-the-Shelf (COTS) digital to analog (D/A) and analog to digital (A/D) conversion (instantaneous bandwidth up to 1.6 GHz) located proximate to the ground station antenna aperture, which streams digital signal via commodity networks to/from the SW modem host environment.

Key Features

- Bi-directional communications up to 750 Msym/sec
- Baseband data rates up to 2 Gbps
- QPSK, 8PSK, 16APSK, 32APSK modulation formats
- Configurable RRC Matched Filter
- Generic Stream Encapsulation (GSE)
- Deploys flexibly on COTS server or in a cloud environment
- Internal BERT for fault isolation and performance testing
- Limited 1 year warranty
- Extended warranty available at additional cost



Improved Performance

Based on the proven digital architecture that General Dynamics Mission Systems has used to field software modems at ground stations across the globe, the guarDSMan[™] modem improves upon that baseline to deliver the highest performance softwaredefined modem in the industry.

Modular and Extensible

Additional high-rate guarDSMan[™] modems can be added to the resource pool without the long lead time that accompanies custom hardware.

Easy to Use, Deploy and Manage

Software defined modem allows new waveforms to be easily added and remotely installed to meet ever evolving technological advancements. Designing the guarDSMan[™] modem to run on COTS hardware improves interoperability, system maintainability, and fast tracks cloud migration. Built-in test functions streamline troubleshooting and fault isolation.

Technical Specifications

- Standards Compliance
 - DVB-S2 ETSI EN 302 307-1
 - SDA NEBULA Standard
 - SDA Ka-Band Modem GSE Specification

Warranty

 GDMS offers a 1 year limited warranty, extended warranty are available at additional cost.

DVB-S2 MODCODs

- Up to 750 Msym/sec (bi-directional)
- Up to 2 Gbps data rate (bi-directional)
- OPSK, 8PSK, 16APSK, 32APSK modulation
- LDPC 1/4, 1/3, 2/5, 1/2. 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

DVB-S2 Options

- Normal FEC Frame Size (64k)
- Constant Coding and Modulation (CCM)
- Pilot Frames
- Generic Continuous Stream
- Configurable RRC Matched Filter

Two-Way Time Transfer

- Accuracy: < 3 ns rms</p>
- Logging
 - Performance metadata available for advanced troubleshooting

Networking Features & Protocols

- M&C interface: RJ45, Baseband/Digital IF interface: QSFP112
- GSE over Ethernet

Ordering

- Available for order through General Dynamics
- Email: guarDSMan@gd-ms.com
- U.S. & Canada: 1-877-449-0600 International: Country Code + 877-466-9467 DSN: 312-282-1048

Lead Time

• Current lead time is 6 months. General Dynamics reserves the right to update lead times or cancel an order at any time.



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