

The MOD1250 is 500Msps DVB-S2X high performance Modulator designed for High Throughput Satellites (HTS) VSAT networks and Broadcast applications



Overview

Based on a "Software Defined Radio" architecture, the MOD1250 is SpaceBridge's DVB-S2X Wideband Modulator, designed to support high symbol data transmissions over High Throughput Satellites from a central Hub towards a group of remote terminals. MOD1250 Modulator is a very powerful system that allows the most efficient use of the satellite segment by combining the full implementation of the MODCODs stated as part of the DVB-S2X standards and the use of a roll-off factor as small as 5%. It also supports Time Slice Numbering (TSN) what reduces considerably the data processing time at the user terminal by exposing the decoder only to data that is destined to it. Furthermore, MOD1250 also supports Direct Sequence Spread Spectrum (DSSS) on the Forward Link and NCR/PCR time stamping for synchronous VSAT Network operation

Features

- Symbol rate from 500 Ksps to 500 Msps
- Software Defined Radio architecture
- All MODCOD as per EN 302307-02
- GSE or MPE Encapsulation (188, 189 or 204 bytes)
- Pay-As-You-Grow (PAYG) licensing
- BB Frames: Normal and Short
- Built-in 1:1 Redundancy
- NCR/PCR time stamping
- High Output Power up to +5 dBm

Optional Features

- Time-Slicing: Abides to Annex M, support 32 simultaneous PLS's per discrete modulated carrier
- Carrier ID (CID) support
- Very Low SNR (VLSNR) MODCODs
- Direct Sequence Spread Spectrum (DSSS) Multiple inputs for redundancy
- Support BISS2 (mode 0, 1 and E)
- 128 and 256AES Encryption

UNIT CHARACTERISTICS		NETWORKING	
Form Factor	19" Rack mountable	Data throughput	3 Gbps
Application	High-Speed Satellite Modulator	Data Input Ports	2 x 10 GbE Ethernet Port
FORWARD LINK (TRANSMISSION)			Manage me nt Interface
Technology	DVB-S2X TDM Forward Link	Timing and Frequency	1 PPS and 10 MHz reference
Modulation	DVB-S2X ACM, QPSK up to 256APSK	Connectors	BNC inputs
FEC	Inner LDPC, outer BCH	Data throughput	3 Gbps
Coding Rates	per EN 302307-02	Data Input Ports	2 x 10 GbE Ethernet Port
Frame Length	Normal 64800 bits and short 16200 bits		
ACM	Up to 32 simultaneous MODCODs		
Symbol Rate	500 ksp/s to 500 Msps		
Encapsulation (188, 189 or 204 bytes)	GSE or MPE (188, 189 or 204 bytes)		
Time Slicing	Up to 32 TSNs, Annex M		
Channel Spacing	5%, 10%, 20%, 25%, 30% or 35% channel spacing (roll-off factor)		
Carrier ID	Per DVB-CID specifications		
RF PERFORMANCE			SYNCHRONIZATION REFERENCE
Frequency Range	950 – 2150 MHz, 1 Hz step	10 MHz Ref Clock	BNC: -5 to +15 dBm (50 Ohm) sinus reference input
Output Level	-40 dBm	1 PPS Input	BNC: 1PPS input TTL/50 Ohm
Phase Noise, dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz	GPS-NTP/PTP-Sync	Provides NTP server function, or IEEE1588-2019 and SyncE
Return Loss	> 15dB	Operating Temp.	0°C – 55°C
Output Connector	N-type(F)		
Output Impedance	50 Ohms		
In-band	<-65 dBc,		
Signal Related Spurious			
Non-Signal Related Harmonics	<-80 dBc		
L-band Monitor	SMA (F), 50 Ohm, same spectrum as at Output, -20dB down		
ENVIRONMENTAL AND MECHANICAL			
Dimensions	435 x 44 (1RU) x 458 mm (W x H x D)		
Weight	~ 4Kg		
Power Consumption	60W		
Operating Temp.	0°C – 55°C		