

SmartGate S2/S2X

IP/Ethernet Satellite Gateway



The SmartGate S2/S2X is a Satellite modulator dedicated to IP applications over Satellite.

SmartGate is a state-of-the-art of satellite modulator dedicated to IP applications over satellite. It combines, in a 1U rack, both powerful IP/Ethernet encapsulation capabilities and Satellite modulation in full compliance with the DVB-S2 and DVB-S2X standards.

IP/Ethernet Input Management

SmartGate is able to manage an enhanced filtering & QoS through its 1GEth and 10GEth ports. To ensure a backward compatibility with existing receivers, an optimized Multiprotocol Encapsulation is used.

Full Implementation of the DVB-S2 & DVB-S2X standards

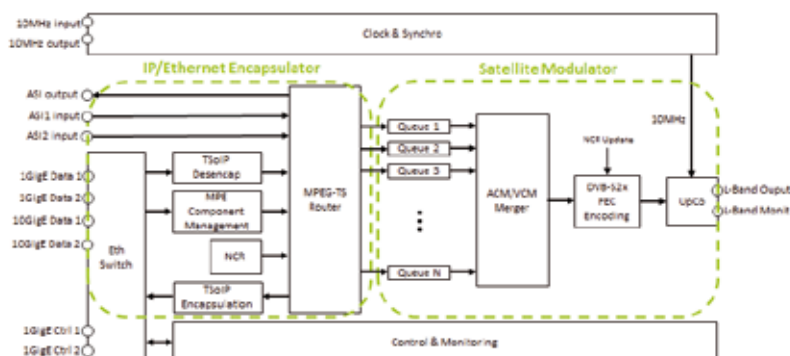
SmartGate integrates the latest FPGA technology required to perform high quality modulation based on the DVB-S2 and DVB-S2X standards. It offers VCM/ACM multiqueuing, low roll off and VL-SNR modes.

Crystal Spectrum

SmartGate covers the full L-Band spectrum range (950/2150 MHz) with a Symbol Rate from 0.05 to 120 MBaud and roll off factor from 5 to 35% (1% steps). This RF output constitutes a best in class performance, providing a high SNR value, excellent shoulder levels and lowest phase noise.

Easy integration in existing VSAT system

SmartGate can be fully configured remotely by SNMP and can be easily and seamlessly integrated into most existing systems to improve efficiency (Wideband, DVB-S2X), flexibility (ACM/VCM multiqueuing) and reliability (NCR insertion, VRRP input redundancy).



Applications

- Content Delivery Network (CDN) for Multiscreen viewing (OTT over Satellite)
- Interactive TV:
 - Non-linear TV like Catch Up TV and Push VOD with DRM
 - Home Automation & e-Health
 - Betting/Voting Applications
- Backhauling for IoT (Internet-of-Things) terrestrial networks
- Direct M2M communications
- Upgrade of VSAT systems

Benefits

- Ultra-low latency
- Powerful IP/Ethernet filtering
- Optimized Multiprotocol Encapsulation (MPE)
- Full management of PSI/SI tables
- Network Clock Reference (NCR)
- DVB-S2/S2X standards
- ACM Multiqueuing
- Symbol Rate: up to 120 Mbaud

INPUT

- Datagrams over Ethernet**
- 2 x 1GigE
 - 2 x 10GigE (copper or fiber)
- MPEG-TS Management**
- 2 MPEG-TS over ASI inputs

OUTPUT

- RF Output**
- Bandwidth up to 125 MHz
 - L-Band: 950 MHz to 2150 MHz, step 1 Hz N 50 Ω / +0dBm / -35dBm, step 0.1 dB
 - SNR > 40 dB @ 0 dBm -16 APSK - 72 Mbaud
 - Shoulders rejection < -50dB @ 0dBm & f/fN=1.5 for ro 20%
 - Spurious:
 - < -65 dBc/4KHz @ 0 dBm for 950 to 2150 MHz range
 - 60 dBc outside the useful band
 - Phase noise:
 - @10Hz < -80 dBc/Hz
 - @100Hz < -90 dBc/Hz
 - @1KHz < -100 dBc/Hz
 - @10KHz < -105 dBc/Hz
 - @100KHz < -110 dBc/Hz
 - @1MHz < -130 dBc/Hz
 - Switchable 10MHz insertion on L-Band RF output

- MPEG-TS Management**
- 1 MPEG-TS over ASI output
 - MPEG-TS over IP output

PHYSICAL

| | |
|--------------------------------|-----------------------|
| Dual Redundant AC Power supply | 90 to 240 VAC - 50 Hz |
| Power consumption | 100W |
| Mountable 1RU rack, Dimensions | 483 x 376.5 x 43.8 mm |
| Weight | 8 kg |
| Temperature Range | 0° C to 50° C |



ORDERING CODES

SmartGate S2/S2X IP/Ethernet Satellite Gateway

| | |
|-----------------|--|
| XSSR-SGT0-3000 | SmartGate: IP S2/S2X Satellite Gateway - MPE, QPSK/8PSK, L Band/15 Mbaud |
| XSSO-SGT0-16AM | 16APSK constellations |
| XSSO-SGT0-32AM | 16/32APSK constellations |
| XSSO-SGT0-64AM | 16/32/64APSK constellations |
| XSSO-SGT0-128AM | 16/32/64/128APSK constellations |
| XSSO-SGT0-256AM | 16/32/64/128/256APSK constellations |
| XSSO-SGT0-36MB | Symbol Rate < 36 Mbauds |
| XSSO-SGT0-72MB | Symbol Rate < 72 Mbauds |
| XSSO-SGT0-120M | Symbol Rate < 120 Mbauds |
| XSSO-SGT0-LSNR | VL-SNR modes |
| XSSO-SGT0-AVCM | Multiqueue ACM/VCM Management |

FEATURING

Encapsulation

- Useful Ethernet data rate up to 600Mbit/s
- L2 or L3 Multiprotocol encapsulation (DSM-CC)
- Up to 4000 independent components (PID)
- Standard & QinQ VLAN support
- MAC mapping
- Section packing
- Traffic Management (shaping, policing, priority)

Modulation

- Symbol rate: 0.05 to 120 Mbaud (1 Baud steps)
- Standard roll-off and custom roll-off from 5 to 35 % (1% steps)
- DVB-S2 & DVB-S2X
 - Outer encoding: BCH
 - Inner encoding: LDPC (all code rates of the standards)
 - Constellations: QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK
 - PL Scrambling codes
 - Operating modes: CCM, VCM & ACM
 - Frame length: Short & Normal frames
 - Pilots insertion

Clock & synchronization

- Internal 10 MHz Reference Frequency
 - High stability: +/- 5 ppb over 0 to 70° C
 - Ageing: +/- 0.05 ppb/day - +/- 7.5 ppb/year
- External 10 MHz input for RF synchronization
- External 1 PPS input for NCR initialization

Control & Monitoring

- RS232 control port with SCPI protocol
- 2 dedicated Ethernet ports for
 - SNMP (V2C) over Ethernet
 - HTTP over Ethernet (Embedded HTML5 web client)
- Front panel keyboard & display

Redundancy

- 1+1 redundancy on Ethernet ports (x2) for Control
- RRRP management for the 4 Data Ethernet ports
- 1+1 redundancy RF signal with Alarm relays
 - connector 9-pin sub-D (F)
 - Dry contact management
- N+1 redundancy through Ethernet