SM1- Satellite Modem

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meet SM1

The SM1 Advanced DVB-S2 SCPC Modem with a GigE interface, offers service providers a strong competitive edge when offering their services in today's competitive market.

SM1's best cost-performance parameters lead the market. With the high spectral efficiency of the DVB-S2 standard and its extensions the SM1 delivers more performance at lower cost and significantly reduces long-term operating costs.

Offered in multiple form factors, from 10X15 CM board to high end 19" chassis.

The SM1 offers fast recovery from power cycle to a well-defined last known state.

Image upgrade can be simply and reliably done locally or over the air.

The SM1 supports GSE and MPE encapsulations.

Product Highlights

- DVB-S2 receiver with support of 15% roll off, ACM, VCM, and 16/32 APSK
- Up to 67.5Msps simultaneously in both directions
- Wire speed processing of traffic – full hardware implementation
- GigE interface to support full DVB-S2 transponder
- Advanced GSE VCM optimizer for high channel utilization
- High BUC power drive – up to 24V/6AMP

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Enhanced Features

Focus on Data transfer – SM1's unique architecture focuses on data transfer over satellite, leaving routing and other functionality to external device

Standard base - SM1 utilize the state of the are standards in satellite communication to offer high spectral efficiency and avoiding proprietary solutions

Wire-speed – SM1 handles traffic between the satellite to the network via dedicated hardware, supporting payload rates of up to 220Mbps and eliminating the bottleneck caused by CPU processing

Efficiency – SM1 supports the new generic stream IP over DVB-S2 encapsulation, offering superior performance for IP over satellite delivery, as compared to the multiprotocol encapsulation (MPE)

Easy Integration – With the flexibility of the GSE the SM1 can offer L2, L3. Flexibility that simplify the integration of the SM1 in any network

Redundancy – With its dual RX inputs, the SM1 Provides redundancy in the reception channels. The Two RF inputs are fully independent and support 2 LNB powering

Flexible Management Interface - Provides an independent management interface supporting CLI, Telnet, and SNMP.

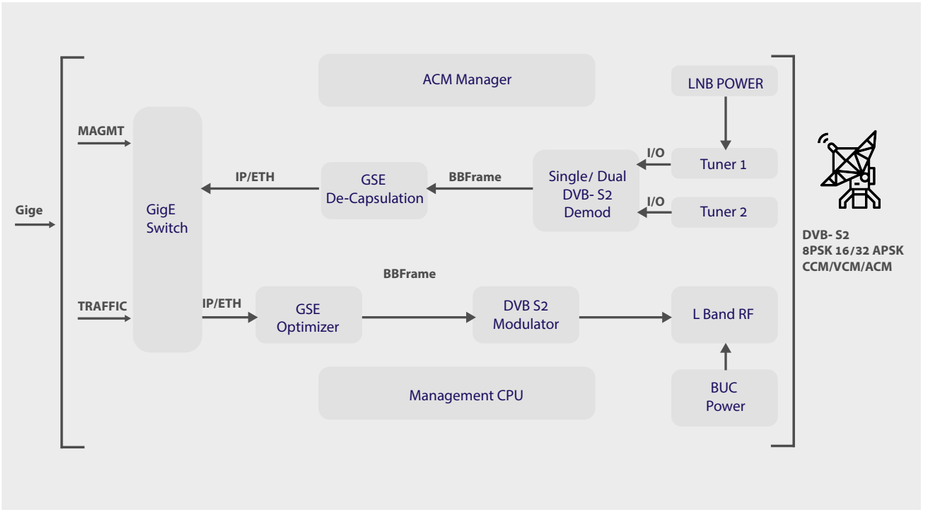
Applications

SCPC – The superior RF front end and support for high bit rates makes the SM1 an optimal solution for reception of SCPC signals.

Backhauling – The small form factor and competitive price make the SM1 a perfect solution for Cellular and Wireless local loop backhauling

IP DSNG - Simply connect DSNG trucks to teleport to deliver UHD Video and data

SM1 – Block Diagram



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SM1 Specifications

Receiver

Standard	DVB-S2
Modulation	QPSK, 8PSK,16APSK, 32APSK
Channel Rate	Over 220Mbps
Roll-off factors	0.15, 0.2, 0.25, 0.35
Coding	LDPC and BCH decoder as for DVB-S2 pecifications
Code Rates	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Framing	DVB-S2 Normal and Short
Modes	CCM, VCM, ACM

Receiver RF

Input Frequency	Full L-Band range 950-2150MHz
Symbol Rates	100Ksps to 67.5Msps (Low SR require PLL LNB, 32APSK performance up to 54Msps)
Signal Level	-35 to -75 dBm
Input Connector	Type F- 75 Ohms, SMA – 50 Ohms
Redundancy	Two RF inputs with Automatic selection
LNB Power	14/18V, 22Khz, DiSEqC 2.0

Encapsulation

MPE	ETSI 301 192
GSE	ETSI TS 102 606 ETSI TS 102 771
BB Frames Over UDP	Comply with ESA / Sat labs L.3 protocol

Environmental Conditions

Operating Temp.	0° to 50° C
Storage Temp.	-25° to +85° C
Humidity	5% to 95% non-condensing

Transmitter SCPC – DVB-S2 mode

Modulation	QPSK,8PSK,16APSK, 32APSK
Channel Rate	Up to 240Mbps
Roll-of Factors	0.05,0.1,0.15,0.2, 0.25, 0.35
Coding	LDPC and BCH decoder as for DVB-S2 requirements
Code rates	½, 3/5, 2/3, ¾, 4/5, 5/6, 8/9, 9/10
Output frequency range	Full L-Band 950-2150Mhz
RF connector Type	Type-F, 75 Ohms / SMA 50 Ohms
Output Spectrum	< 50dBc/4kHz, modulated carrier
Excludes spectral	Mask area
Phase Noise	Better than IESS-316
Reference clock	10Mhz Internal, stability ±2.5 ppm
Return loss	>10 dB
Output OFF	Better than 50db
Flatness	+/- 0.5 dB over any 36MHz band, +/- 2dB over the full band

Network

Physical interfaces	RJ-45 10/100/1000 BaseT Auto Switching
Traffic handling	MPE – L3, GSE – L2/L3
Forwarding path	Hardware based, Wire Speed
GSE	Tx – Up to 8 Different Label / MODCOD/ISI channels Rx – ISI + 4 labels advanced GSE VCM optimizer for high channel Utilization
MPE	Tx– Up to 1024 entries forward Rx – 8 PID/MAC filters
Multicast	Supported
IP address	Manual or DHCP
BBFrames Over UDP	Based on ESA / Sat labs L.2 protocol
Management port	Independent or using Traffic

Control and Monitoring

Serial Port	Serial over USB CLI Switching
IP	10/100 BaseT interface CLI and SNMP Management
Management interface	Configurable – DSCP, VLAN
Maintenance	Software, Firmware and boot loader are field upgradable using TFTP
SNMP Traps	RX Unlock, Link Margin low, Link Margin High
Web	PHP based* customizable on request

Physical Characteristics

Board only	3 cm x 10 cm x 15 cm (H x W x D 0.15K
Rack mount	1U 19" 20 cm deep. 2.5

Power Supply

Desk top – No BUC power	12V 2A DC
Rack mount	100V – 240V

Power Consumption

Desk top – No BUC power	15 Watts

Standards compliancy

Safety	CE
EMI/EMC	CC part 15, Class B

* Specifications and product details are subject to changes

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