



SM6615 Satellite Modulator

The rise in the number of satellite transmissions continues to grow swiftly. There is demand for a reliable, high quality satellite modulator that incorporates a feature-set which caters for this growing demand. The SM6615 fulfills that requirement perfectly.

The SM6615 is a feature-rich, compact, L-band output satellite modulator. The high quality L-band output ensures that top quality transmissions can be achieved for all applications from DSNG to fixed location, high data rate services.

PRODUCT OVERVIEW

Most Common Modulation Modes

The SM6615 supports both DVB-S and DVB-DSNG modulation modes covering the most popular standards for DTH, C&D and Mobile applications. The features available make this well specified product extremely flexible and capable of performing in all types of system architectures.

Variable Symbol Rate

The SM6615's wide symbol rate range from 0.2 to 66 Msym/s makes it suitable for all applications from low bit-rate DSNG transmissions to high data-rate IP backbone applications.

High Quality L-band Output

The SM6615 follows the high spec design philosophy through to its L-band Output stage by offering the highest possible transmission quality. In addition, to ensure that the received signal is free from up-link generated distortions the SM6615 also provides digitally generated cable tilt correction thus removing any adverse effects created by long cable runs at the transmit location.

Full Set of Control Methods

The SM6615 incorporates an easy to use web browser control interface as well as full control through SNMP, RS232, RS485 and Telnet sessions. For local control the SM6615 also has a simple to operate front panel control.

BASE UNIT FEATURES

SM6615 Satellite Modulator (SM6615/BAS)

- Operation to ETSI standard EN 300 421 (DVB-S: BPSK and QPSK)
- Variable symbol rate operation: 1 to 48 Msym/s
- User selectable spectrum roll-off factor: 20%, 25%, 30%, 35%
- Transmission quality L-band output: 950 – 1750 MHz, tunable in 1 kHz steps
- L-band output provides switchable DC power and 10 MHz frequency reference for external up-converter
- L-band monitor output and communications channel L-band input and combiner
- Digitally generated cable tilt correction
- Two DVB ASI inputs
- Input data rate adaptation mode – including PCR correction
- Easy software upgrades for extra features
- Web browser control and via easy-to-use front panel, SNMP, RS-232 or RS-485 remote control or Telnet

OPTIONS

DVB-DSNG Higher Order Modulation Option (SM66XX/SWO/HOM)

- 8PSK and 16QAM option to EN 301 210 standard in addition to BPSK and QPSK

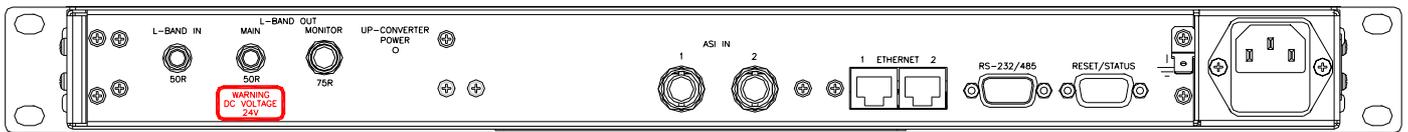
Extended Symbol Rate Option (SM66XX/SWO/HS)

- Extends the symbol rate from 1 to 48 Msym/s to 0.2 to 66 Msym/s

Additional Transport Stream Inputs (SM66XX/HWO/ASI-SPI)

- Additional 2 DVB ASI and 1 DVB SPI input option

SAMPLE CONFIGURATION



SPECIFICATIONS

Inputs

Transport Stream Inputs

2 x DVB ASI Copper

Rear panel connector: BNC (F), 75 Ohm

+2 x DVB ASI Copper (option)

Rear panel connector: BNC (F), 75 Ohm

+1 x DVB SPI (option)

Rear panel connector: 25-way, D-type (F)

Transport Stream Data Specification

ASI Data Rate: 213 Mbps maximum

ASI Format: Byte and single packet burst mode

Packet Size: 188-byte, 204-byte, unframed

SPI

Data Rate

108 Mbps maximum

Packet Size: 188-byte, 204-byte, unframed

Data Clocking Modes: Input data rate adaptation mode including PCR correction

Input data rate derived mode

Output Specification

L-Band Output

Main L-Band Output

Frequency Range: 950 – 1750 MHz

Frequency Step Size: 1 kHz

Frequency Error: ± 1 kHz maximum

Output Power: -20 to +5 dBm (0.1 dB steps)

Impedance: 50 Ohm

Connector: SMA (F)

Spurious Outputs:

< -60 dBc/4 kHz over 500-2500 MHz (modulated carrier)

Phase Noise: > 6 dB below IESS-308 limits

L-Band Monitor Output

Output Power

-30 dB nominal relative to Main L-Band output power

Impedance: 75 Ohm

Connector: F-type female

DC Power Output

Voltage: 24 V switchable on/off

Current: 500 mA maximum, short circuit protected

10 MHz Reference Output

Output Power: 0 dBm ± 3 dB sine wave into 50 Ohm load, switchable on/off

Frequency Stability: ± 5.5 Hz over 10 years

Carrier Combining Input

Path Gain to Main L-Band Output: 0 dB ± 2 dB

Input Power: +5 dBm maximum

Intermodulation Products: < -60 dBc/4 kHz

Input Impedance: 50 Ohm

Connector: SMA (F)

Distortion Correction

Cable Tilt Correction

± 0.04 dB/MHz maximum (Digitally generated)

Modulation Features

DVB-S and DVB-DSNG

Signal Conditioning

EN 300 421 (DVB-S) and EN 301 210 (DVB-DSNG)

Modulation

BPSK, QPSK, 8PSK (option) and 16QAM (option)

FEC BPSK/QPSK

1/2, 2/3, 3/4, 5/6, 7/8

FEC 8PSK: 2/3, 5/6, 8/9

FEC 16QAM: 3/4, 7/8

Symbol Rate:

1 to 48 Msym/s

0.2 to 66 Msym/s (option)

variable in 1 symbol/s increments

Spectrum Roll-off Factor α :

20%, 25%, 30%, 35% user selectable

Control

Front Panel: 2 line x 40 character LCD display

Navigation: four cursor keys, two function keys

RS-232/RS-485

Via RS-232/485 control port using VT100 emulator or PC control software

Connector: 9-way D-type (M)

Ethernet: Dual-redundant 10BaseT Ethernet

Web browser control interface

Telnet/FTP

SNMP

Connectors: 2 x RJ45

Reset/Status Port

Relay contacts for signaling equipment and input signal failure

Connector: 9-way D-type (F)

Physical and Power

1RU, 19" rack mounting

Approximate Weight

8kg

Supply Voltage

100-120 VAC and 220-240 VAC, wide ranging

Power Consumption

Approx. 60W (dependent upon options fitted)

Environmental Conditions

Temperature Range:

0°C to +50°C (32°F to 122°F) operational

-20°C to +7°C (-4°F to 158°F) storage

Relative Humidity:

0% - 90% (non-condensing)

Compliance

CE marked in accordance with EU low voltage and EMC directives. Standards applied: EN55022, EN55024, EN61000-3-2, EN61000-3-3 for EMC and EN60950 for Safety, as a minimum where applicable. Also meets other relevant requirements and national standards derived from international requirements on which the above European Standards are based and FCC Pt 15B. Designed to meet UL 1950.

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