



## Features

- DVB-S2, DVB-S/DSNG compliant
- QPSK, 8PSK, 16APSK and 32APSK support
- Data Rates in excess of 200Mbps
- Up to 8 ASI inputs for Multi-stream DVB distribution
- L-Band Output
- BISS Scrambling
- Software Upgradable Features
- High granularity roll-off
- Software Defined Radio
- Exceptional RF performance
- ISSY time stamping for SFN compliance
- Null Packet Deletion and Rate Adaption (Bandwidth Saving)
- One solution for all DVB applications

## Overview

Advantech Wireless' SBM75e Satellite Broadcast Modulator is designed for the transmission of industry standard Digital Video Broadcasting over Satellite (DVB-S/S2/DSNG).

For all broadcast applications, the fully featured SBM75e modulator offers unrivalled flexibility supporting DVB-S2 LDPC + BCH coding, SHORT and NORMAL FEC frame, Constant Coding Modulation (CCM), Variable Coding and Modulation (VCM) and Adaptive Coding and Modulation (ACM) modes of operation, and performance up to 45 Msys. The SBM75e also supports legacy DVB-S and DVB-DSNG standards.

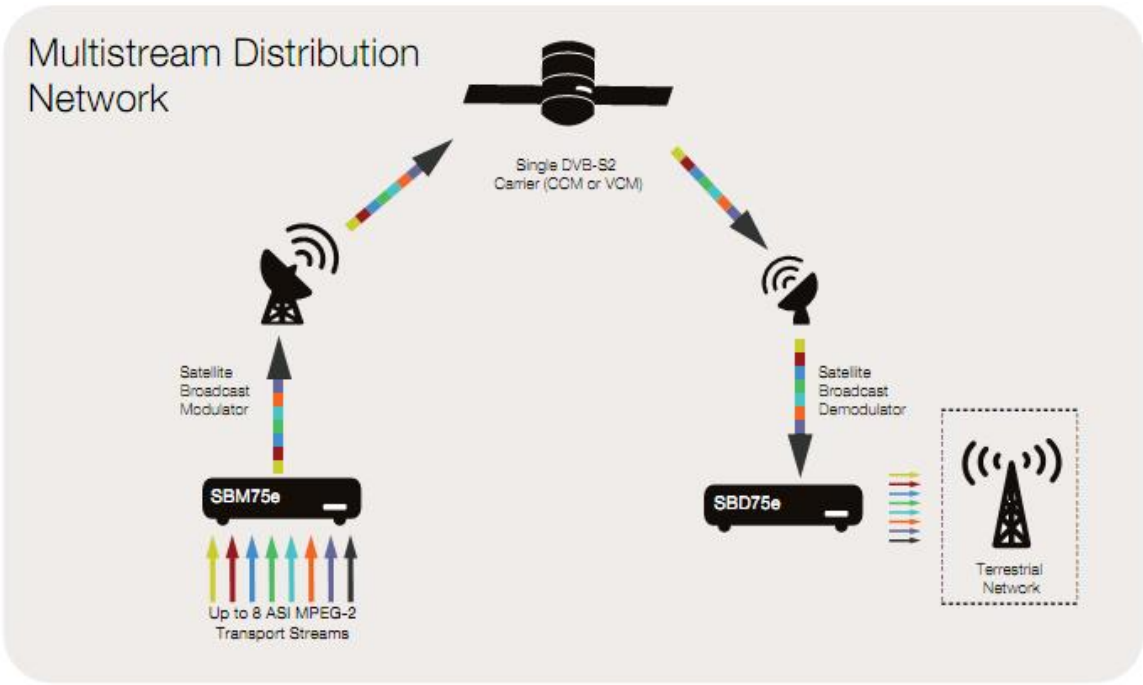
DVB-S2 is the latest standard targeted and optimized for broadcast applications. With a wide range of modulation and coding options, it permits broadcasters to achieve optimal efficiency. DVB-S2 offers performance gains of up to 2.5dB compared to DVB-S systems. This translates, approximately, to a 30% performance increase in a given transponder bandwidth. This performance gain can be used to increase the data throughput in a given transponder bandwidth, provide more link margin or even to reduce antenna size.

New DVB-S2 modes of operation, such as Variable Coding Modulation (VCM), further improve carrier efficiency by permitting multiple modulation and coding combinations within the same carrier. VCM operation is targeted at Multi-Streaming modes of operation where more than one Transport Stream can occupy a single carrier. Each Transport Stream can be transmitted with different modulation and coding combinations to maximize channel efficiency.

## Application

The SBM75e is designed to provide best in class performance for critical applications such as:

- Video Contribution Digital Satellite News Gathering (DSNG)
- Primary Distribution of Digital Television for Mobile and Terrestrial applications
- Direct To Home



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Ref.: PB-SBM75e-001-11025

## Performance Specifications

### Input Interface

ASI interface (standard)

From 1 to 8 ASI inputs on BNC (f)

- - 1 for 1 redundancy for ASI interfaces
- - DVB-S2 Multi-Stream support
- - VCM support
- Encoded Line Rate: 270 Mbps + 100 ppm
- Sensitivity (D21.5 idle pattern): 200 mV
- Max. Input Voltage: 880 mV p-p
- Min. Connector Return Loss: 15 dB
- Max. Distance: 150 Meters
- BISS scrambler mode 0, mode 1, mode E (odd and even key)
- Base-Band Frame input support

### Modulation

45MSPS Modulator (>200Mbps)

DVB-S/DSNG ModCods

- QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
- 8PSK: 2/3, 5/6
- 16QAM: 3/4, 7/8

DVB-S2 ModCods

- QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
- 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
- 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
- 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

Frame Length

- DVB-S/DSNG 188 bytes
- DVB-S2 SHORT Block 16200 bits
- DVB-S2 NORMAL Block 64800 bits

Roll off

- 0.15 to 0.35 with 0.01 steps

### Output Interface

Output Connector

- Type N (f) 50 Ohm for L-band
- Option: BNC (f) for 70/140MHz, 50 Ohm
- Return Loss  $\geq 12$ dB

Frequency

- L-band 950 to 2000MHz in 1Hz steps
- Optional: 70+/-18MHz and L-band
- Optional: 140+/-36MHz and L-band

Output Power

- Range: +0 to -40 dBm, in 0.001 dB steps
- Accuracy: +/- 0.5 dB; Temp
- Stability: +/- 0.25 dB

BUC 10MHz Reference and PSU

- Frequency: 10 MHz, 0 dBm, +/- 2 dB
- Stability: 1 x 10<sup>-9</sup>/per day; +/-150 x 10<sup>-9</sup> long term, no frequency/phase hits for external ref.
- BUC PSU 24VDC@4A, 48VDC@2A, 48VDC@4A

### Physical and Power Specifications

Dimensions

- 1RU stand-alone chassis
- 19W X 15.75D X 1.75H inches (48W X 40D X 4.4H cms)

Weight

- 8lbs / 3.7kgs (no BUC power supply)

Power

- 90 – 264VAC (50/60Hz) or -48VDC (32 to 72VDC)

Power Consumption

- 50 Watts (no BUC power supply)

Operating Temperature

- 0°C to 45°C (32°F to 122°F)

Storage Temperature

- -25°C to 85°C (-13°F to 185°F)

Relative Humidity

- Operating: Up to 90% non-condensing
- Non-Operating: Up to 95% non-condensing

Altitude

- Operating: Up to 10,000' (3,045M)
- During Transit: Up to 40,000' (12,180M)

### Optional Features

Software Key

- DVB-S (standard)
- DVB-DSNG
- DVB-S2 (includes DVB-S)
- DVB-S2 + 16APSK
- DVB-S2 + 32APSK
- BISS Encryption
- VCM/ACM

Hardware

- Multiple ASI (from 1 to 8)
- Ethernet Interface (Transport Streams)
- Active Front Panel
- 10MHz Reference IN/OUT
- IF Output Frequency Band

Additional features and capabilities

- Advanced Web Based GUI
- Alarm Logs and Relays
- User Definable Thresholds
- SNMP v1, v2, v3 supported

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