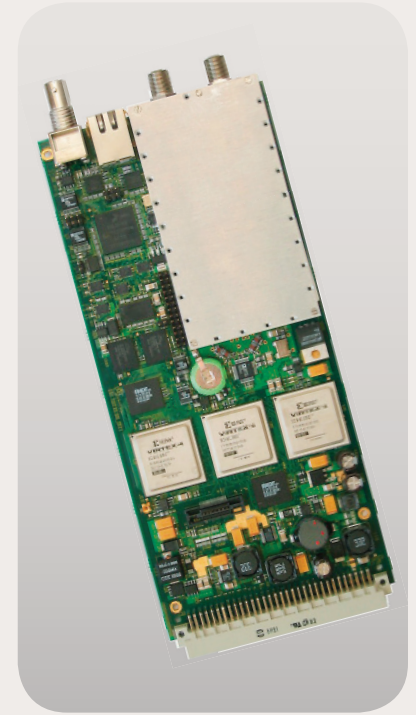
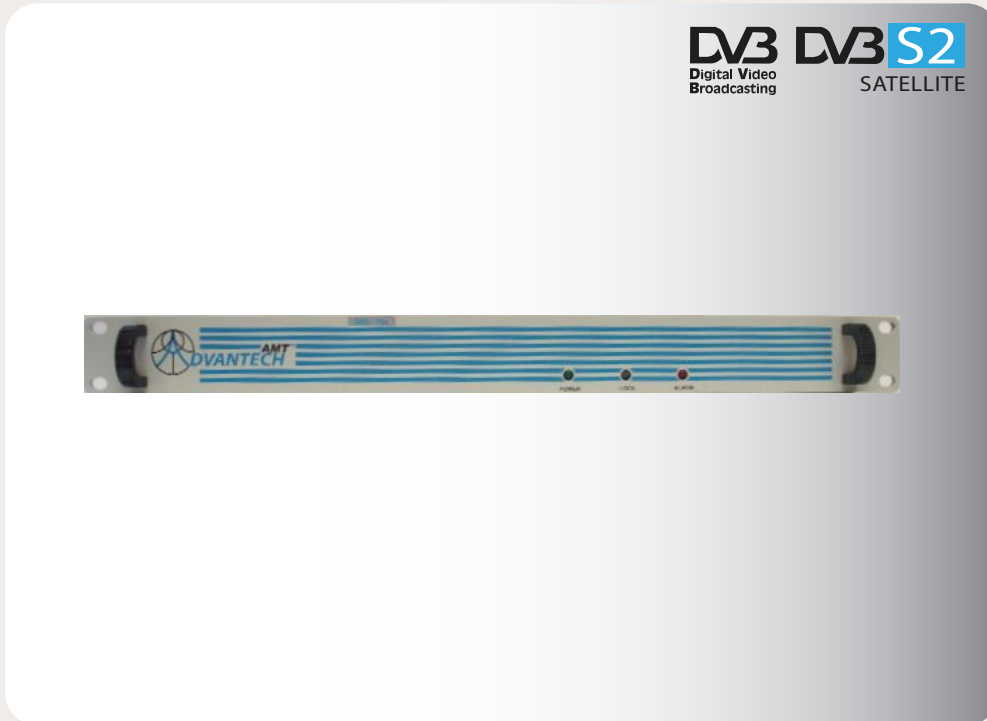


DVB-S/S2 Broadcast Demodulator



Features

- Management via 10/100BT with SNMP V3, GUI or RS-232/RS485.
- ISI broadband de-multiplexer (selectively retrieves multiple MPEG-TS from carrier).
- ISSY time stamping for stream synchronization
- Null-packet reinsertion.
- Optional: BISS encryption support.
- Optional: Variable Coding Modulation
- Optional: Adaptive Coding Modulation
- Optional: L-band and 70/140Mhz support.
- Optional: Multi-receiver (up to 2 SBR75)

Overview

Advantech's SBD75e DVB-S/S2 Broadcast Receiver is designed for the reception and forwarding of digital television signals and/or transmission of high-speed data (IP) over industry standard Digital Video Broadcasting over Satellite (DVB-S/S2).

At the heart of the SBD75e is the Satellite Broadcast receiver (SBR75) which is a low-profile embedded card in a compact form.

For all broadcast applications, this fully featured Demodulator offers unrivalled flexibility supporting DVB-S2 LDPC + BCH coding, SHORT and NORMAL FEC frame, and up to 45 Msys. This card can also be specified with DVB-S and DVB-DSNG Pragmatic Trellis decoding allowing the demodulation of existing QPSK, 8PSK and 16QAM DVB-S and DVBDNSG PTM signals.

When used in DVB-S2 modes the card offers performance gains of up to 2.5dB compared to older 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 available throughput on given satellite channels. The performance benefits, reliability and interoperability of standards based DVB-S2 makes it the ideal solution for broadcasters considering implementing new services or upgrades to current DVB-S networks.

The SBR75 supports up to 4 DVB ASI ports, providing the means to de-multiplex and remap DVB MPEG Transport streams (TS) to individual ASI ports, from a single carrier or may also duplicate a single MPEG TS so that the output appears at both ASI outputs.. Additionally, an optional 10/100/1000BaseT interface is available providing the means to simultaneously support both ASI and Ethernet based data and video streams.

The SBD75e can support up to 2 SBR75 in distinct and/or redundant formation within a 1RU chassis providing compact solution for multi receiver applications. Optionally, Advantech's Media Gateway (MG) may be combined with the demodulator providing the AMT75 with advanced ASI, IP and media handling capabilities.



Applications

- The SBR75/AMT75 is designed to provide best in class performance for critical applications such as:
- Digital Video Broadcast (DVB)
- Digital Satellite News Gathering (DSNG)
- Business enterprise data distribution (high speed IP delivery, e-learning, streaming video and audio)
- Distribution of Digital Terrestrial Transmission (DVB-T, ATSC, ISDB-T/SBTVD-T, DMB-T/H)
- Distribution of Digital Handheld Transmission

Performance specifications

DATA AND CODE RATES

Roll off: 0.15, 0.20, 0.25, 0.30, 0.35

DVB-S and Intelsat 308/309 coding

- BPSK: 16kbps to 36Mbps
- QPSK: 16kbps to 70Mbps

IF Input Connector

- Type N (f) 75Ohm for L-band
- Option: BNC (f) for 70/140Mhz. 50Ohm
- Return loss: ≥ 10 dB
- LNB Alarm for Short Circuit

DVB-DSNG coding

- QPSK: 64kbps to 70Mbps
- OQPSK: 64kbps to 72Mbps
- 8PSK: 128kbps to 110Mbps
- 16QAM: 128kbps to 120Mbps

RF Input Frequency

- L-band: 950 to 2150Mhz in 1Hz steps
- Optional: 70+/-18Mhz and L-band

DVB-S2 short and normal FEC block coding

140+/-36Mhz and L-band

- QPSK: 64kbps to 80Mbps
- 8PSK: 256kbps to 120Mbps
- 16APSK: 340kbps to 160Mbps
- 32APSK: 470kbps to 200Mbps
- SHORT Block 16kbit $\frac{1}{4}^*$, $\frac{1}{3}^*$, $\frac{2}{5}^*$, $\frac{1}{2}^*$, $\frac{3}{5}$, $\frac{2}{3}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{7}{8}$, $\frac{8}{9}$
- NORMAL Block 64kbit $\frac{1}{4}^*$, $\frac{1}{3}^*$, $\frac{2}{5}^*$, $\frac{1}{2}^*$, $\frac{3}{5}$, $\frac{2}{3}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{7}{8}$, $\frac{8}{9}$, $\frac{9}{10}$

RF Input Power Levels

- Nominal: 45 dBm - $10\log(400/R)$ dBm, where R = Symbol Rate in kSymbols
- AGC range: +/-20dB minimum
- Max level: 0dBm

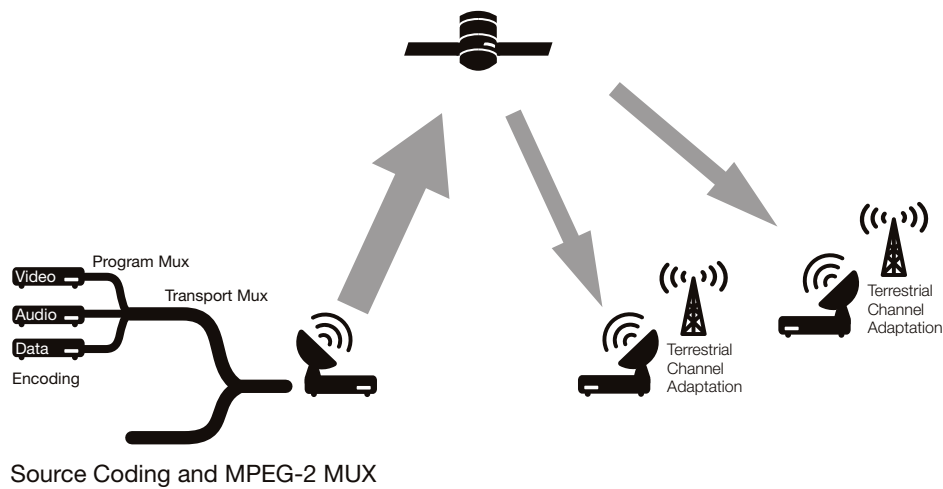
Noise Figure

- 9 dB typical, 12 dB at max AGC gain

*Only available in QPSK according to DVB-S2 Specification

LNB Power and Control

- Selectable LNB Supply Voltage: ON/OFF, 18 VDC(Horizontal Pol.) or 13 VDC (Vert Pol.)
- LNB Control: 22 +4 kHz single tone burst, amplitude = 0.6 +0.2 V p-p



Typical Eb/No Performance

(margin with regards to DVB ideal requirements)

	DVB-S	DVB-DSNG	DVB-S2
QPSK	<0.5dB	<0.5dB	<0.5dB
8PSK		<0.7dB	<0.7dB
16APSK			<1.0dB
32APSK			<1.5dB

Physical and Power Specifications

Dimensions:

- 1RU standalone chassis,
19W X 15.75D X 1.75H inches
(48W X 40D X 4.4H cm)

Weight: 8lbs (3.7kgs)

Power: 90 – 264VAC (50/60H)

or -48VDC (32 to 72VDC)

Power consumption: 50Watts

Operating temp: 0°C to 45°C (32°F to 122°F)

Storage temp: -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)

Data Interfaces

ASI interfaces

- BNC (f), 75 Ohms for ASI
- 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

The Media Gateway (MG) assembly includes two additional ASI IN and ASI OUT ports in addition to a dual 10/100BaseT interface. The MG provides advanced ASI and IP multiplexing capability to complement the capabilities provided by the demodulator.

Capabilities enabled by this assembly are as follows:

- Support for local content insertion into received demodulated ASI streams from either ASI IN or MPEGoIP ports.
- Advanced PID handling capabilities allowing for PID filtering/remapping and updates of PAT/PMT tables.
- IP decapsulator should there be IP components to the received data (MPEG/MPE, or GSE).
- Supports encapsulation received MPEG TS over IP (UDP/RTP) for transport over IP network. Pro-MPEG CoP3 forward error correction (FEC) compliant.
- Satisfies Single Frequency Network (SFN) network timing requirements.



Advantech

wireless broadband culture

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