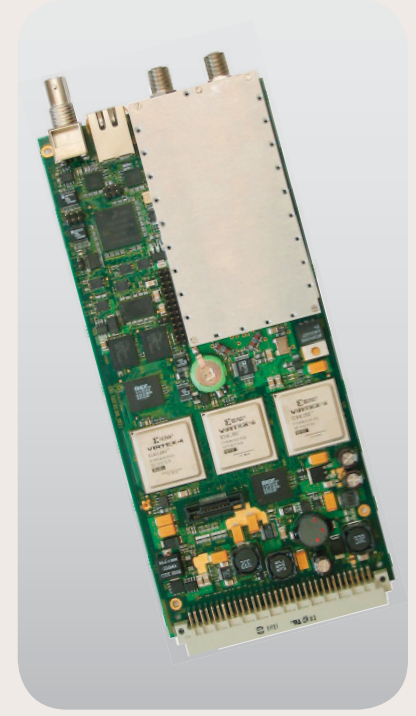


## DVB-S/S2 Broadcast Demodulator



### 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 3 SBR75)

### Overview

**Advantech's AMT 75** 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 AMT 75 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 coded data rates of up to 130 Mbps in a 36 MHz channel using 32APSK (110 Mbps using 16APSK or 80 Mbps using 8PSK, respectively in a 36Mhz transponder). The card supports both the SHORT FEC frame and the NORMAL FEC frame. The SHORT frame is particularly useful to minimize latency in low data rate contribution applications. 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 DVBDNG 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 can be translated to approximately a 30% capacity increase in a given transponder bandwidth.

This performance gain can be used to either increase the data throughput via a given Satellite bandwidth, therefore significantly reducing transponder costs, to provide more link margin or even to reduce antenna size. The card also supports new DVB-S2 modes of operation, such as Variable Coding Modulation (VCM) and Adaptive Coding Modulations (ACM), which 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 current deployed 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. 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 AMT75 can support up to 3 SBR75 in distinct and/or redundant formation within a 1RU chassis providing compact solution for multi receiver applications.



## 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 (ultra high speed IP delivery, e-learning, streaming video and audio)
- Distribution of Digital Terrestrial 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

#### DVB-DSNG coding

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

#### DVB-S2 short and normal FEC block coding

- 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  $\frac{1}{4}^*$ ,  $\frac{1}{3}^*$ ,  $\frac{2}{5}^*$ ,  $\frac{1}{2}^*$ ,  $\frac{3}{5}$ ,  $\frac{2}{3}$ ,  $\frac{4}{5}$ ,  $\frac{5}{6}$ ,  $\frac{7}{8}$ ,  $\frac{8}{9}$ ,  $\frac{9}{10}$

\*Only available in QPSK according to DVB-S2 Specification

### IF Input Connector

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

### RF Input Frequency

- L-band: 950 to 2150Mhz in 1Hz steps
- Optional: 70+/-18Mhz and L-band  
140+/-36Mhz and L-band

### RF Input Power Levels

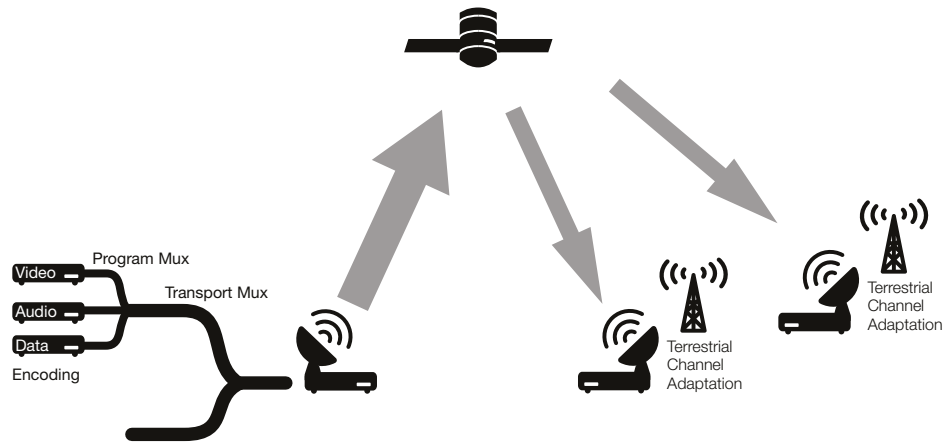
- Nominal: 45 dBm -  $10\log(400/R)$  dBm, where R = Symbol Rate in kSymbols
- AGC range: +/-20dB minimum
- Max level: 0dBm

### Noise Figure

- 9 dB typical, 12 dB at max AGC gain

### 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



Source Coding and MPEG-2 MUX

**Typical Eb/No Performance**  
(margin with regards to DVB ideal requirements)

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

10/100/1000BaseT (RJ-45) ports.



# Advantech

wireless broadband culture

## **NORTH AMERICA**

### *USA*

2325 Dulles Corner Boulevard  
Suite 500, Herndon  
VA 20171 USA  
Tel: +1 703 788-6882  
Fax: +1 703 788-6511  
info.usa@advantechwireless.com

### *CANADA*

2341 Alfred-Nobel  
Montreal, QC  
Canada H4S 2B8  
Tel: +1 514 335-3550  
Fax: +1 514 335-3022  
info.canada@advantechwireless.com

657 Orly Avenue  
Montreal, QC  
Canada H9P 1G1  
Tel: +1 514 420-0045  
Fax: +1 514 420-0073  
info.canada@advantechwireless.com

550 Campbell Drive  
Cornwall, ON  
Canada K6H 6T7  
Tel: +1 613 936-2000  
Fax: +1 613 936-2010  
info.canada@advantechwireless.com

## **EUROPE**

### *UNITED KINGDOM*

39 Edison Road  
St.Ives Huntingdon, Cambridgeshire  
United Kingdom PE27 3LF  
Tel: +44 1480 357 600  
Fax: +44 1480 357 601  
info.uk@advantechwireless.com

### *SWEDEN*

Fabriksgatan 7  
SE-412 50, Göteborg  
Sweden  
Tel: +46 31 771 79 00  
Fax: +46 31 771 79 10  
info.sweden@advantechwireless.com

### *RUSSIA & CIS*

107564, Moscow  
Krasnobogatirskaya  
2-2, 2 floor, office 5  
Tel: +7 495 967 1859  
Fax: +7 495 967 30 24  
info.russia@advantechwireless.com

## **SOUTH AMERICA**

### *BRAZIL*

Avenida Rouxinol, 55, 8 andar, sala 813  
04516-000, Moema, São Paulo, SP, Brasil  
Tel: +55 11 3054 5701  
Fax: +55 11 5041 4026  
info.brazil@advantechwireless.com

### *ARGENTINA*

Bogado 16 - Of. 2  
B1609IEB - San Isidro  
Buenos Aires - Argentina  
Tel: +54 11 4731 1034  
Cel: +54 911 4492 5601  
info.argentina@advantechwireless.com