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AYECKA
Communication Systems Ltd.

TM1

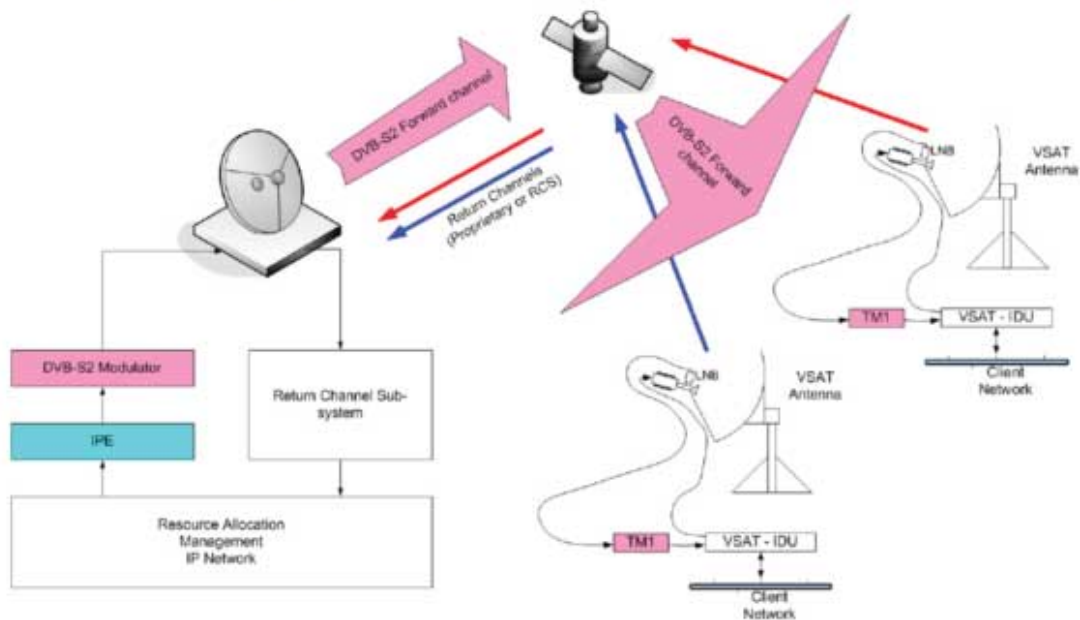
[TM1 - First DVB-S2 to DVB-S transmodulator](#)

TM1 is a transmodulator that allows existing DVB-S receiver to migrate to DVB-S2

TM1

TM1 is a transmodulator that allows existing DVB-S receiver to migrate to DVB-S2

The TM1 System diagram



The TM1 Solution

The current investment in VSAT networks is based on the **DVB-S** transmission standard that is now facing obsolescence. The new-generation **DVB-S2** technology delivers significantly enhanced network efficiency, with about a 30% savings from improved satellite space segment utilization. Rather than replacing the VSAT itself, a simple and cost-effective upgrade can solve the **DVB-S2** compliance requirement. The new **TM1** trans-modulation solution from **Ayecka** enables a smooth, quick, economical migration path to improve existing VSAT assets.

Minimal logistic efforts are required to implement the **TM1** upgrade, and the quick ROI payback is estimated at 5-7 months.

The **Ayecka TM1** is a unique trans-modulation device designed as a practical and trouble-free way to migrate existing VSAT networks to DVB-S2. The **TM1** is an indoor unit simply installed by the end user between the LNB and the VSAT.

The **TM1** operates as a transparent and integral upgrade to the network. The **TM1** makes it simple and cost effective to migrate to the more efficient DVB-S2 standard, thus leveraging the current investment in the VSAT network.

Why DVB-S2 ?

DVB-S2 is the second-generation standard for satellite broadcasting, which is now widely adopted. The new specification benefits from recent developments in channel coding (LDPC codes) combined with a variety of modulation formats (QPSK, 8PSK, 16APSK and 32APSK). This more efficient technology yields increased transmission capacity along with an approximately 30% improvement in space segment utilization.

TM1 Specifications

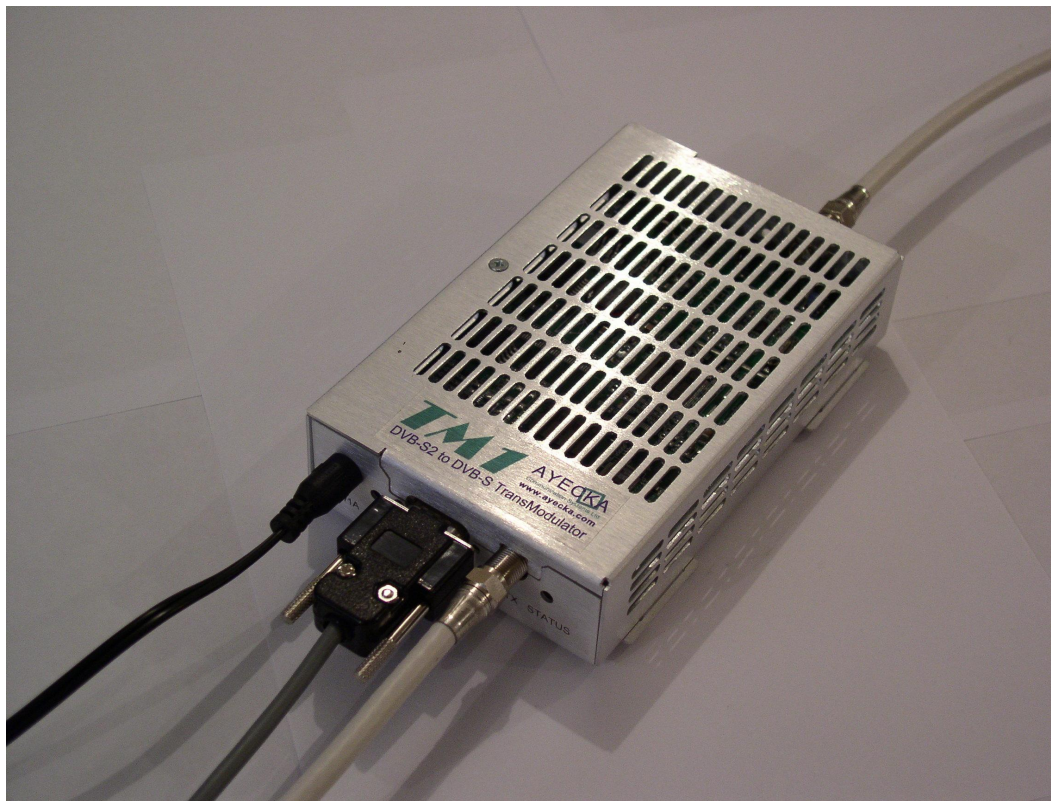
<p>Receiver DVB-S2 mode</p> <p>Modulation QPSK, 8PSK</p> <p>Channel Rate up to 90Mbps</p> <p>Roll-off factors 0.2, 0.25, 0.35</p> <p>Coding LDPC and BCH decoder as for DVB-S2 requirements</p> <p>Code Rates ½, 3/5, 2/3, ¾, 4/5, 5/6, 8/9, 9/10</p> <p>Framing DVB-S2 framing</p>	<p>Transmit</p> <p>IF Freq 1GHz</p> <p>Symbol rate 27Msps</p> <p>Code Rate 7/8</p> <p>Signal level -55 dBm +/- 5 dB</p> <p>Standard DVB-S</p> <p>Connector Type F, 75 Ohms.</p>
<p>Receiver DVB-S mode</p> <p>Modulation QPSK</p> <p>Channel Rate up to 72.7 Mbps</p> <p>Roll-off factors 0.35</p> <p>Coding Convolution with Reed Solomon</p> <p>Code Rates ½, 2/3, ¾, 5/6, 6/7, 7/8</p>	<p>Physical Characteristics</p> <p>Dimensions 3 cm x 8 cm x 14 cm (HxWxD)</p> <p>Power 12VDC, 5W</p> <p>Weight 0.5 Kg</p>
<p>Receiver RF</p> <p>Input Freq 950-2150MHz</p> <p>Signal Level -35 to -65 dBm</p> <p>Symbol Rates 1 to 45 Msps</p> <p>Input connector Type F, 75 Ohms.</p>	<p>Standard Compliance:</p> <p>Safety TUV/cTUVus; CE</p> <p>EMI/EMC FCC part 15, Class B EN 55022, EN 55024, EN61000 AS/NZS CISPR 22</p>

Control & Monitor:

Connector	Dsub9 Female
Protocol	CLI
Physical	RS232, 8,n,1, 9600
LED	Power on/signal detect/TX state

Environmental Conditions

Operating Temp.	0° to 50° C.
Storage Temp.	-25° to +85° C
Humidity:	5% to 95% non-condensing
Altitude	Up to 10,000 Feet



[TM1 user manual](#)

SatStream

SatStream

SatStream is a PCI board that allow direct reception of IP traffic to standard PC.

Compatible with Ayecka TM1 to receive DVB-S2 !!

Specifications

- Multi Protocol Encapsulation (MPE)
- PID filtering in Hardware
- RF Input Frequency, RF Level 950-2150 Hz, -65 to -20 dBm
- LNB Power and Signaling Switchable 14/18 VDC, up to 350mA, 22 KHz (automatically set)
- LNB Requirements Phase noise of:
 - 57dBc/Hz @ 1KHz
 - 75dBc/Hz @ 10KHz
 - 95dBc/Hz @ 100KHz
- L.O stability of ± 1 MHz over -30°C to $+60^{\circ}\text{C}$
- Interface Standard LNB output, F-type, 75 ohm
- Modulation Type QPSK (optional BPSK), DVB Compliant
- Bit Rate 1 to 53 Mbps (depending on FEC Rate)
- 4 to 53 Mbps in SCPC applications continuously variable
- FEC Concatenated Convolutional Code and Shortened Reed-Solomon (188, 204)
- Convolutional FEC Rates 1/2, 2/3, 3/4, 5/6, 6/7, 7/8
- PC Interface Internal PCI bus ver. 2.1
- Dimensions 1/2 size PC card format
- Drivers for Windows NT, Window XP, (For Linux drivers, please contact)

[SatStream datasheet](#)