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**AYECKA**  
Communication Systems Ltd.

**TM1**

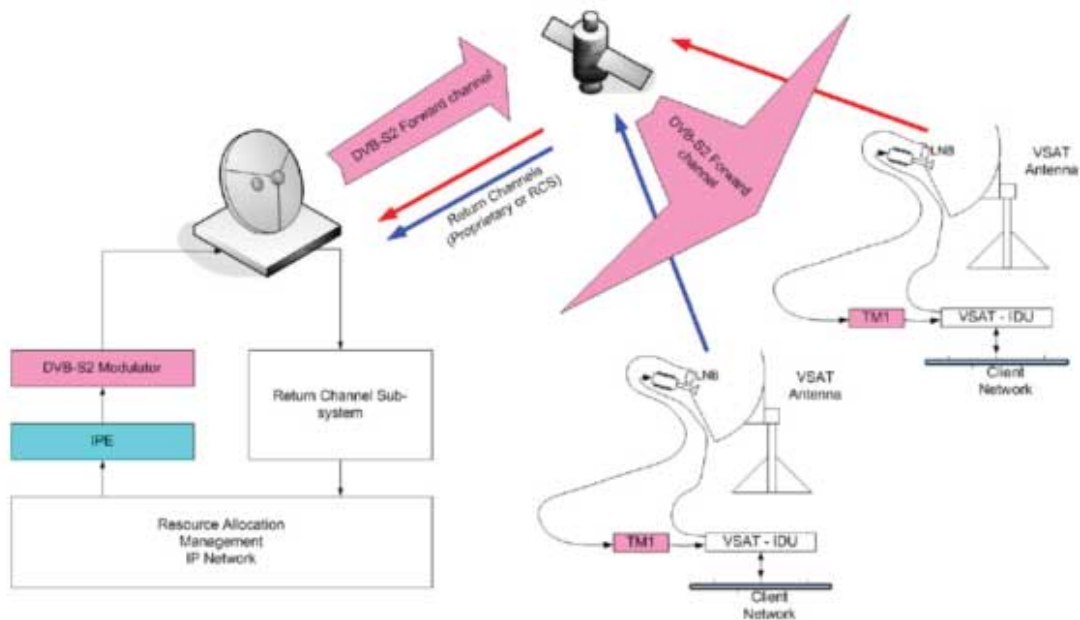
[TM1 - First DVB-S2 to DVB-S transmodulator](#)

**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

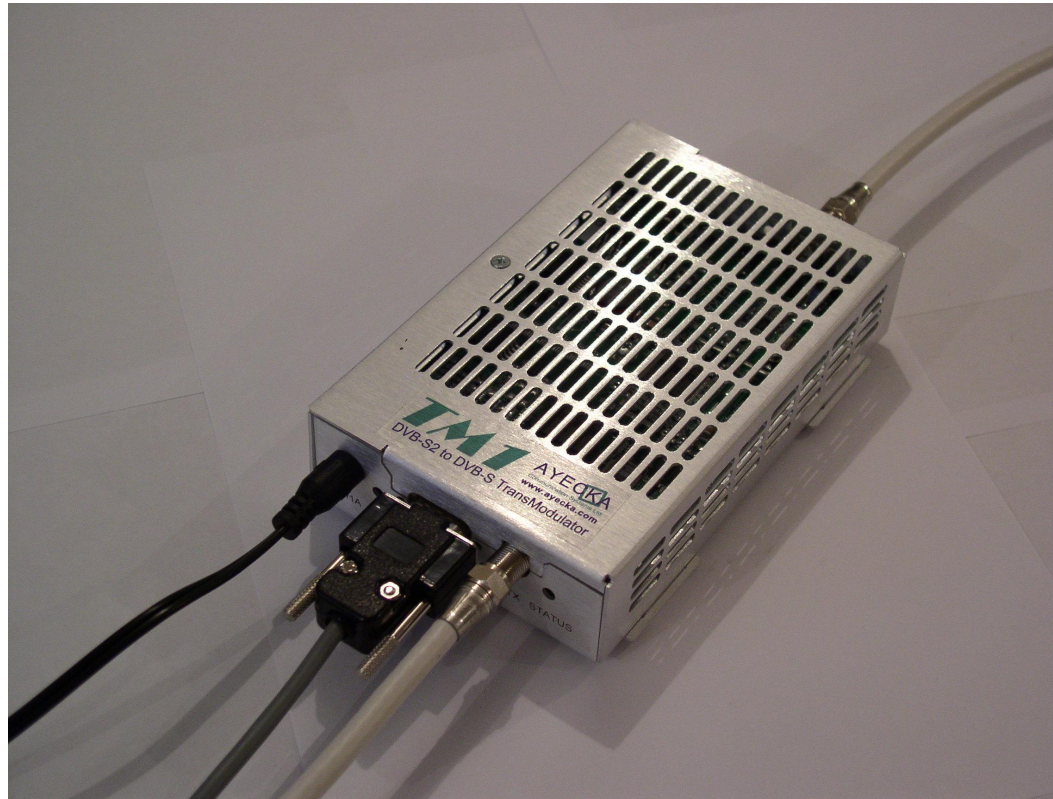
<p><b>Receiver DVB-S2 mode</b></p> <p><b>Modulation</b> QPSK, 8PSK</p> <p><b>Channel Rate</b> up to 90Mbps</p> <p><b>Roll-off factors</b> 0.2, 0.25, 0.35</p> <p><b>Coding</b> LDPC and BCH decoder as for DVB-S2 requirements</p> <p><b>Code Rates</b> ½, 3/5, 2/3, ¾, 4/5, 5/6, 8/9, 9/10</p> <p><b>Framing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

**Control & Monitor:**

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

**Environmental Conditions**

<b>Operating Temp.</b>	0° to 50° C.
<b>Storage Temp.</b>	-25° to +85° C
<b>Humidity:</b>	5% to 95% non-condensing
<b>Altitude</b>	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  $\pm 1$ MHz over  $-30^{\circ}\text{C}$  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](#)