Vyper is a state-of-the-art satellite modulator designed for applications over satellite in full compliance with the DVB-S, DVB-DSNG, DVB-S2 and DVB-S2X (Broadcast and DSNG profiles) standards. Vyper modulator covers the full L-Band range (950/2150 MHz) or IF Band range (50/180 MHz) and offers bit rate from 0.25 Mbps up to 200 Mbps. Vyper has the capability to drive a Block Up Converter (BUC) via High Stability 10Mhz reference and/or a DC Voltage power supply available on the L-Band RF output signal. Vyper is compliant with latest Carrier ID requirements defined in ETSI 103 129. Vyper offers a Push Data Service (DualCast), free of charge based on MPE. Vyper introduces an ACM Contribution (Contribution ACM) feature that adapts the modulator MODCOD without any video interruption. So ACM will allow the video transmission to continue under deteriorating satellite link conditions. Vyper allows the aggregation of 2 transport streams into one satellite carrier via the Multi-stream feature (as per DVB-S2 standard) whilst maintaining the integrity of the original content. Vyper offers a possible upgrade (via an option) to DVB-S2X Broadcast and DSNG profiles. That means Vyper supports all new MODCOD (linear MODCOD), the 64 APSK constellation and already the new roll off (from 5% to 15% by step of 1%).

Performance & Reliability

Vyper has been designed to meet all ETSI EN 302 307 requirements. All modes of bit rate adaption are possible: PCR adaptation, Padding insertion and Dummy BBFrame insertion - resulting in Vyper’s unique automatic flexible rate adaptation. Vyper offers a flexible baudrate (from 0.1 Mbaud to 68 Mbaud) to fully feed a 72 MHz transponder. An internal PRBS generator can be used to generate a RF spectrum without any valid signal input. Vyper offers, without option, the possibility to receive the incoming MPEG-TS stream either over ASI or Ethernet inputs.

Vyper integrates the core technology required to perform high quality modulation based on TEAMCAST expertise. It provides customers with a best in class performance, providing a high SNR value, excellent shoulder levels and lowest phase noise. Vyper provides a high performance channel spectrum and in addition to the standard, roll off from 5 to 35% by step of 1% for the all modulation: DVB-S/DVB-DSNG, DVB-S2 and of course for DVB-S2X. This results gives an efficient transmission in 32APSK (DVB-S2/S2X) and 64APSK (DVB-S2X) with lower power.

The user-friendly Embedded Web Browser ensures ease of use and enables full configuration of the modulator, including signal input management, selection of DVB-S, DVB-DSNG and DVB-S2, modulation type (MODCOD) and control of the mute/unmute conditions for the RF output signal. The GUI also offers monitoring of the input stream (i.e. input format & useful bit rate).
Specifications

Standards
- Carrier ID: ETSI 103 129
- DVB-S2: EN 302 307
- DVB-S: EN 300 421
- DVB-DSNG: EN 301 210
- MPEG-TS: ISO/IEC 13818-1
- DVB MPEG-TS over ASI: ETSI TR 101 891
- DVB MPEG-TS over IP: ETSI TR 102 034
- MPEG-2 PSI Tables (PAT and PMT): EN 300 468

Inputs
- MPEG-TS (188/204 bytes) over ASI (x2) - BNC connectors, 75 Ω
- MPEG-TS (RTP/UDP - SMPTE-2022) over IP (x1) - RJ45
- Flexible bit rate adaptation
  - PCR adaptation/Padding/Dummy frame
- Encryption 0.25 to 200 Mbps
  - BISS (single/multiple programs): mode 0, 1, E

RF Outputs
- L-Band: 950 MHz to 2150 MHz, step 1 Hz
- IF-Band: 50 MHz to 180 MHz, step 1 Hz
- SNR + 40 dB @ 0 dBm -16 APSK - 30 Mbaud
- Shoulders rejection -50dB @ 0dBm & f/1N=1.5 for roll off 20%
- Spurious: < -65 dB @ 0 dBm for 50 to 180 or 950 to 2150 MHz
- -60 dBc outside the useful band
- Main RF output, type N, (L-Band: 50 Ω, IF-Band: 75 Ω)
  - X SSR-DTM2-15x1: +5 dBm to -30 dBm, step 0.1 dB
  - X SSR-DTM2-1502: +10 dBm to -40 dBm, step 0.1 dB
- Monitoring RF output, type SMA, 50 Ω,
  - X SSR-DTM2-15x1: -15 dBm to -50 dBm, step 0.1 dB
  - X SSR-DTM2-1502: -10 dBm to -60 dBm, step 0.1 dB

Distortion Correction
- Cable Tilt Correction: ±0.04 dB/MHz maximum

BUC Driver: DC & 10MHz in L-Band signal
- DC power max. 50VA - 12/18/24VDC (software selection) - 48VDC
- 10MHz: Very High Stability frequency
  - High Stability: +/- 0.01 ppm over 0 to 70°C
  - Ageing: +/- 15 ppb/day - +/- 300 ppb/year

Clock & Synchronization
- Standard Stability (X SSR-DTM2-15x1)
  - Stability: +/- 2.5 ppm over 0 to 70° C
  - Ageing: +/- 0.88 ppm/day - +/- 10 ppm/year
- External 10 MHz input for RF synchronization

Order Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>X SSR-DTM2-1502</td>
<td>DVB-S/DSNG/S2 Modulator - L-band with BUC Driver - 1U Rack</td>
</tr>
<tr>
<td>X SSR-DTM2-1501</td>
<td>DVB-S/DSNG/S2 Modulator - 950 MHz to 2150 MHz RF output - 1U Rack</td>
</tr>
<tr>
<td>X SSR-DTM2-1571</td>
<td>DVB-S/DSNG/S2 Modulator - 50 MHz to 180 MHz RF output - 1U Rack</td>
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<td>X SSO-DTM2-S2XR</td>
<td>DVB-S2X Standard - Broadcast &amp; DSNG profiles - Software release</td>
</tr>
<tr>
<td>X SSO-DTM2-BISE</td>
<td>BISS-0/1/E Encryption license - Software release</td>
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Specifications are not contractual and are subject to revision without notice.