PowerVu®

Model D9752/D9390 Advanced Modulator

Description

Scientific-Atlanta's PowerVu® Advanced Modulator now offers DVB-compliant higher order modulation technology in two unique configurations in order to meet satellite operator needs.

A standalone 1RU, multi-mode D9390 modulator is shown in the diagram. The same technology has been repackaged as a multi-mode, one-card D9752 modulator solution that can be installed in the Originator™ encoding platform. Both products feature DVB-compliant QPSK, 8PSK and 16QAM-capability and also utilize flexible digital signal processing techniques for versatility. The PowerVu Advanced Modulator accepts redundant DVB-ASI (single DVB-ASI in the modulator card) and outputs a QPSK, 8PSK or 16QAM modulated signal. This higher order modulation can save operators money, as it requires less transponder space for a given transmission bit rate, or a higher bit rate in a given bandwidth.

The standalone Advanced Modulator and the Advanced Integrated Modulator card may be used in conjunction with Scientific-Atlanta's PowerVu digital content distribution system or any DVB-compliant encoding or multiplexing product, for single channel or multiple channel applications. The modulator complies with all applicable ITU-R and IESS recommendations and is CE approved.

Key Features

- MPEG-2 Compliant
- DVB-S (EN 300 421) and DVB-DSNG (EN 301 210) compliant
- Switching capability between QPSK, 8PSK and 16QAM operation
- Frequency agile output for operation anywhere within a transponder centered at 70 MHz or 140 MHz IF
- User-friendly menu-driven front panel control for standalone operation
- Card-based solution that fits in the Originator chassis for a complete DSNG system in one 2RU package
- Fully variable selectable symbol rates from 1.042 Mbaud to 35 Mbaud
- Usable information rates from 0.961 Mb/s to 96.0 Mb/s
- Programmable Forward Error Correction (FEC) rates
- 1:1 automatic redundant configuration including DVB/ASI protect, MUX protect and modulator protection
- Redundant power supplies, providing maximum transmission protection
- CW mode for uplink system alignment
- One rack unit high or card based solution for the 2RU Originator™ Encoder
- SNMP Interface
- Ethernet monitor and control ports

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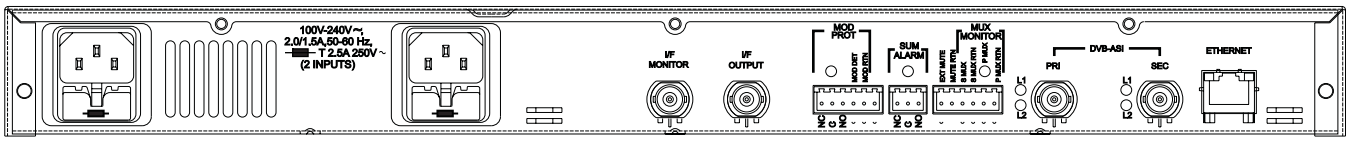
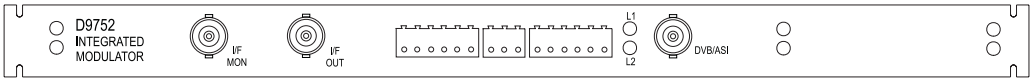
Specifications

Features	Description	
Modulation and Encoding	**Modulation:** DVB QPSK, 8PSK, 16QAM **Framing and Coding:** Compliant with DVB-S EN 300 421 and DVB-DSNG EN 301 210 specification **Viterbi FEC Rates:** QPSK: 1/2, 2/3, 3/4, 5/6, 7/8 (Convolutional Coding) 8PSK: 2/3, 5/6, 8/9 ("Pragmatic" Trellis Coding) 16QAM: 3/4, 7/8 ("Pragmatic" Trellis Coding) **Reed Solomon:** 204, 188, T=8 **Convolutional Interleave:** Depth of 12 **Symbol Rate:** 1.042 to 35Mbaud (100 baud stepsize)	**Usable Information Rate (Ru):** QPSK: 0.961 to 56.46 Mb/s 8PSK: 1.92 to 86.03 Mb/s 16 QAM: 2.88 to 96.0 Mb/s **Filter Alpha:** QPSK: 35% per DVB specification 8PSK/16 QAM: selectable 25% or 35% **Output Frequency:** 70 MHz (52 to 88 MHz) and 140MHz (104 to 176 MHz) **Stepsize:** 250 kHz **Stability:** < ± 1 ppm
Outputs and Monitor/Control	**Output connector:** BNC (female) **Impedance:** 75Ω **Output Return Loss:** -20 dB Max. **Output Level:** 0 to -25 dBm (0.1 dB stepsize) **Output Level Accuracy:** ± 0.5 dB **Synthesizer Phase Noise:** Exceeds IESS-310 requirements <2.048 Mb/s **Output Spurious (except CW mode):** In-Band: >50 dBc/4 kHz (in-carrier bandwidth) Out-of-Band: >80 dBc/4 kHz (full transponder carrier), >60 dBc/4 kHz (1/4 transponder carrier)	**Monitor Connector:** BNC (female, 75Ω) **Alarms:** Summary alarm via contact closure **Input Data Interface:** Redundant DVB-ASI **DVB-ASI Connector:** 75Ω, coaxial **Monitor and Control:** D9752: Via internal control bus on the Originator Encoder D9390: Ethernet (10Base-T) control ports on the PowerVu Network Centre. Supports a SNMP v2c with MIB for third party monitor/control.
Environmental	**Operating Temperature:** 0°C to 50°C (32°F to 122°F) **Storage Temperature:** -25°C to 80°C (-13°F to 185°F)	**Relative Humidity:** 5% to 95% non-condensing
Power Requirements	**Voltage Range:** 100V to 240V ac ±10% nominal **Line Frequency:** 47 Hz to 63 Hz auto selectable	**Power Consumption:** 40W typical



D9390 Standalone Rear Panel



D9752 Integrated Card for Rear Panel of the Originator™ Encoder

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