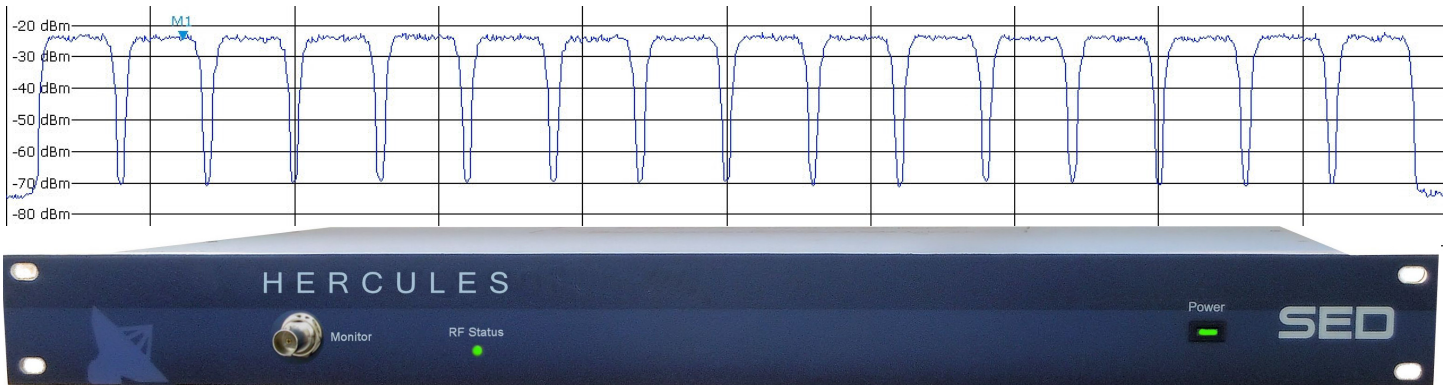


# Hercules Satellite Modulator

Generate Multiple Channels out of a Single 1RU Chassis



SED's Hercules satellite modulator is an innovative product for use in a multi-channel environment. The high density provides significant savings in capital costs, reduced operating expenses and other benefits.

Equipped with two GigE based IP data inputs, Hercules is capable of generating up to 16 independent 30 Msps carriers in the 950 MHz to 1750 MHz band. All carriers are frequency agile and have individual control of power, symbol rate, FEC rate and roll off.

Hercules is flexible to support multiple operational modes and includes the ability to generate a single carrier up to 416 Msps.

The convenient rear panel Ethernet management port provides easy access to the user interface using any standard web browser.

An SNMP-based monitor and control interface provides a connection to external management systems.

# Technical Specifications

<b>DVB-S2/S2X</b> Signal format CCM  Modulation format and FEC rates <b>QPSK</b> ; FEC rates 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 <sup>2</sup>  <b>8PSK</b> ; FEC rates 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 <sup>*</sup>  <b>16APSK</b> ; FEC rates 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 <sup>*</sup>  <b>32APSK</b> ; FEC rates 3/4, 4/5, 5/6, 8/9, 9/10 <sup>*</sup>  Roll-off factor 0.05 to 0.35 with 0.05 resolution *Normal mode only		<b>L-BAND INTERFACE</b> Operating Frequencies Band 1: 950 MHz to 1450 MHz Band 2: 1250 MHz to 1750 MHz  L-Band Output 950 - 1750 MHz, 1 Hz step 50 Ω SMA-Female +5 to -25 dBm (composite)  Output power step 0.1 dB Output power stability ± 0.5 dB Output power accuracy ± 0.5 dB (Single Carrier)  Monitor Output 50 Ω BNC - Female 950 - 1750 MHz -32 dBc, ±3 dB  Return Loss Minimum 14 dB Spurious -55 dBc in any 4 kHz bandwidth  Phase Noise 100 Hz -80 dBc/Hz 1 kHz -85 dBc/Hz 10 kHz -85 dBc/Hz 100 kHz -100 dBc/Hz 1 MHz -110 dBc/Hz	
<b>DVB-S/DSNG</b> Modulation format and FEC rates <b>QPSK</b> ; FEC rates 1/2, 2/3, 3/4, 5/6, 7/8 <b>8PSK</b> ; FEC rates 2/3, 5/6, 8/9 <b>16 QAM</b> ; FEC rates 3/4, 7/8  Roll-off factor 0.05 to 0.35 with 0.05 resolution		<b>CONTROL INTERFACE</b> SNMP SNMPv2. Accessed over ethernet physical interface.  Web interface Accessed over the ethernet physical interface.  Alarms Complete suite of parameters monitored. Access via GUI or SNMP. Comprehensive alarm history. Alarm relay contact - DB9 sockets.	
<b>COMMON</b> Spectral Inversion On/Off  Packet stuffing & PCR recalculation Insert Null packets as required & recalculate PCR  Input sync On/Off. When on, the symbol rate is determined from input data & selected modulated type & FEC rate.  Carrier Control Off/ No modulation (C/W) / Random PN23 bit stream / input stream		<b>PHYSICAL</b> Size 19" W, 1RU (1.75")H, 11" D EIA standard 19 inch rack mountable  Weight 7 pounds	
<b>TURBO</b> Modulation format and FEC rates <b>QPSK</b> ; FEC rates 1/2, 2/3, 3/4, 5/6, 7/8 <b>8PSK</b> ; FEC rates 2/3, 3/4, 4/5, 5/6, 8/9  Roll-off factor 0.1 to 0.5 with 0.05 resolution		<b>ENVIRONMENTAL</b> Operating Temp. 0°C to 50°C Storage Temp. -10°C to 55°C  Operating Humidity 10% to 80% relative humidity non-condensing Electromagnetic Compatibility EN 61000-6-2 2005, EN 55022 2006 Class A FCC Title 47, Part 15 Safety EN 60950-1, UL 60950-1, CSA22.2 No. 60950-1	
<b>PERFORMANCE</b> Min. symbol rate (per carrier) 1 carrier 45 Mbaud 8 carrier 5 Mbaud 16 carrier 100 Mbaud  Max. symbol rate (per carrier) 1 carrier 416 Mbaud 8 carrier 72 Mbaud 16 carrier 30 Mbaud  Min. symbol rate step 1Baud User packet size 188 bytes		<b>NOTES:</b> 1. Several different operational scenarios are available. Contact SED for more details. 2. Rate 9/10 is not applicable for short frames. 3. All specifications at 25°C unless otherwise noted. 4. All specifications subject to change without notice.	
<b>INPUT INTERFACE</b> DVB-ASI <sup>1</sup> 75 Ω BNC; Qty 2  Ethernet (data) 10/100/1000 Base T (RJ-45); Qty 2 Supports COP3 as per: SMPTE 2022-1-2007 and SMPTE 2022-2-2007  Ethernet (control) 10/100 Base T (RJ-45)  10 MHz Frequency Reference 50 Ω BNC-Female  Power Male IEC 320 100-120 VAC, 220-240 VAC auto-ranging, 50-60 Hz Power consumption: 75 W typical			

## To learn more, please contact:

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