INTERNATIONAL DATACASTING

SE4000™ SD MPEG-2 Video Encoder

Ideal for mobile broadcast contribution applications as well as network and cable headend use, the SE4000 SD MPEG-2 Video Encoder combines best in class modulation technology with proven IDC encoding to provide a complete encoder and modulator solution.

Applications

- Digital Satellite News Gathering
- Sports/Event Contribution

Features

- Modulated 70 and 140 IF and L-Band with internal 10MHz high stability reference
- L-Band monitor port with F-connector cables directly into IRD
- DVB QPSK, 8PSK and 16QAM modulator with control buttons
- 100/1000 Base-T IP with COP3 FEC
- DVB-S2 modulator with QPSK, 8PSK and 16APSK
- DS-3/E3 interface
- 4:2:0 or 4:2:2, field upgradeable
- BISS 1 and E conditional access
- Front panel power switch
- Backlit alphanumeric buttons
- Large illuminated LCD display
- Fully MPEG-2 and DVB compliant
- Composite broadcast quality video and two stereo audio channels
- Analog, AES serial digital audio and SDI embedded audio inputs
- Integrated 10 MHz high-stability reference
- Web-based interface

Easy to Use

There is a complete set of backlit alphanumeric full travel buttons on the front panel for easy configuration, event in the dark. The large LCD display is illuminated yet provides high contrast for visibility in direct sunlight. The power switch is on the front panel for easy access. There are 24 user-programmable preset configurations that van be named, stored and recalled from the front panel menu.

Reliable and Affordable

By using the latest integration of MPEG and low power digital electronics technology, the SE4000 combines a complete modulator and encoder in a small, low power, quiet, highly reliable and feature rich package. The SE4000 even includes redundant cooling fans with fault monitoring to ensure trouble free operation under the harshest of conditions.

Direct Connect to ODU and Monitor IRDs

Systems no longer require external splitters or upconverters when using the SE4000. The SE4000 is capable of delivering DVBs or DVB-S2, QPSK, 8PSK, 16QAM or 16APSK modulation in IF frequencies of 70 MHz and 140 MHz, plus an L-Band output from 950 to 2050 MHz. These outputs will interface to virtually any traditional upconverter and the latest low power low cost block upconverters (BUC), allowing significant savings in system equipment cost and complexity. The modulator may also be fitted with an optional high-stability 10 MHz reference.

Direct Connect to ODU and Monitor IRDs

BISS Mode 1 and E are supported by the SE4000, in addition to the IDC proprietary Privacy Guard Conditional Access (PGCA). PGCA is a fixed key scrambling system that is included as a standard feature in most IDC encoders and decoders. It is addressable and allows the decoder addresses to be added or deleted from the authorization list using the SE4000 front panel or remote control interface.

TECHNICAL SPECIFICATIONS—SE4000 SD MPEG-2 Video Encoder

MODEL	DESCRIPTION
Base Unit	• MPEG-2 4:2:0 MP@ML encoding 1 to 15 Mb/s • Composite PAL/NTSC and SDI video inputs • Two analog stereo and two AES/EBU digital stereo audio inputs • MPEG-1 Layer II, AC2 2.0 2 Channel audio encode
HARDWARE OPTIONS	
IF Internal Modulator | 70/140 MHz Output	
L-Band Internal Modulator | L-Band + IF (70 & 140 MHz)	
G.703 | BNC Unbalanced Interface Module	
SOFTWARE OPTIONS	
MPEG-2 4:2:2	
BISS	
DVB-S2	

VIDEO SPECIFICATIONS	
Video Input	PAL (625 Line) or NTSC (525 Line) Formats
Analog	SMPTE 170M NTSC or ITU-R BT.470-6 PAL-I/B/D, BNC connector
Serial Digital	SMPTE 259M SDI @ 270 Mb/s, BNC connector
Video Processing	• MPEG-2 4:2:0 (Main Profile @ Main Level), 1.0 to 15.0 Mb/s • **Horizontal Resolutions:** 720, 204, 640, 544, 480 and 352 Pixels/Line • **Vertical Resolutions:** 240 or 480 Lines (NTSC) or 288 or 576 Lines (PAL) • 4:3 and 16:9 configurable aspect ratio • TBC, AGC and clamp for composite video signal restoration
Vertical Blanking Interval	• Proprietary passage of NTSC Line 21 closed captions (composite or SDI) • ATSC closed captions, per A/53 (composited or SDI) • DVB Teletext for World System Teletext on PAL composite video • Full VBI passage with DVB expanded windows mode
Latency (Encode to De-code)	• **Ultra-low latency:** 150 ms • **Low Latency:** 240 ms • **Quality:** 350 to 1000 ms
AUDIO SPECIFICATIONS	
Audio Inputs	• 2 Stereo or 4 independent analog mono channels on balanced XLR connectors • 2 AES/EBU digital stereo pairs on 75 Ohm BNC connectors • 2 AES/EBU digital stereo pairs embedded in SDI, 48 Ks/s sample rate
Audio Processing	• MPEG-1 Layer II, AC3 2.0 encoding, AC3 5.1 pass-through • 2 stereo channels or 4 independent mono channels sampling • Sample rates of 32, 44.1 and 48 Ks/s • Output rates from 64 to 640 Kb/s
AUXILIARY DATA	
One Synchronous	1 to 20 Mb/s, resolution 1b/s, EIA-422, on Female DB-9 connector
One Asynchronous	1200 to 115 Kb/s, EIA-232, on Female DB-9 connector

MISCELLANEOUS SPECIFICATIONS	
Control Tables	Internally-generated DVB-compatible PSI/SI tables
Timing	Lip synchronization adjustment -30 to +300 ms
Transport Output	• MPEG-2, DVB-Compliant transport stream • Two DVB ASI outputs (75 Ohm BNC connectors) • 1 to 80 Mb/s in units of 1 b/s
Fault Monitoring	Contact closure for alarm conditions on RJ-11 connector
Software Upgrade	Simplified EIA-232 remote port, Ethernet remote port
FRONT PANEL INDICATORS	
Backlit, full-travel pushbuttons; Recessed front panel AC power switch; Three special purpose buttons: carrier, modulate, status; Backlit 2x 40 LCD display; 24 user-programmable preset configurations	
CONDITIONAL ACCESS	
PGCA, Enable/Disable IRDs from front panel or remote control	
STATUS AND CONTROL INTERFACES	
• EIA-232 on Male DB-9 connector (DTE), ASCII commands • IEEE 802.3 10/100 Base-T (Ethernet) on RJ-45 connector • Web-based interface, SNMP	
POWER REQUIREMENTS	
Supply Voltage	90 to 240 VAC, 50/60 Hz
Power Consumption	70 Watts (typical)
PHYSICAL PARAMETERS	
Chassis	1RU rackmount, suitable for mobile operations
Dimensions (H, W, D)	4.45 cm x 44.45 cm x 39.37 cm (1.75” x 17.5” x 15.5”)
Weight	5.5 kg (12 lbs.)
ENVIRONMENTAL CONDITIONS	
Operating Temperature	0° to 50° C (32° to 122° F)
Storage Temperature	-20° to 70° C (-4° to 158° F)
Humidity	Up to 95% humidity, non-condensing

Digisat International Inc.
4195 W. New Haven Ave., Suite 15
Melbourne, FL 32904
USA
+1-321-676-5250
Email: sales@digisat.org
http://www.digisat.org

INTERNATIONAL DATACASTING

WWW. DATACAST.COM