

H.264 - 4:2:2 Encoder & DVB-S2/S Modulator

The HENM-70 is the new equipment developed by SVP Broadcast Microwave, which includes an H.264 - 4:2:2 encoder and a DVB-S2/S modulator in the same equipment.

It features H.264 encoding for 3G, high definition (HD) and standard definition (SD) signals, being able to detect automatically the video input format. Based on NTT-NEL encoding technology, the new HENM-70 offers the highest video quality with minimum latency: 33 ms.

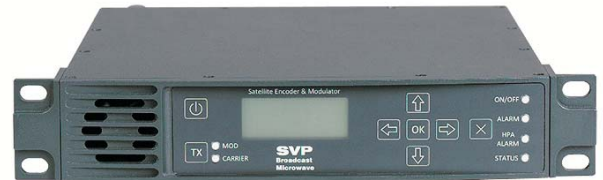
Based on the latest modulation technology, the HENM-70 provides a high signal quality solution. It has been designed to address the requirements of the ETSI DVB-S2 forward-link satellite standard (EN302307).

For added security, transmitted signal can be encrypted using BISS or AES encryption (optional).

It performs ASI Transport Stream over IP and FEC encoding as defined in SMPTE 2022. It allows to send the signals over IP networks. In its default configuration, the encoder and modulator is able to transmit one MPEG transport stream in DVB-S2 or DVB-S mode.

At the output of the modulator, the signal is available in IF from 950 to 2,150 MHz. A switchable 10 MHz reference signal is multiplexed on the L-band interface for the up-converters.

The HENM-70 allows the remote control of most of the BUC and SSPA equipment available in the market.



H.264 4:2:2

DVB-S2

FEATURES

- Superior encoding quality and performance (NTT-NEL technology)
- H.264 HD/SD 4:2:2/4:2:0 encoder
- Input signals: video, HD/SD-SDI, 3G-SDI
- Highest video quality available: 1080p/50, 1080p/60, 3G-SDI
- QPSK, 8PSK, 16APSK, 32APSK modulation
- ASI over IP interface with FEC
- 10 MHz reference for BUC
- Lowest Delay in H.264: 33 ms
- BISS-1 and BISS-E encryption
- Allows the remote control of BUC and SSPA
- 70 MHz output

OPTIONS

- AES-128 and AES-256 encryption

APPLICATIONS

- SNG
- High-performance encoder

APPLICATIONS



Satellite News Gathering (SNG)

Characteristics

IF Stage (L Band) DVB-S2 and DVB-S

Frequency Range:	950 to 2.150 MHz (L band)
Output Level:	-50 to +5 dBm
10 MHz Ref. Oscillator:	0 dBm (Low phase Noise)

IF Stage (70 MHz) DVB-S2 and DVB-S

Frequency:	70 MHz
Output Level:	-10 dBm (DVB-S/S2) -14 dBm (DVB-T/T2)

Video

Inputs:	3G-SDI SMPTE-425M-A (299M) HD-SDI SMPTE-292M (299M) SD-SDI SMPTE-259M (272M) HDMI (1.4a) CVBS
Formats:	1080p (1920 x 1080) - 23,98/ 24/ 25/ 29,97/ 30/ 50/ 59,94/ 60 Hz 1080i (1920x1080) - 50/ 59,94/ 60 Hz 720p (1280x720) - 23,98/ 24/ 25/ 29,97/ 30/ 50/ 59,94/ 60 Hz 576i (720x576) - 50 Hz 480i (720x480) - 59,94 Hz

Audio

Input :	SDI embedded / HDMI embedded AES Digital / Analogue
Analogue:	2 Stereo / 4 Mono Line, Micro Dynamic and Micro with Phantom
SDI embedded:	1 group (4 audio channels)
AES Digital:	2 stereo channels

Data Channels

Data channel 1:	User data or GPS data
Data rate:	1.200 to 57.600 bps

ASI and IP

Input and Output:	ASI Transport Stream (EN50083-9) Transport Stream over IP (SMPTE2022/CoP3) - FEC 188/204 byte-packets Max. TS packets / IP packet: 7
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Encoder

Video compression:	H.264/ MPEG-4 Part 10
Profile:	High 422, High, Main
Level:	3.0 / 3.1 / 3.2 / 4.0 / 4.1
Latency:	Ultra Low delay: 33 ms
Audio compression:	MPEG-1 Layer II
Audio bit rate:	128, 192, 256 or 384 Kbps
Output bitrate:	1 Mbps - 100 Mbps

Modulation

DVB-S2:	QPSK, 8PSK, 16APSK, 32APSK LDPC FEC: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 Max. Symbol Rate: 31Msymb/s
DVB-S:	QPSK Reed Solomon FEC: 1/2, 2/3, 3/4, 5/6, 7/8 Max. Symbol Rate: 31Msymb/s

Encryption

BISS:	BISS-1 and BISS-E
AES:	AES-128 and AES-256 (optional)

Control & Monitorization

Control Interfaces:	Front panel and display Web Server interface SNMP RTC-01 via cable
Monitoring:	Encoding parameters Modulation parameters Alarms and warnings

Test Signals

Video:	Bars with moving icon
Audio:	4 audio tones

Power Supply

AC input:	100 to 240 V
DC input:	8 to 36 V

Mechanical

Size:	1/2 RU, 210 x 44 x 240 mm (WxHxD)
Weight:	1,8 kg

Environmental

Temperature range:	-10 to 45 °C
Consumption:	18 W @ 12 V
Height:	4.500 m
Humidity:	95%



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DVB-S/S2

NEC NTT Electronics Codec Inside