

## DVB-T2/T/S2/S Portable Transmitter

The new HDT-70 is a split box portable microwave transmitter, which consists of a control unit and an RF head connected by triax cable. The control unit has a 70 MHz output connection through which it is possible to transmit the signal to the RF head via a triax cable in DVB-T2, DVB-T, ISDB-T, DVB-S2 and DVB-S modes. Besides, this control unit could have another optional output connector in which the signal is generated in the L band for DVB-S and DVB-S2.

It features H.264 encoding for 3G, high definition (HD) and standard definition (SD) signals. Based on NTT encoding technology, the new HDT-70 offers the highest video quality with minimum latency, 33ms. H.264 transmission is possible using 40% lower bitrate than conventional MPEG-2 systems. For added security, transmitted signal can be encrypted using BISS or AES encryption.

This new generation transmitter accepts 3G/HD/SD-SDI, HDMI and analogue video input signals. SDI embedded, HDMI embedded, AES audio and analogue inputs are available as standard. User data or GPS data can be transmitted over the data channel.

Transport-Stream over IP optional input and ASI input enable the use of this transmitter as a modulator. Besides, the ASI and the Transport Stream over IP outputs enable the user to use the transmitter as a standalone encoder.

The HDT-70 transmitter performs DVB-T, DVB-T2, ISDB-T, DVB-S and DVB-S2 modulations. DVB-T enables compatibility with nearly all types of COFDM receivers. DVB-T2 modulation outperforms DVB-T modulation, and offers much higher data rate, which renders in a higher signal quality and a much more robust signal than DVB-T, making possible longer and more complex links. This transmitter also performs DVB-S2 and DVB-S modulation. An L band output is available which enables the user to handle the BUC and SSPA.



Duplexer SCDA



External unit



Internal unit front



Internal unit rear

H.264 4:2:2

**DVB T2**

### FEATURES

- Frequency Bands: 2, 4, 6, 7 and 10 GHz
- Terrestrial and satellite transmission
- Highest video quality: 1080p/50, 1080p/60, 3G-SDI
- Delay 33 ms
- BISS-1 and BISS-E Encryption
- DVB-T2/T/S2/S
- Remote Control of BUC and PA-10
- Remote polarization control
- Integrated autotracking antennas by GPS: Sectorial and 2 axis positioner
- H.264 4:2:2

### OPTIONS

- DVB-S2 and DVB-S compliant.
- AES 128 and AES 256 Encryption
- Remux
- RF AUX and L Band Outputs
- IP Input and Output
- ISDB-T with interlaced

### APPLICATIONS

- Portable and point-to-point radio link
- SNG
- High performance Encoder
- IP Networks

## Characteristics

### RF Stage DVB-T2, DVB-T, DVB-S2 and DVB-S

Frequency Range:	2, 4, 6, 7 and 10 GHz bands (standard)
Output Power:	3 W (2 GHz band) 1 W (4, 6, 7 and 10 GHz bands)
IF Frequency:	70 MHz (Triax Lemo 3)

### Video

Inputs:	3G-SDI SMPTE-425M-A HD-SDI SMPTE-292M (299M) SD-SDI SMPTE-259M (272M) 2 x HDMI (1.4a) Composite video (PAL/NTSC)
Formats:	<b>1080p</b> (1920 x 1080) - 23,98/ 24/ 25/ 29,97/ 30/ 50/ 59,94/ 60 Hz <b>1080i</b> (1920x1080) - 50/ 59,94/ 60 Hz <b>720p</b> (1280x720) - 23,98/ 24/ 25/ 29,97/ 30/ 50/ 59,94/ 60 Hz <b>576i</b> (720x576) - 50 Hz <b>480i</b> (720x480) - 59,94 Hz

### Audio

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

### Data Channels

Data channel:	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 (Optional) (SMPTE2022/CoP3) - FEC 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:	Low delay: 33 ms
Audio compression:	MPEG-1 Layer II
Audio bit rate:	128, 192, 256 or 384 Kbps
Output bitrate:	1 Mbps - 109 Mbps
Remux	(Optional)

### Encryption

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

### Test Signals

Video:	Bars with moving icon
Audio:	4 audio tones

### Modulation

DVB-T2:	COFDM 1K, 2K, 4K, 8K, 8K.ext QPSK, 16QAM, 64QAM, 256QAM Constellation rotation LDPC FEC:1/2, 3/5, 2/3, 3/4, 4/5, 5/6 IG: 1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128 Time Interleaving Bandwidth: 1,7, 5, 6, 7, 8 MHz Max. bitrate: 44.6 Mbps
DVB-T:	COFDM 2K mode QPSK, 16QAM, 64QAM FEC:1/2, 2/3, 3/4, 5/6, 7/8 IG: 1/4, 1/8, 1/16, 1/32 Bandwidth: 5, 6, 7, 8 MHz Max bitrate: 31,67 Mbps
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: 25 Msymb/s Max. bandwidth: 30 MHz Max. bitrate: 108.9 Mbps
DVB-S:	QPSK Reed Solomon FEC: 1/2, 2/3, 3/4, 5/6, 7/8 Max. Symbol Rate: 22.2 Msymb/s

\*ISDB-T with interlaced (optional)

### Control & Monitorization

Control Interfaces:	Front panel & display Web Server interface SNMP
Monitoring:	Encoding parameters Modulation parameters Frequency and output power Alarms, warnings and logbook

### Antenna Control

Parabolic:	Remote Polarization Contro Autotracking with panel switchg
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### Power Supply

AC input:	90 to 240 V AC
DC input:	24 to 36V DC

### Mechanical

Control unit: (IDU)	Size: 1/2 RU, 240 mm (9.4 in) depth Weight: 4 kg (8.8 lb)
RF head: (ODU)	Size: 185.5 x 79 x 333 mm Weight: 4,4 kg (9.7 lb)
Consumption:	RF Head 60 W Control Unit 40 W
Temperature range:	-30 to 50°C

### RF AUX Output DVB-T2 and DVB-T (Optional)

Frequency Range:	2.0 to 2.4 GHz
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### L Band Output DVB-S2 and DVB-S (Optional)

Frequency Range:	950 to 2.150 MHz (L band)
Output Power Level:	-50 to +5 dBm
10 MHz Ref. Oscillator	High stability and low phase noise

How to order

**HDT-70-XXX-YYY**

(H.264 - 4:2:2 DVB-T/T2 Portable Transmitter)

Optional features \*

000: Default	066: IP	072: S2+RM+IP
061: S2	067: AUT+RF	073: S2+RF
062: RM	068: S2+RF	074: S2+RM+AES+RF+IP
063: AES	069: RM+RF+IP	075: AES+AUT+RF+IP
064: AUT	070: AES+RF	076: RM+AES+AUT+RF+IP
065: RF	071: S2+ RM+RF	077: S2+RM+AES+AUT+RF+IP

\* TX Frequency Ranges (YYY)

02G: 2.000 to 2.400 MHz	07G: 6.800 7.400 MHz
04G: 4.400 to 4.900 MHz	10G: 10.150 to 10.650 MHz
06G: 6.280 to 6.900 MHz	

Application example:

Point to Point Link:

HDT-70-000	HDT-70-064	HDT-70-068	HDT-70-075
HDT-70-062	HDT-70-065	HDT-70-069	
HDT-70-063	HDT-70-066	HDT-70-074	

High Capacity Link:

HDT-70-000	HDT-70-077	HDT-70-072
HDT-70-061	HDT-70-070	HDT-70-073
HDT-70-062	HDT-70-071	HDT-70-076

\*S2: DVB-S/S2 modulations with L band output  
 RM: Remux function  
 AES: AES128/AES256 Encryptions  
 AUT: Autotracking  
 RF: Auxiliary RF output  
 IP: TS over IP input/output

Design and specifications are subject to changes without prior notice. 04/16