

ENG H.264 SD/HD COFDM Transmitter

COFDM – Video, Audio Telemetry and IP Products

COBHAM

September 2011 Data Sheet

The most important thing we build is trust



The SOLO ENG Transmitter from Cobham is a rugged, SD/HD COFDM digital video transmitter specifically designed for Electronic Newsgathering (ENG) applications. The unit docks neatly onto all types of ENG cameras via integrated V-mount or AB battery plates.

Standard broadcast connectors are used for video (BNC), audio (XLR3) and power (XLR4) inputs and are accessed via a horizontal connection panel. This eliminates clashes with the camera's own connectors, minimises cable strain and enables the camera to be placed on the ground when not in use.

The increased compression and efficiency of the MPEG4 H.264 encoder offers users additional range with the added benefit of small size, low latency and low power consumption. In particular, HD transmission is possible using 40% lower bit-rates than conventional MPEG2 systems, enabling true HD transmission in a single 8MHz DVB-T channel whilst using robust modulation settings. Able to transmit images in a non-line of sight environment up to 1km depending on mode and frequency, the ENG Transmitter can achieve even further range with an optional clip-on booster PA.

The transmitter can operate in a variety of transmission bandwidths allowing the user to trade off image quality against range to suit all types of applications. Excellent range, performance and spectral efficiency are offered

when operating in the optional narrow bandwidth mode, which combined with the ultra efficient H.264 encoding allows true broadcast quality pictures to be transmitted in only 2.5MHz bandwidth. This enables users to maximise usage of limited RF spectrum as 2 or 3 cameras can occupy the bandwidth previously required by a single MPEG2 system. All modes of DVB-T modulation are also supported.

Designed to offer maximum flexibility in the pressurised and rapidly-changing ENG environment, the unit has a variety of video input options including composite, SDI, HD-SDI and HDMI – particularly useful when accessing material in the field from prosumer and semi-professional equipment. Analogue audio inputs feature switchable mic/Line level with variable gain and P12 microphone powering. AES and SDI/HD-SDI embedded audio inputs are also offered as standard. An optional ASI in/out interface is also available, enabling the unit to be used as a stand-alone encoder or modulator.

The SOLO ENG transmitter has an integrated control panel with sunlight-readable OLED display covering all major functions and has 16 user-defined presets. A power on-off switch is also provided to minimise camera battery consumption when the RF link is not in use. A wide range of RF frequency bands is available from 340MHz to 8.2GHz. Users can up-grade the RF section to an alternative frequency band as a low-cost option.

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Specification:

Input

SD Composite Video	BNC
SD/HD-SDI	BNC
HDMI	HDMI Type A
ASI In	BNC (optional)
Balanced Stereo Audio	2x XLR3-F
USB Control	6 way OB Lemo
Power	XLR4-M
Data channel	4-way OB Lemo

Output

RF	N(f)
ASI Out	BNC (optional)

RF

Frequency Bands	Frequencies available from 230MHz to 8.6GHz, see product codes
Tuning Step Size	250kHz
O/P Power	100mW

DVB-T Modulation

DVB-T Bandwidth	8MHz, 7MHz and 6MHz modes
DVB-T Guard	1/32, 1/16, 1/8, 1/4
DVB-T FEC	1/2, 2/3, 3/4, 5/6, 7/8
DVB-T Modulation	QPSK, 16QAM, 64QAM
DVB-T Bit-rates	3.6Mbps to 32Mbps

Narrowband Modulation (with TX-NBUP option)

SOLO Bandwidth	2.5MHz, 1.25MHz and 625kHz modes
SOLO Guard	1/16, 1/8
SOLO FEC	1/3, 2/3
SOLO Modulation	QPSK, 16QAM, BPSK, 8PSK
SOLO Bit-rates	140kbps to 4.8Mbps

Video

Video Input	SD-SDI, HDMI, Composite
Compression Type	AVC/H.264/MPEG-4 Part 10
SD Resolution modes	720x480i 59.94Hz, 720x576i 50Hz
Other modes	Horizontal downsampling of 3/4, 2/3, 1/2 Vertical downsampling of 1/2 Sub-frame rate of 1/2, 1/4, 1/8, 1/24
Coding Mode	High profile level 4.1, I/PP 4:2:0 Progressive or Interlaced (MBAFF)
Encoder Delay	<65ms in low delay mode Variable in standard delay mode
Encoder Bitrates	0.25 to 30Mb/s

HD Video (with TX-HDUP option)

Video Input	HD-SDI, HDMI
HD Resolution modes	1920x1080i 60/59.94/50Hz 1920x1080p 30/29.97/25/24/23.97Hz 1920x1080psf 30/29.97/25/24/23.97Hz 1280x720p 60/59.94/50Hz

Audio

Audio Inputs	SD/HD-SDI, HDMI 2 digital stereo pairs 1x Analogue stereo pair Mic/Line level P12 2 channels stereo or mono
Coding Modes	MPEG Audio Layer 1 64-448kbps MPEG Audio Layer 2 48-384kbps

Data Interface

RS232 Data Input	1k2 to 115k2 baud switchable 7/8 bit, none/odd/even parity
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Control

Front Panel	Integrated Field Controller 2 Buttons and OLED Screen
Remote Control	USB Control from PC GUI Application

Physical

Dimensions	L 200mm, W 110mm, H 71mm
Weight Base Unit	900g

Power

DC Input	6 to 17V Reverse Polarity Protected
Power Consumption	10W

Environment

Temperature Range	-10 to +50° C
Sealing	Splash Proof

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Product Codes:

SOLH264ENGTX-034047 ENG H.264 SD TX 340-470MHz 100mW
SOLH264ENGTX-100150 ENG H.264 SD TX 1.0-1.5GHz 100mW
SOLH264ENGTX-150200 ENG H.264 SD TX 1.5-2.0GHz 100mW
SOLH264ENGTX-200250 ENG H.264 SD TX 2.0-2.5GHz
Limited to 20dBm EIRP with 3dB antenna
SOLH264ENGTX-250300 ENG H.264 SD TX 2.5-3.0GHz 100mW
SOLH264ENGTX-300350 ENG H.264 SD TX 3.0-3.5GHz 100mW
SOLH264ENGTX-350400 ENG H.264 SD TX 3.5-4.0GHz 100mW
SOLH264ENGTX-400450 ENG H.264 SD TX 4.0-4.5GHz 100mW
SOLH264ENGTX-550600 ENG H.264 SD TX 5.5-6.0GHz 100mW
SOLH264ENGTX-640700 ENG H.264 SD TX 6.4-7.0GHz* 100mW
SOLH264ENGTX-700750 ENG H.264 SD TX 7.0-7.5GHz* 100mW
SOLH264ENGTX-810860 ENG H.264 SD TX 8.1-8.6GHz 100mW

More frequencies available upon request

*= currently under development

Product Code Includes

1 x CA0343 USB Control Cable
1 x CA0340 RS232 Data Input Cable/4 Pin Lemo
1 x CA0665 DC Power Input Cable

Accessory Options

TX-VBAT V-Mount Battery Plates
TX-ABBAT AB Battery Plates
TX-PAGBAT PAG Battery Plates
TX-HDUP HD Encoder Upgrade
TX-RFUP-xxxxxx RF Band Swap

Licensing Options

TX-NBUP 2.5MHz/1.25MHz/625kHz Narrowband Modulation
TX-ASIUP ASI in/out BNCs

Products are available to security users only, in licensed frequency bands. These products are not approved for use by unlicensed users.

Commercial products are available to unlicensed users - contact Cobham Tactical Communications and Surveillance direct for details.

All product specifications are subject to change without notice. Cobham Tactical Communications and Surveillance will not be liable for technical or editorial errors or omissions.

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