SKYMASTERTX

HD / SD COFDM Aircraft Transmitter

FEATURES:

- Proven interoperable SD and HD encoding
- 8W RF TX output power
- Standard bands include 2GHz, 4.5 GHz and 6.5GHz
- MPEG-4 Part-10/H.264
- Optimized size and weight for aircraft
- Multiple ARINC mounting options
- Superior broadcast quality video
- Video, audio, data and telemetry
- Front panel LCD screen and LED alarms
- ASI multiplexing
- GPS receiver
- AES encryption (BCRYPT)
- 16 or more user configurable presets

OPTIONS:

- Narrow band 1.25 MHz/2.5 MHz COFDM
- Second MPEG-2 or MPEG-4 encoder *
- IP streaming input *

ACCESSORIES:

- ACCESS remote control
- ARINC mounting tray
- GPS antenna

The new SkymasterTX (SKTX) is a lightweight, full-featured digital COFDM video downlink transmitter built to address the unique requirements of aircraft downlink operation. The chassis design features either horizontal or vertical ARINC mounting. All of the connections and controls have been located on one side of the unit. This allows the SkymasterTX to be removed from one aircraft and installed in another with ease.

A unique feature of the SkymasterTX is a built-in GPS receiver. This allows aircraft position data to be downlinked to the command center for display on a moving map system. This feature allows rapid location of the aircraft.

The SkymasterTX can operate in a wide variety of bands delivering High Definition and Standard Definition video resolutions. The SkymasterTX can output up to 8W of RF power extending and improving link reliability. The SkymasterTX features COFDM digital modulation. COFDM modulation is unaffected by multipath – unlike single-carrier modulation formats such as FM, CDL or QAM.

The SkymasterTX has a built-in H.264 (MPEG-4) encoder or optional MPEG-2 encoder. MPEG-4 encoding is the latest encoding method. It requires 50% less bit-rate over MPEG-2 improving the reliability of the transmission even more. MPEG-4 also allows for the transmitting of High Definition video without sacrificing performance. IMT has taken great care with the design of the internal H.264 encoder. It has been designed with video quality as its cornerstone. The quality of the encoding rivals that of full-featured rack mounted encoders.

Knowing that security of the video is critical, the SkymasterTX features the latest in AES 128 and 256 encryption. This feature can be enabled or disabled very easily allowing the mode to be selected depending on the mission requirements. To ensure interoperability between vendors we also conform to BCRYPT, a published, non-proprietary standard.

The front panel LCD and a Remote Control user interface allow for quick control of preset selection, standby mode, and encryption mode. For advanced functions such as changing frequency plans, AES encryption keys, or unit naming, an easy-to-use administration software package is supplied. Configuration is flexible with 16 or more different presets available.

SKYMASTERTX

HD / SD COFDM — Aircraft Transmitter

RF Specifications:

Base Model Number	Frequency (GHz)
23SKTX	2.000 - 2.500 *
25SKTX	2.400 - 2.700 *
47SKTX	4.400 - 5.000
65SKTX	6.425 - 6.525

(Other bands are available, please consult the factory for more information.)

Tuning Step Size:	250 KHz step size (others available)
Frequency Stability:	± 30 ppm

Modulation Modes:

Modulation 1:

Modulation Formats:	COFDM (DVB-T)
Carriers:	2k
Constellation:	QPSK, 16 QAM, 64 QAM
Code Rate:	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval:	1/32, 1/16, 1/8, 1/4
Bandwidth:	6 MHz, 7 MHz, and 8 MHz

Modulation 2 (Optional):

Modulation Formats:	COFDM (Proprietary)
Carriers:	2k
Constellation:	QPSK
Code Rate:	1/2, 3/4
Guard Interval:	1/32
Bandwidth:	1.25MHz, 2.5 MHz

Video:

Video Input:	Composite
	NTSC
	PAL
SD-SDI Input:	ANSI/SMPTE 259M
HD-SDI Input:	ANSI/SMPTE 292M

Audio:

Audio Channels:	1 Stereo, 2 Mono Standard
Audio Input:	Line, Gain selectable
	(-12 dB to +50 dB)
	Balanced 600Ω
Audio Input:	De-embedded from SDI
	Tone (-10dBfs/8dBm)
	Level Adj. (-10-26dBfs)

MPEG Encoder:

Video:

Method:	MPEG-4 Part 10/H.264
Video Coding:	AVC
Audio Coding:	ISO/IEC 11172-3(MPEG Layer II)
Audio Sample Rate:	48 kHz
MPEG-4 Formats:	1080i/59.94
	1080p/29.97
	1080i/50
	720p/59.94
	720p/29.97
	720p/50
	480i (NTSC)
	576i (PAL)
	Other formats are available.

System:

Video Present:	Remote Standby/Test
	Generator selectable
Test Generator (Dynamic):	SMPTE CB(NTSC)/100% CB(PAL)
	1kHz Tone
ASI Input:	Rate converted from
	0mpbs-Max modulation rate
	PCR Retime stamp
Encryption (optional):	BCRYPT1 and 2
	AES Block Cypher,
	key size of 128 and 256 bit
	(FIPS PUB 197)
User Data:	RS232
	300-115k Baud
Remote Control:	Remote RS232 or Web GUI *

Power Requirements:

Input Range:	+24 to +32 VDC

Environmental:

Temperature Range:

Full Specification:	-20° to +60°C
Storage:	-40° to +80°C
Humidity:	0 to 95% non-condensing

Physical Characteristics:

Dimensions:

	4.88" W x 7.5" H x 12.6" L
	(12.4 cm x 19.1 cm x 32.0 cm)

Weight:

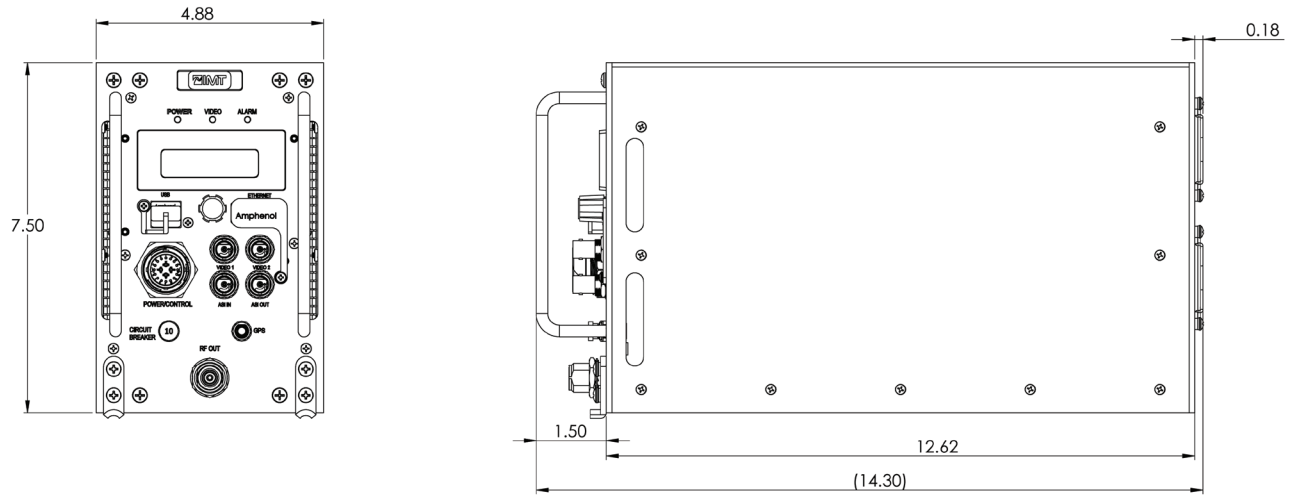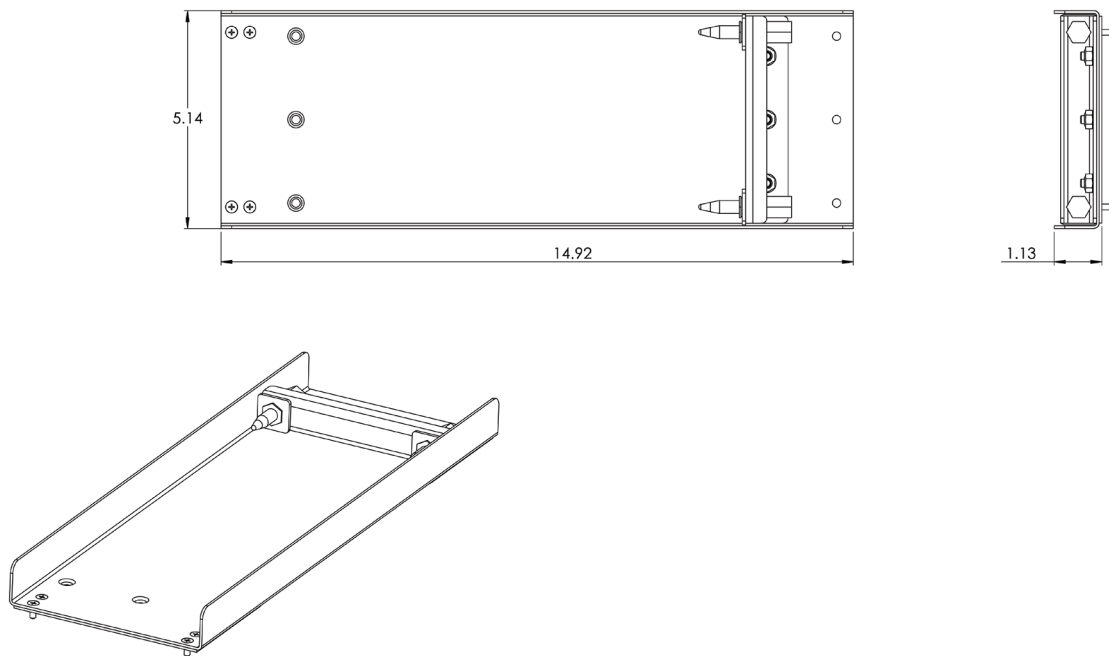|	
	<10 lbs (4.5 Kg)

* Feature under development

SKYMASTER TX

HD / SD COFDM — Aircraft Transmitter

SKTX Outline Drawing (inches):

ARINC Horizontal Mounting Tray Drawing (inches):

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SkymasterTX Suggested System Configuration:

GPS

HD-SDI

UDP IP
Stream

RF Output

RS232

Access RC – Cockpit
Remote Control

IMT
A Vitec Group brand

Made in USA

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