

MICRO TRANSMITTER

MINIATURE VIDEO/DATA MICROWAVE TRANSMITTERS



L-3's MICRO Transmitter is a compact and power-efficient video/data transmitter for Unmanned Vehicle applications.



L-3 Telemetry & RF Products (L-3 T&RF)

Micro Transmitters are 1- and 2- Watt versions and are packaged in rugged, easy-to-mount, 1 cubic-inch, 1 ounce housings, making them ideal for all types of UAV/UGV applications that require extended range operation. The highly efficient power amplifier design draws minimal current thereby extending operational life. A built-in thermal shut down switch prevents transmitter damage due to overheating.



The MICRO Transmitter supports an NTSC or PAL video input and provides CCIR 405 pre-emphasis filtering. Frequency agile (multi-channel) models enable up to 64 channels to be factory programmed and selected via a parallel BCD or Binary interface. An optional TTL-level remote serial interface enables frequency control in steps as fine as 2 kHz.

An optional integrated GPS L1 filter is available to reduce the amount of spurious emissions at GPS frequencies between 1570 to 1580 MHz. The unit is equipped with one high-quality subcarrier that can be configured as an analog or data input. The analog option provides a 40Hz to 15 kHz, ± 2 dB response, while the data option supports a DC-Coupled, TTL-level data stream of up to 56 kbps. The subcarrier is factory set to a customer specified frequency from 4.83 to 8.5 MHz.

FEATURES

- High-Quality NTSC or PAL color video
- L-, S- or C-Band operation
- 1- or 2-Watt output power
- Occupies less than 1-Cubic Inch
- Weighs less than 1 ounce
- Optional integrated GPS L1 filter
- Low power operation for exceptional battery life
- Single Analog or Data subcarrier

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SPECIFICATIONS

ELECTRICAL

RF Characteristics

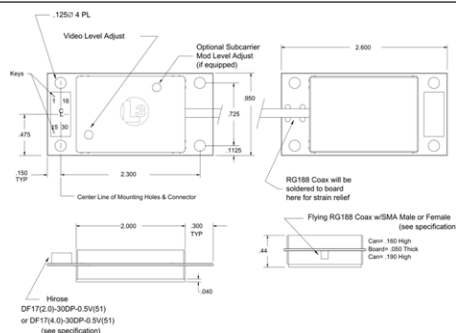
Frequency Ranges	L-Band (1710-1850 MHz), S-Band (2200-2400 MHz or 2300-2500 MHz), or C-Band (1 W Model: 4400-5000 MHz; 2 W Model: 200 MHz across 4400-5000 MHz)
Frequency Selection	Parallel (standard): Up to 64 channels, user-defined channel plan or 1 MHz steps via remote BCD or binary-coded parallel interface Serial (optional): select frequencies in 2 kHz increments across selected band via a TTL-level serial interface
Frequency Stability	$\pm .003\%$
Output Power	1 or 2 W, minimum Low power = -10 to +10 dBm, nominal Standby = -25 dBm, nominal
Output Impedance	50 Ω
Output Mismatch	2:1, maximum
GPS Filter Option	30 dB rejection across 1570 to 1580 MHz, minimum

Video Characteristics

Modulation Sense	Positive voltage generates increasing frequency
Frequency Response	VNTX video: 10 Hz to 4.5 MHz per CCIR 405 525 line pre-emphasis, ± 1.5 dB
Modulation Sensitivity	Adjustable, set to 1.0 Vpp ± 1.2 dB for ± 4 MHz deviation
Modulation Linearity	2% maximum. least-squares method
Modulation Distortion	2%, maximum (end-to-end with receiver)
Input Impedance	75 Ω

Subcarrier Characteristics

Subcarriers Available	1 data or analog
Offset Frequency	Any from 4.83 to 8.5 MHz
Frequency Response	Data: 100 bps to 56 kbps, DC coupled Analog: 40 Hz to 15 kHz, ± 2 dB
Modulation Sensitivity	Set to ± 75 kHz, Adjustable on analog subcarriers only
Input Level	Data: TTL; RS-232 (Optional on select configurations)



Input Impedance	600 Ω or 10 k Ω
Distortion	2%, maximum
Modulation Sense	TTL "1" level or positive voltage causes increase in frequency

Power Requirements

Input Voltage (Including ripple and noise)	+11.5 to +16 VDC
Current Draw	Full power, L- or S-Band: 1 W = 350 mA, typical, 470 mA, maximum; 2 W = 550 mA, typical, 700 mA, maximum Full power, C-Band: 1 W = 460 mA, typical, 560 mA, maximum; 2 W = 660 mA, typical, 750 mA, maximum Low Power = 110 mA, typical Standby = 40 mA, Typical
Reverse Polarity Protection	Up to +16 VDC

Signal Interface Connections

RF	SMA female on 3" RG188 coax cable; rigid coax or SMA male (optional)
Video, Power, Data, Frequency Select	Hirose board-to-board DF17(2.0)-30DP- 0.5 V (51); DF17(4.0)-30DP-0.5 V(51) (optional)

Options

Interface Board	Hirose connector interface board with local switch programming options
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ENVIRONMENTAL

Temperature	Operating: -20 °C to +50 °C min., baseplate Extended (optional): -20°C to +70°C min., baseplate Extended (optional): -30 °C to +70 °C min., baseplate
Over temp Protection	Unit will go to low power at 75°C, then resume normal output at 72°C
Altitude	Unlimited
Vibration	2 G Random, 20 Hz – 2000 Hz, 0.4 DA maximum
Humidity	Up to 95%, non-condensing

MECHANICAL

Volume	1 cu. in., nominal
Size	0.95 in L x 2.60 in W x 0.44 in H (.24 cm L x 1.71 cm W x .11 cm H)
Weight	1 oz., (28.36 g), maximum excluding RF pigtail cable

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