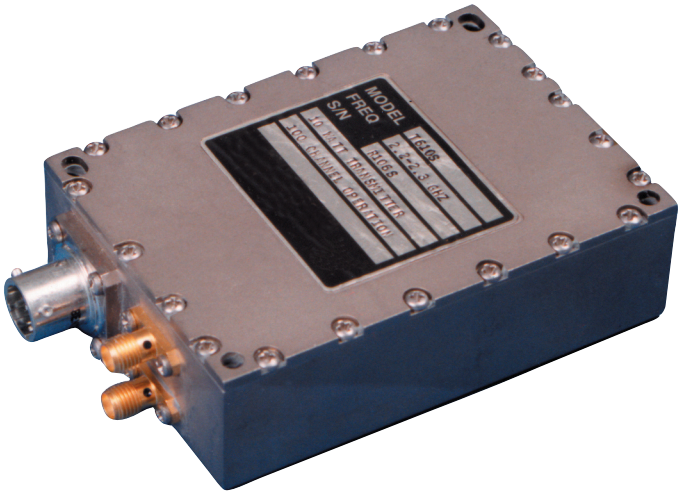
Product Bulletin

T-610

S Band Frequency Agile FM Transmitters

Airborne Telemetry Products



FEATURES

- Low S, Upper S, or Full S Band Coverage
- 8.75 Cubic Inches
- 12 Ounces
- Frequency Agile
- 1/2 MHz Steps
- Meets IRIG Turn-On Time
- Optional CCIR-405 Pre-Emphasis

L3 communications

The L-3 Communications Telemetry-East T-610 series UHF transmitters are 8.75 cubic inch frequency agile wideband telemetry transmitters designed for video and high data rate digital modulation requirements. The units are designed to operate in severe aerospace environments encountered in missiles, targets and RPV's.

Frequency is selectable in 0.5 MHz steps over S, HS, or the Full 200 MHz S-Band by input of binary codes from a remote line or by connecting a prewired programming plug to the unit's MDM-15S frequency select connector. An internal PROM translator option enables custom selection codes or BCD thumbwheel inputs without the need for any additional hardware.

A unique PLL control circuit permits 10 Hz modulation response while still meeting IRIG one second turn-on time requirements. Anti-sweep lock detect circuitry prevents RF radiation until the unit has locked on frequency, thereby eliminating the possibility of interference with other RF signals.

RF originates at full frequency rather than a subharmonic of the output frequency, thus eliminating low-order spurious signals. This scheme also minimizes part count thereby enhancing transmitter reliability.

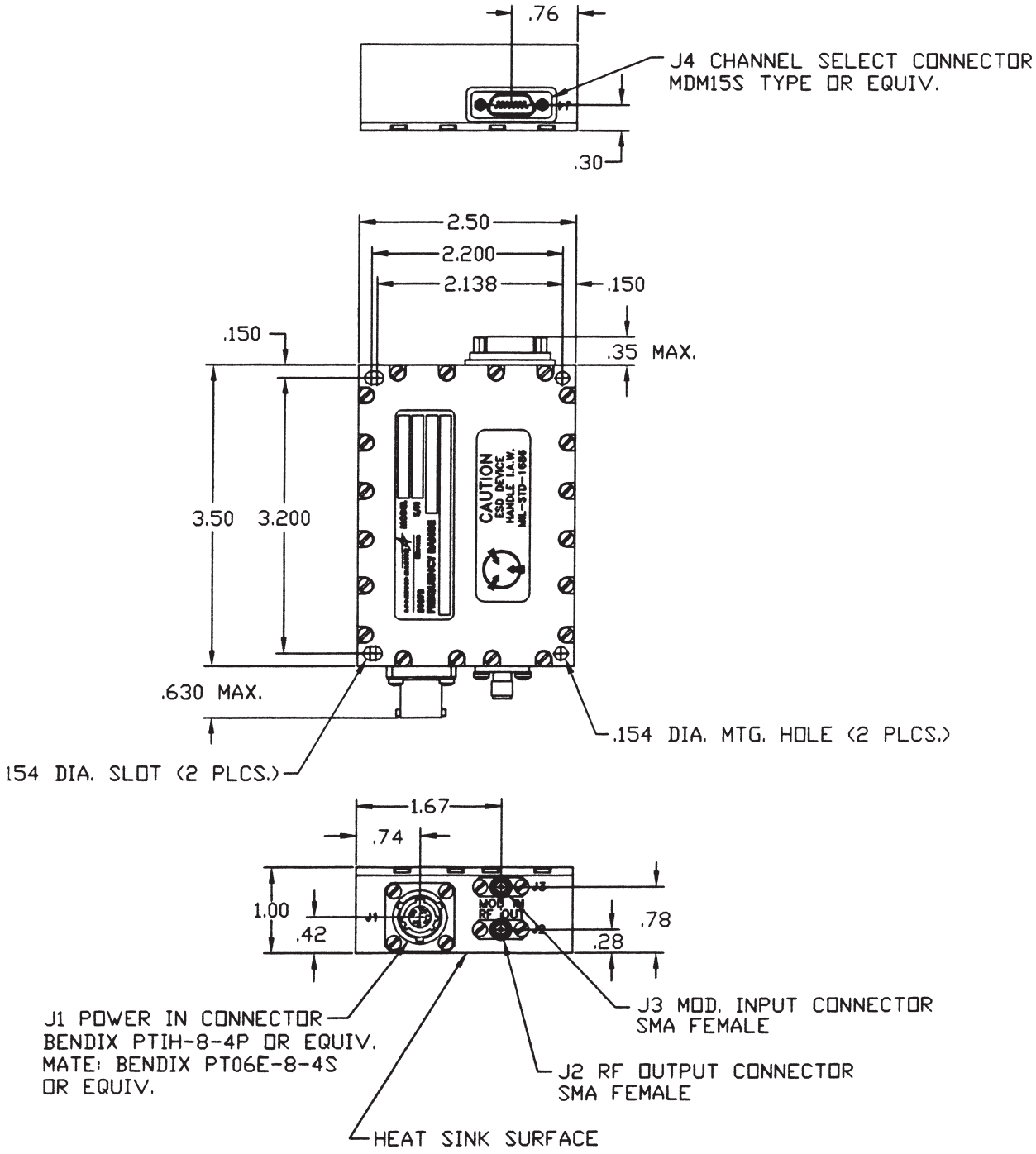
The design accommodates the upgrading of all parts to fully hermetic high-reliability requirements to meet almost any special program needs.

PIN CONNECTIONS

J1	Telemetry (Optional)	Video
A	+28 VDC In	+28 VDC In
B	MOD In	N.C.
C	+28 VDC RTN	+28 VDC RTN
D	MOD RTN (DELETE J3)	N.C.

CHANNEL SELECT CONNECTOR

J4	2200 MHz 2300 MHz	2300 MHz 2400 MHz	2200 MHz 2400 MHz	Step Size
P1	LSB	LSB	LSB	0.5 MHz
P2	—	—	—	1.0 MHz
P3	—	—	—	2.0 MHz
P4	—	—	—	4.0 MHz
P5	—	—	—	8.0 MHz
P6	—	—	—	16.0 MHz
P7	—	—	—	32.0 MHz
P8	MSB	MSB	MSB	64.0 MHz
P9	N.C.	N.C.	N.C.	128.0 MHz
P10-14	N.C.	N.C.	N.C.	—
P15	GND	GND	GND	—



T-610 Mechanical Outline Drawing

SPECIFICATIONS

Output Characteristics

Power Output (min.):	10 watts @ 1.5:1 VSWR
Turn-on Time:	Per IRIG 106-86
Frequency Range (band):	2200-2300 MHz, 2310-2390 MHz and 2200 MHz-2400 MHz
Frequency Selection:	Frequency Agile, 1/2 MHz Steps thru Operating Band. Selection is accomplished by input of binary code via a remote line or a prewired program plug. (See Options)
Frequency Stability:	±0.002%
Output Impedance:	50 ohm nominal
Output Load VSWR:	Isolator Protected

Power Requirements

Voltage:	28 ±4 VDC
Current (max.):	3.5 amp 4.0 amp for the -200
Reverse Polarity:	No Damage from Indefinite Application of –40 VDC
Over Voltage:	+40 VDC, 3 minutes; no damage
Grounding:	Power and Modulation Returns

Modulation Characteristics

Type:	True FM
Sense:	Positive
Input Impedance:	Video = 75 ohm Telemetry = 10k ohm (Other available – specify when ordering)
Frequency Response:	10 Hz to 6 MHz ±1.5 dB (See Options)
Deviation Sensitivity:	User Adjustable, Preset at ±4 MHz/Vp-p ±15% for Video or ±500 kHz/Vrms ±15% for Telemetry (Customer Specified)
Maximum Deviation:	±8 MHz (Consult factory for > ±8 MHz)
Linearity:	2% BSL at 5 MHz Deviation
IFM:	10 kHz peak
IAM:	5% max.
Modulation Distortion:	2% max. at 5 MHz deviation

Environmental

Temperature	
Non-Operating:	–55°C to +100°C
Operating:	–20°C to +70°C Baseplate (See Options)
Vibration	
Random:	20-2000 Hz, 14g rms, 3 axes
Sine:	20-2000 Hz, 20g peak, 3 axes
Shock:	100g, 11 msec, 1/2 sine, 3 axes
Acceleration:	100g, 3 axes
Altitude:	Unlimited
Humidity:	95% RH
EMI:	MIL-STD 461 at 28 VDC, IRIG-106 for Antenna Conducted

Mechanical

Dimensions:	See Outline Drawing
Volume:	8.75 cubic inches
Weight:	12 oz. max.
Connectors:	See Outline Drawing
Pin Connections:	See Outline Drawing

Options (Consult Factory)

Extended Operating Temperature:	–40°C to +85°C
Video Pre-Emphasis:	CCIR-405
Higher Efficiency:	Consult Factory
Extended Frequency Response:	12 MHz (Consult Factory for >12 MHz)
Other Modulation Sensitivity:	Consult Factory
Modulation Return Isolation:	Consult Factory
Frequency Select:	Internal PROM selection by BCD or custom digital codes. DIP switch in lieu of J4
Modulation Input Connector:	SSMA or Modulation input on J1& deletion of J3
Reduced Operating Voltage:	22 VDC Low Line min. for 10 Watt min. output power
RF Output Connector	TNC Female

Specify When Ordering:

Model Number/Frequency Bands:

T-610S	-	2200 MHz - 2300 MHz
T-610HS	-	2310 MHz - 2390 MHz
T-610S-200	-	2200 MHz - 2400 MHz

Frequency Selection:	Standard Binary, Internal PROM Translator or DIP switch
Modulation Input Impedance:	75 ohm or 10k ohm
Modulation Sensitivity:	Per Customer Requirement
Other Options:	(See Options)

L-3 communications

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