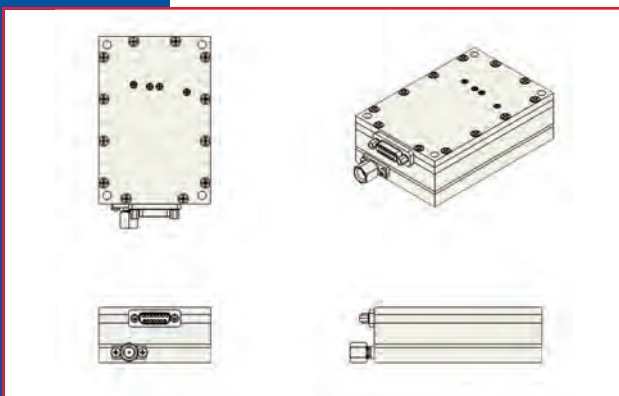
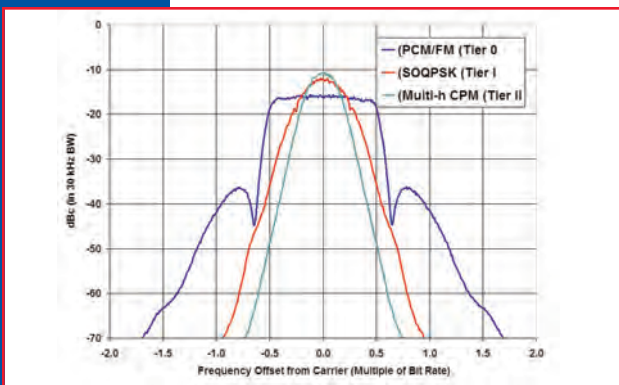


CHANNELIZED MULTI-MODE TRANSMITTER



- **PCM/FM Modulation**

Legacy waveform for maximum compatibility with existing range ground equipment. Premod filtering is built in, eliminating external filters.

- **SOQPSK-TG Modulation**

Advanced Range Telemetry (ARTM) Tier I waveform delivers twice the spectral efficiency of PCM/FM. SOQPSK-TG is fully interchangeable with FQPSK, but SOQPSK requires no intellectual property license.

- **Multi-h CPM Modulation**

ARTM Tier II waveform delivers 2.5 times the spectral efficiency of PCM/FM.

- **Direct Digital Synthesis**

Exceptional spectral purity, without spurious spectral lines due to I-Q modulator imbalances.

- **Automatic Data Rate Tracking**

Premod filtering and deviation automatically track the data rate, with no programming or configuration.

- **VCO-free Design**

Immunity to shock and vibration, allowing application on platforms with severe dynamics.

- **Bypassable Randomizer**

Standard IRIG-106 fifteen-stage randomizer, for applications with non-encrypted data.

- **Standard Package**

Uses industry standard mechanical outline and mounting hole pattern.

- **Exceptional DC-to-RF Conversion Efficiency**

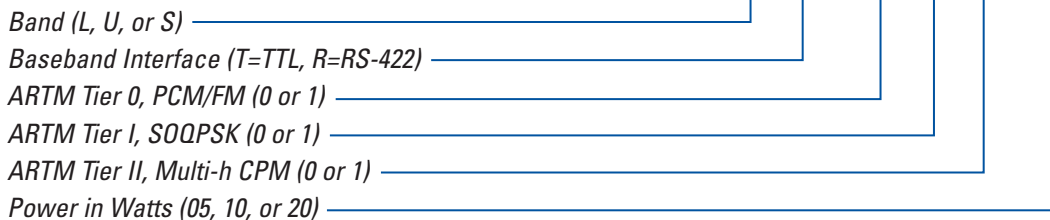
Draws less current than legacy analog PCM/FM transmitters, at any RF output level.

SPECIFICATIONS:

Characteristic	Specification
Size	6 cubic inches, 2.00" (W) x 3.00" (L) x 1.00" (H)
Modulation type	PCM/FM (ARTM Tier 0), SOQPSK-TG (Tier I), and Multi-h CPM (Tier II)
RF output power	5 mW, 5 W, 10 W, or 20 W, specify in model number Option DP: Dual power, 2 settings, selectable via serial control Option VP: Variable power, 31 settings over 24 dB range (non-uniform, largest step approximately 1 dB)
Carrier frequency tuning range, any one model covers all of any one band	Lower L-band: 1435.5 MHz to 1534.5 MHz Upper L-band: 1750.0 MHz to 1855.0 MHz S-band: 2200.5 MHz to 2394.5 MHz
Carrier frequency tuning increment	0.5 MHz
Carrier frequency accuracy	± 2.5 ppm over temperature ± 7.5 ppm, all causes, including aging over 5 years
Data (bit) rate, automatic rate adaptation	Standard: 1-20 Mbps (0.5-10 Mbps for PCM/FM) Option LR: Extends lower limit to 50 kbps (25 kbps for PCM/FM) Option HR: Extends upper limit to 25 Mbps (13 Mbps for PCM/FM)
Input voltage	+28 ± 4 VDC
Input current at 28 VDC	5 Watt (05S models): 1.2 Amps max all conditions; 1.1 Amps typ. 10 Watt (10S models): 1.6 Amps max all conditions; 1.5 Amps typ. 20 Watt (20S models): 2.0 Amps max all conditions; 1.8 Amps typ.
Power reversal	Reverse voltage protection
Turn-on startup time	< 240 Ms
Control interface	RS-232 serial control
Signal interfaces	Serial data with separate synchronous clock, TTL or TIA/EIA-422
Randomizer	15-stage LFSR, per IRIG 106. Selectable for bypass or enable

MODEL NUMBERS:

Q S X - V ○ ○ - ○ ○ ○ - ○ S - 20 - 6 A



OPTIONAL FEATURES:

Order by appending options to model number, separated by “-”

- > PS Multiple presets (specify 2, 4, 8, or 16)
 - > WV Wide input voltage range
 - > CG Clock generator output
 - > RN Randomizer output
 - > DP Dual power (two settings, “full” and “low” – specify settings)
- > VP Variable power (31 settings, spanning 24 dB)
 - > CF Clock-free baseband interface
 - > HR Increases max bit rate to 25 Mbps (13 Mbps for Tier 0)
 - > LR Decreases min bit rate to 50 kbps (25 kbps for Tier 0)