

TDFM-600/6000 SERIES

Analog/Digital/Encrypted/Trunked/Multi-band Airborne FM Transceivers



TDFM-6148 with AMS-6000

- Supports up to three bands (TDFM-6000) or two bands (TDFM-600) customized to your requirement.
- RF Modules available to cover VHF, UHF and 800 MHz bands.
- APCO Project 25 compliant – Conventional and Trunked.
- Supports SmartNet™ and SMARTZONE™ Trunking protocols.
- Supports DES, DES-XL, DVI, DVP, DES-XL, AES Encryption options.
- P25 CAI allows digital communications with backward compatibility to both narrow and wide band analog channels.
- Flash upgradeable architecture allows new features and options to be subsequently implemented on the existing transceiver platform.
- Optional AMS-6000 (Audio Mode Selector) panel allows operation of multiple RF modes in either “combined” or “separate” transceiver configuration. Also supports simulcast and cross-band repeat.
- Optional RC-6000 Remote control available. Allows for remote operation of TDFM-600/6000 transceiver.

Configurable Multi-band Airborne Transceivers.

Each transceiver can store 255 channels per band and is capable of simultaneous operation on all available bands. The TDFM-600 and 6000 must be programmed with a laptop utilizing the Motorola Radio Service Software (RSS)™ ensuring total compatibility with existing fleet deployment. For maximum ease of Installation, programming and operation including ancillary features, the optional AMS-6000 mode selector should be used in conjunction with the TDFM-600/6000 series transceivers.

TDFM-600 series transceivers support dual band operation in two of the following bands:

| | |
|-------------------------|-------------------------|
| VHF (136 to 174 MHz) | UHF Lo (403 to 470 MHz) |
| UHF Hi (450 to 512 MHz) | 800 (806 to 870 MHz) |

TDFM-6000 series transceivers support three band operation in the above configurations. Technisonic 600/6000 transceivers provide digital or conventional analog communications on the Project 25 Common Air Interface (CAI) and support P25 conventional and trunked communications as well as Motorola ASTRO™ trunking. SmartNet and SMARTZONE trunking protocols are also supported along with encrypted communications including Project 25 DES-OFB, AES, DES, DES-XL and OTAR in some applications.

TDFM-600/6000 series architecture supports provides a 2 line, 24 Character display and a multifunction front panel keypad, Night Vision compliant display and panel optional. The small size (no remote box) and light weight (3 pounds) of these compact panel mount multi-band airborne FM transceivers make them ideal for helicopter installation.

Protocols Supported

Conventional Analog
Conventional P25
Type II SmartNet
SMARTZONE
P25 Trunking (800 MHz)

Optional Encryption Formats Supported

DES, DES-XL, DVP, DVP-XL DVI
AES (includes DES Formats)
Multiple Encryption keys (Multi-Key)
Conventional OTAR
P25 OTAR (Available for limited applications)

SPECIFICATIONS

TDFM-600/6000 Series – Available RF Modules

| | | | | |
|--------------------------|--|---------------|---------------|----------------|
| Operating Band | VHF | UHF Lo | UHF Hi | 800 MHz |
| Frequency Range | 136 – 174 | 403 – 470 | 450 – 512 | 806 – 870 |
| RF Power Out | 5W/1W | 4W/1W | 4W/1W | 3W |
| Channels Available | 255 programmable channels per band | | | |
| Channel Spacing | 12.5/20/25/30 | 12.5/20/25 | 12.5/20/25 | 112.5/20/25 |
| Dimensions | 5.75 " (W) x 3.0" (H) x 7.5" (D) – add 1.5" for connectors | | | |
| Temperature Range | -45 ⁰ C to +50 ⁰ C | | | |
| Input Voltage | +28.0Vdc ± 15% | | | |
| Current requirement | 165 mA Minimum, 5.0A Maximum | | | |
| Environmental Categories | RTCA DO-160C [(B2/D1)X]XXX[BMN]XXXXXXXXZBBXXXZXXXX | | | |
| Airworthiness Approvals | FAA and TC Aviation Fixed Wing and Rotor Craft STC approvals granted | | | |

Transmitter

| | | | | |
|-------------------------------|-----------|----------|----------|----------|
| FM Hum and Noise (wideband) | -48 dB | -45 dB | -45 dB | -45 dB |
| Audio Distortion (at 1000 Hz) | < 2% | | | |
| Frequency Stability | ±2.0 ppm | ±2.0 ppm | ±2.0 ppm | ±1.5 ppm |
| Modulation Limiting | | | | |
| Wideband (20/30 KHz) | ± 5.0 KHz | | | |
| Narrowband (12.5 KHz) | ± 2.5 KHz | | | |
| Emissions | | | | |
| Conducted * | -70 dBC | | | |
| Radiated ** | -70 dBC | | | |

Receiver

| | | | | |
|--------------------------------|-------------------------------|--------|---------|-----------|
| Sensitivity | | | | |
| *Digital 1% BER (12.5 KHz) | 0.35 uV (0.4 uV for 800 MHz) | | | |
| *Digital 5% BER (12.5 KHz) | 0.25 uV | | | |
| ** Analog 20dB quieting 25 KHz | 0.04 uV | | | |
| ** Analog with 12 dB SINAD | 0.25 uV | | | |
| Selectivity ** | | | | |
| 25/30 KHz Channel | -78dB | -78 dB | -78 dB | -75 dB |
| 12.5 Khz Channel per EIA | -67 dB | -68 dB | -68 dB | -63 dB |
| Intermodulation * ** | -78 dB | -77 dB | -77 dB | -74 dB |
| Spurious response * ** | -75 dBC | | | |
| Frequency Stability | ± 2 ppm | ± 2ppm | ± 2 ppm | ± 1.5 ppm |
| Audio Distortion | < 2% | | | |

Note:

*measured in digital mode per TIA/EIA TSB102 CAAB

** measured in analog mode per TIA/EIA 603

Technisonic Industries Ltd. 240 Traders Blvd. E. Mississauga, Ontario L4Z 1W7 Tel: 905 890-2113

www.til.ca