

MODEL TDFM-636

P25 Compliant

Dual VHF airborne FM Transceiver



The **TDFM-636** is an addition to the TDFM-600 series line of advanced Airborne FM transceivers. It offers leading edge technology including P25 analog and digital operation, front panel programmability (FPP), P25 Trunking, AES, and P25 OTAR. It provides two VHF/FM modules which can be operated simultaneously in different modes. This radio is designed to support critical missions of federal law enforcement, homeland security and para military operations.

The TDFM-636 offers:

- Separate VHF/RF modules to allow independent receive and transmit operation. One module supports conventional operation with front panel programming and a second module supports Trunking operation.
- **Note:** The trunking module supports conventional communications as well as trunking however trunking is not front panel programmable.
- P25 Common Air Interface (CAI) allows P25 digital communications with backwards compatibility to both narrow and wideband analog channels.
- TIA/APCO Project 25 Compatible - in both Conventional and Trunking modes.
- Supports Project 25, SMARTNET™ and SmartZone™ Trunking protocols.
- Encryption capable including DES, DES-OFB, AES with P25 OTAR on both RF modules.

Feature Packed Airborne FM Panel Mount Transceiver

The TDFM-636 transceiver can store 240 channels in the front panel programmable conventional module and 510 channels on the multi-protocol trunking module. The TDFM-636 must be initially programmed with a laptop utilizing Motorola Windows® based Customer Programming Software (CPS)™ ensuring total compatibility with existing ground based land mobile infrastructure. For maximum ease of installation, programming and operation the TDFM-636 employs a front panel connector for frequency/operating parameter input and encryption key loading. The TDFM-636 is frequency agile and allows many functions to be programmed from the front panel in addition to PC programming.

The TDFM-636 is a dedicated VHF band transceiver operating in the 136 to 174 MHz General radio service band. This transceiver is a self-contained panel mount radio that is 5.75" (W) X 3.0" (H) X 8.5" (D) and weighs just 4.2 lbs. A separate BNC antenna connector is provided for each RF module. As a result it is possible to independently transmit and receive on either module simultaneously. Transmit power is 1 or 10 watts.

TDFM -636 architecture supports a 2 line display with alpha numeric capability and a multi-function keypad. NV compatible display is optional. The small size (no remote box) and light weight of this compact panel mounted, Dual-Band airborne transceiver make it ideal for helicopter installation.

TDFM-636 Typical Performance Specifications

General

Operating Band	VHF General Service Band – 136 to 174 MHz
RF Power Output	1 Watt or 10 Watts
Channels/Zones	240 Chan in conventional mode (15 zones of 16 channels) 510 channels in trunking mode
Channel Spacing	25 KHz or 12.5 KHz
Dimensions	5.75" (W) X 3.0" (H) X 7.5" (L) add 1.5" for connectors
Weight	4.2 Lbs (1.9 Kg)
Temperature Range	-45°C to +60°C
Input Voltage	28.0 Vdc ± 15%
Current Requirement	350 mA minimum, 5.0 A maximum
Environmental Categories	RTCA DO-160C [(B2/D1)X]XXX[BMN]XXXXXXZBBXXXZXXXX
Airworthiness Approvals	FAA and TC Aviation Fixed Wing and Rotorcraft STC approvals pending

Transmitter

FM Hum and Noise (25 KHz)	-48 dB
(12.5 KHz)	-42 dB
Audio Distortion ₁	1%
Frequency Stability _{1,2}	± 2.0 PPM
Modulation Limiting	
Wideband (25 KHz) Channels	± 5 KHz
Narrowband (12.5 KHz) Channels	± 2.5 KHz
Emmissions _{1,2} (Conducted and Radiated)	-75 dBC

Receiver

Sensitivity	
₂ Digital 1%BER (12.5 KHz)	0.25 uV
₂ Digital 5% BER (12.5 KHz)	0.20 uV
₁ Analog with 12 dB SINAD	0.20 uV
Selectivity ₁ 25 KHz channel	-80 dB
12.5 KHz channel	-63 dB
Intermodulation _{1,2}	-78 dB
Spurious rejection ₁	-80 dB
Frequency Ttability ₁ (-30 °C to +50°C ref)	± 2.0 PPM
Audio Distortion ₁	1%

₁ Measured in analog mode per TIA/EIA 603 under nominal conditions

₂ Measured in digital mode per TIA/EIA IS 102CAA under nominal conditions

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