

MODEL TFM-30

Airborne VHF FM Transceiver



Technisonic VHF FM Airborne Transceiver

The Technisonic TFM-30 airborne VHF/FM transceiver utilizes state of the art frequency synthesis techniques to provide FM communications on every currently available channel in the Public Safety, Forestry and General Service VHF/FM Low Band. This transceiver provides coverage from 30.000 MHz to 50.000 MHz in 2.5 KHz increments and is capable of operation in both 12.5 KHz (Narrow Band) and 25 KHz (wide Band) mode. Data entry and function control are via a front panel 12 button keypad. Operating frequency and other related data are presented on a 48 character two line LED matrix display which is available in either green or red (green standard, red optional).

Technisonic FM transceivers can be operated in the Direct Entry or Simplex mode by simply keying in the desired operating frequency, or can function without restriction on any split frequency pair within the band. The TFM-30 features 120 preset memory positions each of which is capable of storing a receive frequency, a transmit frequency, a separate CTCSS tone and/or DPL / DCS (Digitally coded Squelch) code for each receive and transmit frequency and an alpha numeric identifier for each channel. The TFM-30 allows either 25 kHz wide band or 12.5 kHz narrow band operation on any or all of 120 preset channels. Data can be easily entered into any of the preset non-volatile memory positions for both main and guard channels via the front panel keyboard, or can be downloaded from a PC or uploaded to a PC from a transceiver using software supplied with each radio. Information stored in memory is available for instant recall by keypad entry, or by pressing the UP or DOWN button which allows the operator to scroll through all preset channels. Technisonic FM transceivers feature a synthesized two channel guard, receiver, a DTMF encoder for signaling during transmit, and a scan function which will scan any or all of the frequencies stored in the preset memory positions.

The TFM-30 transceiver is panel mounted (Dzus) and completely self contained in a 8.0 x 3.0 x 5.75 inch chassis weighing just 3.1 pounds. Front panel controls are **MAIN** for main channel volume; **GUARD** for guard channel volume; **MON** for squelch test; a **MN/GD** switch provides for main or guard transmitter selection; a **G1/G2** switch selects guard 1 or guard 2 receive and transmit; and a **HI/LO** switch allows for control of transmitter power output. Hi power is 10 Watts output, low power is 1 Watt output, to comply with Marine harbor environment rules. This transceiver offers 28 volt DC backlighting, which is controlled by the aircraft dimmer bus. Display brightness is controlled from the front panel keypad. The small size and light weight of the TFM-30 transceiver makes this radio ideally suited to helicopter installations. Technisonic FM transceivers are compliant with RTCA DO-160C categories relating to Vibration, Overpressure, Humidity, Temperature and Altitude, Magnetic Effect, Power Input, Voltage Spike, Decompression, and RF emission (including Section 21, Category Z).

TFM-30 General Specifications

Frequency range	30.000 MHz to 50.000 MHz
Tuning increments	2.5 KHz
Operating mode	F3E simplex or semi-duplex
Channel spacing	12.5 KHz or 25 KHz
Physical dimensions	Approx. 8.0 x 3.0 x 5.75 inches
Weight	3.1 Lbs. (1.4 Kg)
Temperature range	-45 deg C to +70 deg C
Altitude certification	50,000 ft.
Power requirement	28 VDC (14VDC with optional converter) Receive - 700 mA 1 Watt transmit - 1.3 amps 10 Watts transmit - 2.0 Amps
Certification	FCC and DOC
RTCA DO-160C Environmental category compliance	(B2,D1)XXX(B,M,N)XXXXXXABBXXXZXXX
Guard receiver	2 channel, synthesized
CTCSS squelch encoder/decoder	all available CTCSS tones
DPL/DCS squelch encoder/decoder	all available codes, 000 to 777
Audio output	500 mw into 600 ohms
Speaker output	2.5 Watts RMS into 4 ohms
Back lighting	28 VDC or 5 VAC (specify when ordering))
Display color	Green (standard) or Red (specify)

Minimum Performance Specifications

Main receiver

Sensitivity	Better than 0.35 microvolts at 12 dB SINAD
Adjacent channel	-70 dB (25 KHz)
Spurious attenuation	-80 dB
Third order intermod	-70 dB
Image attenuation	-80 dB
FM acceptance	\pm 6 KHz
Hum and noise	better than 40 dB
Audio distortion	Less than 5%
Antenna conducted emissions	less than -80 dBm

Guard receiver

All specifications as per main receiver

Transmitter

Power output	1 Watt or 10 Watts, front panel selectable
Output impedance	50 ohms
Maximum deviation	Limited to \pm 5 KHz (wide band mode) or 2.5 KHz (narrow band mode).
Spurious attenuation	-80 dB below carrier
Frequency stability	\pm 0.0025%
Microphone circuit	Carbon or equivalent
Sidetone output	500 mW (max) into 600 ohms
Harmonic attenuation	-60 dB below carrier level
FM Hum and Noise	-40 dB
Audio input	50 mV at 2.5 KHz into 200 ohms for 3.5 KHz deviation, adjustable
Audio distortion	Less than 5%

Note: Specifications are subject to change without notice
DPL is a trademark of Motorola Corporation

Technisonic Industries Ltd.

240 Traders Blvd, Mississauga, Ontario L4Z 1W7 Canada
Ph: 905 890-2113 Fax: 905 890-5338 www.til.ca