

# MODEL TFM-520

## Airborne UHF/VHF AM/FM Transceiver

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### Technisonic Multi-Band, Multi-Mode Airborne AM/FM Transceiver

The Technisonic TFM-520 airborne VHF AM/FM, UHF FM transceiver utilizes state of the art frequency synthesis techniques to provide AM or FM communications on every currently available channel within the General Radio Service VHF High Band and FM communications in the UHF/FM Band. The VHF module covers from 138 to 174 MHz in 2.5 KHz increments while the UHF module covers from 403 to 512 MHz also in 2.5 KHz steps. Operating frequencies and other related data are presented on a 96 character, four line LED matrix display, which is available in either red or green. The TFM-520 can be installed as a single transceiver operating in VHF/FM, VHF/AM or UHF/FM mode through a single audio controller input, or can be installed as AM/FM1 (VHF) and FM2 (UHF) enabling simultaneous operation on both bands. All data entry and control commands are entered via an enhanced 12 button keypad which is conveniently situated on the face panel.

The TFM-520 can be operated in the Direct Entry or Simplex mode by simply keying in the desired operating frequency. It can also function without restriction on any split frequency pair within either band. This unit features 400 preset memory positions (200 VHF and 200 UHF) each capable of storing a receive frequency, a transmit frequency, a separate CTCSS tone for each receive and transmit frequency, an alpha numeric identifier for each channel and a DPL or DCS coded squelch identifier for each channel. The TFM-520 provides for either 25 kHz wide band or 12.5 kHz narrow band operation on any or all of its 400 preset channels. Information stored in the transceiver's memory is available for instant recall by keypad entry, or by pressing the UP or DOWN buttons which allows an operator to scroll through all preset channels. The TFM-520 transceiver features a DTMF encoder for signaling during transmit, and a scan function which will scan any or all of the frequencies stored in up to five scan lists.

The TFM-520 transceiver is panel mounted (Dzus) and completely self contained in a 8.0 x 3.75 x 5.75 inch chassis weighing just 4.7 pounds. Front panel controls are **VHF** for VHF main channel volume; **UHF** for UHF main channel volume, a **VHF/UHF** Band transmit select switch, a **FM/AM** select switch to facilitate VHF AM or FM mode selection; and a **HI/LO** switch for control of transmitter power output. In UHF mode, Hi power is 1 Watt output, Lo power is 0.1 Watt (100 mW) output. In VHF FM mode, Hi power is 10 Watts (max) and Lo power is 1 Watt. In VHF AM mode, transmit power output is 5 Watts (carrier) at the Hi setting and 1 Watt at the Lo setting. This transceiver offers 28 volt DC backlighting as standard, (5 Volt AC as an option) and a NVG (AN/VIS 6) night vision panel as an option. External access for mic gain and sidetone level adjust provide for easy installation and setup for optimum performance. The small size and light weight (4.7 lbs., 2.2 Kg) of the TFM-520 Dual Band, Multi-Mode transceiver make this radio ideally suited to helicopter installations. This transceiver was designed specifically to support Police aviation related activities in the UK and is presently available only in the United Kingdom.

## TFM-520 Technical Characteristics

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UHF Frequency range	403.000 MHz to 512.000 MHz
VHF Frequency range	138.000 MHz to 174.000
Tuning increments	2.5 KHz (UHF and VHF)
Operating mode	F3E in VHF and UHF FM mode 6K00A3E (AM) in VHF AM mode
Channel spacing	12.5 KHz or 25 KHz
Physical dimensions	Approx. 8.0 x 3.75 x 5.75 inches
Weight	5.1 Lbs. (2.3 Kg)
Mounting	Dzus panel mount
Temperature range	-40 deg C to +60 deg C
Altitude certification	50,000 ft.
Power requirement	28 VDC Receive – 1.0 Amps max 1 Watt transmit – 2.0 Amps max 10 Watts transmit - 3.2 Amps Hi power dual transmit – 5.0 Amps Max
Operating channel data storage	200 preset memory positions (channels) per band
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

<b>AM</b> receiver sensitivity	1.0 microvolts for 12 dB SINAD
<b>FM (UHF and VHF) receiver</b>	
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	± 6 KHz
Hum and noise	better than 40 dB
Audio distortion	Less than 5%
Antenna conducted emissions	less than -80 dBm
<b>Transmitter</b>	
VHF FM Power output	1 Watt or 10 Watts, front panel selectable
VHF AM Power output	1 Watt or 6 Watts (carrier), front Panel Selectable
UHF FM power output	100 mW or 1 Watt, front Panel Selectable
Output impedance	50 ohms
Maximum deviation	Limited to ± 5 KHz (wide band mode) or 2.5 KHz (narrow band mode).
Spurious attenuation	-90 dB below carrier
Frequency stability	±0.0025%
Microphone circuit	Carbon or equivalent
Sidetone output	500 mW (max) into 600 ohms
Harmonic attenuation	-65 dB below carrier level
FM Hum and Noise	-40 dB
Audio input (FM)	50 mV at 2.5 KHz into 200 ohms for 3.5 KHz deviation, adjustable
Audio input (AM)	-10 dBm at 1 KHz for 30% mod.
Audio distortion	Less than 5%
AM Audio distortion	Less than 10% (at 80% modulation)

Note: Specifications are subject to change without notice  
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