

MODEL TAF-550

VHF/AM/FM Modular Communications



Technisonic VHF/AM/FM Modular Communications System

The Technisonic TAF-550 VHF/AM/FM Modular Communications System is a transportable AM and FM base station capable of operating simultaneously on any 25 kHz VHF/AM aeronautical band frequency (117.975 to 138.000 mHz) as well as any VHF/FM high band (138.000 mHz to 174.000 mHz) frequency. Power for the TAF-550 can be external 120 VAC, external 12 VDC or 24 VDC. Both transceiver modules utilize state of the art, microprocessor controlled frequency synthesis techniques to provide communications on every currently available channel. The TAF-550 AM/FM Modular system is mounted into a rugged transportable case with protective covers (front and rear) into which the accessories (microphone, power cables, antenna cable, etc.) can be stored. It is intended for temporary, emergency or backup operation in a fixed environment.

The FM transceiver incorporated into the TAF-550 is the Technisonic TFM-138B which 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. It features 120 preset memory positions each of which is capable of storing a receive frequency, a transmit frequency, a separate CTCSS tone for each receive and transmit frequency and an alpha numeric identifier for each channel. The TFM-138B also offers the capability of allowing for DPL or DCS coded squelch operation. This transceiver 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. 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 VHF/AM transceiver incorporated into the TAF-550 is the Technisonic high performance 91-DE. This transceiver allows the operator to store up to 10 channels in non-volatile memory which are displayed on a front panel liquid crystal display, and then easily recall, seek or scan them. Receive only channels to prevent unauthorized transmission as well as a 90 second time out feature are easily programmed via the front panel 12 button key pad. The highly sensitive and selective receiver provides for superior long distance communication. A 35 dB Rx and Tx audio compressor maintains constant audio level and modulation. A user adjustable squelch and external headset jack are conveniently located on the front panel. A noise cancelling dynamic microphone (included) provides for clear audio even in a high noise environment.

General Specifications for TAF-550 Components

Model Designation	TiL 91-DE (VHF/AM)	TFM-138B (VHF/FM)
Frequency Range	117.975 to 138.000 Mhz	138.000 Mhz to 174.000 Mhz
Tuning increments	25 KHz	2.5 KHz
Operating Mode		F3E simplex or semi-duplex
Channel spacing	25 KHz	12.5 KHz, 25 KHz or 30 KHz as per applicable FCC and DOC spec.
Memory positions	10	120 channels
Physical dimensions	Approx 8.5 in x 10.25 in x 2.75 in	Approx 8.0 in x 3.0 in x 5.75 in
Weight	3.5 Lbs.	3.1 Lbs (1.4 Kg)
Temperature range	-40°C to + 55° C	-40°C to + 60° C
Certification	FCC and DOC Type approved	FCC and DOC Type approved
Guard receiver	N/A	2 channel synthesized
CTCSS squelch capability	N/A	Encodes/decodes all 63 available tones
DPL/DCS capability	N/A	Encodes/decodes all avail digital sq codes
DTMF encoder	N/A	All standard DTMF tones available
Audio output	100 mw into 600 Ohms	500 mw into 600 Ohms
Speaker output	3 Watts min	2.5 Watts into 4 ohms
Back lighting	N/A	28V (standard) or 5V (specify)
Display	Liquid crystal	Green (standard), red (optional)

Minimum Performance Specifications

Main receiver

Sensitivity at 12 dB SINAD	Better than 1.5 microvolts	Better than 0.35 microvolts
Adjacent channel	At least 80 dB	-75 dB for 25 KHz, -70 dB for 12.5 KHz
Spurious attenuation	At least 90 dB	-90 dB below carrier
Third order intermod	At least 67 dB	-70 dB
Image attenuation		-80 dB
FM acceptance		± 6 KHz
Hum and noise	Better than 40 dB	Better than 50 dB
Audio distortion	Less than 3.5%	Less than 5%
Ant conducted emission		Less than -70 dBm

Transmitter

RF power output	7 Watts nominal	1 Watt or 10 Watts
Output impedance	50 Ohms	50 Ohms
Maximum mod/deviation	Up to 95%	Limited to 2.5 KHz for 12.5 KHz channels and 5 KHz for 25 KHz channels
Spurious attenuation	-60 dB below carrier	-90 dB below carrier level
Frequency stability	±0.00025%	±0.00025%
Microphone circuit	Dynamic microphone	Carbon or equivalent
Harmonic attenuation	- 60 dB	-65 dB below carrier level\
FM hum and noise	-50 dB	-40 dB
Audio input	50 mV to 2 V rms	50 mV into 200 ohms
Audio distortion	Less than 5%	Less than 5 %

TAF-550 General

Power requirement	AC Input Voltage/Current DC Input Voltage/Current (24 Volts) DC Input Voltage/Current (12 Volts)	100 to 132 VAC @ 1.5 Amps 21.6 VDC to 30.0 VDC @2.5 Amps 11.6 VDC to 13.0 VDC @ 4.5 Amps
Weight	16 Lbs.	
Dimensions (includes covers)		10.0 in (width) x 8.75 in (height) by 14.0 in
Operating Temperature	-25 deg C to +55 deg C	
Relative Humidity	100% non condensing	

Specifications subject to change without notice

Technisonic Industries Ltd.

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