

# Technisonic Model TSC-4400 VHF/AM 50 Watt Ground Station Transceiver



## Cost Effective VHF/AM (118-138MHz) High Power Civil Aviation Communications

The Technisonic TSC-4400 is a 19" rack mount fully synthesized single channel transceiver that has been designed to provide civil aviation band communications in a ground based environment. The equipment takes advantage of sophisticated technology to provide full UHF/AM operating band coverage from 118 to 138 MHz with 25 kHz or 8.33 channel spacing.

The unit is provided with simple PC programming software and a programming cable that allows selection of any frequency in the operating band with the capability to set a 25 kHz or 8.33 kHz channel. A transmitter RF isolator is provided to suppress transmit intermodulation in high RF density areas. Provisions are included for the use of an optional Rx front end crystal filter (25kHz only) to eliminate receiver cross modulation, intermodulation and spurious responses in problem installations.

The TSC-4400 transceiver is capable of operating with 50 watts (200 watts PEP) of RF output power that is adjustable down to approximately 7 watts. The equipment can operate on a 115 or 230 VAC main supply with automatic switchover to external 48 VDC and 13.75 VDC battery power (if utilized). The TSC-4400 will provide reliable long range communications in conjunction with a base station wide band antenna.

A flexible line interface board can be configured to operate with a variety of communications interfaces and will support remote operation over 2 or 4-wire 600 ohm dedicated lines with several industry standard transmitter keying methods.

## Standard Technisonic rack mount architecture provides the following features:

- ◆ Fully synthesized wide band transceiver with operating frequency selectable by front panel.
- ◆ 19" rack mount format with two height units (3U). Dimensions are 5.25"H X 16"D X 19"W.
- ◆ 110/220 VAC (selectable) operation with automatic switchover to DC operation if AC failure.
- ◆ External DC/battery operation possible with 48 Vdc and 13.75 Vdc input supply.
- ◆ Remote Tx control capability over dedicated 2 or 4-wire 600Ω balanced lines with DC-15mA, tone or ground keying capability. It is not possible to remotely control frequency selection.
- ◆ Standard 25-pin remote control connector on rear of chassis, 0.2" microphone jack and 0.25" headphone jack on front panel. Front panel mount speaker and adjustable volume control.

**Technisonic Model TSC-4400**  
**VHF/AM 50 Watt Rack Mount Ground Station Transceiver**

**SPECIFICATIONS**

Characteristic	Specifications
<i>General</i>	
Frequency Range	118-138 MHz
Frequency Selection	Single Channel Operation via PC programmer
Channel Spacing (kHz)	25 or 8.33 selectable
Dimensions	5.25" (H ) X 16" (D) X 19" (W)
Weight	Approximately 30 Lbs. (13.7 Kg)
Temperature Range	-20EC to +60EC (operating) and -40EC to +85EC (storage)
Input Voltage (AC jumper selectable)	AC: 115 Vac $\nabla$ 15% or 230 Vac $\nabla$ 15% DC: 48.0Vdc $\nabla$ 15% and 13.75Vdc $\nabla$ 15%
Current Requirement (Amps)	5A @ 115Vac, 3A @ 230Vac / 6A @ 48.0Vdc and 4.0A @ 13.75Vdc
<i>Transmitter</i>	
RF Output Power	50 watts adjustable downwards to 7 watts nominal
Audio Distortion	$\leq$ 15 % @ M=90%, 300 to 2500 Hz
Audio Frequency Response	+1 dB, -3 dB for 300-2500 Hz
Frequency Stability	$\nabla$ 1.0 ppm for 0EC to +40EC
Modulation	$\geq$ 85% nominal, adjustable 0-95%
<i>Receiver</i>	
Sensitivity	1.5 $\mu$ V for 12dB SINAD @ 1kHz, M=30%
Selectivity	For 25 kHz, bandwidth $\geq$ 15 kHz @ 6 dB points For 25 kHz, bandwidth $\geq$ 50 kHz @ 60 dB points  For 8.33 kHz, bandwidth $\geq$ 10kHz @ 6dB points For 8.33 kHz, bandwidth $\geq$ 15kHz @ 60dB points
Intermodulation	$\geq$ 65 dB
Spurious Attenuation	$\geq$ 90 dB
Unwanted Radiation	$\leq$ 80 $\mu$ V into 50 $\Omega$
Squelch Control	Noise and carrier, adjustable 2 to 15 $\mu$ V
Audio Output	$\geq$ 3W @ 4 $\Omega$ and $\geq$ 100mW @ 600 $\Omega$

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