

Sideband Strip Receiver Model STR-5()



TMC
Technical
Bulletin

103014 B



- Solid State.
- Single or Dual I.F.
- Operates on 19 watts of Power.
- 2 to 32 MHz.
- Facilities for Squelch.
- Provides Audio to 600 ohm Line.

Features

The Technical Materiel Corporation's Model STR-5() Solid State Receivers are compactly constructed and offer all the advantages of modern voice communications, either in standard AM mode or SSB modes. The low mass and low heat of the unit make it ideal for high density relay rack mounting without a requirement for shock mounts or forced air cooling.



With this receiver, it is possible to reduce space requirements drastically for:

1. Ground-to-Air Service.
2. Ship-to-Shore Circuits.
3. Harbor Circuits.
4. Pleasure Craft.
5. Tactical Command Circuits.
6. Amphibious Control Circuits.
7. Transmission Monitor Service.
8. Extended Telephone Service and many others.

Elimination of all receiver noise, except when the circuit is active with a suitable signal, is possible in the STR receivers by the addition of a CODAN unit. The TMC Model CDN- () CODAN unit, described in Technical Bulletin 4013A, is well suited for this purpose, is used in the Bell Telephone System, and is available (separately priced).

The versatility of the STR-5 () series of receivers is such that many configurations are available and, dependent on the mode requirements, the model numbers are broken down as follows:

Model Number	Mode Requirements
STR-5U/L	USB, LSB, CW and AME.
STR-5U	USB, CW and AME.
STR-5L	LSB, CW and AME.
STR-5A	AM only.
STR-5AU	USB, AM and CW.
STR-5AL	LSB, AM and CW.

Any model can be converted to another model by changing the appropriate plug-in cards, and all units utilize standard 115/230 volts removable power supply. Optional 12 volt power supply available at extra cost.

TECHNICAL SPECIFICATIONS, TMC MODEL STR-5

Frequency Range: 2 to 32 MHz by crystal controlled plug-in RF modules. Two basic modules in the ranges 2-16 MHz and 16-32 MHz are provided. Each module is further subdivided by plug-in oscillators and tuning elements as follows:

2-16 MHz Module: 2-3, 3-4, 4-6, 6-8, 8-12 and 12-16 MHz.

16-32 MHz Module: 16-24 and 24-32 MHz.

Modes of Operation:

- 1- AM/AME/MCW (single I.F.).
- 2- LSB or USB/CW/AME (single I.F.).
- 3- ISB (LSB and USB)/CW/AME (dual I.F.).
- 4- LSB or USB/AM/AME/MCW (dual I.F.).

The optional CODAN devices (accessories) permit automatic electronic detection and switching between incoming AM and SSB signals to provide compatible AM and SSB detection automatically.

Frequency Stability: Crystal controlled.
 ± 10 Hz, 0° to 50°C standard.
 ± 10 Hz, -30°C to $+50^{\circ}\text{C}$, optional extra.

Speech Clarifier: Manually controlled front panel adjustment allows "fine tune" of the HFO oscillator. Remote DC control is available at the rear terminal.

Input Impedance: 50 ohms nominal, unbalanced.

Sensitivity: **SSB:** 1 microvolt input, 15 db S+N/N.
AM: 1 microvolt input, 10 db S+N/N.

Intermodulation: -40 db from PEP of a two tone test with 100 microvolts at the antenna.

Image Rejection: Minimum 60 db from 2-16 MHz.
Minimum 50 db from 16-32 MHz.

IF Selectivity: **SSB:** 3 kHz \pm 2 db.
AM: 6 kHz \pm 2 db symmetrical.

AGC Characteristics: With 100 db change in input signal from one microvolt, the output will not vary more than 10 db.

IF Frequency: 1.75 MHz.

Audio Amplifier Response: 250 to 7500 Hz.

AF Outputs: Each channel provides 0 to +12 dbm into a 600 ohm balanced output.

Hum Level: At least 40 db down from full output.

Power: 104/115/125/208/230/250 volts, \pm 10%, 50/60 Hz, single phase. 10 watts.
12 volts DC optional extra.

Environmental: Designed to operate in any ambient temperature from -30°C to +50°C and any value of humidity up to 90%.

Installation Data: **Size:** 1-3/4 inches High x 19 inches Wide x 15 inches Deep.

Components and Construction: All equipment manufactured in accordance with U.S. military specifications wherever practicable.

TECHNICAL SPECIFICATIONS, TMC MODEL STR-5 (Continued)

External Connections,

Rear Apron: HFO, BFO, IN.
HFO, BFO and IF OUT.
Dual Audio OUT.
Dual AVC OUT.
Dual Squelch IN.
Remote Clarifier.
Antenna.
Remote Channel Indicator.

External Connections,

Other: Dual Audio Monitor Jack on Front Panel.
ON/OFF Switch.
Clarifier.
Channel Switch.

Conversion Capabilities: Any model can be converted to another model by changing the appropriate plug-in cards.

Power Supply: All units utilize standard 115/230 volts removable power supply.
Optional 12 volt power supply.

OPTIONS AND ACCESSORIES, SEPARATELY PRICED

Tuning Drawer Storage Panel, Model THRA-1, provides space for three tuning modules. Size: 1-3/4 inches High x 19 inches Wide x 15 inches Deep.

Audio Amplifier/Loudspeaker Unit with remote clarifier and remote squelch control operated in conjunction with the AGC of the receiver.

Proportional plug-in oscillator unit, for operation -30°C to +50°C.

Model CDN- () CODAN unit described in Technical Bulletin 4013A. For use in the Bell System on A.M.

12 Volt DC power supply module, plug-in type.

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