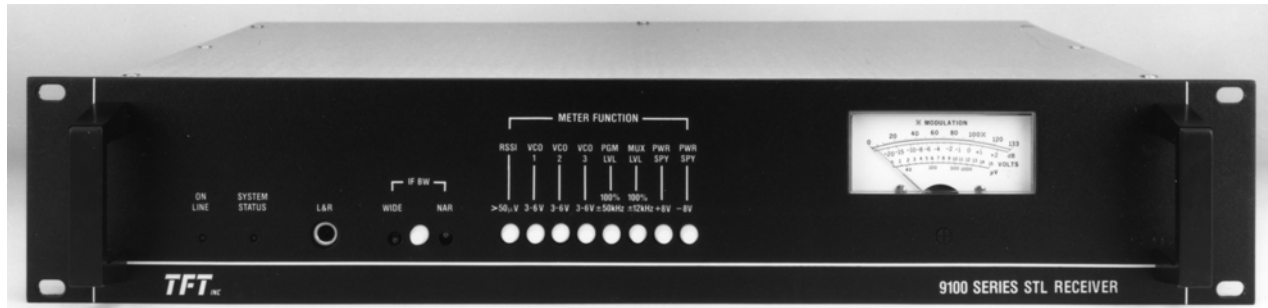


## 9107 Series



### Composite Aural STL Receiver

#### Features and Benefits

- Frequency Agile-Provides an accurate and field programmable frequency
- Triple Conversion IF and Pulse Counting FM Discriminator - 0.05% THD, 80 dB SNR and 50 dB stereo separation
- High Interference Immunity - Narrow Band cavity RF filters and SAW IF filters provide superior selectivity without inducing phase distortion
- Built-In Stereo Decoder (Optional) - Space-saving and economical means to demodulate L and R channels (>40 dB separation). Ideal for AM stereo applications
- Composite Baseband Output - Provides stereo program and SCA channels for direct feed to an FM transmitter
- Built-In Receiver Switchover unit for Hot-Standby applications
- Front Panel Headphone Jack for ease in monitoring

#### General Description

The Model 9107 Aural STL Receiver is designed to meet today's demand for digital sound quality. The operating frequency is synthesized and field programmable, over an entire 8 MHz range. The rugged, modular construction contributes to low maintenance cost and

ease of field servicing. A front panel meter and distinctive pushbutton switches provide diagnostic readings for important monitor points.

#### The Leader in STL Technology

TFT, Inc. is an industry leader in broadcast quality aural Studio-Transmitter-Links (STL) and Inter-City-Relays (ICR) for stereo, monaural and multi-channel program audio applications. Several U.S. Letter Patents pertaining to the design of RF and STL equipment have been granted to TFT.

The Model 9107 STL receiver is once again a reflection of TFT's year of innovative research and development to achieve CD-quality performance in STL's at very affordable prices.

#### Interference Immunity

The front end of the Model 9107 uses cascaded high-Q cavity filters and SAW IF filters to provide high selectivity. Linear phase IF bandwidth can be changed via the front panel from "wide" to "narrow" if the receiver is used in an RF-congested area. The receiver housing was designed and field tested in the most adverse RF environments at high power transmitter sites to insure extremely high RF immunity.

#### Frequency Synthesized

The Model 9107 receiver is user-programmable in 12.5 kHz steps in the field. Frequency selection is obtained by changing internal DIP switches. A broad 8 MHz range of frequency synthesis is another unique feature of the 9107 receiver.

#### Digital Quality Sound and Pulse Counting FM Discriminator

The Model 9107 utilizes a pulse counting discriminator for baseband demodulation, one of the many state-of-the-art techniques pioneered in 1970 by TFT for high fidelity FM demodulation.

#### Universal STL Receiver

Model 9107 performs with excellent results with any of TFT's Composite STL transmitters. If the Model 9107 is used with another brand of transmitter, internal adjustments in the receiver make it possible to accommodate a Composite STL Transmitter capable of carrier deviation from  $\pm 25$  kHz to  $\pm 75$  kHz.

## Built-In Receiver Switchover

An internal circuit monitors critical parameters of received signal level, power supply operation, VCO unlock, and modulation level and, in the event of any one of these items, switches the PGM and MUX outputs to a hot stand-by receiver connected via rear panel loop-through connectors. The modulation level parameter and alarm is adjustable for a timing range of 10-20 seconds when modulation falls below 5%. An alarm output is provided. An optional 2-way power splitter can be used to feed both receivers from a common antenna. An external automatic switchover unit is not required.

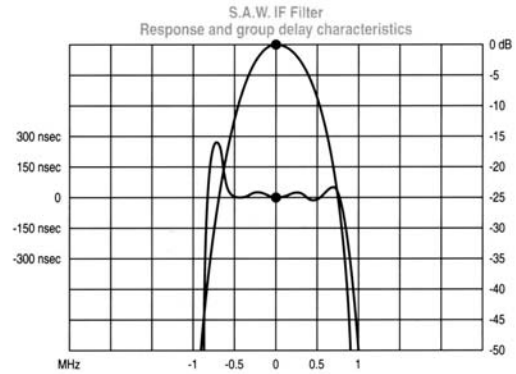
## Accessories & Options

**Extended Baseband Filter (7100-3790):** Permits Composite STL to convey 92 kHz SCA Channel and works with DMM92-100.

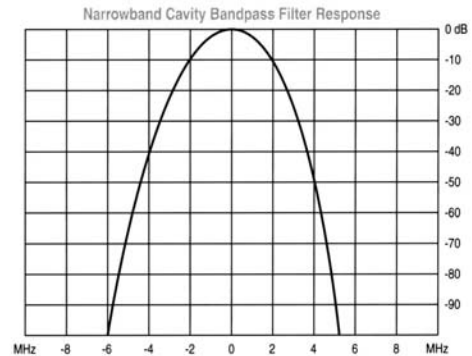
**Stereo Decoder (7100-3710):** Built-in FM Stereo Decoder Board option for decoding left and right channels to provide external audio monitoring of the L and R channels for AM stereo broadcast (45 dB stereo separation).

**SCA/MUX Decoder (7100-3572):** Built-in SCA/MUX Decoder Board for demodulation of SCA or MUX channel. Please specify audio or subcarrier output and operating frequency (67 kHz to 200 kHz)

**2-Way Power Splitter (3500-0021):** For two receivers using one antenna. Please specify operating frequencies.



(Illustrates high adjacent channel rejection and linear phase response)



(Illustrates measure of selectivity and prevention of receiver desensitization by high rejection of out-of-band signals)

## Specifications

Frequency Range ..... 800-960 MHz, 400-480 MHz, 300-330 MHz, 200-240 MHz, and 140-180 MHz. Frequency synthesized, field programmable in 12.5 kHz steps, within approximately  $\pm 2.5\%$  of the center frequency.

RF Input Connector ..... Type N Female, 50 ohm

Sensitivity..... 30 mV for 60 dB SNR, 400 mV for 80 dB SNR (75  $\mu$ sec de-emphasized)

Selectivity  
Wide Position ..... For 300 kHz Channel Spacing  
Narrow Position..... For 250 kHz Channel Spacing

Baseband Frequency Response ..... +0.1 dB, 50 Hz to 60 kHz  
+0.5 dB, 20 Hz to 75 kHz (Standard)  
+0.5 dB, 20 Hz to 105 kHz (Optional)

Stereo Separation ..... 50 dB at 1 kHz, 40 dB or better at other frequencies

Total Harmonic Distortion..... 0.05% with 75  $\mu$ sec de-emphasis

Crosstalk (Mux-to-Main) ..... 50 dB or better

Signal-to-Noise Ratio ..... 75 dB with 75  $\mu$  sec de-emphasis at maximum deviation.

### Demodulation Outputs

Composite ..... +10 dBm (0.866 Vrms into 75 Ohms)  
Unbalanced, adjustable  
MUX..... +4 dBm (1.24 Vrms into 600 Ohms)  
Unbalanced, fixed

Alarm Output (Relay Closure) ..... 1A at 25 Vdc, 0.5A at 115 VAC

Temperature Range..... 0°C to +50°C

Power Requirements ..... 120/240 VAC, 50-60 Hz, 12W

Dimensions ..... 3.25" (8.3 cm) H x 19" (48.3 cm) W x 15" (39.4 cm) D

Weight ..... 12 lbs. (5.5 kg) net; 21lbs. (9.5 kg) shipping



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