

**UHF RPU System****Features**

- Frequency Agile Transmitter and Receiver
- Selectable FM Deviation
- Selectable Receiver Bandwidth
- 20 watts RF Power; 2 other ranges from 1 to 18 watts
- DTMF Signaling for System Security and Cueing Command
- Front Panel Diagnostics Metering
- Transmitter Portable or Rack Mount
- Complies with New FCC Part 74 Channel Assignments

General Description

The TFT Model 8888 RPU Transmitter and 8889 RPU Receiver bring new levels of performance and convenience to Remote Pickup equipment for remote broadcasts. Frequency agility, selectable FM deviation, selectable receiver bandwidth for applications in the N₁, N₂ and S frequency bands, and DTMF control are among the advances that TFT has brought to RPU for high quality audio performance and convenience.

Model 8888 RPU Transmitter

The TFT 8888 frequency-agile RPU Transmitter is a compact portable or rack mountable unit (with optional adapter). It incorporates designs that enable flexible applications and high quality audio performance.

Frequency Agile

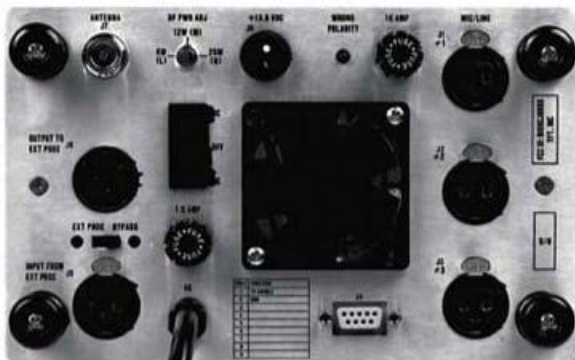
The TFT RPU Transmitter is frequency-synthesized for maximum versatility. Operating frequencies are programmed by secure internal DIP switches. (See specifications for details.) The frequencies must be within 6MHz of each other and each is programmable within a 1MHz bandwidth in steps of 3.125kHz. A front panel switch permits convenient selection of two user-programmed channels.

Selectable FM Deviation

Hand-in-hand with frequency agility is selectable carrier frequency deviation to conform with occupied bandwidth limits in the FCC designated N₁, N₂ and S frequency bands. Maximum FM deviations of the 8888 in these bands are $\pm 5\text{kHz}$, $\pm 10\text{kHz}$ and $\pm 25\text{kHz}$, respectively.

Three Audio Inputs

Three microphone/line level selectable inputs minimize the need for an external mixer. Built-in peak limiting circuit prevents overmodulation without introducing harmonic distortion. A headphone output with volume control is provided for local monitoring of the mixed audio signal



External Processor Patching

Audio companding or sophisticated signal processing can be used with the 8888 RPU system. The Transmitter incorporates patching facilities on the rear panel to route the mixed audio signal through an external processor.

Comprehensive Front Panel Diagnostics

A multi-position switch and test meter allow monitoring of critical circuit parameters. An audio bargraph display is provided to continuously monitor the modulation level.

Fault Indicators

An Antenna Fault indicator and warning buzzer on the transmitter alert the operator of potential antenna or interconnect problems. A wrong polarity indicator and warning buzzer alert the operator of incorrect battery polarity.

Built-in Test Tone

A built-in 400Hz test oscillator can be activated by a front panel switch for aligning the path as well as for calibrating the modulation meter for 100% modulation.

Accessories



An Optional Rack Mount (Part No. 2001-2937) allows you to install two transmitters side-by-side for stereo or redundant Mono applications. The mount occupies three standard EIA rack units.

Model 8889 RPU Receiver

The TFT 8889 is a microprocessor-controlled, frequency synthesized triple conversion receiver. As a companion to the Model 8888 RPU Transmitter, it is suited for use at repeater sites as well as at the studio.

Microprocessor Control Affords Full Security

An on-board microprocessor is the nerve center of the receiver. After receiving the DTMF user input (security code and commands) via the RF or telco path, or via the front panel control, it switches the operating channels and IF bandwidth. Unauthorized interruptions of the system are thereby negated.

Selectable Bandwidth

The TFT 8889 features 3 front panel or DTMF controlled, selectable IF bandwidths for 25kHz, 50kHz or 100kHz channel spacing, allowing for maximum flexibility of audio quality and availability of RF spectrum.

Repeater Transmitter Enable

A rear panel contact closure is provided to activate a repeater transmitter upon the recognition of a security code via the DTMF signaling and when the received RF signal is above the selected squelch threshold.

Received Signal Strength Indication (RSSI)

A calibrated DC voltage at the rear panel is available for RSSI for use in conjunction with remote control equipment.

Built-in DTMF System

User convenience is greatly enhanced by being able to control the receiver from a remote location via DTMF signals.

Using a standard touch-tone telephone plugged into the modular phone jack on the front panel of the RPU Transmitter, the Receiver's channel and IF bandwidth can be remotely selected by entering a unique 6-digit code. Furthermore, the DTMF codes can activate a repeater transmitter. Multiple repeaters can be individually addressed.

The DTMF tone protocol is 8 digits long. In addition to start and stop, 4 digits are user-definable security code; the remaining 2 digits are the pre-defined execution codes.

Alternative Control Input

In case DTMF tones are unavailable from the RF path, an alternate DTMF input is provided via a rear panel phone jack. This input takes priority over the RF path.



Specifications

Transmitter

Frequency Range	400-470 MHz. Two MHz frequencies within 6 MHz of each other	Audio Frequency Response (1dB roll off)	50 Hz to 16 kHz, for ± 25 kHz deviation. 50 Hz to 10 kHz, for ± 10 kHz deviation 50 Hz to 6 kHz, for ± 5 kHz deviation
RF Channels	Two pre-programmed carrier frequencies are front panel selectable. The frequencies can be located up to 6 MHz apart and each carrier is programmable within its 1 MHz bandwidth in 3.125 kHz steps by internal DIP switches.	External Audio Processor Patching	Rear panel connectors for external unity gain or processing; input level 10K, 2V RMS; output level 1V RMS, 600 Ohm balanced, XLR connectors.
Power Output	High Level 20 Watts; mid-range 6 - 18 Watts; low-range 1 - 8 watts; normal reduction with 13.8V external battery. (50 ohms, type N female connector)	Peak Modulation Limiter	Built-in peak modulation limiter to prevent over-deviation
Maximum Frequency Deviation	± 5 kHz, ± 10 kHz, and ± 25 kHz	Front Panel Bargraph	Monitors modulation level
Signal-to Noise-Ratio	65 dB with microphone input at ± 25 kHz deviation 70 dB or better with line input at ± 25 kHz deviation	Power Requirements	115/230VAC, 50/60 Hz, 100 watts or 13.8VDC external battery, 7 amps; switchable.
Frequency Stability	0.00025% (0° to +50° C)	Size	1/2 rack mount: 5.5" (13.3 cm) H 8.5" (21.6 cm) W x 14.5" (36.8 cm) D
VSWR	Withstands infinite VSWR	Weight	14.5 lbs net (6.7 kg); shipping wt: 18 lbs (8.3 kg)
Spurious Output	60 dB below carrier	FCC ID	B109CJ8888RPU
Harmonic & Intermodulation	60 dB below RF carrier		
Audio Inputs	Three microphone inputs at -70 dBm to -40 dBm, 150-500 ohms balanced XLR-3 connector and transformer coupled input, level control provided. Switchable to high level line inputs. -20 dBm to +10 dBm, 600 ohms balanced.		

Receiver

Frequency Range	400-470 MHz.	Front Panel Meter	Monitors received signal strength, program audio level, power supply, VCO voltages.
RF Channels	Two pre-programmed carrier frequencies are front panel selectable. The carrier frequencies can be located up to 6 MHz apart and each carrier is programmable within its 1MHz bandwidth in 3.125 kHz steps by internal DIP switches.	DTMF Decoder	Allows remote control of receiver bandwidth, channel selection, and repeater transmitter enable.
RF Input	1.0 μ V for 20 dB quieting ± 5 kHz deviation de-emphasized audio; 50 uV for 50 dB. (Type N female connector, 50 Ohms)	External DTMF	Overrides input DTMF signal from air link. RJ 11
IF and Image Rejection	80 dB	Received Signal Strength DC Output	1VDC to 5 VDC for 1 uV to 200 uV of RF
Frequency Stability	0.00025% (0° to +50° C)	Transmitter Enable	Relay contact closure enables external repeater transmitter
Spurious Rejection	70 dB	Security Code	User programmable 4-digit security code, set by internal DIP switches.
Audio Response	(400 Hz reference)	AC Power	115/230 VAC, 60/50 Hz, 30 watts.
IF B.W	1dB 3dB	Optional Battery Power	12 to 13.8 VDC, approx. 2 amps
Narrow	40 Hz to 6 kHz 30Hz to 7 kHz	Operating Temperature	0° C to +50° C
Medium	40 Hz to 8 kHz 30Hz to 10 kHz	Size	3.5" (8.9 cm) H x 19" (48.3 cm) W x 11" (27.9 cm) D
Wide	40 Hz to 12 kHz 30Hz to 15 kHz	Weight	10 1/2 lbs (4.8 kg); shipping wt: 13 lbs (6.0kg)
Program Audio Output	± 10 dBm, 600 Ohm balanced, with squelch, barrier strip.		

Receiver Bandwidth, SNR, THD, and Adjacent Channel Rejection

Channel Spacing (FCC Description)	F	IF BW	THD (400 Hz)	S/N (De-emp)	Adj. CH Rej.
25 kHz (25KOF3)	± 5 kHz	Narrow	<2.0%	>55 dB	50 dB
25 kHz (25KOF3)	± 5 kHz	Medium	<1.0%	>55 dB	6dB
25 kHz (25KOF3)	± 5 kHz	Wide	<0.5%	>55 dB	0dB
50 kHz (50KOF3)	± 10 kHz	Medium	<2.0%	>60 dB	55dB
50 kHz (50KOF3)	± 10 kHz	Wide	<1.0%	>60 dB	6dB
100 kHz (100KOF3)	± 25 kHz	Wide	<1.0%	>68 dB	26dB 60dB*

* for 150 kHz spacing



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