

MODEL 1100A/1000A

# PRECISION FM TRANSMITTER

*Demonstrate receiver or tuner performance  
with controlled listening tests*



## DESCRIPTION

The 1100A Signal Conditioner and the 1000A FM Alignment Generator combine to form a miniature precision fm transmitter. This system converts program material from a phonograph or tape recorder into an extremely high quality fm stereo signal anywhere in the broadcast band. With the 1100A/1000A system you can easily and effectively demonstrate fm receiver performance with listening tests.

## INCREASE YOUR DOLLAR VOLUME IN RECEIVER SALES

Sell your customer up to a better receiver by letting him make comparative listening tests using music you select. Let him hear the difference and he will buy the better receiver. With the 1100A/1000A system, you can control your music source. You are no longer at the mercy of fm stations, their program material, multi-path, nearby traffic problems, weak signals, competitor's commercials, limited 4-channel material, etc.

## USE 2-CHANNEL OR 4-CHANNEL PROGRAM MATERIAL

You needn't depend on local stations for program material. In addition to conventional stereo, you can transmit matrixed 4-channel material directly from a phonograph. Or connect your tape recorder through a matrix encoder to the Model 1100A to transmit discrete 4-channel tapes.



## SOUND TECHNOLOGY

1400 DELL AVENUE  
CAMPBELL, CALIFORNIA 95008  
(408) 378-6540



## *How to demonstrate receiver performance*

The tests below are easy to perform with the 1100A/1000A system, and they are easy to explain to your customer, but they dramatically show up deficiencies in receiver performance.

**Distortion:** Play the program source through the 1100A/1000A system, then play it directly through the receiver's amplifiers, bypassing the fm section. If the receiver is top quality, you will hear no difference in sound. Distortion contributed by the 1100A/1000A system is insignificant — less than 0.1%.

**Tuning Characteristics:** With the receiver in stereo and a strong signal from the 1100A/1000A transmitter, tune the receiver for optimum indication on its meters. Is the receiver distortion free? Can you tune the receiver slightly to either side without hearing distortion? If not, the receiver bandwidth is too narrow, and it will have to be tuned by ear and continually readjusted as it drifts, an inconvenience at best.

**Overmodulation:** The FCC allows significant overmodulation, and some receivers can't handle it. Purposely overmodulate the 1100A/1000A system using the meter to tell where you are. Receivers with inadequate bandwidth will

break up on loud, high notes. These last two tests are good ways to sell up. Expensive receivers usually have more non-distorting bandwidth and will stand out in these tests.

**Sensitivity:** Put the receiver in stereo and decrease the 1000A RF LEVEL until the receiver starts to sound noisy and distorted. Be sure the receiver is in stereo, because an insensitive receiver can sound good in mono but not in stereo. This test is much more revealing than an IHF sensitivity check.

**Sensitivity to Pilot Level:** If the pilot detection circuitry in a receiver is inadequate, the sensitivity test above will reveal the deficiency. Turning the PILOT LEVEL control on the 1000A will help tell if this is the problem when a receiver sounds bad. The FCC permits as little as 8% pilot, and good receivers should get stereo at much lower pilot levels. If a receiver requires a high pilot level, it will work in stereo only on very strong stations and separation and distortion will depend on signal strength.

**Separation:** Turn the STEREO BALANCE control on the 1100A to either extreme position to transmit only one channel of the music. Evaluate receiver separation with listening tests.

## *Make a profit on receiver service*

The 1000A is a proven profit maker in service. It speeds up receiver alignment and troubleshooting by a factor of 3 to 5. It has shown that it can pay for itself on only one service job a day.

Use the 1100A/1000A system to show a customer how his receiver sounds after servicing. It will help convince him you've given him the best service he can get.

## *Model 1100A/1000A system specifications*

### **FM RF OUTPUT**

**TUNING RANGE:** 88 to 108 MHz. 6:1 planetary drive provides better than 10 KHz tuning resolution.

**DRIFT:** No adjustment required after station frequency is set following ½ hour warmup.

**TOTAL HARMONIC DISTORTION:** Less than 0.1% THD at 1 KHz, 100% modulation.

**RESIDUAL FM:** Less than 75 Hz, 20 Hz to 15 KHz.

**RESIDUAL 38 KHz SUBCARRIER:** Less than 0.5%.

**OUTPUT LEVEL:** 0.5 to 30,000  $\mu$ V into 50  $\Omega$  load, continuously adjustable.

**OUTPUT IMPEDANCE:** 50  $\Omega$ , VSWR less than 1.3, 200 Vdc isolation.

**STEREO SEPARATION:** Greater than 50 dB at 1 KHz.

### **METERING**

**MODULATION LEVEL:** 0 to 150%, peak reading.

**PILOT:** 0 to 15%.

**ACCURACY:**  $\pm$ 7% of reading  $\pm$ 2% of full scale, 88 to 108 MHz, for audio frequencies 20 Hz to 15 KHz.

### **AUDIO INPUTS**

**FREQUENCY RESPONSE (TAPE INPUT, PRE-EMPH IN):** Pre-emphasis standard  $\pm$ 0.5 dB, 20 Hz to 15 KHz.

**FREQUENCY RESPONSE (PHONO INPUT, PRE-EMPH IN):** RIAA standard combined with pre-emphasis standard  $\pm$ 0.5 dB, 20 Hz to 15 KHz.

**INPUT IMPEDANCE:** 50 K $\Omega$ , PHONO or TAPE.

**INPUT LEVEL FOR 100% MODULATION:** 7 to 15 mVac at 1 KHz on PHONO, 0.2 to 0.5 Vac at 1 KHz on TAPE.

### **OPTIONS**

MODEL 1000A: All Model 1000A options apply.

### **GENERAL**

**MODEL 1000A DIMENSIONS:** 8-3/8 inches high x 11-1/8 inches wide x 11-3/4 inches deep.

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**POWER:** 115 or 220 V  $\pm$ 10%, 50 to 60 Hz. Model 1000A, 12.5 w, Model 1100A, 6.5 w.

**WEIGHT:** Model 1000A — 12 lbs. Model 1100A — 6 lbs.

**SHIPPING WEIGHT:** Model 1000A — 18 lbs. Model 1100A — 10 lbs.

All prices f.o.b. Campbell, California — data subject to change without notice.