

TELEX COMMUNICATIONS, INC.
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MODEL FMR-4 WIRELESS RECEIVER

GENERAL DESCRIPTION

The Telex Model FMR-4 True Diversity Wireless Microphone Receiver, used with a Telex Belt-Pack or Handheld Transmitter, is designed for demanding professional users in broadcast, theatres, and live sound reinforcement applications. The multi-frequency Pos-i-Phase™ True Diversity FM Receiver operates on selected VHF frequencies from 165-216 MHz. Twenty stock frequencies are available for immediate delivery, and at least fifteen systems can be used simultaneously on separate channels.

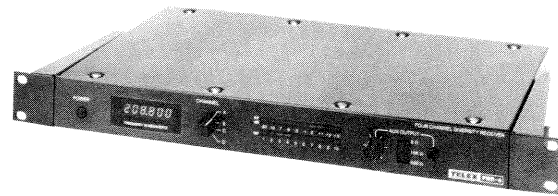
The FMR-4 may be powered by 115/220 Vac, 50/60 Hz using a standard IEC-type grounded plug. The unit is protected by user-replaceable 200 mA fuses (extras are provided). The unit is supplied with rack mounts, and it occupies only one rack space.

DESIGN FEATURES

The chassis and cover are painted steel which provides 100% shielding. Circuit boards are 0.062-inch (1.57 mm) thick, glass-epoxy composition with liberal use of 5% tolerance capacitors and metal film resistors. The Receiver features a state-of-the-art GaAs FET front end for maximum sensitivity with minimum noise. The highly selective IF section features a specially designed 9-pole linear phase filter system which helps to eliminate out-of-band interference without distorting the phase of the audio signal. The Receiver incorporates patented* Pos-i-Phase™ diversity circuitry which eliminates drop-outs from signal cancellation. The Receiver features a compander in the audio section for expanded dynamic range and noise reduction. A special TLX™ circuit provides protection from "noise-ups" when the signal is very weak. Pos-i-Squelch™, a noise-sensing squelch circuit, is used to eliminate annoying squelch breaks from spurious RF noise. The unit contains four separate frequencies with a selector switch which allows the user to field-select a different frequency when using the system in four applications.

OPERATING FEATURES

The front panel has two, ten-segment bar graph multi-color LED displays: one for RF signal strength, and the other for VU level. There is a numerical digital display indicating which of the four frequencies is selected and a push on/off power switch. Auxiliary output is provided with taps at 8 ohms, 10K ohms, and 600 ohms with a continuously variable attenuator. The rear panel has two PL-259 (UHF type) antenna connectors for the



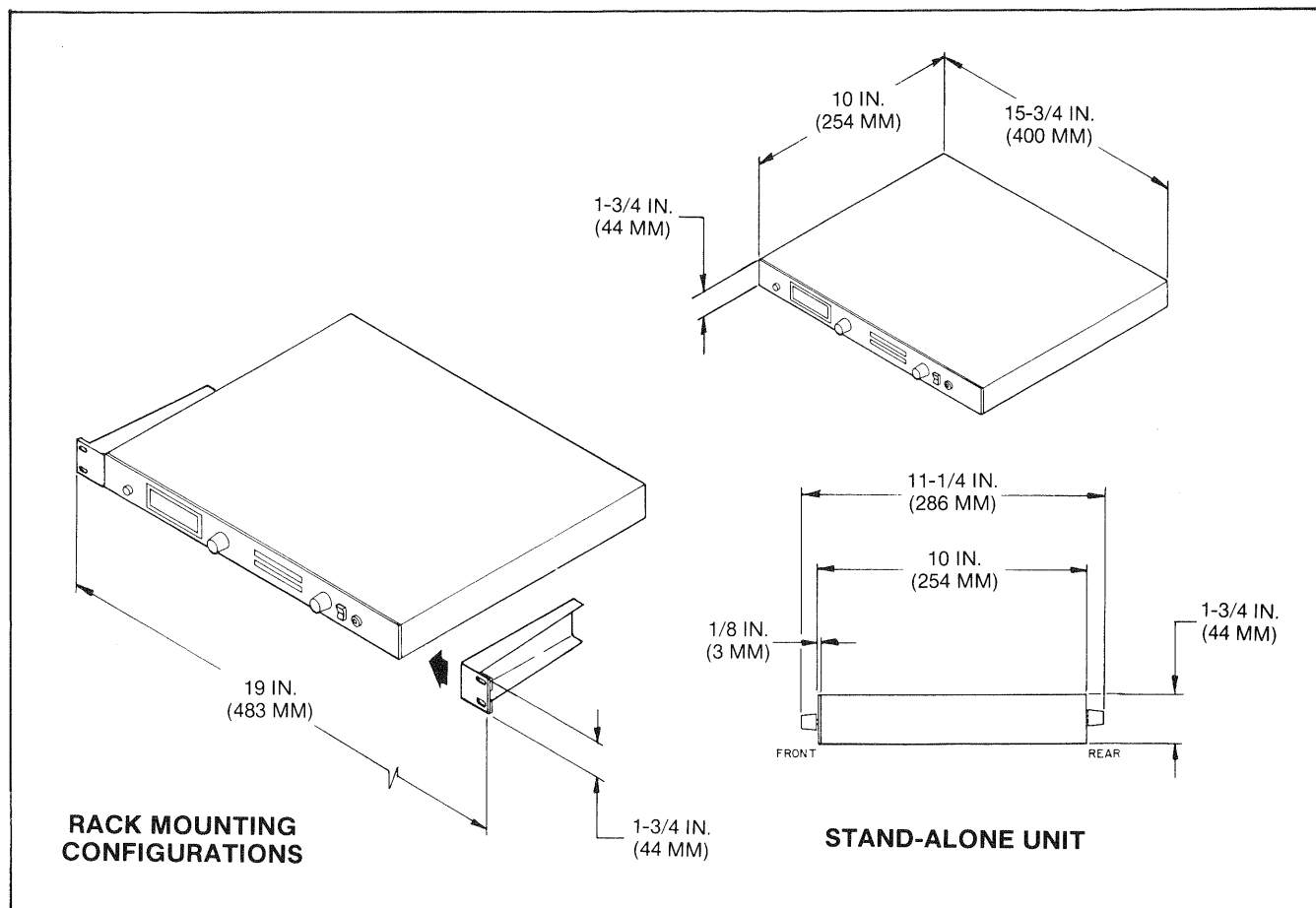
supplied $\frac{3}{8}$ -wave gain antennas. The audio output is a balanced XLR with a volume attenuator, switchable from either line or microphone. The microphone level is adjustable from -10 dBm max to -60 dBm. The line output is fixed at +13.5 dBm. The power cord is a universal IEC-type with user-replaceable 200 mA fuses in the socket on the unit. The unit also has a voltage switch that is selectable for 110/220 Vac. All control designations are clearly silk-screened on the unit.

SPECIFICATIONS

- Frequency Response:** 50 Hz to 15 kHz ± 1 dB
- Squelch Quieting:** 125 dB
- Squelch Level:** 1 μ V, internally adjustable
- Antenna Impedance:** 50 ohms nominal
- Hum and Noise:** -125 dB
- Audio Output:**
 - Auxiliary: 8 ohms, 75 mW max
 - 600 ohms, 40 mW max
 - 10K ohms, 0.2 mW max
- Microphone/Line:**
 - Line: 600 ohms, +13.5 dB max
 - Microphone: 200 ohms, -10 dB max
 - Microphone Adj: -10 dB, -50 dB min
- Power:** 115 Vac, 50/60 Hz, 3 watts
(switchable to 220 Vac)
- Temperature Range:** 0° F to 130° F
(-18° C to 55° C)
- Weight:** 5.5 lbs (2.5 kg)
- RF Sensitivity:** Less than 0.5 μ V (12 dB SINAD)
- Ultimate Quieting:** 100 dB (A weighted)
- Image Rejection:** Greater than 75 dB
- Signal-To-Noise Ratio:** 104 dB (compander on)
- Fuse:** (2) 200 mA fast blow
- Dimensions:** 15 $\frac{3}{4}$ in. W x 10 in. D x 1 $\frac{3}{4}$ in. H
(400 mm x 254 mm x 44 mm)

* Patent No. 4,293,955

DIMENSIONS



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The Telex Model FMR-4 Wireless Microphone Receiver shall be a multi-channel Receiver with four crystal-controlled oscillators, operating on selected frequencies from 165-216 MHz. The Receiver shall be a Pos-i-Phase™ diversity design to eliminate dropouts from phase cancellation. The Receiver shall incorporate 9-pole linear phase filters in the RF circuitry for maximum selectivity, and allow operation of at least fifteen simultaneous systems on separate channels. The Receiver shall incorporate a compander system to assure maximum dynamic range and noise reduction. The Receiver shall have TLX™ noise reduction to eliminate extraneous “noise-ups” when signal strength is very weak or the transmitter is at maximum range. The Receiver shall have a signal-sensing Pos-i-Squelch™ circuit which will not open the squelch for spurious RF noise. The Receiver shall have four user-selectable frequencies with a digital readout. The Receiver shall be

powered either by 115 Vac or 220 Vac, 50/60 Hz. The Receiver shall be protected by a user-serviceable 200 mA fuse. The Receiver shall use a universally adaptable IEC-type cord and plug. The Receiver shall be rack-mountable in one rack space. The Receiver shall use 5/8-wave remote antennas with PL-259 (UHF type) connectors. The Receiver shall incorporate a ten-segment LED bar graph display for VU level and another for RF level. The Receiver shall provide a balanced output, switchable from line or microphone through a male XLR connector. The microphone output level shall be adjustable with a variable attenuator. The Receiver shall provide an auxiliary output switchable from 8 ohms, 10K ohms and 600 ohms with a volume attenuator. The Receiver shall be certified under FCC rules, Part 15, and DOC certified under RSP 121. The Receiver shall be a Telex Model FMR-4 Pos-i-Phase True Diversity Wireless Receiver.

ORDERING INFORMATION

Telex Model FMR-4 Wireless Microphone Receiver Catalog No. 70270-XXX