

Mason MPR-5

Miniature Probe Receiver System



Model MPR-5

Everything you need to quietly and privately locate clandestine transmitters. The MPR-5 pocket countermeasures receiver has sophisticated features found only in larger "rack mount" equipment.

- Full tuning range 20 KHz through microwave 10 GHz
- Visual spectrum analyzer display
- Accurate digital frequency display
- Subcarrier detection
- RF panadapter and time base display

Extremely rugged to withstand luggage and diplomatic pouch handling abuse. Portable, battery operated, miniature, modular, radio receiver consisting of basic unit with plug in tuner modules and visual display unit. Improved electronic tuning.

May be operated inside coat pocket with hearing aid type earphone. Has a carrier to hold and connect basic receiver, scope, counter, antenna, and speaker for desk-top or hand carry operation.

Mason MPR-5 Miniature Probe Receiver System

"Pocket"
Operation



Receiver Specifications:

RF Tuning Range:

20 KHz to 10 GHz

Sensitivity:

For 6 dB S+N/N
1 to 3 μ v 20 KHz/1 GHz
5 to 10 μ v 1 GHz/10 GHz

Selectivity:

7 KHz (crystal filter)
90 KHz (crystal filter)
1 MHz

Tuning:

Each of 10 Tuners has 2 bands to spread electronic tuning motion of common 10 turn control knob. Microwave Tuner has a 20 turn micrometer drive.

BFO:

Xtal controlled BFO provides capability of detecting SSB signals.

Dials:

The common 10 turn tuning knob has a "clock face" type dial that can be used as a logging dial. Microwave tuner has a multi-turn 30 inch tape dial.

Subcarrier Detection:

Frequency range 2 to 300 KHz tunable (not a broad band detector). Selectivity 10 KHz ceramic 80 dB filter. Audio detection of all RF and subcarrier AM/FM combinations.

Function Selection:

One 5 position switch selects simultaneous audio, visual display, and digital frequency counter readouts of the RF in either narrow, medium, or wide bandwidths or selects simultaneous subcarrier audio, visual display and digital frequency counter readouts in either AM or FM detection. Thus, except for the signal level meter, all readouts are either RF or subcarrier at any one time to avoid confusion.

Other Features:

Operates independently (without visual display, frequency counter, or interconnecting carrier) in "pocket" mode. 20 segments L.E.D. solid state signal level meter. 60 dB sensitivity control for high level signals. Loudspeaker or earphone output. Power mains and telecommunications coupler for carrier current detection. Battery or AC powered.

Frequency Counter Specifications:

Function:

Digital display of RF frequencies 20KHz to 1600 MHz or subcarrier frequencies from 2 KHz to 300 KHz depending on receiver function selected. (Directly counts local oscillator frequencies and offsets by programmed IF frequency for direct accurate RF readout).

Display:

4 digit 1/4 inch high liquid crystal display.

Resolution:

From 100 Hz to 100 KHz depending on Tuner in use. (Maximum resolution obtained when switched to odd extra last digit losing first digit.)

Illumination:

Back lighting may be switched on if needed.

Complete System:

Model MPR-5: 20 KHz-10 GHz includes all components listed under "modules".

Visual Scope Display Specifications:

Function:

Displays spectrum frequency on horizontal axis and signal amplitude on vertical axis of RF or subcarrier as selected by receiver function switch. Swept converter allows simultaneous visual display and uninterrupted audio. Visual display can be used with adjustable time base to display modulation, composite video, etc.

Resolution:

4 KHz for all RF frequencies.
Choice of 4, 90, or 1000 KHz for 1.6 to 10 GHz RF.
10 KHz for subcarrier frequencies.

Dispersion (sweepwidth):

Sweepwidth of up to 5 MHz at RF frequencies with calibrated visual display base line (does not interrupt audio). Wider dispersion of up to 50 MHz is provided at RF frequencies 1.6 to 10GHz. (The baseline is not calibrated, audio is interrupted.)

Modules:

Basic Unit: (Model B12) contains IF amplifiers, crystal filters, AM/FM detectors, audio amplifiers, signal level indicator circuits, subcarrier tuner, subcarrier IF and AM/FM detectors, RF tuner compartment, and all other components required which with one tuner and battery pack comprises the complete receiver (pocket operation mode) without visual display or frequency counter. Size—4.1x7.7x1.7 cm (1 5/8x3x7 inches).

Tuning Modules: (models TMPP-1 thru 10) plugs into basic unit. Size—2.6x5x6.7 cm (1x2x2 5/8 inches). Tuner #11 is 2.6x5x9.5 cm (1x2x3 3/4 inches).

Visual Display Unit: contains cathode ray tube, high voltage converter, vertical and horizontal amplifiers, sweep drive circuitry. Adjustable time base and panoramic down converter displays frequency vs. amplitude of RF or subcarrier signals as selected. Size—4.1x7.7x1.7 cm (1 5/8x3x7 inches).

Digital Frequency Display: contains LCD display, counting, dividing offset programming, and memory circuits. Size—4.1x3.2x1.7 cm (1 5/8x1 1/4x7 inches).

Accessories: AC power supply (Model PS11A) (50/60 Hz, 115/230 volts), set of antennas, cables, manual, earphones, interconnecting carrying rack, rugged aluminum padded attache case with lock. Battery pack for pocket operation: extends basic unit by 2 1/4 inches and holds 4 each 9 volt transistor batteries for 2 hours continuous operation. Batteries not included. Also has rechargeable battery which attaches to bottom of carrier and is recharged by the AC supply (PS11A). Allows approximately 2 hours operation of all circuits.



Microwave
Operation

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