

Mason PACMR-1

Programable Audio Countermeasures Receiver System



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|-------------------------------|---------------------------------|
| DIGITAL TUNING | 100% PROGRAMABLE |
| RF 2 KHz - 10 GHz | LCD AND SCOPE DISPLAYS |
| SUBCARRIER ANALYSIS | SYNTHESIZED (PHASE LOCKED) |
| 3200 CHANNEL MEMORY | PRINTER, RS 232 BUS OUTLETS |
| ON-BOARD MICRO FLOPPY DISK | COMPARATIVE SPECTRUM LOGGING |
| AUTOMATIC AND MANUAL PROGRAMS | UNLIMITED PROGRAMING CAPABILITY |

Mason PACMR-1 Programmable Receiver System

LCD Display



PURPOSE

To fill the need for an easy to use, effective spectrum recorder and signal analyzing receiver that is both portable and ideally suited to "in place" systems. Primarily designed for audio countermeasures applications, the PACMR-1 also may be used as a "watch dog" over Tempest approved equipment that is "on line" in the field, far from laboratory testing sites.

To record, analyze, sort out, and compare thousands of channels of RF signals as an aid in identifying clandestine transmitters. Essential for an on-going audio countermeasures program for protection of sensitive information, restricted rooms, buildings, areas, vehicles, electronic equipment, etc.

To record changes in RF spectrum signatures of electronic equipment used to process, transmit, or otherwise handle sensitive information (cipher machines, teletypes, typewriters, copiers, computers, etc.) that are on line in the field. To sense and identify RF leakage due to tampering, accidental damage (bent covers, etc.) or poor maintenance (missing cover screws, gaskets, cable clamps, line filters, etc.) of such equipment.

BASIC PROGRAMS

MANUAL OPERATION:

Any RF frequency from 2 KHz to 10 GHz may be directly entered with up to 7 digit accuracy. Any subcarrier frequency may be directly entered with up to 5 digit accuracy. Two state-of-the-art synthesizers are employed to perform these functions. All other parameters of the receiver can also be adjusted such as bandwidth, detection mode, scope sweep width, RF attenuation, subcarrier bandwidth, first and second detection mode, subcarrier RF audio output, etc. Coarse and fine tune of the RF and subcarrier frequency is keyboard driven.

AUTOMATIC SPECTRUM LOGGING:

Logs 400 overlapping channels of any combination or all of 23 bands (9,200 total) as to frequency and amplitude. Logs are disk recorded for automatic comparison with other logs to display or printout **new signals** only.

AUTOMATIC RECALL OF MANUAL SIGNAL LOGS:

Up to 3,200 signals may be manually logged along with exact frequency, signal level, detection mode, bandwidth, scope display mode, time base, subcarrier detection, RF attenuation, etc. for each signal. When recalled, the receiver automatically sets all of the parameters to instantly recreate conditions as originally logged for comparison purposes.

LCD DISPLAY:

2.5x9 inches, 480x128 dot matrix, alpha/numeric/graphic displays of signal level (2 digits) frequency (8 digits), bandwidths, detector modes, RF/IF attenuation, subcarrier parameters, scope modes and parameters, spectrum graphic displays, total spectrum display. Custom software available for different languages.

THE FUTURE

Because the PACMR-1 is totally programmable (all functions of the receiver are microprocessor controlled), it will outlast other designs by virtue of the infinite future programs that may be written to encompass new operating concepts.

SPECIFICATIONS:

RF Range: 2 KHz/10 GHz

Sensitivity: 3 uv to 1 GHz; 10 uv, 1/10 GHz

Image/IF Rejection: 50 dB

RF ATTN: 0/60 dB, 20 dB steps

IF ATTN: 0/70 dB, 10 dB steps

RF Filters: 19 each, fixed, 6 POLE, to 1.6 GHz

Microwave: YIG tuned L.O./RF 1.6/10 GHz

Tuning Resolution: (minimum step size) 10 Hz to 2 KHz for 2 KHz/1.6 GHz RF dependent upon RF (1.6/10 GHz RF non synthesized)

IF Bandwidths: 2, 7, 25, 90, 500, 1000, 5000, for RF .3/10,000 MHz

RF Demod: AM, FM, CW, NBFM, Subcarrier, Raster

Subcarrier: 2/300 KHz; 2/10 KHz bandwidth; AM/FM 1st det., AM/FM/CW 2nd det.

Audio: Subcarrier/RF one at a time, speaker/phones.

Scope: 5" screen dual trace, DC/20 MHz, most controls operable through keyboard and microprocessor.

Scope Displays: RF + SC frequency base, time base, raster (TV picture), one at a time.

Floppy Disk: On-board 3 1/2" micro floppy

Printer: 40 character, impact type, parallel, attaches to controller.

Antennas: Complete set and remote stand supplied.

Keyboard: Push button keys protected and shielded with metallic & plastic membrane.

RF Shielding: All housings, windows, keyboard, cables, etc. shielded such that pickup with antennas at 3 meter distances is virtually undetectable.

Portability: 4 aluminum, padded cases 17"x21"x7.5"

Printer (unnecessary for most field operation) 5th case.

Loaded wts: 40, 37, 35, 27, 22 lbs.

F.G. MASON
ENGINEERING INC. Est. 1961

1700 Post Road.

Heritage Square.

Fairfield CT 06430.

Telephone: 203/255-3461