MULTI-RANGE TELEMETRY RECEIVER

NEMS · CLARKE

TYPE
1037A

Nems-Clarke 1037A Multi-Range Telemetry Receiver provides comprehensive reception capability, achieved by the latest in proven design techniques. An optimum combination of transistor and nuvistor circuitry provides improved performance over existing receivers with much reduced space and power requirements. Modular construction permits wide choices in RF tuning ranges, IF bandwidths, modes of demodulation, and the addition of auxiliary functions.

A basic receiver is now available including the following plug-in modules: RF tuners covering 55 to 2350 mc, IRIG recommended IF bandwidths from 12.5 kc to 1.5 mc with matched FM discriminators, AM detection, and an integral spectrum display unit. Phase lock FM demodulation can be added. A more elaborate model will provide many new capabilities as dictated by users requirements. These include:

1. A phase-lock tracking filter which automatically searches for a signal, locks to the signal when it appears (but will not lock on sidebands of modulated signals), demodulates PM or AM and provides pulse reshaping for PCM signals. Tracking of doppler shifts at signal strength of -150 dbm is possible.
2. Operation of two or more complete RF tuner IF amplifier systems from common local oscillators for such purposes as predetection diversity combining, RF phase comparison, and monopulse systems. Additional circuitry required for combining or phase comparison can be included in the complete unit.
3. Integral down-converters and up-converters for predetection recording and playback, suitable for various bandwidths and tape speeds.
4. Additional special purpose RF tuners, IF amplifiers, and demodulators with different IF frequencies if necessary.
5. Special video circuitry, such as dc amplifiers, pulse reshapers, and linear-phase filters.

The 1037A Receiver can be built to meet the latest military specifications for ground support equipment. With planned flexibility, small size, and a new level of Nems-Clarke reliability, it is ideal for the latest telemetry and space communications needs.

CIRCUIT DESCRIPTION

The basic receiver is a double superheterodyne with IF frequencies of 30 mc and 10 mc. Some applications require a third conversion to 455 kc. Plug-in RF tuners determine the RF tuning range, and plug-in filter-demodulator modules determine IF bandwidth and type of demodulation. Front panel selector switches control AGC characteristics, slow, pulse and off; Second LO Mode, Playback, AFC, VFO and Extal, and Video Bandwidth. Outputs from the first local oscillator

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