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NOTES FOR ELECTRONIC WARRARE DIVISION REVIEW (from 56R06-29)

In direct response to the operational needs of the certain portions of the Navy and the Intelligence community a program of crystal-video receiver component development has been carried out in this division. These components are unique in their small size and weight and conservative power requirements but most off resoverall design for reliability in predictable performance te facility waxmbannxmeaxemedmemememe for calibration ng and documenting the exact performance character istics Me entire spectrum from VHF to above 21,000 Mcs, using swept frequency techniques and plotting systems. The antenna systems associated with these components in the operational systems are tested on a unique anechogic chamber located inside an RF Screened room so that the antenna system is completely isolated from kmg both the test instrumentation and the surrounding ambient ... effectively a free space antenna testing chamber. This chamber was the model for the large NRL test facility located in Building A-59.

In the area of the real-time data acquisition systems the division has done estensive design and developmental work to effect an analog-to-digitial data conversions system. In the operational application of this system the observational accuracy of the time-significant data has been improved by a factor of about

This has allowed benefitial a great refining impact on the accuracy of the operational system imv-olved.

Significant design and development effort has been devoted to a linear-phase solid-state receiving system which has a digitally controlled local oscillator so that a computer or remote tuning may be utilized addition to the novel local oscillator, there is another

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extremely strained eature; an adaptive thresholding device which thresholds on pulsed data on the Half-Arpl tude of each pulse rather than the usual method of a fixed level "Slicer" type thresholding. The latter did design ix severely the time domain with changes in the data amplitude and with the adaptive thresholding system this degradation is not evident. Thus a great improvement has meen made in the operational data receiving systems in operational use on one of the kaker Navyes data acquisition systems.

Cat Table 1

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