DEVELOPMENT OF SPECTRUM ANALYZER SYSTEM

Project report submitted by

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SUMMARY

A simplified diagram is shown for a typical spectrum analyzer, superheterodyne receiver, the spectrum analyzer is electronically tunable by applying an adjustable saw-tooth voltage ramp to a voltage tuned local oscillator (VTO), The same saw-tooth voltage ramp is applied simultaniously to the horizontal deflection plates of the CRT, to form the frequency axis of the display. The input signal is mixed with a signal from VTO, the output of the mixer is amplified, detected and then applied to the vertical plates of the Cathod Ray Tybe. Thus the vertical deflection is proportional to the amplitude of the input signal.

For an input signal Fs, the VTO frequency is tuned so that Fvto - Fs= Fif

When this equation is satisfied the input signal is deflected and displayed on the CRT.

Furthermore by slowly sweeping the full saw-tooth voltage the VTO sweeps through its frequency range and the output of the mixer will be a wide range of frequencies, but the IF amplifier will pass only those frequensies within its passband.

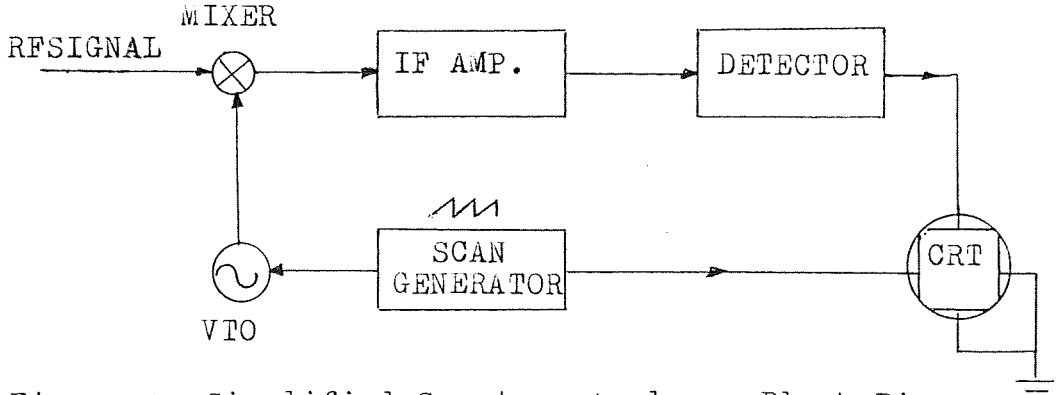

Figure 1. Simplified Spectrum Analyzer Block Diagram

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