XI. SIGNAL PROCESSING

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A. SPECTRUM SCANNER

D. R. Cuddy

A device to display an audio spectrum has been designed and constructed. The scanner is used in conjunction with a General Radio multifilter which contains 30 adjacent third-octave bandpass filters. The filter outputs are fed to a bank of 30 signal averagers, which produce dc levels proportional to the rms value of the narrow-band audio signals. These dc levels are then sampled sequentially by COS/MOS switch multiplexers. The sampled spectrum is processed by a logarithmic amplifier, and log amplitude vs frequency is displayed on an oscilloscope. The display covers the frequency range 20-20 kHz with a dynamic range of more than 45 dB.