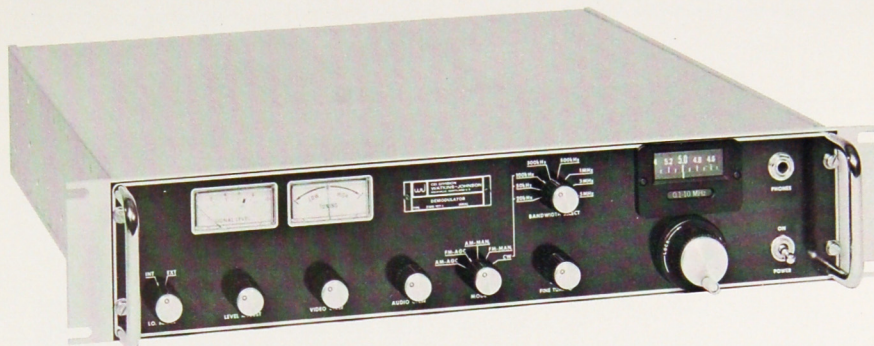


## **SIGNAL PROCESSORS DMS-107 AND DMS-107-1**



DMS-107-1 SHOWN

### **FEATURES**

The DMS-107 and DMS-107-1 Signal Processors provide demodulation of AM, FM, CW, and Pulse signals from wideband tape recorders such as the RCA TR-22A and Ampex 901. They are tunable over an input frequency range of 0.1 to 10 MHz in a single band. Signals in this range are translated to 21.4 MHz for demodulation. Provision is made to lock either unit to a desired frequency using the DAFC (digital automatic frequency control) capability of a Watkins-Johnson frequency counter such as the DRO-320. In addition to providing a six-digit display of the tuned frequency, a counter will hold the Signal Processor within  $\pm 100$  Hz of the set frequency for an indefinite period. Provision is also made to operate the units with an external local oscillator source. Eight IF bandwidths are provided in the DMS-107 Signal Processor: 20, 50, 100, 300, and 500 kHz; 1, 2, and 3 MHz. The DMS-107-1 differs only in that it has a 5.5 MHz bandwidth in lieu of 2 MHz.

All active elements in the units are solid state. The tuned frequency is indicated on an illuminated 26-inch steel tape dial for maximum readability and resetability. A front-panel

control is used to set the gain. In addition to video and predetection IF outputs, two audio outputs are provided; a front-panel phones jack and a rear-panel barrier strip.

Accessory units to the DMS-107 are the MD-107 Autoscan and DRO-320 Frequency Counter. The MD-107 Autoscan enables the DMS-107 to automatically scan and log the presence of signals without an operator. The Autoscan can be operated in one of three modes: Manual, Auto-Scan, and Scan-Lock. In the Manual mode the operator can manually tune the DMS-107 in the conventional manner. In the Auto-Scan mode, tuning of the demodulator is controlled by the MD-107. When a signal is detected which exceeds a preset threshold level the scan is stopped and the MD-107 automatically locks on the signal. The Scan-Lock mode is the same as the Auto-Scan mode except that a restart pulse must be generated to resume the scan once the unit is locked on a signal. A front-panel restart switch is provided for this purpose. The MD-107 may be set to scan the entire 100-kHz to 10-MHz tuning range of the DMS-107, or a sector of the band may be scanned. The upper and lower frequency limits of the sector to be

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scanned are set by front-panel controls. In addition, the scan speed may also be adjusted by means of a front-panel control.

The DRO-320 Frequency Counter provides a six-digit readout of the tuned frequency of the demodulator over the range of 100 kHz to 10 MHz with 100 Hz resolution. The counter's frequency display is updated 80 times each second. In addition, the DRO-320 provides the following: digital automatic frequency control (DAFC) for the demodulator's

local oscillator; a logic command processor between the MD-107 and the DMS-107, and supplies BCD (binary coded decimal) frequency information to the computer interface unit. Most functions of the DRO-320 are employed when the associated MD-107 Motor Drive is used in the autoscanner mode. Additional information and specifications for the (decimal) frequency information to a computer interface

Used together, the DMS-107, MD-107, and DRO-320 provide a versatile signal processing system.

## SPECIFICATIONS

Tuning Range .....	100 kHz to 10 MHz in one band
Reception .....	AM, FM, CW, and Pulse
Input Impedance .....	50-75 ohms
Input Level Range .....	30 mV to 1V peak-to-peak
IF Center Frequency .....	21.4 MHz
IF Bandwidths:	
DMS-107 .....	20, 50, 100, 300, and 500 kHz, 1, 2, and 3 MHz
DMS-107-1 .....	20, 50, 100, 300, and 500 kHz, 1, 3, and 5.5 MHz
Predetection IF Output .....	100 mV, minimum, into 50-ohm load
Video Output Level .....	2V, peak-to-peak, minimum, into 600-ohm load
Audio Outputs .....	100 mV, minimum, into 600-ohm load, and headphones jack
Video Amplifier Response .....	70 Hz to 4 MHz at 3-dB points
Local Oscillator Output .....	100 mV, minimum, into 50-ohm load
External Local Oscillator Input .....	1V, rms, into 50 ohms
Signal Monitor Output .....	21.4 MHz center frequency
Lowest Tuned Frequency where LO leakage, measured at IF Output, is less than 30 dB below nominal output level (typical):	
20, 50, and 100 kHz Bandwidths .....	100 kHz
300 kHz Bandwidth .....	600 kHz
500 kHz Bandwidth .....	1 MHz
1 MHz Bandwidth .....	1.25 MHz
2 MHz Bandwidth .....	2.2 MHz
3 MHz Bandwidth .....	2.8 MHz
5.5 MHz Bandwidth .....	6 MHz
Input Power .....	115 or 230 Vac, $\pm 10\%$ , 48-420 Hz
Power Consumption .....	10 watts, approximately
Dimensions .....	19 inches wide, 3.5 inches high, and 18 inches deep, approximately
Weight .....	18.5 pounds, approximately