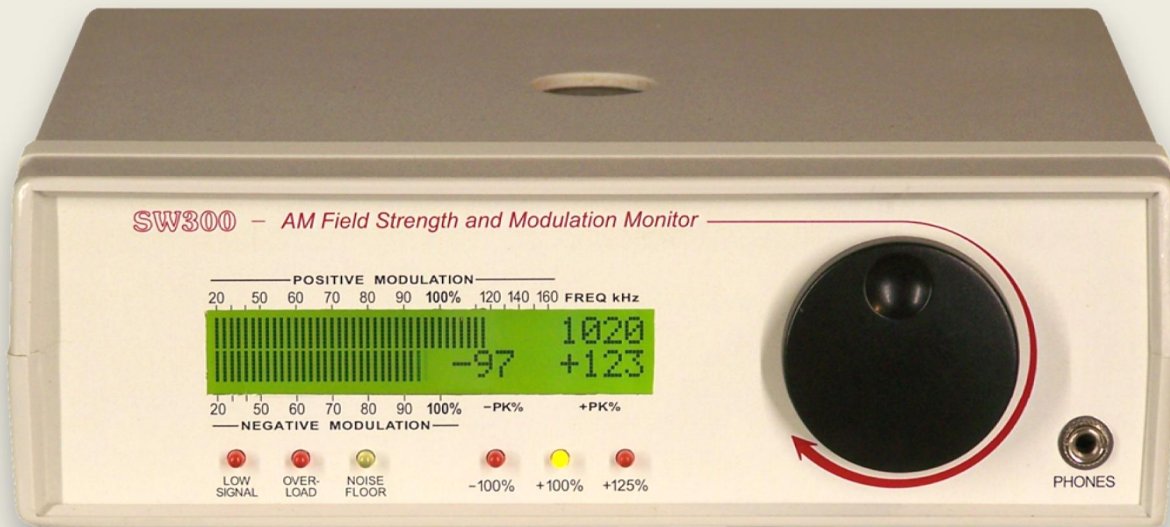


The Schlockwood 300

AM Field Strength and Modulation Monitor



The Schlockwood 300 (SW300) is a compact, portable field strength meter and modulation monitor for medium-wave AM broadcast applications. It satisfies needs ranging from those of FCC Part 15 operators to commercial stations.

The SW300 is supplied with our calibrated Goldring™ antenna and an AC mains power adapter. In the field it can easily borrow power from a car's 'lighter socket,' or utilize any 8V to 24V general-purpose backup battery pack.

SW300 FEATURES:

- Dynamic bargraph and peak-holding numerical readouts of off-air signal strength, channel noise floor and positive and negative modulation peaks.
- Front-panel alarm LEDs give clear indication of poor signal and over-modulation conditions. Rear-panel alarm 'tallies' may be wired to remote indicators or external alarm logic.
- Easy and intuitive operation with jog wheel navigation of LCD menus.
- Defeatable NRSC program de-emphasis, and a variable-cutoff audio program output filter that can simulate real-world radio-listening conditions.
- Compatible with power-saving MDCL transmissions.
- Rear-panel test jacks for external signal analysis with a 'scope or spectrum analyzer.
- AC mains and battery power options.
- User maintenance and/or modification made easy through our use of thru-hole assembly and common, readily-available generic components.

SW300 SPECIFICATIONS

INTRODUCTION (Please Read):

The SW300 was developed and is intended solely for the off-air measurement of signal parameters within the user's local AM-radio broadcast market. As a receiver with unusually broad bandwidth, it will appear a rather dismal performer alongside nearly any decent car radio; definitely not for AM 'DXing'!

The SW300 combines dual-conversion receiver architecture with a low-distortion, lock-on synchronous detector to provide precise modulation measurements. Field-strength readings have equitable accuracy and are displayed digitally in dB, quickly and easily converted to the more customary mV/m values using a lookup table in the manual.

Tuning Range:

500kHz - 2MHz in 10kHz or 1kHz steps; 24 nonvolatile memory preset positions.

Sensitivity:

6mV/m required for 40dB SNR ($\approx 1\%$ modulation measurement error point). Field strength measurements have reasonable accuracy down to 3mV/m but are not certified to meet field strength legal reporting standards.

Off-Air Measurement Bandwidth:

± 0.2 dB, 10Hz - 10kHz for all measurements.

Off-Air Audio-Output Response:

± 0.5 dB, 20Hz - 10kHz; -3 dB at 15kHz. (NRSC de-emphasis and audio cutoff filter disabled.)

Distortion:

$< 0.25\%$ THD at 99% carrier modulation.

Antenna Input

Dedicated active-impedance input matching for the Goldring™ loop antenna supplied with the SW300.

High Level RF Input

50 Ω -terminating input (RCA); front-panel LCD readout from 0dBm to -60 dBm in three manually-switched ranges.

IF Output:

Buffered output (RCA) of the 300kHz second IF; 1.25Vpp (unmodulated carrier), 100 Ω source.

Wideband Demod Output:

Buffered output (RCA) of the synchronous detector; 5Vpp at 100% modulation, 100 Ω source.

Program Line Output 1:

Balanced (XLR); $+4$ dBu, 200 Ω source.

Program Line Output 2:

Unbalanced (RCA); -10 dBV, 1k Ω source.

Headphone Output:

Front-panel 3.5mm jack (TRS) with adjustable level. Drives Lo-Z / Hi-Z headphones or an efficient 16 Ω loudspeaker.

NRSC De-Emphasis:

'Truncated' 75 μ s curve (defeatable). Active only in the program line and headphone outputs.

Audio Cutoff Filter:

30dB/octave low-pass filter (defeatable); tunes from 10kHz to 2kHz (-3 dB points) in 1kHz steps. Active only in the program line and headphone outputs.

LCD Display Screens:

Total Modulation: Simultaneous bargraph and peak-holding numerical readouts of positive and negative peak values, -20% to -100% , $+20\%$ to $+160\%$; $< 2\%$ meas. error.

Field Strength: Bargraph and numerical readouts, 0dBV to -60 dBV; < 1 dB measurement error; lookup table converts dB to a corresponding range of 1000mV/m to 1mV/m.

Noise Floor: Channel noise at the tuned frequency is displayed as bargraph and numerical readouts, 0-10% with reference to 100% carrier modulation.

(Other): Station Presets • Tuned Frequency

- RF Attenuator • Pre-Emphasis • Audio Cutoff • Headphone Volume.

Power Requirement:

8-24Vdc, 1.2W (e.g. 100mA at 12Vdc); 5.5mm x 2.1mm coaxial power connector. A universal switchmode power adapter is supplied for operation from 100 - 240Vac, 50/60Hz AC mains.

Size and Weight:

2½"H x 8"W x 8"D; 4 lbs shipping weight.

Rear Panel View:



Menu Snapshots:



Station Presets Menu:

24 memory positions spread over four menu screens.



Main Menu: Used when tuning the SW300; also displays frequency and peak modulation.



RF/NF Menu: Shows the incoming carrier level and the noise floor at the tuned frequency.



Setup Menu: Used to select the RF pad, NRSC de-emphasis and audio cutoff.



Headphone Volume: Adjusts the headphone listening level.



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