

## RF-SM (Variable RF Sampler / RF Demodulator with Headphone and External Trigger Out)

The model **RF-SM** (Variable RF Sampler / RF Demodulator with Headphone and External Trigger Out for Station Monitoring) is designed specifically for those who do not use linear amplification but want the best RF station monitoring capabilities available.

The Variable RF Sampler of the model **RF-SM** is designed to specifically sample and convert very low RF power envelopes directly to a usable signal suitable for feeding the vertical "Y" input of your oscilloscope.



The External Trigger output of the model **RF-SM** provides a unique signal suitable for feeding the "External Trigger" input of your oscilloscope. This signal has an ability to synchronize your horizontal modulation envelope sweep, regardless of changing voice or data modulated frequencies, in either SSB or AM envelope monitoring.

A base band AM Audio Demodulator is also provided, designed to directly demodulate the RF envelope from your transmitter to a usable signal yielding a flat audio frequency response ranging from 10 Hz to 16 kHz. This signal is suitable for feeding stereo headphones, line level amplifiers or audio mixers with the final audio level adjustable to the 1/4" TRS output Jack.

Additionally, the model **RF-SM** features a very low operational VSWR over a broad frequency range. Insertion loss is a negligible 0.1 dB and produces both an un-rectified, variable, non-directional sample at the samplers BNC jack; a rectified, variable, non-directional demodulated source at the 1/4" TRS jack and a rectified, non-variable, non-directional demodulated source at the external triggers BNC jack.

Two 6 Ft. cables and adapter included!

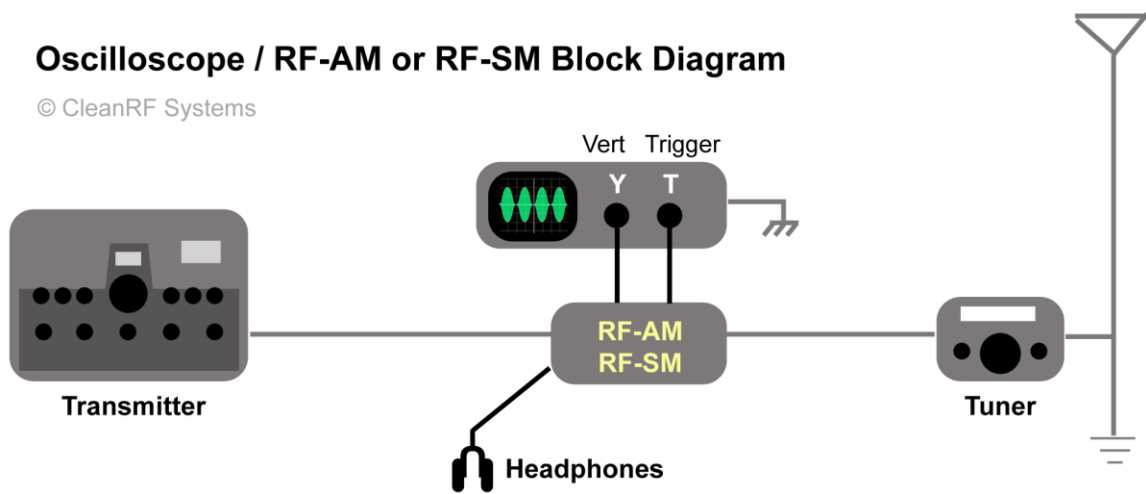
### RF-SM Specifications

- Frequency Response: 500 kHz ~ 60 MHz – Audio: 10 Hz ~ 16 kHz
- Rated Input: Sampler: 0w ~ 200w PEP / Trigger: 1.5w ~ 200w PEP
- Sampler Output: -26dB ~ -50dB
- AM Dynamic Range: 60dBu
- Connectors In: SO-239
- Connectors Out: SO-239, BNC, BNC, 1/4" TRS Audio
- Controls: Variable RF Output, Variable AF Output
- VSWR: < 1:1.1
- Insertion Loss: < 0.1 dB
- Cable and Adapter: (2) 6 Ft. BNC Male-to-BNC Male and UHF Male-to-Male Adapter
- Applications:
  - RF Modulation Envelope Monitor
  - External Trigger Synchronization
  - Peak Envelope Power Monitor
  - AM Audio Modulation Monitor
- Dimensions: W 2 1/8" x L 4" x H 1 5/8"

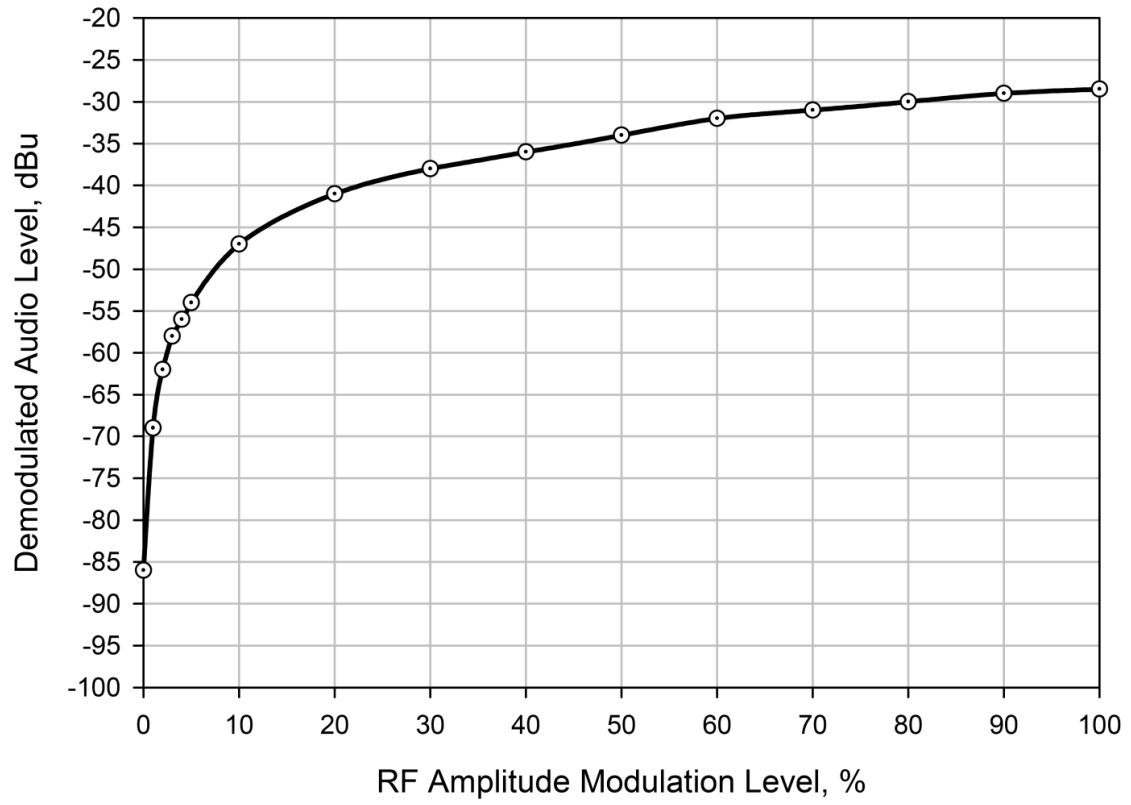


### Oscilloscope / RF-AM or RF-SM Block Diagram

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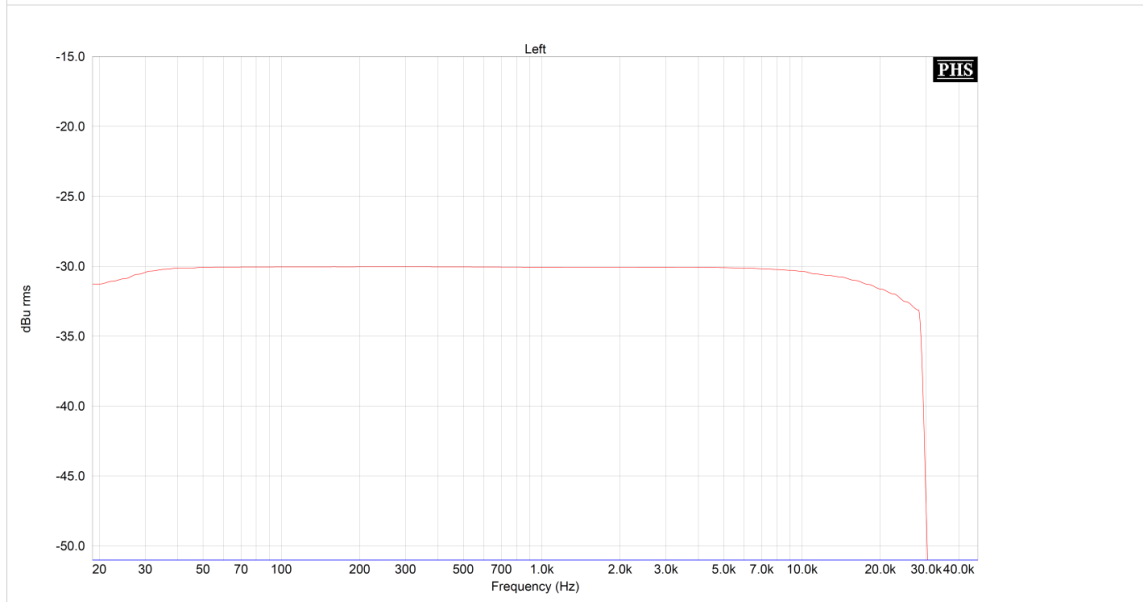
## Amplitude Modulation Dynamic Range at 1 kHz



Sampling: 96000 Hz  
FFT size: 65536  
Averaging: 1  
Window: Hanning

CleanRF.com RF Demodulator  
RF at +7.1dBm, AM sweep 80% depth

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RF signal generated by HP2920A Comm Test Set = 7 MHz at +7.1 dBm carrier and 80% AM level.  
RF Demodulator BNC output to M-Audio Delta 1010LT soundcard calibrated with Fluke 289 True RMS Meter at 1kHz.