

Spectrum Analyzer Audio Demodulation Tips for AM/FM

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The SIGLENT SSA and SVA series of spectrum analyzers feature the ability to demodulate AM or FM transmissions and then play the audio output using an external speaker or earphone. [Spectrum-Analyzer-Audio-Demodulation-Tips-for-AM-FM.pdf](#)

Here are some tips to optimizing the audio quality:

1. Set the center frequency to match the channel of interest. For example, if you wish to monitor/demodulate a signal at 100.7 MHz, set the center frequency to 100.7 MHz
2. Set the span to fully capture the entire transmission bandwidth. Most North American Am/FM radio station channels have bandwidths < 1 MHz.
3. Set the RBW > the modulation bandwidth of the signal. For most radio transmissions, this is > 20 kHz. An RBW setting of 100 kHz or greater should be a good starting point.
4. Set the demodulation time to 10 s or so. The analyzer will update the signal trace every 10 s. This decreases the audio interruptions that occur during a sweep update but still provides some signal information
5. Turn the volume to 1 before enabling the demodulation. Enable demodulation and check the volume as you slowly raise the volume to an acceptable level.
6. Remember that the bandwidth of human voice audio is 4k and radio broadcast transmissions are often 20 kHz. So an RBW larger than 40 kHz is required (Nyquist Sampling).



North American Headquarters

SIGLENT Technologies America, Inc
6557 Cochran Rd Solon, Ohio 44139
Tel: 440-398-5800
Toll Free: 877-515-5551
Fax: 440-399-1211
info@siglent.com
www.siglentamerica.com/

European Sales Offices

SIGLENT TECHNOLOGIES EUROPE GmbH
Staetzlinger Str. 70
86165 Augsburg, Germany
Tel: +49(0)-821-666 0 111 0
Fax: +49(0)-821-666 0 111 22
info-eu@siglent.com
www.siglenteu.com

Asian Headquarters

SIGLENT TECHNOLOGIES CO., LTD.
Blog No.4 & No.5, Antongda Industrial Zone,
3rd Liuxian Road, Bao'an District,
Shenzhen, 518101, China.
Tel: + 86 755 3661 5186
Fax: + 86 755 3359 1582
sales@siglent.com
www.siglent.com/ens