

The Dr. Scientist 7 Channel Spectrum Analyzer

Hello and thank you very much for picking up this Spectrum Analyzer, we really appreciate it and hope you enjoy it!

This manual will go over the basics of your analyzer (referred to as SA) and if you have any questions about using it just shoot me an email, ryan@drscientist.ca.

Your SA requires 9VDC center negative and 300mA for power using a 2.1mm plug. It's a little picky about its power and if you use too noisy of an adapter you'll see incorrect readings on your displays, like too much lows or highs will read from the noise. So use a nice regulated and filtered power supply if you don't want to use the one it came with.

So how does the SA work anyway? It's basically a computer that's dedicated to splitting your audio into 7 frequency bands and then showing you the quantity of each filter band on a bar graph LED. Audio is read by the processor and split into the following bands: 63Hz, 160Hz, 400Hz, 1000Hz, 2.5kHz, 6.25kHz, and 16kHz. These bands are displayed on the front of your SA from left to right, with 63Hz (low bass) on the farthest left bar and 16kHz (high treble) on the farthest right bar.

There's two modes the SA can operate in: Mic mode and Line/Instrument mode. The mode is selected with the push-button switch on the back of the box. With the switch pushed in the SA is in Mic mode, with the switch out the SA is in Line/Inst mode. Mic mode uses the small front panel microphone as the audio source input. The microphone needs as hot of a signal level as possible, it's not great at reading quiet signals, it's intended to be reading loud guitars and drums in a live setting. You can use the level knob on the side of the box to bump up the display if you don't have a very loud source signal. Line/Inst mode is expecting to see a line level input like a computer, stereo, tablet, phone, electronic instrument, recording rig, or a strong signal from a guitar pedal board.

The only control you have to use in the day-to-day operation of the SA is the small level control sticking out of the side of the box. This knob is how you set the maximum height of the bar graph displays. On the loudest peaks of your audio input you want the SA to light up the highest bar graphs and you use the little level knob to adjust that height. ***You always want to send in as hot of an audio signal as possible to the SA to give you the best/fullest display possible.***

You can plug anything that outputs audio into the SA provided you have the right adapters. I've started you off with a few things I think will be handy for your hookups, but you might have to get creative depending on what you're trying to do. You can always check in with me for ideas about hooking up gear. ***Make sure you click the 1/8" plugs in all the way to the jacks, they need to click twice and be pushed in all the way!***

Your SA needs to be inline with whatever you want to look at and listen to. Say you mainly use your phone to listen to music and watch videos, you'd use the cable with 1/8" plugs on both ends and plug one end into your phone, the other end into your SA. Then you'd plug your headphones or your stereo into the SA as well. Now you can see the audio output of your phone on the SA while you still hear the output on your usual listening system. You want to send in as hot of a signal as you can to your SA, giving it the most signal possible will give you the fullest display possible. So keep your output level on the phone high.

If you want to use your SA with your guitar or pedal board or musical instrument you'd use the 1/8" to 1/4" adapters on the ends of your patch cables. Remember the SA wants to see a hot input signal so it's best to put it at the end of your pedal board or effects chain, right before the amp input.

If you're jamming in a space and would like the SA to monitor the room in general, set it to Mic mode and put it somewhere loud where it will read a strong level.

Remember that the different things you plug in to the SA or monitor with the mic will have different signal levels, some quieter, some louder, so it's normal to have to adjust your SA display with the little level knob. If the display is too full, turn the level knob down a bit. If the loudest parts don't light up all the way to the top, turn your level knob up a bit so they do.

I hope you get a kick out of seeing your sounds and thank you again! -Ryan