

Product Review: NTI Minirator MR-PRO

Many will now be familiar with the audio test tools from Neutrik Test Instruments (NTI), whether they be the handheld 'Minstruments', the fully fledged acoustic analysers or the manufacturing production line test instruments. TF has long benefited from the Minilyzer and the Minirator hand-held analyser and generators respectively, although they are showing the signs of spending several years in a toolbox. As such, the chance to review the new Minirator MR-PRO was most welcome. It has also just won an award at the 2008 InAVation Awards which gives some idea of how well it has been received. But did it deserve it? Well, TF chucked it in the toolbox and gave it a few outings on site to find out.

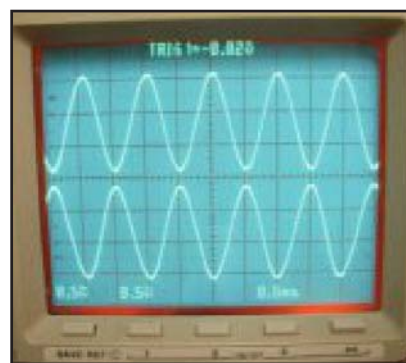


Figure 1. "a perfectly clean 1kHz trace . . ."

The unit provided to me included a mains power adaptor and cable checker plug, which are optional extras and not included in the MR-PRO sales package. There is also a nice wrist strap, which is included as a standard accessory - a nice touch. The unit fits comfortably in the hand, and the controls are all easily accessed by the thumb (it also works for us left-handed people too!). The display has a blue backlight and is easy to read - even in direct sunlight and at most angles. The backlight can be turned on or to manual and operated using the power key.

Most of the control is done using the rotary jog wheel and using this one can select a variety of signal sources at levels from -80dBu to +18dBu (or thereabouts) including sine-wave, stepped and continuous sweep signals with definable end points, white and pink noise, polarity, delay test (used for acoustic analysis) and user imported WAV files. There are shortcut buttons around the wheel that allow the user to select frequency, waveform and level directly to save scrolling through the options. The sensitivity button allows the user to configure the steps for scrolling through frequency and level: the former can be dropped to 1/12 octave steps and the latter to millivolt steps. If you find yourself using the same setups routinely, up to 10 configurations can be stored and instantly recalled using the menu, saving a bit of time.

One function of great benefit that was not present on the earlier models is the ability to measure impedances on both unbalanced and balanced lines. While this is a great aid for checking cables from, say, mic connection point to desk for missing cores or damage, it also found a use for measuring 100V line speaker impedances. It compared well against both TOA and CIE Audio impedance meters and this is probably due to the cleaner sine-wave the MR-PRO delivers; the TOA (although not checked on a scope) sounds sharp, whereas the CIE waveform is positively square if viewed on scope. The MR-PRO, however, does sound like a rounded sine-wave and a perfectly clean 1kHz trace (balanced line) can be seen in [figure 1](#). Unfortunately, these tests were done before the latest update (early 2008) that actually now has a specific speaker load measurement function, allowing the user to measure phase and impedance or apparent power directly, which is perfect for distributed speaker systems, particularly as it allows the user to define the system operating voltage (e.g. 70/100V etc).

As it has this impedance measurement ability, it also allows the unit to test cables using the same technique. There is an XLR

input or an additional test plug for installed runs, so cable can be readily checked for crossed pairs, missing connections etc. It can also check phantom power supplies and reads the voltage on both hot and cold legs individually.

Another helpful function is its ability to store 48kHz 16-bit WAV files on board. Plugging the USB lead into the PC resulted in a mass storage device appearing on the desktop just like any memory stick and I was able to merrily download aging prog rock tracks plus a couple of favourites from the old Alan Parsons Sound Check CD. Although the storage isn't vast at 31MB, and is shared with the config files, it certainly is a useful feature and easy to use. As it's supplied, there are some speech and instrument tracks (plus a STIPA tone) pre-loaded, taking up half the memory, so the German voice tracks came straight off, as did the English ones ('Zis ees a test announcement for ze oadio engineers . . .') but again they're pleasant touches. Perhaps someone ought to do the proper English version - 'Hi, I'm trying to make the audio system sound okay, and am wandering around the venue aimlessly staring at the walls and ceiling. Please excuse the intrusion . . .'

Perhaps the only real complaint is the power switch - this is mounted on the front panel and while some attempt to recess it has been made by making the case rise up at the edges of the button, it is not enough and after a week or so in the toolbox the batteries needed changing as it keeps turning on accidentally! There is of course a time-out feature, but ideally the power button should be properly recessed and perhaps made smaller.

We also tried to update the firmware using the USB lead and it nearly went smoothly until the end, when it said it couldn't connect to download the latest firmware (v.2.02), but it did update to V2.01 instead (which has the impedance screen included) as it turns out you have to install the earlier version before doing the latest one. Otherwise it was a straightforward process; the subsequent update took a couple of mouse clicks and it was done.

Apart from the power button issue, it's an ideal tool for anyone involved in commissioning or testing audio systems and is very accurate with THD+N below 0.0016% and accuracy at 1kHz of +/- 0.2dB for level and 0.01% for frequency - better than many bench generators one can buy. Price is around £330 depending on where you go, but well worth the investment.

www.nti-audio.com