

Electronic Tool Tip #22 – FNIRSI LCR-ST1 LCR Tweezer

In this day and age of miniaturized surface-mount components, it has rapidly become evident that making test measurements on some of these parts is quite dicey. It can be all but impossible to make a good multimeter probe connection to a component's end terminal at any time, but especially so when the component is soldered in place on a printed circuit board. That is where this month's specialty tool comes into play.

The FNIRSI LCR-ST1 LCR meter is a useful item that will make it much less problematic to measure modern miniature components. While I have absolutely no idea whatsoever how the name of the company is pronounced, I can certainly pronounce that this tool is worth every penny of its cost, which itself is quite modest.



Starting with the full-color display and taking into consideration the simplistic control system, this meter has a user-friendly design and functionality. It is surprisingly accurate for its cost. There are similar tools available from the big electronics suppliers, and their accuracy is not much better than that of this tool, but their cost is at least ten times the cost of this device.



I recently had the opportunity to perform a head-to-head comparison of the LCR-ST1 against a *Smart Tweezers LCR Meter* from Advance Devices, Inc of Maple, Ontario (Canada). The price of the Smart Tweezers LCR Meter is north of three hundred dollars. However, its capability is only just marginally better than the LCR-ST1, and in some functions was no better at all.

For the average user, this device is very satisfactory in terms of function, performance, and accuracy. It offers three testing frequencies (100Hz, 1kHz, and 10kHz) and two forward-voltage test levels (0.3V and 0.6V). It has an auto-detect mode which attempts to identify the component type, but then it also offers discrete resistance, capacitance inductance, and diode test functions.

The LCR-ST1 stores its test results for each power-on session, which can easily be retrieved into a CSV file simply by connecting the meter to a PC via the USB-C port that doubles as a charging port. When connected to a PC, an Excel spreadsheet is created which contains the test results in tabulated form. In addition, the LCR-ST1 Has a data hold feature which will lock in the data display at the touch of a button. Power is from an integrated rechargeable 250mAh lithium battery.

This unit is supplied in a durable zipper pouch which also holds a second set of (angled) tweezer tips, the USB-A x USB-C data and charging cable, and the instruction manual. Oh yeah... I cannot let it go by without mentioning that there is also a small steel plate with adhesive on one side, intended to be installed to a convenient surface as a means of baby-sitting the LCR-ST1. The device has an integrated magnet that will hold it in place on any ferrous-metal surface, such as that provided in the kit.

This tool is available online from Amazon at a price of \$39.99 (USD) plus shipping if you are not an Amazon Prime member. Of course, the government has to get its share, so tax will also be applied. Point your browser to <https://www.amazon.com/dp/B0DBQ4SQGK> if you want to investigate this item for yourself. For those who would like to save a couple of bucks and don't mind waiting a bit longer this tool is also available online at AliExpress.