

# Ute-style DMM at a pocket money price

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The **Digitech QM1321** is a robust, auto-ranging DMM with true-RMS AC measurement at an unpretentious price.

I've seen and used a lot of multimeters during my various careers across manufacturing, RF and electronics product design, science and servicing, technical magazine publishing, and home hobby stuff.

My first multimeter was a volt-ohm meter (VOM) I built myself, with a panel meter and a big, robust, multi-position rotary switch, both re-purposed from ex-defense equipment. I made the chassis, too, featuring a sloping panel. I could measure, within limited ranges and uncertain accuracy, DC volts and current, resistance and continuity. Checking volts or continuity under the dash of the family's FJ Holden was not on. My pocket money saved for a month would not afford a *real* VOM, let alone a vacuum-tube voltmeter (VTVM).

Hurtle through serial careers and where am I at? Well, I still have one or two multimeters. OK, one analogue and one digital. The DMM in my portable toolbox (aka 'Old Yeller') gets used the most. But, but . . . I wished Old Yeller, although auto-ranging, did a few more things. Like detect 'live' power cables et al, non-contact. I could retire that bulky pocket-pen tester that's *always* under everything else in the toolbox when needed. And *another* thing: I'd like to identify 'live terminals' with a beep *and* flash without having to look at the instrument; I could retire another old 'pocket' tool. I'd like Old Yeller to hold a reading when I can't watch while measuring something. And frequency measurement; 100 kHz, good, 1 MHz, better.

Lo and behold, along comes this Digitech, with all those like-to-haves wrapped up in a multi-function handheld DMM boasting true-RMS measurement and auto-ranging, plus more besides. Although a bit larger than Old Yeller, the QM1321 fits comfortably in my average-sized hand, even with its high-viz jacket.

The big, robust, multi-position rotary switch fills the panel between the large 4-digit liquid crystal display and the array of four connector jacks. It has OFF positions at each end. You don't have to turn it all the way back when you're finished with the furthest function. Smart. The 4000-count display includes backlighting that turns off automatically after 10 seconds. The digits are 22 mm tall – almost twice that of Old Yeller's (12 mm tall). Easy to read under many different circumstances.

Holding this DMM in either hand, it is well-balanced and I can operate all the pushbuttons with a thumb – and even the range switch – all singlehandedly! The non-contact voltage detection function (NCV)

piqued my curiosity. I found it could reliably detect the 15 VDC supply lead to my laptop at 50 mm; likewise for a 240 VAC lead. The LCD shows 1-to-4 dashes for 'field strength' while flashing a LED and beeping. Very handy. The Live Wire check launches the same beep-flash-dash indications, when using the leads to test which terminals in a multi-terminal block have volts applied, for example.

It comes with a multi-function socket that plugs into the pair of jacks on the right. This enables checking junction transistor gain (hFE), both NPN and PNP, and leaded capacitors

This DMM's designers have included many thoughtful touches; the 1-m long test leads have probes with safety collars so your fingers don't slip down, exposing you to danger; the high-viz jacket has collars to store the test probes; the DMM's body has a tilt-stand at the back that swings out to hold it up for convenient viewing, and there's the "off" positions at each end of the range switch. The manual's in English.

## The closer

With the variety of included functions (I counted 15), plus true-RMS AC facility, the ability to measure frequency to 10 MHz in seven ranges, plus the 'live wire' checking facilities, makes this a very versatile instrument suited to 'workhorse' usage – akin to a ute – in electrical, electronics and RF applications.

The instrument's strengths are in the attention to key details, along with little ones that are nevertheless significant. Listed at \$49.95, the QM1321 is worth close consideration.

[Unit provided by Jaycar].

