

G3LIV Isoterm data interfaces



ISOTERM MULTIMODE. Isoterm Multimode is very similar to the Multicon USB, but with a few notable differences. First, it has an RS232 interface, so if you are using a modern laptop you will need an RS232/USB converter. I tested it with a cheap model bought off eBay and it worked fine. After all, all it has to do is key the transmitter.

Secondly, it has a button marked FSK on the front that, when depressed, lets you run Frequency Shift Keying and not Audio Frequency Shift Keying (AFSK) when running RTTY and similar modes.

It also has a 3.5mm CW socket on the front and the back. The back socket can be used to key your radio automatically (with a supplied cable) and the front socket allows you to plug in your straight key at the same time. I found that my paddle worked only when plugged into the second (front) socket of the Yaesu FT-2000 and not the interface.

Computerised keying shouldn't be underestimated as it allows you to automatically key your radio from a contest program like N1MM. To me this was a revelation, allowing me to take part in the RSGB's 80m CW Club Championship without even touching my Morse key and notching up numerous CW contacts in the Commonwealth Contest in the same way, just by hitting a couple of function keys.

The N1MM keying with the interface was superb and never missed a beat. However,

HISTORY. Johnny Melvin, G3LIV has a background in bio-medical electronics and built his first data interface for the BBC B home computer in 1981. He takes great care in making his current range of digital isolation interfaces and it shows – the workmanship is first class, the screen-printed front panels clear and attractive and they come with all the required leads, software and instructions.

As I had not yet got around to buying or making a new set of leads to connect my recently-acquired Yaesu FT-2000 to my existing Opto-electronic interface it seemed like a good opportunity to review two of G3LIV's products to see how they performed. The models tested were the Isoterm Multicon USB and the Isoterm Multimode. Both models are very similar in size with the Multicon USB measuring 77 x 125 x 30mm and the slightly larger Multimode measuring 102 x 125 x 30mm. They are both housed in extruded aluminium project boxes (for RF isolation) with plastic feet, attenuator controls for both TX drive and waterfall drive, plus transmit and receive LEDs. Now let's look at both in turn.

ISOTERM MULTICON USB. This is a fully-isolated data interface with USB input. The PTT line is also fully isolated via a DIL relay. On the computer side are two 3.5mm stereo jack plugs, which are plugged into the soundcard line in / line out jack sockets or, in the case of laptops, the mic and headphone

sockets. A connection to a standard USB port controls the required PTT switching.

Most laptops no longer have an RS232 serial port as standard, making USB the only way to trigger the rig's PTT. Data in and out of the transceiver is via a rear-mounted six-pin mini DIN socket and the supplied cable as requested to suit your rig. A USB cable is also supplied for the computer to interface connection, plus Windows drivers supplied on a mini CD ROM. Note that this won't work with 'push in' CD ROM drives – you must be able to mount it on the central spindle.

Another supplied full-size CD ROM comes with a selection of various data software programs, including Digipan, Ham Radio Deluxe, MMSSTV, MMTTY, CwGet and CWType. While some of the programs are free, both CwGet and CwType offer 30-day evaluation periods before you must register the products and pay to continue their use. The supplied software allows you to transmit and receive a whole host of digital modes including PSK, RTTY, SSTV, WSJT, CW and others.





some logging programs are not so efficient at keying so do test this thoroughly. I also tested it with N3FJP's ALog and, while it did work, there were times when the keyed CW was incorrect as the program/computer couldn't keep up with the interface. This used to be a common problem with keying interfaces, but N1MM has obviously found a way around the issues.

I then tried the Multimode unit on 80m RTTY with MMTTY and it worked very well. It was actually quite handy having the waterfall gain control on the terminal unit as it saved delving around in the computer's sound control panel. Likewise, the TX drive control ensured that you didn't overdrive the radio.

I then moved on to Ham Radio Deluxe, and in particular the Digital Master (DM) 780 digital modes option. This is a fantastic free program by Simon, HB9DRV that covers RTTY, PSK31/63, Olivia, CW, MT63, Domino, SSTV and just about anything else you can throw at it. I have been using it after Simon demonstrated it at the 2007 RSGB HF Convention and can thoroughly recommend it.

Once again, it only took a minute or so to configure the software to work with the FT-2000 and soon I was having PSK31 QSOs with most of Europe – the SuperBrowser allowing me to decode 10 or more PSK 31 QSOs at once. On CW and DM780, it made a fair stab at decoding 25WPM machine-sent Morse, but struggled with hand-sent and weak CW, which is to be expected.

As a learning tool and as a way of dipping

your toe in the water with CW to see if is a mode you might like to learn properly it has a lot to commend it. But don't expect perfect copy under all conditions.

Switching to the IsoTerm Multicon USB, with the appropriate driver software installed, it was recognised straight away by my Toshiba laptop and automatically allocated as COM2 (note with Windows XP it is possible to reallocate the COM port numbers if this isn't suitable).

The main difference between the two units is that the Multicon USB doesn't have a socket for a Morse key. That doesn't mean that it can't send Morse. Using Digital Master 780 you can send CQ with the interface using what DM780 calls MCW (keyed audio tones out of the loudspeaker socket) – more on this later. I was soon receiving PSK31 signals on 14.070MHz, interestingly including those of GW2ABJ in South Wales. As I live in Norfolk I did a double take as you shouldn't really be able to hear Wales on 20m. But this was the Sporadic-E season and probably short skip. Sure enough they soon faded away.

In transmit mode I was able to get about 50W out on PSK31 with the transmit drive control in the 12 o'clock position and with no sign of the ALC operating. This suggests that the interface is set up so as not to be overdriven, which is a good idea.

Advancing the transmit drive to full gave 80W out, with the ALC still in the green zone. Again, this looks like the unit has been well thought through in terms of making sure that it can deliver full power, but without overdriving the transmitter. On receive the waterfall was best with the drive in the 12 o'clock position as well.

Switching to Digital Master 780 it was a similar story, so the interface will work well with your favourite data mode program. It was able to decode any of the modes selected, including CW. By selecting the MCW mode you can transmit CW using the interface as it sends CW by playing audio tones out of the speaker socket. You can then select the frequency of the tones and the speed. While it works, I think it would take some getting used to. The supplied CWType program works in the same way.

By the way, this method of CW generation will not work with contest programs like N1MM. It is also frowned upon by traditionalists. Another problem with this is that you can't hear a sidetone. And you can't generally run a keyer or paddle at the same time, at least without some form of interface, as you need to have the radio in USB mode. Some rigs do allow you to use a key while the rig is in SSB mode – the Yaesu FT-2000 included – but do check.

CONCLUSION. Both interfaces do exactly what they say on the tin. If you are not interested in CW (or are happy to use CWType to do the keying) then the Multicon USB is probably for you. If you are a CW aficionado then the IsoTerm Multimode is probably better – its CW keying capabilities means you can choose between proper machine-keyed and/or hand-sent Morse.

The IsoTerm Multicon USB comes fully-wired to suit your transceiver and costs £74.50 plus £3.00 P&P. The IsoTerm Multimode costs £88 plus £5 p&p, complete with the data cable to the rig. The FSK or CW cables are extra – the FSK cable being £7.00 to £10.00, depending on the rig, and the CW cable is £6.00. For more details see www.melvin2.freemove.co.uk or call Johnny on 0191 2843028. My thanks to Johnny, G3LIV for the loan of the interfaces.

