A transceiver that will do it all!

The Kenwood TM-V71E Dual-Band Mobile

The Kenwood TM-V71E is a dual-band v.h.f. and u.h.f. rig covering the 144 and 430MHz Amateur bands. The rig offers extended receive capabilities and includes the amplitude modulation (a.m.) air band and the v.h.f. marine band frequencies.

Once I had collected it from the *PW* office I soon found that the Kenwood TM-V71E is a solidly built rig and is finished in black and charcoal metal and plastic and weighing in at 1.5kg made it feel to me that it's a rig that 'means business'!

The rig offers 50W (**High Power**) on both bands. This can be reduced to 10W (**Medium Power**) and 5W (**Low Power**).

The Kenwood TM-V71E has a detachable front control panel 'head'. However, it's necessary to buy a separation kit to be able to use the detachable front panel but (as I discovered!) this feature is really useful when trying to get a rig in a modern car.

Another rather wonderful little touch regarding the front panel is that it can be turned upside down, but why I hear you ask would that be needed? Well again it comes down to flexibility; the modular style microphone socket is on the side of the rig, when temporarily putting the rig in the car I found that the microphone – in effect – was coming out of the wrong side of the rig.
No problem! I just inverted the rig and inverted the front panel; effectively placing the microphone socket on the side I needed for my installation requirements.
Perfect! (Obviously you wouldn't actually operate it with the head upside-down, it's the body that's inverted!
So the internal loudspeaker can be facing up or downwards, depending on installations needs).

The rig is supplied with a mobile mounting bracket and a Kenwood MC-59 dual-tone multi-frequency (DTMF) equipped microphone. This can be configured via the rig's menu to allow you to use the DTMF key pad to input a direct entry frequency – this is a very useful feature.

I think it's important to mention that the Kenwood TM-V71E has an elegant simplicity about its design, which to be honest understates the actual reality of what the rig can achieve. The build quality and finish is excellent.

The TM-V71E has really been designed with the mobile operator in mind. All the controls are well labelled and although it's menu driven the main functions that a mobile operator may want at their fingertips are, in fact, at their fingertips. The reverse function for checking a repeater input frequency is there; the output power adjustment is there, memory channel and v.f.o. selection are there.

The transceiver is indeed a well thought out rig. It's uncluttered, having essential controls available and well labelled and less used functions selectable from the easy to access menu system. It is largely controlled by a multi functional and ergonomically superior

Richard Newton G0RSN discovered that the Kenwood TM-V71E dual-band transceiver is much more than a mobile rig!

Richard Newton G0RSN has been trying out a new dual-band mobile from Kenwood, thoroughly enjoyed using the rig and the rather special extras that come with it!

rotary control, which has reassuring clicks when operated and can be pushed in to access tuning in 1MHz steps. When used in conjunction with the F button this also gives access to the set up menu.

Each Band Independent

Each band can be independently controlled and the operator can have both bands set to v.h.f. or both to u.h.f. if so wished. Each band enjoys the services of separate rotary volume and squelch controls.

On the rear of the TM-V71E there's an N-type 50Ω antenna connection. There's also a data connector; a 6-pin mini DIN connector. This is for use with a TNC for packet operation or used when operating the Voice over the Internet Protocol (VoIP) software.

There is also an 8-pin mini DIN socket for connecting the rig to a personal computer. I also used this in conjunction with the optional PG-5H PC interface kit when trialling the rigs built in VoIP capabilities, more on this later.

There are two 3.5mm jack sockets for mono speaker use on the rear of the rig. These are set to output each band separately but their function can be easily configured via the rig's menu.

Easy Use & Flexibility

Ease of operation and flexibility are a must as far as I am concerned and the TM-V71E scores highly on these points as well. An example of how easy it is to operate must be the input of memory channels and this is worth a few words of explanation.

While I was making provisional notes for the review, I wanted to listen to the marine band. Entering a memory involves pressing two buttons – the rig will give a clear indication if the memory you have selected already has data in it by displaying a black arrow head – useful for a scatter brain like yours truly! Within

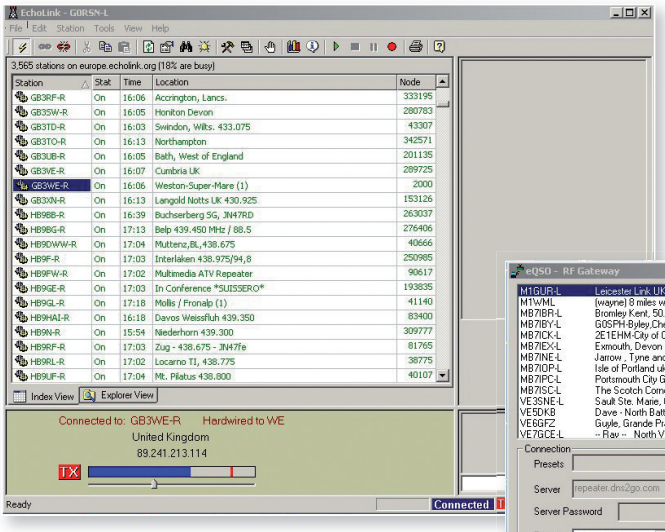

Fig. 1: Using Echolink software with the TM-V71E.

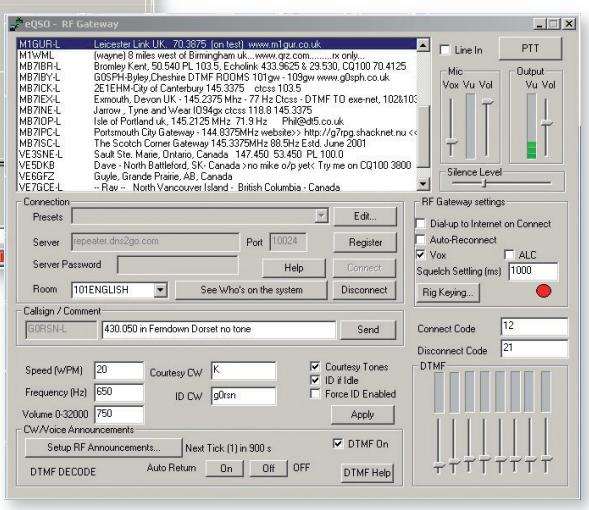

Fig. 2: Using eQSO software with the TM-V71E.

30 seconds I had programmed my six favourite marine band frequencies and was scanning away.

The transceiver offers the user 1000 memory channels. These 1000 memories are sub divided into ten banks of 100 memories for ease of scanning. This means that the user has the flexibility to have all simplex frequencies in one bank, all air band frequencies in another and perhaps repeaters in another. Finally, by using the various scan configurations all memories can be scanned, or just one bank can be scanned.

Another way in which this rig offers flexibility are the two **Programmable Function** (PF) keys on the rig and the four PF keys on the microphone. As the name suggests these are keys that can be configured to do a huge list of functions, depending on what's required.

Operating mobile

I decided to see if the TMV71E would perform as well as I expected when operating mobile. Installing it in the car was a 'breeze' and the rig was mounted under the driver's seat. Using the optional PG-5F separation kit I then mounted the front panel on the centre of the dashboard console, just under the vehicle's ashtray.

The transceiver proved sensitive enough to enjoy several simplex contacts with local stations from my home in Ferndown, Dorset. It coped well with local well-known areas of r.f noise near local industrial estates where electrical noise and r.f. problems abound.

Using the ability to run a decent output power I was able to work the **GB3DR** South Dorset repeater on 145.7375MHz with ease. This repeater is situated on The Ridgeway, on high ground between Weymouth and Dorchester on the west side of Dorset. I was working this repeater from my home area on the north side of Poole on the east side of the county.

I then set the TM-V71E up at home on the main station antenna. On 145MHz I had a very enjoyable simplex chat with **Andy G0JZW** who was mobile in the New Forest, about 16km (10 miles) or so away. Andy said, "the quality of the audio seems OK Richard, you are 5 & 9 with me."

Looking to test the rig a little more I listened round and spoke to **Carl G0TQM** who was operating portable on Brighstone Down on the Isle of Wight, about 48km (30 miles) away from me on the English Channel side of the Island, south of Newport the Island's administrative centre. Carl gave me a 5 and 2 report, "you are fully readable Richard," said Carl, he went on," a bit of smooth noise but nice clear audio, perfectly good." Carl was using a Yaesu FT-817 running 5W into a home-brew G2BCX 'Slim Jim' antenna made from ribbon feeder.

My final contact that day with **Klaus G7AUF**, just down the road in Corfe Mullen, only about 8km away from me and close to the *PW* office. Klaus said, "Brilliant audio Richard, no problem at all."

I was delighted to get one more contact on 145MHz while I was actually writing the last bits of the review. I was monitoring 145.500MHz and heard a station calling "CQ", no one else replied so I took time out and replied to his call.

It was **David G0LCN** from Bitterne in Southampton, about 55km (34 miles) away from me. He gave this report on the TM-V71E audio as, "deviation is good and narrow Richard, audio itself is nicely cropped, not too excessively so a very natural audio, very nice to listen to."

I'd quickly discovered that the TM71E is a very smart and capable dual-band mobile rig with extended receive and good ancillary functions, such as memories, scan features, full continuous tone squelch control system (CTCSS) and a flexible user menu, etc. But what sets it apart from some of the other

Fig. 3: The head may be operated with the main body either way up. It may also be operated remotely with the cable kit.

radios? To start answering the question, apart from the distinctive Kenwood audio and build quality there's the built-in Voice over Internet Protocol (VoIP) operation, so let's now see what that's all about!

What's VoIP?

What's VoIP? (You may ask!). "Well what a huge subject to answer simply", must be my reply! I can only scratch the surface here and it's also subject that is the basis of much debate. I know there are some who see it as Amateur Radio's salvation in the modern world and some see it as an insult to the hobby.

I have to say I take a more middle of the road approach in that I see VoIP as yet another way I can use radio to meet new friends who have a like interest the world over. It's just another a tool in the toolbox and just another way in which to enjoy our wonderful hobby.

The VoIP mode is a method where audio is passed over the Internet and I'm sure many of you will be familiar with skype and msn and other software packages that allow you to talk to other people using your PC. There are also software packages available for Radio Amateurs, such as *EchoLink* and *eQSO*, which enable you to interface a radio to a PC and therefore give you a voice portal to the Internet.

Here's a quick run down on how it works: Firstly, a link station radio receives your audio and using a simple connection between speaker output and the PC sound card, the audio gets passed over the Internet and received by a remote station's PC. Via a simple interface, the audio is then transferred from the remote stations PC to the transceiver connected to it before being transmitted over the air. Stations offering this facility are called 'gateways', 'links' or 'nodes'.

If someone has set up such a gateway in my area, all I need to know is the frequency and any CTCSS tone it may require. This then makes it possible for me to be on a v.h.f. or u.h.f. hand-held rig walking down my road, or in my car driving around and chatting to another Amateur doing the same thing in Coventry, Birmingham, New York or anywhere else in the world that has an Internet gateway attached to a radio.

The Kenwood TM-V71E is advertised as having *EchoLink* memories included and being able to work an *EchoLink* node or link. The memories and the ability to be a link or node are two completely different functions. Additionally, by using the proprietary name *EchoLink,* Kenwood may have caused a little confusion. I will now try and explain!

EchoLink, is in fact, a software programme available from **http://www.echolink.org** using Voice over Internet Protocol and is just one of several Amateur Radio software packages available. Perhaps the most well known alternative is *eQSO* and this is available from **http://www.eqso.net**

The difference between the two software programs is that *EchoLink* is a series of point-to-point nodes using unique number identifiers (seen in the screen shot down the right hand column in **Fig. 1**). Normally, one station connects to another and it would be unusual for more than two or three to be connected together.

In practice the *eQSO* system is more like a 'chat room' where many stations connect to one central point and everyone hears what's going on and everyone hears everyone else! I actually prefer *eQSO* as I find it easier to use as you do not need to link nodes and the software seems to cope with computer firewalls (computer security protection systems) a lot easier than *EchoLink*.

However, I do like *EchoLink* when I need to make a connection with a specific station. In fact, I use this to connect my station to the GB3WE repeater in Somerset; this enables me to contact my brother, **William G7GMZ** who monitors this, as it's his local repeater.

If your local VoIP node on 430.050MHz and is running *EchoLink*, you would call up on that frequency and take pot luck that it was connected to another node across the Internet. If, however, you knew the unique number given to the node you wanted you could send a connect request over the air using DTMF tones and the EchoLink software will them connect to that remote gateway station and you'll be able to communicate with anyone who can hear that gateway, disconnecting when you've finished.

Echolink Memories

Using this term, Kenwood mean that by *EchoLink* memories, the user can store up to 10 dedicated memories representing the code numbers of favourite remote nodes. The operator would use this when they're TM-V71E is accessing someone else's node, which is an *EchoLink* node.

If, however, the local node, link or gateway is running *eQSO* the operator will call up in the same way as though they were listening through a repeater. This is because the repeater has worldwide coverage depending on the gateways that are connected at the time of the call (as can be seen from the screen shot in **Fig. 2**). Gateways from all over the country and all over the world are linked in and some of these are actual voice repeaters in their respective areas as well.

Ready To Go!

The interesting point for me was that the TM-V71E had a VoIP interface built-in and ready to go. But please bear in mind that this is not referring to the TM-V71E accessing a node, but instead actually acting a node itself. Where Kenwood has described it as *EchoLink* they could have caused confusion because it's equally useful as an *eQSO* gateway. The protocol is the same; it's just the software and what's actually on offer that's different.

To set up a gateway in the UK you have to have a Notice of Variation (NOV) from Ofcom. Fortunately, I have one and already run a modest local link on 430.050MHz.

I'd actually been using a simple interface I had built from bits, which cost me less than £10. To achieve this I had used an old crystal controlled PMR rig re-tuned to 430.050MHz and had quite good results but it took me a long while to get it all set up!

With the Kenwood TM-V71E all that's required is a PC (I used my laptop) the software (either *eQSO* or *EchoLink*) and I used both for this review and the PG-5H PC interface cable. All I needed to do was to just tune to the correct frequency, set up the rig menu to EchoLink sysop and adjust the software settings on the PC. I was actually up and running in less than 30 minutes having configured both software packages. For the review contacts I used *eQSO*, but remember the rig is in the same setting and mode as it would be if you ran *EchoLink*.

Product Kenwood TM-V71E Dual-Band VHF/UHF Mobile Transceiver

Company Kenwood Electronics UK Ltd.

Contact (01923) 655284

Pros & Cons

Pros Extremely versatile transceiver, a very easy-to-use mobile that's 'operator friendly'.

Cons Computer required for VoIP/eQSO use. If you don't have a computer you're missing a great deal with this rig's extra facilities!

Price £250 approximately

Supplier My thanks for the loan of the review unit go to Kenwood Electronics UK, (Communications Division), Kenwood House, Dwight Road, Watford, Hertfordshire WD18 9EB.
Tel: (01923) 816444,
FAX: (01923) 212477,
E-mail: **comms@kenwood-electronics.co.uk**

Fig. 4: The remote operational kit allows the unit to be placed in a more convenient place.

Fig. 5: The simplier remote head mounting kit.

To ensure the best quality, audio settings between the rig and the computer must be optimised; adjusting sound card settings can do this. However, as the system depends on the rig to do 'it's bit' as well, judging by the reports I received TM-V71E was a well adjusted radio, more than I can say for the user!

Having configured the TM-V71E and connected it to my laptop, the **G0RSN-L** link was on air. I used my Kenwood TH-G71 hand-held transceiver and put it on 500mW, tuned it to 430.050MHz and worked into the TM-V71E's VoIP link in my shack.

My first contact was with **Grant VA7GO** in the Pacific North West, near Victoria in Canada, we were also in QSO with **Marco N2YN** in the Bronx area of New York City. They both gave me favourable reports and we all enjoyed a good old 'chin wag'. Note: We were all using hand-held transceivers to talk into local gateways.

Next, was **Rob 2E0CRW** in Portsmouth and another enjoyable chat with great report on the audio, remembering that is an amalgam of the hand-held, computer and the TM-V71E.

Perhaps the most exciting contact I made was with **Chan DS1OHQ** from near Seoul in South Korea. Chan was very complimentary about the audio quality from the station.

So there it is, the Kenwood TM-V71E is a very enjoyable to use and extremely capable rig. It will give you hours of enjoyment over a good cross-section of the v.h.f./u.h.f. bands chatting on the local repeater, a bit of hill-top f.m. DXing, listening to the air band or the marine band. You can also connect it to a computer and speaking to friends in far away areas of the world, or linking to a local repeater on the other side of the UK. The Kenwood TM-V71E will do it all, as it's an extremely versatile transceiver. Have fun!

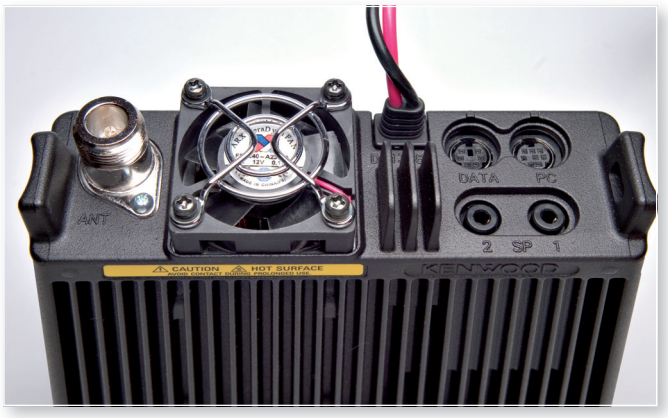

Fig. 6: The rear panel, with its N-type dual-band antenna socket, two audio jack sockets and two DIN sockets for use with computers.