



Review: the Xiegu X5105 QRP Transceiver

Carl Gorse 2E0HPI looks at an increasingly popular QRP HF transceiver from one of the newly emerging Chinese manufacturers.



It's been a while since I have written a review for *PW* and those have been mainly based on antennas. I thought now would be a good time to share my experiences with my latest radio, the Xiegu X5105 QRP transceiver, which already seems very popular around the world.

The Xiegu X5105 is a 5W transceiver with plenty of extras that would cost you more on purchasing other radios such as the Yaesu FT-817ND/818 models or even the Elecraft KX2/3, both of which I have owned and used at different times. It comes as standard with the onboard ATU, built-in PSK function, antenna analyser and, perhaps most important of all, a 5000mAh high-capacity battery pack.

The reason for my interest and for purchasing the X5105 is that, as many *PW* readers will know, I enjoy portable

operations. I usually work at the QRP (5W) level – I have used a Yaesu FT-857 and it's nice to have more power available but that requires carrying a substantial battery around, something that really doesn't suit my style of portable operating! That leaves a limited selection of transceivers that are sufficiently lightweight and operate at the 5W level. Elecraft have several but the KX2 is the obvious choice. I owned and used one for a while and added my findings to **Don G3XTT's** review in the February 2017 issue of *PW*. I have also been a long-time enthusiast for the Yaesu FT-817ND (recently replaced by the FT-818, in effect an FT-817ND Mk 2, with some enhancements and incorporating a few features that were sold as optional extras on the FT-817). The FT-817ND is justifiably a very popular portable rig and its successor will, I'm sure, remain

equally popular. I draw some comparisons between the three transceivers in the course of this review.

Xiegu

Xiegu is a Chinese manufacturer of lightweight, low power HF transceivers for amateur radio use. The X108G has been around for a while although early models had some issues with respect to the quality of their transmitted signal. I understand that this has now been resolved but the X5105, reviewed here, incorporated suitable filtering from the start and I have received nothing but good reports during my various operations. Although the Xiegu radios are available from several sources, including MFJ in the USA and direct shipping from the Far East, it makes sense to buy from the Sinotel in the UK, to ensure that you have backup in the (unlikely) event



Fig. 1: Side view showing some of the interfaces and one of the feet.



Fig. 2: The other side of the radio.



Fig. 3: Out in the field, with PELI case.

of any problems and that the radio you end up with is fully CE compliant. This is what I did and, indeed, **Alan Clunnie MORYZ** at Sinotel has been very helping in answering any questions I had.

The X5105

The X5105 is a portable HF and 6m transceiver with a nice clear 3.6in large, high-quality LCD display and an output of up to 5W. The battery pack gives you around 6-8 hours of use and I have found that to be more than enough for a day's operating after I have logged around 100 contacts on an activation of a Summit (SOTA) or Worldwide Flora and Fauna (WWFF) counter (you can, though, run the transceiver from an external power source, should you need or wish to do so). The build quality is to a high standard and the

radio appears to be very rugged despite weighing just 0.94kg. The features and specification are shown in the sidebar.

Compare and Contrast

Over the past four years I have operated portable with a number of different radios, as I mentioned above. The Yaesu FT-817ND is, as I have said, an excellent rig. However, I had to use the LDG Z817 ATU to tune my usual multiband antenna and also needed to take along an external battery pack because the internal batteries offered very limited operating times and were no good for my usual extended operating longer periods. I really enjoyed using the Elecraft KX2 but it seemed to get very warm when out operating and, as I reported in that *PW* review, I felt was not sufficiently weatherproof to cope with the

misty weather we often get here on the coast. The X5105 has a large heatsink and so far I have yet to notice any obvious rise in temperature.

That said, however, the FT-817ND offers a wider range of bands (it includes 160m as well as 2m and 70cm) than either of the other transceivers I have mentioned. The display, though, is small, occupying just part of the front panel. Both the Elecraft KX2 and the Xiegu X5105 take a different approach, with the controls on what might be considered the top panel, allowing for a much larger display (the X5105 having the largest display of the three, easy to read when out in the sun). The function buttons on the X5105 light up – handy when operating in reduced light. The KX2 is a fully-fledged SDR transceiver, with all that implies, whereas both the other radios use a more traditional superhet design (albeit more than adequate for portable use). The X5105 is a double-superhet with 70MHz first IF, but with plenty of digital signal processing (DSP) later in the receive chain. The KX2 also had a greater range of data mode capabilities than the X5105 but, personally, when operating data modes with any of these transceivers I would opt to use an external interface and laptop. And, as a further reminder, the KX2 covers 80 through 10m and there is an optional 2600mAh battery pack available.

I also liked the two feet on the X5105, somewhat more substantial and more convenient than the single foot on the KX2 when, for example, using it on a table or desk. The side view, **Fig. 1**, shows this clearly. Other photos, **Figs. 2** and **4**, show the other side and the internals.



Fig. 4: A view of the internals.

In Use in the Field

As I said, I bought my X5105 from Alan at Sinotel. It was only the matter of a few minutes from unboxing the radio to getting on air and making contacts around the UK and Europe from my home station. I also managed to catch up with quite a few stations from the USA and cannot wait to use the radio at St Abbs Lighthouse in Scotland the for ILLW weekend in August. I have also purchased a PELI Case 1060, which is perfect for the radio for added protection against knocks, see **Fig. 3**.

Normally when I go portable now I use the X5105 and the SOTAbears 6m or 10m travel pole with a 9:1 unun and 51ft or 84ft of lightweight wire. This is where the X5105's internal ATU really helps because I have found that it tunes just about anything and using that 9:1 unun and 84ft of wire, it tunes perfectly from 160m to 6m with no problems.

Other Observations

The X5105 firmware can be updated using the COM port and the USB lead that comes with it. If there are any firmware updates prior to purchasing, then the radio is normally updated ready for you, but it is an easy process using the Teraterm software for updates and the lead also doubles-up for computer software such as HRD's Ham Radio Deluxe. I also purchased the CE-19 Expansion Card, **Fig. 5**, which can be used for data modes for audio in and out and also to interface, if required, to the XPA 125 100W Linear Amplifier. This interface costs just £24.99, significantly cheaper than other data interfaces I have seen or bought previously. I understand that a matching panadaptor will be released quite soon too.



Fig. 5: The CE19 Expansion Card.

Editor's Observations

I was happy to see that Carl had taken the plunge and bought an X5105. I have been fortunate enough to have one on loan for a while and echo his conclusions. My impression is of a nice rig with controls that are fairly intuitive (albeit, personally, I would have put the volume buttons the opposite way round!). I found the monitor note very loud when sending CW with headphones but Carl tells me this has now been addressed in the firmware. The radio seems to cope well with close-in signals (I tried it on a full-size 4-element 20m Yagi to try to overload the front-end!) although the received tone on CW can sound a bit warbly at times – I'm not sure why. SSB reception is excellent. I love that you can select a digit on the display and the dial speed is adjusted accordingly – this is more than even quite expensive radios offer. The major weakness is my book was the very limited User Manual, which doesn't really cover all the features. If this can be addressed, I suspect this radio will become very popular indeed – Carl sent me a copy of the current version and I can already see many improvements in the documentation.

Xiegu X5105 Features

VFO A/B
 Split Mode
 RIT
 Noise Blanker
 AGC – Auto Gain control
 Noise Reduction
 Notch Filter
 Built in ATU
 CW Trainer
 5000mAh 12V battery pack
 Mode selection AM/CW/CWR/NFM/LSB/USB
 Meter selection SWR/SIG/PWR
 Preamp/ATT

Specifications

Receive 1MHz – 54MHz
 Transmit 160m – 6m (Amateur bands only)
 Minimum frequency stepping: 1Hz
 Antenna impedance 50Ω
 Operating temp range –10°C to +60°C
 Supply voltage 13.8V DC
 Operating voltage 9.0 – 15.0V DC
 Current consumption: Receive 500mA
 @ Max & Transmit 2.5A @ Max 5W
 Battery 3800mAh @ 12V
 Dimensions 168 x 93 x 47mm
 Weight 0.97kg

Receiving Parameters

- Circuit type: Double frequency conversion superheterodyne + audio DSP
- IF frequency: first IF: 70.455MHz; second IF: 10.695MHz; third IF: 455kHz (NFM)
- Battery life is around three years and warranty is two years.
- Fully functional microphone with all functions and bands accessible from it.

Conclusion

The X5105 is well-built and the audio is really clear. I recall the KX2 sound to be very poor when down by the beach with the high background noise of the waves. The menu system and various functions are very easy to navigate. I have yet to try CW but it's on my to-do list this year along with gaining my Advanced licence.

There is a Facebook group, below, which covers the Xiegu 108G and the X5105. You can also find a number of videos on YouTube describing the X5105 and its features. The price at the time of writing is £509.99. I consider this extremely competitive – the FT-818 retails for £599.95 to which you would need to add a battery and charger while an Elecraft KX2 retails for £899.95 and by the time you have added a battery pack and internal tuner will have cost more than twice the price of the X5105.

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