Review

Xiegu G106 HF transceiver

The G106 is the latest HF transceiver from the Xiegu stable. It's a QRP rig offering 5 watts on the 10 to 80m bands.

I am quite a fan of Xiegu transceivers. I have reviewed them all for various radio magazines and own both the X5105 and the G90. I should be clear here that Xiegu radios are not perfect, just as my FTDX10 is not perfect. Perfection is in the eye of the beholder and the use to which you put your radio. That said, Xiegu do provide an awful lot of radio for the money.

I was pleased, therefore, when Sinotel offered me a review unit of the brand new Xiegu G106, due to be released in the UK in Autumn this year. The G106 is a 5 watts (minimum) HF QRP transceiver, covering the 10 to 80m bands. The unit also provides general coverage receive from 0.55 – 30MHz, and coverage of the FM broadcast band from 88 – 108MHz.

PHOTO 1: The Xiegu G106 front panel with liquid crystal display, similar to the GM1 version.

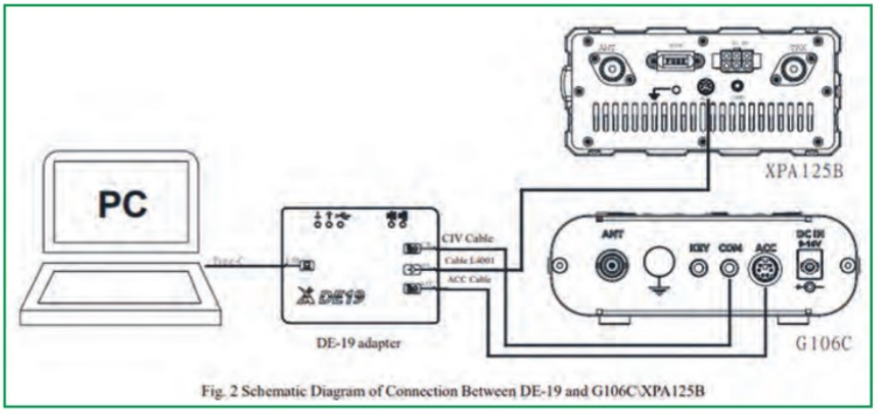

FIGURE 1: The DE-19 interface uses a single USB C cable to the PC.

Out of the box

When I unboxed the unit I was pleasantly surprised at the comparatively small size and the design, which has rounded edges. It is pleasing on the eye, measuring in at 120 x 40 x 135mm and weighing 720g. Included is a microphone and a power lead terminated in a coaxial plug to suit the rig. No COM port cable was provided, unlike with many other Xiegu rigs, and this is needed for CAT control and digimodes.

On the front panel is a volume control, mic socket, four menu buttons and the large VFO control. The front controls are given protection from knocks and bumps by means of the case extending forward flush with the control's uppermost surface. On top and just to the rear of the fascia is a power button, a mode button that also activates a pre-amplifier stage, and an up/down band button that also doubles as a tuning step change control. On the rear is a BNC antenna connection, a ground screw terminal, key socket, COM port socket (3.5mm), 8-pin mini-DIN accessory socket and a co-axial power socket. Stand-by current is specified at 0.37A and transmit current at 2.8A max.

In use

Powering the device up for the first time, I immediately noticed the similarity of the display to the existing Xiegu G1M transceiver, which appears to share an identical layout and design, albeit with the colours inverted. As a monochrome display, it is easy to read in bright sunlight and there is an option to turn the backlight on and off.

The menu is simple to access and use, by pressing one of the four menu buttons under the display. These give access to memories, VFO switching, CW filters and settings, display options and the FM broadcast band. The VFO control is used to cycle the menu options for these buttons.

I began by tuning around on CW and using the CW filters, which has options of 500, 250 and 50Hz. The 50Hz filter could be useful on a busy band, but there is quite a lot of 'ringing' in this setting, which means I would use it sparingly. I went on to have a number of successful CW contacts and the volume available is plenty.

Using the display control on the menu I was able to choose from three display types – both VFOs, S-meter and panadapter; both VFOs and panadapter, or just a single VFO with a large panadapter display. This latter display proved most useful, but it was when using this that I noticed a discrepancy. The panadapter for an SSB signal lines up with the tuning mark correctly, either on the upper or lower side, but when tuning CW, the tuning line is off by the CW offset of, in my case, 800Hz. You basically need to tune for the audio and almost ignore the panadapter for CW, which is a shame, but should be an easy firmware upgrade fix at some point.

Another shortcoming on CW was the QSK facility. The rig arrived set with this at 0 milliseconds, but there was a whacking audio thump from the speaker in between dots and dashes that was very intrusive. I set about experimenting with the QSK delay but without much success. Effectively to eliminate the audio click, you have to accept that QSK is not usable and that you cannot listen at all between characters. The QSK

PHOTO 2: Rear panel of the G106 with connectors shown.

PHOTO 3: The DE-19 USB to radio interface uses a USB C connector towards the PC for CAT control and audio.

delay ended up at 250ms. This is not a major issue and the rig still handles CW QSOs perfectly adequately, but if you are a full or semi-break-in fan, you will be disappointed. Hopefully Xiegu will address this in a future firmware release. Like both the G1M and the G90 there are no CW keyer memories.

SSB brought a few contacts, although it is not my preferred mode, and the small and cheap microphone appeared adequate – I had no negative audio reports, but you should note that there is no speech compressor available.

I was a little frustrated by the use of the band button as the means to adjust the tuning step of the VFO. In order to do so you must press and hold the Band Up or Band Down button for a full two seconds! This is far too long, and 0.5 second would be more than long enough. It therefore became a little frustrating when moving through two or more steps. Hopefully Xiegu can correct this too in a future firmware upgrade.

Digital modes

The rig is suitable for digimodes and Sinotel sent me the Xiegu DE-19 adapter, which will retail at £48.99 and is also compatible with the G90. This adapter performs a similar role to the CE-19 adapter for the X5105 and G90, using the same rig connections via the 8-pin mini-DIN. However, it appears to be an improved version, as it interfaces to the computer via a single USB-C type cable, keeping cable clutter a little more under control. The DE-19 came with all the required (three) cables to connect the rig to the PC and was easy to set up. An additional L4001 cable is required if you also wish to use the XPA-125B linear amplifier. I connected and made digital QSOs easily and the rig performed well in this mode with no noticeable drift on WSPR mode. A picture of the unit and a connection diagram is included here.

Tests into a dummy load gave power output indications of between 6-9 watts, with 9 watts available on the 12m band, 8 watts on 15 and 20m, 7 watts on 80m and 6 watts on 17, 30 and 40m bands. Interestingly, the 60m band is not specified as a band capable of transmission on this rig. Testing into a dummy load though revealed 7 watts output between 5331 and 5405kHz, which I believe corresponds to the US band plan. Here in the UK, our allocation ranges from 5258.5 to 5406.5kHz. Hopefully the EU shipped version will give full 60m coverage but I cannot confirm this.

Prices

With a launch price from Sinotel of £329, it is worth considering where this new model sits in the Xiegu line up. At the cheapest entry level is the G1M, a very similar SDR radio with a nearly identical display, similar form factor and the same power output. The G1M retails at £239, £90 less, but is only a four band HF radio, covering 80, 40, 20 and 15m bands. It also only has a single 800Hz CW filter, although semi-break-in keying was better than the G106. The G106 audio output is stronger and clearer than the G1M, thanks, in part, to a larger speaker.

At £399 is the G90, the next model up from the G106, followed by the X5105 at £499 and the X6100 at £575. The G106 is at the entry level, but sat almost in the middle of the price gap between the G1M and the G90. This seems fair enough, given the extra band coverage.

There are, therefore, a number of features not present on the G106 that do feature on the G90. These include the lack of an ATU, no noise reduction or adjustable filters (other than CW bandwidth), and whilst there is a pre-amp there is no attenuator. A tilt bail at the front would also improve operability.

Conclusion

Overall though, the rig was simple to use and operate and many QSOs were possible. There were no major bugs discovered and I was thinking of taking the rig with me in the caravan on our visit to the Commonwealth Games, when I suddenly realised that there is no headphone socket. That put paid to that idea, as operating CW in a caravan with my wife and two kids would be impossible. This seems a real oversight, and a headphone socket is even included on the G1M. Checking the manual seemed to show a speaker output to the microphone, which had a 3.5mm socket, but that does not appear to work. One possibility, if headphones are important to you, is the 8 pin mini-DIN socket on the rear, for digimodes. This obviously provides an audio output – maybe one could connect headphones that way to resolve the issue? I cannot help thinking that the lack of a headphone socket is a fairly fundamental mistake, especially if one wanted to use the rig in a portable or field-day type of environment.

Despite this, the G106 remains a good rig for a modest investment of £329 and in a small and neat package, perfect for the shack, car or portable. Of course, at this price, the fact that it comes with a 12-month warranty might give it an edge over a quality piece of used gear, at least for peace of mind. Given the rig's compact size and comparatively low weight, it struck me that the addition of a suitable carry-strap would make this a neat and light pedestrian portable set-up. There does not appear to be a designed facility for this, but it would not be difficult to achieve with a little ingenuity.

Overall though, I think that the price point of this radio is so close to the G90, which has a wealth of additional features, that I would advise you to consider carefully the difference in features and price before making a decision. Despite this, the G106 would certainly get you on the air perfectly well in a smaller and lighter package, and, like other Xiegu products, it represents real value for money.

The Xiegu range is available direct from www.sinotel.co.uk or from https://moonrakeronline.com, www.nevadaradio.co.uk or https://hamradiostore.co.uk.

Daimon Tilley, G4USI
daimontilley@hotmail.com