

Xiegu G90

HF multi-mode transceiver



The G90, an HF multi-mode transceiver that employs up-to-date SDR technology.

A user review of the latest HF multi-mode transceiver with SDR architecture from Chinese company Chongqing Xiegu Technology. The G90 has a removable head unit and covers from 1.8MHz to 30MHz on transmit and 500kHz to 30MHz on receive.

The G90 is the replacement for the X108G and this HF multi-mode transceiver employs up-to-date SDR technology.

A little over a year ago, when I reviewed Xiegu's X5105 transceiver, I described it as "...a vast improvement over Xiegu's previous HF offering, the X108G." I also said; "If this level of advance and improvement is a sign of the things to come, it could be that the next Xiegu radio will be something really special. Time will tell." Well here we are, a little over a year later and I am reviewing Xiegu's latest HF radio, this time with SDR architecture (24-bit data, 48kHz sampling rate).

The package

As per previous Xiegu radios I have seen, the G90 arrived in a plain brown cardboard carton with a stick-on label to identify the contents. Upon opening the carton, the first thing to be revealed was the documentation. There was a 37-page photocopied instruction manual. The standard of printing and the standard of English weren't great, but it was understandable. I've since been told that a revised manual is now available to download from www.sinotel.co.uk. There was also a warranty/maintenance record card.

Beneath the documentation, the radio and accessories were well protected by polystyrene foam, although most items were not individually wrapped. Also included was a tiny QA certificate, a 1m-long power cable with fuse in the positive lead, a 90cm-long USB adapter cable, an Allen key, a 1m-long separation cable and a multifunction microphone with coiled lead that stretches to about 2m in length. A spare fuse, accessory plugs and a microphone hook are not supplied.

Layout

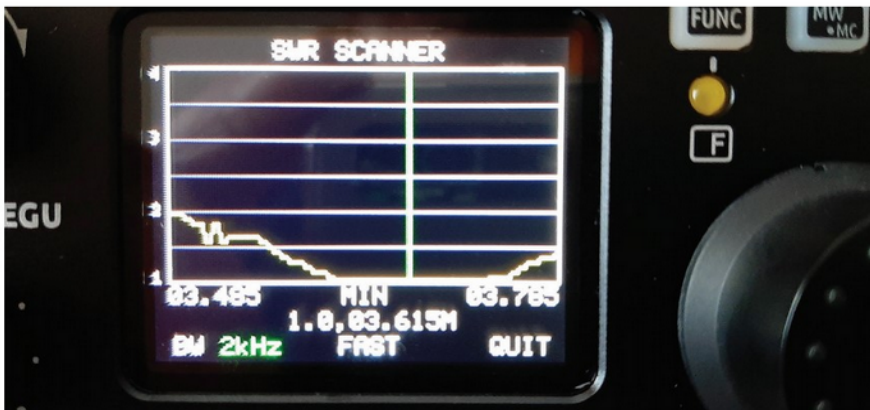
The G90 is housed in an all-aluminium case. The bottom and sides are formed from a single casting, with small cooling fins along all three sides. The fins run the full depth of the transceiver. The back panel, top and head unit are made from aluminium sheet. The transceiver is finished in a matte black paint, with white lettering throughout. The physical appearance is professional and it feels solid when handled. It might be quite small, but it's no featherweight.

The G90 has a head unit that can be detached from the main body by removing four hex headed bolts and then plugging it in using the supplied 9-pin D-type to D-type cable. A suitable Allen key is provided. The same tool can be used to detach all four handles (two at the back to protect the rear connectors and two at the front to protect the rotary controls).

There are sockets and connections on three sides of the head unit. The multifunction microphone – it's the same as the one provided with other Xiegu HF radios



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The G90 has a real-time band scope and waterfall display plus a function to scan the VSWR of an antenna across a range of frequencies.

doesn't operate full break-in. The inbuilt CW reader worked, but required extremely accurate tuning for it to operate. I found the trick was to get the yellow Δ LED (no information in the instruction manual about what it does) to flash in sympathy with the received signal, so it obviously indicates a signal lock condition. Lots of CW readers have great difficulty decoding hand sent Morse and the one in the G90 was no different.

Having checked the preamp/attenuator function (pressing the preamp button cycles round them), I'm not sure they are working 100% right. The waterfall display, bandscope and audio level show the marked difference I would expect when cycling round the function, but there was perhaps only a 1 S-point difference in the S-meter reading. I found the spectrum and waterfall display useful, but the bandwidth is fixed at 48kHz and cannot be varied.

Something that really impressed me about the G90 was its auto ATU. It successfully – and quickly – tuned a 160m quarter wave antenna on every HF band. It worked just as well at tuning an 80m dipole on every HF band. Other G90 users have also reported good results. One thing that really didn't

impress me though was the noise blanker – and similarly it has not impressed others. Try as I might to adjust it, the most I could get it to do was act as a kind of squelch. I do not live in an area where there is much pulse type noise, so maybe I was trying to get it to deal with a problem I don't have.

Pressing the tactile buttons on the G90 presented me with some problems. Firstly, most of them are tiny. Secondly, they all require a really firm press to make them click. Pressing the buttons of the top (band and mode) was easy enough, because they are bigger than the front panel buttons and well spaced, but pressing the front buttons made the radio slide away from me. The G90 does not have rubber feet, which exacerbates the problem. I found the best way to press the front panel buttons was with the tip of a fingernail, while holding the transceiver still with my other hand. Whilst trying all the buttons is also became apparent that those below the display screen are on an assembly which is either very thin or not well supported. Pressing any one of these buttons made the others move inwards, particularly the middle button of the five. This movement did not occur with other buttons on the front panel.

The brightness of the colour display is adjustable in five steps. At full brightness it can be viewed easily in a sunlit room. The screen is crammed with information. It can be blanked with a brief press of the power button and turned back on by pressing any button or rotating any knob. Something that would have been useful is a video output for a supplementary screen, but it is not supplied.

The G90 has a 40 watt PA device, so with its maximum output of 20 watts it is used well within spec. On receive and during SSB contacts the radio got only gently warm. On continuous full power transmit (4A was drawn at 13.8V) the underside of the radio got very warm after 10 minutes. The sides and top also warmed up, but not as much.

The G90 incorporates a SWR scanning function. Centred on the dial frequency, it can be configured to scan five different ranges, from 150kHz to 750kHz. When in use the display screen is reconfigured to show a graph of the scan (which is repeated continuously until cancelled), plus the SWR value on the frequency on which it was lowest. The User Manual acknowledges the fact that the measurement may have 'a certain error' but, as a basic guide to how good an antenna is, I thought it was very useful.

As supplied this transceiver does not cover FM, but a panadapter is referred to that is said to give the radio FM. At the time of this review it was still 'forthcoming'.

As regards the audio quality, I conducted a few contacts on SSB. The reports I received were that transmit quality was good. Monitoring myself in the shack it was clear that the transmit audio was very crisp. I used only the supplied microphone for the on-air tests. On SSB transmit I monitored adjacent frequencies, to listen for problems. I could detect no wideband synthesiser noise, but there was faint carrier bleed through. On receive I could turn the volume up high, leave the shack and still listen to a QSO, so I give the loudspeaker a good rating. Only at really high volume was there objectionable distortion.

Summing up

Priced at £399.99 (less in some places), the G90 is a budget radio that has much in its favour. It isn't perfect and it certainly has some quirks but, in my opinion, it represents good value for money. Certainly, it ought to be possible for the manufacturer to iron-out some of its shortcomings with software updates as they have done with the RIT.

I would like to thank Alan Clunnie of Sinotel (www.sinotel.co.uk) for loan of the review model and for his willingness to improve this radio wherever possible.