

# The Kenwood TS-590SG

Don Field G3XTT takes a look at this latest incarnation of the very successful TS-590S transceiver.



**T**he Kenwood TS-590S was introduced in late 2010 and PW carried an extensive review in our March 2011 issue. Reviewer Roger Cooke G3LDI was suitably complementary and rightly so. In the intervening years, the TS-590S has established itself as an excellent transceiver in terms of performance, usability, reliability and value for money. Its rating on the well-known eHam.net website is 4.7/5 and its performance figures, particularly in down-conversion mode (see below), as measured on the respected Sherwood Engineering website, put it ahead of a number of considerably more expensive radios. It's no wonder that it has been a success in the marketplace and has re-established

Kenwood as a serious manufacturer of HF amateur transceivers, the range now being complemented by the rather more expensive TS-990S, which we also reviewed here in PW. [www.sherweng.com/table.html](http://www.sherweng.com/table.html)

### Enter the TS-590SG

Kenwood are obviously sufficiently happy with the success of the TS-590S that, rather than replace it as they have done with previous models (the TS-570, for example), they have simply given it what might best be described as a mid-life facelift. Thus, we now have the TS-590SG. The question, of course, is whether much has changed and, if so, whether the changes are significant.

### More of the Same

The basic specification remains the same

and I won't repeat it in detail here except to say that this is a fully-featured HF to 6m transceiver, requiring an external 13.8V supply and producing 100W of output on SSB, CW, FSK and FM. There is also an AM capability, with a maximum 25W output. The TS-590SG retains the same circuit architecture as the TS-590S, using a triple-conversion arrangement with a 73.095MHz first intermediate frequency (IF) for much of its tuning range. However, when used on the 160, 80, 40, 20 and 15m amateur bands and with a bandwidth of 2.7kHz or less, the signal path is by way of a double-conversion scheme with a first IF of 11.374MHz. This may sound unnecessarily complex but signal filtering and processing at the lower IF is much easier to achieve and more effective than at the higher IF and results in significantly better receive performance as the measurements (again, I would refer you to the Sherwood Engineering website) show. It's a neat trick and one that seems to have worked out well in practice.

### And Some New Twists

The changes from 'S' to 'SG' are to some extent cosmetic but there have been some technical additions and improvements too. The cosmetic changes are minor, such as some to the knobs, lettering and trim to match the TS-990S. You'd be hard-pressed to spot the changes though. There is also an increase in the colour options for the backlight to the display, with ten variations on amber and green now available.

One of the more obvious new features is a Morse decoder. This shows in the lower right of the display and can be helpful if you are still at the level of Morse reception that you need an aid to your confidence. However, like all such decoders, it works best with machine-sent Morse and little noise or interference. It's no substitute for years of CW receiving experience!

There have been some changes to the automatic linearity control (ALC) to avoid overshoot, which on the TS-590S caused problems with some linear amplifiers by applying the full 100W momentarily on key down, even when the power level had been backed off. The automatic gain control circuitry has also been modified to avoid desensitizing of the receiver under certain conditions of close-in strong signals. I am in no position to judge the effectiveness of this change but reports from amateurs who have owned both models suggest that it has been well worthwhile.

The other changes are probably of less interest although one that I suspect could be handy is the ability to switch the low-level drive output connector to an alternative function, that being to provide an output to feed an external receiver.

### Early Impressions

It's surprising what strikes you when operating a new transceiver for the first

time. I decided to use the TS-590SG in the CW leg of the RSGB 80m Club Championship. The first thing I noticed was that there are separate key sockets according to whether you are using a straight key or a paddle key, quite unusual (most rigs have a single socket and you select the type of key from a menu) but potentially useful because it means that you can key from the PC (common practice for sending contest exchanges) but have a paddle connected at the same time for those moments when you want to send something over and above the basic contest exchange.

The basic operation of the transceiver is straightforward. I hadn't used a TS-590 before but although most buttons have a dual function, everything was clear. What did throw me, however, is that the common controls, in particular the AF



The TS-590SG looks small next to the FTDX5000.



GB2RN is solid copy on the built-in Morse decoder.

and RF gain controls, are to the right of the tuning knob whereas on both my FTDX5000 and my Elecraft K3, they are to the left. When I am operating CW, I use my right hand for the Morse key and for the PC keyboard and operate the radio with my left hand (I am right-handed). It wasn't a problem – if I was using the radio on a regular basis, I would simply ensure that I located it to the left of my PC. On the other hand, if you are a phone operator and hold the microphone in the left hand, the placing of the gain controls makes absolute sense. Again, because I am primarily a CW operator, I would have liked a CW speed control on the front panel

rather than having to select a menu item to change keying speed. I do recognise, though, that the manufacturers have some tough decisions to make with compact rigs in terms of what they make directly accessible on the front panel.

I find these short CW contests a great test of a radio as I mentioned when I reviewed the Yaesu FTDX1200. Power output in these events is limited to 100W but, nevertheless, there are lots of strong signals close together and it's a good test of the radio's filtering and signal handling. I recall one transceiver I used that had quite early DSP. Even when I narrowed the bandwidth to a few hundred Hertz, I



could hear signals off the sides at a level where it often made it difficult to copy the wanted signal. I've also had problems with traditional mechanical filters, though less so, with adjacent signals leaking past the filters and causing problems. With the TS-590SG, none of this occurred. I had the bandwidth set to a fairly narrow 300Hz for the duration of the contest and, for all I knew, the stations I was working could have been the only signals on the band because I heard nothing off the sides. Reception was clean and quiet and I ended the 90-minute session with 137 QSOs from the Orkneys down to Austria, including comfortable QSOs with many stations operating in the QRP (10W) section.

### Interfacing to a PC

One of the nice features of the TS-590SG and indeed its predecessor is the USB connection. I struggle to understand why a number of high-end radios still use an RS-232 interface in this day and age. There is quite a lot of PC software available to interface to the TS-590SG both from Kenwood themselves and from third-party suppliers. The result is that you can control most features of the radio from the PC, opening the door, for example, to remote operation. You can also run data modes without the need for external interfaces, which is a big plus in my book.

Roger G3LDI, in his TS-590S review, never managed to use the radio on data modes so I thought that the least I could do with the TS-590SG was put it to the test on RTTY. Over the years I have used a number of setups for RTTY, starting with a PK-232 TNC back in the 1980s. Nowadays it's a case of using the PC to do the heavy lifting but there always seem to be too many leads and there is generally the

need to isolate the radio from the PC by using an interface box of some sort, the purpose being primarily to avoid hum from earth loops.

I was delighted, therefore, at how easy it was to set the TS-590SG up for RTTY. The only hardware required is the USB cable. You then download a virtual COM port driver from the Kenwood website and install your favourite data modes software. In my case, I used the popular MMTTY software. It took me maybe 15 minutes to set all the menu options correctly, both in the MMTTY program and on the TS-590SG, with the help of the guide on **Ian Wade G3NRW's** website, below. The only hiccup was that Ian's guide is based on the TS-590S and some of the menu numbers are different with the TS-590SG because additional menu items are now available. A quick cross-reference to the TS-590SG soon set me on the right track. <http://tinyurl.com/pdaj9ox>

Once I had all the settings correct, I found that I was copying RTTY with no problems and was quickly able to make my first QSO, using the internal data modes VOX facility in the TS-590SG to take care of the transmit/receive switching. My first QSO was a quick exchange of reports with special event station R120RM in Russia on 20m. I've never found it quite so easy to get going on RTTY with any previous transceiver.

### Remote Use

The TS-590SG lends itself to remote use and will, I'm sure, be used in that way by many people. As an example, **Carlo IK0YGGJ** has posted a video on YouTube (URL below) showing him using an iPhone 6 to remotely operate his TS-590SG. Carlo, incidentally, also waxes lyrical about the digital audio equaliser in the TS-590SG

that can be used on incoming as well as transmitted signals. He finds, for example, that it can peak up CW signals in a very helpful way.

### VGS-1 Voice Guide and Storage Unit

The review radio was fitted with the optional VGS-1 Voice Guide and Storage Unit. Not only is this useful for users who are visually impaired, announcing frequencies and key functions, for example, but it has much wider use for storing incoming audio and recording standard messages such as CQ calls and contest exchanges.

### Conclusions

If you own a TS-590S already, you might be wondering whether an upgrade is worthwhile. Early reports on the eHam.net website are rating the TS-590SG 5.0/5 and the AGC is apparently a significant improvement over the earlier model. Whether the CW decoder is of value to you is very much something that you have to decide.

The TS-590SG currently retails for around £1350. This is excellent value considering the specification and remembering too that the TS-590S sold for over £1500 when first launched. Full specifications are available on the Kenwood website (below). My thanks to Kenwood Electronics UK for the loan of the review radio. For my own part, I continue to prefer having a second receiver available for contesting and DXing but in every other respect the TS-590SG meets my expectations of an HF transceiver and would suit me very well indeed for expedition and portable purposes. I was certainly reluctant to see it go. [www.kenwoodcommunications.co.uk/amateur-radio](http://www.kenwoodcommunications.co.uk/amateur-radio)