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Practical Wireless Rating

★★★★☆

Good value as a starter rig on 12 and 10m.

Anytone 5555 Plus 10m Transceiver

With the improvement in high band conditions, **Daimon Tilley G4USI** looks at an inexpensive rig that gives you access to the 12 and 10m bands.

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I have never operated a CB radio, but back in the early 80's when I was first licensed, I did buy a used Cobra AM CB from the Leicester Rally to convert for 10m FM. However, it was a project that never got started, let alone finished. Now that HF conditions are once again picking up with this new cycle, I have had a number of very successful forays on 10m in all modes, including a number of FM simplex and FM North American repeater contacts.

That got me thinking about what might be available today, to get on 10m on a budget, and I scrolled through this magazine's advertisement pages to see what might be available. I came across the Anytone 5555 Plus from Moonraker, priced at £169.95. This radio looks very much like a CB programmed for the 10m band, and Moonraker were kind enough to send me this radio for review.

Specifications

On the website, the specifications are shown as having a frequency range of 28 – 29.7MHz, with a stated maximum RF power of 12W on AM/CW, 40W FM and 40W SSB. I was particularly interested in the advertised CW function, as that is my main HF interest. Out of the box the radio comes with a microphone, power lead and mobile mounting bracket. First impressions were that the radio was larger than expected, measuring some 28 x 25 x 6cm, and weighing in at a little under three kilogrammes. This is surprising given the amount of empty unused space inside the rig (see photos.) The front panel has two displays, a numeric frequency display that also displays the status of selected menu items, and a channel number display, perhaps harking back to its CB roots. Functions such as Noise Blanker, Noise Limiter, Dual Watch and Scanning were readily available from the front panel, along with the ubiquitous CB 'Echo' function (why would you want to?). In addition are volume, squelch, RF gain and RF power controls.

Tuning is achieved by selecting one of six bands from a rotary knob, labelled A to F, and turning the channel selector. An irritating feature is a beep every time you turn a knob, but it is possible to turn off the beeping sounds in the menu and it makes for a much more pleasurable operating experience. The tuning control/channel selector has a detent, so is a positive switching action every turn and results in a loss of audio each time. This makes tuning across a band a bit slow and noisy as a result. Channels can also be changed from the supplied microphone.

Accepting this channelised nature of the rig, I noticed that every turn of the channel/tuning knob meant a 5kHz frequency change. At first this struck me as a severe limitation, but then I realised that in reality on HF SSB, the majority of the time operators tend to operate in 5kHz steps. When that is not the case, the Clarifier knob can be used. This knob, by default, alters both TX and RX frequencies at the 1kHz level, although repeatedly pressing it also allows you to change the clarifier increments to tune at 10 and 100Hz levels, as well as at the 5 and 1kHz steps. Using that facility I went on to readily have a number of SSB QSOs and managed the tuning quite easily. It should be noted that in software (see later) it is possible to alter how the Clarifier works and it can be set to just alter the TX frequency (like the XIT function on some rigs) but not just the RX (RIT) frequency.

In Use

Connecting it up to my SpiderBeam Yagi gave me four elements on 10m and a number of QSOs on FM Simplex and through North American repeaters, by setting the appropriate CTCSS tone in the menu. The received audio was fine and there were no negative comments about my transmission.

Then my thoughts turned to CW. The mode button has a setting for this, but using CW with 5kHz tuning steps, even with the Clarifier, was going to be problematic. I plugged in a key and switched to CW just to see. A few things struck me. First there is no internal keyer, so it is a

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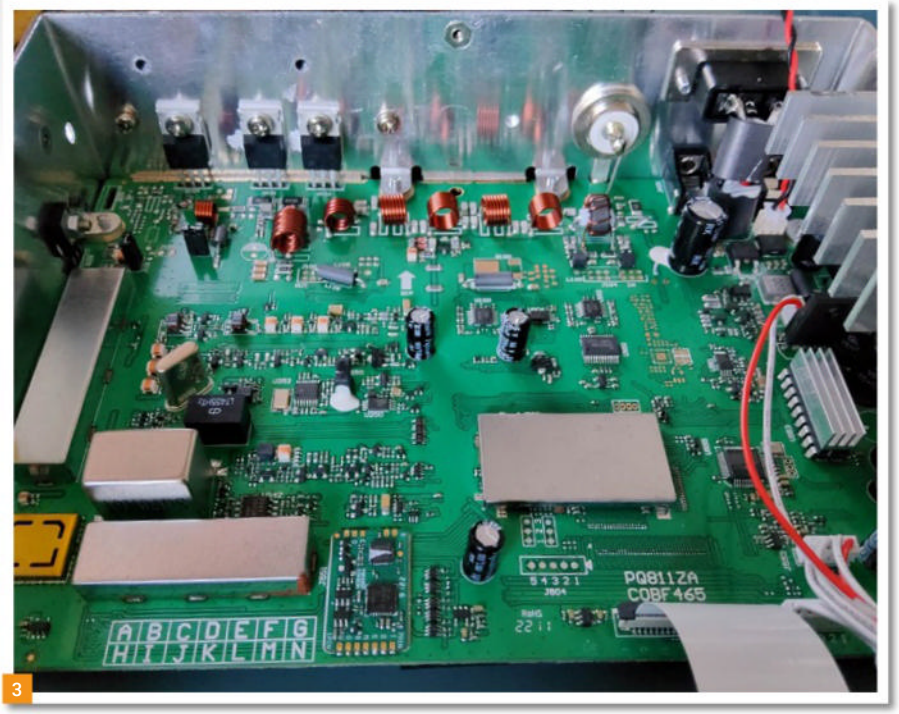
Photo 1: Front view of the radio.
Photo 2: Rear view. Photo 3: A look inside.
Photo 4: The author's spreadsheet for programming the memories.



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straight key only, or external keyer for a paddle. Next there is no CW specific filtering. The filter width is shown in the manual as 3kHz on AM/FM and 2.1kHz on SSB. This makes it quite a challenge to tune to the correct frequency for a QSO and separate out adjacent stations in the passband. Keying into a dummy load I then noticed another issue – there is no transmit or receive offset for CW. On a modern rig designed for CW, the transmit and receive frequencies are set a few hundred Hertz apart (around 700 – 800Hz and usually the same as your sidetone pitch). As an operator you don't notice this, but it is this difference that allows you transmit on the same frequency as the other station yet still hear them. If you were to listen on their exact indicated frequency, you would actually hear nothing! Finally, there is no QSK facility provided.

Progamming

It was at about this point that I noticed that a computer programming cable is available for the rig at £14.99 and Moonraker kindly provided one on request. I downloaded the software from their website and opened it up. The format is similar to many other radios and takes the spreadsheet format. Anytone advise that the very first thing you do is to read the existing programmed data from the radio and save it, in case you need to restore it later.

This is easily achieved. Simply plug in the radio and switch it on, use Device Manager (Windows) to determine the COM port, and then in the software, select 'Setup' and highlight the correct Communication Port number. Then select 'Program' and 'Read from Radio'. Once done, save this file as the original configuration.

Having done that I immediately noticed something interesting – in the channel information window there was an option to select from one of two frequency bands: 29 – 29.7MHz, as supplied, or 24.715 – 30.105MHz. Could I make this radio work on 12m too?

I began by choosing this wider frequency band and placing just a couple of 12m frequencies into the sheet for Band A, then adding some 10m (28MHz) frequencies into Band B. Using 'Program – Write to Radio' was not successful – the rig had not accepted the data. A little Googling around led to a solution. As well as selecting the wider frequency range in software, you also have to do this on the rig itself by:

1. Hold in the FN and EMG buttons, while turning the radio on
2. Use the Channel switch to change from Band 1 to Band 2
3. Then press and hold the FN button until the display changes
4. Switch the rig off and back on
5. Upload your file from software

I tried again and success!

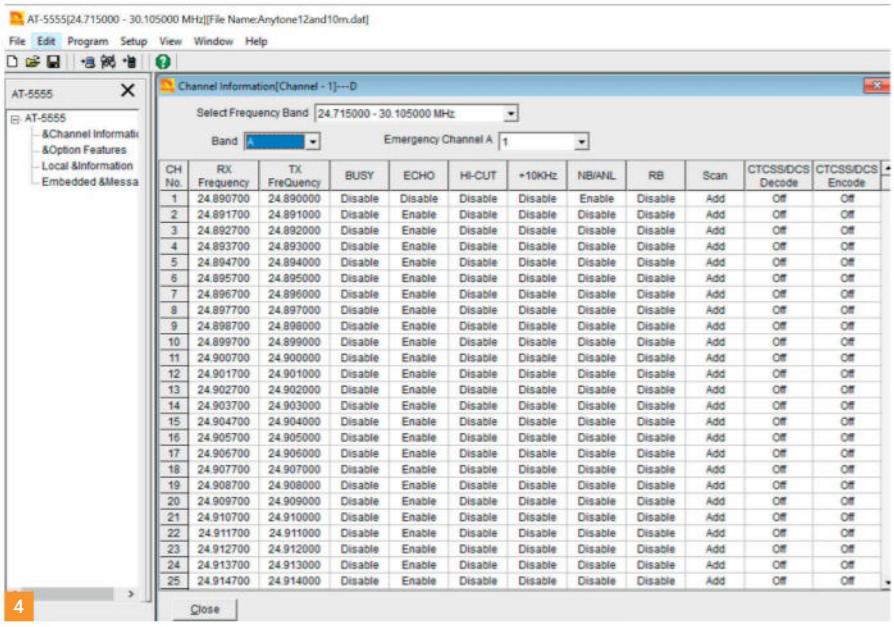
I then decided to spend some time programming the radio more fully and trying to resolve the CW offset issue. I decided to program the CW segments of 12m and 10m in 1kHz steps

with the RX frequency 700Hz higher than the TX frequency so that the rig emulated what modern CW transceivers do by default. It took me a good couple of hours as everything had to be entered manually, but I ended up with the following programmed bands:
Band A: 24.890 – 24.990 in 1kHz steps with RX frequency offset +700Hz for CW
Band B: 24.931 – 24.990 in 5kHz steps for SSB
Band C: 28.010 – 28.070 in 1kHz steps with RX frequency offset +700Hz for CW
Band D: 28.300 – 28.595 in 5kHz steps for SSB
Band E: 28.600 – 28.895 in 5kHz steps for SSB
Band F: 29.100 – 29.200 in 10kHz steps for FM Simplex
29.600 for FM Calling Channel
29.620 – 29.700 RX with corresponding
29.520 – 29.590 TX offset and CTCSS enabled for FM repeaters

As I said, this was a pretty painful process. I did find that if you enter the RX frequency and then hit TAB, it auto populates the TX frequency the same, but this is no use for setting CW offset or FM repeater offset. It was also a pain to enter 60 different frequencies per band. I had hoped that the spreadsheet format would allow me to enter a couple of values and then extrapolate them like a spreadsheet, but it would not. I then tried doing that in a normal spreadsheet, which is easy, and then copying and pasting into the Anytone software, but the software does not allow cut, copy or paste at all. Frustrated, I persisted by entering every frequency manually until everything was programmed, saved the data and then uploaded it to the rig., which was thankfully successful.

This procedure did indeed give me exactly what I had hoped for. Fairly comprehensive coverage of the CW, SSB and FM portions of both 12 and 10m. I did make a bit of a mistake here. By reserving Band A for 12m CW I used just 26 Channels, and on Band B for 12m SSB, only 12 channels. This meant that I was not able to get full coverage of the 10m band and had effectively 'wasted' 82 channels! I could have filled them in or added the CB channels but everything would have been out of a logical sequence. With hindsight I should have confined both CW and SSB 12m coverage to Band A, giving me 60 channels on Band B for better coverage of the 10m SSB allocation. I did go into the software and try to alter this, by moving band channel data between Band allocations, but the complete lack of a copy and paste function prevented this. I would have to start from scratch and enter all the data again to keep logical low to high coverage, so I left it alone. If I were planning on keeping the rig, I would go through that pain again to get the wider coverage.

Testing into a dummy load and a basic power meter (so not lab measurements by any means)



I recorded the following output power:
12m: SSB = 15W, CW = 10W.
10m: SSB = 20W, CW = 8W and FM = 30W.

These are somewhat below manufacturers claims, but I would not be concerned about it, being mostly a QRP operator in any event.

One consequence of programming the CW frequencies as I did, with a higher RX frequency than TX, is that the rig actually displays the RX frequency rather than TX. Therefore, on CW, my frequency display shows, for example, 24.89570 on RX and then changes to show 24.89500 on TX, but this is not a problem in practice.

So far so good, but what about on the air with these new frequencies. Well, I fairly immediately heard **Dan KB0EO,** in Minnesota, on 12m SSB calling CQ. The 15W and the two elements on this band from my Spiderbeam yielded a very enjoyable QSO across the pond over 15 minutes or so, until the band began to close.

I then decided to try CW and had a number of unsuccessful attempts at answering CQ calls before making contact successfully with **Willy LY2PX** with whom I have spoken many times. The filters are wide open on CW and if the band was crowded, it would make for tough operating, but it is possible.

Tuning around both bands, I of course stumbled across FT8. That got me wondering if digital modes could be worked with this radio. I did not try it but suspect it would be possible. There is an audio out jack and you could fashion an audio input using the four-pin mic socket, but there is no CAT control facility, so you would need to set the frequency manually and key the PTT with some form of relay or other manual switching. I suspect the filtering is wide enough to be successful, but not sure I would go to the trouble of doing it myself. I also noticed occasional broadcast station breakthrough on 10m from time to time, which surprised me a little.

The rig is sensitive enough for everyday use and there are also some useful features in the menus, including the ability to set SWR protection levels, voltage input minimum and maximum protection, microphone gain, noise reduction levels, CW sidetone pitch and volume, scanning mode (based on squelch or dwell time), and VOX settings.

In Summary

So, to sum up. This rig is good value for the money. With a little programming work and the cable, it is possible to get almost full coverage of the 12m and 10m bands. You could, if you wish, also program the CB channels. Performance on SSB and FM is more than adequate and good results are possible. I didn't try AM, but this mode is available. It is possible to use CW, but it is not a great experience and personally I would not purchase the rig for this mode. While a little on the large side, the price point of this rig would make it a good choice for, perhaps, permanent installation in a vehicle, where the relatively compact size of antennas for this band are an advantage, or a good station monitor where the scanning function could be useful for scanning the 10m FM repeaters perhaps. Overall, if you are on a budget, £170 plus the cost of a programming cable gives a reasonable quality dedicated 12 and 10m transceiver, with the ability to include 11m too. If you have one of these rigs, or decide to purchase one, I have kept the data file of the band and frequency allocations I made and would be happy to let you have a copy to save you the effort. You would still need the programming cable though.

My thanks to Moonraker for the loan of this rig. **PW**