

Moonraker HT-500D

dual band 70cm and 2m DMR / analogue handheld

Earlier in the year I was able review my first DMR handheld radio, which took me on a journey through the initial steps of actually getting on the air with a mode that I hadn't tried before.

With the required hurdles being jumped, the operation of DMR radios was still a little clouded in mists of code-plug folklore, with even some experienced DMR users responding to queries with a sharp intake of breath as soon as you mention the subject! Undeterred, I was fortunate to be able to review this Moonraker HT-500D and with a second attempt at the world of DMR certain things became a little clearer.

Easier this time

The significant advantage of the HT-500D is that it comes supplied with a code plug already installed and should you require to re-program the radio, the software is readily available as a download from the Moonraker website. More of that to follow.

The HT-500D sports 3000 channels, 10000 contact slots, built-in CTCSS/DCS (analogue mode only), single call, group call and all call, remote kill/stun/activate, transmit interrupt, VOX, TOT, Monitor, Scan, Talk around and lone worker function. There is also a record function where reception audio can be recorded and played back at a later date.

As supplied, the radio came with all the necessary accessories to get on the air including charger, mains adapter, belt clip and the all-important USB programming lead. Visually, the HT-500D looks and feels like a product similar to the Retivis/Tytera commercial mobile radio manufacturing style. Further research reveals that the radio is in fact a Retivis RD82 that Moonraker have developed to their own specific requirements and performance.

Once again the handbook is quite confusing in the beginning as some of the sometimes amusing terminologies used might not chime immediately. But, as long as you read it thoroughly, operation and connections etc all



The HT 500D dual band DMR / analogue handheld and its user manual.

become clear. An important section is called 'Safety and Overview' that details all the functions of the keys, particularly useful when some have a short and long press function.

Assembling the radio was quite straightforward. First with the battery and then the antenna and belt clip if you require it.

Having seen a few of these radios I was impressed by the battery installation and the neat clip that allows the battery to be changed with ease without losing some of your fingernails in the process. With battery connected I allowed the HT-500D to fully discharge to flatten the battery before giving it a full charge. This took some time. In fact it was over 24 hours on receive before it went totally flat – this with a half charged battery. Full battery recharge takes about 5 hours from flat to full.

Also supplied by Moonraker was an A4 multi page document detailing the codeplug updates up to 25/7/17. This will come in handy if there is a requirement to change or manually update the contact lists in the code plug. Moonraker maintain the code plug and updates are available on request. It could be that required contacts are not

available in the code plug therefore it's handy that this information is available.

Setting Up & On the Air

At switch on, the first thing I did was turn off the keypad tones and the channel announcement



The well fitting battery pack can be changed with ease.



Keep the cover over this connector unless you are programming the radio.



Power output is controlled by the orange coloured button.

facility as I was in close proximity to others in the family etc. They can be seriously annoying to those around you as you find your way through the main menus. This can be done directly in the Radio Settings menu or also in the software configuration using a PC.

Although the HT-500D had a code plug installed and was ready to go, some good judges in the DMR field advised that it would be better to download and install the code plug for my local DMR access point. In this case it was to be GB7JL located in Lowton, Wigan. If you are happy to stay with the installed code plug, which is quite extensive, you can supply your callsign and DMR ID and this will be programmed into the radio before shipment from Moonraker.

Here is a brief *résumé* of how to change the code plug in the HT-500D and most other cloned radios of this type. As mentioned, the USB drivers and software are conveniently hosted on the Moonraker website [1]. Once downloaded and initialised, the driver software should unpack into a folder on the C drive of your PC. I tried this on both Windows XP and Windows 7 and all ran fine. Code plugs that are written for the popular MD380 will also work in the HT500D fine, so if you are upgrading to this new radio then the code plug installation should be a breeze.

Removal of the side cover on the HT-500D and connection of the programming lead was easy (a small coin does the job if you don't have a screwdriver handy) and it is important to make sure that the USB programming lead uses a dedicated port on the PC/laptop, not through a hub, as this can corrupt the programming. As this cover protects the external connections during normal use, I would recommend to always have it in place when not programming the radio.

Modifying and changing code plugs seems a bit of a black art at first however there are numerous websites and just as many YouTube videos that give all the information you need to experiment.

There are numerous code plugs to download however before experimenting with others it is essential that you save the original one that is in the radio. Should there be any disasters and you

want to return to the original setup, just write the original backup back into the radio.

The whip antenna screws on to the female SMA connector, which also lends itself to trying a dual band 70cm & 2m mobile antenna. On a recent trip this worked extremely well – a pity that I didn't have the external speaker/microphone combination at the time.

The HT-500D specifications also claim that there is certification to IP67 standards with good waterproofing and dust resistance. As all these radios are initially produced for the commercial market they have to withstand significant abuse and the case and buttons certainly felt as if they were of good quality. Although the 1m immersion test wasn't attempted, it is clear the radio will certainly survive the rigours of mobile and portable operation.

On the air audio reports were made using analogue and digital modes and were more than complimentary. Receive audio was also fine with little speaker distortion – however the volume control seemed somewhat non-linear, with volume position 1/2/3 being rather quiet and then full blast from then on! After a little practice the optimal position was found and all was well but the situation would certainly be improved with the use of the optional speaker mic.

Buttons and controls

All the radio's functions are accessed via the buttons on the top and left hand side of the radio. All these seemed positive in operation. The keypad on the front of HT-500D also has good quality keys, which again were positive.

An unusual feature however is the 'trackball' that works as a scroll control, which comes in very handy if you get fed up of pushing buttons. It will alter most of the on screen menus. It is very sensitive however and might not be to everyone's taste, in which case it's back to the buttons!

Power output is controlled by the top orange coloured button. The high power setting on 2m and 70cm measured within spec on a Bird 43 wattmeter and suitable dummy load.

The Menu Operation Settings in the manual

details how to manipulate all the settings – I would advise a good read through before you start keying away as it will save time in the long run.

Accessories

Optional accessories are available from Moonraker that would make for easier use while out and about or mobile. These include a car charger/battery eliminator and a connected earpiece or speaker mic. The latter would be an essential, especially if used in a mobile environment. Moonraker also maintain the code plug and updates are available on request.

Final summary

All in all a very pleasant experience using this radio and with all the functions available is considerable upgrade from previous DMR radios reviewed. Once the basics of code plugs are mastered then there is a whole world of programming and modification to get even more from your radio. The pre-installed code plug idea is also a good one to give the flexibility of not having to make any significant changes to the radio if a PC is not to hand.

Your local DMR access point website should have more details and information about getting the best from DMR. In my case, the GB7JL website [2] is an excellent source of code plug information and links to the Brandmeister website.

Thanks once again to Moonraker for the loan of the unit, which retails at £199.95. See www.moonraker.eu for full information.

Websearch

[1] www.moonraker.eu/

[2] <http://gb7jl.webs.com>

Richard Staples, G4HGI
g4hgi@live.com