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GOCOM GD900 - A Flawed Radio

> The GOCOM GD900 is an ok radio with some serious flaws.

Introduction

After finding the cheap COTRE CO01D DMR radios on Amazon, I have been keeping an eye out for any of the other products using the AUCTUS A6. The GOCOM GD900 uses this processor and it appeared on Amazon about a month ago. It ticks off a lot

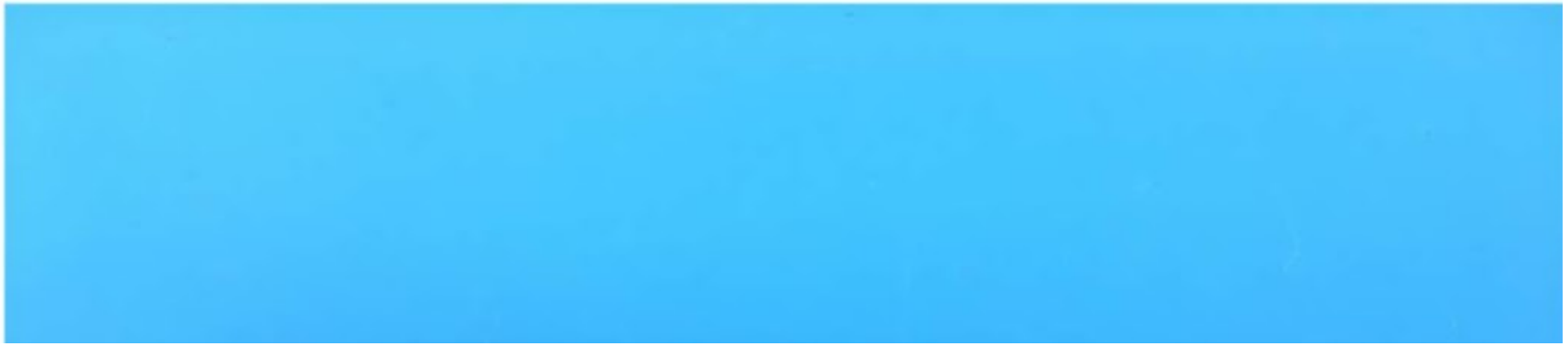
of the boxes that the COTRE radios do not. It has a screen, it has a keypad and it has knobs! It sort of looks like an Anytone or a Retevis DMR radio. I came in with high hopes for this radio.

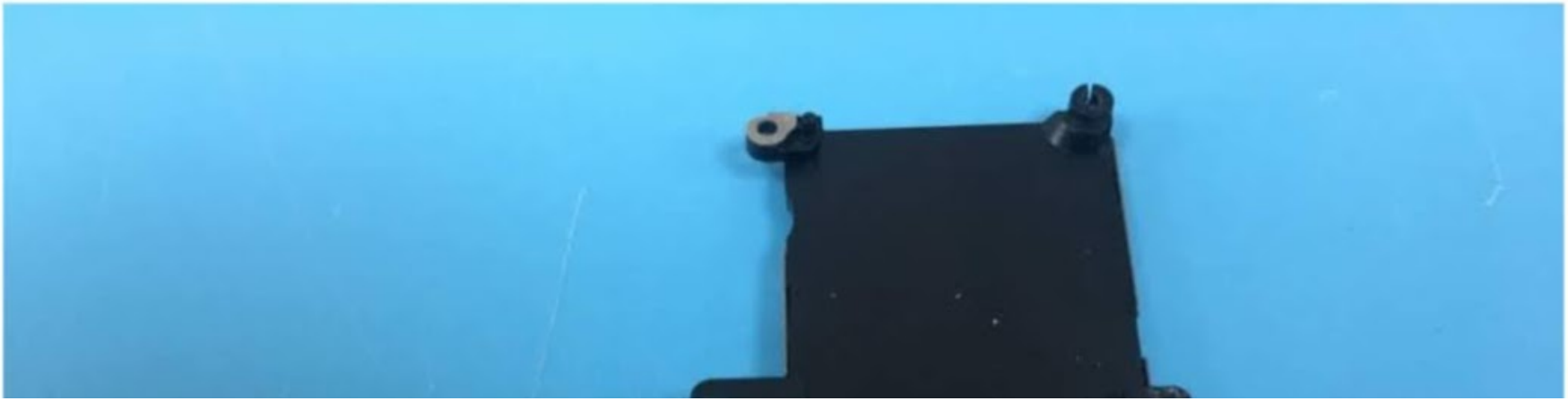
Prepurchase investigation

Some searching of FCC records leads to the filing. GOCOM which sometimes appears as Global Camry or 環球佳美科技有限公司. This filing indicates 3 radio modes, 11K0F3E, 7K60F1D and 7K60F1E.

Emission	Description
11K0F3E	Narrow band FM voice
7K60F1D	Narrow band digital data
7K60F1E	Narrow band digital voice

This is the same as the COTRE radio and the same chipset so lets see what it can do.





Similarly to the COTRE, the GD900 has very few components but has a few extra in comparison. The SoC and RF sections look similar with the addition of some extra traces for the keypad, knobs and the screen. The FCC photos show a bluetooth module and a GPS module as well.

I figured if that $20 radio can do real DMR, this radio should be able to as well. And with the addition of the screen, it might be a competitor in the ham radio market.

Purchase

I purchased the radio from Amazon for $99 which I figured was pretty reasonable, but the current price is $89 with an extra 20% off coupon that drops it to $72. But as before discounts and prices are always subject to change. At the time I purchased the radio, it had an estimated delivery of 45 days. I anticipated a wait as the radio was shipped from China, but I was pleasantly surprised that the radio arrived in a little over two weeks.

First impressions

Same as the COTRE, the box included the bare minimum, radio, antenna, battery, charger, belt clip and instructions. The instructions while better written that the COTRE also point to programming by computer, but no programming cable is included.

In a welcome departure, this radio uses a standard SMA male connector for the antenna port so the antennas which you might have for other radios can be readily used.

Now out of the box, the radio is programmed to channels which I am not licensed for. You need to setup the radio before you can start using it.

Programming

The programming works the same as with the COTRE radios. The CPS software is available on GOCOM's website. And the programming cables I have detailed previously. The same issues as the COTRE radio apply to this radio. Buy an FTDI or CH341 cable. The PL2303 cables won't work.

Here is where I started to have little issues with this radio. With the COTRE radio, you are limited to 16 channels. 16 channels are no big deal to type in manually. At the worst you will have 16 different channels and 16 different contacts and really it doesn't take too much time . With this radio you have up to 1024 channels, 1024 contacts, 32 zones, 32 channels per zone. I think you get the picture. Some way of importing a CSV would be greatly appreciated.

In this programming area, I will point out one more thing that is a negative for this radio vs an Anytone. The A6 has a limited amount of flash and does not have an external flash chip. This means that you will not be able to transfer the entire RadioID database of all registered hams into your radio as you could with the Anytone. At best, you can manage 1024, but that 1024 is the combination of talk groups and contacts. Again, not necessarily a deal breaker, but something to keep in mind.

Testing it out

The physical side of the radio is quite nice. It is a little longer and wider than the Anytone, but thinner front to back. The case has a nice nonslip surface and all of the knobs have a nice feel to them with just enough resistance.

My one complaint is that the PTT key doesn't take much force to trigger. I tried it on a scale at it seems to be about 250 gf (1/2 lb or so) compared with my Anytone which required about 650 gf (1.5 lb). I know it doesn't sound like much, but in using this radio, I found myself accidentally transmitng a few times when picking up the radio.

FM

The radio is capable of regular wideband FM (25kHz) in addition to the listed narrowband FM in the FCC filing. Both simplex and repeater operation with CTCSS was possible. And I was able to hit the local repeaters. And had no issues with this part of the radio.

DMR

DMR surprisingly didn't work as well as the COTRE! I was absolutely shocked by this, but after some troubleshooting it appears that the frequency of the radio is off by about 500Hz. The local repeater works fine, but my little MMDVM hotspot absolutely chokes on this frequency shift. The BER out of the box was about 5-7%! Now how to fix this? This transceiver is miscalibrated out of the box. I have no way to adjust the calibration and GOCOM essentially told another purchaser that it is within specs. So here is what works, just subtract the offset from the frequencies programmed into the radio. Instead of 438.8, you instead set the frequency to 438.799500. This *works* but this workaround should not be necessary. When you are getting beat by the COTRE which uses the same chip… GOCOM should give a way to adjust this offset.

With this change simplex, hotspot and repeaters all work. Just like the COTRE, this radio has a normal AMBE vocoder and I had no problems interoperating with any other DMR radio at my disposal.

SMS

Now there is one more little feature to this radio. It can send and receive SMS messages over DMR. Now, I have never used this feature before on the Anytone, so I thought that if I were going to write a little review, I should learn how to do it. I used the SMS gateway on both the Anytone and the GD900 and found that while messages are sent just fine(T9 text input aside since that is the norm on both radios), receiving messages is a different story.

What the heck? There is something up with the decoding of the received text on the GD900. I wasn't able to come to a

satisfactory explanation of what exactly it is doing but I would guess it is taking UTF8 and decoding it as something else.

Sending Chinese text to the radio doesn't work either.

Pros

This little radio actually has a few things going for it.

- Cheap $72
- Has a screen and knobs
- SMA antenna connector
- Feels nice and sturdy
- Comes with CPS and is reasonably straightforward to program
- Actually does DMR

Cons

There are some huge flaws

Fatal flaws:

- High BER out of the box due to ~500Hz frequency miscalibration

Medium flaws:

- SMS has problems, but then again I'm not sure how many people use this

Minor flaws:

- Touchy PTT key
- Lack of programming cable
- Only supports 70cm band
- Only 1024 contacts

Final thoughts

I wanted to like this radio. It seems like it should compete against the other big name radios well, but it falls a little flat. Comparing the GD900 to other radios on the market, I would say the closest comparison would be the Retevis RT3S which while $110 ticks a lot of the same boxes plus includes GPS and is dual band.

Will I keep it? I suppose, but I am hoping to see some replacement firmware which can fix some of these flaws.

Will it replace my Anytone? No. Without some additional flash to allow for more contacts, I don't see this being a real competitor for hams.