FCDP+ Review

SDRZone


FCDP+
FUNcube Pro
Dongle
Mini Review

FunCube Dongle Pro +

Review

October 15th 2013

Reviewed by NI0Z

FunCube Dongle Pro

http://www.funcubedongle.com/

Downloads & Manuals

http://www.funcubedongle.com/?page_id=1225

Retail Cost $200 US Approximate

Review Type = High-level – Mini Review

SDR Type = Dongle SDR Receiver

Vendor Review Validation = NO

Review Scope

The FunCube Dongle Pro Plus is a very interesting compact SDR. Due to limitations on review time with the unit the review will cover the basic capabilities of the SDR, IE. I will only be reviewing it as an SDR Receiver. The coverage will be limited to HF reception.

Reviewer

NI0Z, Mark Abraham - Licensed as Extra 2011. You can read more about the reviewer's background using the link at the bottom of the review.

Ordering, Shipping & Receiving

The FunCube Dongle Pro + (hereby referred to in this review as FCDP+) was directly ordered from the vendor.

It was shipped via Fedex and arrived in just a few days.

I did not receive a tracking number or confirmation the order shipped. I had actually wrote the vendor to ask for a tracking number and found it had arrived already that same day I made the inquiry.

This was all fast and easy and other than the tracking number there were no concerns on my part, shipping and receiving was first good!

There was ample packing materials to protect the radio.

Everything was sealed in plastic protecting it from any moisture.

Notable Specs

I believe the following specs are particularly noteworthy and am therefore calling them out for your attention.

1. ✓ 16 bits of ADC resolution
2. ✓ 150kHz to 240MHz and 420MHz to 1.9GHz
3. ✓ Accuracy at 1.5ppm
4. ✓ Sample rate 192kHz
5. ✓ 11 discrete hardware filters to the front end

Radio Build

The build is pretty much as expected, a plastic USB Dongle like finish. I would approximate 3 inches long and about an inch wide. The connectors are solid and the overall finish is clean and commercial looking. There is a USB connector on one end and a SMA Antenna Connection on the other.

A CE Sticker appears on the bottom side of the dongle. The serial number is provided on the box the device comes in.

Case and Labeling – BNC adaptor not included

Underside Labeling

Computer Requirements

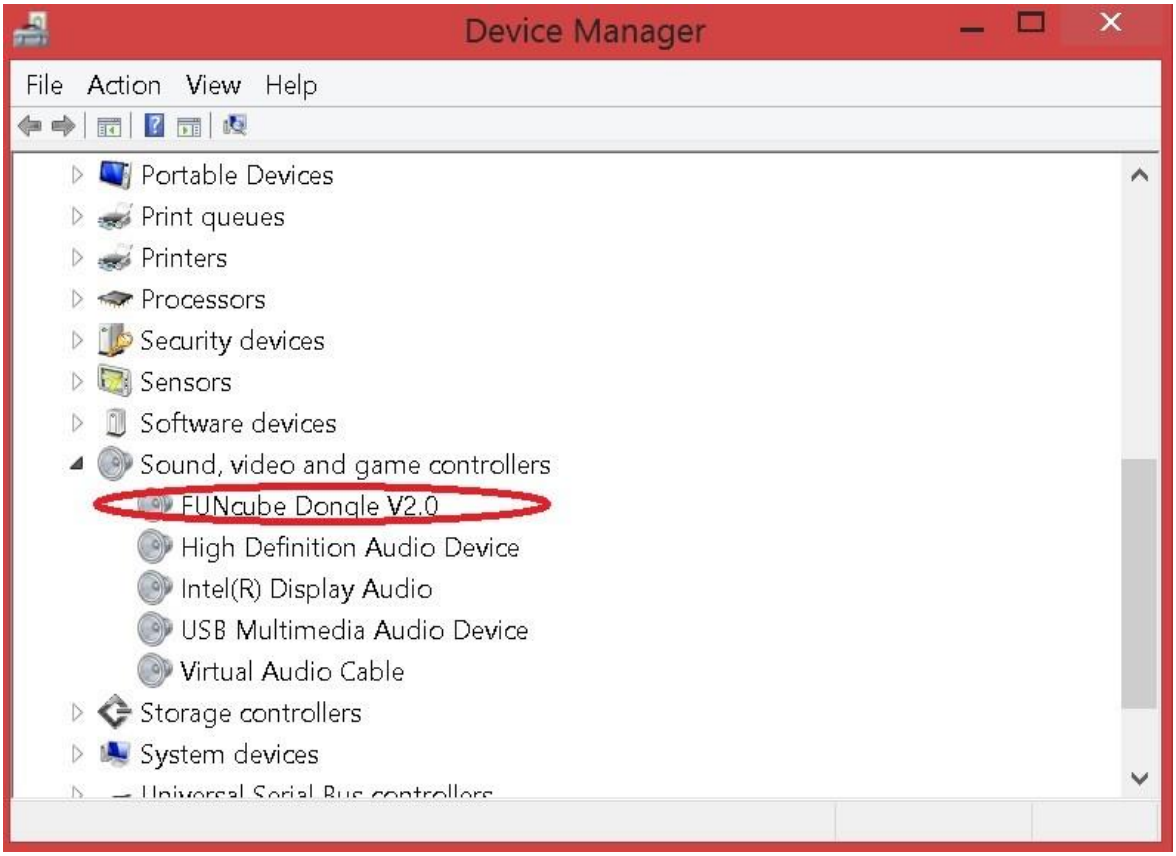
No particular requirements appear on the website. It would appear to work on my MS Surface Pro and consumed about 27 Percent of the CPU using SDR Radio V2. This review is being run on Windows 8.

Setup

Setup is not difficult, however it can be a little quirky because you have to decide which software package you're going to run it with. With SDR Radio 2 is very simple and straight forward. Add a radio definition in SDR Radio 2, select 192K sampling and the FCDP+.as the soundcard and push play.

I would say this is the easiest and perhaps best way to leverage the FNCDP+. More on that in a bit!

When you plug in the FCDP+ it will instantly install by itself. No user interaction should be required. At least this is how it worked on Windows 8.



Device Driver Installed as seen in Device Manager

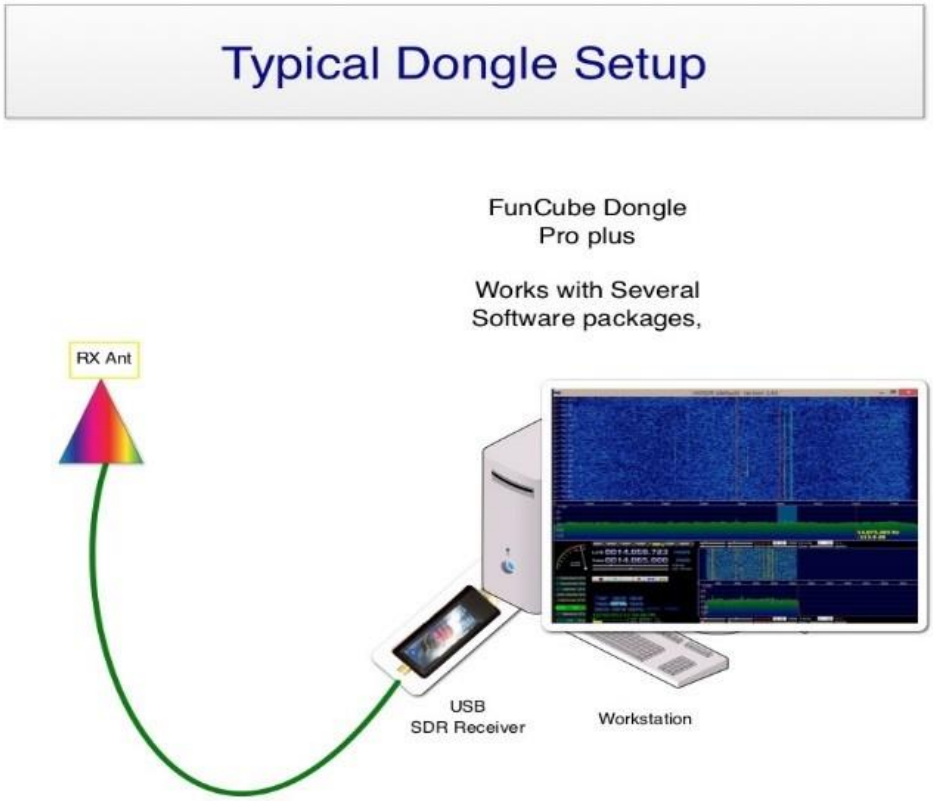
There is a program available for download on the website that allows you to set the center frequency of the FCDP+.

Overall setup is straight forward and simple per the instructions.

Possible Use Cases

The FunCube Dongle Pro Plus can have many possible use cases. I'll cover three common ones here.

The first is simply as a SDR Receiver. Simply plug it into a computer USB Port and an antenna and off you go! I like using the Dongle with SDR-Radio most, although the picture below depicts usage with HPSDR.



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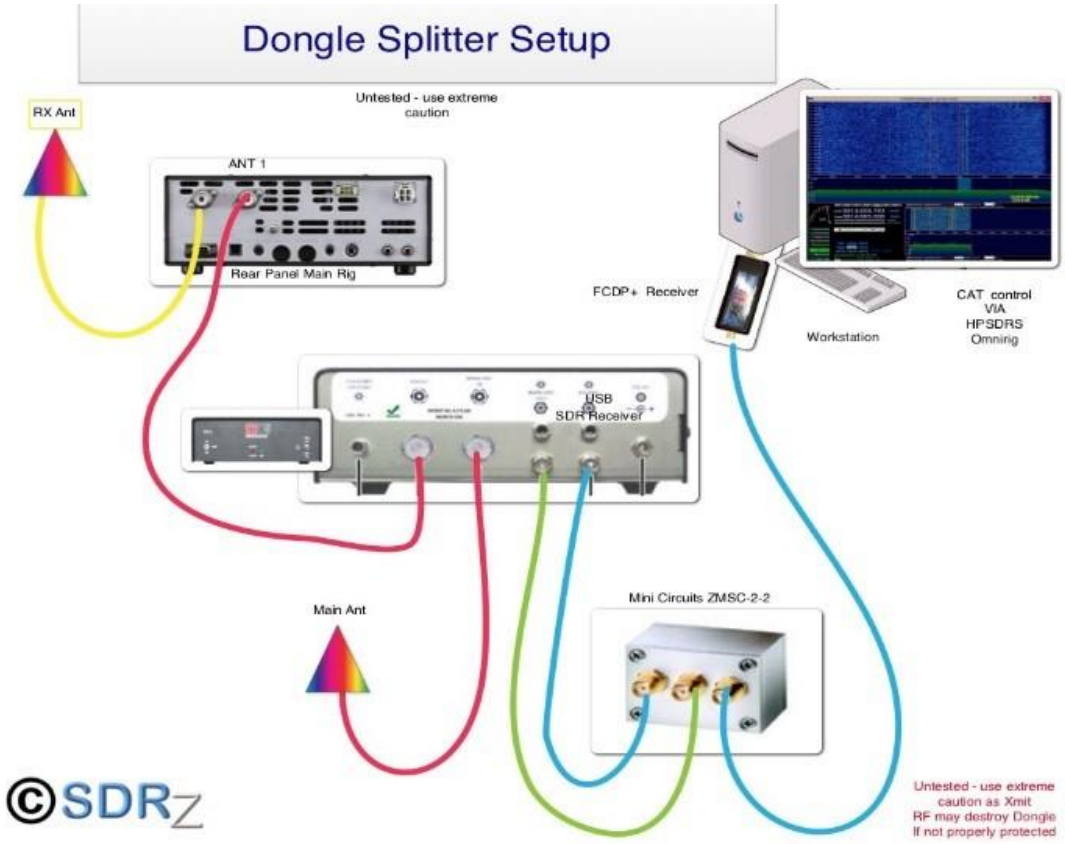
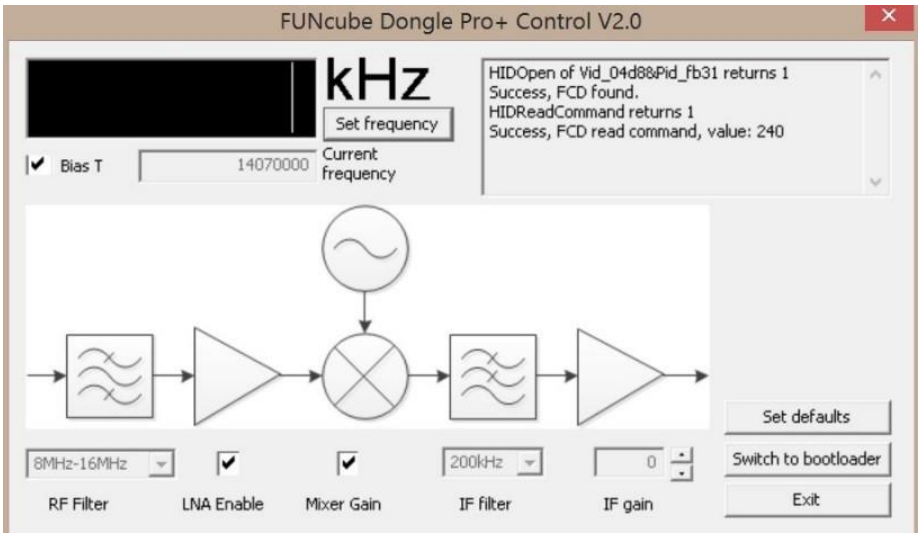
A second possible use is as a very low cost panapator. I did not test this, however, I see no reason at present for it not to work. In this scenario you would use HPSDR and Omnirig to sync to a main transceiver. Given the nature of the dongle, in most cases I would just use the transceivers receiver and the dongle as a display.



Yet one more use case is as a satellite receiver as per the Dongles original design and intent. You can find more information on the website on how to facilitate this.

Operation

When first working with the Dongle you'll be directed to download the control panel or frequency control depicted below.



Since you can in theory use the Dongle with any Soundcard SDR Software this control panel can become necessary to set the center frequency.

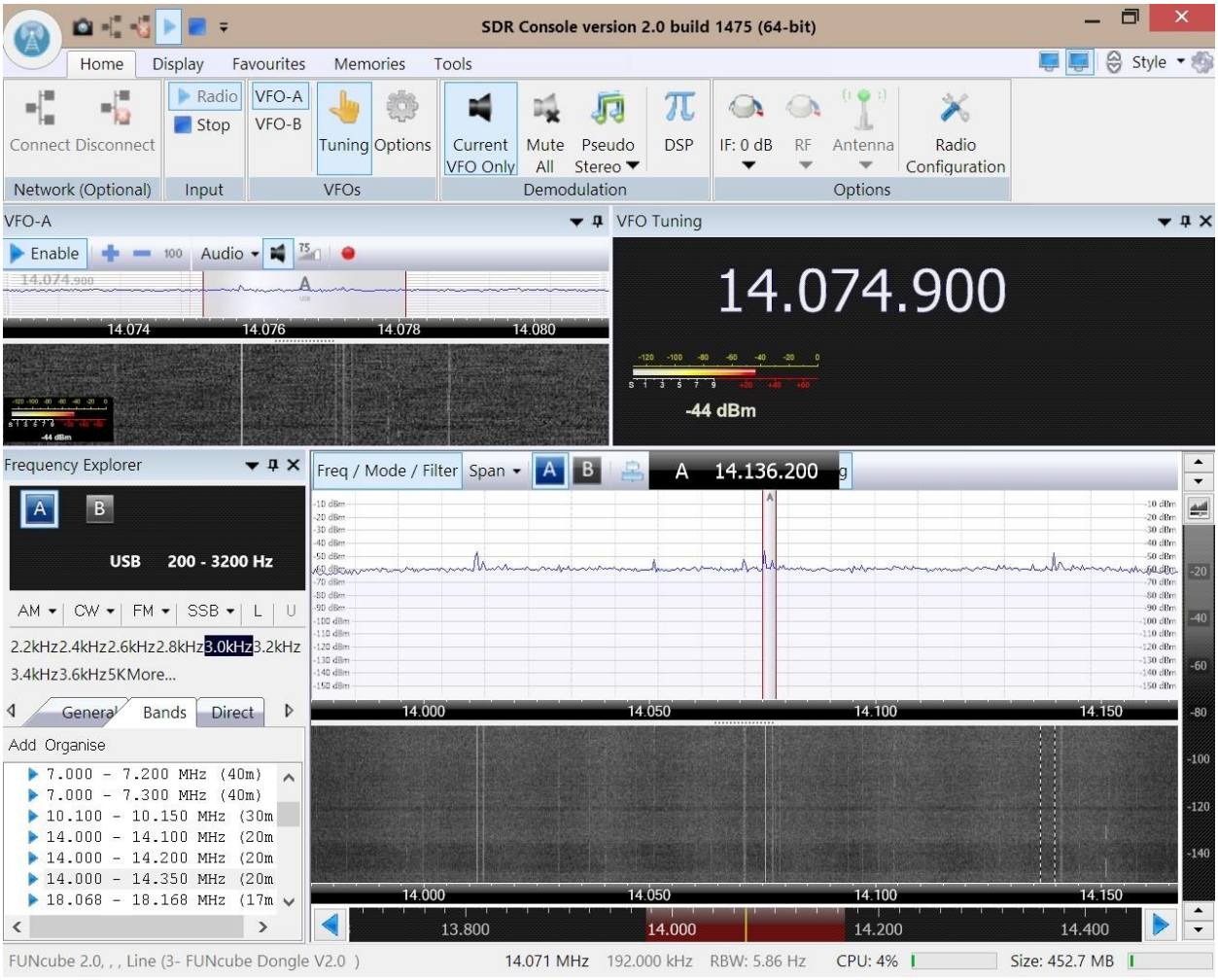
Tuning is easy enough, you can enter in your center frequency in the program pictured above and that will provide 98K of spectrum to your sound card based SDR software.

From there you can tune within that spectrum using the software.

This is a bit of an uncomfortable expereince for those used to just being able to tune where they want without flipping programs.

Enter SDR Radio2. It would appear that Simon has done the work of making the Dongle fully controllable within SDR Radio.

Since the Dongle only really comes with the control panel, I am not going to discuss software much. I will tell you that I personally felt the dongle worked best for HF spectrum with SDR Radio. I tried some FM and scanning around the spectrum to explore its full range, however, I really didn’t have an antenna capable of fully exploring the range the dongle could cover.



I really enjoy having a knob with PowerSDR using the Hercules Controls and SDR Radio provides a knob facility with the Tmate and soon Tmate 2 controllers. This is a huge plus for SDRs that are able to work with SDR-Radio giving it a leg up on many other SDR Software packages. The knob would be super nice for fine tuning verses the mouse wheel which pales in comparison.

SSB/SW AM

The audio is nosier than a high-end receiver, are you surprised? :) For $200 though what do you expect! All that said it's still very functional and practical when you are on the go! I was able to get very good AM reception with a nice loop antenna. This could be a nice way for Shortwave Radio listeners to jump up to an SDR like solution.

PSK31

This was done through the soundcard directly which is nice when SDRs appear as their Soundcard. This seemed to work just fine using SDR-Radio as the primary software and DM780 for the decoding software.

CW

I had no surprises routing CW to DM780 and compared the Dongle to the Afedri and the QS1R in which it compared well to both given the limits of the ability to test it in such comparisons.

Platform Support

- Mac Support = Yes – as a sound card SDR
- Linux Support = Yes
- CAT Control = Yes

Other Software

I tried the dongle with SDR-Radio 2.x beta, Studio 1 and HPSDR. All worked fine. SDR-Radio by far provided the best operating experience in my opinion.

Reviewer Notes

The dongle is highly versatile and of course portable. For a much more comprehensive look at the FCDP+ check out this article from Nils, DK8OK.

http://www.ae5x.com/docs/Funcube_DK8OK.pdf

ZLHam Blog on the site has another very nice review as well.

https://sdrzone.com/index.php?option=com_easyblog&view=entry&id=7&Itemid=488

Scoring

Criteria	*Score 1-10 · 10 is high	Weighting	Weighted Score	Notes
Order/Ship	9	0.07	0.6	Good Communication and Packaging
Build Quality	9	0.12	1.1	Commercial Looking Build
Design Quality	9	0.12	1.1	Very Clever Design
Ease of Setup	9	0.06	0.5	Was very easy to setup
Documentation	8	0.05	0.4	Locatable and simple to follow, effective
Expandability	9	0.10	0.9	Works in a variety of packages
Operating Experience	8	0.10	0.8	Software is ok and makes Dongle more widely useable.
Performance	9	0.15	1.4	Very clean receive audio, good on weak sigs
Support	9	0.08	0.7	Fast responsive support
Value	9	0.15	1.4	Cost as compared to specs and other SDRs
	88			
Overall Score (Average)	**8.8**	**1.0**	**8.9**	**Good Communication and Packaging**

8-10 = best in class, 5-7 Above Average, 3-4 Below Average, 2 Poor, 0-1 Unacceptable

Pros

- Decent Receiver Performance!
- Cross Platform Support
- Several Packages Support the Dongle
- EXTIO.dll support for additional compatibility!
- Also can be used for other purposes in the shack or on the bench.
- Supported

Cons

- Requires additional software for tuning with some software.
- BNC Converters for antenna connections not included.

Summary

I had fun playing with the dongle. Many reviews have already been done on the Dongle so I tried to just cover the beginner basics.

If you have ever been curious about SDRs this is a great way to try it out, even though RTS dongles can be had and experimented with for far less. Of course with those you would need an up converter for HF.

What you're paying for is an enhanced level of connivance with HF support being built in and the extra care and thought that has been put into the dongle for it to truly work as an SDR and not simply be a conversion project.

Additional Thoughts

Really when I think about it the dongle is quite an amazing compact piece of technology. It was fun and I have another RTS Dongle on the way to try next with an upconverter that I will be able to contrast to the FCDP+.

Connect this to an antenna and SDR-Radio and you have a really nice setup for basic listening and monitoring!

More simply said, I liked it, especially combined with SDR-Radio V2.x!

You can watch the videos posted on Zwall to watch the comparisons. I found the FCDP+ to compare amazingly well to higher end SDRs like the QS1R.

About the Reviewer

You can learn more about Mark [NI0Z] on the site at the link below.

https://sdrzone.com/index.php?option=com_content&view=category&layout=blog&id=24&Itemid=506