Final Video:

Open, Wow, Connected, Reproducable/other uses, Inovation, Interface, Manufacturable

Show off prototype (industrial design), demonstrate connectedness, Sell to non-technical viewers.

5 Minutes.

PortableSDR. What it is, what does it do, why would you want one? (What can it do for you?) What makes it special.

Points I want to hit on. SDR flexibility and upgradability use as a tool and learning aid, backpacking/survival applications. Why HF?

PortableSDR.

**What is it?** The PortableSDR is a pocket sized, two way shortwave radio. It’s a radio that can keep you connected with the world when you are out in remote places like when you are hiking, backpacking, or fishing, or when traveling abroad.

**What sets the PortableSDR apart?** It’s a Software Defined Radio. That means most of its functions are handled in software, rather than with dedicated electronics. That it makes the PortableSDR very flexible and upgradable. For example, the national weather service regularly broadcasts weather photos, they could be very helpful for backpackers, but with a normal radio, if it wasn’t designed to receive these photos, it’ll never be able to. The PortableSDR on the other hand, like a computer or smartphone, can load new software that gives it new capabilities. It’s a radio that can evolve and improve with time.

**Easy to use:** The PortableSDR was designed to be rugged and easy to use. It has a machined aluminum case with a polycarbonate front cover. It’s totally self contained and requires only an antenna to operate. The whole thing is controlled by a single knob. Push and turn the knob to select what you want to change, and release and turn to change it. These keys are for amateur radio operators wanting to do Morse code. It has USB for charging and firmware updates and could also be used for things like keyboards, or remote operation over the internet. It includes what’s called a waterfall display. This allows you to *see* radio signals. With this you can quickly and easily find signals to listen to.

**Why shortwave?** Most of the time, when we hear about Megahertz and Gigahertz, more is better. Very high frequency radio waves travel in straight lines. So if you aren’t close to a radio station or cell tower, you can’t hear it. But the band of frequencies up to about 30MHz is special. Signals at these frequencies are able to bounce between the earth and the upper atmosphere. That’s why you can hear broadcasts from China on a shortwave radio, but not on the radio in your car. If you are in a remote area, shortwave signals may be the only thing that will reach you. These are the frequencies the PortableSDR was designed to listen and transmit on so you can connect to people around the world.

Using a shortwave radio at home can be challenging because there is so much noise from things like power lines, and computers. But out away from civilization, things are quieter, so you can hear signals more clearly and from much further away. When I am at home, I can jump on the internet and connect to anyone, anywhere, but there is something magical to me about connecting with people around the world from remote places, where cell phones and the internet can’t reach.

It’s also worth pointing out that in disasters, radios like these are sometimes the only way to communicate.

**Emergency Location:** The PortableSDR includes a GPS receiver, this combined with the shortwave transmitter means that in an emergency, the PortableSDR may be able to transmit your location to others, even when there is no internet or cellular coverage.

I didn’t design it as an emergency device, if that’s what you need, there are better tools, I made it for fun, for shortwave listeners and amateur radio enthusiasts to take their hobby to remote places, where cell phones and wifi still can’t reach.

**Open:** The PortableSDR is an open source project. Everything about its design is freely available. Anyone that is interested in making the PortableSDR better can contribute. Its circuitry was designed to be easy to understand and modify so it will be helpful to people learning radio electronics. I’m working on documentation that walks through how each part of the circuit works and why. It also contains several advanced instruments, like an Antenna Analyzer and Vector Network Analyzer, and Spectrum analyzer that make it a useful tool for electronics and radio enthusiasts.

**More Info:** There is a lot more than I can share in a few minutes. For more detailed information, please visit the link below.

I designed the PortableSDR because I wanted a high performance radio I could take with me on backpacking trips. This is the radio I wanted. I’ve been blown away by the response I’ve received from many people online. Apparently, this is the radio a lot of you want as well. Thank you so much for all your support and encouragement. And thank you for watching.

**Licence**: No licences is needed to use the PortableSDR for listening in on broadcasts and other signals, but to take full advantage of its capabilities, you’ll need to get an Amatrue Radio licence. They aren’t particularly hard to get, you’ll learn a lot, and may discover a new hobby.

**Getting a PSDR**: I plan on offering kits for people that are excited to build their own. I’m working on detailed assembly instructions that will help. I also hope to offer assembled units.

I am looking into producing both the case and circuit boards in different colors.