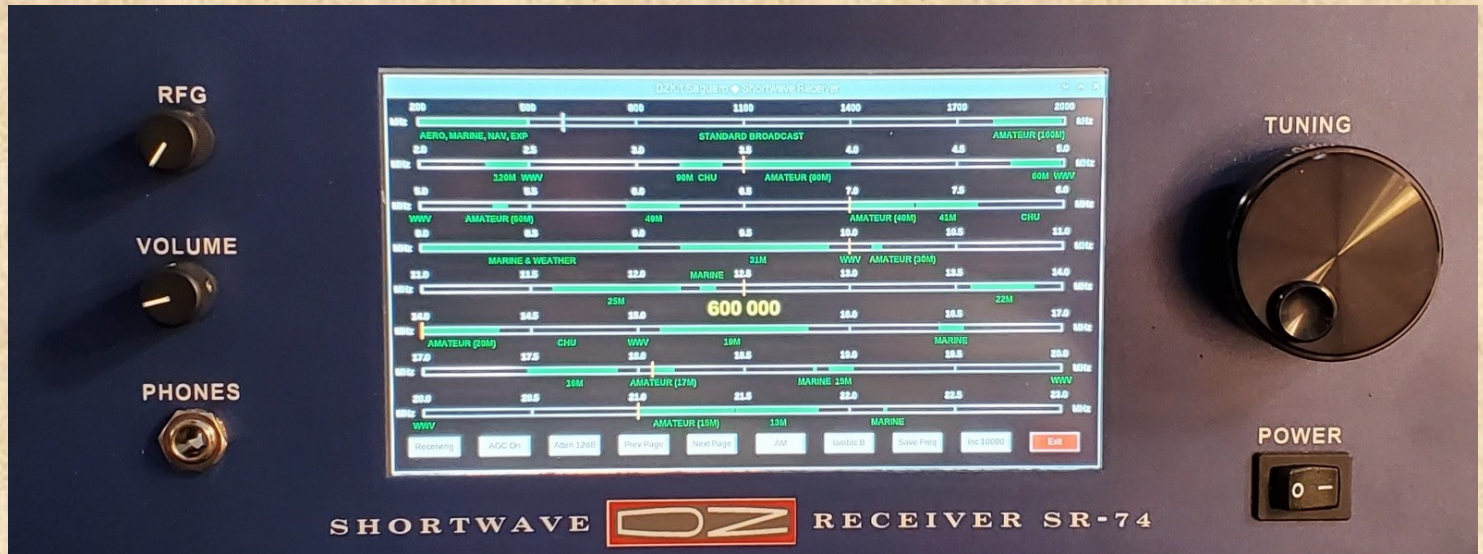# DZKit "Saguaro" (Model SR-74)
Shortwave Receiver Kit or DIY Chassis for SDR/RPi Experimenters

This ergonomically pleasing receiver will look great anywhere in your house!

Explore the fun of shortwave listening with included software that emulates the shortwave radios of yesteryear, but brought up-to-date with modern SDR technology. Or use it as a DIY experimenter platform! Either way, you get these outstanding features:

- *Quality chassis—sanded, chromated .063" aluminum, with captive nuts and standoffs, black painted top cover, polycarbonate front panel overlay, screw-on rubber feet, all made in the USA*

- *Large 7" color touch HDMI display*

- *Powerful 4" permanent magnet speaker built-in, and external speaker jack on back panel*

- *1/4" headphone connector on front panel*

- *"Velvet-touch" main tuning control uses hi-res optical encoder, machined aluminum knob*

- *Microprocessor controller to read control inputs and feed data to and from the Raspberry Pi (soldering required kit board; some pre-loaded SMT may also be present); solder included in kit*

- *Code practice oscillator with back panel sidetone level, pitch and speed controls*

- *Built-in transformer-operated, fused AC power supply runs on 100-240VAC, or use the 12VDC input*

- *Standoffs for mounting internal Raspberry Pi 4B running Linux, with back panel access (OS and required software provided on included MicroSD card)*

- *Standoffs for mounting SDRPlay RSP1A SDR, with opening for SMA connector on back panel*

- *Standoffs for mounting DIY experimenter board*

> **Price: $759 + options**
> **Typical price with most options: ~$1000**

- *Options include: * Raspberry Pi 4B (4G or 8G) * SDRPlay RSP1A * AC power cord * 2nd HDMI display interface for connection to external monitors (monitor not included) * Touch interface * Wireless keyboard/mouse * Extra solder * 72-page printed color manual*

The DZ Company, LLC
710 Grove Ct • Loveland, CO 80537
www.dzkit.com • 877-HAM-SHACK • sales@dzkit.com

Made in the USA

Shortwave radio has once again become an important part of the global community. When governments restrict the ability to get accurate and timely news and information, shortwave radio often fills the gap. Listen to international broadcast stations, AM/FM broadcast bands, ship-to-shore marine radio, WWV time signals, and Amateur and Citizen's Band transmissions on AM, FM, SSB and CW. Practice your Morse Code skills with the built-in code practice oscillator. Use included Saguaro software to emulate old-style slide-rule dials to tune 200kHz to 108MHz, or use included CubicSDR (right) to receive over the full 2GHz frequency range supported by the RSP1A SDR.
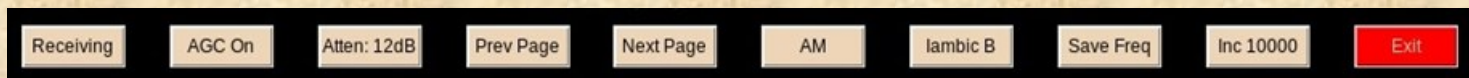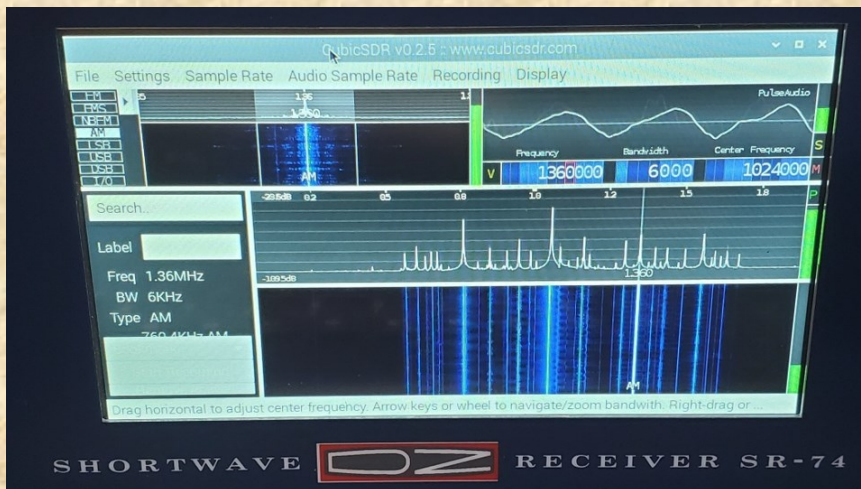
A closer look at the touch/click buttons at the bottom of the Saguaro software — Mute/Rcv, AGC On/Off (use RFG pot for threshold control when AGC is on), Several levels of front-end attenuation, Page selectors, Mode (AM, FM, NBFM, USB, LSB, CW(USB), CW(LSB)), Keyer mode, Save current freq, Tuning resolution, Exit

Reasons why we know you'll be successful building a DZKit Saguaro

- It's made in the U.S. to assure high quality and fast response to any manufacturing issues:

  ✓ Chassis sheet metal is manufactured by a top-notch manufacturing facility in Golden, CO.

  ✓ Cables are made by a top-notch facility in Golden, CO

  ✓ Front panel overlays are made in Illinois

  ✓ DZKit-designed circuit boards are made in Oregon

 ✓ DZKit products are designed, tested and kitted at our plant in Loveland, CO

  ✓ We buy parts from American distributors (e.g., Mouser, Digikey) and directly from many manufacturers, guaranteeing high quality and no "knock-offs".

- We provide detailed assembly manuals with pictures, drawings and step-by-step instructions.

- No custom IC's are used. All parts are off-the-shelf.

- Captive nuts/standoffs and screws with built-in lockwashers eliminate tedious mechanical assembly.

- Small surface-mount parts are pre-loaded.

- We provide hard-to-get or uncommon tools in the kit.

- Support is just a phone call or email away, with exceptional responsiveness.
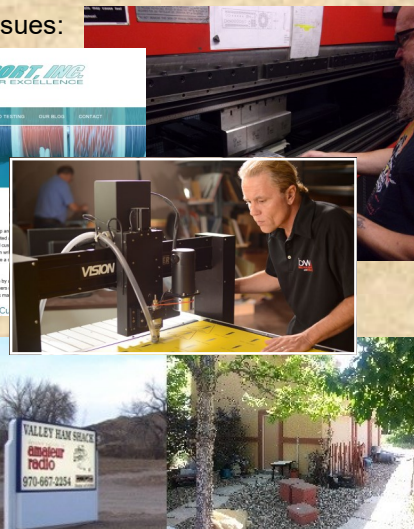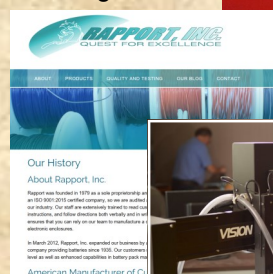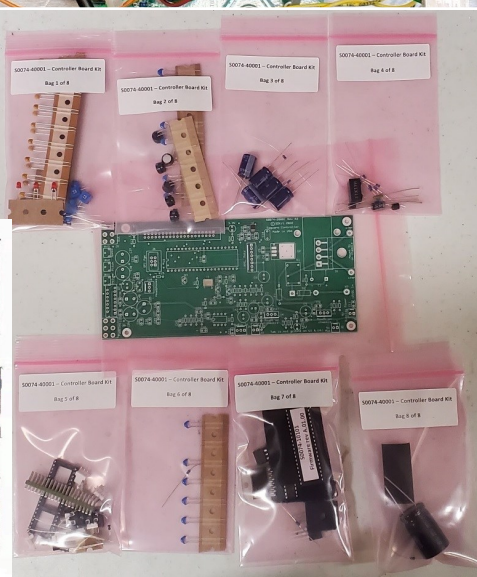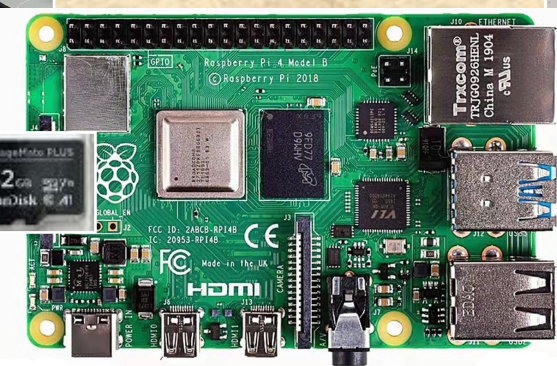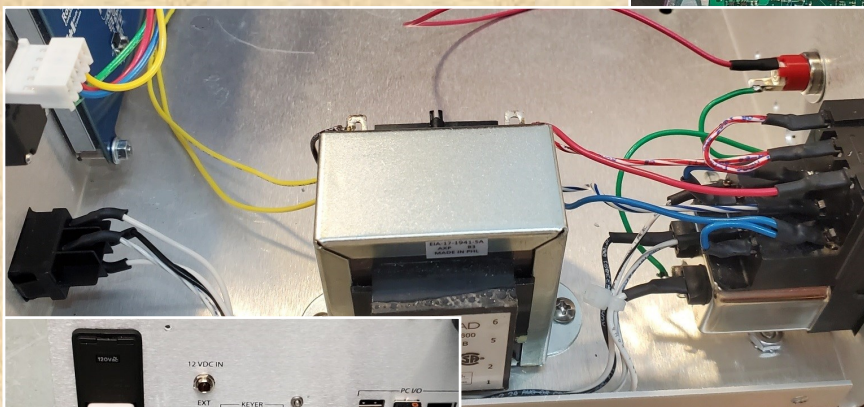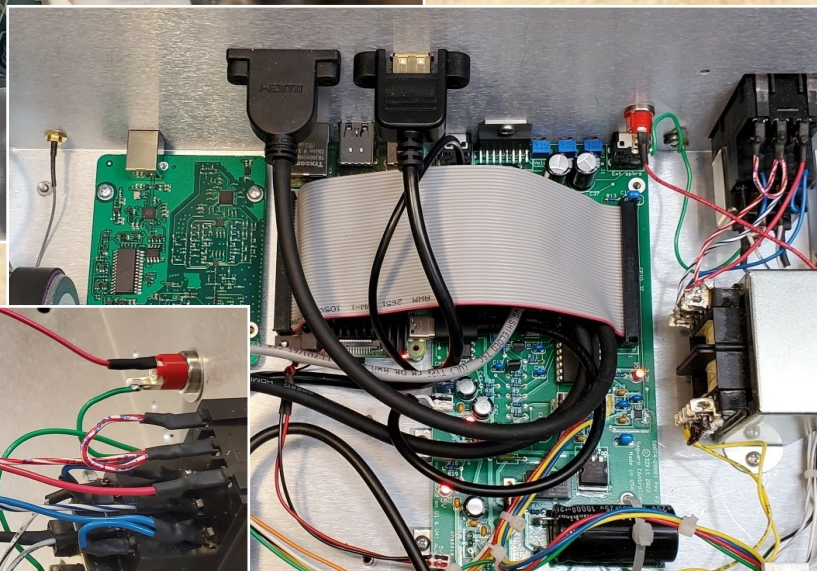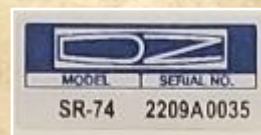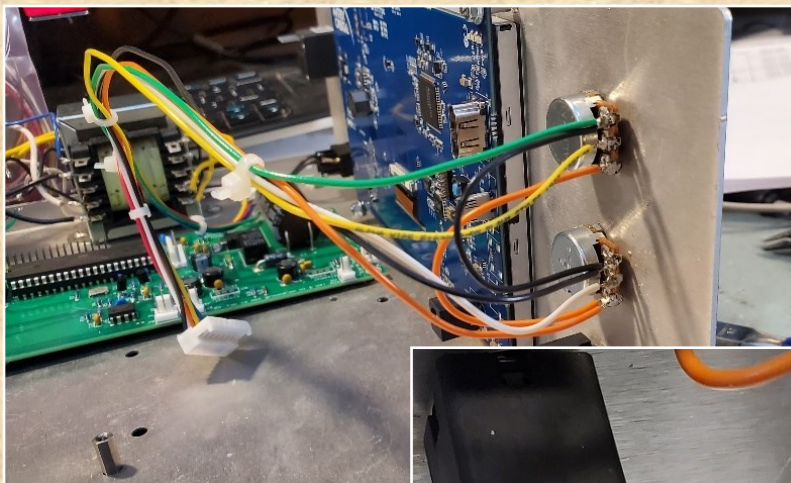
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SPECIFICATIONS

RF Specs are identical to those of the SDRPlay RSP1A. See
https://www.sdrplay.com/wp-content/uploads/2018/01/RSP1A-Technical-Information-R1P1.pdf

Receiver type: Software defined radio, 14-bit ADC, controlled by Linux-based PC

Operating system: Raspberry Pi OS (Debian Linux, rev 11.0, codenamed "Bullseye")

Frequency Range of SDRPlay RSP1A: 1kHz-2GHz

Frequency coverage of Saguaro software (additional bands planned for future):

      200kHz-32 MHz (LF, MF and HF in 11 bands)

      50-56 MHz   (Amateur 6M in 2 bands)

      75-108 MHz   (Worldwide FM in 11 bands)

Headphone output impedance: 100 Ohms, suitable for low-Z headphones

External speaker impedance: 4 Ohms min, short-circuit protected, stereo

Connectors and Controls:

      Front panel: On/off, Volume, RF Gain, Tuning, plus mouse/touch control of dial pointers

      Software buttons: See page 2

      Touch type: Resistive, 3H hardness

      Back panel:

            AC input (IEC-320)

            12VDC Input (2.1mm, center positive)

            Chassis Ground

            External speaker (3.5mm stereo minijack)

            Keyer speed, pitch, volume potentiometers

            Keyer paddles (pulled up to 3.3V, 1K input, 3.5mm stereo minijack)

            Touch output: USB-A

            External display: HDMI

            Two USB 2.0, Two USB 3.0, One 1GB Ethernet (plus internal WiFi and Bluetooth)

            SDR IO: USB-B

            Antenna: SMA, 50 Ohms, protected to +0dBm input level

Operating temperature: 0-40C

Operating voltage:

      100-240 VAC, 50/60 Hz, 20W

      10-14 VDC, 20W

Tube complement: none

IC/Board complement: Controller board (TDA7375AV quad 28W low THD audio amp, Microchip ATMega644P microprocessor, AD9833 DDS oscillator, LM358P audio mixer, CTS 16MHz clock oscillator, 2xLM350T 5V regulator, LD1085D2M33R 3.3V regulator), Raspberry Pi 4B, SDRPlay RSP1A

Dimensions: 12.5" W x 9.0" D x 5.25" H

Weight: 6.5 lbs

Made in the USA