

WB5RVZ Softrock SDR Homepage - as of 2/23/2009

[Home Page](#) [Softrock Xtall+Lite v8.3](#) [Softrock Lite v6.2 40m](#) [SR Lite II 40m RX](#) [USB I2C \(BETA\)](#)
[Softrock Xtall+Lite v9.0](#) [HF Multiband BPF kit \(for V9.0 RX\)](#) [Softrock RXTX V6.2](#)
[40/30m](#) [Softrock RXTX V6.3](#)

Frequently Asked Questions

Bob KC4UAI maintains a very informative [FAQ page](#) in the files section of the Yahoo Softrock40 User group (you must be logged into that group to see the file). Bob also maintains a [Softrock SDR Wiki](#) that provides additional info on the Softrocks.

Softrock Rigs Documented on this Site

Rigs currently available (and those that are retired, shaded in red) are shown below

Receivers

SR-Lite V6.2 Xtall+Lite V8.3



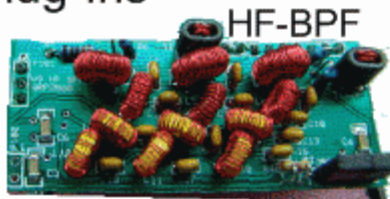
Xtall+Lite V9.0



SR Lite II

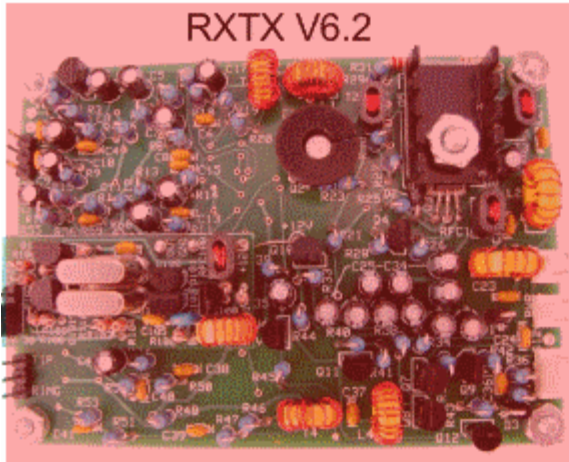


Plug-Ins

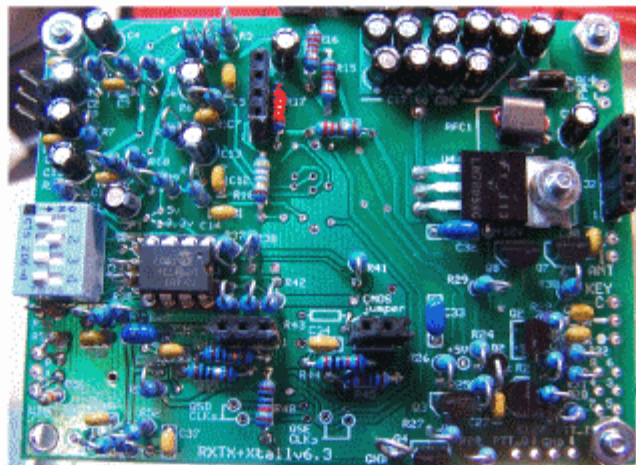


Transceivers

RXTX V6.2



RXTX+Xtall V6.3



Softrock Rigs - an Overview

Softrock is a term for a software defined radio (SDR) which consists of three major building blocks:

- The SDR hardware (e.g., one of the Softrock kits)
- A PC running special SDR software (which is free to download - see the "some SDR software" section of [Alan G4ZFO's website](#))
- and a stereo soundcard (with one stereo input for RX and, if TX is desired, a stereo output for TX and a second soundcard to deliver the demodulated RX sounds to the PC's speaker)

These pages concentrate on the SDR hardware. All of the softrock rigs currently available provide either RX and/or TX capability for signals either side of a "fixed" center frequency. The term "fixed" is relative. It means that, when working on a particular band, the SDR's local oscillator produces an unvarying frequency that anchors a "chunk" of RF bandwidth within which you can operate. Some of the Softrocks allow you to tune the local oscillator to multiple center frequencies; the earlier Softrocks limited you to a crystal-controlled center frequency that was, indeed "fixed" (the crystal was soldered into the board!) The bandwidth provided by these SDRs is a function of the PC Soundcard used. The approximate tuning bandwidth you can get, given a specified center frequency (CF) from the hardware's local oscillator and the soundcard's sampling rate (SR) is a range: $[CF - SR/2]$ to $[CF + SR/2]$.

Availability and Pricing as of 2/23/2009

The kits now available

- the SoftRock Lite II (monoband) receiver
- the v9.0 Lite+USB Xtall (multiband) receiver kit
- the one watt RXTXv6.3 (multiband) SDR transceiver kit.
Note (2/8/2009): after selling the remaining 50 boards, this kit was retired. After numerous entreaties from the SDR community, Tony has placed an order for an additional, but limited number of boards and will announce kit (re)availability in March 2009.
- the USB I2C interface kit
- the Delta 44 Sound Card Interface module
- the XTALL Daughter board
(an early adoption of the Si570 as a replacement for the local oscillator on earlier Softrock kits)

Softrock Band Coverage - general

Softrock RX and TX provide band coverage expressed in terms of kHz on either side of a center frequency. In Some of the kits, the center frequency is "rockbound" (i.e., from a crystal oscillator); in the more recent kits, the center frequency is produced from an Si570 programmable oscillator

Band coverage from each center frequency depends on the sampling rate of the soundcard. With 48 kHz sampling the band coverage is almost +/- 24 kHz each side of

each center frequency. If the soundcard can sample at 96 kHz the band coverage is about twice as great each side of each center frequency.

Ordering Info

You can order kits from Tony using either the Paypal or Mail addresses, below:

Ordering Info

Paypal:
kb9yig@gmail.com

Mail:
Tony Parks
1344 E 750 N
Springport, IN 47386

Kits - Description / Documentation

These pages document the construction of seven different types of SDR and SDR-related kits from Tony Parks' Softrock line. In addition, links to documentation of all of the earlier Softrock kits can be found at [Cecil's K5NWA website](#).

•Receivers

○ SR Lite II - Monoband

A single band receiver. This is the updated replacement for the just-retired, entry-level SR Lite V6.2 receiver.

The Lite II will be priced at the same levels as the retired V6.2 RX:

- \$10 (\$11 for DX) for 160m, 80m and 40m kits (providing center frequencies, respectively, of 1.843 MHz, 3.514 MHz, 7.055 MHz)
- \$12 (\$13 for DX) for upgraded 30m, 20m and 15m kits (providing center frequencies, respectively, of 10.125 MHz, 14.047 MHz, and 21.044 MHz)

As in its predecessor, the builder's notes for the SR Lite II RX will document the construction by WB5RVZ of the 40m receiver with a crystal-controlled center frequency of 7.056 MHz. Using a soundcard with a sampling rate of 96 kHz, this RX provides a bandwidth of 7.008 - 7.104 MHz.

For details see the [Softrock Lite II](#) home page, which documents the build of each of the six options.

- **Xtall+Lite V9.0 - Multiband**

This multiband receiver replaces the V8.3 receiver. The v9.0 Lite+USB Xtall kit provides an all HF coverage receiver where center frequencies are set via a USB connection to the v9.0 circuit board. The v9.0 receiver has MDS of at least -120 dBm on each of the amateur bands and covers the range from 1.8 MHz to 30 MHz with four plug in BPF modules supplied in the kit. 6m operation has also recently been confirmed.

The v9.0 kit available with the following two options:

- Current configuration with the four plug in BPF modules at a kit price of \$44 for US/Canada and \$45 for DX.
- V9.0 board kit plus the electronically switched HF BPF kit at a kit price of \$56 for US/Canada and \$57 for DX. Band coverage is from 1.8 MHz through 30 MHz or from 3.5 MHz through 30 MHz plus 6m. The kit builder selects the band coverage at the time of building the BPF kit. (The current plug in BPF modules would not be included with this kit option.)
- Note: Starting with v9.0 kits shipped after 14 Feb 2009, the USB interface microprocessor will be an ATTiny85 device with Jan GOBBL's new enhanced features code. If there is interest in a programmed ATTiny85 device for an existing v9.0 receiver please let Tony Parks know and he will price the replacement device to cover device cost, PayPal loss and mailing cost.

For details, see the [Softrock Xtall + Lite V9.0 Home page](#).

- **HF-BPF Electronically Switchable 4 Band BPF Board**

Newly in production is a multiband bandpass filter plug-in for the V9.0 RX. This kit provides four switchable BPFs on a single board (as opposed to the four separate boards in the original V9.0 design). In its initial design, switching is manual; however, firmware is currently being updated to allow for automatic switching via the

V9.0 RX's USB interface. The kit will ship with parts to allow two different options to be built:

- A 1.8MHz to 30 MHz (in four bands) option
- and a 3.5MHz through 30MHz plus 6m option, also in 4 bands
- Kit price for the electronically switched v9.0 BPF is \$15 for US/Canada and \$16 for DX where mailing costs are included in each kit price.
- For details, see [HF-BPF Enhanced Builders Notes - Home Page](#).

○ **SR Lite V6.2. - Monoband (retired)**

A single band receiver. These pages document the construction of the 40m receiver with a crystal-controlled center frequency of 7.056 MHz. Using a soundcard with a sampling rate of 96 kHz, this RX provides a bandwidth of 7.008 - 7.104 MHz. This receiver was very close to retirement and then Tony (Softrock40 Yahoo Group message 25109) refreshed his stocks at the same prices as before (160m, 80m, or 40m kit - \$10 US/Canada and \$11 for DX; upgraded 30m, 20m, or 15m kit - \$12 US/Canada and \$13 for DX) For details see the [Softrock Lite v6.2 40m](#) home page

○ **Xtall+Lite V8.3 (Retired)**

This is a multi-band receiver. The web site documents the construction of this receiver with a center frequency that is switch-selectable from among 16 pre-programmed center frequencies, giving a band coverage of 160 - 10 m. The receiver uses four pluggable bandpass filter (BPF) boards to handle that band coverage. For details see the [Softrock Xtall+Lite v8.3](#) home page.

Note: This kit has been retired.

• **Transceivers**

○ **Softrock RXTX + Xtall V6.3. - Multiband (revived fom retirement)**

This kiit was made available for ordering after 14 Feb 2009. This multi-band transceiver is the latest in the RXTX line and, like its single-band predecessor, builds a transmit capability on top of the base multi-band rexeiver's platform.

Like the RX V8.3, the RXTXv6.3 transceiver board includes a Lite+Xtall receiver function along with the RXTX transmit function. A four-position DIP switch at the edge of the circuit board provides for setting sixteen possible center frequencies for receive and transmit functions.

The individual Lite+Xtall BPFs are used with the receiver function for band changing and a PA/Filter module plugs on top of the RXTX board for changing the transmit band. As with receive, four PA/Filter modules will be required to cover all HF ham bands.

Thus, a minimal RXTX for one of the four bands (160m, 80/40m, 30/20/17m, or 15/12/10m) would require one BPF board and one PA/Filter board for the band in question.

Also included on the RXTX board is the Rocky 3.x serial interface function for control of the PTT input to the board and to provide paddles input to the Rocky SDR program. Alternatively, one can build the [USB12C interface kit](#) to control the transceiver via a USB line instead of via a serial RS232 line.

The RXTX+Xtall v6.3 kit price is \$50 for the RXTX board kit along with the receiver BPF kits for all HF ham bands. The \$50 price would include the CMOS Si670 device used on the board. (Without the Si570 included in the kit, the kit price would be \$35. The RXTXv6.3 board also provides for use of the LVDS Si570 part.)

Each PA/Filter kit would be an additional \$15 per kit (\$16 for DX).

Thus for two or three band coverage the RXTX+Xtall v6.3 kit group would cost \$65. Additional PA/Filter modules would expand the band coverage such that all HF bands could be covered at a total kit price of \$110.

The DX price for the RXTX+Xtall v6.3 kit is \$52 and each PA/Filter kit price is \$16. In each case the kit price includes mailing cost. PA/Filter kits are for band groups: 160m, 80m/40m, 30m/20m/17m, and 15m/12m/10m.

For details see the [Softrock RXTX V6.3](#) home page.

- **USB I2C Interface Kit**

Now available is the USB I2C interface kit at \$10 for US/Canada and \$11 for DX. The USB I2C interface kit provides a means of setting the Si570 device on a v6.3 RXTX+Xtall transceiver to any desired frequency from a USB port.

[Enhanced builders notes for the USB I2C Interface](#) are under development. Tony's documentation to build the kit may be downloaded from files area of the [Yahoo Softrock 40 Reflector](#). You will have to register at the website to download the documents for the kit.

- **Softrock RXTX V6.2 (Retired)**

. This transceiver adds a transmit capability to the base platform of the SR Lite (in fact, the RX section is nearly identical to the SR Lite). The transmitter delivers 1 watt of output into a 50 ohm load. The types of modulation will depend upon the modulation modes which the chosen software program can implement. This transceiver has been retired after a long and successful production run. See the details at the [Softrock RXTX V6.2 40/30m](#) home page.

- **Delta 44 Sound Card Interface module**

A small quantity of this kit is still available for sale for \$11, \$12 for DX mailing.

[Home Page](#) [Softrock Xtall+Lite v8.3](#) [Softrock Lite v6.2 40m](#) [SR Lite II 40m RX](#) [USB I2C \(BETA\)](#)
[Softrock Xtall+Lite v9.0](#) [HF Multiband BPF kit \(for V9.0 RX\)](#) [Softrock RXTX V6.2 40/30m](#) [Softrock RXTX V6.3](#)