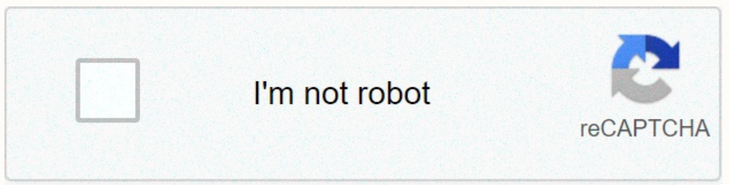

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Softrock sdr transceiver

Portable and independent SDR transceiver products for SSB, CW and AM using digital signal processing integrated with a Softrock as an RF front end for QRP operation. Live bandscope, high-performance T-R switching, multiple APEs and memories, general coverage reception, and band switching control are some of the many advanced features. The expansion port supports external RF covers and accessories. The interface optimized for the NUE-PSK modem provides support in digital mode. The SDR Cube is a fully autonomous integrated SDR transceiver for CW, SSB and AM that uses a Softrock for the RF front end and a PC card implementation of an HF modem. The PC is not required to use the SDR cube, as all DSP processing is achieved by a DSP processor built into the three internal PC cards. The hub is designed to fit in an optional 4 x 4 x 4.5 black powder-coated aluminum housing containing all controls, a blue graphic display indicating transceiver configuration and an exciting 8 kHz bandwidth range of spectrum signals, and the popular Softrock RXTX v6.3 board. The SDR cube can also be used with any of the 11,000 other Softrocks in the field today! Sold as a kit or as a fully assembled and tested transceiver, both versions of the product are in stock. We present at the SED Cube at TAPR's annual Digital Communications Conference in Portland, Oregon, and the DCC Acts containing our document are available on our Documentation page. Product details are presented here on this website, and active email discussion occurs in the SDR-Cube group at Yahoo Groups Independent SDR Transceiver... No PC required, portable and compact general coverage receiver, and user-replaceable Tx band modules... Based on the I/Q RF front end compatible with Softrock... Designed to interact with SR v6.3 RXTX, etc. Low power ... 90ma (Cube), plus 100 ma (Softrock Rx) or 400 ma (Software Tx) RF Amp, Attenuator and AGC ... Good control of incoming quadrature sampling output options ... DDS, Si570, or I2C to aim Softrock Built-in Keyer... 1-100 wpm, A and still, B, or straight key Popular HF modes ... SSB, CW, AM, Digital (with special interface to NUE-PSK for digital modes) Special interface to NUE-PSK modem ... The digital interface provides the best quality graphic LCD display ... It provides clear indications of the many options and status of Bandscope ... Provides +/- 4 kHz spectrum visibility for Rx, signal monitor for Tx audio filtering ... Low corner 200Hz, high corners 700, 1500, 2400 or 3600Hz Audio output ... Amplified headphones or speaker, audio Beeper... Clicks on the user interface, code practice oscillator, and more agile frequency ... Fast/med/slow tuning, dual VFOs, memories, RIT/XIT menus ... Calibration, all settings, system gain, sidetone frequency, etc. Updatable software ... Bootloader allows the user to load new versions of Open Open software ... Take the source code and add your own features (See full list of features in features) 3-PCB BOARD SET Click on the images for larger I/O BOARD DSP BOARD CONTROLS BOARD Views The heart of the SDR Cube transceiver consists of three docking PC boards, as shown above. The board assembly is designed to comfortably connect to each other using edge connectors that can be configured in several ways. When using the optionally purchased enclosure, the Controls board snaps to the back of the front panel, with user-accessible controls and display. The DSP board is connected at a right angle to the control board to sit along the left side of the housing. And the I/O board is connected to the DSP card using a short flat ribbon cable to sit parallel to the back panel. This arrangement maximizes the space inside the SDR Cube in such a way that a Softrock front end or even a battery can be placed in the remaining volume of the housing. The Cube board set can also be organized in other ways for other enclosures, or perhaps in a flat, side-by-side way, as we have used in our development arrangements, as shown below... Softrock RXTX v6.3 Components SR-BASE with TXPA and Multi-Rx plug-ins SDR Cube Transceiver is capable of using any of the 11,000 Softrocks in the field today as your front-end RF. The SDR Cube can be interconnected with the very popular Softrock RXTX 6.3 simply by dropping it into the Cube's armored compartment. Or if the Softrock model you have doesn't fit, like the current Ensemble series, you can interconnect it externally with a custom wire harness that connects to the back panel of the cube. If you don't already have a Softrock, don't worry! We have a good supply of RXTX 6.3 Softrock transceiver kits with 80m/40m and 30m/20m/17m plug-in modules available for sale with the SDR Cube. The Multi-Rx card is a standard problem with full Cube and Softrock orders. The Softrock RXTX 6.3 RF Front End is an option in the SDR cube price matrix on the Orders page. X-LPF ... an extra LPF An additional low pass filter for use between softrock and antenna (Click photos to see a larger image.) This is the eXtra Low Pass Filter that Softrock RXTX 6.3 designers recommend using to reduce harmonics when operating at 80m and 30m. Softrock owners have classically needed to provide this additional LPF in some way for themselves in the past... but we include it when the SR-Base softrock option is purchased with the SDR cube. The dimensions of the X-LPF board are 1/2 x 1 and are mounted on the back of the BNC connector. The cable Short RF from the SR-Base board connects to the nearby X-LPF board and connects to one of the pin head connectors, as determined by the band in which it is intended to operate: 80m or 30m. Then a bypass (jumper) is placed through another header to route the RF to/from the BNC connector. But if the Softrock is to be used in some other band that does not need an additional LPF, the RF cable of the SR base is connected to another pin head on the X-LPF board on the RF is routed directly to the BNC, effectively ignoring either of the two additional LPF filters required for Softrock operation at 80m and 30m. So again, the X-LPF kit is provided with all SR-Base purchases. You do not need to order this item if you already have an ordered SR-Base option; but SDR Cube owners can order the X-LPF element for use with their external Softrocks (see the order page for this). The X-LPF schema is here. (BTW, the need for an additional LPF is an example of Softrock's design limitations, not an SDR Cube design limitation. We mentioned above some challenges of using Softrock as our RF front end, and this is another challenge of this kind. We are currently building other RF covers to see how well the SDR Cube works with a less compromised design... RF covers such as Genesis Radio 2030, WB6DHW's UHFSDR, FlexRadio SDR-1000, and a few others. Although more expensive than Softrocks, these more comprehensive designs have the potential to let the SDR Cube shine relative to RF performance characteristics.) Multi-Rx General Coverage Receive Module The Rx continuous coverage plug-in module covers 3-30 MHz for the receiving side of the Softrock RXTX 6.3 (Click the photo to see a larger image.) TXPA Plug-in Band Module A band-specific 1 watt (typical) RF power amplifier and a low pass filter are available for the transmission side of the RXTX 6.3 Kit softrock and the mounted version of two modules: TXPA-80/40 and TXPA-30/20/17. These modules allow the SDR cube to operate in 5 bands: 80m or 40m (with TXPA-80/40 module), or 30m, 20m or 17m (with TXPA-30/20/17 module) (Click the photo to see a larger image.) Tx Band Coverage Choose TXPA modules for the desired Tx band coverage. The SDR cube is capable of transceiving in 5 ham bands with the right modules in place, as illustrated below. Last updated page: January, 2018 The SoftRock RXTX Ensemble Transceiver Kit provides a 1 watt SDR transceiver that can be built for one of the following four band groups: 160m, 80m/40m, 30m/20m/17m or 15m/12m/10m. Components are included for all four options and can be assembled at the choice of constructors. The kit the functionality of the previous SoftRock v6.3 RXTX+Xtall Transceiver Kit, the USB I2C interface kit and the PA filter kit on a single circuit board with connectors along an edge for easy access. This is the latest KB9YIG transceiver. The kit allows the builder to choose to build the in one of the four options (160m, 80/40m, 30/20/17m, or 15/12/10m). All parts needed to build any version are provided in the kit, leaving the decision as to which superband to deploy to the constructor at the beginning of the build. The transceiver has full frequency agility (via a programmable local oscillator) within the limits of the implemented band pass filter. For pricing, see KB9YIG.com. Currently $74 plus S&H For prices see KB9YIG.com (prices have historically been in the range of $50 to $130). This kit was made available for order after February 14, 2009. This multiband transceiver is the last of the RXTX line. Its single-band predecessors, the RXTX V6.2 and RXTX V6.1, provided a glass control capability (one or two bands) TX (1 watt) and RX that, depending on the sound card used, could cover a band chunk approximately 24 kHz (or 48 kHz or 96 kHz) on either side of the glass-controlled center frequency. These were essentially monobanders. The RXTX V6.3 relies on base and multiband receiving platforms such as the RX V9.0 and RX V8.3 to provide multiband transceiver capability. Like the RX V8.3, the RXTXv6.3 transceiver board includes a Lite+Xtall receiver function along with the RXTX transmission function. A four-position DIP switch on the edge of the circuit board allows you to set sixteen possible center frequencies for reception and transmission functions. The individual Lite+Xtall BDFs that come with the kit are used with the receiver function for belt change and a PA/Filter module (ordered separately, band-specific) on top of the RXTX board to change the transmission band. As with receive, four PA/Filter modules will be required to cover all HF ham bands. Each PA/Filter module includes PA transistors as well as low pass filtering suitable for the band or bands it covers. Therefore, a minimum RXTX for one of the four super-bands (160m, 80/40m, 30/20/17m, or 15/12/10m) would require one of the included BPF boards and one, ordered separately PA/Filter board for the band in question. Note that switching from one super slice to another requires manually replacing the appropriate BPF cards (plug-in), as well as the appropriate PA/Filter board. Also included on the RXTX board is the Rocky 3.x serial interface function for controlling the PTT input to the board and to provide pallet input to the Rocky SDR program. Alternatively, you can build the USBI2C interface kit to control the transceiver via a USB line instead of via an RS232 serial line. The RXTX+Xtall v6.3 base kit contains the RXTX board kit along with the Receiver BPF for all HF ham bands. This would include the Si670 CMOS device used on the board. The RXTXv6.3 board also provides for the use of the LVDS Si570 part.) You can order one to four PA/Filter board kits to provide transmission capacity in up to four superbank segments. Additional Additional would expand the band's coverage in such a way that all HF bands could be covered. For more information, see the SoftrockTX RX V6.3 home page. For prices see KB9YIG.com (prices have historically been in the range of $10 to $15). The I2C USB Interface Kit provides a means to configure your Si570 device on an RXTX+Xtall v6.3 transceiver at any desired frequency from a USB port. Improved constructor notes for the USB I2C interface are in development. Tony's documentation for building the kit can be downloaded from the files area of the Yahoo Softrock 40 Reflector. You will need to register on the website to download the kit documents. Medicine cabinet.