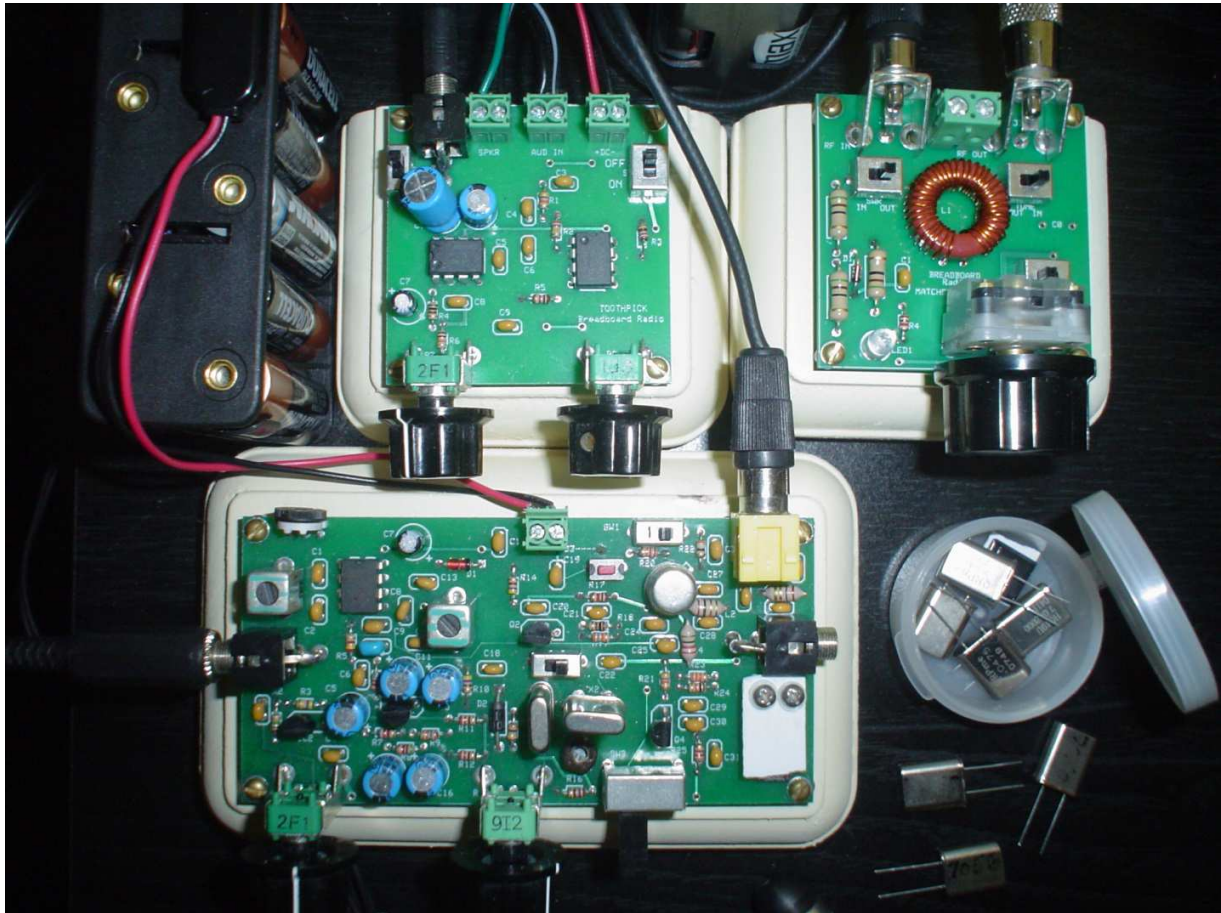


The Splinter Trans-Receiver

Review by Darryl Mento K4VLP



This article describes the Splinter 40m trans-receiver kit from Breadboard Radio, along with its Toothpick audio amplifier/filter and Matchstick transmatch kits which were designed to complement the basic rig, although they are not required for Splinter operation. The Splinter utilizes a direct-conversion receiver which is common functionality for most minimalist rigs, and a Xtal oscillator transmitter. A switch is used to manually change from receive to transmit. The receiver tunes from about 7000-7060Khz, while the transmitter has two Xtal positions which are selectable by a switch. The first position is a 7030Khz Xtal which is soldered in, while the second position utilizes a SIP socket to permit swapping Xtals for frequency selection. A spot switch is used to sync the receive and transmit frequencies. A built-in key is provided, and while being very simple, easily allows 15wpm or faster operation. There is an input jack for an external straight key or keyer/paddle combo if the user so desires. Controls are simple: an AF Gain pot, a receiver tuning varicap, the transmit/receive switch, the two-position Xtal selector switch, and an attenuator to reduce strong signal overload which occasionally

occurs from SWBCI. The Splinter will operate with a power supply of 9-14 volts, with output using a 12V power supply rated at 450-500mW.

The Toothpick audio filter/amp provides enough output power to drive a speaker, and has a switch to permit changing from headphones/earbuds to the speaker. The AF filter circuit limits the audio frequency to a range of 700-1000hz, and while not approaching the effectiveness of an IF filter, it does improve the selectivity quite a bit and helps isolate the desired signal. Controls for this unit are an AF Gain pot, an AF tuner which provides the 700-1000hz range, and a speaker/headphones selector switch. If the power switch is off, the audio signal passes through without amplification or filtering. The unit runs on 9-12V.

The Matchstick transmatch is designed for 40m only and requires a fairly-resonant antenna in order to find a good match. A resistive bridge is used for tuning, with an LED indicating the SWR as the varicap is tuned. When the LED dims to its lowest brightness, the best match is achieved. If the LED darkens, a perfect match has been found. The circuit can be switched from series to parallel depending on the type of antenna being used. Once the best match has been determined, the resistive bridge is switched off and the transmissions can begin. Two connectors are provided, one for a coax-fed antenna and the other for a random wire. The large toroid is easy to wind making this kit a very easy build. Controls on the unit include the varicap, the series/parallel switch, the bridge on/off switch, and the circuit in/out switch.

These kits are fun to build and there are no SMTs to deal with. The only toroid is the easy-to-wind one in the Matchstick, and all the connectors are PCB-mounted so wiring is at the absolute minimum. The PCBs are laid out well with plenty of space between components. Give these kits a try and you'll have the satisfaction of having fun with a rig you built yourself.

You can do a lot with less than a watt !!!

For Product Information visit: <http://breadboardradio.com>