

## **Tiny Toy 40m CW QRP transceiver (VK3YE, Peter)**

Source (5/2021): <https://www.youtube.com/watch?v=DvHfRJvjUN4>

Below you will find 2 schematics for the Tiny Toy ~~Knobless Wonder~~. It is a Pixie style radio with a direct conversion receiver but the oscillator is tuned about the fundamental with a small capacitor and 4 of the same crystals then act as SSB filters on the fundamental frequency (now the LSB). The DSB is via a toroid transformer instead of the 602 or 612 which would require a separate power regulation circuit.

For many years I've derided QRP crystal controlled transceivers (eg the Pixie) as toys. There'd be kits, people would build them, make a contact or two, and then they'd gather dust on a high shelf. Which is not a bad thing given the price of the nine volt batteries some of them use.

But you'd have to say that there's a novelty factor about a cigarette-pack sized rig. And their low power consumption is in start contrast to a hungry beast like an FT-817.

Here is my own novelty rig for 40m CW. Its clunky t/r switching (flip a switch and turn a dial) and a wide direct conversion receiver does not make it a DX machine. But in other respects it is a little less toyish. There's a wide-swing VXO (nearly 20 kHz) and a usable receiver (stable, unmicrophonic and free of broadcast station breakthrough). Plus the 4 x AA batteries provide longer life and cheaper running.

Power output is around 100mW (or a bit more). Under good conditions this is capable of contacts up to around 800km during the day. This video provides some footage of contacts made on its first day, a description and, at the end, a circuit. Note the drawing errors in the Colpitts VXO circuit; 1. add a 1k resistor from emitter to earth, and 2. move the lower 1n capacitor's top lead from the 33k resistor to the emitter/1k resistor/220pf capacitor's junction.

UPDATE: Two 7030 kHz crystals were substituted in place of the 7040 kHz initially used. VXO coverage is now 7005 - 7028 kHz. The unit is described in detail in Lo-Key March 2012 and Sprat Summer 2012.

Also see:

Bigger Toy 40m CW QRP transceiver (VK3YE, Peter)





