

==== PIXIE2e ====

HSC Electronic Supply © 2013

QRPp CW TRANCEIVER KIT

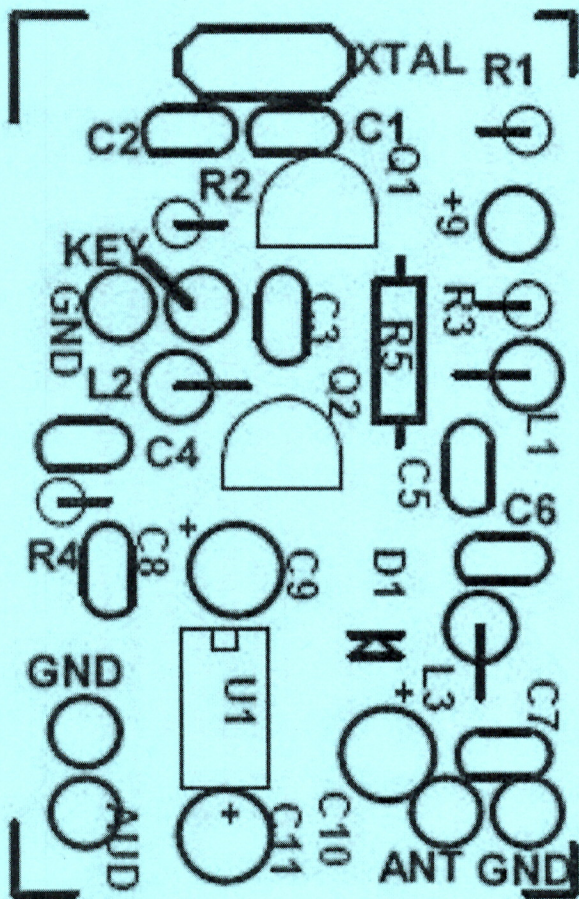
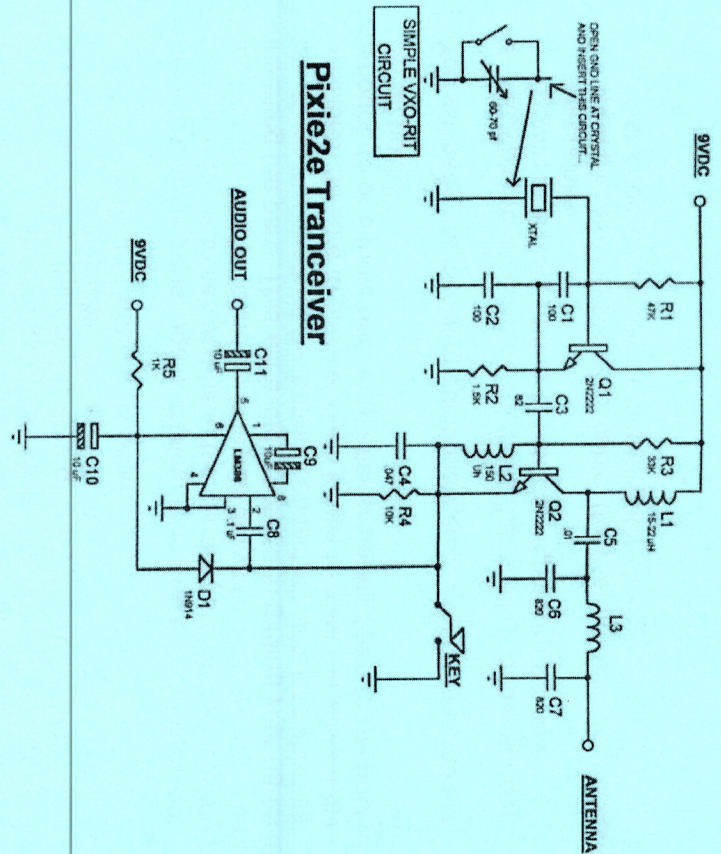
160 - 10 meter capability

200 - 300 mW RF output

8 Ω audio output

TINY! Take it anywhere!

brought to you by
HSC Electronic Supply
www.halted.com



Parts List

C1,2	100pF (101)
C3	82pF (82 or 820)
C4	.047µF (473)
C5	.01µF (103)
C6,7	820pF (821)
C8	.1µF (104)
C9,10,11	10µF electrolytic
D1	1N914
L1	22µH (slvr,red,red,blk,slvr) or (red, red, blk,gld, gld)
L2	150µH (slvr,brn,grn,brn,slvr) or (brn,grn,brn,gld)
L3	Inductor (80 or 40 meter) 80m - 2.2µH (slvr,red,gld,red,slvr) or (red,red,gld,gld) 40m - 1.0µH (slvr,brn,gld,blk,slvr) or (brn,blk,gld,gld)
R1	47K Ω (ylw,vio,org)
R2	1.5K Ω (brn,grn,red)
R3	33K Ω (org,org,org)
R4	10K Ω (brn,blk,org)
R5	1K Ω (brn,blk,red)
Q1,2	2N2222 (or equiv, 2N4401)
U1	LM386 audio amp
+9 / GND	9V Battery Snap
XTAL	3.579545 Mhz xtal, (HC-18) (80 Meters)
XTAL	7.040 Mhz xtal, (purple) (40 Meters)

ASSEMBLY INSTRUCTIONS

ENHANCED PIXIE2e QRPp TRANCEIVER

- [] Refer to the parts list below. Check it against the parts in the kit to be sure you have all of them before beginning the assembly.
- [] You will need a low-wattage soldering iron with a small tip, some rosin core solder, solder wick, (to remove parts), small wire cutters, needle-nose pliers plus any additional tools you may wish to use.

PLEASE PROTECT YOUR EYES WHILE CUTTING LEADS AND SOLDERING COMPONENTS! WARN OTHERS CLOSE BY!

- [] Since all the components, except for U1, are mounted vertically, it's best to start at one end of the board and work to the other. No particular starting point is necessary. Take your time, enjoy the assembly. Your transceiver will be finished sooner than you think. There's no coils to wind, no alignment either! This is a definitely a FUN kit!
- [] Before you get started, note the following parts MUST be installed only one way: the 10 μ F electrolytic caps, D1 – the diode, the two transistors and finally, U1 – the audio amp chip. Make sure you mount these components exactly as the parts layout shows you to. If you mount any of these the wrong way, your transceiver will not work and you'll probably damage the part. The only exception is C11, but it is best to install it as shown.
- [] Mount all of the parts, again, starting from one end of the board. Carefully check to see you have the correct part before installing it in its location. Refer to the parts layout drawing. Double check before inserting the part. This will avoid problems in getting your rig on the air. Keep the length of the battery connector's wires as short as possible. Be sure to allow enough length to twist the wires a fair amount, (5 or 6 turns per inch), after soldering them to the printed circuit board.
- [] You will need the following additional items. Recommended are:
 - 2 - RCA phono, or 3.5mm mini plugs, (for the key and antenna).
 - 1 - 3.5mm mini plug, (mono or stereo), depending on your earphones.
 - 1 - short piece of RG174 coax cable, (for the antenna connection).
 - 1 - crystal socket, (or pair of mini alligator clips).

ASSEMBLY INSTRUCTIONS, (cont.)

- [] NOTE: This transceiver does not have RIT, (receiver offset). It is possible to work other stations if you are close to their frequency. Even if the received signal is close but you can hear its low frequency note, give it a try! A simple RIT circuit using a mono toggle switch and capacitor, hooked up in parallel, and placed in the line between the crystal and ground works well. You won't have full break-in, but it works. See the example next to the circuit schematic.
- [] Remember...all that's needed to change bands on this rig is...change L3 and the crystal...that's it!
- [] You can use "walkman" style headphones with a mono adapter. If a 'motorboating' sound is heard in the earphones, (when connected to a properly tuned antenna), try soldering a small electrolytic capacitor, at least 10 μ F, across the power connector leads where they connect to the printed circuit board. Make sure you observe proper polarity when connecting the cap. There is even enough audio power to drive a small speaker. It's not very loud but you can hear easily in a quite room...neat!
- [] This rig has been squeezed into a 35mm film can, an Altoids© box and a Tic-Tac© box, just to name a few. The enclosure is up to you. One just big enough to hold the rig and the 9 volt battery will give you a tiny self-contained unit.
- [] Many contacts, using a simple end-fed quarter wave wire, worked against a good ground, have been made with this rig. Most of them have been over hundreds of miles away. The transmit signal is very clean, with no key clicks since the oscillator is always running. Just listen to it! Power output is in the 200 to 300 milliwatt range. You'll be amazed what happens at this power level with a decent antenna!
- [] This is a "bare-bones" rig. Use your ingenuity or enlist the help of an experienced ham to help enhance the operation of your rig. Refer to QRP articles like those in the NorCal QRP Club Journals, SPRAT, ARCI and others devoted to QRP operating. If you're not an experienced builder, this kit was designed especially for you. If you've been building circuits, it's hoped you'll have fun with this little rig and/or help a beginner get started in the wonderful world of QRP.

72...ES GL