

******* IMPORTANT PLEASE READ *******

THE FOLLOWING INFORMATION IS PROVIDED 'AS IS' WITHOUT ANY WARRANTY OR GUARANTEE AND SHOULD ENABLE YOU TO BUILD A uBITX FROM SCRATCH ON A STANDARD PTH BOARD FOR USE WITH A DYNAMIC MICROPHONE.

I HAVE BUILT A uBITX ON THIS BOARD SO I KNOW IT WORKS - I AM PROVIDING THE INFORMATION TO ALLOW YOU TO DO THE SAME - BUT IT IS YOUR RESPONSIBILITY TO SOURCE THE COMPONENTS, MATCH THE CRYSTALS, ALIGN THE uBITX AND DO ANY DEBUGGING OR FAULT FINDING - **I WILL NOT BE ANSWERING QUESTIONS OR PROVIDING HELP.**

PARTS LIST FOLDER CONTENTS:

Bill of Materials - a list of parts, values and quantities

Part Numbers and values - use this when building the uBITX

PCB DATA FOLDER CONTENTS:

Dcode data for plotting

Drill data for drilling

Gerber files for top and bottom layers and the solder mask for these layers

Tool data for drill sizes

A ZIP file containing all the above files for PCB manufacture

To get the PCB manufactured send the zip file to the company you use. (I use Eurocircuits and their prototype service) - <https://www.eurocircuits.com>

SCHEMATIC FOLDER CONTENTS:

Pages 1 - 3 of the schematic

PCB LAYOUT FOLDER CONTENTS:

Component Overlay

This shows the position of all components on the board in a large format so it is easy to read, this can be used once the board has been populated to identify specific components.

NOTES:

- All resistors are 0.25W, you can use 0.6w if you can get them in the same size as 0.25W.
- The Arduino MUST be mounted on headers 1) so it can easily be removed for programming 2) So it is clear of the regulator and other components. I used the following TOKO coils - KXCA K2036 AAY (with the capacitor removed) for the 30Mz low pass filter and KANS1508 PAM for the broadcast filter in the receive section.
- I have added a 50R terminating resistor after the first ring modulator where it feeds the 30MHz LPF as the filter was ringing and unstable. I also had to detune L4. You can substitute with suitable alternatives but I cannot guarantee the results.
- The Si5351 board is a standard Arduino 'shield' board that is readily available- do a google search for "Si5351A Clock Generator Breakout Board".
- The Triflar wound Toroids (TRICOIL in the parts list) are made as per the original uBITX specification - I used 3 x different colour wires to make it easy to identify each winding. I also mounted them on DIL headers (along with the diodes for the ring modulators) as I found it much easier to do this than try and put them directly on the board.
- I made some changes to the matching circuit for the 45MHz crystal filter (there is now a 46MHz low pass filter) as this works better with the crystal filter I used.
- There is no provision for an electret condenser microphone as I specifically wanted to use a standard 600 ohm dynamic microphone so you will notice a completely different mic circuit.
- The TDA2822 audio amp is now impossible to source so I have used an NJM2073D which is readily available.
- When wiring the volume control you may find the AGC circuit works better (and with less distortion) if you change the value of R53 to 10K and the pot is wired to the volume control header as follows (rather than the standard method):

Min to pin 1
Max to pin 2
Wiper to pin 3

Have fun!!

73's Peter - MOHYT