

The FDIM 2014 QRPpp HAMfest STICK Project

What is it? The FDIM 2014 QRPpp HAMfest STICK is a simple little project that introduces the builder to several different sizes of components and styles of soldering. The eighth and quarter watt resistors are common kit items and should not be a challenge to either identify or solder. There is a DIP IC micro and several header connectors with close .1" spaced pads which "tax" the skills of the builder a little more than the resistors. Closely spaced pads require just the right amount of solder to make the connection but not too much that it builds up and bridges over to an adjacent pad. The major challenge in this project is to solder the 2 chokes and LED using "Limerick style" construction and the 6 smd (surface mount device) parts. Many builders have discovered that smd parts are not all that challenging.. especially the larger 1206 parts and the large oscillator can at the heart of this design. Lastly, the mechanical parts are pretty straight forward and should be easily handled by builders of all skill levels.

What does it do? Once successfully built, the FDIM 2014 QRPpp HAMfest STICK has many uses:

- * development platform for using & learning Picaxe micros
- * pocket friendly LED based Morse code call sign ID-er
- * code practice oscillator with "real" RF output to radio
- * testing frequency counters or 80m receivers at hamfests

use the Limerick Square Proto Area to make some simple mods for:

- * dual paddle input custom programmed keyer
- * keyboard based keyer for simple transmitters
- * ????

What does it do right now? Once the program has been downloaded for a PC to the HAMfest STICK, it is ready to use. Press & hold the small push button while powering up and the Hamfest STICK will enter the programming mode. Type in your message on a PC style keyboard. End your message using the ENTER key. Press function key F1 and a 2 digit speed code to set the Morse speed. Press the function key F2 and a 2 digit delay code to set the delay time in seconds between message repeats. The code is meant to be an example of a Picaxe program AND a starting point for a group development of more extensive operations. Stay tuned for updated versions....

PARTS LIST (in suggested order of assembling)

Double check ALL parts *first* to ensure that you have everything needed to build the kit!
ALL parts are mounted on the TOP side of the circuit board except for the 2 coin cell holders.

14 pin IC socket @ Picaxe 14M2 The socket is soldered onto the board first in order to have unencumbered access for soldering the socket leads.

CAPACITORS (for 80m 3.6864 MHz oscillator operation)

C0 = .1uf = 1206 smd marked with YELLOW stripe

C1 = 560pf = 1206 smd marked with BLUE stripe

C5 = 560pf = 1206 smd marked with BLUE stripe

C2 = unused for 80m operation

C3 = 1200pf = 1206 smd marked with BLACK stripe

C4 = 240pf = 1206 smd marked with RED stripe

RESISTORS

100 ohm 1/8 watt axial QTY 2 (brn-blk-brn)

4.7K ohm 1/8 watt axial QTY 2 (yel-vio-red)

XXX ohm 1/4 watt axial at R LED (red-red-brn) (org-org-brn) (yel-vio-brn)

10K ohm 1/8 watt axial (brn-blk-org)

INDUCTORS (for 80m 3.6864 Mhz operation - mounted "Limerick style")

L1 = 2.2uh axial choke (red-red-gold)

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SEMICONDUCTORS

The following 3 items are polarized so pay attention to the special markings on the item and on the silk screen designator.

1N4148 axial diode at D1 (match bar to bar)

3.6864 oscillator can (other full size oscillator cans will fit the 4 outside corner pads)

LED = red ultrabright (match flat to flat)

MECHANICALS

Mini 6 pin DIN PC keyboard style right angle connector

2x1x.1" right angle male header @ PWR - connector & jumper serve as an on/off switch

2x1x.1" right angle male header @ RF - serves as an on/off switch for 80m transmitter

3x1x.1" right angle male header @ PGM - Picaxe programming cable attaches here

mini PC membrane SPST NO (normally open) push button switch @ SW - function options

smd 12mm coin cell holders on the back side of the board

2x1x.1" shorting jumpers are used as both a power on/off switch and to power up the

oscillator can to enable the RF output...when desired.
You are DONE!