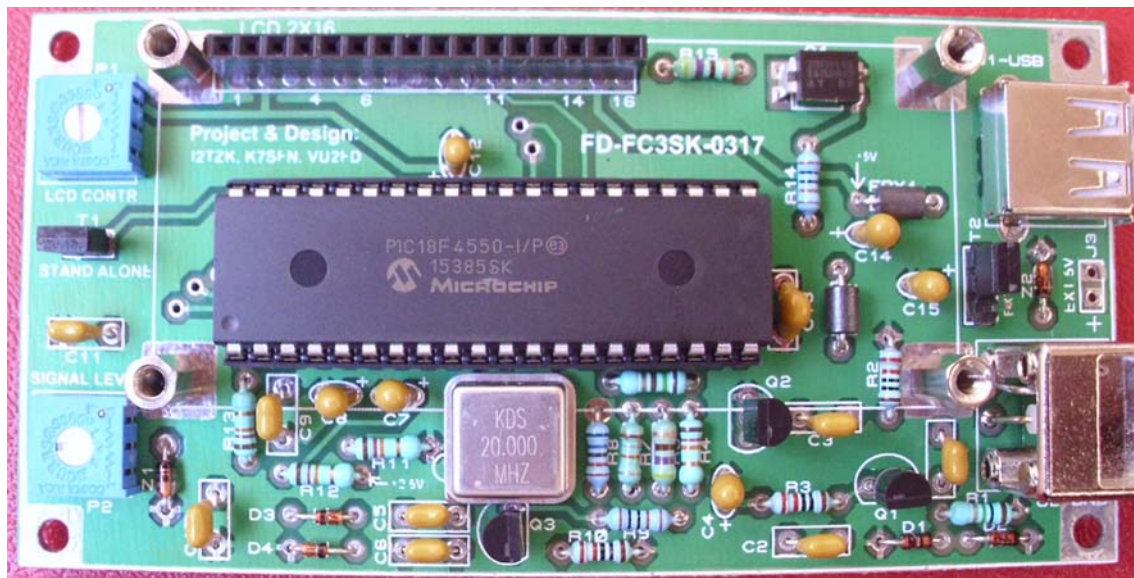**FC3-SK Tech Info Doc: PIC18F4550 50MHZ Freq Counter & RF Meter**

Completed FC3-SK-0317 50MHZ Frequency Counter:

LCD Removed:

FC3-SK-0317 50MHZ Frequency Counter:

Originally designed and developed as a School Project, this Frequency Counter based on PIC18F4550 is ideal Freq/RF Level measurement device for Radio amateurs and especially works well as a Digital Display for old radios.

Some important features:

1. Its USB Powered

2. Simple One Chip 18F4550 Project

3. Count frequency to 50MHZ (Maximum and PIC Specific)

4. 2 x 16 LCD Display

5. Signal Level Indication (Bar Graph)

6. Small enough to carry around with your laptop

7. Frequency "off-sets" set by PC program
.
8. Free PIC Firmware & PC WIN Software by Tony/I2TZK

Counter is designed on a Double Sided PTH Board and works on USB power or if required, on external 5V DC Supply.

Option to apply external +5V is for those who wish to power this counter from their own +5V source. (Digital Display for old radios, etc)

FC3-SK uses simple diode detectors for RF level measurement instead of more accurate chip like AD8307 to make project simple to construct and use. RF level is displayed on second line of LCD in form of a Bar Graph.

An advanced version of this Frequency Counter may be found at Fox Delta site called FC3. On FC3 counter, AD8307 is used to measure RF level very accurately in DBm, Vpp or RMS.

This Counter/RF Meter works with a PC/USB or as a Stand-alone.
Usually, you configure this counter using a PC/USB software designed by Tony/I2TZK, available free of charge, enter IF Offsets etc and then use it as a standalone unit as a Digital Display for your Radio.
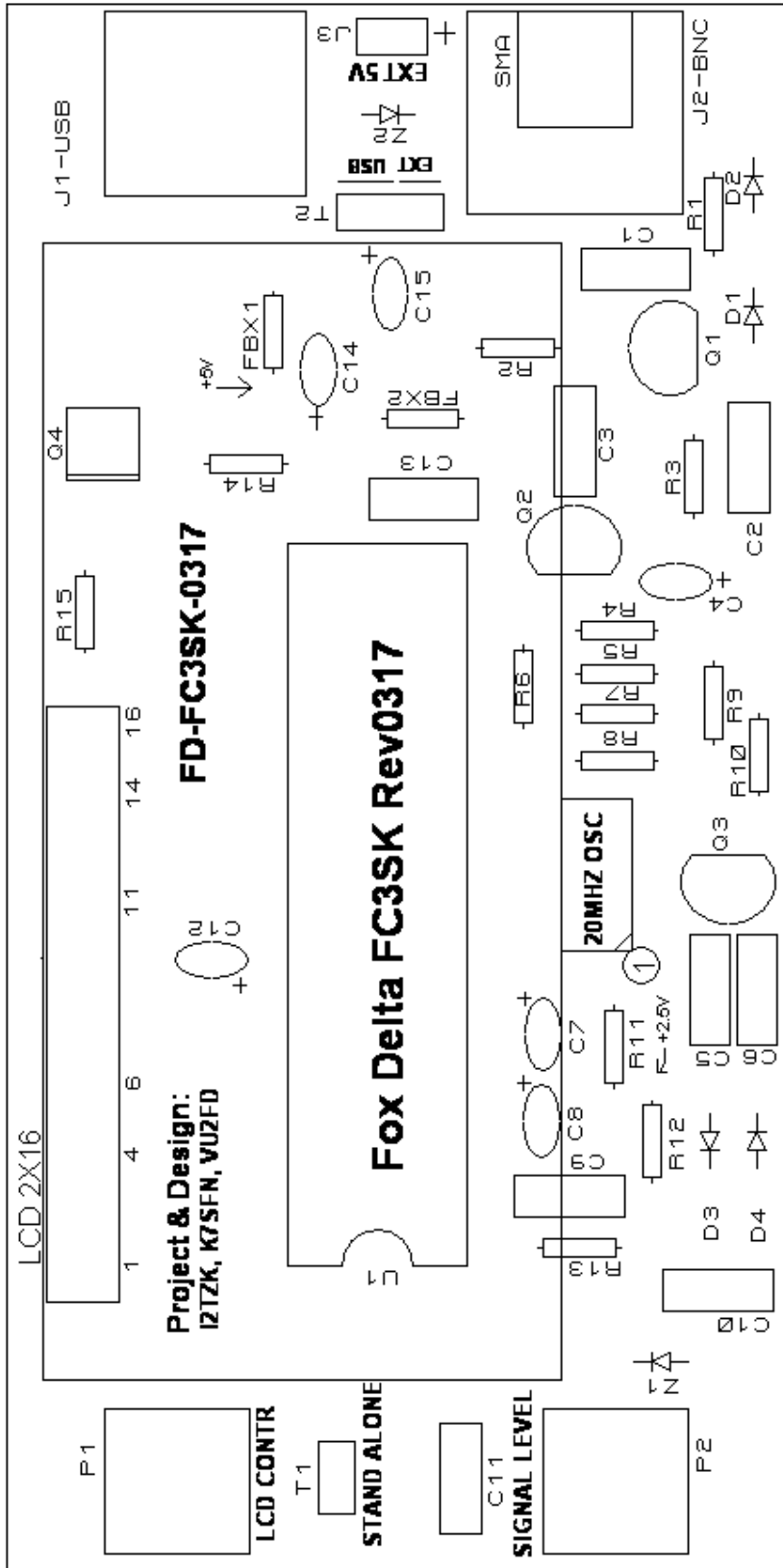
FC3-SK-0317 Frequency Counter and RF Meter Kit Parts List:

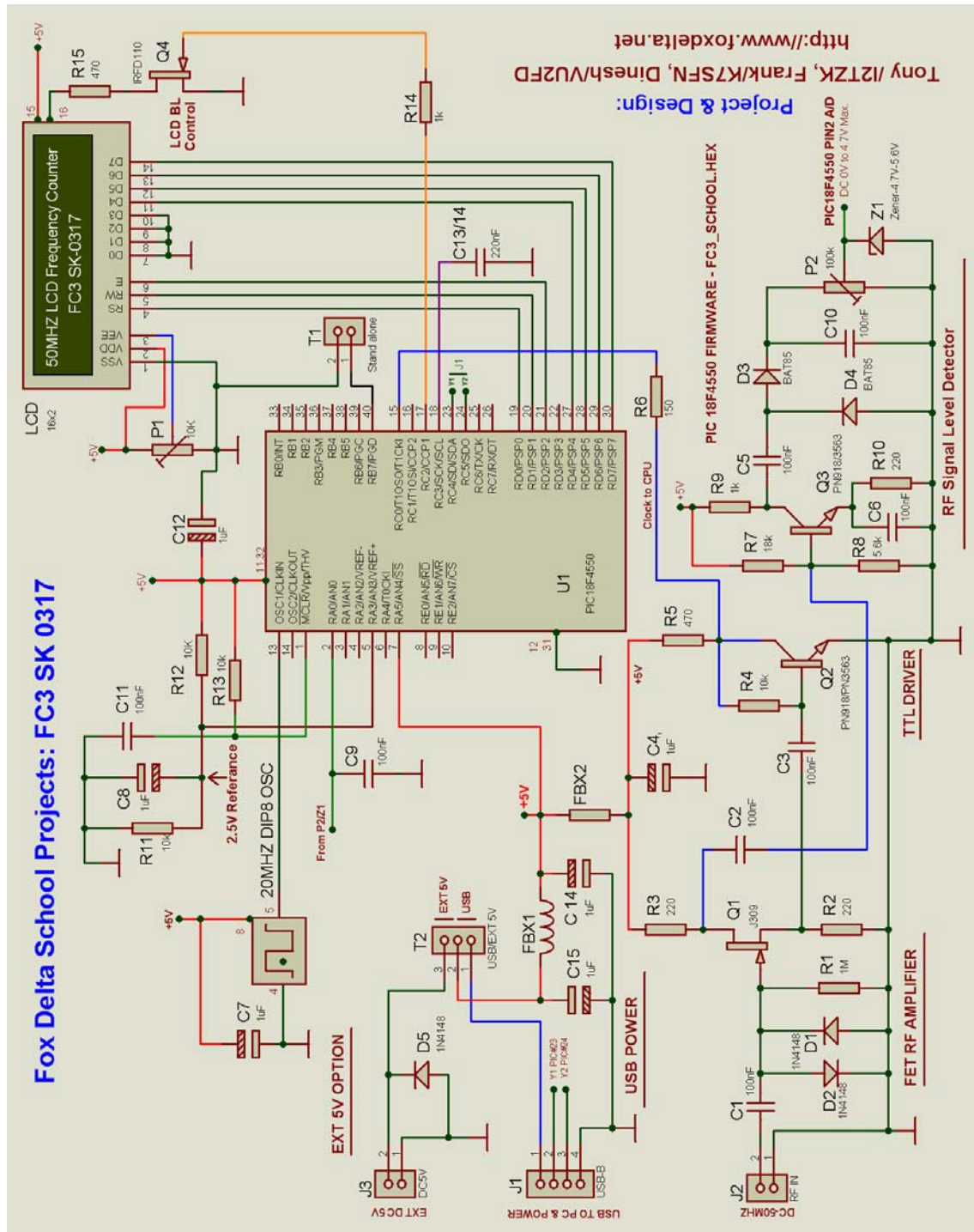| Qty	Check	ID	Part Detail
1		U1	PIC18F4550 40DIP (Pre-Programmed)
1		OSC	20MHZ HALF SIZE OSC
1		LCD	2x16 LCD with BL
1		J1	USB PCB CONNECTOR
1		J2	BNC R/A or SMA R/A PCB Connector
1		Q1	J309 FET TO92
2		Q2, 3,	PN918/PN3563 – TO92
1		Q4	IRFD110
2		FBX1, 2	Ferrite Bead Inductors
1		PCB	FC3-SK-0317 DSPTH BOARD
1		P1	10K Bourns Preset
1		P2	100K Bourns Preset
1		IC Socket	40PIN DIL For PIC18F4550
1		T1	2 PIN Header (Stand-alone)
2		Z1, Z2	4.7V/5.6V Zener
1		T2	3 PIN Header (USB/EXT +5V Select)
2		D1, 2,	1N4148
2		D3, 4	BAT85
1		H1	16PIN Male/Female Header for LCD
Capacitors			
7		C 2, 3, 5, 6, 9, 10, 11,	0.1uF Poly
6		C4, 7, 8, 12, 14, 15,	1uF Tantalum 35V
1		C13	0.47uF Poly
Resistors			
1		R1,	1M All resistors ¼ W 5%
3		R2, 3, 10	220 ohms
4		R4, 11, 12, 13	10K
2		R5, 15	470 ohms
2		R14, 9	1K
1		R7	18K
1		R8	5.6K
1		R6	150

Frequency Displayed on LCD:

FC3- SK-0317 Freq Counter & RF Meter PCB Silk View: TOP

FC3-SK-0317 Freq Counter & RF Meter Schematic:

Dinesh Gajjar
22nd March 2017

For more information, please visit: http://www.foxdelta.com/