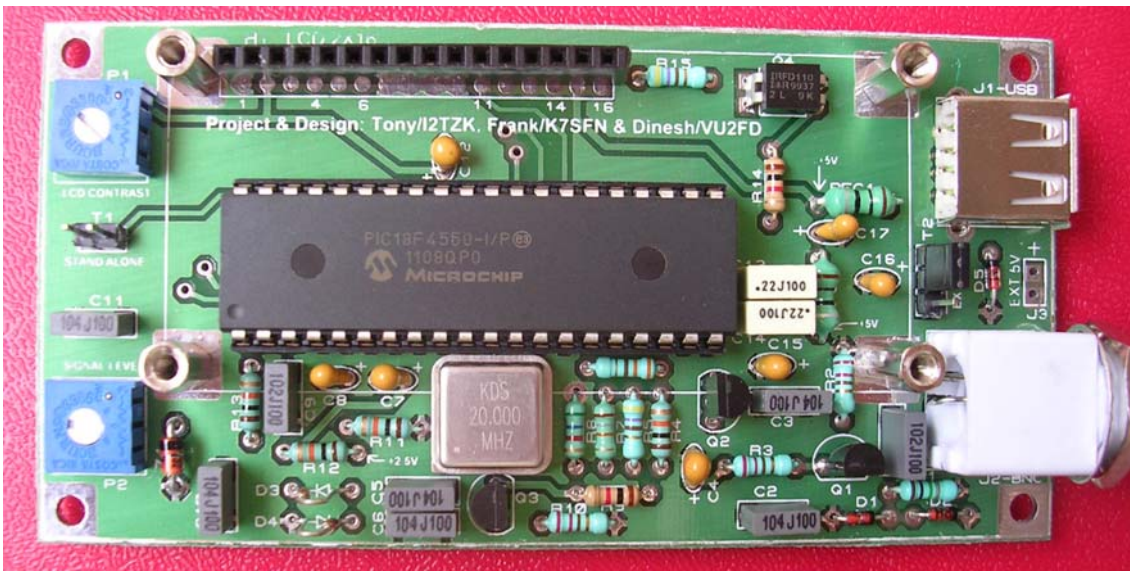


Project Intro, Schematic & Parts List: PIC18F4550 50MHZ Frequency Counter

Completed FC3 50MHZ Frequency Counter:



LCD Removed:



FC3 50MHZ Frequency Counter:

Frequency Counter project detailed here is based on PIC18F4550 for which design and firmware/software support is given by [Fox Delta Team](#).

There are many PIC based frequency counters out there but this one will stand apart from others.

Reasons:

- 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)

Project is designed and developed for science students and Radio Amateurs, looking for economical frequency counter for their hobby work.

It may be a perfect frequency display for old radios too. (Any IF Offsets OK)

Keeping this in view, expensive chip like AD8307 for accurate measurement of RF Signal Level is avoided and instead we have used a simple diode detectors to display signal level on second line of LCD as 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 which is measured in DBm, Vpp or RMS.

But on this economical version of counter, we get an indication of signal presence by way of a Bar-Graph. This Counter works with PC and also as a Stand-alone. Usually, you configure this counter using a PC software, enter IF Offsets etc and then use as a standalone unit.

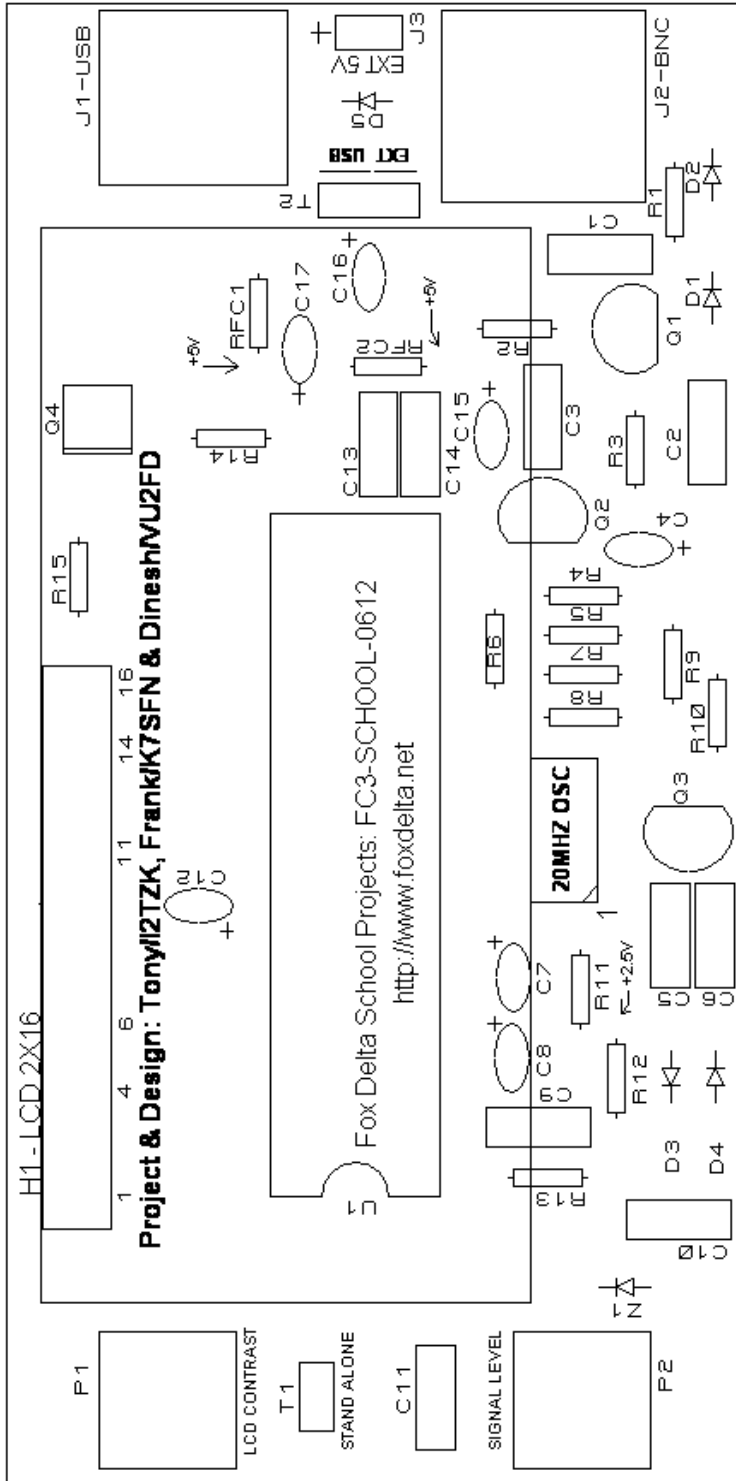
FC3-School-COUNTER Kit Parts List:

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 PCB Connector
1		Q1	J309 FET TO92
2		Q2, 3,	PN918/PN3563 – TO92
1		Q4	IRFD110
1		RFC1, 2	10uH RFC
1		PCB	FC3-School-0612 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)
1		Z1	4.7V Zener
1		T2	3 PIN Header (USB/EXT +5V)
1		T2	3 PIN Header (5V USB / EXT 5V Select)
3		D1, 2, 5	1N4148
2		D3, 4	BAT85
1		H1	16PIN Male/Female Header for LCD
Capacitors			
6		C 2, 3, 5, 6, 10, 11,	0.1uF Poly
2		C9, 1	0.001uF Poly
7		C4, 7, 8, 12, 15, 16, 17	1uF Tantalum 35V
2		C13, 14	0.22uF Poly
Resistors			
1		R1,	1M 1/4W 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	390

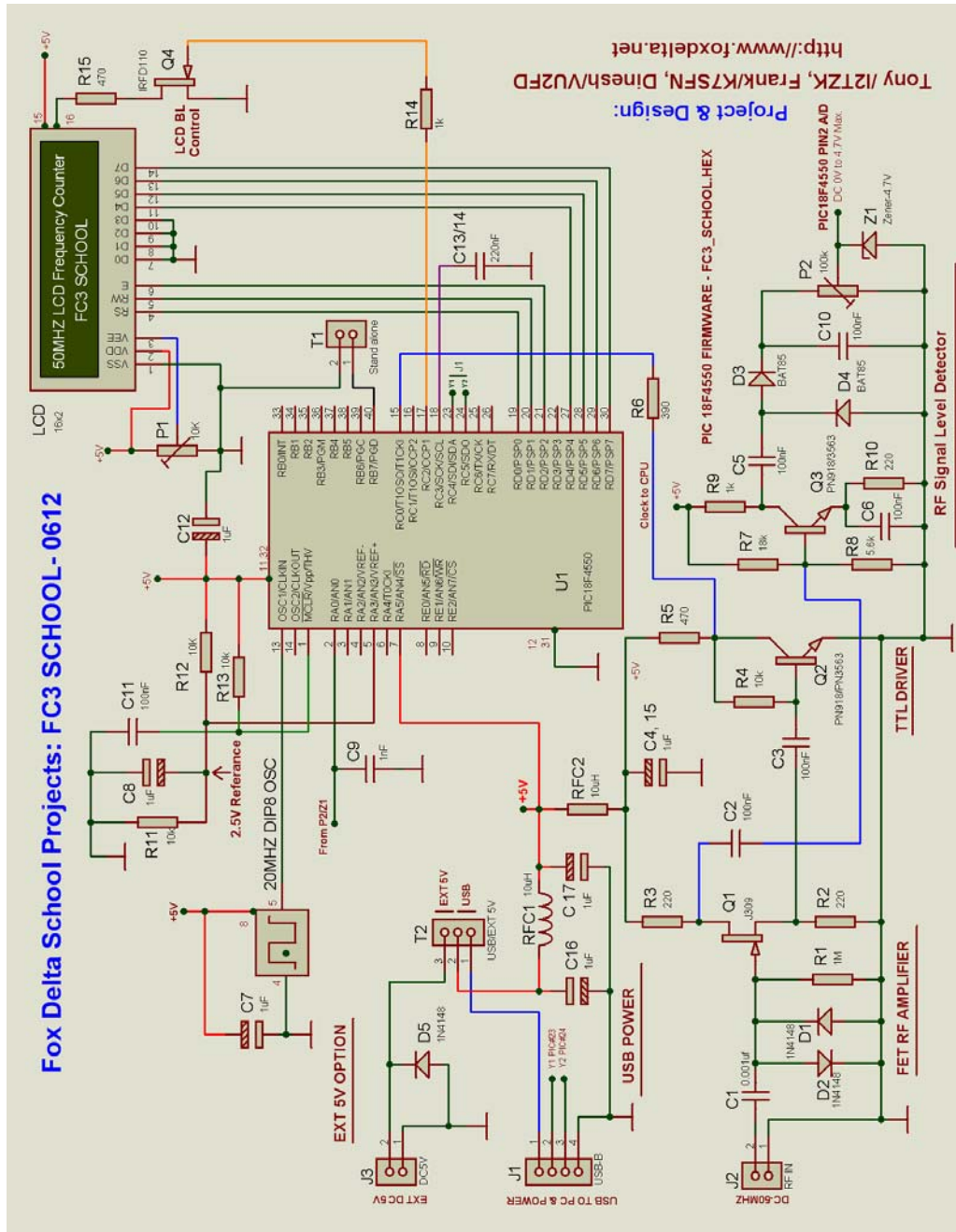
Frequency Displayed on LCD:



FC3- School -COUNTER PCB Silk View:



PIC-COUNTER Schematic:



An assembly manual will be available for first time kit builders.

Nina Gajjar. 08th July 2012

For more information, please visit: <http://www.foxdelta.net>