Schematic & Parts List: PIC18F4550 50/500MHZ Frequency Counter & RF Meter

FC3- 0718A 50/500MHZ Frequency Counter and RF Meter Kit Parts List:

Parts List For 2x16 LCD Version Kit:

Quantity	Part ID	Details
1	U1	PIC18F4550 DIP40 with FW2.04 pre-loaded
1	PCB	FD-FC3-0718A
1	IC Socket	40 PIN DIP
1	U3*	AD8307 SO8
1	U2	LM385-2.5V
1	U6	7805
1	U4*	MC12080 SO8
1	U5*	74VHC00 SO14
1	Q1	IRFD110
1	Q2*	ERA-3SM
1	Q3*	BFR93A
1	OSC	Oscillator 20MHZ Full size (DIP14)
1	P1	10K Preset
1	D1	1N4007 Diode
2	D2, D3	1N4148
1	RFC1*	22uH SMT
7	FBX1, 2, 3, 4, 5,6,7*	SMD FB Inductors
1	RFC2	82uH
1set	LCD Header	16PIN SIL 0.1INCH (Male + Ribbon) 8+8
1set	KB Header	8PIN SIL 0.1INCH (Male + Ribbon)
2	KB Buttons	12mm push Buttons
2	LED	3MM RED, GREEN
1	KB PCB	FC3-0915-1 or FC3-0718-1
1	J3	BNC R/A Connector
1	RLY	OEN42 12V 1CO Relay
1	LCD	2x16 LCD with BL
1	J2	USB Connector
1	J1	DC Connector
1	Case	Free powder coated metal case.
1	Set	LCD and KB mounting hardware

Parts marked with * are SMD and are pre-soldered for kits

Resistors – All 1/4W 5% unless specified

Quantity	Part ID	Details
3	R1, 2, 3	18 ohms
2	R4, 5	100 ohms
1	R23	2.2 ohms
1	R6	470K
1	R7	10
1	R8	100K
1	R9	820
1	R10	150
2	R11, 19	750K
2	R14, 33	470
1	R16	1.5K
1	R12	820K
1	R18	680K
2	R13, 17	220
3	C29, 30, 34	10K
2	R25, 32	1K
2	R20, 31	4.7K
1	R24	2.2K
2	R21, 22	22 Ohms
1	R35	3.3K
1	R15	33 ohms

Capacitors:

Quantity	Part ID	Details
5	C4, 6, 25, 17, 32	0.1uF Ploy
12	C5, 2, 10, 11, 14, 1, 15, 16, 20, 21, 29, 30	0.01uF Poly
11	C3, 7, 8, 9, 12, 13, 22, 19, 26, 27, 31	1uF Tantalum
1	C18	0.47uf
2	C23, 24	27pf Ceramic

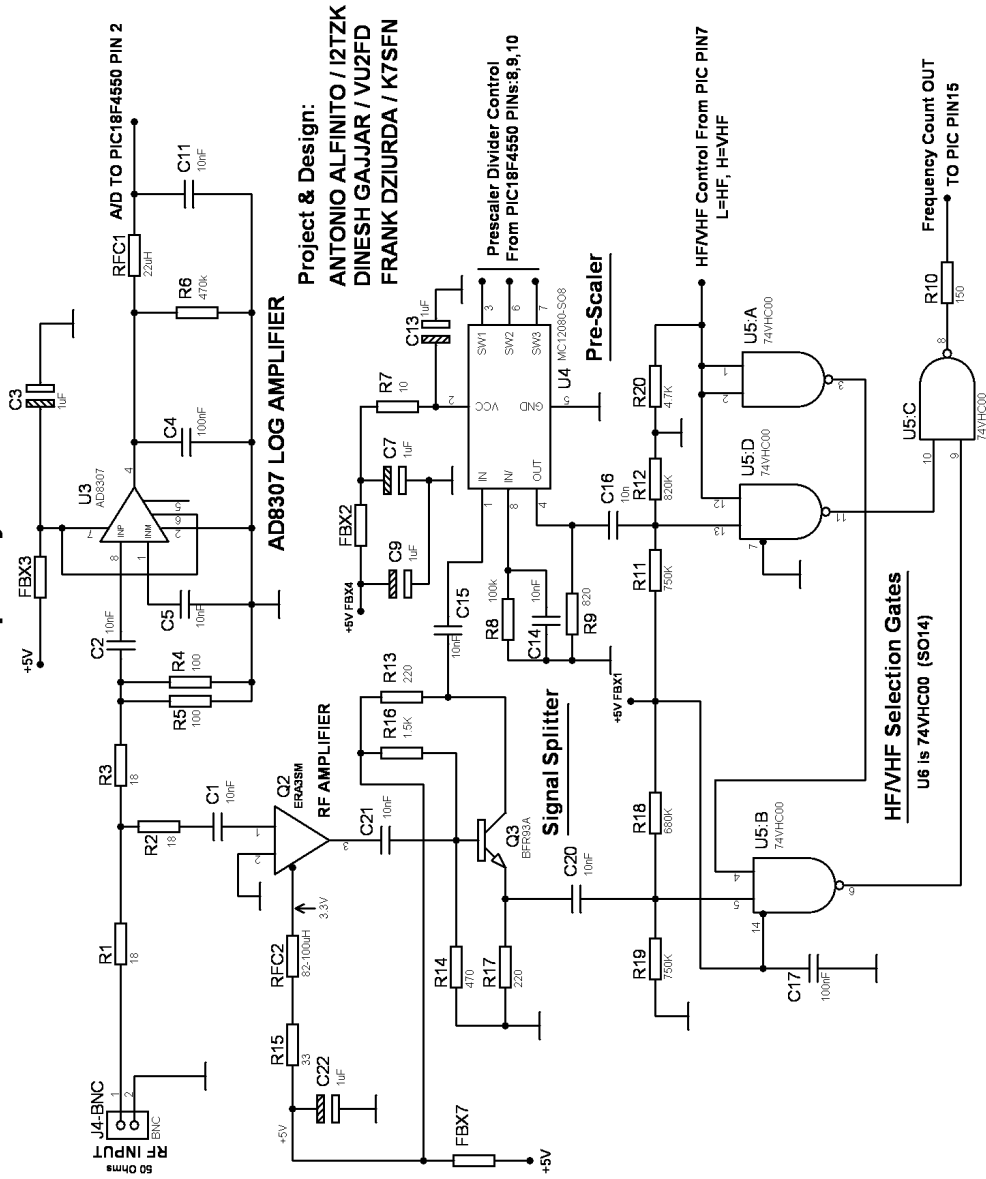**Not included in this 2x16 LCD version kit:**

TFT Version Specific parts: TFT1, C28, FBX8, R26, R27, R28, 2PIN Headers TFT-EN and BOOT.
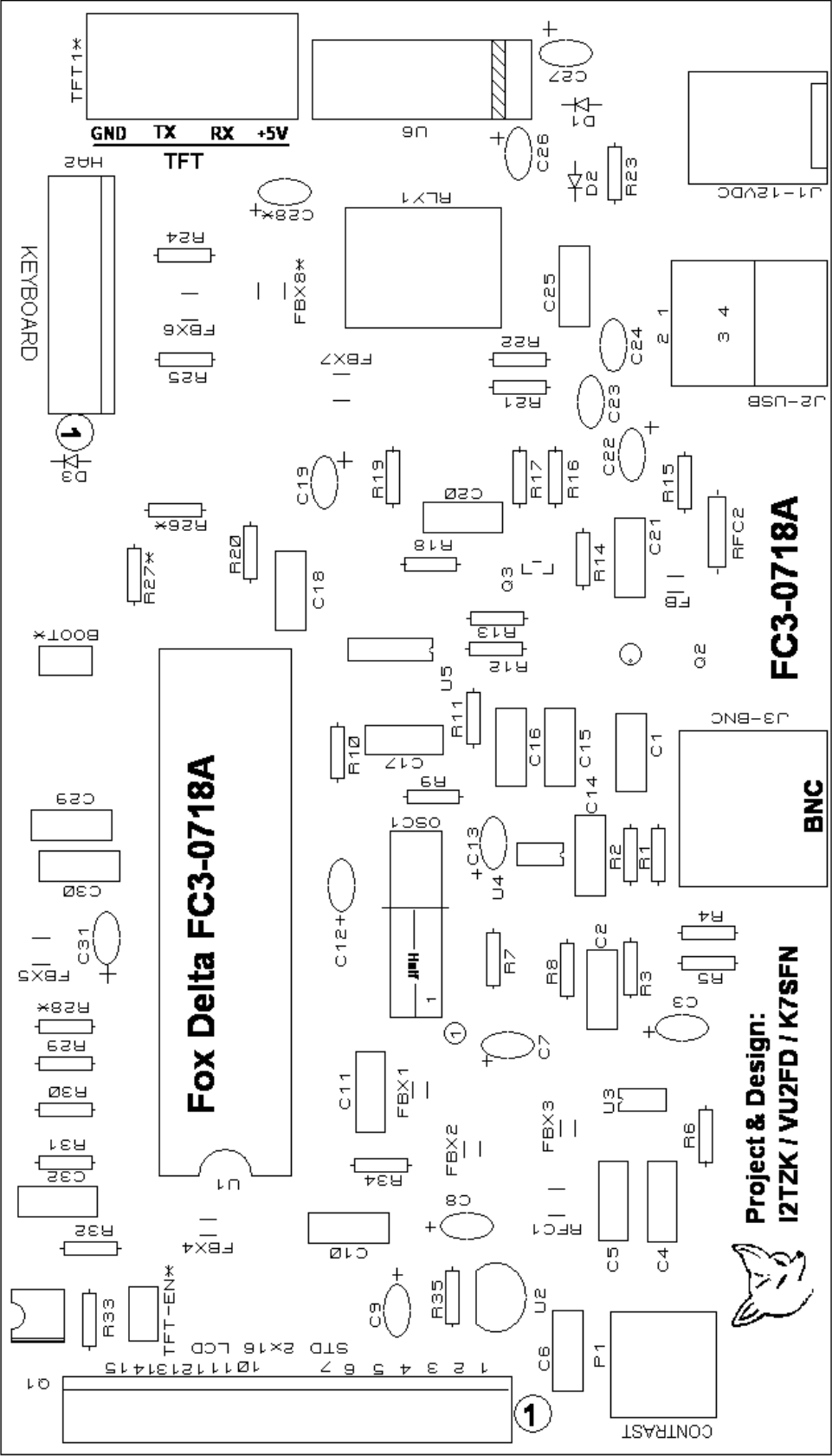
FC3-0718A CPU Schematic:
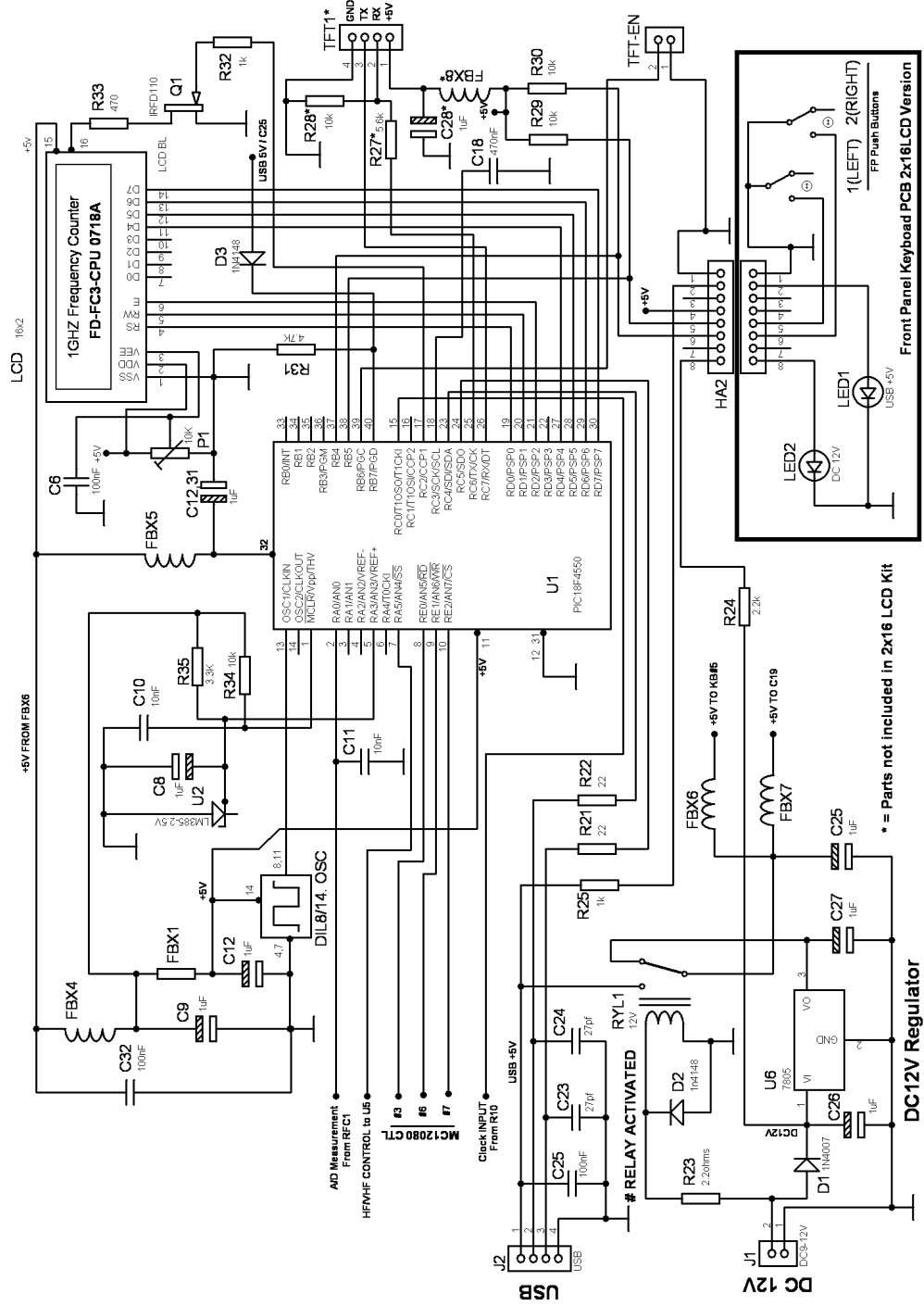
Project & Design by: Antonio Alfinito / I2TZK, Dinesh Gajjar / VU2FD, Frank Dziurda / K7SFN

Fox Delta FC3-0718A PART-1 http://www.foxdelta.com Supports 2X16 LCD and TFT

FC3-0718A INPUT Schematic:

FC3-0718A 500MHZ LCD Frequency Counter & RF Meter

Project & Design:
ANTONIO ALFINITO / I2TZK
DINESH GAJJAR / VU2FD
FRANK DZIURDA / K7SFN

AD8307 LOG AMPLIFIER

A/D TO PIC18F4550 PIN 2

RFC1 22uH

C11 10nF

R6 470k

C3 1uF

+5V

C4 100nF

U3 AD8307

FBX3

C2 10nF

C5 10nF

R4 100

R5 100

R3 18

R2 18

C1 10nF

R1 18

RF AMPLIFIER

Q2 ERA3SM

RFC2 82-100uH

3.3V

R15 33

C22 1uF

+5V

J4-BNC

RF INPUT

50 Ohms

BNC

Prescaler Divider Control
From PIC18F4550 PINs:8,9,10

SW1 3   SW2 6   SW3 7

C13 1uF

R7 10

C7 1uF

FBX2

+5V FBX4

C9 1uF

Pre-Scaler

U4 MC12080-SO8

VCC   GND

IN   IN   OUT

C15 10nF

R8 100k

C14 10nF

R9 820

R16 1.5K

R13 220

C21 10nF

Signal Splitter

Q3 BFR93A

C20 10nF

R14 470

R17 220

FBX7

+5V

+5V FBX1

R11 750K

R18 680K

R19 750K

C17 100nF

HF/VHF Control From PIC PIN7
L=HF, H=VHF

R20 47K

C16 10n

R12 820K

U5:A 74VHC00

U5:D 74VHC00

U5:B 74VHC00

HF/VHF Selection Gates

U6 is 74VHC00 (SO14)

Frequency Count OUT
TO PIC PIN15

R10 150

U5:C 74VHC00
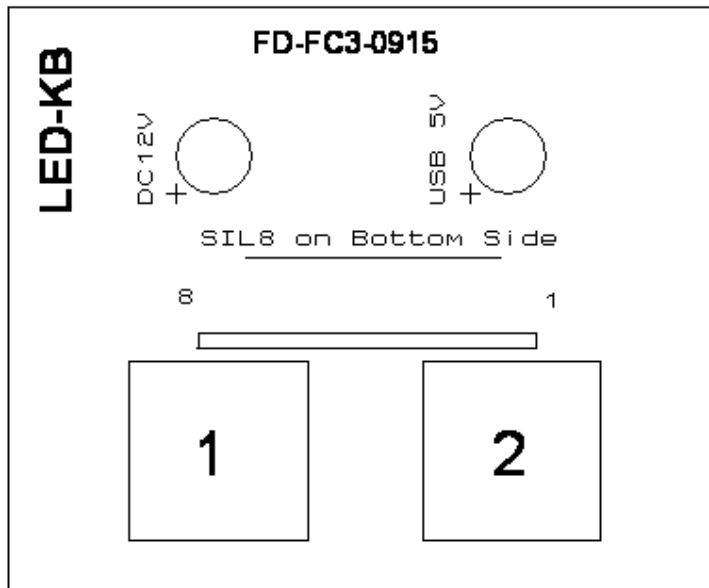
FC3-0718A PCB TOP SILK:

FC3- 0915-1 / 0718-1 Key Board PCB SILK:

Notes:

1. **SMT Parts:** AD8307, MC12080, ERA3SM/74HC, BFR and Ferrite Bead are **pre-soldered on PCB**

2. **PCB Rev 0718 is exactly same as 0915 except that Ferrite Beads are SMD and are pre-soldered for kits. This revision also support 3.2" TFT with change in PIOC Code.**

3. **Ensure** that you pay attention to OSCILLATOR **orientation**. OSC pin 1 is marked by a dot and by way of square edge on body.

4. **Q1 is IRFD110.** Make sure that two pins which are together, goes to pads **marked by black line on SILK**.

5. **LCD headers:** 2 X 8SIL headers are Pre-soldered on main PCB for kits. 2 set of 8PIN ribbon cables are supplied. Connect ribbon cables for each socket marked as "1" and "2".

6. **Keyboard:** 8PIN SIL header is pre-soldered on main PCB and KB PCB for kits**.**

73s

Dinesh Gajjar
18th Sept 2019

For more details on this project please visit http://www.foxdelta.com