



**Fox Delta**

Amateur Radio Projects & Kits

**FC5 - 0815**

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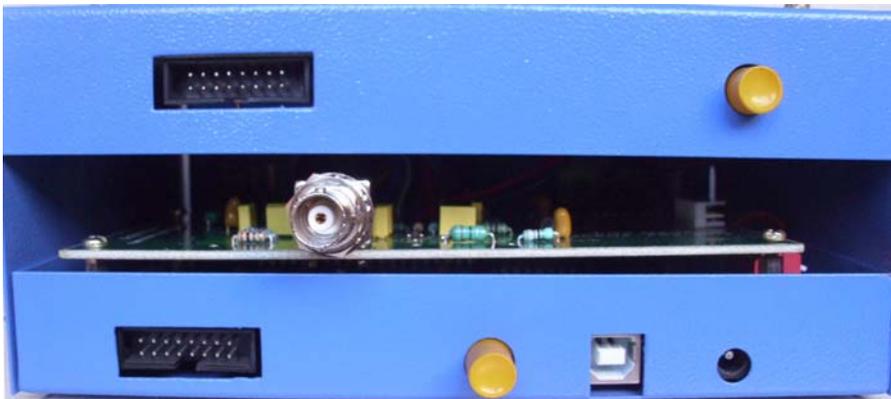
**FC5-0815: 500MHZ Freq Counter + RF Meter add-on Board For GCPuX**

**FC5-0815 Technical Information Document:**

**Completed FC5: Front View**



**Back Panel View:**



**Back panel Connectors:**

1. RF IN (BNC)
2. FRC16 (Lower): COMM Connector (Future add-on)
3. Push Switch (Lower): USB/DC12V Select
4. Push Switch (Top): Battery Power ON/OFF
5. FRC16 (Top): Bluetooth Adapter
6. Lower connectors: DC12V and USB

#### FC4: Interesting features of this project:

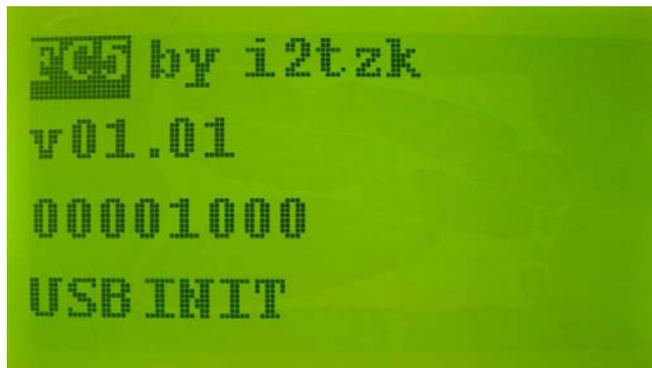
1. USB, DC12V or Internal Battery Powered
2. Use with PC and Free Win7 Program or as a Stand alone unit
3. Measures RF Level using Analog Device Log amplifier AD8307
3. Count frequency to 50MHZ / 500MHZ (HF or VHF manual or auto Select)
4. Signal Level measurement in dbm, vpp and rms
5. 50 ohms input impedance
6. Free PIC Firmware & PC WIN Software by [Tony/I2TZK](#)

Designed on a three Double Sided PTH Board with same size as PM5 or SWM5, FC5 is a Triple Power device. It may be powered by USB, internal battery or from a DC 12V. USB/DC12V selection is a manual switch.

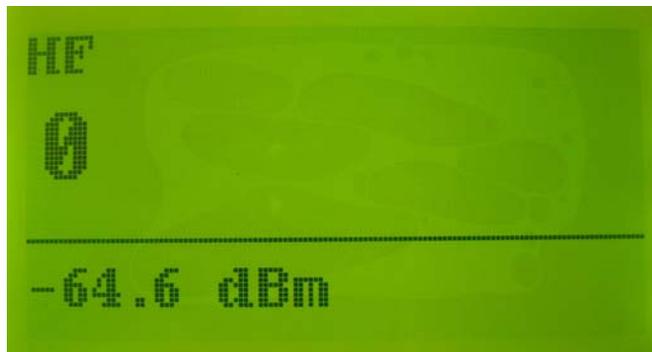
FC5 is ready to work with a Blue tooth adapter and smart phones as and when FC5 firmware is offered with BT capability. ([Look for updates](#))

FC5 is designed and developed for Radio Amateurs looking for economical frequency counter and RF Meter for their hobby work.

#### FC5 Measurement Screen Shots:



Power ON Menu



First Menu after  
Initialization: PC  
Found or Standalone



Antenna analyzer (AAZ-0914A) output connected to check frequency and signal level



Antenna analyzer (AAZ-0914A) output connected to check frequency and signal level at 55MHZ



Vpeak Measurement

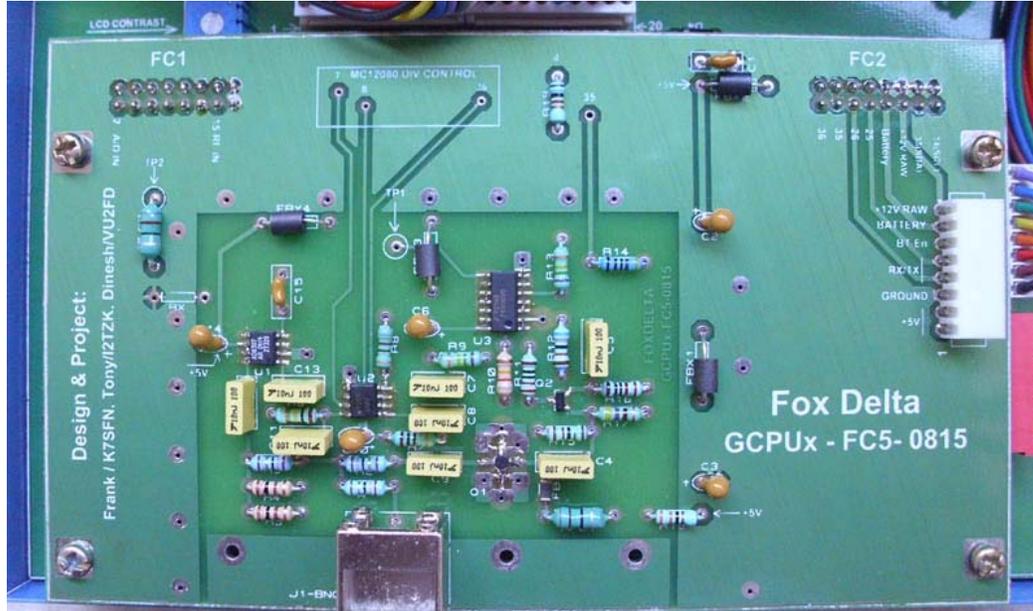


V RMS Measurement

**Hardware:**

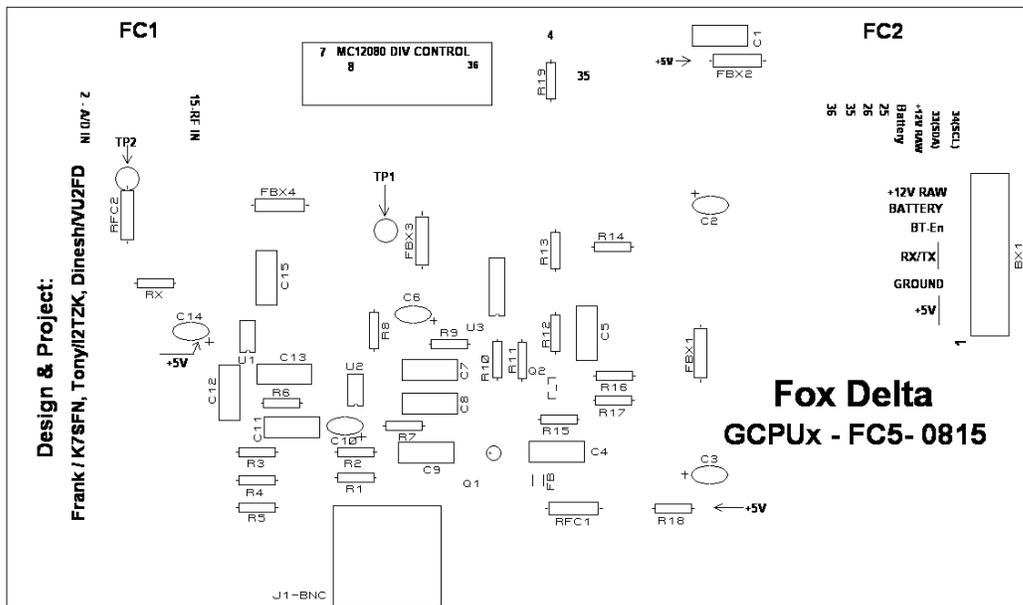
FC5 Complete KIT includes AD8307, ERA3SM, BFR93A, 74VHC00 and MC12080 in SMT package. Kit is supplied with pre-soldered SMT parts.

**FC5 Board TOP VIEW:**



Component RX is not required when used with GCPuX Main Board. If you wish to use FC5 board for your own project, please add RX as 470K resistor.

**FC5 Board TOP SILK:**



## Battery Board: (Details of this board listed in separate documents)



**Battery, NiMH or NiCad can be used in this board. Require a 4 Cell battery with about 1000ma capacity (more is always better!)**

**Battery Board kit dose not include battery and user is required to purchase it from market.**

**Bluetooth adapter, such as BT2 used with AAZ-0914A antenna analyzer, can be used with this project when BT code is embedded into FC5 firmware.**

**Connector BX1, SIL8 type Right angle, is used to interconnect FC5 board with Battery/BT board, which mounts on roof of the metal case**

**A free metal case is supplied with FC5 kits. Present available metal case colors are Blue or Choco Brown.**

### Menu Buttons:



**Four Button Menu has two top buttons for selection and lower two for selection within menu.**

**Button assignment and functions are dependent on firmware of specific project.**

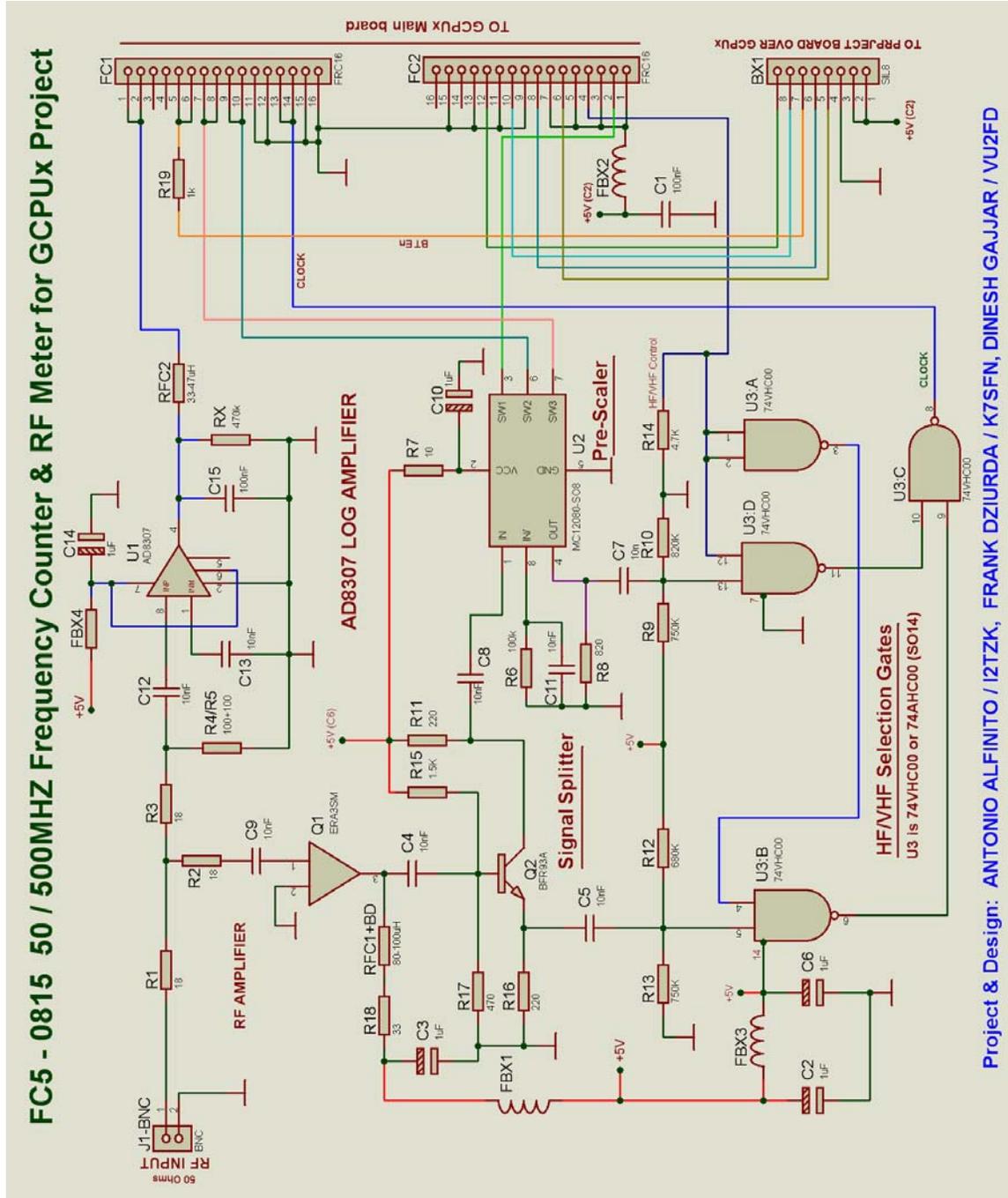
## FC5 Parts List

Quantity	Part No.	Part ID
1	PCB	F5-0815 DSPTH PCB
2	FC1, FC2	FRC16M PCB Straight Interconnect to CPU
1	BX1	SIL8 PCB Connector (Battery Board Expansion)
1	J1	BNC R/A
1	Q1	ERA3SM
1	U1	AD8307 SO8
1	Q2	BFR93A
1	U2	MC12080 SO8
1	U3	74VHC00 SO14
2	RFC1 – RFC2	82-100uH
4	FBX1- 4	FB Inductors
1	Set	PCB Hardware
<b>Capacitors</b>		
4	C2, 3, 10, 14	1uF Tantalum
2	C1, 15	0.1uF
8	C4, 5, 7, 8, 9, 11, 13, 12,	0.01uF
<b>Resistors</b>		
3	R1, 2, 3	18
2	R4, 5	100
1	R6	100K
1	R7	10
1	R8	820
2	R9, 13	750K
1	R12	680K
1	R18	33
2	R11, 16	220
1	R15	1.5K
1	R14	4.7K
1	R10	820K

**Note:**

1. FC5 is an add-on board for GCPuX-0815, together they make a Frequency and RF measuring device.
2. ALL SMT Parts are Pre-Soldered on PCB

FC5 0815 Schematic:



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

73s  
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For more details please visit <http://www.foxdelta.com>