



Fox Delta

Amateur Radio Projects & Kits

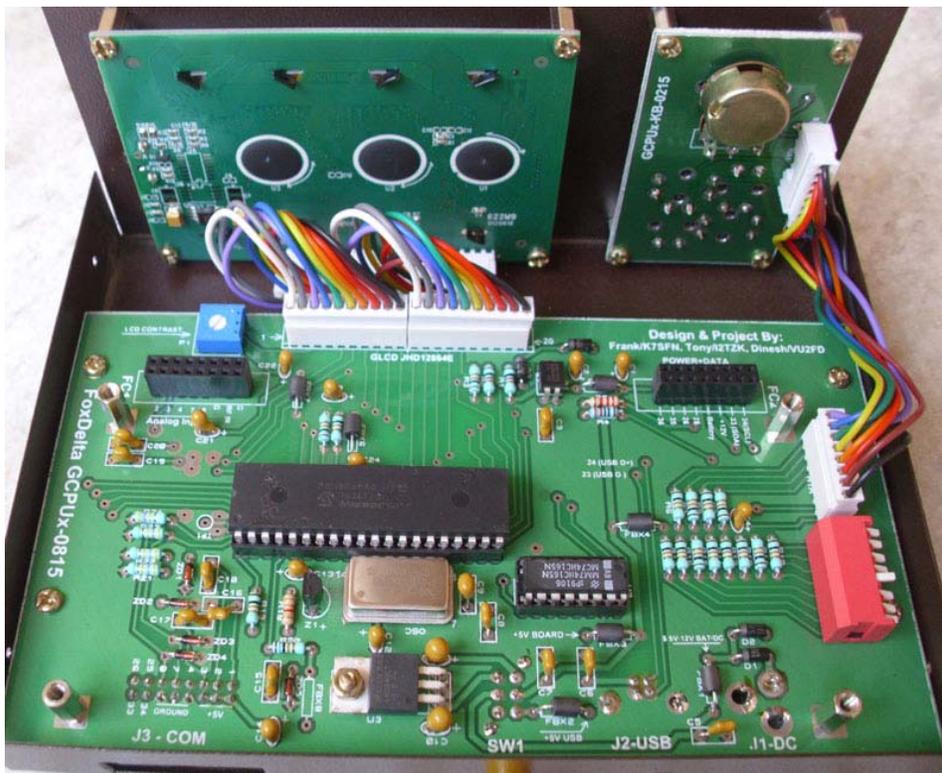
FD- GCPUx - 0815

GCPUx-0815 Parts List: PIC18F4550 General Purpose 128X64 Graphic LCD CPU

GCPUx TECHNICAL INFORMATION DOCUMENT:



Completed GCPUx-0815 internal view: (without project board)



GCPUx is an expandable CPU and Graphic LCD project which has provision to "add" a "project" board to create a full function amateur radio station accessory.

Advantage of "GCPUx" concept is a possibility to add new project board, Change processor code and have a new working unit for your ham station.

GCPUx has following design task:

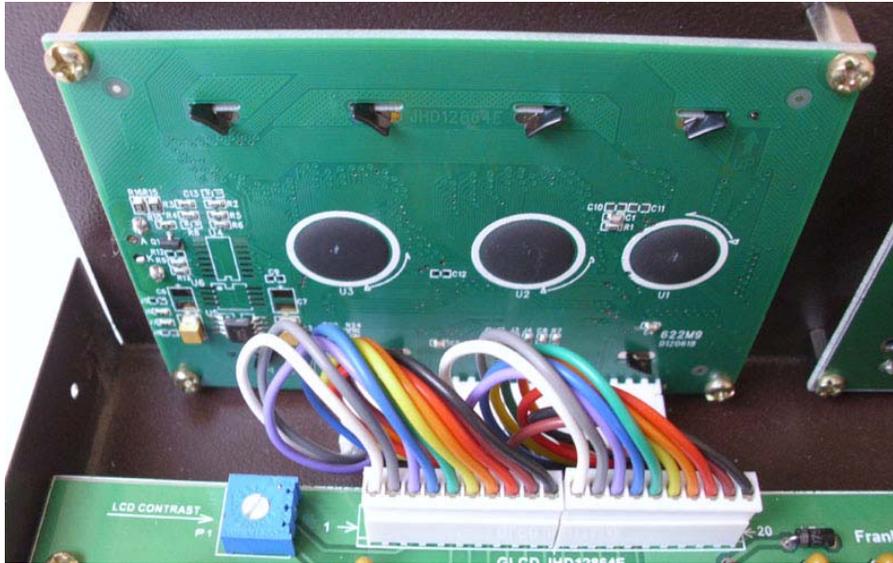
Simple single Micro Controller with built-in A/D converter (PIC18F4550)

Support add-on board: PM5, SWM5, FC5, AAZ and more...

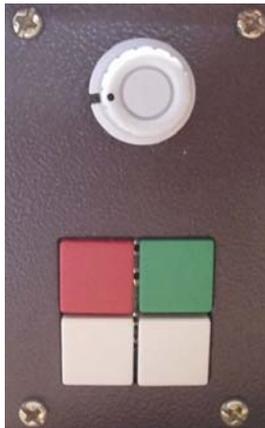
GCPUx:

●	Operates on DC12V, USB or Internal battery*.
●	Provision for 7.2V NiMh/NiCad Battery on roof for Standalone operation
●	Bluetooth operation for smart phones (Depend on FW)
●	4 A/D channels and 4 Digital channels ready for Project Board
●	One Frequency Measurement Channel.
●	Simple 4 Button Menu operation
●	Graphic LCD 128X64 with backlight
●	Battery board uses MAX712 for charging (Option)
●	Free Powder coated metal cases

Graphic LCD and ribbon cable:



Menu Buttons:



Battery board (option: not ready yet)



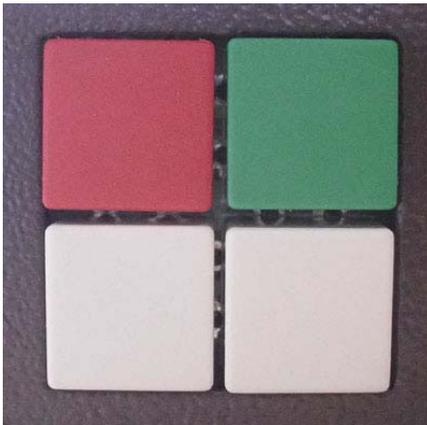
GCPUx back side connectors:



Back panel: GCPuX fitted with PM5 add-on bard:

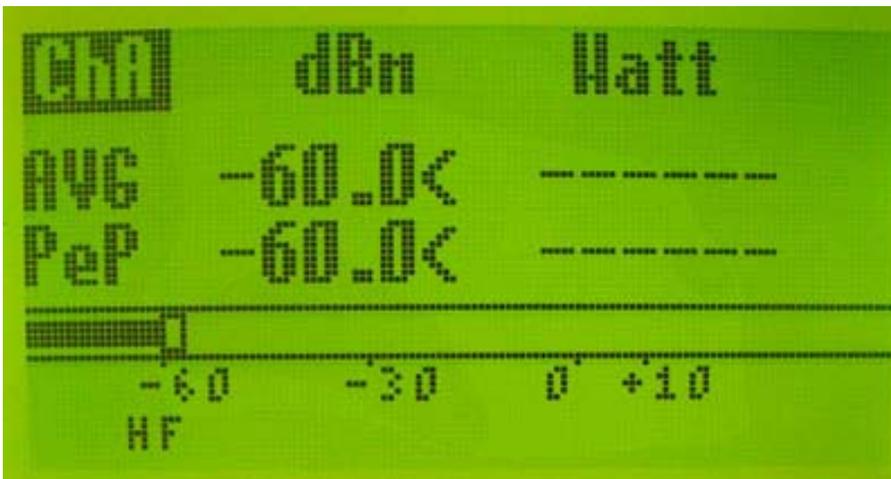


Menu Buttons:



Red =	BT1
Green =	BT2
White =	LEFT and RIGHT

GCPuX screenshot with PM5 board installed:



GCPUx kit parts list:

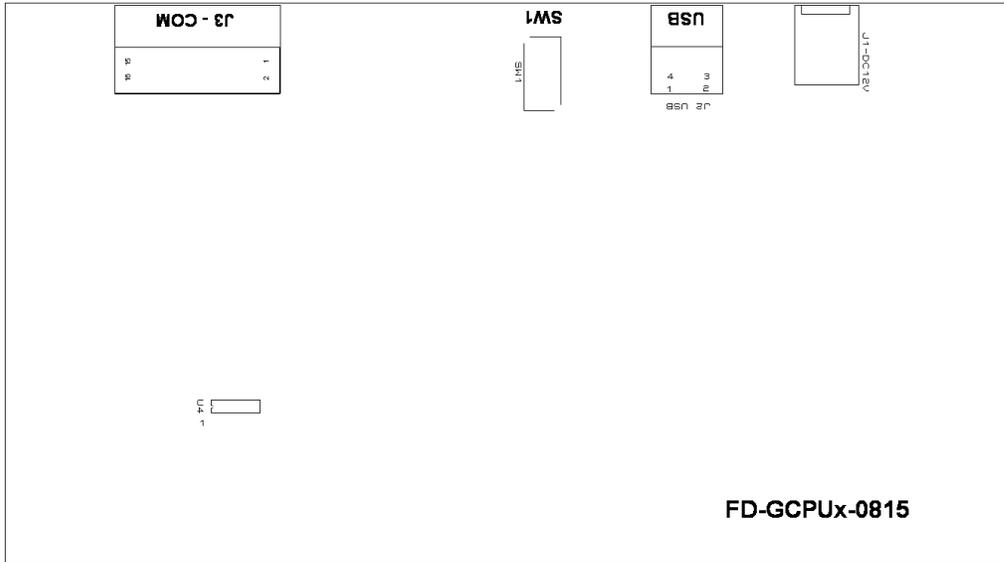
Qty	Part ID	Part Details
1	U1	PIC18F4550 Pre-Programmed DIP40
1	LCD	128X64 Graphic LCD: JHD128X64E
1	Q1	IRFD110
1	LCD Connector	20 SIL LCD Connector (10+10) + Ribbon Cable
1	Z1	LM385-2.5V
1	J1	DC 12V connector
1	J2	USB PCB Connector
1	J3	FRC16 R/A Ext. COMM CONNECTOR
2	FC1, FC2	Female FRC16 Connectors
1	SW1	USB / DC Selector switch
1	U2	74HC165 DIP16
1	U3	LM2940-5V TO220 (LDO)
1	U4	74HC14 SO14 (Pre-Soldered on PCB)
3	D1, D3, D4	1N4007
1	D2	1N5719
5	ZD1, 2, 3, 4, 5	5.1V Protection Zeners
4	BT1, 2, 3, 4 (KB)	Keyboard 12MM Push Buttons
1	FD-GCPUx-0815	Double Sided PTH PCB Main Board +HW
1	PCB (KB)	Double Sided PTH PCB Keyboard + HW
1	P1	10K Preset (LCD Contrast)
1	POT (KB)	10K POT + Knob (LCD Backlight Control)
1	OSC	20MHZ Crystal Oscillator
1	DIP SW	DIP 8 POSITION: CPU CONFIG
1	H1A	2 X 8 SIL Connector + Ribbon Cable for KB
1	DIP16	IC Sockets
1	40DIP	IC Socket
8	FBX1, 2, 3, 4, 5, 6, 7, 8	Ferrite Beads
1	Set	Nuts / Bolts for LCD and KB Mounting
1	Battery PCB Connector	SIL8 Male
1	Case	Free Powder Coated Metal Case + Hardware
4 Set	HW Set	LCD, Main board, Project Board and KB Spacers + Bolts

Note: U5/74HC14 is SMT part and is supplied pre-soldered on PCB for kits

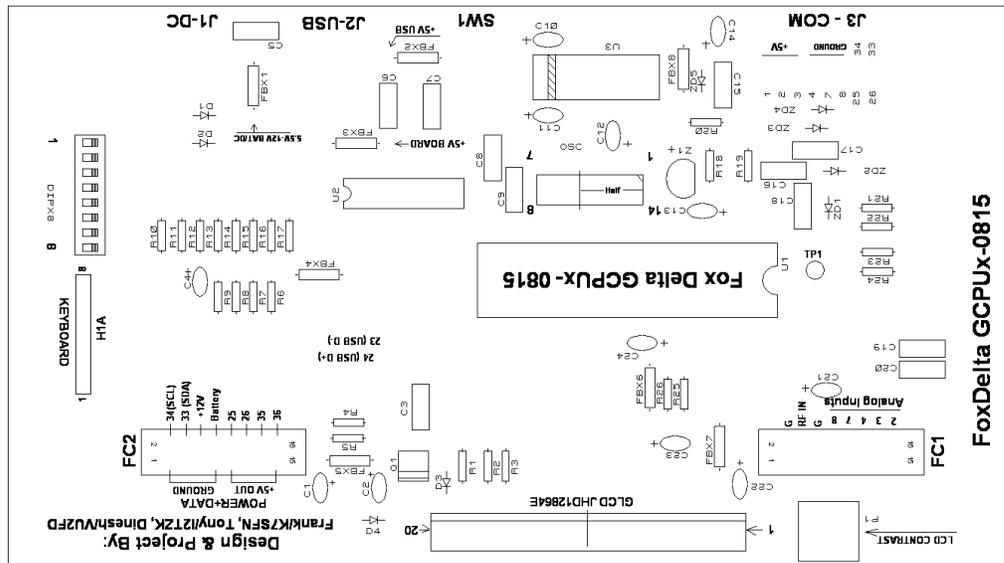
QTTY	Capacitors	
12	C1, 2, 4, 5, 6, 7, 12, 14, 21, 22, 23, 24	1uF Tantalum 35V
5	C5, 6, 7, 8, 16	0.1uF Poly
6	C3, 15, 17, 18, 19, 20	0.001uf Poly
1	C9	0.47uF Poly
2	C10, 11	22uf Tantalum
1	C13	10uF Tantalum

QTTY	All Resistors ¼ W 5%	
2	R1, 2	1K
17	R3, R6 to 17, R19, R20, R25, R26	10K
1	R4	220 Ohms
1	R5	2.2K
1	R18	3.3K
4	R21, 22, 23, 24	470K

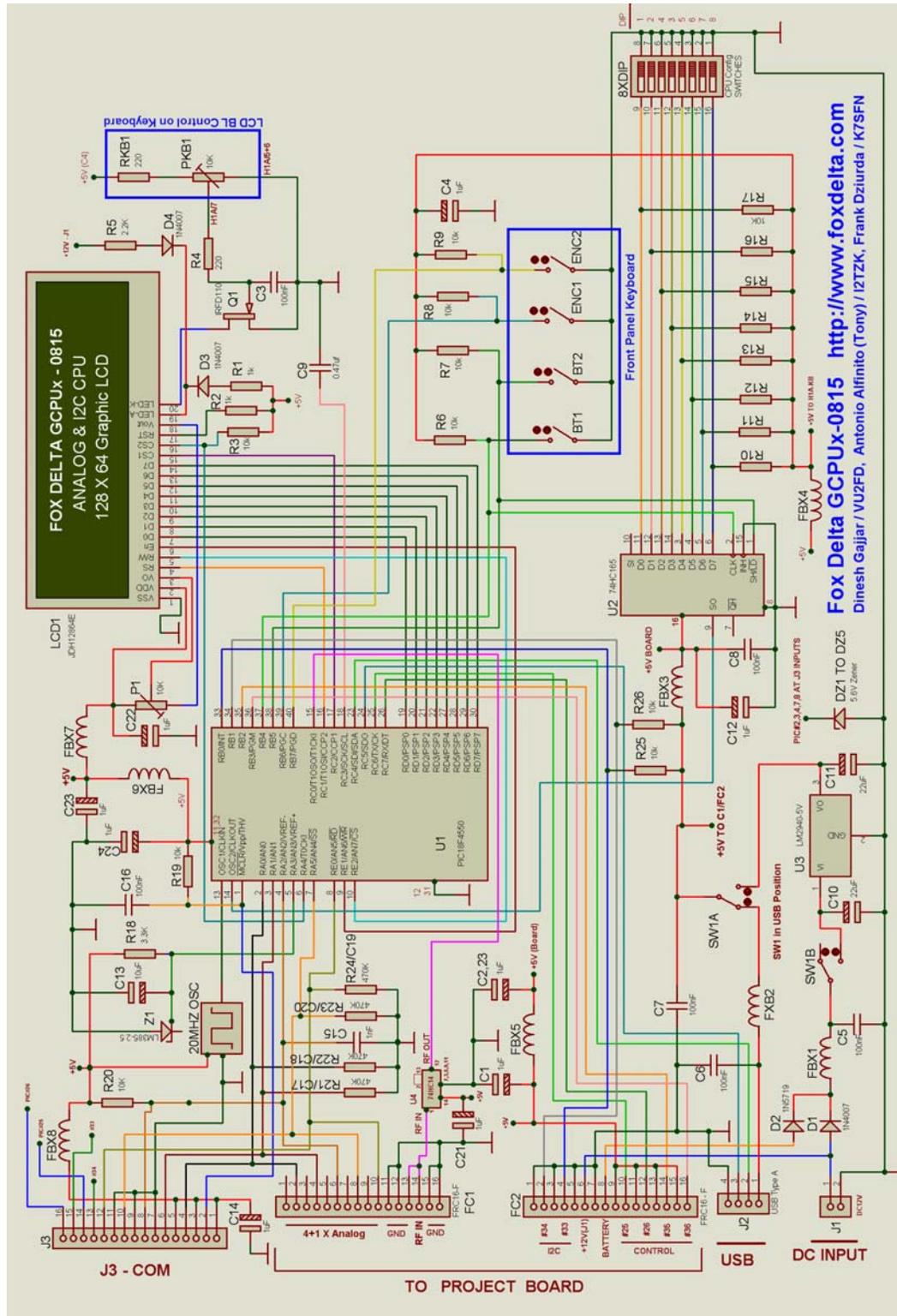
GCPU-0815 PCB BOTTOM SIDE SILK:



GCPU-0815 PCB TOP SIDE SILK:



GCPU-0815 SCHEMATIC:



73s
 Dinesh Gajjar
 9th November 2015

For more details, please visit Project Page: <http://www.foxdelta.com>