



Fox Delta

Amateur Radio Projects & Kits

FD- AAZ-0713A

AAZ-0713A USB and Graphic Capable 35MHZ Antenna Analyzer

AAZ- 0713A KIT: USB Standalone and Graphic capable 35MHZ Antenna Analyzer

Design change from Last Version AAZ-0713: Change of ADA4789 to Mini-Circuit's ERA3SM

35MHZ Antenna Analyzer: AAZ-0713A:

AAZ-0713A is designed to work as a standalone Antenna Analyzer like AAZ0912 and also works with a Graphic LCD Display.

A PC program is available for using AAZ-0713A as a PC based USB antenna analyzer, like our most popular AAZ-0912. Firmware for Graphic CPU and Antenna Analyzer – 0713A are developed by [Tony/I2TZK](#).

AAZ-0713A is a simple single board antenna analyzer using DDS signal as a source and a return signal from antenna is used for measurement by a Log Amplifier AD8307

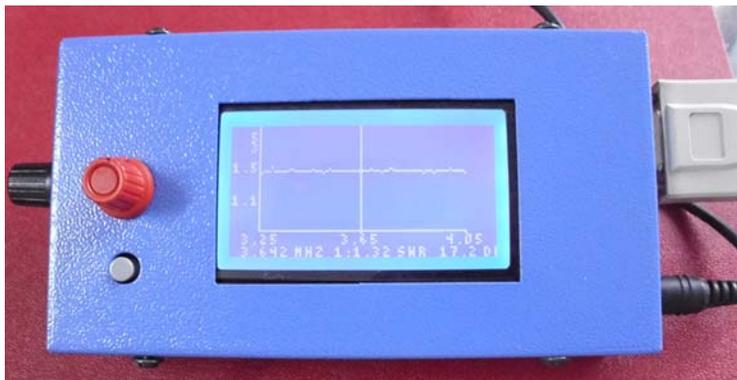
AAZ-0713A is Project "INFINITY" Module:

Our present projects, uses dedicated CPU and hardware to address a specific task, like [SWM3](#) or [FC3](#) etc.

Graphic CPU used in this Antenna Analyzer is a core of our "[INFINITY](#)" Project and is developed keeping in mind that we use same CPU/LCD/Hardware for various Purposes or Projects, saving a lot of money in hardware.

AAZ-0713A is designed in two parts:

1. [Graphic CPU Board: GCPU-0613](#)



Graphic CPU - 0613 is not a part of AAZ-0713A kits.

You may buy it separately, if you like to use it.

And

2. Antenna Analyzer Board: AAZ-0713A



AAZ-0713A Complete Kit also include a free powder coated metal case

A D9 Male to male cable (supplied with Graphic CPU KIT) is required to interconnect two units. Communication from CPU to Antenna Analyzer is by way of serial data fed to USB port. (It uses I2C lines of Graphic CPU for this purpose and USB data lines of AAZ-0713)

Antenna Analyzer AAZ – 0713A has dual interface:

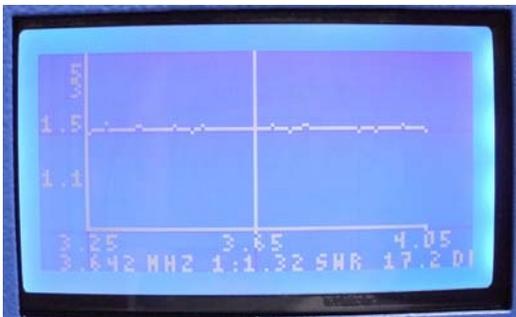


1. USB for use with your PC like AAZ-0912 or
2. Use with Graphic LCD [CPU-0613](#) to operate without a PC.

Graphic CPU Compatibility: AAZ-0912:

If you like to have a Graphic Display for your [AAZ-0912](#) boards, you need not buy or build this AAZ-0713A. Just make yourself a simple USB to D9M cable, do small modification on AAZ-0912 board and you are ready to use Graphic LCD Display for your AAZ-0912 board.

LCD SCREEN:



Side Views of AAZ- 0713A:



AAZ-0713A has two powering and communication options. You may connect your PC at USB or connect it to a D9M cable for Graphic CPU/DISPLAY.



Like on AAZ0912 Boards, Front Side of AAZ-0713A has a BNC connector, Activity LED and an Update header.

AD9850 DDS Assembly:

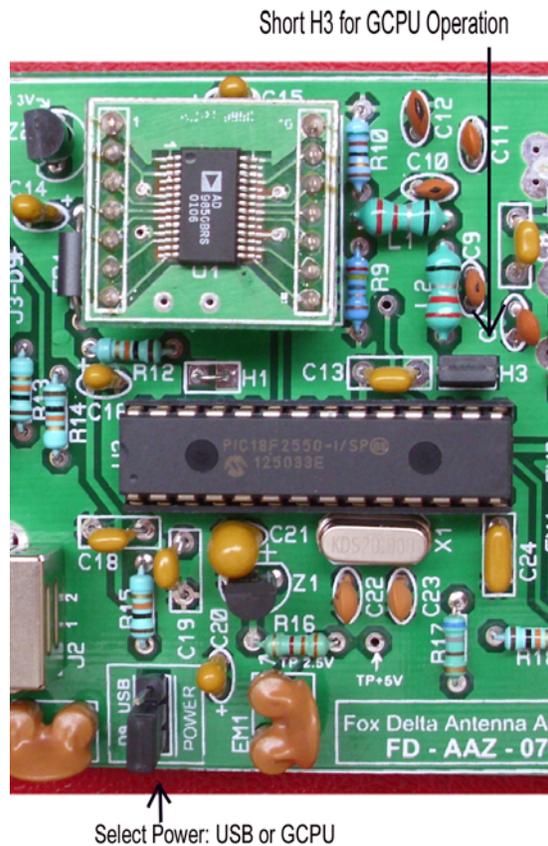


DDS: AD9850 is supplied with kits as a Pre-Soldered and fully tested for 0 to 35MHZ range.
Solid Pin Header
Male/Female are supplied for easy removal of this module in case of damage.

Kits are supplied with AD9850 Pre-soldered on a carrier board for easy assembly. This plug-in module is tested for full HF range before dispatch with kits.

Board header settings for PC or Graphic CPU Interface Selection:

There are two headers on AAZ-0713A board that require to be configured correctly for suitable PC or Graphic CPU operation:



USB operation for PC:

Select POWER Header for USB
Remove Shorting PIN from H3

Graphic CPU Operation:

Select POWER header for "D9"
Use shorting PIN at H3

H1 Header Selection:

Short this header using a wire for AD9850 (For present kits)

If you are making your own board and wish to use AD9851, keep H1 "open"

AAZ - 0713 KIT Parts List:

Quantity	Part ID	Part Details
1	U2	PIC18F2550 Pre-Programmed V4.03
1	AD9850 Adapter	AD9850 & SMT Caps are Pre-soldered
1	U1	AD8307 SO8 Pre-Soldered on Board
1	OSC	125MHZ SMT OSC 3.3V SMT
1	X1	20MHZ Crystal HC49
1	LED	3mm LED
1	Q1	ERA-3SM
1	IC Socket	28PIN DIP
1	PCB	FD-AAZ-0713 DSPTH PCB
1	Z1	LM385-2.5V
1	Z2	LP2950-3.3V
4	EM1, 2, 3, 4,	DSS9NC
2	L1, 2	HF LPF Inductors / RFCs
1+1	RFC + Bead	82uH RFC+ 1 Ferrite Bead
1	J2	USB Socket, R/A, PCB Type
1	J3	D9F R/A Socket (To GCPU)
4	FB	4 X Ferrite Beads (Board Isolator)
1	J1	BNC R/A PCB
1	H2***	2PIN Header (for FW Update)
NA	H1*	Jumper (Short for AD9850)
1	H3	A shorting PIN to enable GCPU
1	POWER SELECT	3PIN Header + Shorting PIN
1	FB1	Ferrite bead
All Resistors ¼ W 5%		
1	R5	300 Ohms
1	R6	18 Ohms
1	R7	270 Ohms
8	R1/A, R2/A, R3/A, R4/A	100 Ohms
1	R8	22 Ohms
1	R9	24 Ohms
1	R10	50 Ohms
3	R12, 13, 14, 15, 18	10K
1	R11	5.6K
1	R16	3.3K
1	R17	680 Ohms
1	H3	Install shorting pin for GCPU Enable
Capacitors		
2	C24	0.47uF
2	C18, 19	.001uf Poly
6	C1, 2, 4, 6, 8, 13,	.1uf Poly
7	C3, 5, 14, 20, 15, 16, 17	1uf Tantalum
2	C23, 22	18pf or 22pf Ceramic
1	C21	10uF Tantalum
1	C7,	82pf Ceramic
2	C10, 9	15pf Ceramic
1	C12	47pf Ceramic
1	C11	100pf Ceramic

Note:

H1*= Short for AD9850. Open for AD9851

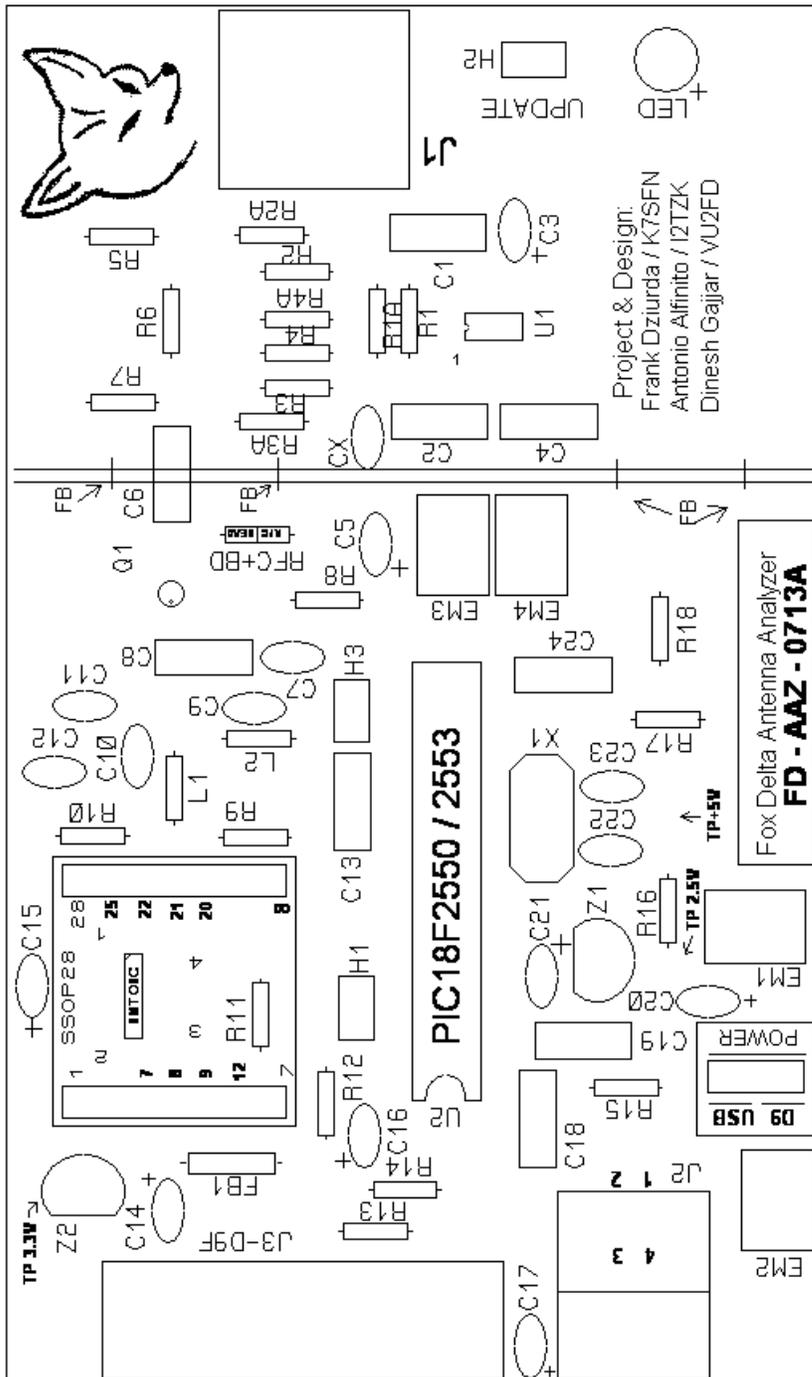
H3= Open for USB operation, short for GCPU.**

H2*= Firmware Update Header**

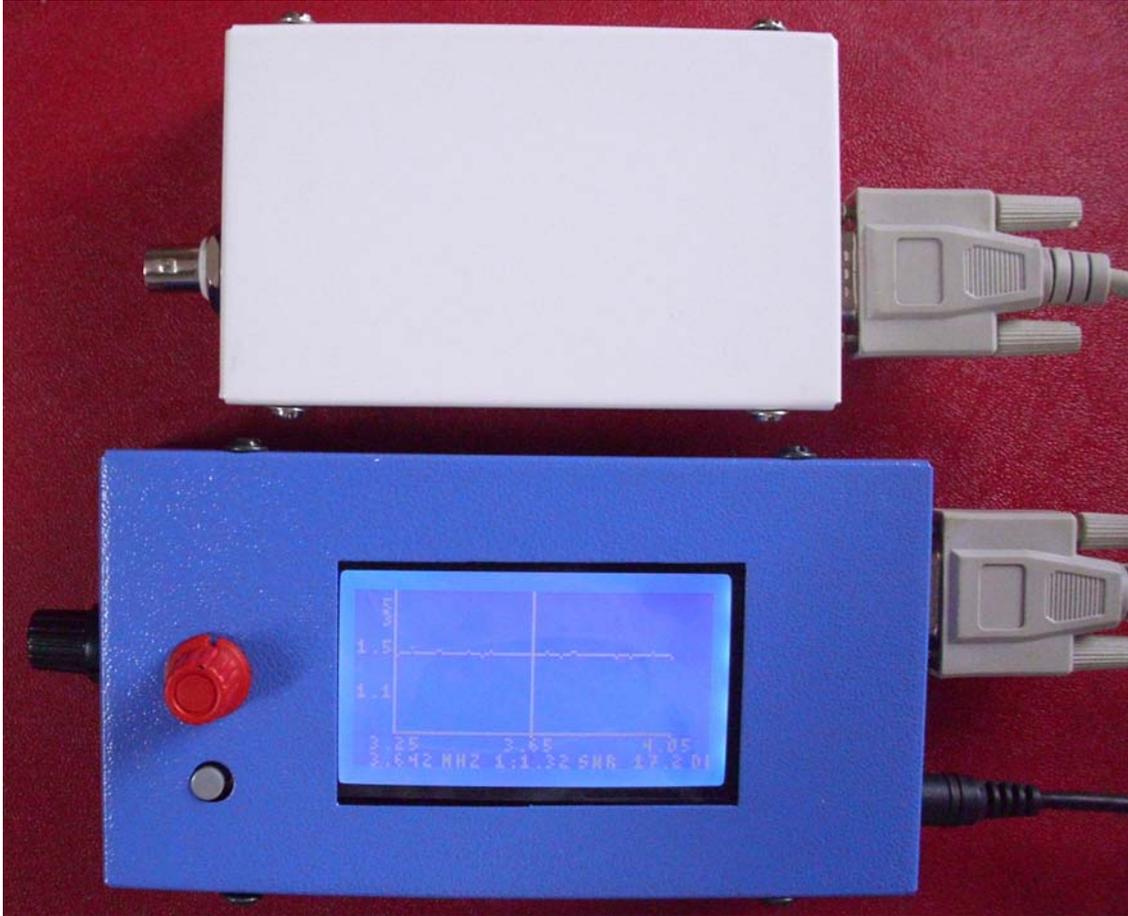
ADA, AD8307 and AD9850 are Pre-Soldered for Kits

C22 and C23 may be either 18pf or 22pf

AAZ-0713A COMPONENT SIDE SILK:



Graphic CPU and AAZ-0713A:



A male to Male D9 cable is required for interconnection of Graphic CPU and AAZ-0713A boards.

Usually, this cable is included with Graphic CPU kit (FD-GCPU-0613)

73s

Dinesh Gajjar

25th September 2013

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