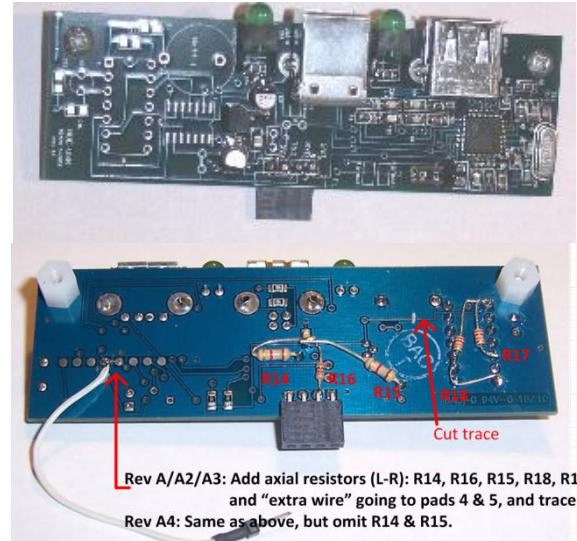


The USB add-on card makes your NUE-PSK Digital Modem more flexible and useful with its ability to record the QSO text (for both receive and transmit) to a USB flash memory stick for archival and remote printing. The USB card also provides a serial connection to a PC, and in the future a port for a USB printer, and a real-time clock/calendar function (RTCC) to timestamp QSOs. The latest modem software contains the keyboard commands used for controlling the USB card functions, plus a comprehensive set of text editing commands. The USB card fits into the existing modem enclosure with minimal mods, or a replacement bottom chassis with pre-drilled holes for the connectors is optionally available.

NOTE 1: The Record and PC Bootload functions are currently supported in software. Updates will come soon to allow printing and RTCC functions. (RTCC parts are not provided in this kit.)

NOTE 2: A full manual is available at www.nue-psk.com/usb



Rev A/A2/A3: Add axial resistors (L-R): R14, R16, R15, R18, R17 and "extra wire" going to pads 4 & 5, and trace cut.
Rev A4: Same as above, but omit R14 & R15.

Designator	QTY	Description
SMT Card		
C11	1	Capacitor, SMD, 0805, 0.001 uF
C4, C10	2	Capacitor, SMD, 0805, 0.01 uF
C2, C12	2	Capacitor, SMD, 0805, 0.1 uF
C6, C7, C13, C14	4	Capacitor, SMD, 0805, 47 pF
C8, C9	2	Capacitor, SMD, 0805, 68 pF
R1, R2, R3, R4	4	Resistor, SMD, 0805, 27 ohms
R7	1	Resistor, SMD, 0805, 180 ohms
R25, R26	2	Resistor, SMD, 0805, 330 ohms
R14, R15	2	Resistor, SMD, 0805, 1K ohms
R9	1	Resistor, SMD, 0805, 10K ohms
R5, R6, R10, R11	4	Resistor, SMD, 0805, 47K ohms
R12, R13	2	Resistor, SMD, 0805, 100K ohms
Bagged Parts		
C1, C3	2	Capacitor, SMD, 1.0 uF
P2	1	USB connector, Type A
P1	1	USB connector, Type B
J1	1	SIP socket, 0.1", 1x4, 90-deg
P3	1	Pinheader, 1x2, 0.1", right angle
LED1, LED2	2	LED, 90-deg, green
U1	1	Vinculum VNC1L-1A, LQFP-48
U2	1	Voltage regulator, 3.3V, LP2950 (TO-92)
X1	1	Crystal, 12.0 MHz, 20 pF
PCB	1	PC Board
	1	Desolder braid, 6"
	2	Spacer, nylon, hex tapped, 4-40x1/4" (PCB)
	4	Machine screw, pan slotted, #4-40x3/16"
Extra signal cable to modem board:		
J2	1	SIP socket, 0.1", 1x3
W1	1	Ribbon cable, 3-wire, 4"

Assembly Instructions

- 1) Attach U1. Use care to ensure it is carefully aligned. Use desolder braid (supplied) to remove excess solder between pins.
- 2) Attach all parts from the SMT card. C10, R12, R13, R14, and R15 should be mounted on bottom of board. (Their outlines are shown on top.)
- 3) Attach crystal X1 slightly elevated so it touches no other parts.
- 4) Attach all remaining parts. J1 mounts on bottom side, and P3 mounts on top. Check photos for proper placement. Ensure that P1, P2, LED1 and LED2 are mounted flat and straight.
- 5) Attach two nylon standoffs with screws.
- 6) Create 2-wire "extra signals" cable with ribbon cable and J2. Solder one end of cable to J2. On modem board, remove screws and lift up LCD. Solder two wires on other end of cable to points 'c' and 'd' on the modem board at lower left area of U1 (See photos 1a and 1b). This cable will plug into P3 when USB board is plugged in. Plug J2 into P3 using the appropriate diagram in lower-left corner of the schematic (next page) as a guide.
- 7) Add 5V jumper on modem board at Field Programming port P4. First cut the 'x' trace connecting the two pads near the lower-left LCD standoff. (Make sure this 3.3V trace is thoroughly cut.) Next add a short jumper from the leftmost 'X' pad down to the pad above the Select pushbutton. This jumper will supply 5V to the USB card. (See photo 2.)



Photos 1a and 1b: "Extra Signals cable" (See Assy step 6)
(Photo 1a shows 3 wires, but only two wires used now.)

Final Assembly

- 1) Use template from website to make holes in existing bottom chassis for USB connectors and LEDs, or use the optional pre-drilled chassis.
- 2) Plug in the USB card to the Field Programming port P4 along the modem board's left edge and attach the Extra Signal jumper to P3.
- 3) Insert board assembly to new/modified chassis and screw into place. (Proper clearance for modem board controls can be achieved by biasing board to lower left while tightening top and bottom screws.)



Photo 2: Adding 5V to P4
(See Assy step 7)

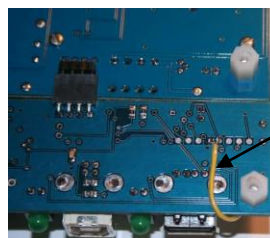
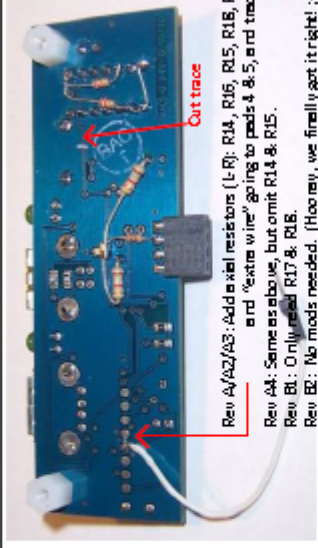
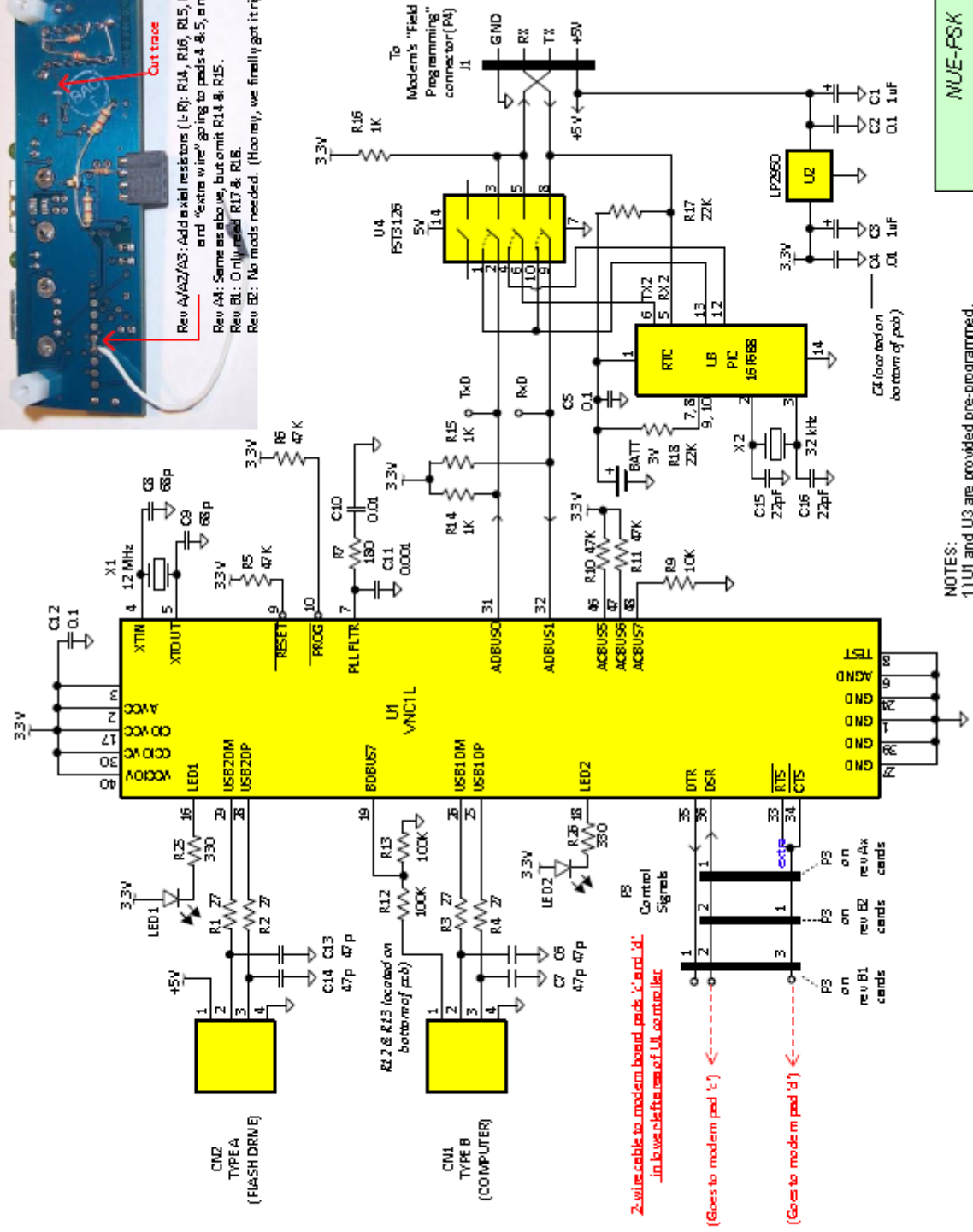


Photo 1c: "Third Wire"
(See Assy step 6)

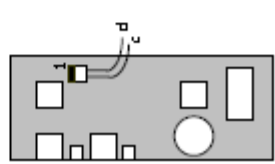
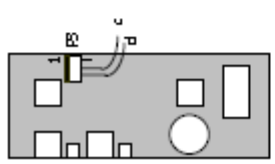
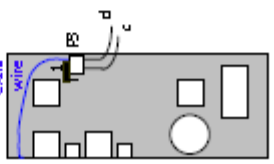


Rev A2/A3/A3: Add axial resistors (1-R7, R14, R16, R15, R18, R17) and "extra wire" going to pads 4 & 5, and trace cut.
 Rev A4: Same as above, but omit R14 & R15.
 Rev B1: Only pad R17 & R18.
 Rev B2: No mods needed. (hoo-ray, we finally got it right! :)



NOTES:
 1) U1 and U3 are provided pre-programmed.
 2) See mods in photo above for different version cards

NUE-PSK
USB Option
 Rev B2a N2APB 20072012



2-wire cable to modem board pad 4 and 5
 in lower left frame of UI controller

(Goes to modem pad 4) ←
 (Goes to modem pad 5) ←