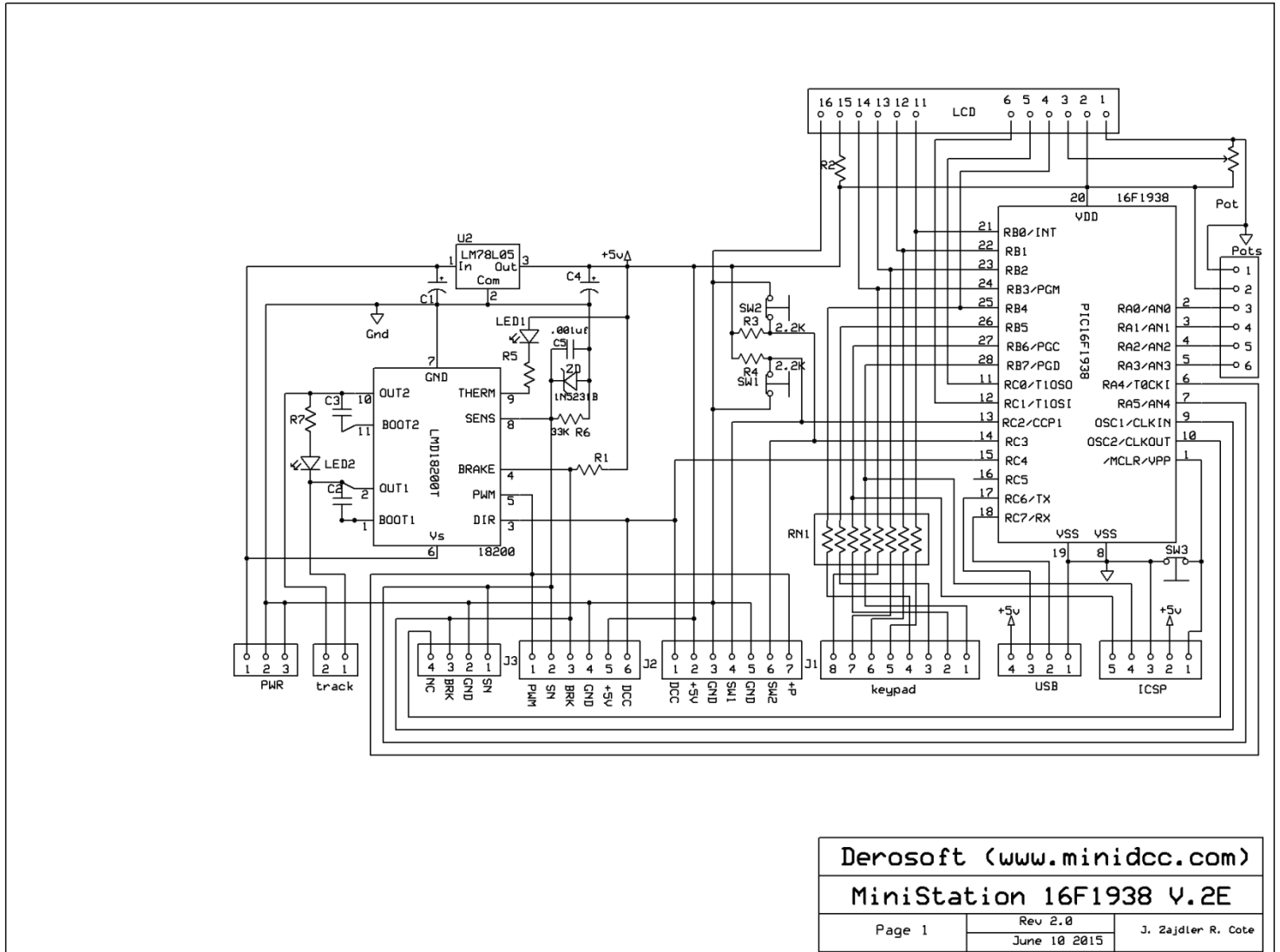


MiniDCC V2.0 – 2.1 – Schematic – PCB layout and Parts list – December 2017
 Software and Schematic design – Robert Côté
 PCB layout design – John Zajdler / Robert Côté



Parts list

- C1 – 47ufd to 100 ufd – 25 volts min – Electrolytic
- C2, C3 – 10nf (.01 ufd) ceramic disk
- C4 – 1ufd 10 volts Tantalum capacitor
- C5 - .001ufd ceramic capacitor

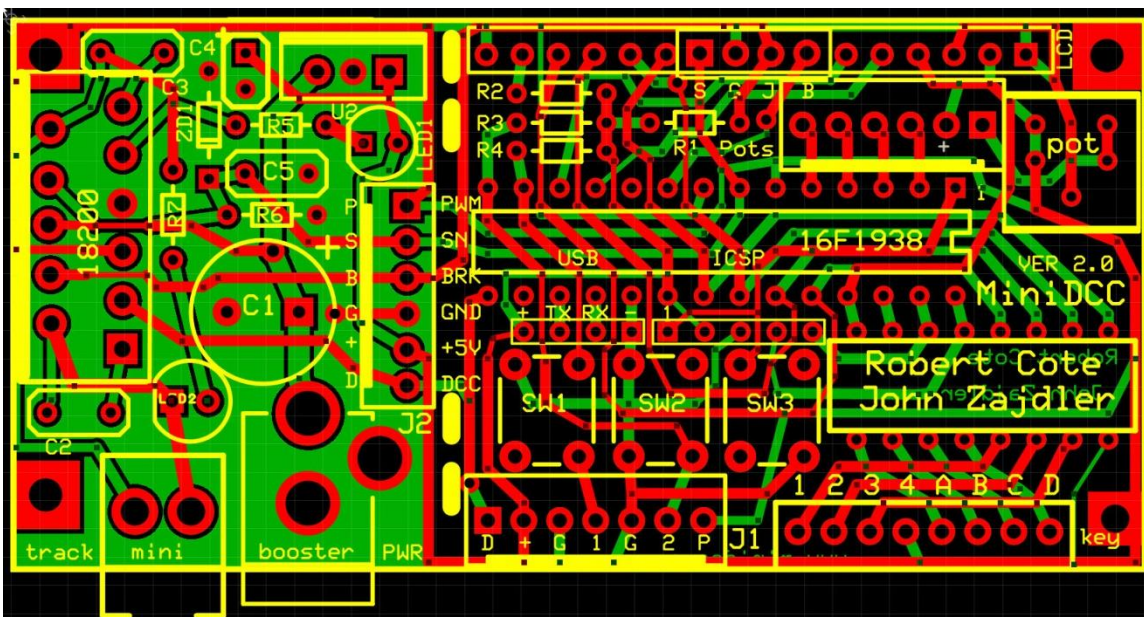
RN1 – 510 ohm to 820 ohms resistor network (parallel) or 8 discrete 510 ohms – 820 ohms resistors
 R2 – 51 ohm or straight jumper (depending on LCD backlight requirements)
 R1,R3, R4 – 2.2k to 4.7k resistors
 R5 – 470 ohm to 4.7 k resistor
 R6 – 33k resistor – (critical – do not substitute – used in sensing CV values)
 R7 – 1k resistor
 Pots 1 to Pots4 – 5k to 10 k with optional direction switch
 Led1 – Regular LED (yellow or white)
 Led2 – Bipolar Red/White led (or back to back discrete leds)
 SW1, SW2, SW3 – spst miniature switches (Menu – Emergency Stop – Reset)
 POT – 5k – LCD brightness
 U1 - LM18200T – Dual half bridge
 U2 – 7805 – 5 volt regulator (or any electronic substitute)
 U3 – Pre-programmed 16F1938 pic
 ZD – Zener Diode 5.1 volts (IN5231B)
 J1,J2,J3... various Molex pin connectors as required
 LCD – 16x2 or 20x4 standard LCD display (Hitachi HD44780 compatible)
 Pre-programmed (28 pins) PIC 16F1938
 Keypad – 4x4 matrix keypad – Flat keypad interface directly – Telephone Type Keypad
 may require mirror wire switching (1234 – ABCD) becomes (4321 – CDAB) on the keypad side

Note 1: A jumper must be inserted between point J and B (see top row of PCB) to enable the MiniBooster (Brake) pin of the LM18200T for Version 2.0 board. Version 2.1 and 2.2 board do not require the jumper.

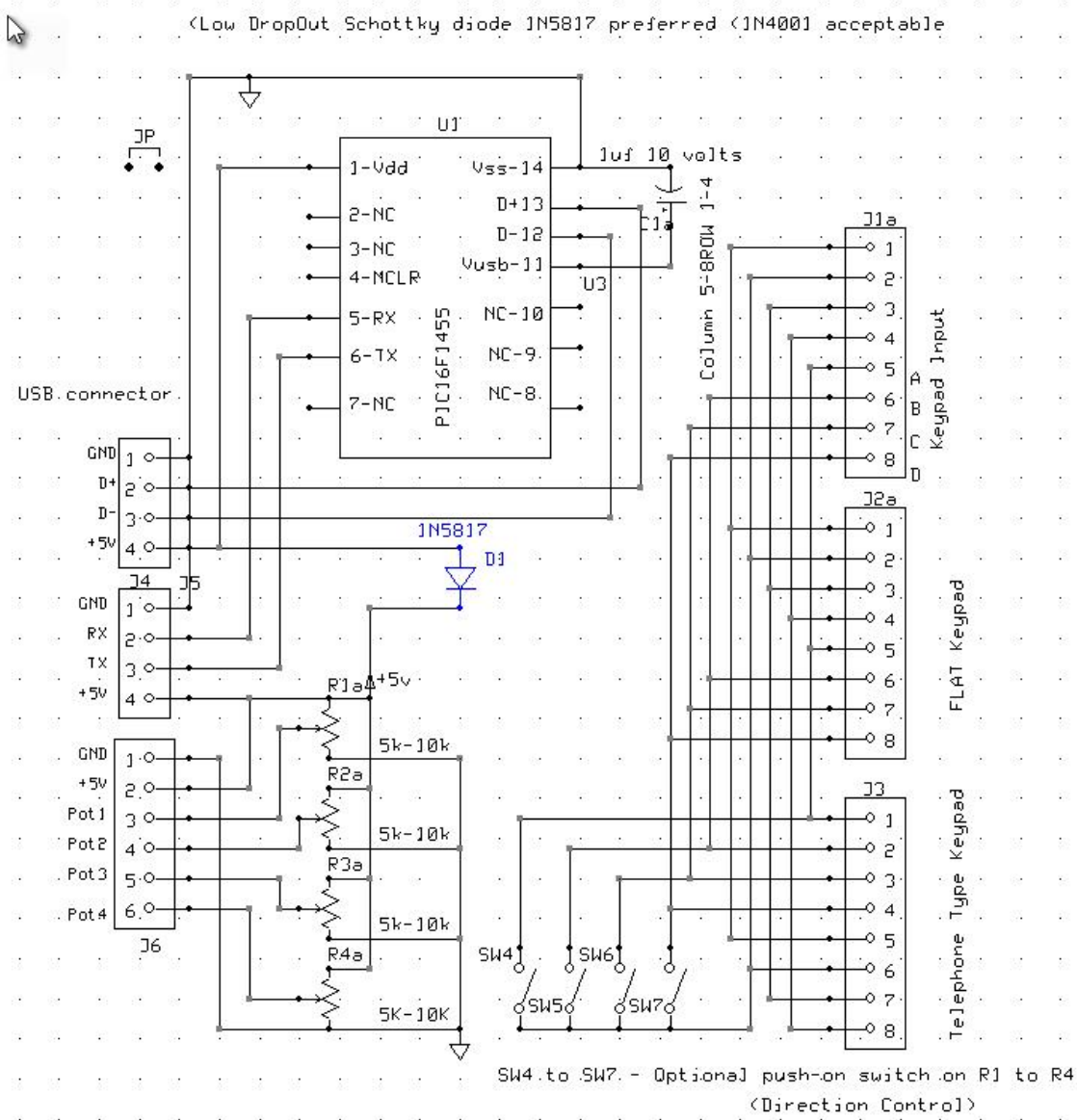
Note 2: If a potentiometer with Forward/Reverse switch is used, the switch must be connected to short Column 3 with Row 1,2,3 and 4 (to simulate keypad Direction keys).

Note 3: Board must be populated with SW1 for external menu switch to function properly.

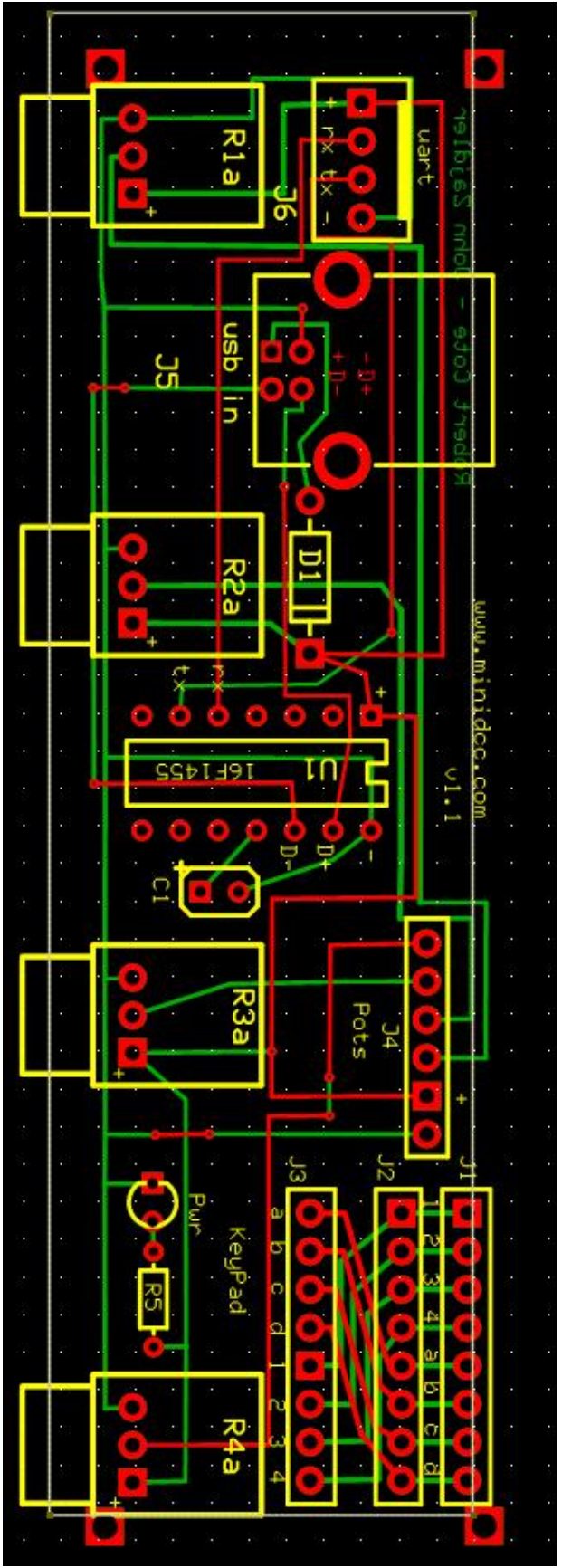
Note 4: Version 2.2 requires that power connector (PWR) ground makes contact with bottom of board, a small jumper is already installed on non-populated board and the Pwr connector (2.1mm) is already installed. If removed, make sure contact is established between bottom connector hole and bottom of board.



Preliminary PCB (soon to be available on the Web site) and Schematic for optional potentiometer control and imbedded USB/UART interface.



Derosoft - MiniDCC
MiniUSB-Pots



Technical support available directly from minidcc@videotron.ca

Ref: <http://www.minidcc.com> – Derosoft@videotron.ca

Note on Pre-programmed MiniDCC Station micro-controller...

By default, the MiniDCC station will boot in 20x4 LCD display mode – To change to 16x2 format, hold the “Menu” button (center button) and press the “Reset” - red button. The format will be remembered after that. To go back to 20x4, just repeat the action – Hold MENU and then RESET.

If you hold the “Emergency Stop” button and Reset, the Station will go into “Bootloader Mode” and wait for the proper PC connection to start upgrading. Just RESET again to revert to normal operating mode.

A “Flat” keypad connects directly to J1 – With a “Regular Telephone” keypad, Pin 1234 becomes Pin ABCD and Pin ABCD become 1234.

A few parts are included with bare PCB (depending on version) to facilitate getting started with sometimes difficult to acquire parts...

Please refer to the full operation manual on the web site <http://www.minidcc.com>

For technical support, please write to minidcc@videotron.ca