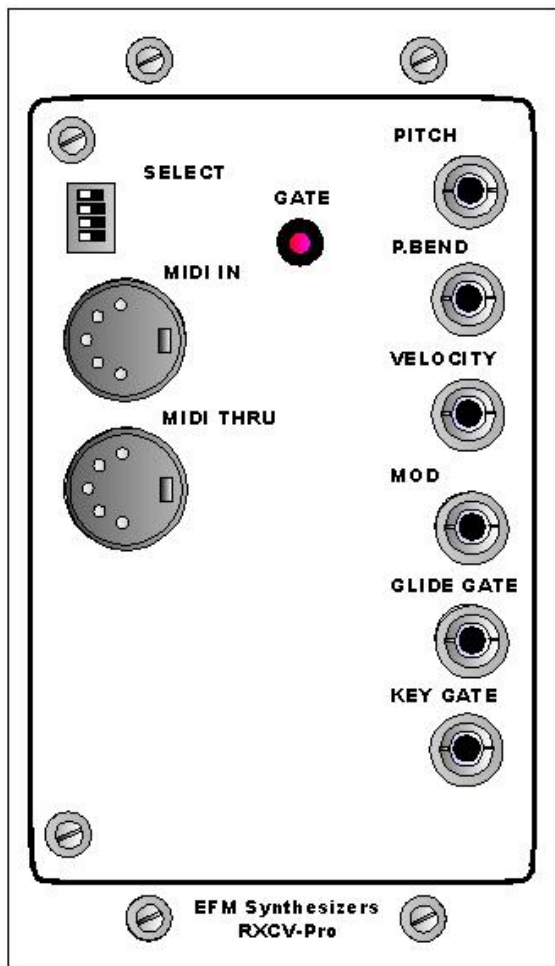


EFM Synthesizers

RXCV-Pro - Pro level midi to control voltage converter



Pro level midi to control voltage converter.
Features...

- Pitch (Key-CV)
- Pitch Bend (PB-CV)
- Key Velocity (Velocity)
- Mod CV
- Key Gate
- Glide Gate
- Selectable midi channel (1-16)
- +/-12 or +/- 15V

The RXCV-Pro is the next generation *midi to control voltage* converter. This converter was also developed in collaboration with Trevor Page of Resonance and designed to be a complete midi solution for monophonic analog synthesizers.

It has an on board +/-12V, +5V power supply and can be used as a stand alone device. It may also be powered by a central modular supply by omitting the regulators.

Assembly

See General Instructions Here - [General Instructions](#) <- not working yet!

- Press the overlay on the panel blank
- Drill and clean the holes
- Remove the application tape and cutouts
- Mount the jacks, switches, pots ect... to the panel.
- Install the resistors
- Install the IC sockets
- Install the capacitors
- Cut and solder header strip pins in pads used to connect wire to the board

Midi Interface Test and Setup

Connect a midi keyboard set to midi channel 1 to the midi-in jack.

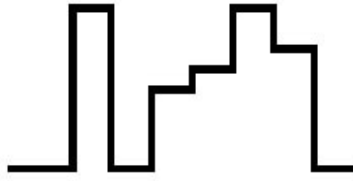
Make sure all switches on S2 are off.

If you have a scope. Measure Pins 15 and 16 of U5. You should see the PIC clock running at about 10MHz.. Pin-3 of the 4051 is multiplexed data (looks like a changing staircase) when a midi key is played.

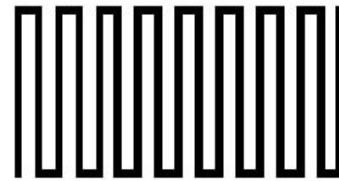
PIC Pins 15 & 16 10MHz



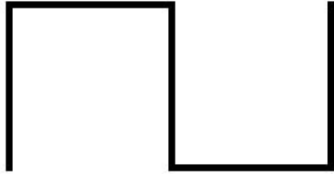
4051 Pin 3 (C3 midi-kbd)



4051 Pin 6



4051 Pin 8



4051 Pin 9



4051 Pin 10

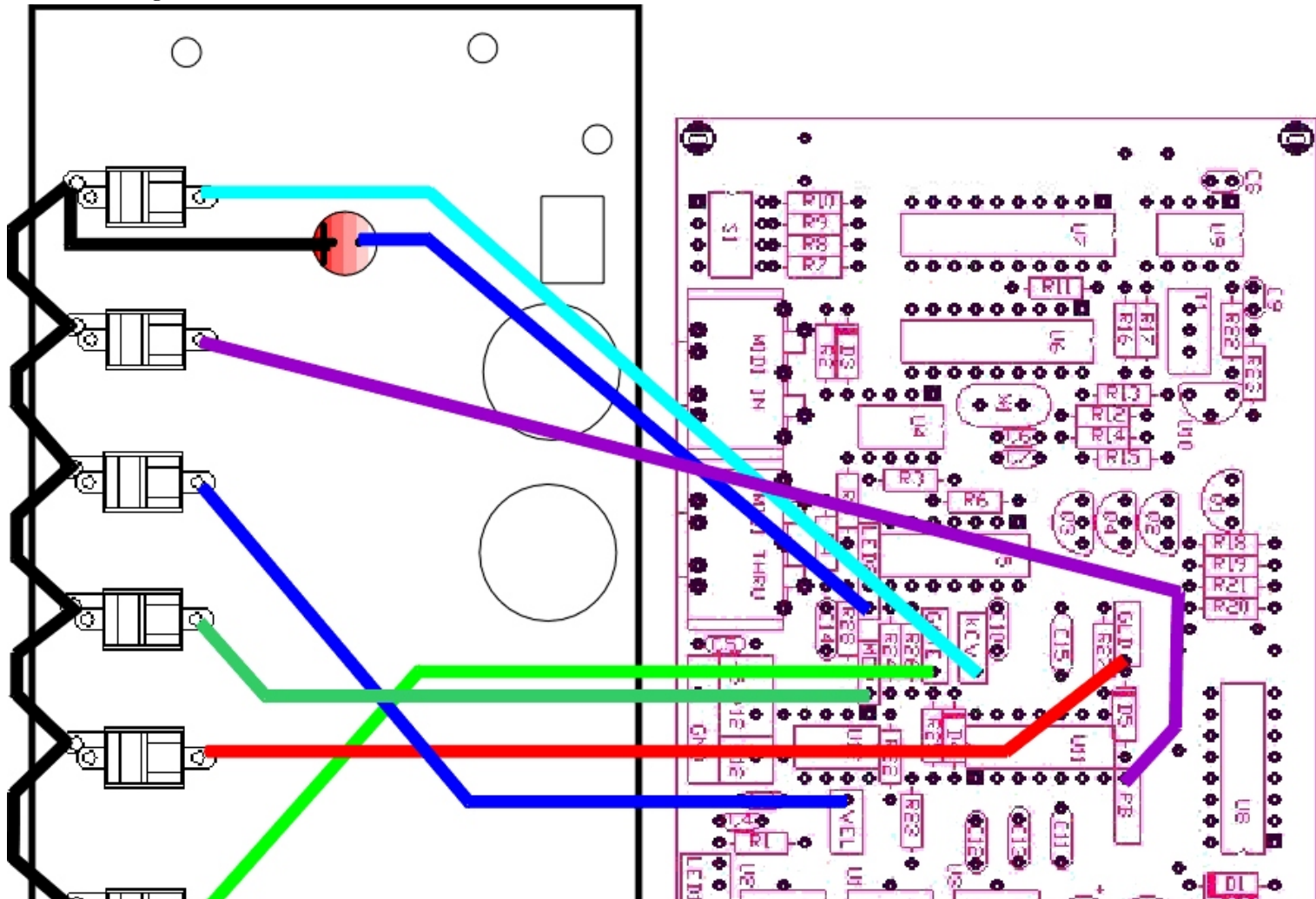


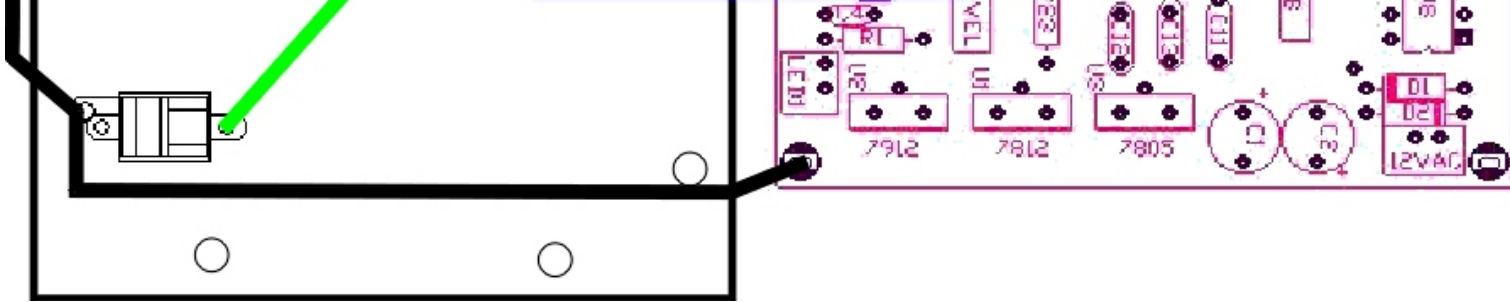
With a digital probe or scope you should see a low going pulse on pin-6 of the PIC when a midi key is played.
Measure the voltage on pin-7 of LM358. Adjust T1 until it's -10.56VDC.

NOTES:

Previous versions of this document specified a TLO72 for U9. This has been changes to a LM358.

PC Board Wiring



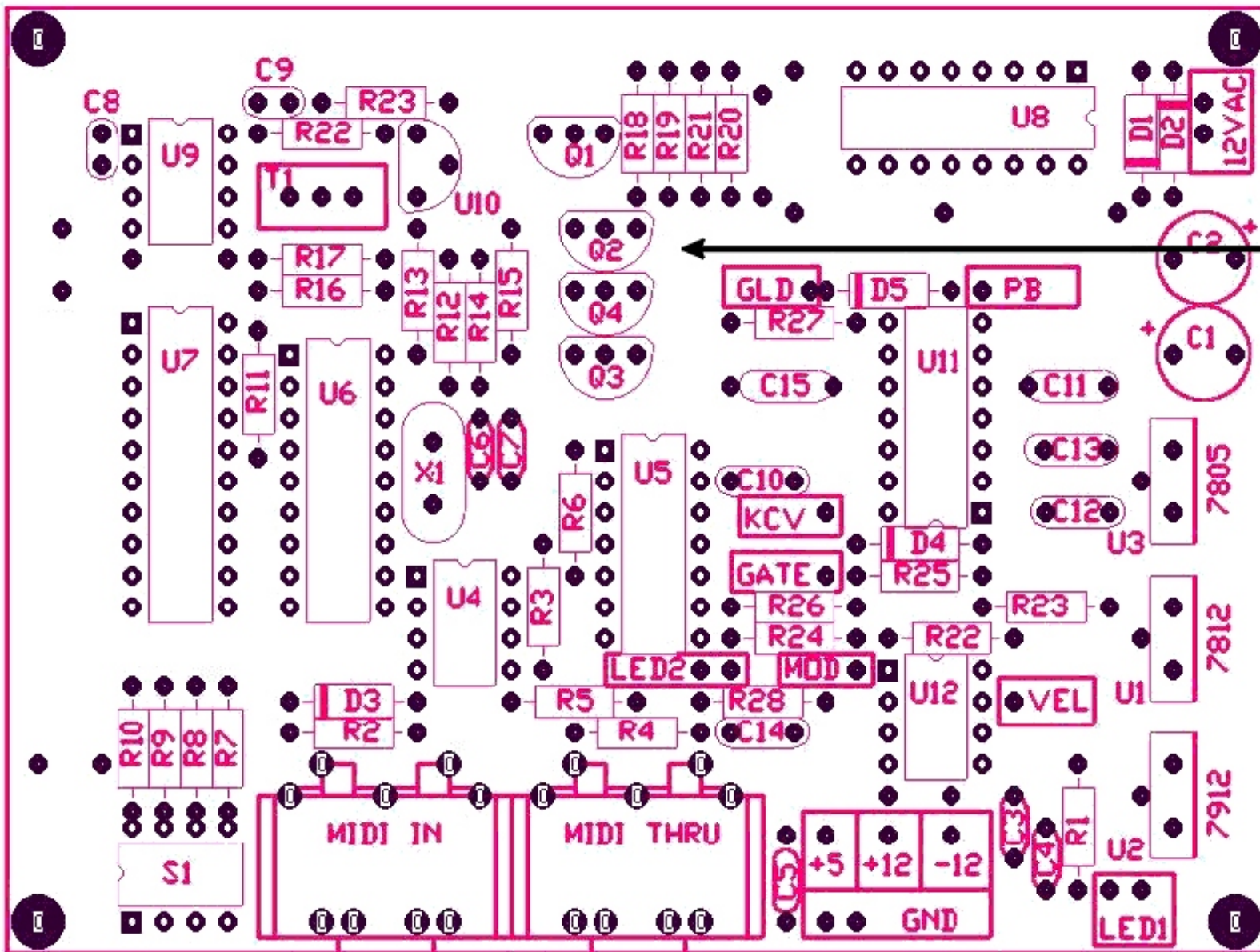


Small Parts

D1,2	Diode - Rectifier - 1N4001	2
C1,2	Capacitor - Ele - 470uF/35V	2
C3,4,5	Capacitor - Ceramic - 0.1uF	3
C6,7	Capacitor - Ceramic - 22pF	2
C8	Capacitor - Ceramic - 10pF	1
C9	Capacitor - Ceramic - 0.01uF	1
C10,11,12, 13,14,15	Capacitor - Mono - 0.1uF	6
R1,23,28	Resistor - 1% Metal Film - 2K2	3
R2,4,5	Resistor - 1% Metal Film - 220R	3
R3,12,13,14, 15,16,17,18, 19,20,21,24, 27	Resistor - 1% Metal Film - 10K	13
R6	Resistor - 1% Metal Film - 1K	1
R7,8,9,10,11	Resistor - 1% Metal Film - 4K7	5
R22,25	Resistor - 1% Metal Film - 100K	2
R23,26	Resistor - 1% Metal Film - 47K	3
Q1,2,3,4	Transistor - NPN - 2N3904	4
U1	IC - Voltage Regulator +12V/1A	1
U10	IC - Voltage Referance - LM336Z 5.0	1
U11	IC - Opamp - BiFet - Quad - TLO74	1
U2	IC - Voltage Regulator -12V/1A	1
U3	IC - Voltage Regulator +5V/1A	1
U4	IC - Opto Coupler - 6N138	1
U5	IC - TTL - Hex Inverter - 74LS04	1
U6	IC - PIC - 16F84-10	1
U7	IC - DAC - TLC7528CN	1
U8	IC - CMOS - CD4051	1
U9	IC - Opamp - Dual - LM358	1
U12	IC - Opamp - Dual - TLO72	1
X1	Cryatal - 10Mhz	1
PC-Board	PC-Board	1

Full Kit

Jack - DIN 5 pin Panel Mount	Jack - DIN 5 pin Panel Mount	2
T1	Pot - 16mm - 50K	1
Jack - Mini - 1/8th	Jack - Mini - 1/8th	6
Switch - 8 pin DIP	Switch - 8 pin DIP	1
LED	LED	1
Bracket - L-Bracket	Bracket - L-Bracket	2
Overlay	Overlay	1
Connector - 4 Pin - 0.156 Header	Connector - 4 Pin - 0.156 Header	1
IC - Socket - 8 pin	IC - Socket - 8 pin	3
IC - Socket - 14 pin	IC - Socket - 14 pin	2
IC - Socket - 16 pin	IC - Socket - 16 pin	1
IC - Socket - 18 pin	IC - Socket - 18 pin	1
IC - Socket - 20 pin	IC - Socket - 20 pin	1
Panel - Aluminium	Panel - Aluminium	1



The silkscreen for transistors Q1-Q4 is reversed. Turn the packages so that the flat is facing U5

