Dejavu®
Volume Unit/Peak Meter
with PIC16F88 Microcontroller

Augustica®
Technologies

www.augustica.com
DANGER

Safe assembly and operation of this kit is the user's responsibility. The kit and this user manual are provided 'as is'. Augustica Technologies Inc. accepts no responsibility for any damage, injury or death as a result of assembling this kit or using the information herein. The assembled kit must be properly enclosed to prevent contact with voltages and must be kept out of reach of children. Keep this kit away from water and other damp environs. As with any self-assembled electronics project, improper assembly could cause damage to the kit, overloading of a circuit or an electrical fire. If you don't feel comfortable in assembling the kit or using the VU meter, please contact us to return it for a full refund.

INTRODUCTION

The volume meter kit Dejavu® allows building a two-channel volume unit and peak meter (with a hold function) based on PIC16F88 microcontroller. Dejavu® requires about 20 mVolt in amplitude of a signal to activate each of the 16 LEDs. Activation of all 16 LEDs ("a full scale deflection") requires a signal with amplitude of about 320 mVolt.

ASSEMBLY

Cleanliness is essential. Before soldering, be sure to clean both sides the PCB with 70% to 90% isopropyl alcohol. Do not use dull looking solder. Solder should shine. If it does not shine, first clean away the outer oxidation with some steel wool or a copper-scouring pad. If the resistor leads look in the least gray, clean away the oxidation with either steel wool or a wire sniper's sharp edges. Admittedly, with new resistors and a fresh PCB, such metal dulling is rare, but if the parts have sat in your closet for a year or two, then expect a good amount of oxidation to have developed.

Be consistent in orienting the resistors, capacitors and diodes. Keep nominal information on a resistor's or capacitor's body flowing from the left side to the right side as you face the resistor or the capacitor straight on. This will pay dividends later, if you need to locate and de-solder a resistor, a capacitor, or a diode placed in a wrong location. Because the board is double sided, with traces and pads on each side, it is easier to solder the resistors and diodes from their topside. As the PCB is overbuilt, it is difficult to remove an incorrectly placed part. Be sure to confirm all the diodes' orientations as well as the orientation of PIC16F88. Confirm trice, solder once.

Start with assembly of the components that have the lowest profile- resistors, diodes, and capacitors. First, install resistors R1 and R2. Followed by resistors R4, R5, R6, R7, R8, R9, R10, and R11. Finally, install resistors R12, R13, R14, and R15.
Second, solder capacitors C1 and C2.

Third, solder 18-pin socket of the microcontroller PIC16F88. Watch for the notch on the socket. The notch has to face the closest edge of the PCB.

Fourth, solder switch SW1. Pay attention to label 'ON' on the top surface of the switch. The label 'ON' has to correspond with the label 'ON' on the PCB.

Fifth, solder variable resistor R3.

Sixth, solder terminal block K1

Seventh, install LEDs starting from D18 and D34 on the right edge of the PCB and move all way down to the right D3 and D19 on the right edge of the PCB. Start with red LEDs D17 and D18 followed by red LEDs D33 and D34. Then install yellow LEDs D15 and D16 followed by D31 and D32. Finally, install green LEDs D14 to D3 and D30 to D19. Pay attention to the polarity of LEDs. A flat side of LED's body or side with a notch represents "-". Minuses of ALL in the top row have to face minuses of ALL LEDs in the bottom row.

Eighth, insert microcontroller PIC16F88 in its socket. Watch for a notch on the microcontroller's body. The notch on the microcontroller has to correspond with the notch on its socket.

**Testing**

Connect +5 VDC, ground, signal from right channel, and signal from left channel to the terminal block K1. You may need to adjust resistance of the variable resistor R3 to set up proper sensitivity of the VU meter Dejavu®. Switch SW1 allows changing four modes of the VU meter Dejavu® operation. The four modes are:

- Dot Scale/Bar Scale (DOT/BAR)
- Linear Scale/Logarithmic Scale (LIN/LOG)
- Peak Falls Down/Peak Does Not Fall Down (SPARK/FALL)
- Peak Fall Delay/No Peak Fall Delay (MOFF/MON)

**Let Us Know What You Think**

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