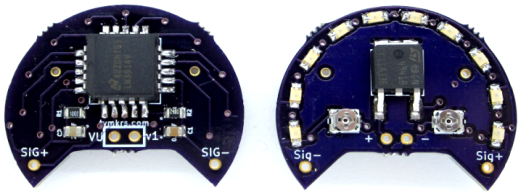
The Toymakers @ tymkrs.com
Questions? Please contact us:
feedback@tymkrs.com

DATASHEET



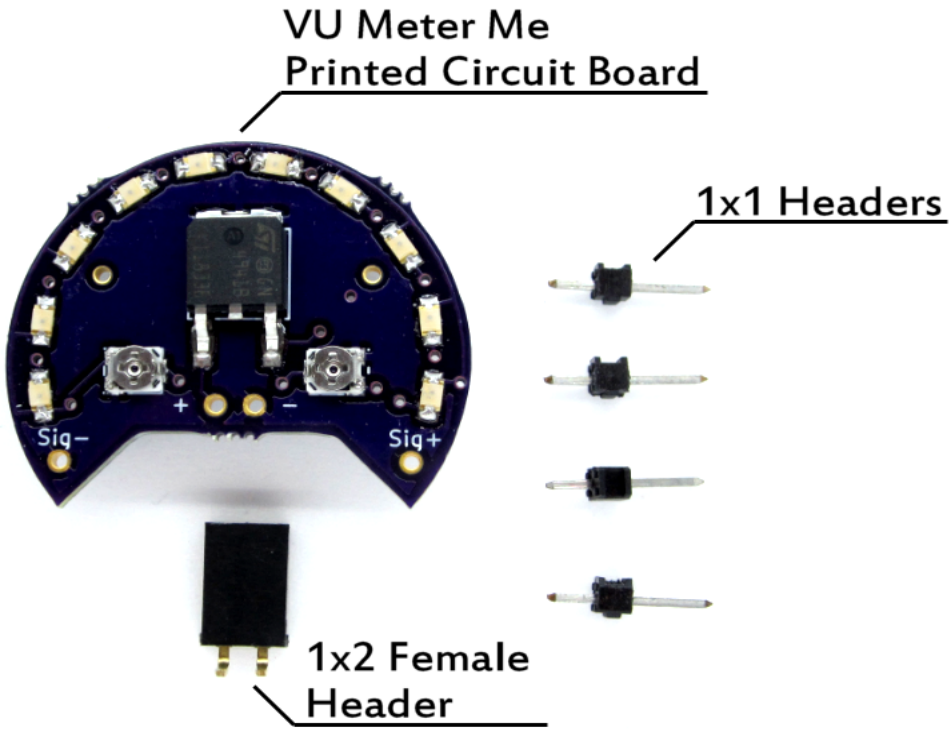
VU Meter Me

VU Meter Kit

The VU Meter Me is a LED-based visualizer for your audio signals!

- Kit Type: SMT and minimal throughhole soldering
- Function: Breadboard friendly VU Meter Kit
- Works with line level and headphone level outputs.

KIT CONTENTS



Contents of the VU Meter Me Kit:

- SMT VU Meter Me printed circuit board (30.71 x 25.58 x 1.60mm)
- 1x2 Female Header
- 4 – 1x1 Male Headers

Electrical Components

Reference	Quantity	Type	Value
U2	1	LED Bar Driver	LM3914
U1	1	5V LDO Regulator	L4941
R1	1	Resistor, 1/8W	10k ohms
R2	1	Resistor, 1/8W	2.5k ohms
C1	1	Capacitor, 16V	0.1 uF
C2	1	Capacitor, 16V	22 uF
PV1	1	Potentiometer	10k ohm
PV2	1	Potentiometer	10k ohm
D1 - D10	10	0805 LED	Red

L4941 LDO Regulator Electrical Characteristics

Datasheet: http://www.st.com/st-web-ui/static/active/en/resource/technical/document/datasheet/CD00000443.pdf

Parameter	Test Conditions	MIN	TYP	MAX	UNIT
Output Voltage	Io = 5mA to 1A, Vf = 6 to 14V	4.8	5	5.2	V
Input Voltage (Vf)	Io = 5mA			16	V
Quiescent current	Io = 5mA, Vf = 6 to 14 V			3	mA
	Io = 1A, Vf = 6 to 14V			-10	mA
Dropout Voltage	Io = 0.5A		250	450	mV
	Io = 1A		450	700	mV

LM3914 LED Bar Driver Electrical Characteristics

Datasheet: http://www.ti.com/lit/ds/symlink/lm3914.pdf

Parameter	Test Conditions	MIN	TYP	MAX	UNIT
LED Current	$V+ = V_{LED} = 5V$; $I_{L(REF)} = 1mA$	7	10	13	mA
Dropout voltage	$I_{LED(ON)} = 20$ mA, $V_{LED} = 5V$, $\Delta_{ILED} = 2$ mA			1.5	V
Load regulation	$0.1mA \le I_{L(REF)} = I_{L(REF)} \le 4mA$ $V+ = V_{LED} = 5V$		0.4	2	%
Output Voltage Change with Temperature	$0ºC \le T_A \le 0ºC$, $I_{L(REF)} = 1mA$ $V+ = 5V$		1		%
Supply Voltage				25	V
Storage temperature Range		-55		150	ºC

Recommended Operating Conditions

Parameter	Range	UNIT
Input Voltage	6 – 12	V
Operating temperature	0 - +70	°C

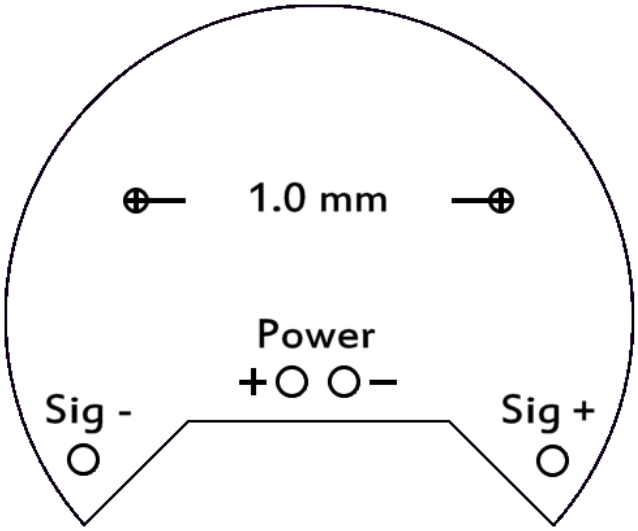
Tools and material required for assembly (not included with the kit):

- Soldering iron
- Solder

User provided items required for audio:

- Audio signal
- Power source (6 – 12V)

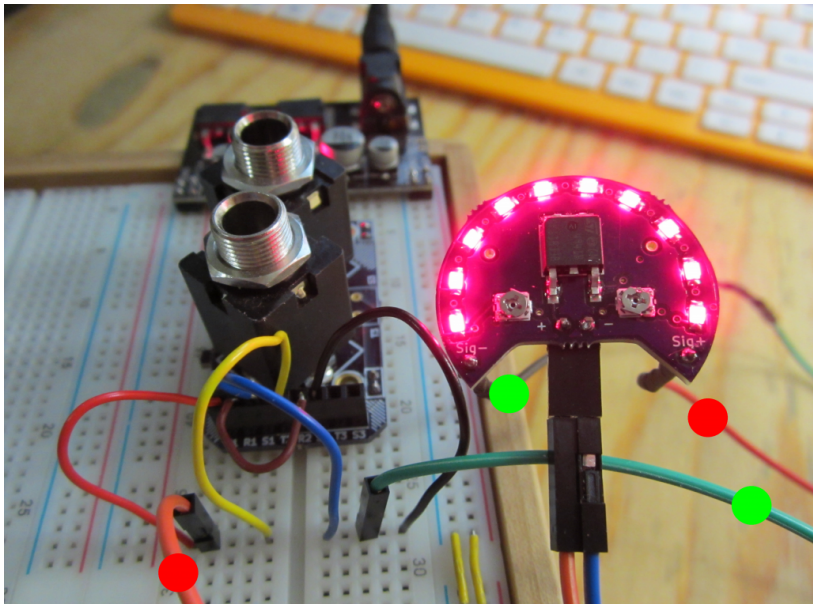
Mounting/Header Holes:



Additional physical/electrical specifications:

- Printed Circuit Board size: 1.21 x 1.01 x 0.063" (30.71 x 25.58 x 1.60mm)
- PCB thickness: 0.063" (1.60mm), not including any components
- PCB thickness: 0.433" (11mm), max height with LM3914
- Mounting holes: 2 holes provided. See drawing for location and size. Can be used with 1x1 male headers and are breadboard friendly

Additional Picture:



Assembled PCB in use with Jack Me Module. The green dots reflect SIG – (Shield/GND) and the red dots reflect SIG +.(Tip/Ring)

Assembly/Use Instructions

Build Notes:

- The 1x1 headers are breadboard friendly and can be soldered to the 2 mounting holes as well as to Sig + and Sig -. The mounting holes are not tied into the circuit. The + and – signals of your audio can then be connected to the module.
- There are 2 trimmer potentiometers that you can use to calibrate how much volume you want reflected in your VU meter. By adjusting these with a normal Phillips screwdriver, you can change where the light starts and how many lights are lit up as the volume changes
- + and – in the middle of the board is for your power supply. It powers the LED bar driver chip and provides a reference for the audio signal. We recommend no more than 12V in.
- Sig + and Sig – is where you connect your audio signal to. SIG + can be used with your tip/ring and SIG – would be your shield or ground.
- 1 x 2 right angle female header: This is provided for the power +/- solder points. It can be soldered to come out under or over the board, or not soldered at all.
- Audio signals can be line level or headphone level.