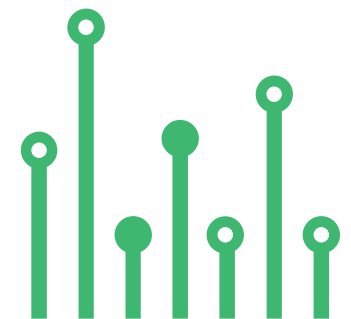


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RMS Noise to DC Converter - RMS Noise Measurement



SKU: EL148470

TEST & MEASUREMENTS

RMS Noise to DC Converter - RMS Noise Measurement



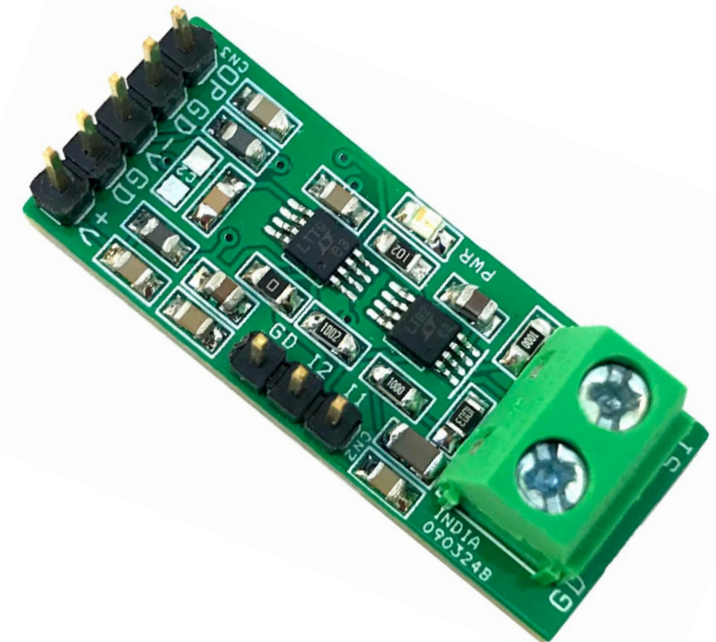
This mini-module helps users to measure the RMS noise of AC signal. Apply the AC noise signal to the input and the circuit outputs a DC voltage. Signal bandwidth is 1Khz to 100Khz and input sensitivity is 1 μ Volt RMS. The LT6203 ultra-low noise, low power op-amp amplifies the low-level signal. Further, this signal is converted into a DC voltage by LTC1966 True RMS converter chip from Analog Devices. The circuit works with dual supply +/-5V DC and consumes very low current.

$V_{Output} = 1mVDC/1\mu\text{Volt RMS Noise}$

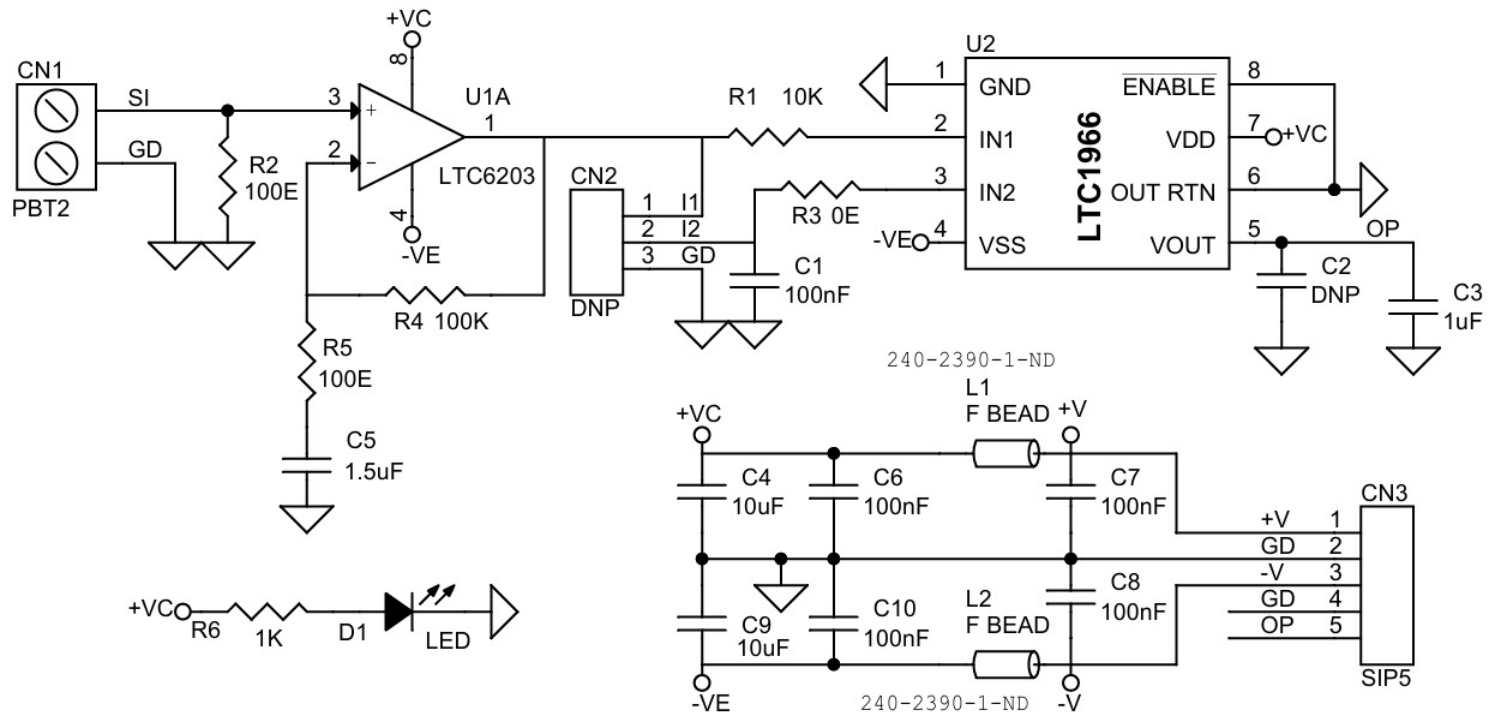
Credits: Schematic is from Analog Devices Application note.

FEATURES

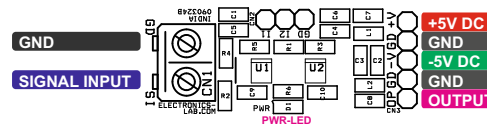
- Supply Dual 5V DC (+/-5V DC)
- Input Sensitivity 1 Micro-Volt RMS Type
- Screw Terminal Connector for Input Signal
- Header Connector for Output and Power Input
- On Board Power LED
- PCB Dimensions 36.51X14.61MM



Schematic



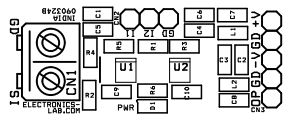
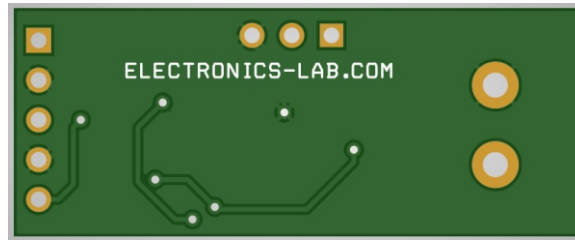
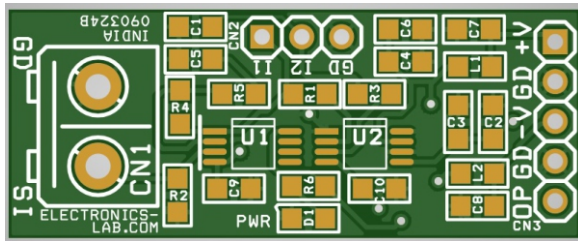
Connections



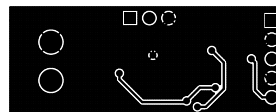
Connections

- CN1: Pin 1 AC Signal Input, Pin 2 = GND
- CN2: Pin 1 = LTC1966 Direct Input 1 Optional, Pin 2 LTC1966 Direct Input 2 Optional, Pin 3 GND
- CN3: Pin 1 = +5V DC, Pin 2 = GND, Pin 3 = -5V DC, Pin 4 = GND, Pin 5 = Output-DC Signal
- D1: Power LED

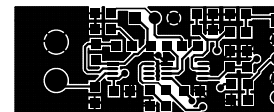
PCB



SILK SCREEN TOP



BOTTOM LAYER

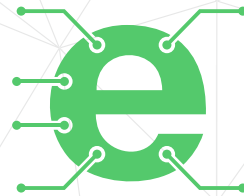


TOP LAYER

PCB DIMENSIONS 36.51X14.61MM

Parts List

BOM						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	2 PIN SCREW TERMINAL PITCH 5.08MM	PHOENIX	DIGIKEY	277-1247-ND
2	1	CN2	DNP			
3	1	CN3	5 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5318-ND
4	5	C1,C6,C7,C8,C10	100nF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
5	1	C2	DNP			
6	1	C3	1uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	2	C4,C9	10uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
8	1	C5	1.5uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
9	1	D1	LED RED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
10	2	L1,L2	FERRITE BEAD 600OHM/100MHZ SMD SIZE 0805	LAIRD	DIGIKEY	240-2390-1-ND
11	1	R1	10K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
12	2	R2,R5	100E 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	R3	0E SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
14	1	R4	100K 1% smd size 0805	YAGEO/MURATA	DIGIKEY	
15	1	R6	1K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
16	1	U1	LTC6203 MSOP8	ANALOG DEVICE	DIGIKEY	LT6203CS8#PBF-ND
17	1	U2	LTC1966 MSOP8	ANALOG DEVICE	DIGIKEY	505-LTC1966CMS8#PBF-ND



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electronics-lab
.com

info@electronics-lab.com
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