VM1000 Coupon PCB User Guide

Rev 1.0
By Shin Nagpal

General Description

This document describes the S-VM1000-C Coupon PCB evaluation board. The coupon PCB provides a quick and simple way of evaluating the single ended analog output VM1000 microphone. The board consists of a VM1000 bottom port MEMS microphone and a 0.1uF power supply bypass capacitor along with an edge connector. The user can simply use a corresponding female connector (CW Industries CWR-170-10-0000) or solder wires to make good electrical contact to the power and output pins of the microphone.

Pinout and Pin Descriptions

The board is shown in Figure 1 as follows and the corresponding pins in table 1 have been labeled:

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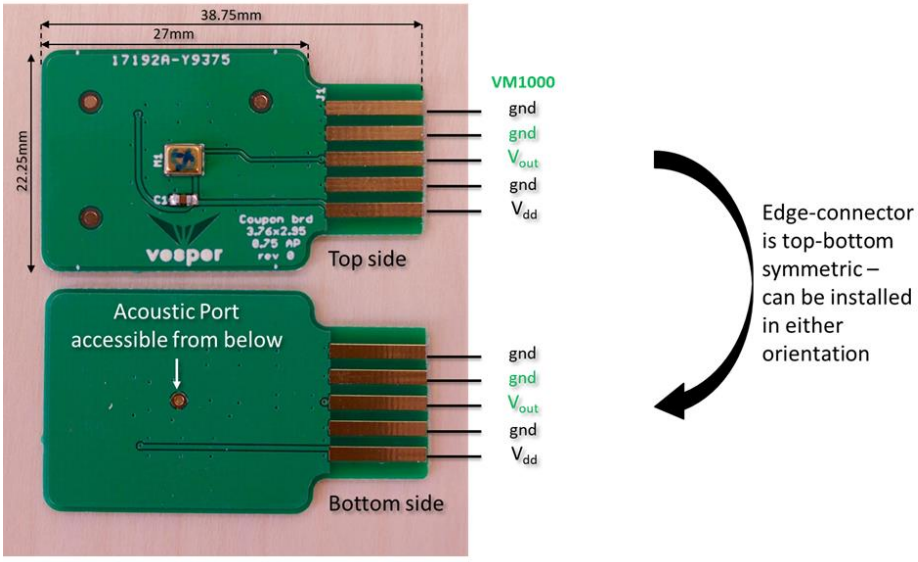


Figure 1. VM1000 Coupon PCB (Edge Connector recommendation is provided below)

Board Pin #	Name	Description
1	Gnd	Ground
2	Gnd	Ground
3	Vout	Analog Output
4	Gnd	Ground
5	Vdd	Power Supply 1.6V to 3.6V DC

Table 1: Pin Configuration

Edge Connector

VM1000 Coupon PCB can be used with an Edge connector from CW Industries with part number CWR-170-10-0000. Wiring on the edge connector is redundant and only one electrical connection needed to each of **Vdd, Vout+, Vout-, gnd.** Supply range for Vdd is 1.6V – 3.6V

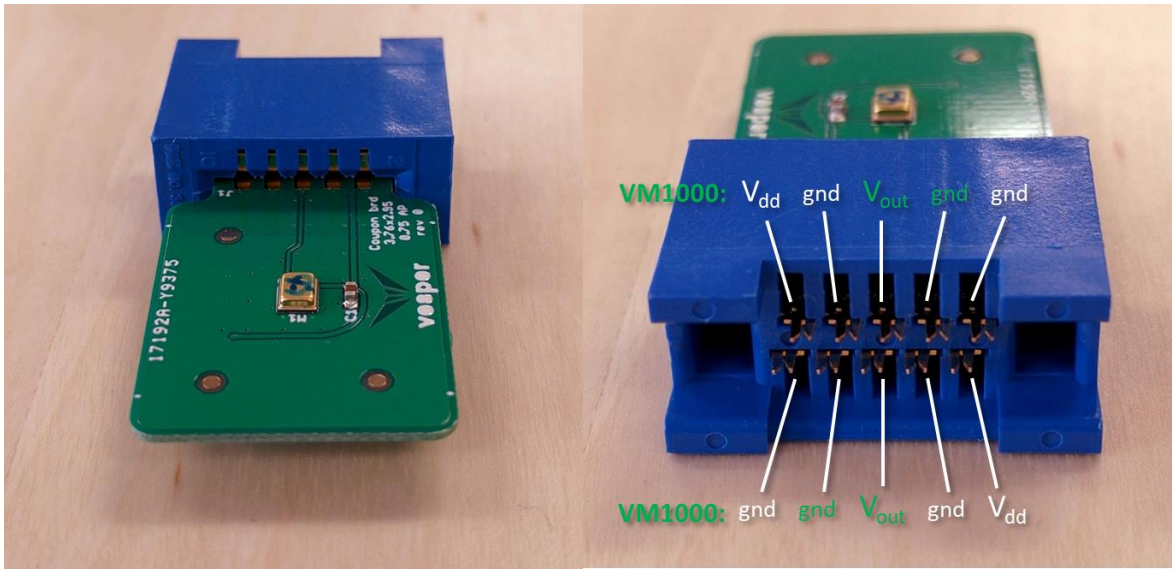
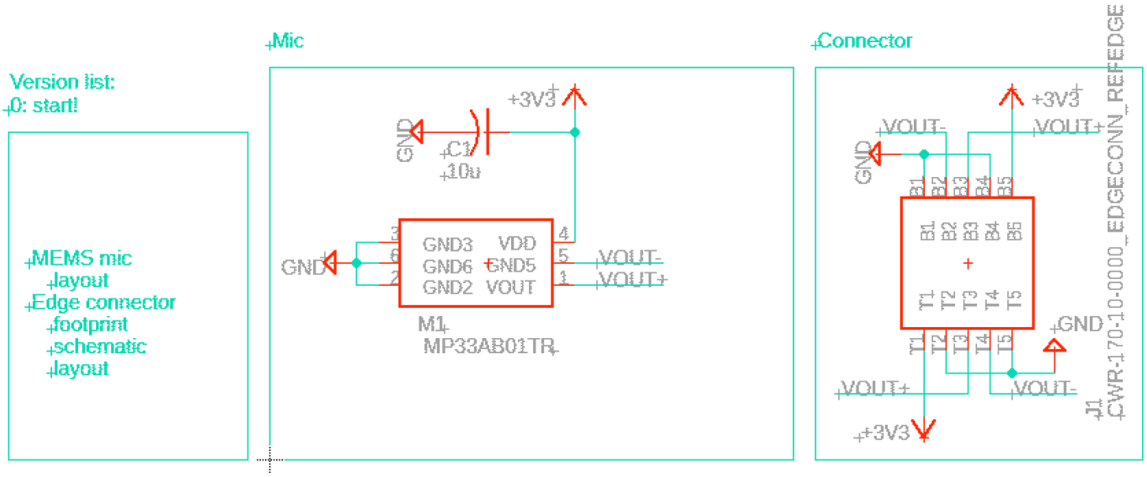


Figure 2: Connections on VM1000 Coupon PCB and Edge Connector CWR-170-10-0000

Schematic

The schematic of the board is shown in Figure 2. The S-VM1000-C Coupon pcb consists of the VM1000 microphone and the 0.1uF power supply bypass capacitor.



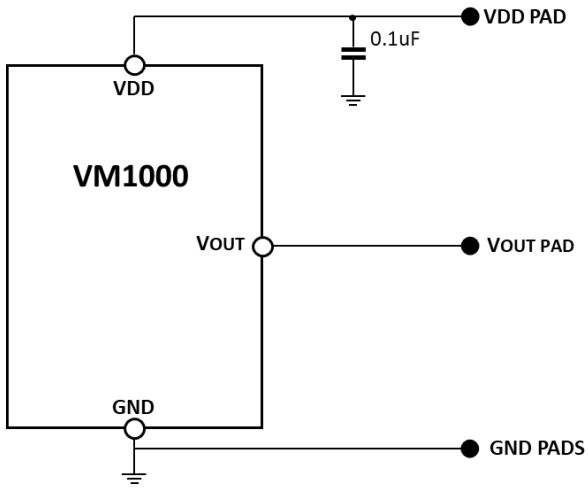


Figure 3: S-VM1000-C Coupon PCB Schematic

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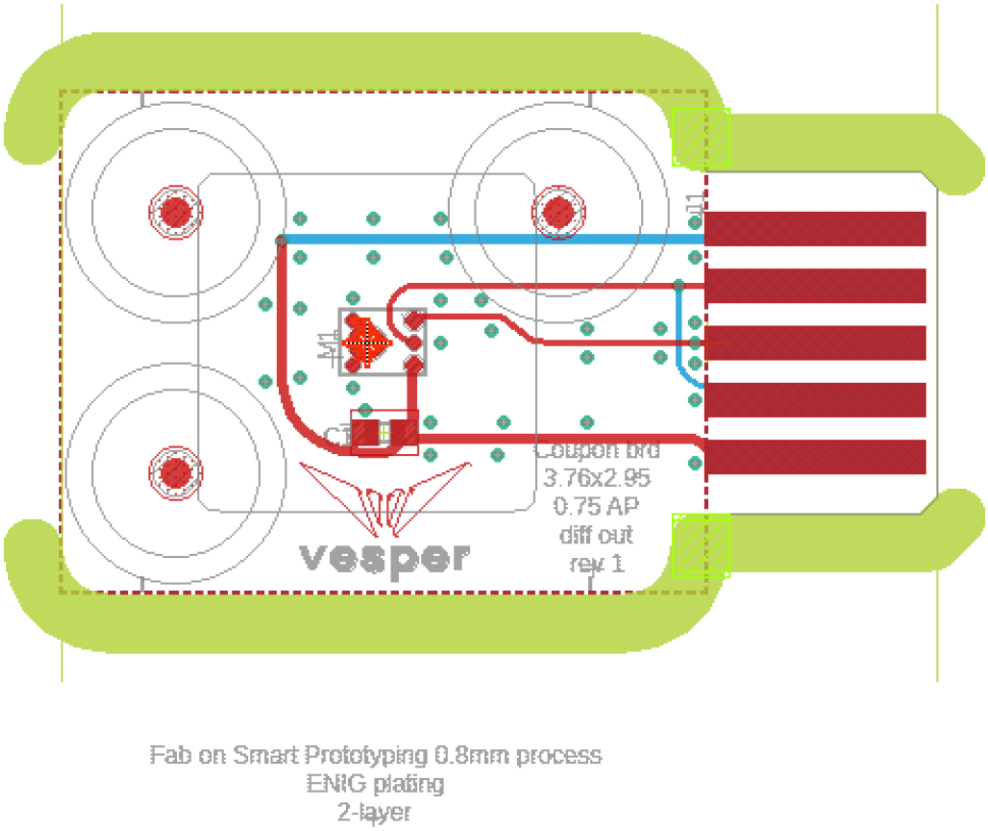

Figure 4: S-VM1000-C Coupon PCB board layout

Other Information

The detailed specifications and description of the VM1000 microphone can be found in the product datasheet. For convenience the basic parameters and absolute maximum ratings also shown in tables 2 and 3 below:

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Parameter	Typical Value	Units
Supply Voltage	1.8	V
Idd	165	µA
Sensitivity @ 94dB SPL	-38.0	dBV
	12.59	mVrms
Output Impedance	400	Ω
Output DC Offset	0.8	V

Table 2. Typical parameters for microphone operation

Parameter	Rating	Units
Supply Voltage	-0.3 to +3.6	V
Sound Pressure Level	160	dB re 20 µPa
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-55 to +150	°C
Mechanical Shock	10,000g per IEC 60028-2-27:2008	
Vibration	Per MIL-STD 883E, 2007.2	

Table 3. Absolute Maximum Ratings

For additional information on Vesper products, contact info@vespermems.com.