

## General Description

This document describes the C-VM2020 Coupon PCB evaluation board. The coupon PCB provides a quick and simple way of evaluating the differential analog output VM2020 microphone. The board consists of a VM2020 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:

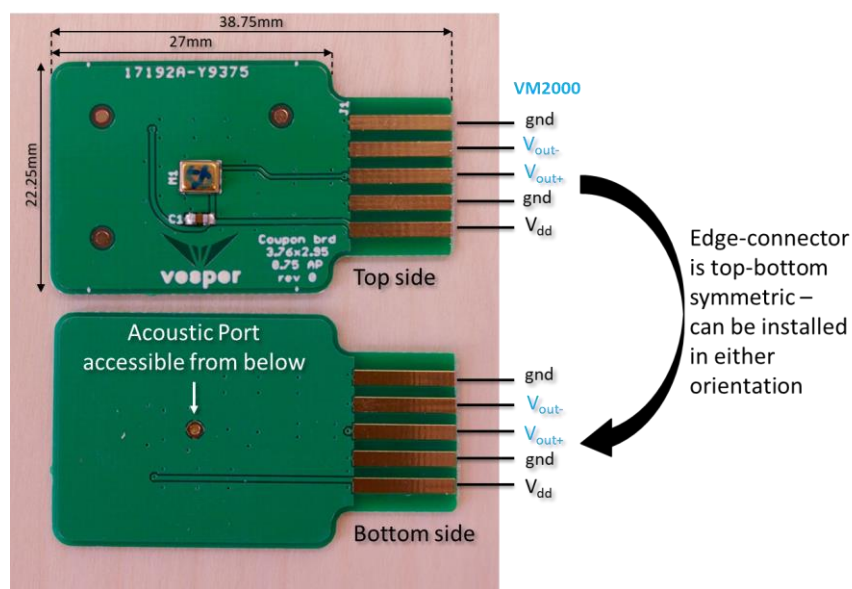


Figure 1. VM2020 Coupon PCB (Edge Connector recommendation is provided below)

| Board Pin # | Name   | Description                      |
|-------------|--------|----------------------------------|
| 1           | Gnd    | Ground                           |
| 2           | Vout - | Analog Output -                  |
| 3           | Vout + | Analog Output +                  |
| 4           | Gnd    | Ground                           |
| 5           | Vdd    | Power Supply<br>2.25V to 3.6V DC |

Table 1: Pin Configuration

## Edge Connector

VM2020 Coupon PCB can be used with an Edge connector from CW Industries with part number CWR-170-10-0000. Supply range for Vdd is 2.25V – 3.6V

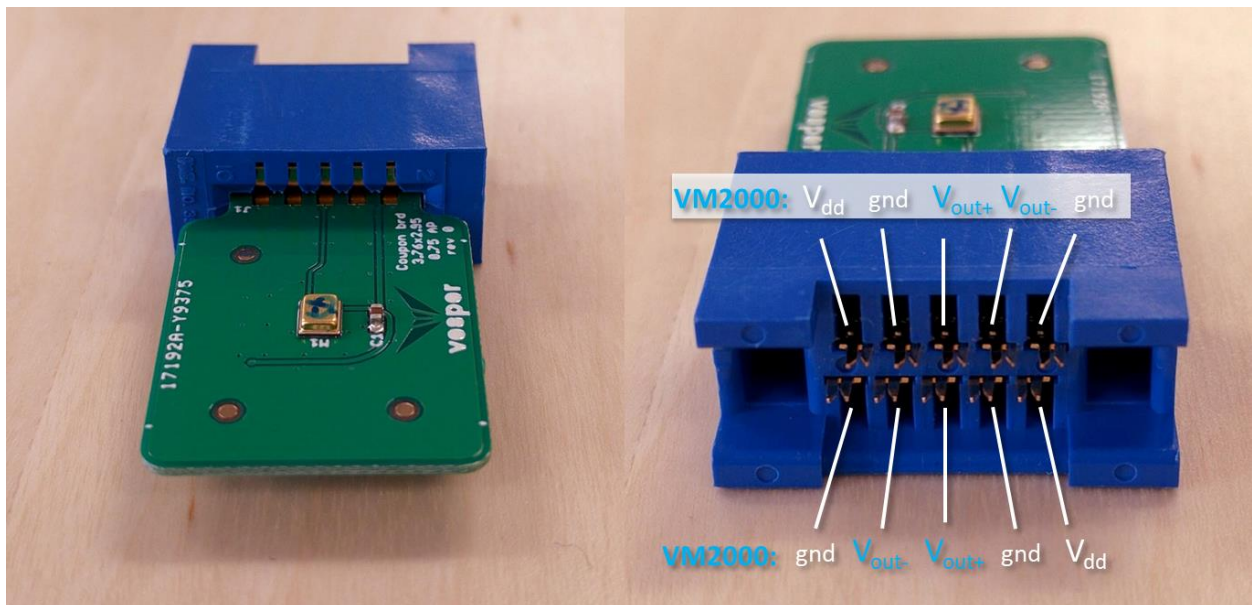
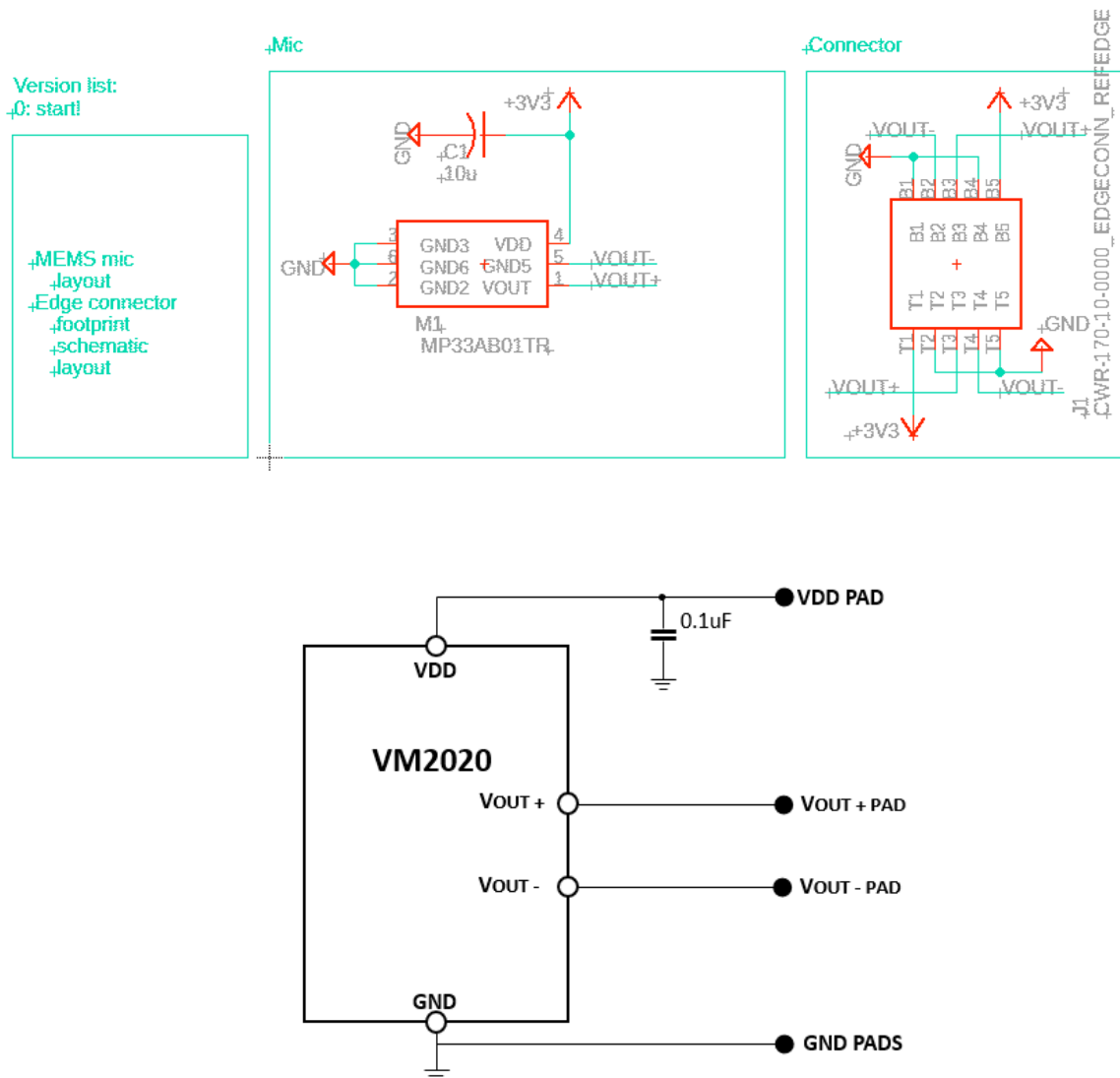
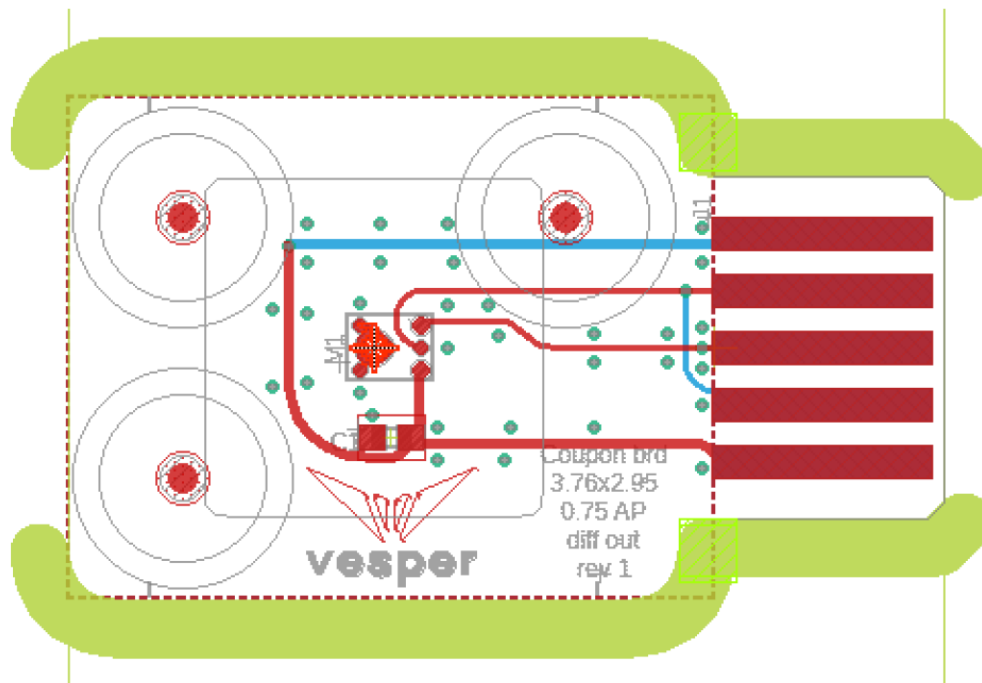


Figure 2: Connections on VM2020 Coupon PCB and Edge Connector CWR-170-10-0000

## Schematic

The schematic of the board is shown in Figure 2. The S-VM2020-C Coupon pcb consists of the VM2020 microphone and the 0.1uF power supply bypass capacitor.





Fab on Smart Prototyping 0.8mm process  
ENIG plating  
2-layer

Figure 4: S-VM2020-C Coupon PCB board layout

## Other Information

The detailed specifications and description of the VM2020 microphone can be found in the product datasheet. For convenience the basic parameters and absolute maximum ratings also shown in Table 2 and Table 3 below:

| Parameter                                                   | Typical Value | Units             |
|-------------------------------------------------------------|---------------|-------------------|
| Supply Voltage                                              | 2.6           | V                 |
| I <sub>dd</sub>                                             | 248           | μA                |
| Sensitivity @ 94dB SPL                                      | -63.0         | dBV               |
|                                                             | 0.71          | mV <sub>rms</sub> |
| Output Impedance, V <sub>out</sub> +,<br>V <sub>out</sub> - | 1400          | Ω                 |
| Output DC Offset, V <sub>out</sub> +,<br>V <sub>out</sub> - | 0.8           | V                 |

Table 2. Typical parameters for microphone operation

| Parameter                   | Rating                          | Units        |
|-----------------------------|---------------------------------|--------------|
| Supply Voltage              | -0.3 to +3.6                    | V            |
| Sound Pressure Level        | 180                             | 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

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