

MAV Kit Test Board: Instructions for Use

(AN-60-025)

Introduction

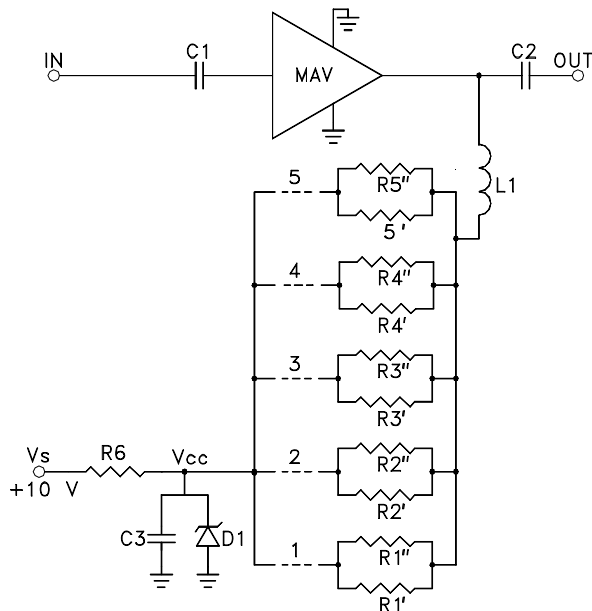
MAV Models are series of wide band amplifiers. They have different device voltages and currents (refer to catalog spec). The test board has been constructed in such a way as to make it useful for evaluating all the devices by suitable selection of bias resistor. This is done by soldering jumper wires across the specified dashed-line positions 1 to 5 shown in Fig.1.

The Test Board has the following components:

Component	Value	Function
C1 & C2	39000 pF	DC blocking
L1	MCL Model # ADCH-80A	RF choke
R1	95.5Ω	Sets bias current
R2	147Ω	Sets bias current
R3	206Ω	Sets bias current
R4	375Ω	Sets bias current
R5	288	Sets bias current
R6	4.75Ω	Sets bias current
D1	Zener, 10V	Protects against excessive supply voltage
C3	0.1 μF	Bypass capacitor; Bypass noise of supply voltage

Model No.	Short at Position
MAV-1A	4
MAV-2A	3
MAV-3A	2
MAV 11A	1 & 5
MAV-1SM	5
MAV-4SM	1
MAV-11SM	1 & 5
MAV-11BSM	1 & 5

Fig 1. Schematic of the Test Board MAV - TB



Procedure

Follow these steps to use the Test Board. Figure 2 shows the layout.

1. Solder selected MAV unit onto Test Board.
2. Make DC connection by soldering jumper wires in accordance with the table, depending on the selected MAV model. All other positions should be open.
3. Calibrate test setup.
4. First, connect the RF output port of the test board to Network/Spectrum analyzer. Then, apply +10 V DC (10.2V max). Finally, apply RF input to the test board from Network Analyzer.
5. Test Board has Insertion Loss due to the length of its lines, DC blocking capacitors and RF choke as shown below. Add this loss to the measured gain to get actual gain.

Frequency (GHz)	Insertion Loss (dB)
0.1	0.43
0.5	0.5
1	0.59
2	0.79
4	0.92
6	1.78

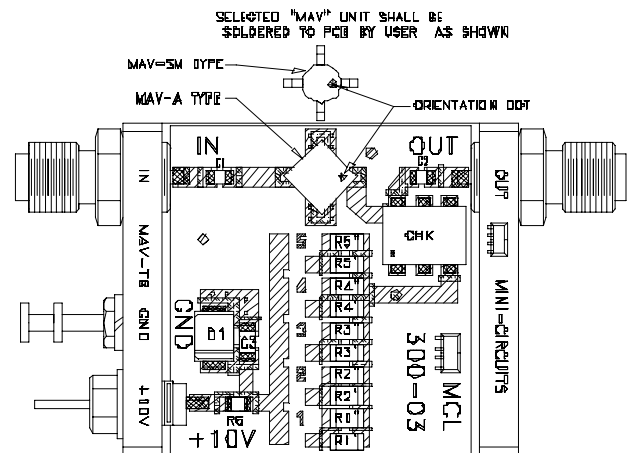


Fig 2. Layout of the Test Board MAV-TB