MAR/RAM Kit Test Board Instructions for Use

(for testing all MAR-SM AND RAM models)
(AN-60-018)

Introduction

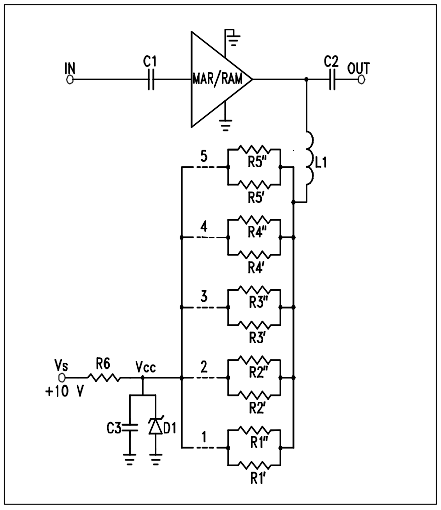
MAR-SM and RAM Models are series of amplifiers. They have different device voltages and currents (refer to catalog spec). The test board has been constructed in such a way as to make it useful for evaluating all the devices by suitable selection of bias resistor. This is done by soldering jumper wires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

The Test Board has the following components:

Component	Value	Function
C1 & C2	39000 pF	DC blocking
L1	MCL Model # ADCH-80A	RF choke
R1	288Ω	Sets bias current
R2	196Ω	Sets bias current
R3	89Ω	Sets bias current
R4	402Ω	Sets bias current
R5	268Ω	Sets bias current
R6	4.75Ω	Protects Zener
D1	Zener, 10V	Protects against excessive supply voltage
C3	0.1μF	Bypass capacitor; Bypass noise of supply voltage

Model No.	Short at Position
MAR-1SM RAM-1	1
MAR-2SM RAM-2	2
MAR-3SM RAM-3	1,5
MAR-4SM RAM-4	3
MAR-6SM RAM-6	4
MAR-7SM RAM-7	5
MAR-8SM RAM-8	3,4,5
MAR-8ASM	1,4

Fig 1. *Schematic of the Test Board MAR/RAM - TB*



Procedure

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

1. Solder selected MAR-SM or RAM unit onto Test Board.
2. Make DC connection by soldering jumper wire in accordance with the table, depending on the selected MAR-SM or RAM 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 (10.2 V 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)
1	0.64
2	1.03
3	1.63
4	1.32
5	1.46
6	1.90
8	3.21

Fig 2*. Layout of the Test Board MAR/RAM-TB*