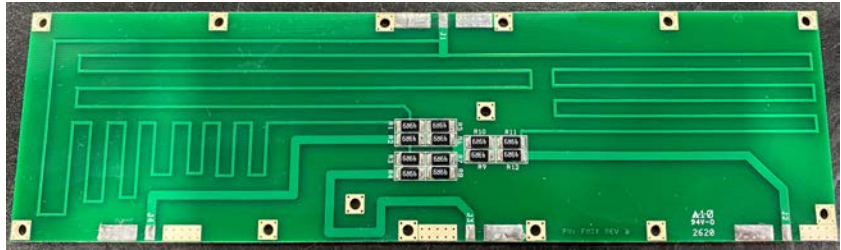


## Model FM3X: 3 way FM 0 degree splitter.

This combiner PCB is ideally suited for 3 way input power dividing in FM amplifier applications.

- **86-110MHz (FM BAND)**
- **Up to 40W CW input port J1**
- **Includes RF resistors**
- **Low cost 0.062 FR4 PCB**
- **Broadband not tune design.**
- **Product comes as a PCB only with resistors as shown.**
- **Optionally Available for purchase as PCB only without resistors.**



Dimension (L x W x H inch) [8.93" x 2.55" x 0.125"]  
 Tolerance +.015 - 0 inches in L and W

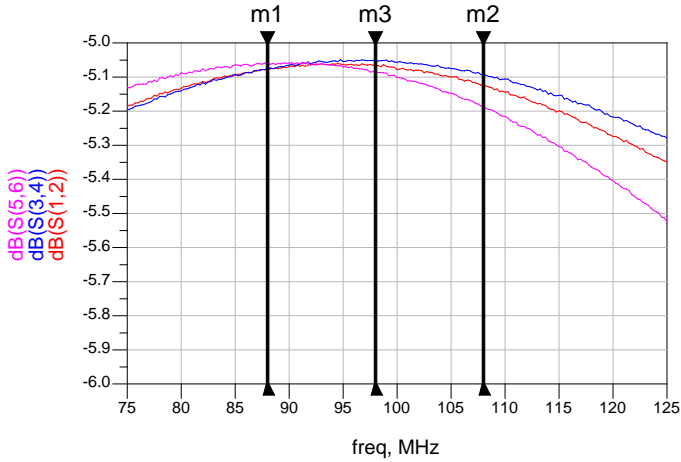
Electrical Specifications				
Characteristics	min	typ	max	unit
Operating Frequency range	86	-	110	MHz
Maximum CW power at input port	-	-	40	Watts
Output ports return loss	-	-30	-25	dB
Common Port Return loss	-	-25	-20	dB
Insertion loss S12/S21**	-5.05	-5.1	-5.2	dB
Port to port isolation	-	20	25	dB
Phase unbalance port to port	-	-	1	degree

A mechanical drawing and raw S-parameter files can be downloaded from the main product page. The S-parameter files are standard 2-port format. The DXF file is 2003-2006 format which can be opened by all modern cad and drawing programs.

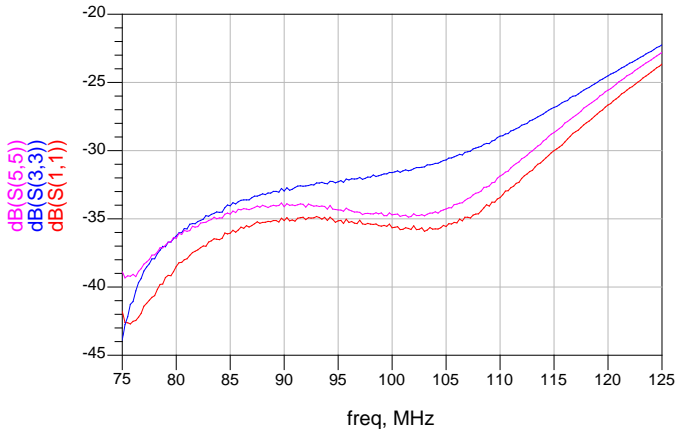
\*\*The ideal 0dB loss for a 3 way combiner is -4.77dB per port.

### RF Performance Summary

<b>m1</b> freq=88.00MHz dB(S(1,2))=-5.079 dB(S(3,4))=-5.074 dB(S(5,6))=-5.062	<b>m3</b> freq=98.00MHz dB(S(1,2))=-5.066 dB(S(3,4))=-5.054 dB(S(5,6))=-5.086	<b>m2</b> freq=108.0MHz dB(S(1,2))=-5.123 dB(S(3,4))=-5.093 dB(S(5,6))=-5.188
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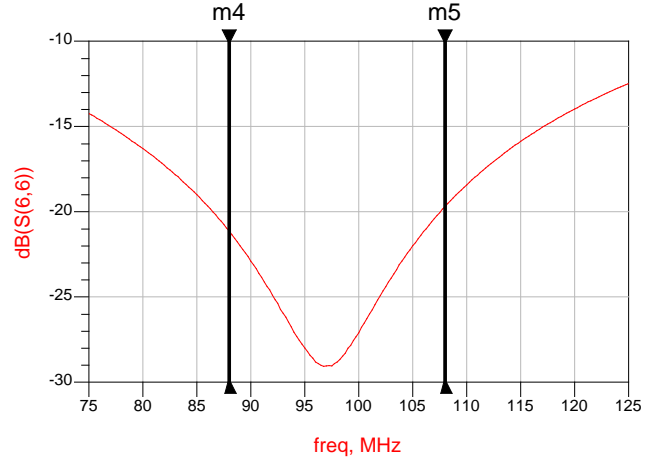


Return Loss 3 inputs



return loss common output

<b>m4</b> freq=88.00MHz dB(S(6,6))=-21.132	<b>m5</b> freq=108.0MHz dB(S(6,6))=-19.707
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## **Installation Notes**

The RF connections are designed to be made by soldering coaxial cable to the combiner or by aligning the main RF input tracks of the pallets with the outputs of the combiner and making the RF connection with solder wick or flat wire. This is the preferred method when mechanical layout allows. The spacing between the RF tracks from pallet to combiner should be .050 inches or less. This will effectively eliminate inductive reactance in this frequency range and provide maximum performance.

We suggest RG178 MIL-C-17 for coaxial connections. Since this is a low power combiner RG178 is an excellent choice. Use only high temperature PTFE cables. Cables that melt when soldered are unsuitable and may fail after a short time. All cables must be the same length to maintain phasing.

Please note that the inputs and outputs have ground solder pads on each side of the RF track. It is not necessary to make a ground connection with both of them. Do not twist braids of coax cables in an attempt to make contact with both ground pads.

This combiner can be used to drive 3 units of any FM pallet on our website. All pallets must be of the same make and model.

The balance resistors are designed to absorb dissipated power from normal gain and impedance differences between pallets being driven. The balance resistors are not intended as a redundancy feature. Do not operate the combiner with 1 or more pallets non-functional or the balance resistors may fail.

The combiner is not designed for multicarrier combining of signals at different frequencies at maximum rated power levels.

Do not bend the PCB during installation as the surface mount balance resistors will be damaged.