

# VHF Antenna Multicoupler Model VMC-8



TMC  
Technical  
Bulletin

104033 A



The VHF Multicoupler, Model VMC-8, is a broadband antenna coupling device which connects eight VHF receivers to a common antenna. It consists of a bandpass filter, broadband transistorized preamplifier, eight individual output amplifiers, and a power regulator. The unit is designed for maximum isolation between receivers and from receiver to antenna. The VMC-8 is capable of operating over a frequency range of 20 MHz to 200 MHz; the specific bandwidth is determined by the filter and preamplifier assembly selected. The standard model is the VMC-8-108/174 which covers the band 108-174 MHz.

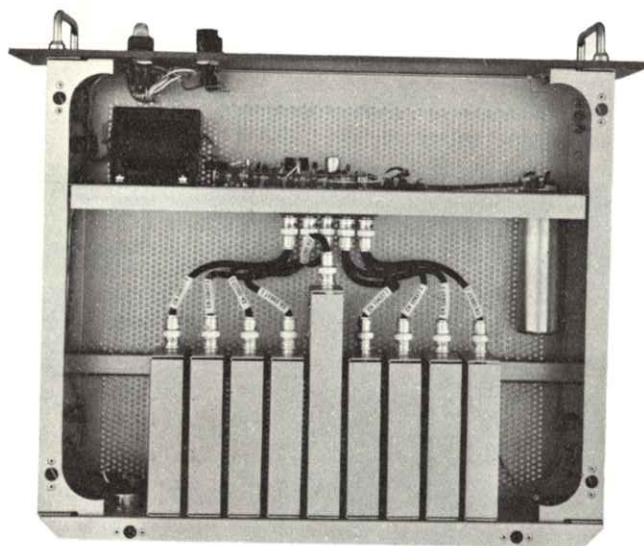
The preamplifier has a low noise figure and large signal handling capability. It has greater than 3 db overall insertion gain with minimum intermodulation. In addition, it provides good VSWR over the frequency range.

The VMC-8 is designed for mounting in a standard 19-inch rack. The power switch, lamp and fuses are located on the front panel. All connectors are located on the rear panel. The standard VMC-8 is provided with N type connectors; other connectors or adaptors can be supplied.

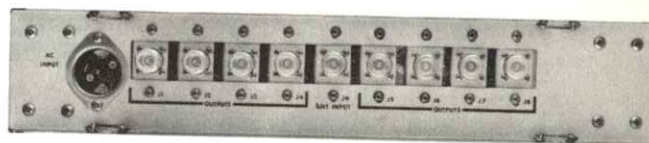
The unit is designed for fast repair in the field. The filter/preamplifier, the eight output modules, the power divider and the power supply regulator are replaceable assemblies.

## TECHNICAL SPECIFICATIONS

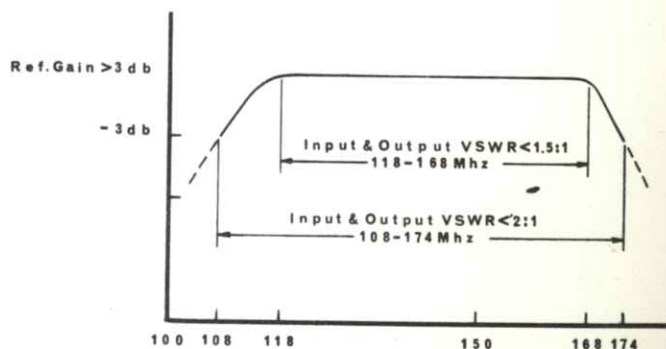
<b>Number of Outputs</b>	Eight	<b>Isolation</b>	-60 db minimum, output-to-output -60 db minimum, output-to-input
<b>Frequency Range</b>	Capable of 20 MHz to 200 MHz, specific bandwidth determined by filter selection	<b>Power supply</b>	115 volts ac or 230 volts ac $\pm 10\%$ , 48/62 Hz, power consumption approximately 30 watts
<b>Input Impedance</b>	50 ohms with a VSWR better than 1.5:1 118-162 MHz and 2.0:1 108-174 MHz	<b>Dimensions</b>	Width 19 inches (48.25 cm), Height 3-1/2 inches (8.89 cm), Depth 14-1/2 inches (36.85 cm)
<b>Output Impedance</b>	50 ohms with a VSWR better than 1.5:1 118-162 MHz and 2.0:1 108-174 MHz	<b>Weight</b>	13 pounds approximately (5.9 kg)
<b>Insertion Gain</b>	Greater than 3 db	<b>Mean time between failures</b>	20,000 hours average.
<b>Noise Figure</b>	8 db maximum	<b>Temperature range</b>	Class 4 military requirements; operating $-10^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ , non-operating $-62^{\circ}\text{C}$ to $+75^{\circ}\text{C}$
<b>Intermodulation</b>	All products at least 55 db down when two 0.25 volt emf signals are applied to the antenna input	<b>Humidity</b>	Operational up to 95%
<b>Cross Modulation</b>	With a desired signal of up to 100 uvolts emf, an interfering signal 5% removed and modulated 30% at an amplitude of 52 db above that of the desired signal, shall not produce more than 1% cross modulation		



Top View (Cover removed) VMC-8



Rear View VMC-8



Typical Frequency Response VMC-8-108/174

## TMC (Canada) Limited

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