

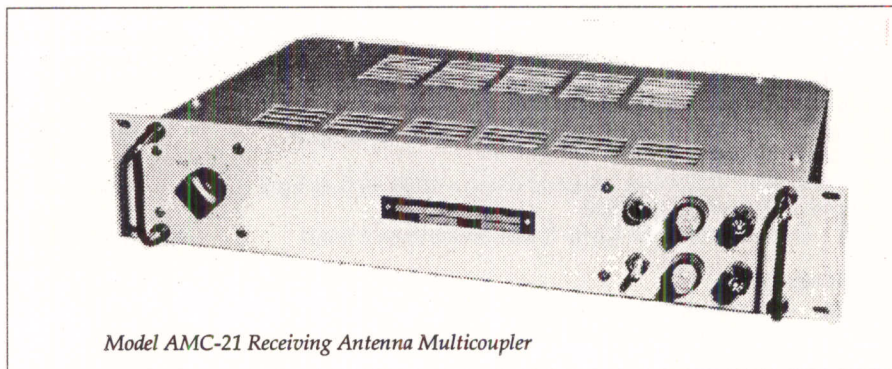


MF/HF Receiving Antenna Multicoupler

AMC-21 Series

Product Bulletin 110308A

- 100KHz to 40MHz Operation
- Completely Solid State
- Switchable Input Filters
- Wide Dynamic Range, Low Noise
- Active Antenna Power Supply



Model AMC-21 Receiving Antenna Multicoupler

The AMC-21 units are broadband coupling devices that provide for low-noise distribution of RF signals from a common antenna to as many as sixteen communications receivers. Cascading of multicouplers will have negligible effect on the quality of the received signal. The unit is capable of working with any receiver operating in the HF region and is effectively transparent to the RF energy received at the antenna. It is totally solid state and broadbanded, making it ideal for many types of installations in both commercial and military service.

The AMC-21 is designed to provide the best possible isolation of receivers connected to it. This is done by using individual buffer amplifiers to significantly reduce the amplitude of signals re-radiated from the receivers and block interference with adjacent receivers or the common antenna system. The low-noise amplifiers used in the multi-

coupler are capable of handling large signals and yield an overall insertion gain without introducing objectionable intermodulation of the received signal. In addition, a front panel selector switch enables the operator to insert any of three input filters between the antenna and the amplifier section. This is particularly important in blocking out high-level interfering signals from such sources as local broadcast stations. The units provide a constant input and output impedance for a VSWR better than 1.5-to-1 over the operating range.

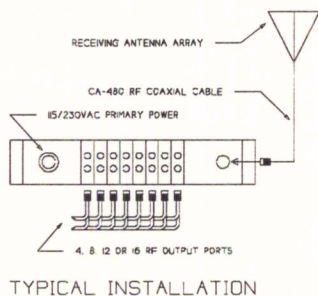
The AMC-21 multicoupler operates with any communications receiver - whether or not engineered by TMC. This "stand-alone" quality makes it universally compatible with existing stations and simplifies the task of incorporating the equipment in a communication system. Maximum performance is achieved through any dual-output module, independent of the antenna loading or number of modules installed.

The AMC-21 mounts in a standard 19-inch equipment cabinet. The solid state circuitry and slim-line chassis eliminates heat-related problems and allows the stacking of multicouplers - one above the other - in the equipment rack. With the exception of the front panel power

and filter-select switches, there are no operating controls. Adjustments at the TMC factory are completed prior to shipment so that the unit can immediately be placed in service upon receipt. Connections for antenna input, receiver outputs, and primary power are located on the rear panel (See diagram).

The AMC-21 is constructed of aluminum alloy with the front panel and back plane bolted to channels forming the sides of the unit. Dual-output modules plug in to the back plane. Component circuit cards are mounted to the chassis internally and are isolated to prevent coupling of unwanted energy. Top and bottom cover plates provide additional protection and isolation. External hardware is stainless steel for operation under the most severe environmental conditions.

The complete multicoupler line is manufactured by TMC to professional standards. Due to the quality of its design, each unit can be upgraded to conform to US military specifications for not only electronic parameters but shock and vibration as well. Other models in the line include the fixed output series AMC-[8][16][32] and the dual-input AMC-2X[4][8][16]. The VMC-8 is a VHF, 8-port multicoupler used in air traffic control systems.



OPERATING PARAMETERS

Frequency Range 100KHz-40MHz without filter
Number of Outputs Four, eight, twelve or sixteen;
 Two outputs per plug-in module; expandable
I/O Impedance 50-ohms unbalanced, BNC connector
 Option: 70-ohms unbalanced; Type UHF, N, other connectors
Insertion Gain Nominal +2dB over range
Frequency Response +/-1.0dB, 500kHz-32MHz
Off-band Rejection >30dB DC-1.4MHz,46-1000MHz
Noise Figure Less than 7dB
Output/output Isolation Greater than -40dB
Output/input Isolation Greater than -55dB
Phase Differential +/-2° maximum, output-output
Desensitization <3dB drop of 100uV signal for 4v peak input
 (f_o is 10% removed)
Intermodulation Distortion Second order: >-60dB for 0.4v input
 to 50-ohm unit; third order: -65dB
VSWR Output: better than 1.2-to-1; Input better than 1.5-to-1

ENVIRONMENTAL

Cooling Convection; no fans or moving parts.
Ambient Conditions 0°C to +50°C; Up to 95% R.H.
Storage: -30°C to +80°C
Primary Power 115/230VAC, 48-400Hz, 25 watts (AMC-21-8)
Size 3.5H x 19W x 14D inches (8.9H x 48.3W x 35.6D cm)
Weight 25lbs (11.4Kg) installed (AMC-21-8)
Line Filters 40dB attenuation 14KHz-150MHz

SPECIAL FEATURES

Mean Time Between Failures Better than 20,000 hours (actual)
Monitoring Indicating fuseholders display primary power status
Safety Fuse and overload protection. HV points covered, labelled
Components Solidstate circuits throughout
Construction Aluminum alloy chassis; stainless steel hardware
Overload Protection Frontend devices prevent circuit failure from
 high RF voltages.

ORDERING INFORMATION

AMC-21-4 Receiving Multicoupler, 4-output
AMC-21-8 Receiving Multicoupler, 8-output
AMC-21-12 Receiving Multicoupler, 12-output
AMC-21-16 Receiving Multicoupler 16-output

Example: Model AMC-21-12/5F4

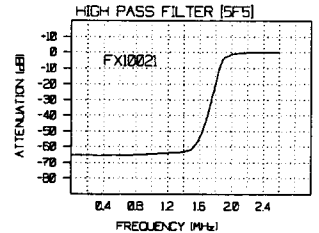
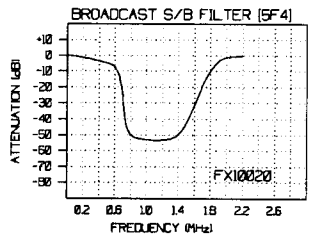
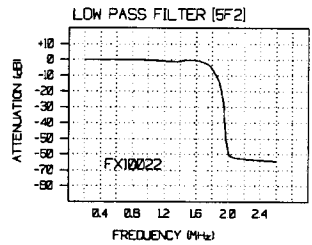
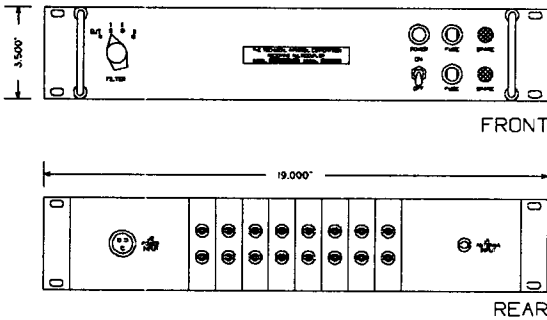
Optional Internal RF Input Filters

Note: x=5 for 50-ohm and x=7 for 75-ohm operation
/xF2 Low-pass filter (f_c=2.0MHz)
/xF4 Broadcast stopband filter (0.6-1.9MHz)
/xF5 High-pass filter (f_c=2.0MHz)
/xF[nnn] Multiple filters, switched at front panel

Related Equipment

AVA-[1][2][3][4] VLF/LF/MF/HF/VHF Active Antenna
RFP Series External Input Filters for high-RF sites
VRA Series VLF/LF/MF/HF Vertical Antenna

Specifications are subject to change without notice - Please verify accuracy with TMC before ordering.



The Technical Materiel Corporation

Communication Products Division

700 Fenimore Road

Mamaroneck, New York 10543-2300 USA

Telephone 914-698-4800 * Facsimile 914-698-4805