

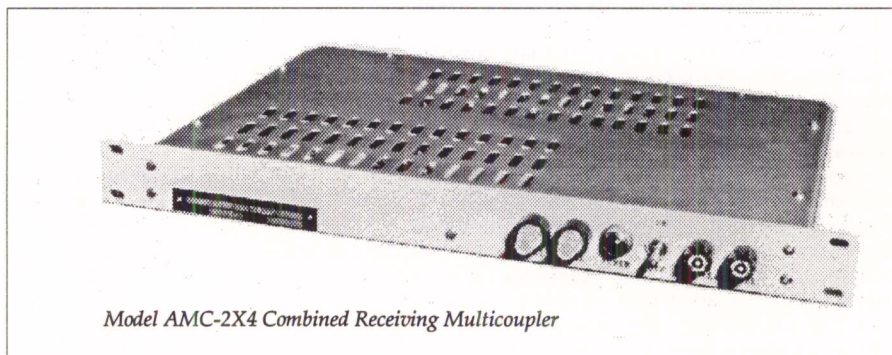


# Dual-Input Receiving Antenna Multicoupler

## Models AMC-2X4, AMC-2X8, AMC-2X16

Product Bulletin 110320

- 10kHz to 40MHz Operation
- Dual-Input/Dual-Section Array
- Multiple RF Signal Paths
- Low Noise/Wide Dynamic Range
- Excellent Phase Characteristics
- Rugged, Solid-State Construction



Model AMC-2X4 Combined Receiving Multicoupler

The AMC-2X4, AMC-2X8 and AMC-2X16 are active, broadband RF coupling devices that permit the simultaneous use of 8, 16 or 32 communications receivers operating in the VLF, LF, MF and HF regions. Each receiver can be separately tuned to a different frequency and connected to one of two RF sections optimized for a given frequency range. The multicoupler can also be used for low-level distribution of RF to counters, recorders, analyzers or data acquisition equipment. Since distortion is negligible, this RF is virtually an exact duplicate of the source RF signal. All multicouplers are solid state and broadbanded, making them ideal for shipboard, aircraft or shore station installation in both commercial and military service worldwide.

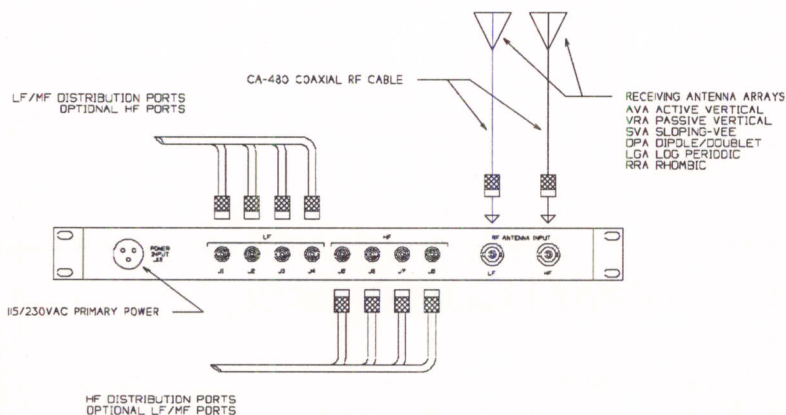
The system design of the AMC-2X multicouplers is unique in that two sections are incorporated in one chassis - each optimized for 10-2000kHz or 2-30MHz. Each section is fed from a separate source of RF - for example, an antenna system - and is equipped with a selection of input filters that suppress spurious radiation capable of interfering with the received RF. These filters cover most field conditions and special ones can be constructed to specific requirements. Filter designs include both bandpass and narrowband notch filters.

The AMC-2X series is engineered to provide the best possible isolation between connected equipments. This is done with separate buffer amplifiers that significantly reduce

the amplitude of signals re-radiated from the receivers while blocking interference from adjacent receivers or the two antenna systems. The low-noise amplifiers are capable of handling large signals and yield an overall insertion gain. They also provide a constant input and output impedance for a VSWR that is better than 1.5-to-1 over each operating frequency range.

The AMC-2X multicouplers are all designed to operate with modern communications receivers. This "stand-alone" quality makes them universally compatible with existing stations, simplifying the task of integrating the equipment in any communication system without modification. All basic models are designed to mount 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 switch, there are no operating controls. Adjustments at the factory are completed prior to shipment so that the unit can immediately be placed in service upon receipt. Connections for primary power, RF inputs and multiple RF outputs are made at the rear panel. Coaxial BNC connectors are used for all RF ports.

### TYPICAL AMC-2X4 INSTALLATION



**THE TECHNICAL MATERIEL CORPORATION**

COMMUNICATIONS ENGINEERS

**GENERAL SPECIFICATIONS**

**Operating Range** 10kHz-4MHz (no filter); 0.5-40MHz (no filter)  
**Number of RF Inputs** Two unbalanced coaxial, BNC-type  
 Option: Single RF antenna input with balanced splitter.  
**Number of Outputs**

- AMC-2X4 Four LF/MF + Four MF/HF
- AMC-2X8 Eight LF/MF + Eight MF/HF
- AMC-2X16 Sixteen LF/MF + Sixteen MF/HF

Option: Identical sections installed in any model  
**I/O Impedance** 50-ohms unbalanced, BNC connector  
 Option: 70-ohms unbalanced; N, UHF, other connectors.

**Insertion Gain** Nominal +2dB over range  
**Frequency Response** +/-1.0dB, 10kHz-30MHz  
**Off-band Rejection** >-30dB DC-10kHz, 46-100MHz  
**Noise Figure** Less than 7dB  
**Output/output Isolation** Greater than -55dB  
**Output/input Isolation** Greater than -60dB  
**Phase Differential** +/-2° maximum, output-output  
**Desensitization** For a 4-volt peak input - 10% removed from  $f_0$  - a 100 microvolt received signal drops less than 3dB.  
**Intermodulation Distortion** Second order greater than -60dB for a 0.4v input; third order greater than -65dB  
**VSWR** Output better than 1.2-to-1; Input: 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, 48-62Hz, single phase  
**Line Filters** 40dB attenuation 14kHz-150MHz  
**Size AMC-2X4** 1.75H x 19W x 12D inches, 8 pounds  
**AMC-2X[8][16]** 3.5H x 19W x 12D inches, 17 pounds

**SPECIAL FEATURES**

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

**Ordering Information and Options**

Note: (1) LF/MF + (1) MF/HF section are installed as standard.  
**AMC-2X4** Receiving Multicoupler, 2X4 Port  
**AMC-2X8** Receiving Multicoupler, 2X8 Port  
**AMC-2X16** Receiving Multicoupler, 2X16 Port

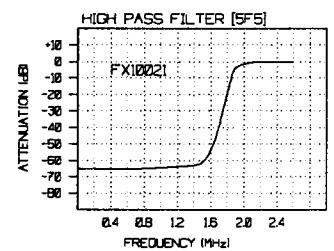
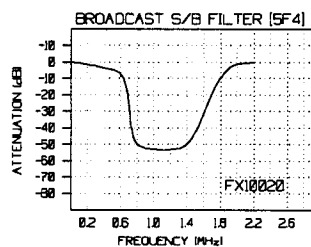
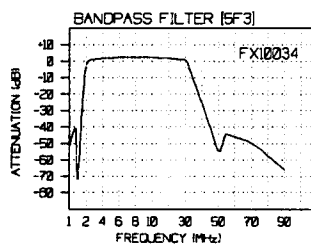
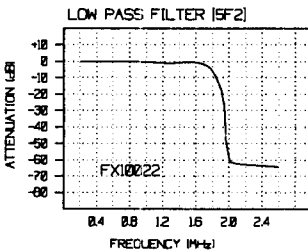
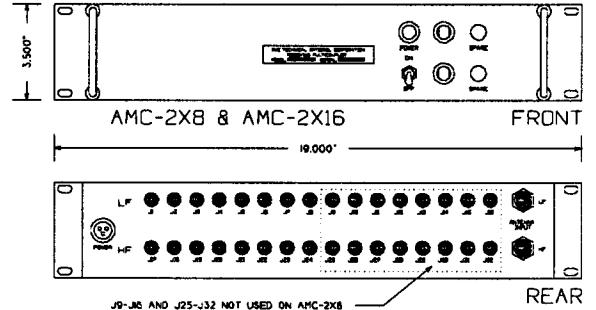
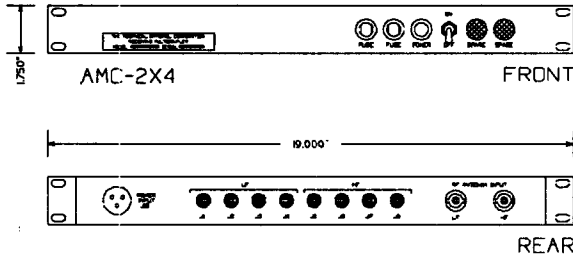
**Optional RF Input Filter (One per section)**

Note x=5 for 50-ohm and x=7 for 75-ohm operation  
 /xF0 No input filter  
 /xF2 Low-pass ( $f_c=2$ MHz) input filter  
 /xF3 Band-pass (2-30MHz) input filter  
 /xF4 Broadcast stopband input filter  
 /zF5 High-pass ( $f_c=2$ MHz) input filter  
 /zF6 Band-pass (300-600KHz) input filter  
 /xF[ ] Customer-specified filters

**Related Products**

- AMC-8[16][32] Receiving Antenna Multicoupler
- AMC-21-4[8][12][16] MF/HF Antenna Multicoupler
- AVA-1[2][3][4] VLF/LF/MF/HF/VHF Active Antenna
- RFP Series External filter for high-RF sites
- VMC-8 VHF Antenna Multicoupler
- VRA Series Vertical Receiving Antenna

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



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