

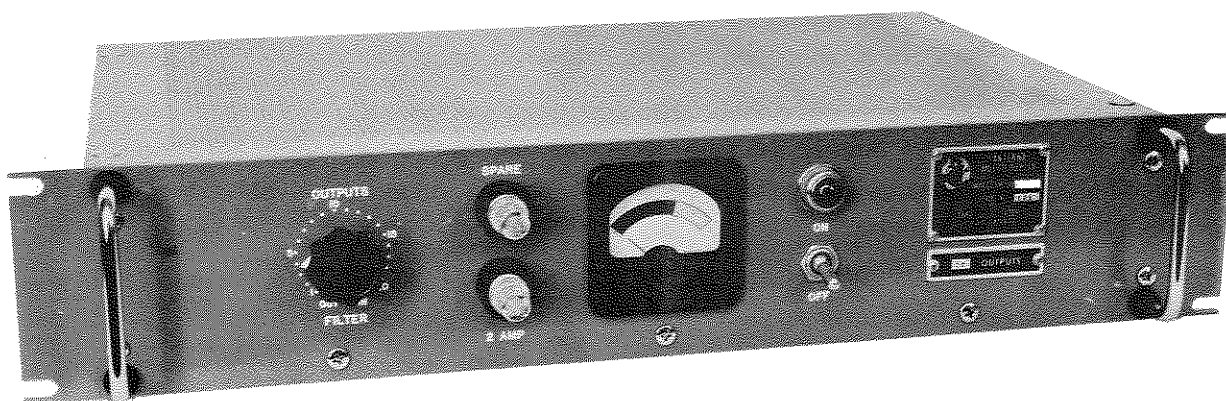
TECHNICAL BULLETIN NUMBER 8019A

Hybrid Antenna Multicoupler

Models AMC-20-4

AMC-20-8

AMC-20-16



PURPOSE

Provides low noise optimum distribution of RF Signals for 2 to 32 MHz to as many as 16 receivers, or by cascading, as shown on the rear page, to as many as 256 receivers.

APPLICATION

- Shipboard
- Commercial Receiving Facilities
- Military Communications Station
- Air Traffic Control Facilities
- High Seas Radio Telephone Service
- Point-to-Point Communications Service

FEATURES

- Low Noise Front End
- Hybrid Solid State
- 4, 8, or 16 Outputs
- 3½" x 19" x 14"
- 70 db Front-to-Back Isolation
- Back-to-Back Phase Within One Degree
- Dynamic Range 100 db

DISCUSSION

The Technical Materiel Corporation's new hybrid-transistorized Antenna Multicoupler Model AMC-20() utilizes a low noise, wideband push-pull tube front end amplifier to drive a transistorized RF distribution system, which provides the maximum effectiveness of tube input and transistor drive and output stages, for coupling up to 16 receivers to one antenna. Requirements for 4, 8, or 16 receivers are accommodated by the models available in this series. (see figure 1.) or by

Hybrid Antenna Multicoupler

cascading, multiple receiver outputs can be made available from a single antenna input, as shown in figure 2. Advantage is taken of the wide grid base of tubes and their low noise, for the pre-amplifier stage of the unit.

The attenuation of high level signals by the use of pads in the front end to achieve greater signal handling capabilities, has been held to a minimum to preserve the Signal/Noise plus Noise ratio of low level signals, which are of prime importance.

The multicoupler provides a nominal gain of 0db with a frequency response of ± 1.0 db over the frequency range 2 to 32 MHz.

HYBRID ANTENNA MULTICOUPLER

The extremely low power consumption of this hybrid unit enables the stacking of these units in high-density configurations without excessive heat failures and associated problems, and the size is such that many channels can be contained in a comparatively small volume.

The unit also features a transistorized internal test oscillator and metering circuit for dynamic checking of all output stages. In the application of this multicoupler in its operating environment, care should be taken to assure that any unused outputs are terminated with 50 ohms in order to maintain correct operation of the unit.

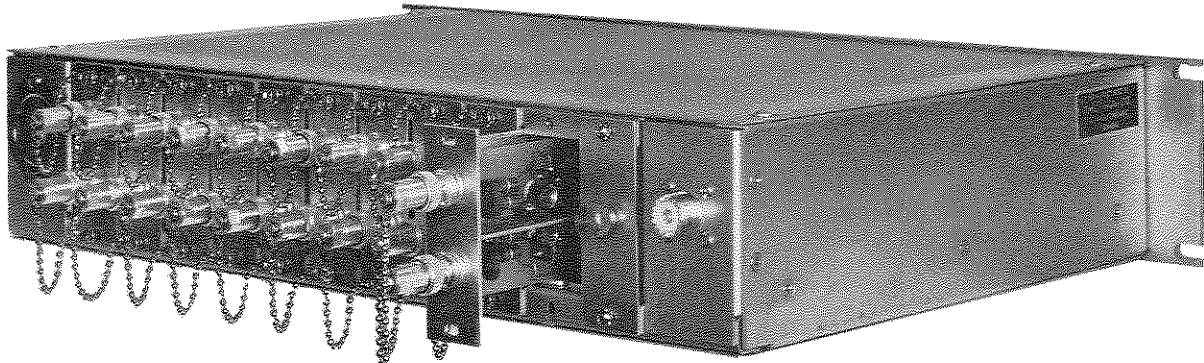
In those applications where the outputs of the AMC-20 are routed to RF patching facilities, it is recommended that a switching panel, such as TMC Model SPP-() to be employed so that the unused outputs will be automatically terminated in 50 ohms (see OPTIONS/ACCESSORIES).

TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE:	2-32 MHz (Usable 500 kHz to 40 MHz).
GAIN:	Nominal 0db, ± 1 db
FREQUENCY RESPONSE:	± 1.0 db, 2 to 32 MHz (Filter Out).
NOISE FIGURE:	Average 7 db.
VSWR:	1:5:1
INPUT IMPEDANCE:	Standard, 50 ohms unbalanced.
OUTPUT IMPEDANCE:	Standard, 50 ohms unbalanced.
NUMBER OF OUTPUTS:	AMC-20-4 (4 BNC) AMC-20-8 (8 BNC) AMC-20-16 (16 BNC)
INTERMODULATION DISTORTION:	In no case are 2nd and 3rd order intermodulation products less than 60 db below two 0.25V RMS signals applied at the input. However typical 2nd order products are 70 db down and all products fall within the shaded area of the graph shown as Figure 2.

Models AMC-20-4, AMC-20-8, AMC-20-16

BACK TO FRONT ISOLATION:	Better than 70 db.
OUTPUT TO OUTPUT ISOLATION:	Average 50 db.
OUTPUT PHASE BETWEEN JACKS:	$\pm 1^\circ$
BROADCAST FILTER:	A switchable broadcast filter is incorporated which provides at least 55 db attenuation at 1.2 MHz.
DYNAMIC RANGE:	100 db based on 1uv input.
DESENSITIZATION:	1.5 volts RMS 10% removed in frequency will reduce a low level signal by no more than 3 db.
OVERLOAD:	10 volts RMS continuous or 75 volts for 5 second intervals will not cause component failure or subsequent degradation of performance.
MTBF:	10,000 hours.
INPUT POWER:	115/230 volts ac, 50/400 Hz single phase.
CONNECTORS:	Output: BNC Input: UHF (SO239A)
POWER CONSUMPTION:	Approximately 45 watts.
SIZE:	3½" h x 19" w x 14" d.
WEIGHT:	30 lbs.
COMPONENTS AND CONSTRUCTION:	All equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.
INSTRUCTION BOOK:	IN 8019A
LOOSE ITEMS:	RF Connectors and mating interconnector cabling.
OPTIONS/ACCESSORIES:	See Connector Products Catalog for information on SPP Switching Panels.



Rear view showing plug-in output modules.

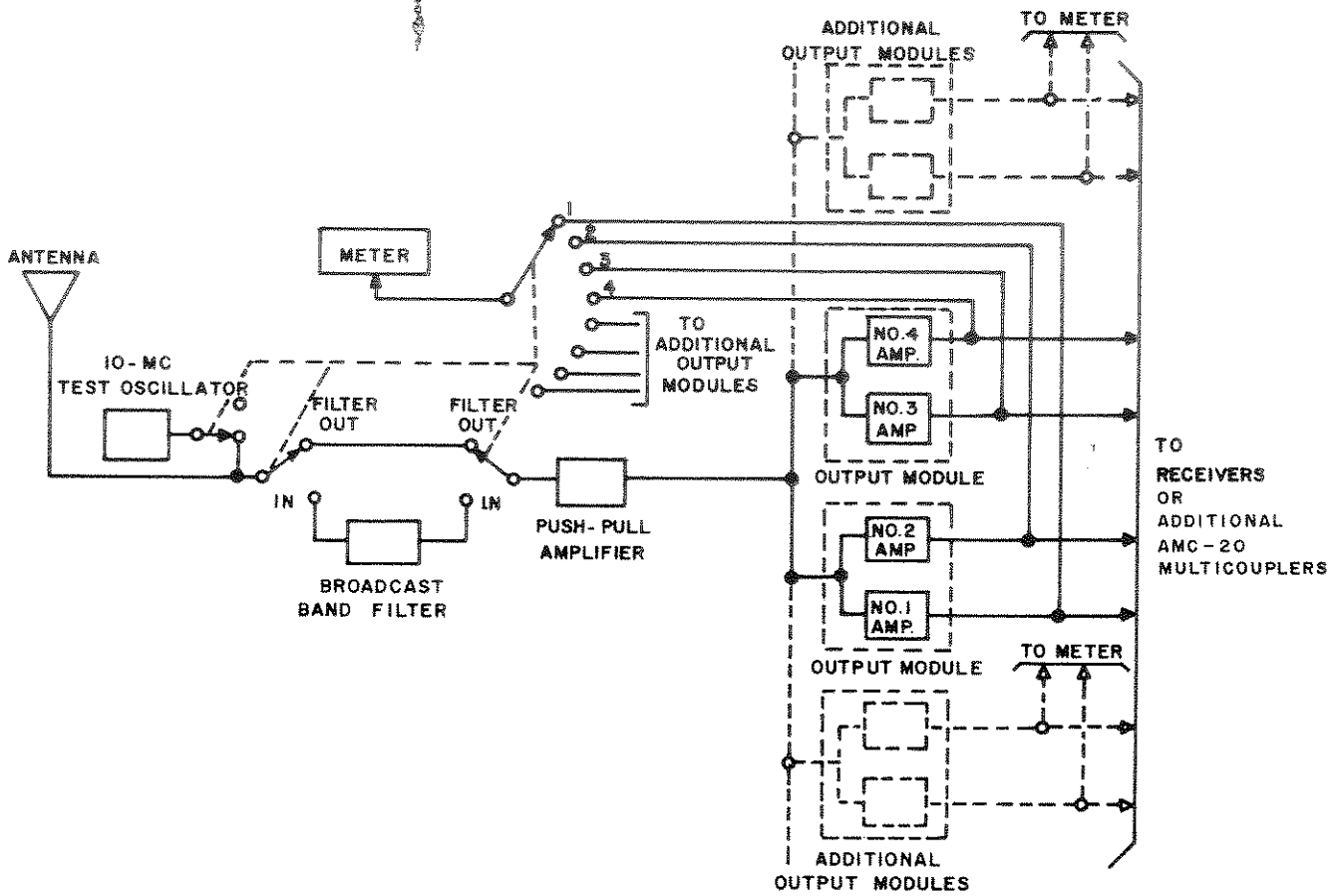


Figure 1 Simplified block diagram.



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