

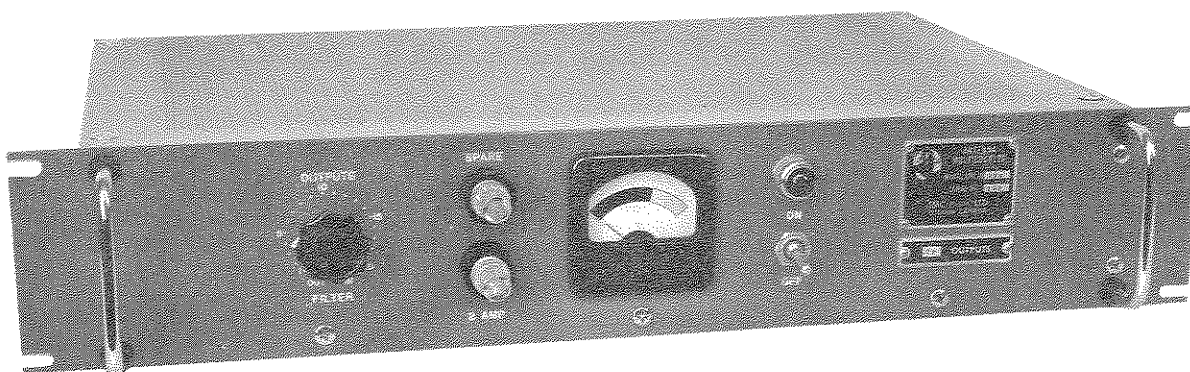
TMC BULLETIN NUMBER 8019B

Hybrid Antenna Multicoupler

TMC Models AMC-20-4

AMC-20-8

AMC-20-16



- Solid State Hybrid
- Minimum Noise Level
- 2 to 32 Mcs(MHz)
- Coupling 4, 8 or 16 Receivers
- 100 db Dynamic Range
- 256 Receivers by Cascading

The TMC AMC-20 series of hybrid antenna multicouplers provides low noise optimum distribution of RF Signals for 2 to 32 Mcs(MHz) to as many as 16 receivers depending upon the particular model selected, or to as many as 256 receivers by cascading, the concept of which is shown in block diagram form on the last page of this bulletin.

This series is specially designed for a wide variety of applications including both ship and shore installations for either military or commercial purposes.

The multicoupler 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 4, 8 or 16 receivers to one antenna. Model AMC-20-4 accommodates four receivers, AMC-20-8 eight receivers, and so forth.

Cascading permits multiple receiver outputs to be made available from a single antenna input, advantage being taken of the wide grid base of tubes and the low noise characteristics for the pre-amplifier stage of the unit.

Hybrid Antenna Multicoupler

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 in order to preserve the signal plus noise/noise ratio of low level signals.

The multicoupler provides a nominal gain of 0 db with a frequency response of ± 1.0 db over a frequency range of 2 to 32 Mcs(MHz). Other important characteristics include 70 db front-to-back isolation and a back-to-back phase within one degree.

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, unused outputs should be terminated with 50 ohms in order to assure correct operation. To accomplish this automatically an RF patching facility, such as TMC Model SPP-() should be used. See OPTIONS/ACCESSORIES.

TECHNICAL SPECIFICATIONS

FREQUENCY RANGE:	2-32 Mcs(MHz) (Usable 500 kHz to 40 MHz).
GAIN:	Nominal 0 db, ± 1 db.
FREQUENCY RESPONSE:	± 1.0 db, 2 to 32 Mcs(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. Typical 2nd order products are 70 db down.
BACK TO FRONT ISOLATION:	Better than 70 db.
OUTPUT TO OUTPUT ISOLATION:	Average 50 db.

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

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 Mcs (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 cps(Hz) single phase.

CONNECTORS: Output: BNC
Input: UHF (SO239A)

POWER CONSUMPTION: Approximately 45 watts.

SIZE: 3 $\frac{1}{2}$ " h x 19" w x 14" d.

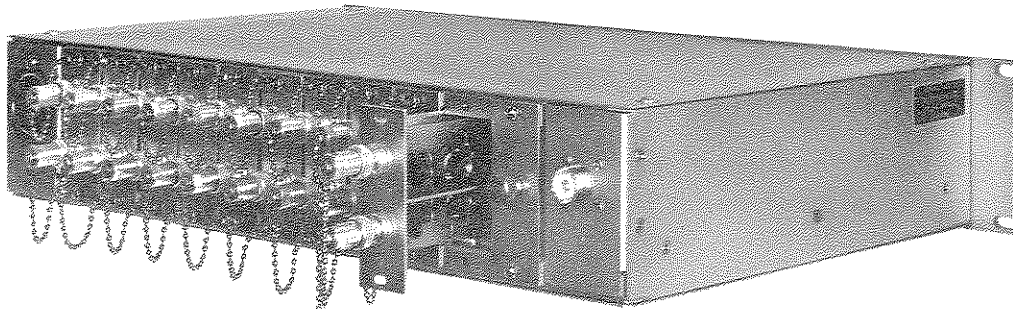
WEIGHT: 30 lbs.

COMPONENTS AND CONSTRUCTION: All equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.

LOOSE ITEMS:

1. RF Connectors and AC Cable.
2. Dummy Loads for 25% of the number of outputs.
3. Two Instruction Manuals

OPTIONS/ACCESSORIES: Connector Products Catalog contains information on SPP Switching Panels useful in connecting RF output Circuits to Receiver antenna inputs and in terminating unused outputs in their characteristic impedance.



Rear view showing plug-in output modules.

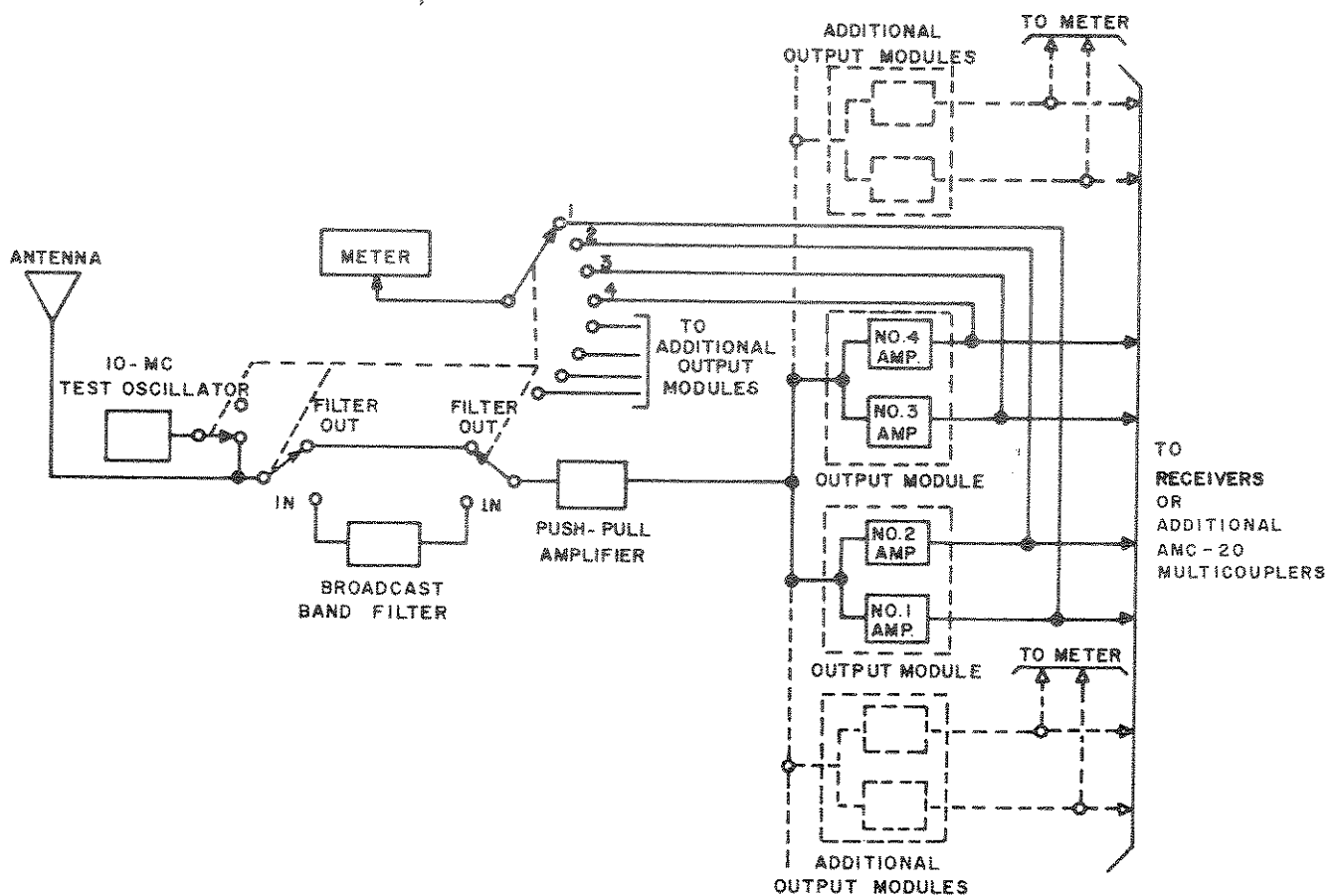


Figure 1 Simplified block diagram.

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