

## TECHNICAL BULLETIN NUMBER 8022

TMC Models AMC-101

AMC-102

Solid State Antenna Multicouplers

CU-1638/GR

PROPERTY OF SPECIFICATIONS  
AND STANDARDS ENGINEERING



### PURPOSE

Provides optimum distribution of RF signals from 2 to 30 mcs to as many as 6 receivers, or by cascading, as shown in figure 2, to as many as 216 receivers.

### APPLICATION

- Shipboard
- Radio receiving station
- Transportable Communication System
- Air Traffic Control Facilities
- High Seas Radio Telephone Service
- Point-to-Point Communication Service

### FEATURES

- Solid State
- 3½" × 19" × 9"
- Six Outputs
- 55 db Front-to-Back Isolation
- Operates on 20 Watts Power

### DISCUSSION

Model AMC-101 is the MIL accepted CU-1638/GR. The AMC-102 is an identical unit except for the front panel. The low power consumption of these units allows "stacking" in standard 19" equipment racks and the low radiated heat contributes to the equipment longevity and personnel comfort. The high front-to-back ratio, flat frequency response, uniformity of outputs, and low noise figure, make this unit a highly desirable addition to any receiving facility. Further, the light-weight and simplicity of construction allows easy installation by ships force or station personnel. The outer shield of the input and the output connections can either be isolated from each other or bonded to a common ground.

Single unit operation is shown in Figure 1 on the third page and a sample of cascading operation is shown on the back page. As shown on the back page, it is possible to operate up to 216 receivers from a single antenna input.

## TMC Models AMC-101, AMC-102

### TECHNICAL SPECIFICATIONS

FREQUENCY RANGE:	2 to 30 mcs.
GAIN:	Nominal 2 db.
FREQUENCY RESPONSE:	$\pm 1.5$ db, 2 to 30 mcs. 30 db down at 1.4 and 43 mcs.
DYNAMIC RANGE:	Input voltages up to 2.0 volts rms will not materially effect the technical characteristics.
UNIFORMITY OF OUTPUTS:	$\pm 0.5$ db between any two channels.
INPUT VSWR:	Does not exceed 1.5 to 1. The unit will perform to specifications when the external RF input source presents a VSWR of up to 2.0 to 1 (25 to 100 ohms.)
INPUT IMPEDANCE:	50 ohms.
OUTPUT:	Output VSWR of the unit is 1.5 to 1 or less for any output channel. The unit will perform to specifications when the output channels are connected to various loads presenting a VSWR up to 2.5 to 1 (20 to 125 ohms).
NUMBER OF OUTPUTS:	Six.
INPUT AND OUTPUT CONNECTORS:	Type "N" mounted on rear panel (others available on special order.)
NOISE FIGURE:	Nominal 6 db. Maximum 7 db.
INTERMODULATION:	2nd order products nominally: 60 db below two 0.5 volts RMS signals. 65 db below two 0.25 volts RMS signals. 3rd order products nominally: 60 db below two 0.5 volts RMS signals. 65 db below two 0.25 volts RMS signals.
CROSS MODULATION:	Less than 25% modulation of a 100 uv signal with a large signal of 2.0 volts RMS with 80% modulation.
HARMONIC DISTORTION:	Negligible.
DESENSITIZATION:	A signal of 2 volts RMS will not materially effect a low level signal.

## Solid State Antenna Multicouplers

OUTPUT TO OUTPUT ISOLATION:	40 db minimum, typical 50 db.
BACK TO FRONT ISOLATION:	45 db minimum, typical 55 db.
OUTPUT PHASE CONSISTENCY:	Less than $\pm 1.5$ degrees with transformer coupled outputs. (Less than $\pm 1$ degree on special order.)
OVERLOAD:	3 volts RMS continuous at the input to the unit will not cause component failure.
LIGHTNING PROTECTION:	Shunt and series protection provided.
POWER LINE FILTERS:	Greater than 60 db down from 150 kcs to 400 mcs.
ENVIRONMENTAL:	-40 to +50 degrees C operating. -60 to +80 degrees C storage. 0 to 95% humidity.
POWER INPUT:	115/230, $\pm 10\%$ , single phase, 47 to 440 cps, approximately 20 watts.
SIZE:	3½" h $\times$ 19" w $\times$ 9" d.
WEIGHT:	12 pounds.
ESTIMATED MTBF:	MTBF 20,000 hours per RADC Reliability Handbook.
COMPONENTS AND CONSTRUCTION:	Manufactured in accordance with MIL-P-11268D.

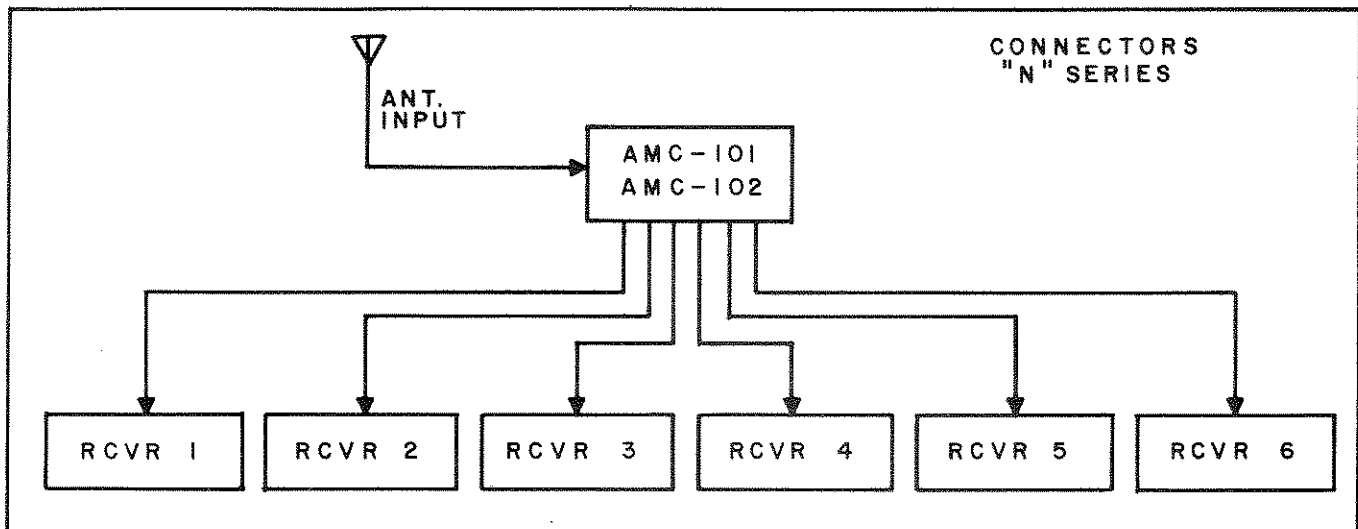


FIGURE 1

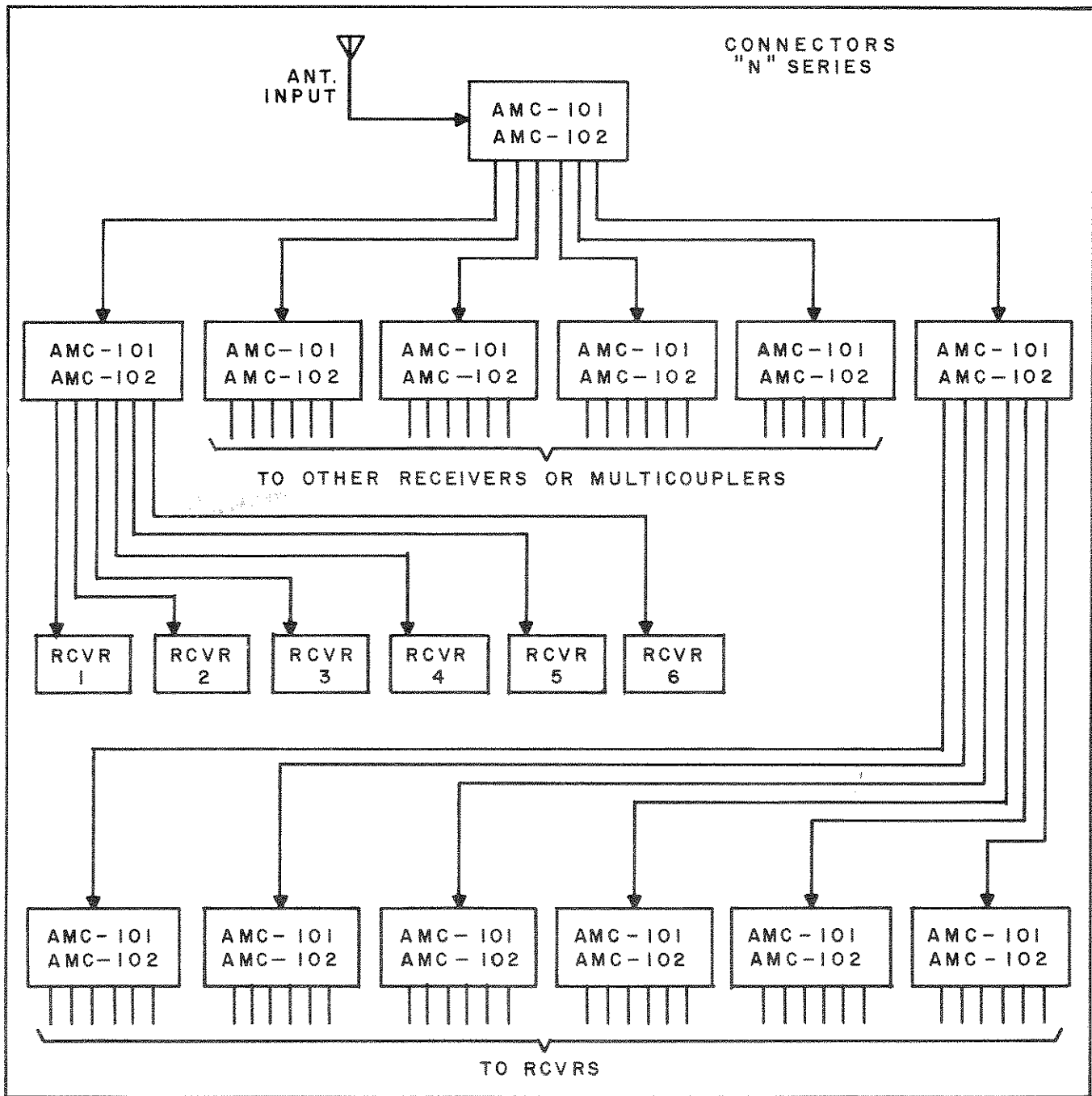


FIGURE 2

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