

AM-4700 R.F. POWER AMPLIFIER

The AM-4700 is a Linear Mode RF Booster Amplifier designed to operate and attach mechanically to any Military VHF Transceiver.

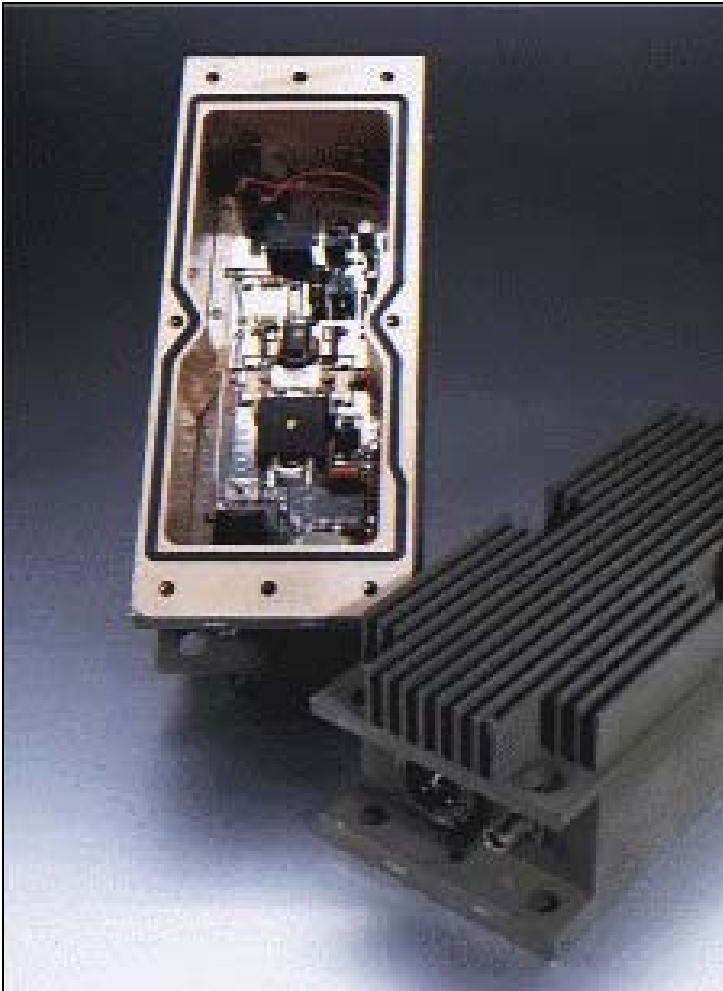
The AM-4700 operates over an instantaneous bandwidth of 30 Mhz to 88 Mhz with a gain flatness of +0.5 dB. It is designed for use as a Booster Amplifier for frequency modulated signals in the above transceivers.

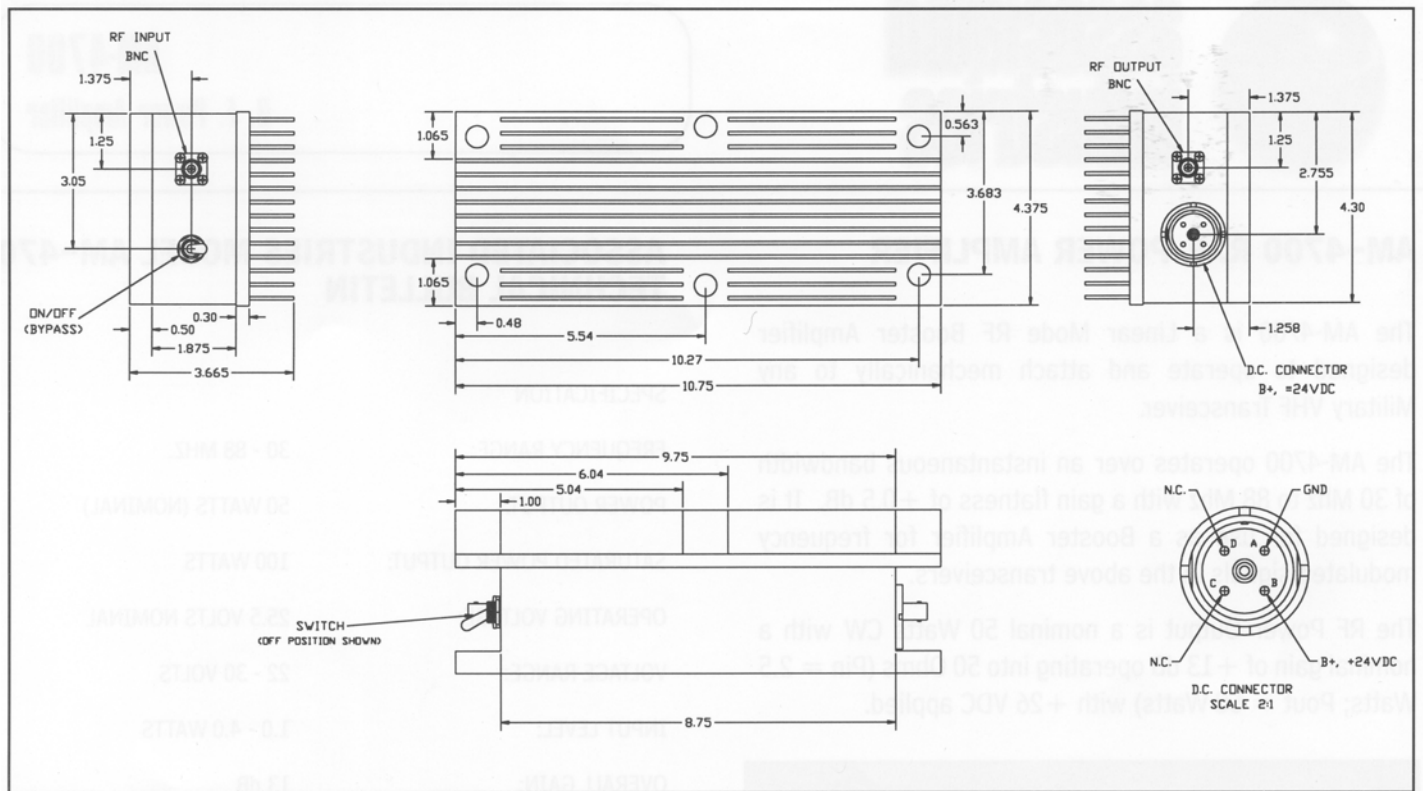
The RF Power Output is a nominal 50 Watts CW with a nominal gain of +13 dB operating into 50 Ohms (Pin = 2.5 Watts; Pout = 50 Watts) with +26 VDC applied.

ASSOCIATED INDUSTRIES MODEL AM-4700 TECHNICAL BULLETIN

SPECIFICATION

FREQUENCY RANGE:	30 - 88 MHZ.
POWER OUTPUT:	50 WATTS (NOMINAL).
SATURATED POWER OUTPUT:	100 WATTS.
OPERATING VOLTAGE:	25.5 VOLTS NOMINAL.
VOLTAGE RANGE:	22 - 30 VOLTS.
INPUT LEVEL:	1.0 - 4.0 WATTS.
OVERALL GAIN:	13 dB.
GAIN FLATNESS:	+ 1 dB.
INPUT VSWR:	2:1 dB MAX.
OUTPUT VSWR:	2:1 dB MAX.
OUTPUT VSWR TOLERANCE:	10:1 NO DAMAGE ALL LOADS @ ANY PHASE ANGLE.
HARMONIC DISTORTION	(2nd ORDER): <60 dBc, (3rd ORDER): <60 dBc.
CURRENT CONSUMPTION:	5.0 AMPS MAX (At 50 WATTS).
OPERATING TEMPERATURE RANGE:	-30° C +60° C.
TEMPERATURE PROTECTION:	ACTIVE TEMP. SENSING WITH AUTO RESET @ 80° C.
CONNECTOR (INPUT):	TYPE BNC.
CONNECTOR (OUTPUT):	TYPE BNC.
CONNECTOR (D.C.):	AMPHENOL 187647-1 (4 PIN).
HOUSING DIMENSIONS:	3.665 x 10.75 x 4.375 (Conform to Mating Surface).
WORKMANSHIP:	IAW MIL-STD-454J.
AUTO BYPASS SWITCH AND THRESHOLD ADJUSTMENT:	OFF POSITION - BYPASS MODE. ON POSITION - OPERATES. ABOVE 1 W INPUT (THRESHOLD).





TECHNICAL DESCRIPTION
ASSOCIATED INDUSTRIES
AM-4700 R. F. POWER AMPLIFIER
30-88mhz, 50 Watts
R.F. POWER AMPLIFIER

The Design Features and improved performance of the Associated Industries Booster Amplifier is obtained by the use of the Field Effect Transistors (FETS). Some of the salient advantages that this technology brings to this Amplifier are as follows:

- Approximately 15 dB better base band noise signal over BiPolar transistors. This means that the radiated noise level will be much lower in the transmitted mode, thus improving the co-location performance.
- Flat gain vs. frequency is possible because of the extreme broad band characteristic of the Silicon FETS.

- Lower harmonic performance is possible with FETS due to the ability to precisely balance this linear design in a push/pull configuration.
- Ruggedability - The silicon field effects transistors inherently tolerant high VSWR mismatch because they are defused on high resistance epitaxial material.
- Thermally protected with a high temperature (80°) shut-off sensor switch restoring full operation when the temperature is decreased to normal range.
- By-Pass operation for low power is provided with a High/Low power switch which operates the Transmit/Receive by-pass relays.
- Efficiency - overall power efficiency is better than 50% due to the use of FETS thus providing longer battery operation.
- Input voltage - At 25.6 VDC, the amplifier will produce 50 Watts of RF Power with approximately 2.5 Watts of RF Drive. The amplifier will operate over a DC voltage variation of 22 to 28 volts with A + 1 dB variation in RF Power Output.

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