



MODEL AR-50S 50 WATTS CW 30 MHz - 88 MHz, Multi-Band Automatic Band-Switching

The Model AR-50S is a portable, lightweight, fully automatic band-switching RF booster amplifier for multi-band VHF Tactical Radio equipment supporting legacy, proprietary and emerging waveforms. The amplifier is a sub-banded version of the JITC certified AR-50 multi-band product and covers the frequency band of 30-88 MHz. High speed auto switching filters assure harmonic suppression and SINCGARS compatibility. The amplifier includes power supply Voltage Spike Suppression, a DC/DC convertor for wide DC input range, RF sensing, T/R switching, Automatic Level Control (ALC), automatically switched harmonic filter bands (DAMA capable). Protections against antenna mismatch, over-temperature and accidental polarity reversal are provided. The amplifier is comprised of a rugged aluminum case. Optional interface coaxial cables and shock mounting plate are available.

- Radio Vendor independent design, single and multi-band radio compatible with just an RF connection
- 50W CW across the entire 30 – 88MHz band
- Full band high-speed filter switching for to assure interference free operation
- DC ON/OFF switch
- Three-year Warranty from a company with 40+ years in the business



GENERAL SPECIFICATIONS

The general specifications listed below apply to the **AR-50S** family of amplifiers unless otherwise noted. For ordering, see “Ordering Information – Model Configurations” for detailed information for specific model names.

ELECTRICAL SPECIFICATIONS

PARAMETER	DETAILS	CONFIGURABLE
FREQUENCY RANGE	30 MHz – 88 MHz	
POWER OUTPUT	50 Watts CW nominal; 50W PEP with 80% AM modulation; <10% distortion typical	
INPUT POWER RANGE CW: 1-20W	<5 Watts CW typical for 50 Watts Output; Input Protection for up to 20W CW	
INPUT POWER RANGE AM:	1.5 Watt average (3 - 5W PEP) for 50W PEP output at 80% modulation	
RF KEYING SENSITIVITY	Minimum input power to guarantee RX to TX switch <1 Watt typical	√
T/R & FILTER SWITCHOVER TIME	SINCGARS, legacy and modern modulations capable	
INSERTION LOSS BYPASS MODE	1.0 dB typical	
INSERTION LOSS ACTIVE RX	1.5 dB nominal	
MODULATION	AM, FM, or PM and Tactical communications waveforms	
DUTY CYCLE	Tactical operations	
INPUT/OUTPUT IMPEDANCE	50 Ohm nominal	
INPUT VSWR	1.5:1 nominal	
HARMONICS	Better than -60 dBc typical. Full high-speed filter switching avoids interference in SINCGARS	
SPURIOUS OUTPUTS	Better than -70 dBc	
POWER REQUIREMENT	12 - 36 VDC filtered and transient protected for 12 or 24 Volt vehicle systems or dual XX90 batteries	
CURRENT	<7.5 Amps @ 24V typical	

DOC-0000087 REV C
18 May 2019



modular rf

ENVIRONMENTAL SPECIFICATIONS

OPERATING TEMPERATURE	-30 to +60 °C Ambient
ALTITUDE (operating)	15,000 ft
IMMERSION (water)	IP67
VIBRATION / SHOCK / HUMIDITY / ENVIRO	Designed to meet applicable sections of Mil Std 810F/ designed for ground/base vehicle use

MECHANICAL SPECIFICATIONS

PARAMETER	DETAILS	CONFIGURABLE
SIZE (HxWxD)	2.50" x 6.00" x 7.50"	
WEIGHT	4.4 lb	
COOLING	Natural convection required	
RF CONNECTORS	RF Input(Radio) RF Output(LOS)	√
DC CONNECTOR	Multi-pin connector (Mating Connector Supplied)	
CONSTRUCTION	Aluminum housing with integrated heatsink	

OPTIONAL EQUIPMENT

BC1050	DUAL BATTERY CABLE
SM-AR-50	SHOCK MOUNT KIT

ORDERING INFORMATION – MODEL CONFIGURATIONS

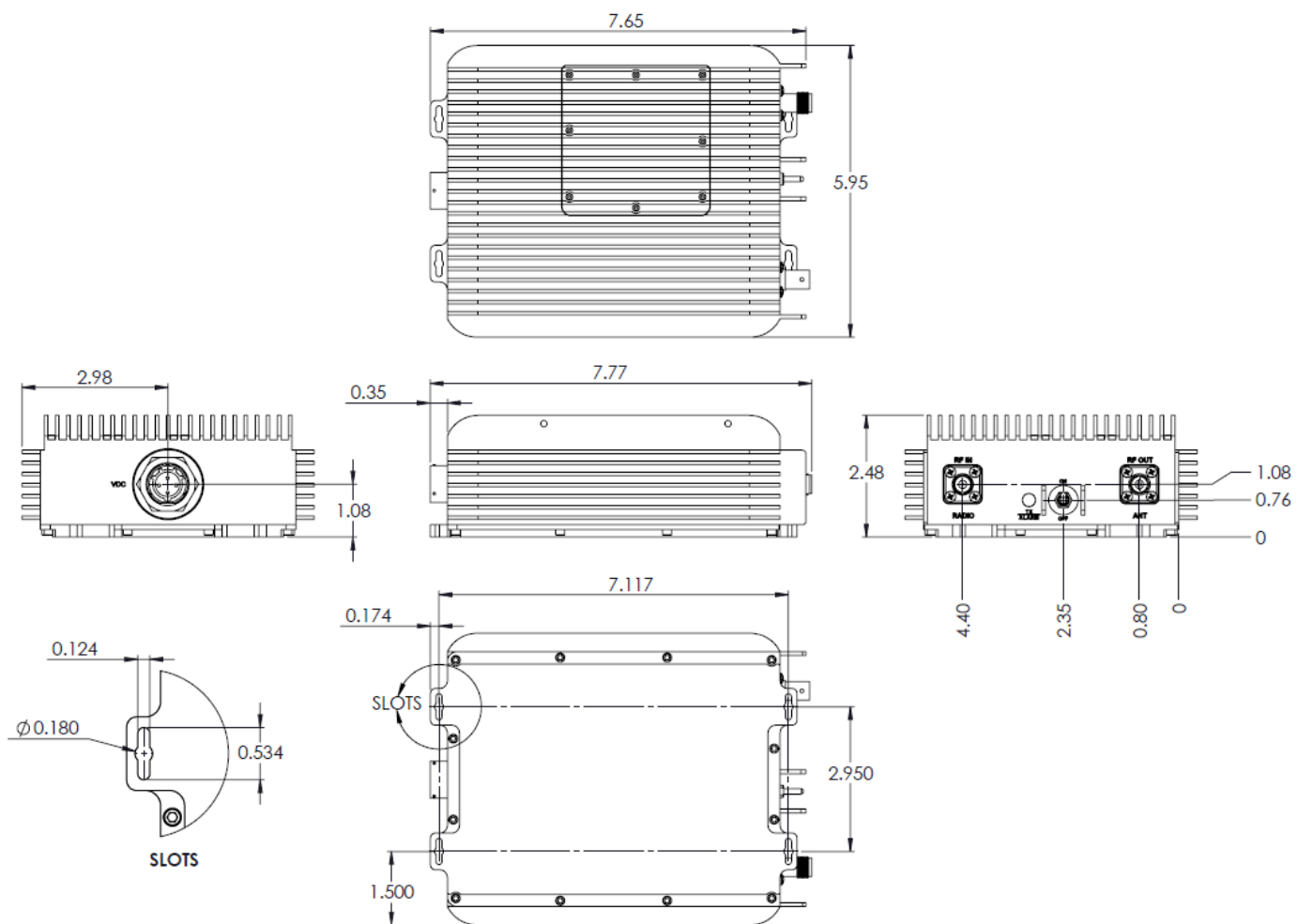
The following table provides specific details on orderable configurations of the AR-50S. For details not listed below General Specifications apply.

MODEL NAME	CONFIGURATION DETAILS
AR-50S	Standard Configuration (C1) • RF KEYING SENSITIVITY.....30dBm RF Connections • RF Input (Radio).....BNC (Female) • RF Output (LOS).....TNC (Female)
AR-50SC2	Configuration 2 (C2) • RF KEYING SENSITIVITY.....20dBm RF Connections • RF Input (Radio).....TNC (Female) • RF Output (LOS).....TNC (Female)
AR-50SC3	Configuration 3 (C3) • RF KEYING SENSITIVITY.....20dBm RF Connections • RF Input (Radio).....BNC (Female) • RF Output (LOS).....TNC (Female)

DOC-0000087 REV C
 18 May 2019

modular rf

NOTE: Drawing is for reference only. Actual RF connectors for Model configurations may vary (See Model Configurations table above).



DOC-0000087 REV C
18 May 2019