



**PRELIMINARY**  
**MODEL AR-20**  
**20 WATTS PEP**  
**30-512 MHz**

The Model AR-20 is a portable, lightweight, fully automatic band-switching RF booster amplifier for multi-band VHF/UHF Tactical Radio equipment employing legacy, proprietary and emerging waveforms. The AR-20 produces 20 Watts from a 1 to 2 Watts PEP radio input and covers the frequency band of 30-512 MHz. The unit has multiple input DC voltage options including operation from a single battery (XX90 battery) or 12 and 24 VDC vehicle power source. The unit is designed for use with the latest modern networking formats like ANW2, WNW and SRW. It also includes Voltage Spike Suppression, Over Temperature Protection, RF sensing, T/R Switching, Automatic Level Control (ALC), Harmonic Filters, Co-Site filters and protection against antenna mismatch. The AR-20 also has a built-in internal LNA that can be switched on or off by the front panel switch to improve SATCOM receive performance. The amplifier is comprised of rugged 3-piece aluminum case. Optional interface coaxial cables and DC battery cables are available.

**GENERAL SPECIFICATIONS**

FREQUENCY RANGE	30-512 MHz
POWER OUTPUT	20 Watts CW or PEP AM Modulation 1 kHz DEM 70%; <10% AM distortion nominal
INPUT POWER RANGE	1-2W CW or PEP
RF KEYING SENSITIVITY	<1 Watt PEP typical
T/R SWITCHOVER TIME	<25 μS
LNA NOISE FIGURE	<2.5 dB
LNA GAIN	12 dB plus Co-Site filter provides >35 dB protection to the SATCOM receive channels
MODULATION	All Legacy and Modern complex tactical communications waveforms like ANW2, WNW, and SRW
DUTY CYCLE	Tactical operations 100% for networking modulations
INPUT/OUTPUT IMPEDANCE	50 Ohm nominal
INPUT VSWR	1.5:1 nominal
HARMONICS	Better than -60 dBc typical
SPURIOUS OUTPUTS	Better than -70 dBc
POWER REQUIREMENT	12 to 35.5 VDC single XX90 battery
CURRENT	3.2A Amps @ 24V typical

**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**

SIZE (HxWxD)	~1.58 x 3.75 x 4.68 inches
WEIGHT	~2.00 lbs
COOLING	Natural convection required
RF CONNECTORS	RF Input( Radio) – TNC* RF Output(antenna) – TNC * <i>*RF connectors may be ordered in any configuration of TNC or N-type per customer's request</i>
DC CONNECTOR	Multi-pin connector (Mating Connector Supplied)
CONSTRUCTION	Aluminum housing with integral heatsink

**OPTIONAL EQUIPMENT**

BMP20K	Base Mounting Plate Kit
--------	-------------------------



modular rf



DOC # 7-98-940-003 REV –  
01 May 2014

**ar modular rf**

21222 30<sup>th</sup> Dr SE, Suite 200 • Bothell, Washington 98021 • 425-485-9000 • Fax 425-486-9657 • [www.arworld.us](http://www.arworld.us)