



modular rf

MODEL AR-20 (KT & KT-DUAL) 20 WATTS 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 28 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, DC battery cables, and kits are available.

GENERAL SPECIFICATIONS

FREQUENCY RANGE	30-512 MHz
POWER OUTPUT	20 Watts CW or PEP AM Modulation 1 kHz DOM 70%; <10% AM distortion nominal
INPUT POWER RANGE	Nominal 2W CW or PEP for full 20 W output. Up to 8W without damage
RF KEYING SENSITIVITY	<1 Watt CW 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, 12 and 28Vdc vehicles
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 5.05 inches
WEIGHT	AR-20: 1 lb 10 oz AR-20KT: 2 lbs 15 oz AR-20KT-DUAL: 4 lbs 5 oz
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
--------	-------------------------

ar modular rf

21222 30th Dr SE, Suite 200 • Bothell, Washington 98021 • 425-485-9000 • Fax 425-486-9657 • www.arworld.us

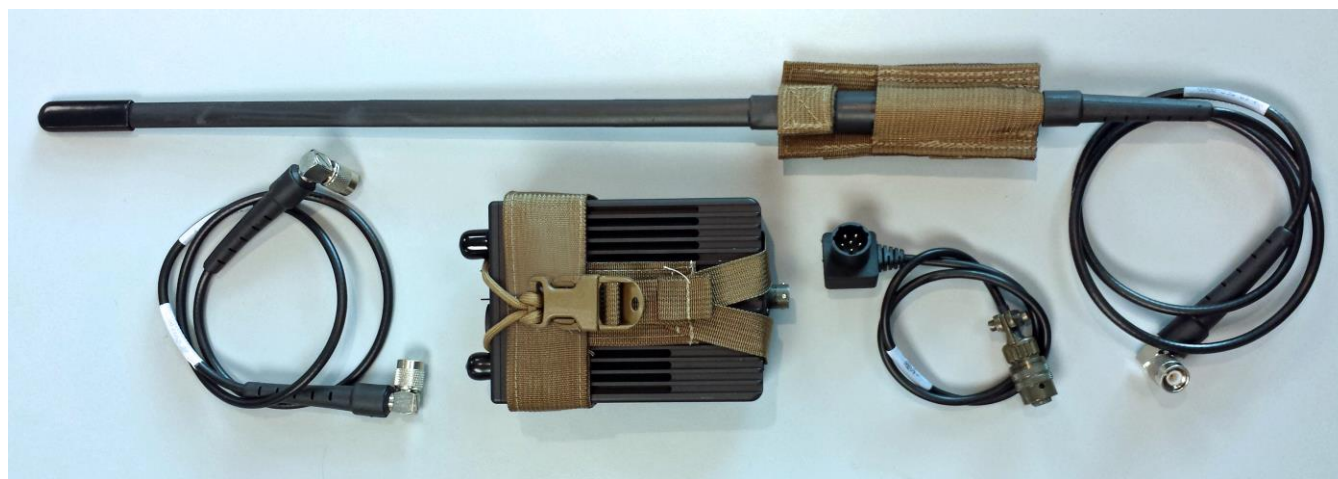
modular rf



(AR-20)

AR-20KT

AR-20	20 Watts, 30-512 MHz RF Booster Amplifier w/LNA
BC20	Battery Cable (22" cable connecting AR-20 to one XX90 or similar batteries)
RC1031	Radio Cable (36" TNC Male to TNC Male)
AC1031	Antenna Cable (36" TNC Male to TNC Female)
TVP20	Tactical Vest Pouch (Attaches to any MOLLIE/PALS style gear for holding the AR-20)
ANT1031	Blade Antenna 30-512 MHz (TNC Male)
TAH1031	Tactical Antenna Holder (Attaches to any MOLLIE/PALS style gear for holding the ANT1031)



(AR-20KT)

modular rf

AR-20KT-DUAL

AR-20	20 Watts, 30-512 MHz RF Booster Amplifier w/LNA
BC20	Battery Cable (22" cable connecting AR-20 to one XX90 or similar batteries)
RC1031	Radio Cable (36" TNC Male to TNC Male)
AC1031	Antenna Cable (36" TNC Male to TNC Female)
TVP20	Tactical Vest Pouch (Attaches to any MOLLIE/PALS style gear for holding the AR-20)
TAH1031	Tactical Antenna Holder (Attaches to any MOLLIE/PALS style gear for holding the ANT1031)
ANT1031	Blade Antenna 30-512 MHz (TNC Male)
RH-2535	RamHead Tactical SATCOM Antenna and RF Cables
SSH1031	SATCOM Switch Holder (Attaches to any MOLLIE/PALS style gear for holding the RFS-117)
SATCOM SWITCH	RF Switch Kit – LOS/SATCOM w/TNC adapter



(AR-20KT-DUAL)

MODEL CONFIGURATIONS

MODEL NUMBER	DESCRIPTION	WEIGHT
AR-20	20W Amp only	1 lb 10 oz
AR-20KT	20W Amp with LOS antenna, cables, and pouches	2 lbs 15 oz
AR-20KT-DUAL	20W Amp with LOS and SATCOM antennas, switch, cables and pouches	4 lbs 5 oz



DOC # 7-98-940-903 Rev A
13 February 2015