

## MODEL AR-20HC2 [AR-20H, CONFIGURATION 2] 20 WATTS CW/PEP 300-500 MHz

The Model AR-20HC2 is a portable, lightweight, RF booster. The AR-20HC2 produces 20 Watts from a nominal 2 Watts CW/PEP radio input and covers the frequency band of 300-500 MHz. The unit is designed for use with the FSK and other latest modern networking formats like ANW2C and SRW. It also includes Voltage Spike Suppression, Over Temperature Protection, RF sensing T/R Switching, Harmonic Filters, Co-Site Filtering, lightning protection, and protection against antenna mismatch.

| FREQUENCY RANGE 300-500 MHz   POWER OUTPUT PEP >20 Watts typical CW or PEP AM Modulation 1 kHz DOM 70% (<10% distortion typical)   INPUT POWER RANGE Nominal 2W - 5W CW or PEP for full 20W output. Up to 8W without damage   RF KEYING SENSITIVITY 0.75 Watt CW (min)   T/R SWITCHOVER TIME <25 JS typical   NOISE FIGURE 2.5 dB typical   LNA GAIN 11 dB typical   MODULATION All Legacy and Modern complex tactical communications waveforms like FSK, ANW2C and SRW   DUTY CYCLE 50% typical at 55C   INPUT YSWR 1.5.1 nominal   HARMONICS Better than -60 dBc typical   SPURIOUS OUTPUTS Better than -70 dBc   POWER REQUIREMENT 9 to 36 VDC   CURRENT -40 to +70 °C Ambient   ALTITUDE (operating) 20,000 ft   IMMERSION (water) IP67   VIBRATION SHOCK / HUMIDITY / ENVIRO HST x x 57 x 8.78 inches (including connectors)   VECHANICAL SPECIFICATIONS VIBRATION / SHOCK / HUMIDITY / ENVIRO   VIBRATION / SHOCK / HUMIDITY / ENVIRO Natural convection required   RF CONNECTORS COOLING Natural convection required   RF CONNECTORS RF Output (Antenna) – BNC COOLING   OCONNECTOR Multi-pin connector (Multing Connector Supplied) | GENERAL SPECIFICATIONS                |   |  |
|---|---------------------------------------|---|--|
| INPUT POWER RANGE   Nominal 2W - 5W CW or PEP for full 20W output. Up to 8W without damage     RF KEYING SENSITIVITY   0.75 Watt CW (min)     T/R SWITCHOVER TIME   <25 µ typical   | FREQUENCY RANGE                       | 300-500 MHz   |  |
| RF KEYING SENSITIVITY   0.75 Watt CW (min)     T/R SWITCHOVER TIME   <25 µ Stypical   | POWER OUTPUT PEP                      | >20 Watts typical CW or PEP AM Modulation 1 kHz DOM 70% (<10% distortion typical) |  |
| T/R SWITCHOVER TIME<25 µS typicalNOISE FIGURE2.5 dB typicalLNA GAIN11 dB typicalMODULATIONAll Legacy and Modern complex tactical communications waveforms like FSK, ANW2C<br>and SRWDUTY CYCLE50% typical at 55CINPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -60 dBc typicalPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical   | INPUT POWER RANGE                     | Nominal 2W - 5W CW or PEP for full 20W output. Up to 8W without damage            |  |
| NOISE FIGURE2.5 dB typicalLNA GAIN11 dB typicalMODULATIONAll Legacy and Modern complex tactical communications waveforms like FSK, ANW2C<br>and SRWDUTY CYCLE50% typical at 55CINPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical  | RF KEYING SENSITIVITY                 | 0.75 Watt CW (min)  |  |
| LNA GAIN11 dB typicalMODULATIONAll Legacy and Modern complex tactical communications waveforms like FSK, ANW2C<br>and SRWDUTY CYCLE50% typical at 55CINPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical  | T/R SWITCHOVER TIME                   | <25 µS typical  |  |
| MODULATIONAll Legacy and Modern complex tactical communications waveforms like FSK, ANW2C<br>and SRWDUTY CYCLE50% typical at 55CINPUT/OUTPUT IMPEDANCE500 hm nominalINPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical   | NOISE FIGURE                          | 2.5 dB typical  |  |
| and SRWDUTY CYCLE50% typical at 55CINPUT /OUTPUT IMPEDANCE50 0hm nominalINPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -60 dBc typicalPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical   | LNA GAIN                              | 11 dB typical   |  |
| INPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT/OUTPUT IMPEDANCE50 Ohm nominalINPUT/VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT-3.5A Amps @ 24V typicalENVIRONMENTAL SPECIFICATIONSOPERATING TEMPERATURE-40 to +70 °C AmbientALTITUDE (operating)20,000 ftIMMERSION (water)IP67VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810VECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)VEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)  | MODULATION                            |   |  |
| INPUT VSWR1.5:1 nominalHARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical   | DUTY CYCLE                            | 50% typical at 55C  |  |
| HARMONICSBetter than -60 dBc typicalSPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT< 3.5A Amps @ 24V typical   | INPUT/OUTPUT IMPEDANCE                | 50 Ohm nominal  |  |
| SPURIOUS OUTPUTSBetter than -70 dBcPOWER REQUIREMENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical  | INPUT VSWR                            | 1.5:1 nominal   |  |
| POWER REQUIREMENT9 to 36 VDCCURRENT9 to 36 VDCCURRENT<3.5A Amps @ 24V typical   | HARMONICS                             | Better than -60 dBc typical   |  |
| CURRENT<3.5A Amps @ 24V typicalENVIRONMENTAL SPECIFICATIONSOPERATING TEMPERATURE-40 to +70 °C AmbientALTITUDE (operating)20,000 ftIMMERSION (water)IP67VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810MECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)WEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)  | SPURIOUS OUTPUTS                      | Better than -70 dBc   |  |
| ENVIRONMENTAL SPECIFICATIONS     OPERATING TEMPERATURE   -40 to +70 °C Ambient     ALTITUDE (operating)   20,000 ft     IMMERSION (water)   IP67     VIBRATION / SHOCK / HUMIDITY / ENVIRO   MIL-STD-810     MECHANICAL SPECIFICATIONS   SIZE (HxWxD)     SIZE (HxWxD)   1.86 x 3.75 x 8.78 inches (including connectors)     WEIGHT   2.6 lbs     COOLING   Natural convection required     RF CONNECTORS   RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC     DC CONNECTOR   Multi-pin connector (Mating Connector Supplied)   | POWER REQUIREMENT                     | 9 to 36 VDC   |  |
| OPERATING TEMPERATURE-40 to +70 °C AmbientALTITUDE (operating)20,000 ftIMMERSION (water)IP67VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810MECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)WEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)   | CURRENT                               | <3.5A Amps @ 24V typical  |  |
| OPERATING TEMPERATURE-40 to +70 °C AmbientALTITUDE (operating)20,000 ftIMMERSION (water)IP67VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810MECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)WEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)   | ENVIRONMENTAL SPECIFICATIONS          |   |  |
| IMMERSION (water)IP67VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810MECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)WEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)  |                                       | -40 to +70 °C Ambient   |  |
| VIBRATION / SHOCK / HUMIDITY / ENVIROMIL-STD-810MECHANICAL SPECIFICATIONSSIZE (HxWxD)1.86 x 3.75 x 8.78 inches (including connectors)WEIGHT2.6 lbsCOOLINGNatural convection requiredRF CONNECTORSRF Input (Radio) – BNC<br>RF Output (Antenna) – BNCDC CONNECTORMulti-pin connector (Mating Connector Supplied)   | ALTITUDE (operating)                  | 20,000 ft   |  |
| MECHANICAL SPECIFICATIONS     SIZE (HxWxD)   1.86 x 3.75 x 8.78 inches (including connectors)     WEIGHT   2.6 lbs     COOLING   Natural convection required     RF CONNECTORS   RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC     DC CONNECTOR   Multi-pin connector (Mating Connector Supplied)   | IMMERSION (water)                     | IP67  |  |
| SIZE (HxWxD)   1.86 x 3.75 x 8.78 inches (including connectors)     WEIGHT   2.6 lbs     COOLING   Natural convection required     RF CONNECTORS   RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC     DC CONNECTOR   Multi-pin connector (Mating Connector Supplied)   | VIBRATION / SHOCK / HUMIDITY / ENVIRO | MIL-STD-810   |  |
| SIZE (HxWxD)   1.86 x 3.75 x 8.78 inches (including connectors)     WEIGHT   2.6 lbs     COOLING   Natural convection required     RF CONNECTORS   RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC     DC CONNECTOR   Multi-pin connector (Mating Connector Supplied)   | MECHANICAL SPECIFICATIONS             |   |  |
| WEIGHT 2.6 lbs   COOLING Natural convection required   RF CONNECTORS RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC   DC CONNECTOR Multi-pin connector (Mating Connector Supplied)   |                                       | 1.86 x 3.75 x 8.78 inches (including connectors)                                  |  |
| RF CONNECTORS RF Input (Radio) – BNC<br>RF Output (Antenna) – BNC   DC CONNECTOR Multi-pin connector (Mating Connector Supplied)  |                                       | 2.6 lbs   |  |
| RF Output (Antenna) – BNC       DC CONNECTOR     Multi-pin connector (Mating Connector Supplied)  | COOLING                               | Natural convection required   |  |
|   | RF CONNECTORS                         |   |  |
|   | DC CONNECTOR                          | Multi-pin connector (Mating Connector Supplied)                                   |  |
| Auninum nousing with integral neatsink  | CONSTRUCTION                          | Aluminum housing with integral heatsink   |  |

## **OPTIONAL EQUIPMENT**

Mounting Plate Kit



## modular rf



\*Photo for illustration purposes only - actual connectors may vary (see specifications above)

| ANTILE<br>PESTS |             |
|-----------------|-------------|
|                 | Made in USA |

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