

Prepared	checked	document no.		
ERU/XMR GREGORY WHITE	G.W.	XM-92323		
Approved	checked	Date	Rev	File reference
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I. DESCRIPTION

The RBS500HP transmitters used in conjunction with a 10 watt 882 transceiver module has been incorporated into the existing 882 cabinet framework. Each amplifier requires half the rack width by four rack units high. They are fully secured into mounting trays inside of the radio rack. Each amplifier incorporates a dual isolator whose output load is built into the amplifier heat sink. All amplifier connections and adjustments are located at the front of the unit including an R.F. sampling port which can be used for combiner tuning. The final output of the amplifiers will be 175 watts. Cables are provided of the proper lengths to connect the amplifiers to the combiner and CCRS unit.

II. SPECIFICATIONS

Frequency Range	869-894MHz
Power Output, continuous 25 at isolator outputs *	175 Watts max
Power control (screwdriver adjust)	70 to 175 watts
Power variation over full temp. range	+/- .05dB
Power input for full output	8-12 watts
Input VSWR max	2.0
Output VSWR *	Isolator limit
Stability with source & load impedance	Unconditional
Maximum reflected power from load **	Full power
Supply Voltage	26.4 Vdc nominal 30.0 Vdc max
Power output at reduced voltage, typ at 25amb	24v Full power 22v Full power 20v 155 watts 18v 125 watts
Current at 175 watts	25 amps max 18 - 21 typ
Fuse	30 amp
Operating ambient air temperature +	-30 to +60 C
Transmit Key Control	TTL (on) 2.4v (off) 0.4v
Alarm outputs, TTL	Power shutdown from overtemp Temperature power reduction RF failure (drive but low output) Open loop

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Heatsink Temp for power reduction 80 +/- 3 C
 Heatsink tempfor power shutdown 90 +/- 3 C
 Duty Cycle Continuous
 Fan cooling ++ Self contained

* Amplifier includes an isolator and low-pass filter, which add about 0.6dB loss. The output VSWR is set by the isolator and low-pass filterand typically is quite low.

** Automatic power reduction will limit long-term reflected powerto about 100 watts.

+ Operation at ambient temperatures about 40C is permissible but may reduce amplifier reliability. Good design practice calls for normal operationat temperatures below 40C.

++ The self-contained fan cooling system allows for continuous operation over the full ambient temperature range. Entry and exit areas must be left unobstructed for up to 200 CFM of air. Air filters must be cleaned or replaced on a regular basis and fan must be replaced every five years. Fans are field replaceable.

III. INSTALLATION

These units should be installed into the power amp mounting trays, using appropriate fasteners, in the designated rack locations. DC power and alarms cables are connected from the power amps to the power panel. The remaining R.F cables are connected to the combiner and to the transceiver R.F. output port.

IV. TESTING

Care should be taken to make sure that the transceivers and combiner cavities are tuned to the same frequencies. Make sure that the output power from the transceiver has been set between 8 to 10 watts (10 watts optimum). If 10 watt transceiver modules are not available, 25 or 50 watt units can be used. It is very important that these units are set to 10 watts. Increasing the R.F. power to the high powered amplifiers will not increase the amplifier output power. This will only result to damage to the amplifier input stage.

To verify transmitter output power and frequency offset, it will be necessary to obtain the following: Bird Wattmeter or equivalent.

Element 250E

Schlumberger Stabilock or equivalent

10-30dB/200 watt attenuator (or dual 100 watt attenuators)

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**IBM compatible laptop PC with Local control cable
Local Control R14**

Insert the Bird Wattmeter and attenuator between the transmitter R.F. output port and the Stabilock R.F. load. Set the Stabilock to the frequency of the transceiver module. Use local control to key the transceiver transmitter. Note the output power on the Bird Wattmeter. Locate the R.F. power adjustment screw on the front of the amplifier. Verify that the transmitter output power can be adjusted from 70 to 175 watts. The transmitter R.F. power can then be set to the desired level. Keep in mind the error factor of the wattmeter. Make sure that the frequency offset is within the specification listed for the transceiver module. The combined frequency offset from both the transceiver and the high powered transmitter shall not exceed the specification listed for the 882 transceiver module. (+/- 900 Hz)

V. MAINTENANCE

Maintenance requirements for these amplifiers have been kept to a minimum. Transmitter frequency offset can be verified during normal maintenance routines carried out for the transceiver modules. In addition, the transmitter air filters must be cleaned periodically to prevent any air flow obstruction.

