



MAXNET®

Pat. #s U.S. 6,842,348; 7,043,236;
Cdn. 2,404,840; 2,404,844

MNRS
Redundant RF Detector / Switch Module
Operational Guide

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OPERATION

1. Operation

1.1. Operational Details

The MAXNET MNRS RF switch provides redundancy in an RF amplifier system. When a failure occurs in the primary amplifier (A) control transfers to a secondary backup amplifier (B). The failure of the amplifier is determined by measuring the total composite RF power at the output of the primary (A) amplifier and comparing it to the set RF power threshold level. If total composite RF power drops below the threshold level the MNRS transfers to the secondary (B) amplifier to maintain normal operation. The switch remains in the B position until the primary (A) amplifier is repaired or replaced and the MNRS is reset.

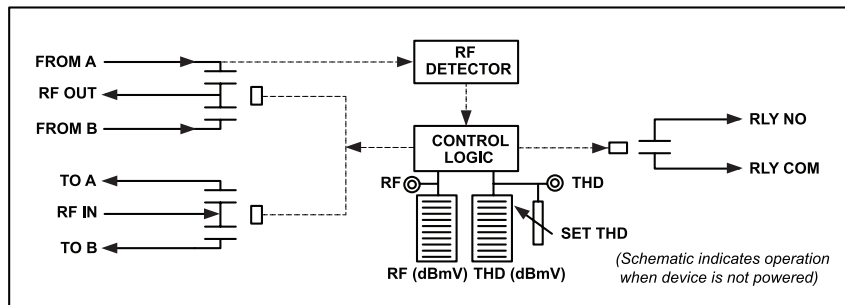


Figure #1: MNRS Functional Schematic Diagram

1.2. Operational Summary

Installation into MAXNET® Chassis:

Install the MNRS into the MAXNET chassis by following the MAXNET RF Detector/Switch and Amplifier Installation sheet provided with the unit.

Threshold Setting:

Front panel **SET THD** potentiometer.

Reset:

Front panel momentary push button – press to set primary (A) amplifier active.

Switch Status:

Front panel LED and Relay Contact on rear terminal block.

Power Failure:

Switch Transfers to B position when MNRS power is lost.

NOTE: This device is not intended for exact power measurements.

It is intended to make a nominal total composite RF power measurement and compare it to a user defined threshold in order to determine the necessary switch status

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SET-UP

2. Set-up

2.1. Redundant Amplifier Applications

Once the MAXNET chassis is powered, the amplifiers are connected to the MNRS (see Figure #2 below), review Section 3 for procedures on how to set the threshold level.

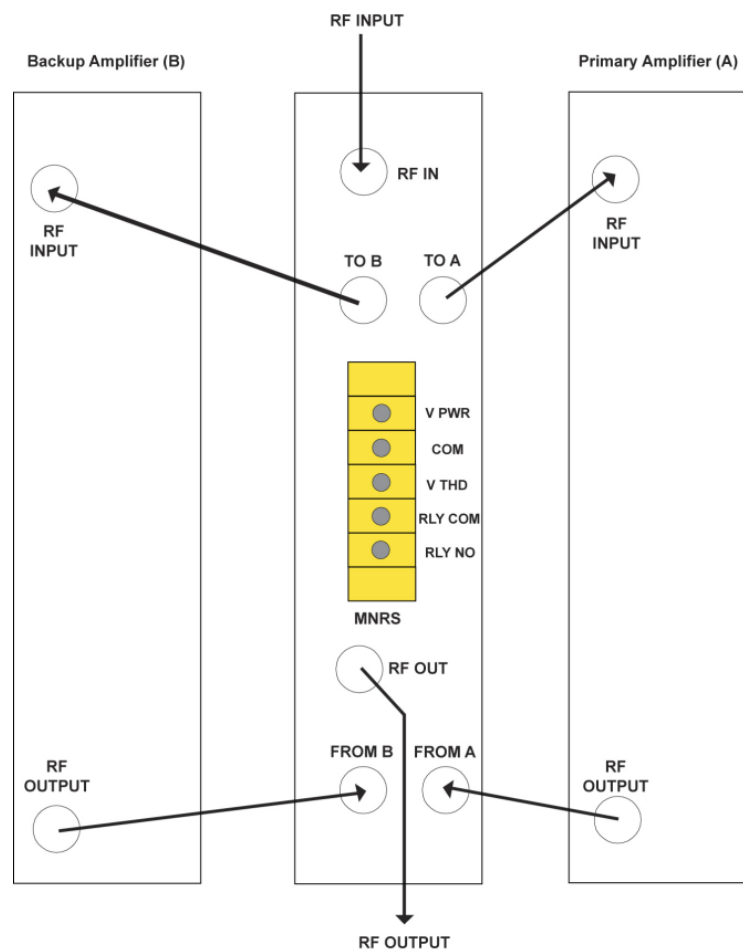


Figure #2: MNRS Wiring Configuration

2.2. RF Detector A/B Switch Applications

Once the MAXNET chassis is powered and the MNRS is configured as shown in Figure #3, review Section 3 for procedures on how to set the threshold level.

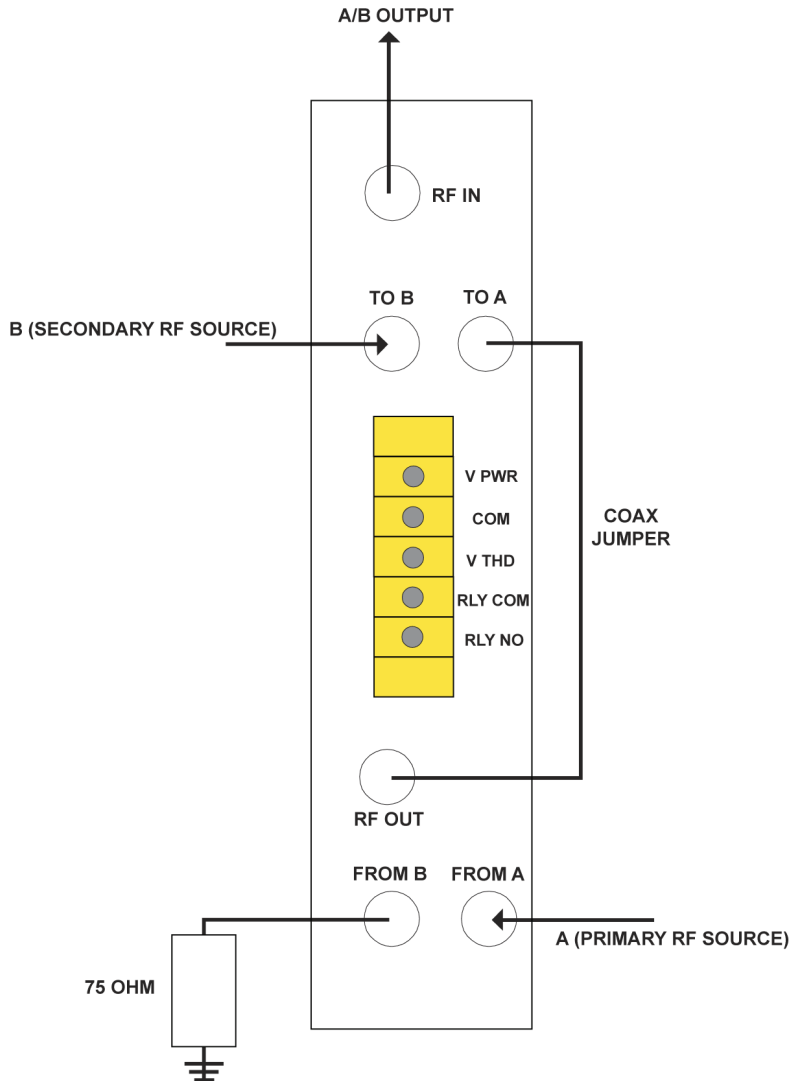


Figure #3: MNRS Wiring Configuration

THRESHOLD LEVEL SETTINGS

3. Threshold Level Settings

3.1. Coarse Setting (3-9 dB) - Recommended

- Adjust the SET THD potentiometer fully CCW
- Press and release the reset (RESET) push button:
 - the B ACTIVE LED should turn **off**
 - the RF PWR level bar graph should indicate a level between 40 and 70 dBmV
- Adjust the SET THD potentiometer CW:
 - obtain a reading on the THD bar graph one bar below that indicated on the RF bar graph (see Figure #4 below)

NOTE: Threshold (THD) should not be set greater than 15 dB below RF Power (RF) indicator level.

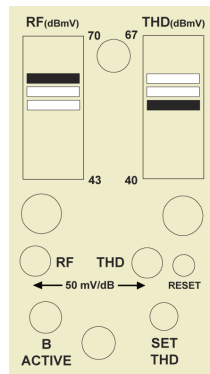


Figure #4: MNRS Front Panel Bar Graph Display (Threshold set for 3-9 dB)

3.2. Fine Setting (3 dB) - Advanced

- Adjust the SET THD potentiometer fully CCW
- Press and release the reset (RESET) push button:
 - the B ACTIVE LED should turn **off**
 - the RF PWR level bar graph should indicate a level between 40 and 70 dBmV
- Connect a DVM (Fluke 87 or equiv.) between the RF test point (black - negative lead) and the THD (red - positive lead)
- Adjust the SET THD potentiometer CW:
 - obtain a reading on the DVM of -150 mV (-3 dB)

NOTE: Voltage scaling for RF and THD test points is 50 mV/dB

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DEVICE RESET

4. Device Reset

4.1. Redundant Amplifier Configurations

After the MNRS has switched (B ACTIVE LED **on** and the RF bar graph blank), the operator should determine the cause of the transfer from primary amplifier A to backup amplifier B.

Once the cause has been identified and corrected:

- Ensure that the wiring is correct
- Press and release the reset (RESET) push button:
 - the B ACTIVE LED should turn **off**
 - the RF PWR level bar graph should indicate a level between 40 and 70 dBmV

4.2. RF Detector A/B Switch Configurations

No reset required. Device returns to primary mode when signal source A returns to a power level above the threshold level.

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SERVICE & SUPPORT

5. Service & Support

5.1. Contact ATX Networks

Please contact ATX Technical Support for assistance with any ATX products. Please contact ATX Customer Service to obtain a valid RMA number for any ATX products that require service and are in or out-of-warranty before returning a failed module to the factory.

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5.2. Warranty Information

All of ATX Networks' products have a 1-year warranty that covers manufacturer's defects or failures.



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