

Options X182AG

RX (806–824 MHz)

TX (851–869 MHz)

X182AH

RX (896–902 MHz)

TX (935–941 MHz)

1 DESCRIPTION

Options X182AG and X182AH provide a duplexer module for use with *Quantar* 800 MHz and 900 MHz stations, respectively. This section provides a general description, identification of inputs/outputs, performance specifications, and a typical mounting location detail. The duplexer module is considered non-repairable and requires no field tuning.

General Description

The duplexer module (shown in Figure 1) allows a transmit and receive channel pair to share a common TX/RX antenna. Each duplexer module consists of ten resonant cavities (five for transmit and five for receive) contained in a temperature-compensated copper enclosure designed to mount in a standard EIA 19" equipment rack.

Each set of five cavities is designed and tuned to pass the respective transmit or receive channel frequency (or bandwidths) while providing maximum TX noise suppression at the RX frequency and maximum RX isolation at the TX frequency.

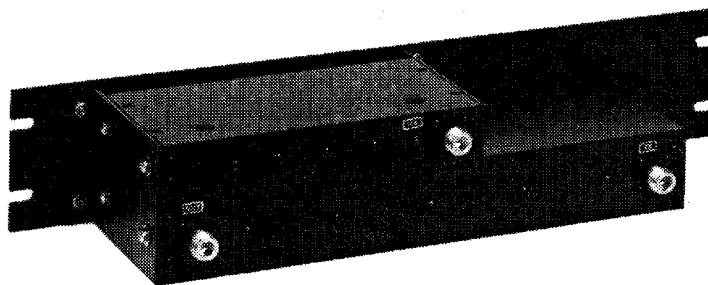


Figure 1. Typical 900 MHz Duplexer Module

2 INPUTS/OUTPUTS

Figure 2 shows the input and output rf connectors for the duplexer module.

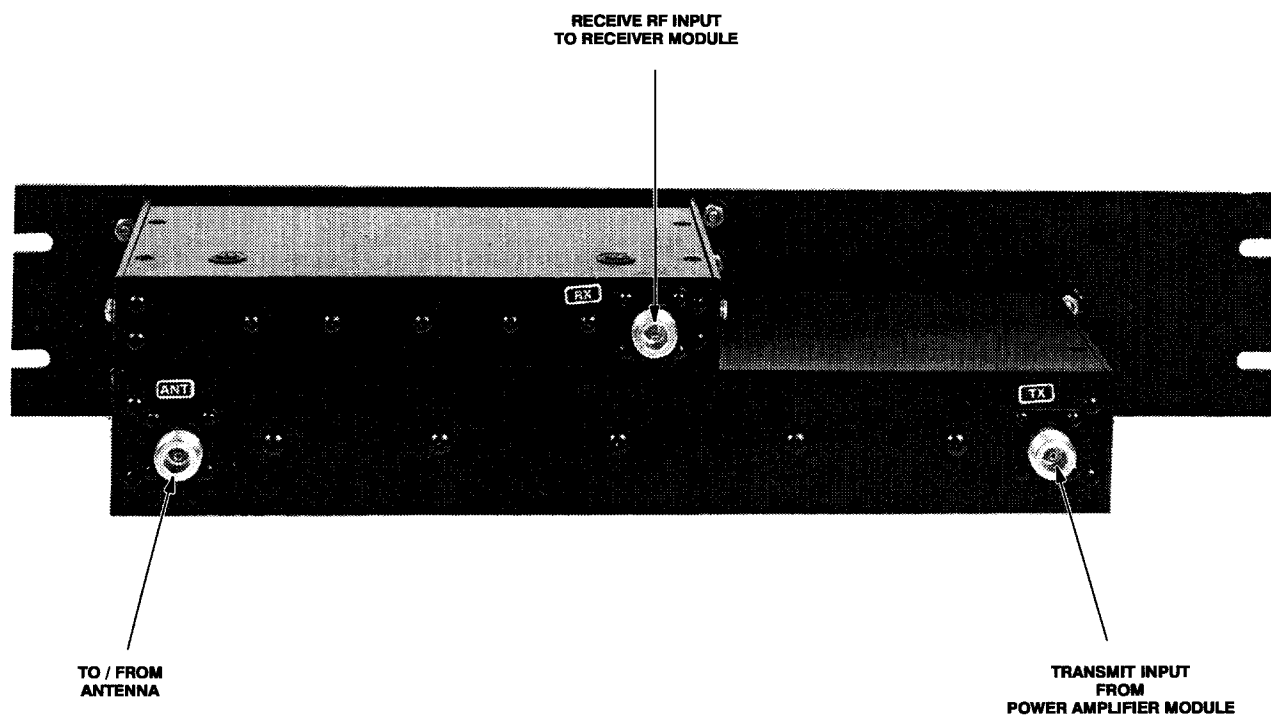


Figure 2. Quantar 800 MHz/900 MHz Duplexer Module Input/Output Connections

3 PERFORMANCE SPECIFICATIONS

Table 1 and Table 2 show the electrical performance specifications for the 800 MHz and 900 MHz duplexer modules.

Table 1. Duplexer Performance Specifications (Option X182AG)

Parameter	Specification
Operating Frequency	806–869 MHz
Insertion Loss (Transmitter to Antenna)	1.0 dB max
Insertion Loss (Antenna to Receiver)	1.0 dB max
Frequency Passband	RX 806–824 MHz TX 851–869 MHz
TX Noise Suppression at RX Freq.	80 dB min
RX Isolation at TX Freq.	80 dB min
Frequency Separation	45 MHz
Return Loss	14 dB minimum
Maximum Input Power	500 W
Temperature Range	–30°C to +60°C
Size with rack mounting panel	3½" (H) x 5¾" (D) x 19" (W) EIA Rack Mountable
Weight with rack mounting panel	7.5 lbs.
Terminations	Female N–Type
Input and Output Impedance	50 Ohms

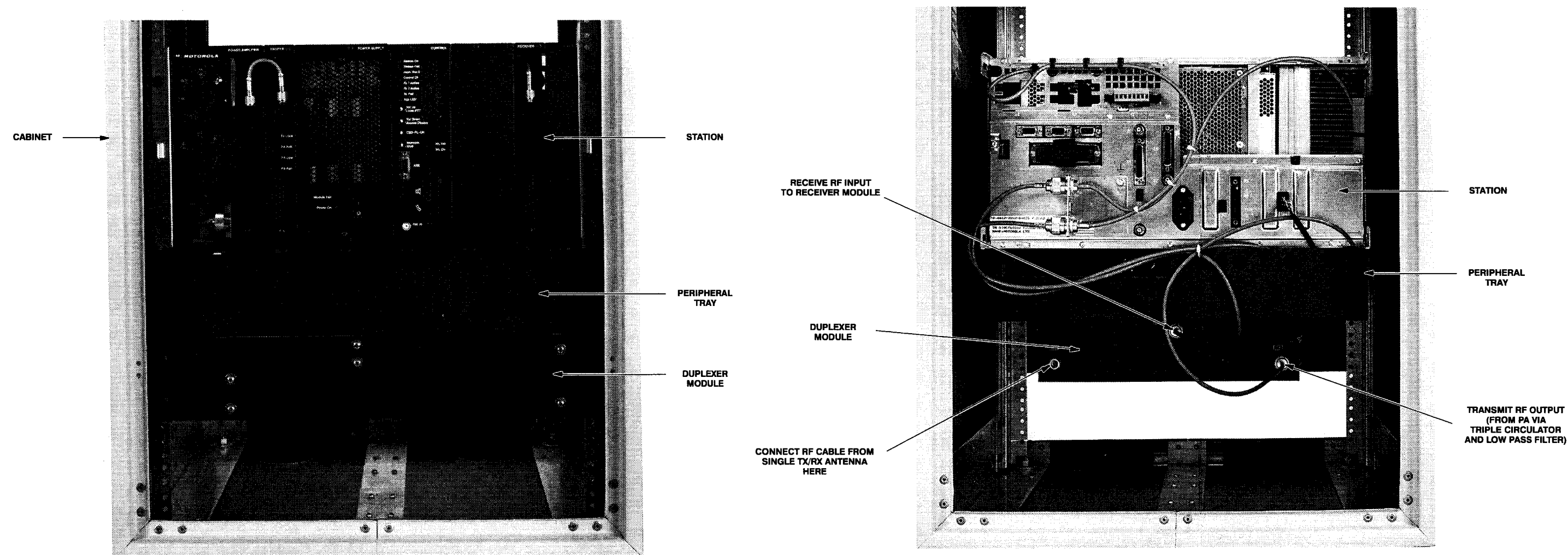
Table 2. Duplexer Performance Specifications (Option X182AH)

Parameter	Specification
Operating Frequency	896–941 MHz
Insertion Loss (Transmitter to Antenna)	1.0 dB max
Insertion Loss (Antenna to Receiver)	1.0 dB max
Frequency Passband	RX 896–902 MHz TX 935–941 MHz
TX Noise Suppression at RX Freq.	75 dB min
RX Isolation at TX Freq.	75 dB min
Frequency Separation	39 MHz
Return Loss	15 dB minimum
Maximum Input Power	500 W
Temperature Range	–30°C to +60°C
Size with rack mounting panel	3½" (H) x 5¾" (D) x 19" (W) EIA Rack Mountable
Weight with rack mounting panel	7.5 lbs.
Terminations	Female N–Type
Input and Output Impedance	50 Ohms

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

4 TYPICAL MOUNTING CONFIGURATION

The duplexer module is typically mounted in the same rack or cabinet as the station and peripheral tray (if equipped). Figure 3 shows front and rear views of a typical repeater configuration in which a station, triple circulator option, and duplexer option are installed in a single cabinet. Also shown is a simplified interconnect diagram showing the receiver and transmitter paths to a single RX/TX antenna.



FRONT VIEW

REAR VIEW

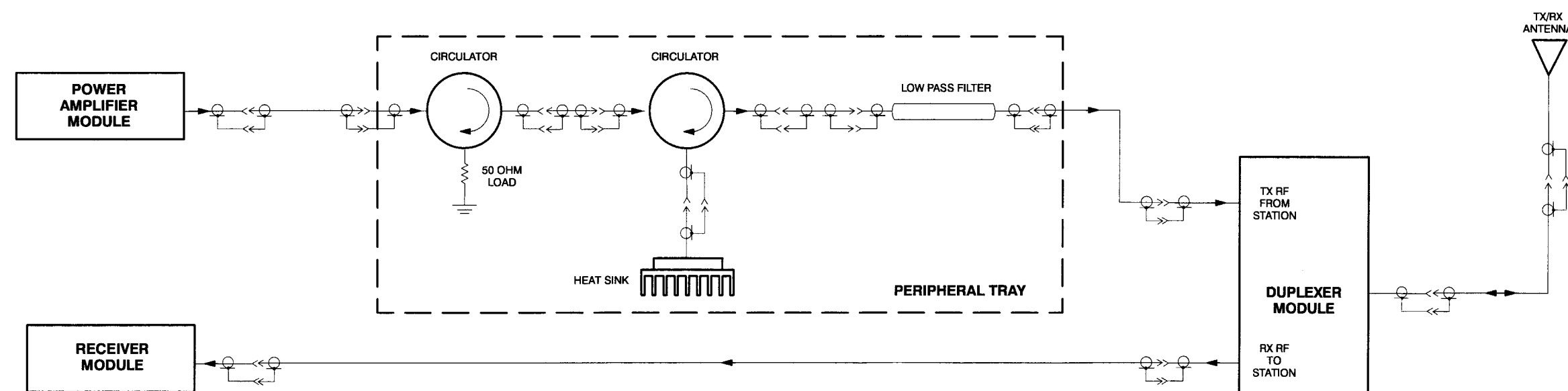


Figure 3. Typical Duplexer Mounting Configuration and Interconnect Diagram