

# MR - Series Mobile Duplexers

## Description

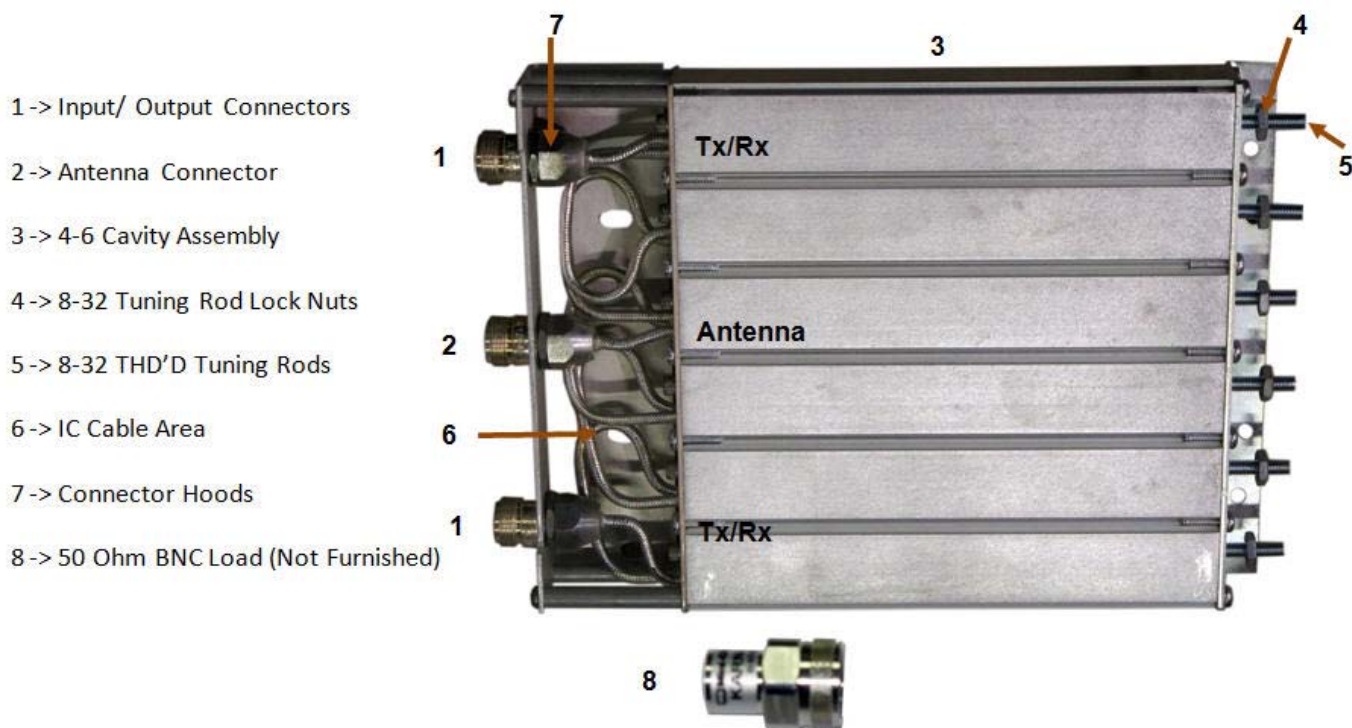
The MR-Series of Mobile Duplexers are fabricated from lightweight, rugged aluminum extrusion which afford maximum structural integrity and are temperature-compensated to minimize variations due to changing operating environments.

The tuning instructions for all models described in this manual apply to all models of the MR-Series which also include any not listed or those which are special orders.

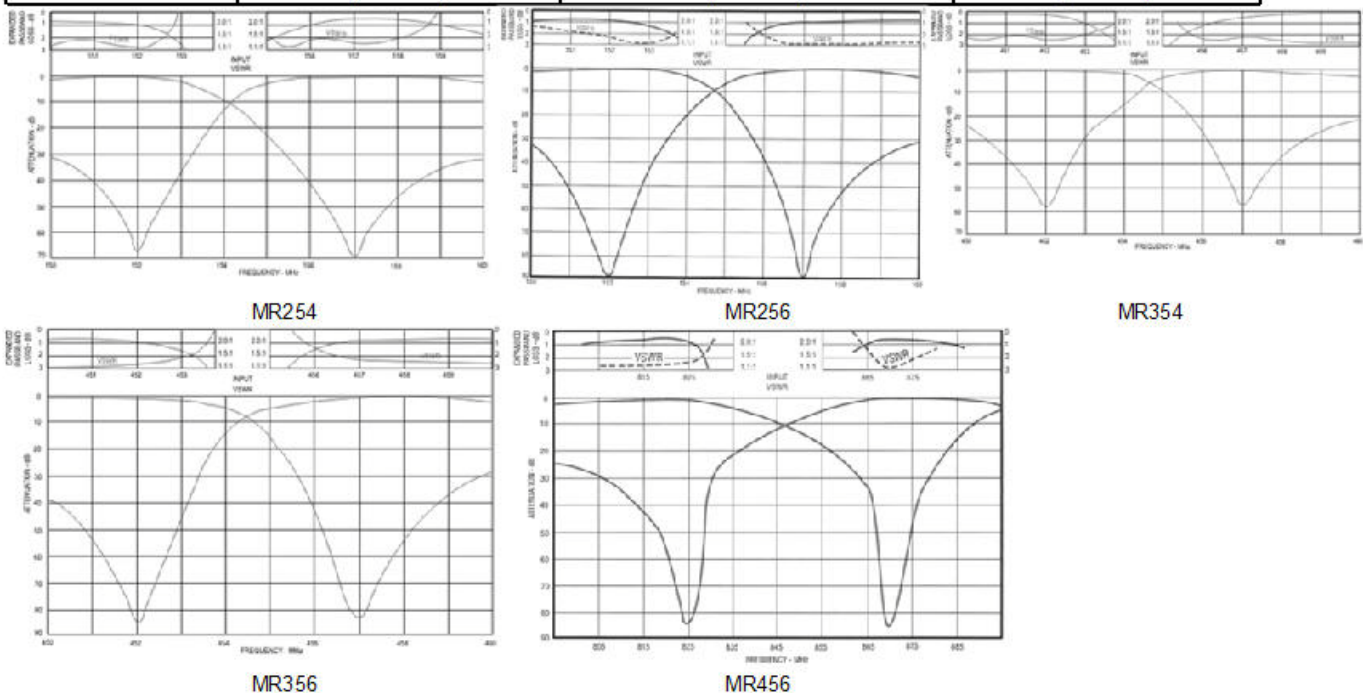
The Duplexers listed are standard units. Variations on connector types, mounting, and cavity configurations are available on special order.

Consult your Sinclair Representative or Sales to determine the best solution for your special system requirements.

All MR-Series Duplexers can be re-tuned within their specific sub-bands for which the unit was designed. Pages CI-1080 and CI-1081 describe three alternate methods for field retuning procedures.



Electrical Specifications	136-148; 148-160; 160-174		406-440; 440-480; 480-512; 380-400; 350-380		806-960; 746-806	
	MR254	MR256	MR354	MR356	MR454	MR456
Frequency Separation (MHz)	4.5 Min to 10 Max		5 Min to 10 Max		Upto 45	
Insertion Loss (-dB)	1.2 Max	1.5 Max	1.0 Max	1.4 Max	1.0 Max	1.5 Max
Isolation (dB)	60 Min	80 Min	50 Min	75 Min	50 Min	60 Min
Maximum Input VSWR	1.5: 1 Referenced to 50 Ohms		1.5: 1 Referenced to 50 Ohms		1.5: 1 Referenced to 50 Ohms	
Input Power (Watts)	50 Max		50 Max		50 Max	
Temperature Range	-30 to +60 deg C		-30 to +60 deg C		-30 to +60 deg C	
Termination	BNC-Female; N-Female; TNC-Female		BNC-Female; N-Female; TNC-Female		BNC-Female; N-Female; TNC-Female	



All MR-Series are tuned at the time of delivery to both transmit and receive frequencies and separations as specified by the customer. The duplexer can be field retuned within the sub-bands for which the unit was designed.

### **Tuning Instructions** (Equipment Receiver Method)

The duplexer is pre-tuned to the exact operating frequencies. No further tuning or adjustment is required. Tuning instructions are furnished only for the purpose of readjustment in the event of frequency changes in the associated equipment.

Equipment required for the tuning procedure is:

1. HP 8714C Network Analyzer (or Equivalent)
2. 50 Ohm Test Load
3. Capacitor Tuning Tool

## Retuning Procedure

1. Unlock the tuning rod lock nuts
2. Tune the signal generator to the receiver frequency. Adjust the tuning screws of the transmitter channel for minimum signal in receiver "A". Lock the tuning lock nuts.
3. Tune the signal generator to the transmitter frequency. Adjust the tuning screws of the receiver channel for minimum signal in receiver "B". Lock the tuning lock nuts securely.
4. A final check that both high and low pass are tuned to the new frequencies is done, and VSWR is checked to be better than 1.5:1 at both frequencies.
5. Repeat steps 3-5 if required for final check.
6. The duplexer is now ready for operation.

WARNING: Do not tune the duplexer with the transmitter keyed into the duplexer.

