

3 Branch RFDS Receiver Multi-Coupler (RMC)

General Information



The Receiver Multi-Coupler provides three independent channels which expand a single receive signal into four ports. One output from each four port channel is fed into a secondary multi-coupler which provides six receive signal outputs per channel. The module contains two "hot swappable" redundant power supplies (DC/DC converters) connected in parallel with reverse polarity, current limit and over-voltage protection. The power supplies convert the -48 VDC (input) to a regulated voltage required to power the six Low-Noise Amplifiers (LNAs). The output of each LNA is then divided equally into four and six isolated ports using a precision

balanced resistive Power Splitter. The Receiver Multi-Coupler contains all the required monitoring and alarm circuitry for proper operation in the system. A three pin Mate-N-Lock II connector located in the rear of the unit is used for the Breaker Panel trip alarm input. This input, along with the internal Amplifier fail alarm and Power Supply fail alarm are then internally cabled to an 8 pin TELCO jack mounted on the back of the module. This jack provides a compatible connection with the Environmental Alarm System (EAS) located in the iMU.

Electrical Specifications

	4-Way Primary Multi-coupler	6-Way Expansion Multi-coupler
Number of Branches	Three	Three
Number of Output Ports	4 per Branch	6 per Branch
Frequency Range	806-821 MHz	806-821 MHz
Gain	10 dB (+/- 0.5 dB)	2.5 dB (+/- 0.5 dB)
Amplifier Noise Figure	1.5 Maximum, 1.2 Typical	1.5 Maximum, 1.2 Typical
IP 3 Output	+24 dBm Minimum	+24 dBm Minimum
Input/Output VSWR	1.2:1 Maximum	1.2:1 Maximum
Isolation	20 dB Minimum	20 dB Minimum
Maximum RF Input Power	+10 dBm	+10 dBm
Power Supply	Dual Redundant in Parallel	
DC Power Input	-48 VDC (-36 to -72 VDC Range)	
Input Protection	Fused and Reverse Polarity	
Output Protection	Voltage and Current Limit	
Monitoring and Alarms	Front Panel operational state LED for Amplifiers & Power Supplies	
Monitoring Signals	Dry Form A contact closure alarm for Amplifiers & Power Supplies. Fault detected as OPEN contact.	

Block Diagram

