

# MiniSystem Combiner

VHF

2 Channel Compact Combining System - Single Antenna operation - with Rx Preamplifier

MSxxxx-0205-SP



The MiniSystem Combiner (MSC) is an innovative solution that simplifies the design, quotation, procurement and installation of RF combining for applications requiring 1-4 RF channels. It caters for most standard frequency sub-bands, channel spacings and Tx-Rx frequency separations. The MSC Tx combiner uses dual stage isolators and hybrid combining techniques to provide Tx-Tx isolation and to minimise intermodulation (IM) impacts. The Rx system uses an ultra low noise preamplifier with user-selectable gain and excellent 3OIP performance, with a multi-way output divider to ensure optimum system receive sensitivity is available. Integral high quality bandpass filtering provides high Rx selectivity and Tx-Rx system isolation performance. Form-C relay outputs provide alarm notification of DC power or Rx LNA amplifier failure. The MSC is available in sub-bands covering VHF, UHF and 800MHz frequency ranges.

## Features:

- 2 channel capacity
- 50W Tx input power (per channel)
- 100% Tx Duty Cycle
- Open-circuit antenna port VSWR protection
- Ultra low noise receiver preamplifier
- User-selectable Rx gain
- DC power and Rx LNA Fail alarm monitoring
- Compact 19in rack mounting



Specifications

FRONT VIEW

REAR VIEW

Model MSxxxx-0205-SP	1313	1314	1415	1516	1517	1616	1617
Frequency Range (MHz)	132-142	138-148	148-158	155-165	151-172	160-170	164-174
Tx Channel Capacity				2			
Tx Input Power				≤ 50W per channel			
Tx Duty Cycle				≤ 100% per channel			
Tx-Tx Bandwidth				1.0MHz			
Tx Insertion Loss				6dB typ.			
Tx-Tx Isolation				> 60dB			
Tx-Ant Isolation				> 50dB			
Tx-Rx Isolation				65dB min. (70dB typ.)			
Tx Input Return Loss				20dB typ.			
Tx-Rx Separation	4MHz min.	4MHz min.	4MHz min.	4MHz min.	21MHz min.	4MHz min.	4MHz min.
Rx Channel Capacity				2			
Rx-Rx Bandwidth				1.0MHz			
Rx System Gain				0dB to 30dB (in 1dB steps)			
Rx LNA Noise Figure				< 2dB (1.2dB typ.)			
Rx Maximum Input Level				-10dBm			
Rx-Rx Isolation				> 18dB			
Rx Output Return Loss				> 20dB			
Impedance				50 ohms (all RF ports)			
Alarms				DC Supply Voltage Low, Rx LNA Fail			
Alarm Outputs				Dry Relay Form-C (N.C./N.O./CMN)			
RF Connectors				Tx = N (female) Rx = BNC (female)			
DC Connector				2pin 5mm Phoenix (mating plug supplied)			
Alarm Connector				3pin 5mm Phoenix (mating plug supplied)			
Enclosure				3RU + 4RU 19in Rack Mount (Black)			
DC Power Requirements				+11VDC to +28VDC 3.5W typ. (polarity protected)			
IP Rating				Indoor Use Only			
Temperature Range				- 30 C to 60° C / - 22° F to 140° F			
Dimensions (HxWxD)				313x483x430mm (12.33x19x17in)			
Weight				18.5Kg (40.7lbs)			

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## Ordering Information

RFI Part Number	Description
MS1313-0205-SP	MiniSystem Combiner, 132-142MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1314-0205-SP	MiniSystem Combiner, 138-148MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1415-0205-SP	MiniSystem Combiner, 148-158MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1516-0205-SP	MiniSystem Combiner, 155-165MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1517-0205-SP (Note: 21MHz Tx-Rx)	MiniSystem Combiner, 151-172MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1616-0205-SP	MiniSystem Combiner, 160-170MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted
MS1617-0205-SP	MiniSystem Combiner, 164-174MHz, 2 Channel, 50 Watt, Single Antenna Operation, Preamplifier fitted