

X-Band Planar Receiver

Model Numbers MSR2100, MSR4400



Key Features

- Low Cost
- High Sensitivity
- Patch Antenna
- Small and Flat Profile
- Rugged, reliable construction
- Low Power consumption
- RoHS compliant

Applications

- Microwave Barriers
- Presence Sensing
- Process Control Equipment

The Microwave Solutions MSR2100/MSR4400 are X-Band planar receivers designed for use in TX/Rx beam breaker systems.

Each unit has an internal bias network to enable a low current dc bias to be applied to the detector diode to increase sensitivity.

Operation

The receiver is used in conjunction with a remote pulse modulated transmitter such as the MST4440 or any MSL Doppler transceiver unit. The receive signal amplitude is dependent on the transmitter radiated power, distance to the transmitter and the loss associated with any obstacle located between the units.

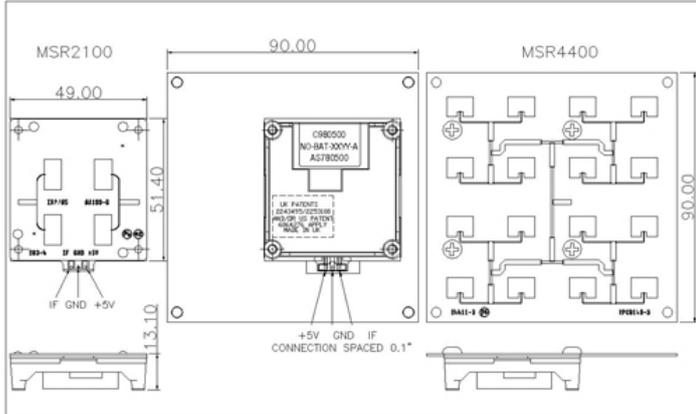
The unit produces a low level output signal which can be amplified and processed to provide an audible or visual alarm signal and employs low cost surface mount manufacturing techniques which are field proven as being rugged and reliable.

Available Modules

Model	Country	Frequency	Comments	Order Code
MSR 2100	Universal	10.5 - 10.7 GHz		C980501
MSR 4400	Universal	10.5 - 10.7 GHz		C980500

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Mechanical Characteristics

Weight	15g (MSR2100)
	20g (MSR4400)
Tab Connections	0.1" spacing
Metallisation	Sn+Ni+Cu
	JEDEC JESD97 (e2)

Environmental Characteristics

RoHS Compliant	
Sensitivity Variation (over operating temp. range)	3 dB
Operating Temperature	-10° C to +55° C
Storage Temperature	-30° C to +70° C

Electrical Characteristics

Bias

Supply Voltage	+5 V ± 0.25 V
Supply Current	50 µA (max)

Sensitivity/Noise: MSR2100

Output signal (typ.)	75mV
(for a -20dBm signal incident on the receiver)	
Noise (in 3Hz to 80Hz bandwidth)	<10 µV

Sensitivity/Noise: MSR4400

Output signal (typ.)	300mV
(for a -20dBm signal incident on the receiver)	
Noise (in 3Hz to 80Hz bandwidth)	<10 µV

Antenna : MSR2100

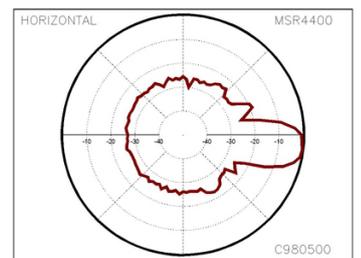
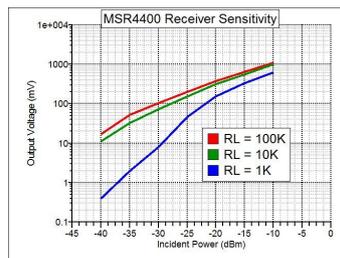
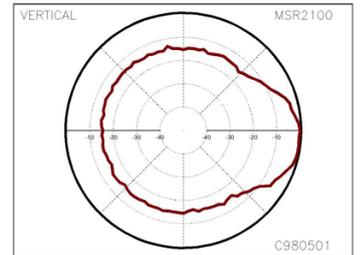
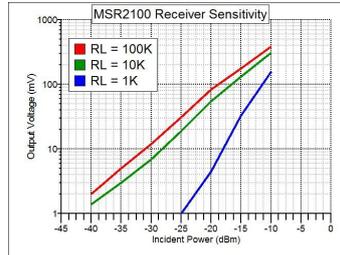
Gain	8 dBi
-3 dB Beamwidth	
E Plane	72°
H Plane	36°

Antenna : MSR4400

Gain	17 dBi
-3 dB Beamwidth	
E Plane	18°
H Plane	18°

NOTES Unit functions over -30° C to +70° C, but performance may be degraded above +55° C

Sensitivity & Coverage Pattern



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