

SSR-9333534040-10-M4

W-Band Radiometric Receiver, 75 to 110 GHz, 4 dB NF, 40 dB Gain

SSR-9333534040-10-M4 is a W-Band direction based radiometric receiver that can be used to measure the average power of the noise coming from a physical object in frequency range of 75 to 110 GHz. By averaging a large number of independent samples, this radiometric receiver can determine the average noise power with a fractional uncertainty. The receiver LNA has a typical gain of 40 dB with a typical noise figure of 4 dB. The receiver includes a high sensitivity Schottky diode detector with a 23 dB typical gain video amplifier. The receiver is designed and manufactured for passive image camera applications. The RF port of the receiver is a WR-10 waveguide with a UG-387/U-M anti-cocking flange. The DC bias and the video output are combined via a LEMO connector for high EM isolation. A male mating cable is included with the receiver. With a large selection of ERAVANT standard and custom antennas, many radiometric receivers can be formed and readily available for various radiometric system applications.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	75 GHz		110 GHz
Noise Figure		4.0 dB	4.5 dB
LNA Gain	35 dB	40 dB	
Integrated Video Amplifier		Yes	
Video Amplifier Gain		23 dB	
Sensitivity ¹		0.3 K	0.35 K
Video Output ²	2,400 mV		2,800 mV
Video Bandwidth		200 kHz	
Bias Voltage		+5 V _{DC}	+8 V _{DC}
Bias Current		70 mA	100 mA
Specification Temperature		+ 25 °C	
Operating Temperature	-20 °C		+ 50 °C

1. Sensitivity is defined as $\Delta T = (TA + TN) / \sqrt{\beta \tau}$, where TA=295 K, $\beta=35$ GHz, $\tau=47$ μ s
2. Video Output is a difference output in the range of $\pm 1,200$ to $\pm 1,400$ mV.

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FEATURES

- Low Noise Figure and High Sensitivity
- Fully Integrated Module
- Compact Size
- Included Mating Cable

APPLICATIONS

- Passive Image Camera Systems
- Concealed Object Detection Systems
- Airplane Landing Systems

SUPPLEMENTAL DETAILS



NOTE:

- Other mechanical configurations are available under different model number.
- A testing cable with LEMO Male 6 pin connector (M/N: SSR-CC-L6M-S1) to connect to LEMO Female port is included.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Any foreign objects into the waveguide will cause performance degradation and possible device damage.
- The case temperature of the device shall never exceed +50 °C. Use proper Heatsink or fan if necessary.

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