



Embedded Computing, Timing and Telemetry Products

WR-G33RSS Signal Strength Measurement Module

The WiNRADiO WR-G33RSS Signal Strength Measurement Module is a specialized OEM building block suitable for a variety of industrial, scientific and other specialist applications where the ability to measure received signal strength within LF, HF, VHF and UHF frequency range is required.

The WR-G33RSS module does not include any signal demodulation capability - its single purpose is to measure signal strength. The module can be easily controlled via a serial interface (RS-232 or USB), with minimum programming required. Full programming support, including source codes and demo programs, is provided as part of the package. The device can be operated easily under standard operating systems, as well as be incorporated into application-specific embedded systems. Features

- Input frequency range 0.009 to 1800 MHz
- Signal strength measurement range -120 to -30 dBm
- Signal strength measurement accuracy 3 dB
- Switchable attenuator and preamplifier
- Measurement bandwidth 10 kHz
- High frequency stability 0.5 ppm
- Simple RS-232 or USB interfacing
- Analog IF output
- Source code and demo program supplied

The module is based on a double-conversion process, where the incoming frequency is down-converted to the output frequency 12 kHz. This IF output is also available as a standard feature of this device. Careful design ensures that images and spurious mixing products are significantly reduced. Tracking filters are employed in the front-end, and the module features impressive spurious-free dynamic range.

The system is robust and compact, and is powered from 12 V DC power supply (AC/DC adapter supplied), and consumes approx 6 W of power, with externally controlled power-saving mode provided.

Technical Specifications

Receiver type	DDS-based dual-conversion superheterodyne
Frequency range	9 kHz - 1800 MHz
Tuning resolution	1 Hz
Frequency stability	0.5 ppm (0 to 60° C)
Image/Spurious rejection	60 dB
RSSI measurement range	-120 to -30 dBm (0.2 μV to 7 mV) typ.
RSSI accuracy	3 dB (higher is achievable with individual calibration)
RSSI acquisition speed	100 measurements/s typ.
Scanning speed	60 channels/s typ.
Gain control	18 dB switchable attenuator 14 dB switchable preamplifier
Selectivity	10 kHz (-6 dB) for RSSI measurements 20 kHz (-6 dB) for IF output
Intermediate frequencies	IF1: 109.65 MHz IF2: 12 kHz
Antenna input	50 ohm (SMA connector)
IF signal output	20 kHz bandwidth, centered at 12 kHz
Spurious-free dynamic range of IF signal output	92 dB
Interface	RS-232C, USB (1.0 and 2.0 compatible)
Power	12 V DC ±5% @ 500 mA
Dimensions	Length: 164 mm (6.46") Width: 96 mm (3.78") Height: 41 mm (1.61")
Weight	467 g (16.40 oz)

Specifications are subject to change without notice due to continuous product development and improvement.