



Low Cost Attenuation Measurement System

FEATURES



- Scans and identifies RF energy activity over 30 MHz – 3 GHz or 30 MHz – 10 GHz depending on options
- Signal Generator provides 1 watt output power over entire frequency range
- User friendly GUI with spectrum analyzer display
- Provides rapid spectrum analyzer display of environment simultaneous to verify measurement accuracy
- Automatic reporting, real time alerts integrated real time clock
- Automatic calibration routine
- Signal detector and signal generator may be used independently for other tasking

DESCRIPTION



The system includes two components, the *Aardvark* signal detector and the SG-10000X signal generator configured to provide continuous frequency coverage from 30 MHz – 10 GHz. The *Aardvark* is shown in the picture with an optional log periodic antenna. The *Aardvark* may be configured with additional frequency bands to augment the full band sweep capability and to identify signals in particular bands of interest. The bands available include all cellular bands, Wi-Fi, ISM, land mobile radio, and any specialized bands of interest. The *Aardvark* provides exceptional sensitivity and out of band filter rejection optimizing performance. Applications requiring additional filter rejection may

include highly customized filters with as much as 120 dB of rejection for use when nearby cell towers may be present.



The signal generator covers from 30 MHz – 10 GHz with 1 watt of output power over the entire range. It is tailored to the attenuation measurement system for operation in a strong signal environment to greatly reduce cost. The cost of the signal generator is held down by the lack of automatic microwave switching and the use of a multiplier approach that is quite suitable for this application because of any harmonics generated being outside of the frequency band of the signal detector. The signal detection scheme is also extremely cost effective by utilizing a direct conversion approach with a bank of wide band filters covering from 10 MHz to 10 GHz. This is a direct derivative of our current TSCM product that is

designed to cover the wireless bands for cellular, SATCOM, land mobile, Wi-Fi, and ISM bands. System control software is provided to provide the ability to automatically calibrate, collect data including time stamp and export it to excel spread sheets for analysis. Operation of the system is fully tunkey allowing it also to be used in a continuous monitoring mode.

Specifications subject to change without notice as we improve our products.
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SPECIFICATIONS

RECEIVER PARAMETERS

Frequency range.....30 MHz to 10,000 MHz (Depends on options)
Selectivity.....Set by filters (Typically >60 dB out of band rejection)
Sensitivity.....-96 dBm noise floor (typical)
Dynamic range.....60 dB
Attenuation.....Programmable values of 0, 10, 20, and 30 dB
Scan speed.....Selectable 1/2/5/10/20/50/100 channels/second max
Antenna.....external SMA antenna connector
Input Impedance.....50 ohms

CONTROL CHARACTERISTICS

Front panel.....Transflective 128x64 LCD w/backlight, R/G/B color is by selectable keypad
Remote control/programming.....USB, serial interface or ethernet

PHYSICAL & ENVIRONMENTAL CHARACTERISTICS

Power Input.....2) 1.5 VAA batteries, Lithium recommended for longer life
Weight.....Approximately 14 oz with batteries
Size.....3W x 5.9L x 0.9T inches
Connectors.....Mini-B USB, RS232 with adapter cable, ethernet
Audio output.....40 mw w/volume control, 3.5 mm stereo jack
Operating temperature range.....-20 to +55°C
Non-operating temperature range.....-40 to +70°C
Operating altitude.....0 to 12,000 ft (0 to 3657 m)
Operating humidity.....10 to 90% non-condensing (waterproof seal)

SIGNAL GENERATOR

RF CHARACTERISTICS

Frequency range.....30 MHz to 10,000 MHz Standard
Tuning resolution.....1 - 3 KHz steps (varies with frequency)
Internal frequency accuracy.....±1.0 ppm (-20 to +60°C)
RF output power...variable from -10 dBm – +30 dbm from 30 MHz – 1 GHz, +30 dBm fixed output power above 1 GHz
Duty cycle.....Continuous
Modulation.....CW, AM, FM, Noise

CONTROL CHARACTERISTICS

Control interface.....4x4 keypad, 128x64 dot matrix backlit LCD display
Remote interface.....Mini-B USB connector, female
Processor.....Microchip 32F series
Control functions.....Frequency, power output, modulation type, modulation settings
Programmability.....Internal programming plug
Open architecture features.....Compiled C language firmware
Power consumption.....TBD

PHYSICAL & ENVIRONMENTAL CHARACTERISTICS

Weight.....2 pounds
Size.....TBD
RF output connector.....SMA
Operating temperature range.....-20 to +60°C
Specified performance.....25 ± 5°C

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