

TECHNICAL SPECIFICATIONS

SeeGull® LX GSM/GPRS/EDGE Receiver

Wireless Test Solutions



PCTEL, RF Solutions Group's GSM/GPRS/EDGE scanning receiver is based on the SeeGull® LX platform, which provides high-speed measurements and superior performance. This receiver is a DSP-based software radio that provides unparalleled precision and user-defined options for the measurement of GSM, GPRS and EDGE networks.

PCTEL's scanning receivers are used globally to optimize wireless network performance via drive test and measurement, tower site survey, base station monitoring, and wireless market analysis tools.

Operational Modes

Spectrum Analyzer

Measures and reports power spectral density using frequency domain techniques. Frequency span in the RF Band, resolution bandwidth (5, 10, 20, 40, and 80 kHz), and sweep averaging (1, 2, 4, 8, and 16) are adjustable.

Distance Based Sampling Option

A cost-effective and user friendly approach in providing both model tuning and optimization capability in one tool. User can select distance that needs to be traveled in between two consecutive RSSI Frequency measurements in 30 kHz bandwidth.

RSSI Scan

Measures and reports RSSI for a given channel list. The measurement bandwidth is selectable as either 30 kHz or 200 kHz. Tuning resolution matches band channelization.

BSIC Decoding

The BSIC is decoded in the receiver and can be used for identifying the transmitting base station. BSIC sensitivity is increased with the LX platform.

C/I Measurement Option

Provides co-channel interference measurements.

BCCH Decoding Option

Enables decoding of BCCH Type 3 message, including Cell ID, MCC, MNC, and LAC parameters. Decoding is supported on numerous user selectable BCCH frequency channels.

Multiple Scan Lists

Thousands of different concurrent measurements in different operational modes can be performed on different frequencies.

Built-in GPS Option

The optional internal GPS receiver is controlled through a single RS-232 port.

GPRS/EDGE Measurements

Measures BCCH C/I down to 2 dB as critical inputs for determining data rate coverage and for GPRS/EDGE planning and optimization.

WCDMA
HSDPA
cdma2000
GSM
GPRS
EDGE
IS-136
JCDMA
EV-DO

SeeGull® LX GSM/GPRS/EDGE Receiver

Specifications

Overview

RSSI Bandwidths

30 kHz (CW)
200 kHz (Wide)

Spectrum Analysis Dynamic Range

> 90 dB

RSSI Measurement Rate

150 Channels/Second (CW)
500 Channels/Second (Wide)

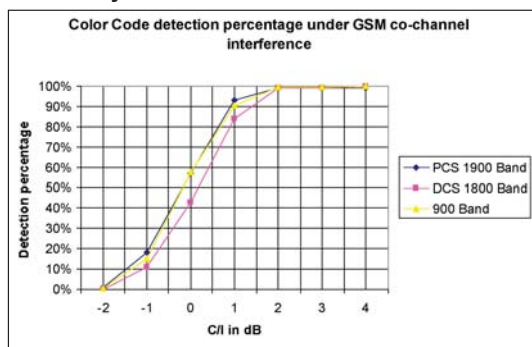
Absolute Accuracy

± 1.0 dB in Basic RF Input Power Range; with additional ± 1.0 dB over the RF Frequency Range and Operating Temperature Range

BSIC False Detection

< 0.1%

Probability of BSIC Detection vs. Co-Channel C/I



Hardware

RF Bands

Single-band: 850, 900, 1800, 1900 MHz
Dual-band: 850/1900, 900/1800 MHz

RF Frequency Ranges (Forward Channels)

GSM 850 869 MHz to 894 MHz
GSM 900 925 MHz to 959 MHz
GSM1800 1805 MHz to 1880 MHz
GSM1900 1930 MHz to 1990 MHz

Frequency Accuracy

± 0.05 ppm GPS Locked
± 1 ppm GPS Unlocked (room temperature),
with less than additional ± 1 ppm/year for aging

Internally Generated Spurious Response

-115 dBm Maximum

Protection Against Spurious Response Interference

88 dB Minimum

Conducted Local Oscillator

-75 dBm Maximum

Desensitization

55 dB Adjacent and 65 dB Alternate Channel

Operating In-Band RF Input Power Range

-15 dBm Maximum

Operating Out-of-Band RF Input Power Range

-5 dBm Maximum

Physical

Input Power

+8 to +16 VDC (Negative Ground)
1.0A Max @ 12 VDC

Communications Interface

RS-232C, 38.4 kbps or 115.2 kbps, 8 Data Bits,
No Parity

Size

6.5" L x 5.25" W x 1.375" H
165.1mm L x 133.4mm W x 34.9mm H

Weight

Less than 3 lbs

Temperature Ranges

Operating: 0°C to +50°C
Storage: -40°C to +85°C

Connectors

RF Input (Scanner) SMA Female (50 Ohm)
RF Input (GPS) SMB Male (50 Ohm)
Data and Power 9-pin DB-9S Connector
Wired as DCE Device

Certification

