PCTEL® Performance Critical

TALLEY®

PCTEL, INC. 5 YEAR WARRANTY

SeeGull IB*flex*® | Scanning Receiver

LTE FDD
TD-LTE
UMTS [WCDMA/HSPA(+)]
GSM
CDMA
EV-DO
TD-SCDMA
Wi-Fi

In-Building Network Testing

CHALLENGE:

In the past, high performance scanning receivers were built predominantly for outdoor drive testing. Today, 90 percent of wireless communications takes place indoors. Modern in-building networks designed to serve this heavy traffic can be extraordinarily complex. A single in-building network may host multiple wireless operators across multiple technologies and frequency bands—while also providing Wi-Fi access. This added complexity makes accurate and flexible network testing equipment more important than ever. To further complicate matters, traditional scanning receivers are not designed to be carried around and operated with a battery over a long day of walk testing.

SOLUTION:

The SeeGull IB*flex* scanning receiver is designed for in-building and small cell testing. Quickly identify and solve problems that hinder network performance using IB*flex*'s comprehensive testing capability. Conduct walk tests more efficiently with its array of features tailored for indoor use. Its enhanced measurements, including Wi-Fi and evolved Multimedia Broadcast Multicast Services (eMBMS), can be used to improve coverage and capacity, maximize customer satisfaction, and increase the long-term revenue potential of in-building wireless networks. While the design and features set of the IB*flex* are geared towards indoor walk tests, the scanner is fully functional for outdoor or drive test needs without compromising performance and accuracy.

BENEFITS

- Complete projects quickly with extended working windows
- Reduce user fatigue during walk testing for DAS and small cell deployment
- Maximize LTE throughput with a complete set of LTE scanner measurements, including eMBMS
- Choose from multiple OS platforms to collect RF data based on specific needs
- Control and manage the scanner with flexible connectivity
- Store data easily across multiple devices

SeeGull IB*flex* | Features

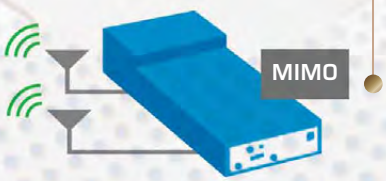
Supports simultaneous data collection across **all major wireless network bands.**

Simultaneous testing across **all major wireless technologies, plus Wi-Fi.**

In-building focus with hot swap battery system, small form factor, lightweight and low power consumption.

Multiple platform support for **Windows® laptop and Android™ tablet or UE.**

Connect with **Bluetooth® or USB** for networking and data protocol.



Dual LTE scanning with **Multiple Input Multiple Output** (MIMO) interface ports.

Collect data with **scanner and UE** in one test with SeeHawk Engage™ integration.

- Minimize testing time with simultaneous use of seven cellular technologies, plus Wi-Fi
- Improve time utilization by discovering all active channels using Blind Scan
- Cover public safety spectrum with extended range from 10 MHz to 6 GHz
- Organize data with time based measurements
- Optimize signal quality by identifying and eliminating quality-robbing interferers
- Enhance customers' multimedia experiences with eMBMS testing

The SeeGull IB*flex* supports LTE FDD, TD-LTE, UMTS [WCDMA/HSPA(+)], GSM, CDMA, EV-DO, and TD-SCDMA, plus Wi-Fi operating bands currently deployed around the world.

SeeGull IB*flex* | Specifications*

LTE FDD and TD-LTE	Measurement Modes	Top N Synchronization Channel Reference Signal, (P-SCH/S-SCH), and Resource Block (Wideband, Subband); Layer 3 Reporting; Top N eMBMS Multicast Reference Signal; Unicast Synchronization Channel Reference Signal and (P-SCH/S-SCH)
	Data Modes	RP, RQ, CINR, Cyclic Prefix, Time Offsets, Delay Spread; MIMO: Condition Number, ECQI, EPUT eMBMS: Area TD, Cluster ID, Frame Configuration
	Channel Bandwidths	1.4 / 3 / 5 / 10 / 15 / 20 MHz
	Max. Number of Channels	24 (16 for eMBMS)
	Receive Modes	SISO; MIMO (2x2)
	Transmit Antenna Configurations	1, 2, 4 (with path measurement)
	Measurement Rates: Sync Channel RS Multicast RS	LTE FDD: 50/sec; TD-LTE: 25/sec eMBMS: 2/sec
	Dynamic Range (CINR): @ 10 / 15 / 20 MHz RS P-SCH/S-SCH Multicast RS	 -26 to +40 dB*** -10 to +18 dB*** -9 to +30 dB***
	Min. Detection Level: RSRP	-140 dBm (RSRP @ 15 MHz)
	Relative Accuracy (CINR): P-SCH/S-SCH & RS	±1 dB
UMTS [WCDMA/HSPA(+)]	Measurement Modes	Top N Pilot, Layer 3 Reporting
	Data Modes	Io, Ec/Io, Aggregate Ec/Io, SIR, Rake Finger Count, Time Offset, Delay Spread
	Channel Bandwidths	200 kHz / 3.84 MHz
	Max. Number of Channels	24
	Measurement Rate**	100/sec (High Speed Mode); 50/sec (High Dynamic Range Mode)
	Top N CPICH Dynamic Range (Ec/Io)	-26 dB
	Min. Detection Level	-120 dBm (High Dynamic Range Mode)
	Relative Accuracy	±1 dB
GSM	Measurement Modes	Color Code, Layer 3 Reporting
	Data Modes	BSIC, C/I, RSSI
	Channel Bandwidths	30 kHz / 200 kHz
	Measurement Rate**	Up to 200 BSIC Decodes/sec
	Dynamic Range	+2 dB C/I ***
	Min. BSIC Detection Level	-110 dBm
	Relative Accuracy	±1 dB
CDMA/EV-DO	Measurement Modes	Top N PN
	Data Modes	Ec, Io, Ec/Io, Aggregate Ec/Io, Pilot Delay, Delay Spread
	Channel Bandwidths	30 kHz / 1.25 MHz
	Max. Number of Channels	24
	Measurement Rate**	CDMA: 25/sec; EV-DO: 18/sec
	Top N PN Dynamic Range, Ec/Io	CDMA: -28 dB***; EV-DO: -18.5 dBm
	Min. PN Detection Level	CDMA: -130 dBm; EV-DO: -120 dBm
	Relative Accuracy	±1 dB
TD-SCDMA	Measurement Modes	Top N Pilot, Layer 3 Reporting
	Data Modes	Sync_DL: Ec/Io, Io, Time Offset, SIR Midamble: Ec/Io, Io, Time Offset, SIR, Midamble Code
	Channel Bandwidths	200 kHz / 1.28 MHz
	Max. Number of Channels	24
	Measurement Rate**	50/sec
	Top N Dynamic Range, Ec/Io	-20 dB***
	Min. Detection Level	-110 dBm
	Relative Accuracy	±1 dB
Wi-Fi	Wireless Adapter	ORiNOCO® USB-9100 (adapter is country specific)
	Radio Configuration	802.11a/b/g/n, 802.11a/b/g/n/ac
	Data Modes	Signal Strength, Noise Level, SNR, Channel Number, Channel Bandwidth, BSSID, Device Name, SSID, Security Protocol, 802.11 Media, Beacon Interval, Channel Utilization, Throughput
	Frequency Range	2.4–2.483 GHz; 5.15–5.85 GHz (subject to country regulations)
	Measurement Rates	9/sec (Typical); 5/sec (Typical) for 802.11ac

** Specifications are for single-technology scanning. ** For Normal mode, measurement rates reduced for Power Save mode. *** @ 90% Signal Detection with <0.1% False Detection Rate.*

SeeGull IB*flex* | Specifications* [continued]

Power Measurements	**RSSI MEASUREMENTS**		
	Measurement Rate (Maximum)	LTE UMTS (WCDMA/HSPA(+)) GSM CDMA EV-DO TD-SCDMA	11,050 ch/sec 4,250 ch/sec 4,250 ch/sec 8,500 ch/sec 8,500 ch/sec 4,250 ch/sec
	Dynamic Range		-120 to -20 dBm @ 30 kHz
	Absolute Accuracy		±1 dB (across Basic RF Input Power Range)
	ENHANCED POWER SCAN (EPS™) MEASUREMENTS		
	Channel Bandwidths		5 kHz to 20 MHz in 2.5 kHz Increments
	Measurement Rate		1,000 MHz/sec @ 5 MHz (Typical)
	Absolute Accuracy		±1 dB (across Basic RF Input Power Range)
	SPECTRUM ANALYSIS MEASUREMENTS		
	Measurement Range		>90 dB
	Measurement Rate (Single Sweep)		>270 MHz/sec
	Accuracy		±1 dB (across Basic RF Input Power Range)
	LTE POWER ANALYSIS MEASUREMENTS (Available for TD-LTE Only)		
	Channel Bandwidths		1.4 / 3 / 5 / 10 / 15 / 20 MHz
	Measurement Rate		20 msec @ 5 MHz
	Accuracy		±1 dB (across Basic RF Input Power Range)
RF Characteristics	Frequency Range		10 MHz – 6 GHz
	Internally Generated Spurious Response		-110 dBm (Typical)
	Conducted Local Oscillator		- 75 dBm Max.
	RF Operating Range:	In-Band	- 15 dBm Max.
	Desensitization:	Adjacent Channel Adjacent Channel Adjacent Channel	>50 dB (CDMA/EV-DO) >55 dB (All Other Technologies) >65 dB
	Safe RF Input Range		≤10 dBm
	Frequency Accuracy		±0.05 ppm (GPS Locked); ±0.1 ppm (GPS Unlocked)
	Intermodulation-free Dynamic Range		2 tone (level 2) @ -40 dBm, 6 GHz, -68 dBc (Typical), -12.6 dBm TOI; @ -25 dBm, 6 GHz, -70 dBc (Typical), 10 dBm TOI
GPS	Type		56 Channel Internal Receiver
	Position Accuracy		±2.5 meters
	Acquisition Time		Cold Start: <30 sec; Hot Start: <2 sec
	Sensitivity (Tracking)		>-150 dBm
Physical	Power Switch		Normal and Power Save
	Maximum Power (+8 to +16 VDC)		18W; Power Save: 10W
	Size	Without Battery Pack With Battery Pack	7.6" D x 4.4" W x 1.55" H (192 mm D x 111.8 mm W x 39.4 mm H) 10.1" D x 4.4" W x 2.1" H (257.6 mm D x 111.8 mm W x 53.1 mm H)
	Weight	Without Batteries With Batteries	2.4 lb (1.1 kg) 3.8 lb (1.7 kg)
	Temperature Range		Operating: 0°C to +50°C; Storage: -40°C to +85°C
	Host Data Communications Interface		USB 2.0, High Speed; Bluetooth
	Data Storage		SD (32 GB)
	Antenna Ports	Wi-Fi Communications Antenna	RF: SMA Female (50Ω); GPS: Male (50Ω) SMB
	Safety (CE)		EN 60950-1
	EMC		EN 301 489-1
	Shock and Vibration		MIL-STD-810G, SAE J1455
	RoHS		Compliant (6/6)

** Specifications are for single-technology scanning.*

Visit www.Talleycom.com for more information.

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Schedule a demo today. Contact LMR@Talleycom.com or call 800.366.2269.

QMS Certified ISO 9001:2008
10MRK6-02 RevD Sept 2016