

PUBLIC SAFETY NETWORK TESTING SOLUTION

Verify and Document Critical Communications Coverage



POLICE



FIRE



EMS



BUSINESS CRITICAL
/ LIFE SAFETY



CELLULAR



WiFi

In-Building Coverage Testing, Commissioning, and Code Compliance

- Streamline grid-based testing to meet NFPA 1221, IFC 510, and local code requirements
- Commission FCC-compliant Business Critical and Emergency Responder Communications Enhancement Systems (ERCES)
- Simultaneously test signal quality across multiple LMR, cellular, and WiFi networks
- Verify uplink and downlink LMR performance
- Automatically generate real-time pass/fail results and printable reports



MADE IN THE USA
of U.S. and imported parts



Automated Testing Saves Time & Money

PREPARE. MEASURE. REPORT. IT'S THAT EASY.

Replace manual processes and ensure critical communications coverage with the PCTEL® Public Safety Network Testing Solution. Our streamlined grid-based testing tool makes it easy to meet or enforce local building codes for Emergency Responder Communications Enhancement Systems (ERECs). The simple pass/fail grading system is also a great way to ensure coverage for cellular, WiFi, life safety, and business critical radio networks.



1 PREPARE

Create grids and set up tests

- Schedule uplink testing with kit at radio site or with SeeHawk™ Monitor (optional)
- Prepare test plans remotely in SeeHawk™ Central cloud platform (optional)
- Import a floorplan, add and adjust grids
- Identify test locations and critical test points
- Select frequencies
- Configure pass/fail criteria



▲ Automatically identify test locations with easy-to-use grid creation tools that rotate to fit your floorplans.



Planning Tool

SeeHawk® Touch

▲ Planning tool integration enables you to easily import floor plans and export test data.

2 MEASURE

Execute tests and grade by threshold

Tap to test downlink | Tap and talk to test uplink | View pass/fail results in real time

Channel: All
Floor Result: PASS
Number of areas tested: 21 (100%)
Number of areas passed: 21 (100%)
Number of critical points tested: 1
Number of critical points passed: 1

Grid #	Area #	Channel	Band	Frequency (MHz)	DL Power (dBm)	DL SINR (dB)	DL BER (%)	DL SINR (%)	DL Signal Power (dBm)	DL UL Power (dBm)	UL SINR (dB)	UL BER (%)	UL SINR (%)
01	01	8330	88.14 Upper 700	743.000000	-79.79	6.91			-108.12	4.6	-45.00	28.00	
01	01	1	WiFi-band	2412.000000	-87.00								
01	01	1	300 p25 germant	380.120000	-64.03	27.21	0.00			4.7	-49.00	28.00	0.00
01	01	1	EMR	402.200000	-119.36					4.8	-42.00		
01	01	1	TETRA	879.170000	-103.94					4.5	-55.00		

Office Device: 081703025, DC Power Level: 92%

Automated, objective downlink signal quality measurements (white)

Automated, objective uplink signal quality measurements (white)

• LMR (P25, DMR, TETRA, etc.)
• WiFi
• LTE/FirstNet

- Measure all bands, technologies, and channels simultaneously
- Objectively measure downlink and uplink signal quality (BER and SINR)
- Test channel power for any technology
- Add manually collected Delivered Audio Quality (DAQ) and uplink measurements for automated reporting

Estimated DAQ 3.4 Equivalents*

Radio Type	BER (%)	SINR (dB)
Analog FM LMR +/- 2.5 kHz (12.5 kHz)	N/A	26
Analog FM LMR +/- 4 kHz (25 kHz)	N/A	22
P25 C4FM (IMBE) wide IF (12.5 kHz)	2	16.2
P25 C4FM (IMBE) narrow IF (12.5 kHz)	2	17.7
P25 C4FM (VSELPL) (12.5 kHz)	1.4	19
P25 CQPSK (IMBE) LSM 9.6 kb/s (12.5 kHz)	2	17
P25 CQPSK (IMBE) WCQSK 9.6 kb/s (12.5 kHz)	2	16.8
P25 H-DQPSK (12 kb/s), (AMBE+2) DL	2.4	16.4
P25 H-CPM (12 kb/s), (AMBE+2) UL	2.6	18.7
DMR 2-slot (AMBE+2) (12.5 kHz)	2	15.6

TETRA: Contact radio manufacturer as sensitivity varies by deployment configuration.

*Source: Projected Channel Performance Criterion (CPC) from TIA Telecommunications System Bulletin 88.1-E (November 2018), "Wireless Communication Systems Performance in Noise and Interference-Limited Situations Part 1: Recommended Methods for Technology-Independent Narrowband Performance Modeling."

“We did the coverage testing in about 25% of the time planned.”

– Jason Chambers, Day Wireless Area Service Manager

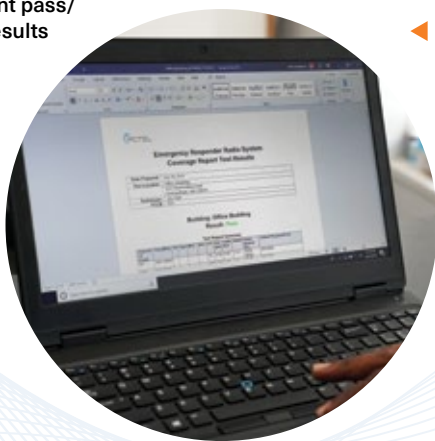
3 REPORT

Auto generate real-time results and submittable reports with one tap

- Synchronize uplink data from uplink test kit at radio site or from SeeHawk™ Monitor Platform Manager
- Automatically upload to SeeHawk™ Central cloud platform for collaboration and reporting
- Automatically incorporate uplink and equipment room test results
- Save printable reports within minutes
- Customize pass/fail criteria on multiple reports to meet local government or business requirements

Building Result	
PASS	
Number of floors tested:	04
Number of areas tested:	472
Number of critical points tested:	0
Area Pass Criteria %:	95%
Critical Points Pass Criteria %:	99%
Result Calculation:	By area per floor
CHANNELS RESULT	
Floor Plan	Result
F1P 28-420	Pass
F1P 27-420	Pass
F1P 26-420	Pass
F1P 25-420	Pass
F1P 24-420	Pass
F1P 23-420	Pass
F1P 22-420	Pass

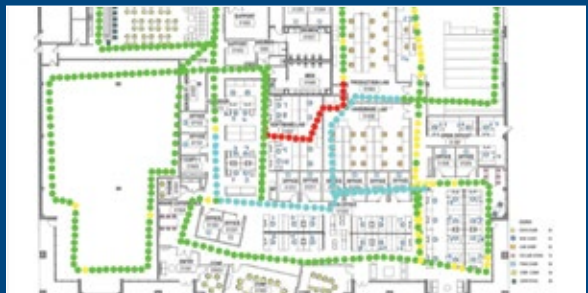
Instant pass/fail results



Save as Excel or Word document

GET EVEN MORE DONE, FASTER

PCTEL's Public Safety Network Testing Solution includes additional tools that streamline testing throughout your project lifecycle.



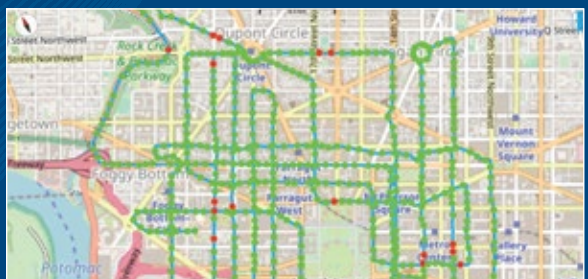
Indoor walk testing: detailed data for DAS and small cell network design, baseline testing and optimization



Spectrum Analysis mode for troubleshooting and equipment room work, right on your tablet



Antenna Verification Tool (optional): fast troubleshooting during the DAS and small cell commissioning process



Outdoor mode (optional): drive and walk testing for cellular and LMR networks with automatic GPS mapping

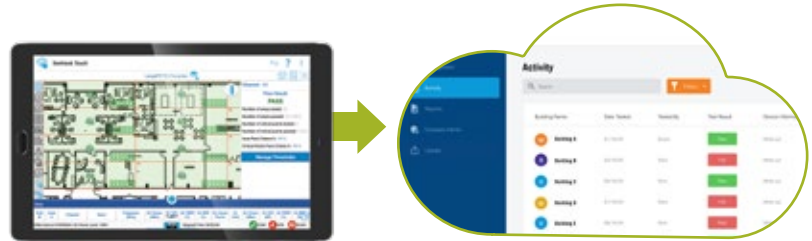
SeeHawk™ Central

CLOUD REPORTING AND AUTOMATION PLATFORM FOR GRID-BASED NETWORK TESTING

SeeHawk Central extends the capabilities of SeeHawk® network testing solutions with time-saving workflows and anytime, anywhere access to all your grid-based data.

Automated Data Upload

- Seamless integration with SeeHawk® Touch
- Improves efficiency of field technicians
- Instant data and report access in the cloud



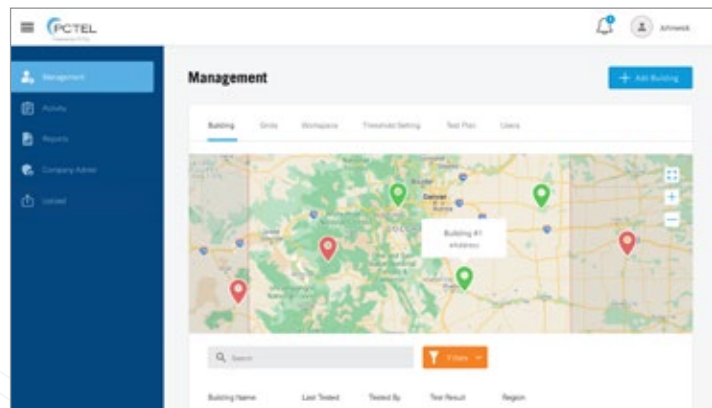
▲ Data upload from SeeHawk® Touch to SeeHawk Central

Cloud-Based Data Repository

- Centralized access to all your organization or jurisdiction's data
- Historical data viewing
- Easy-to-use map-based interface

Fast, Secure Data Sharing

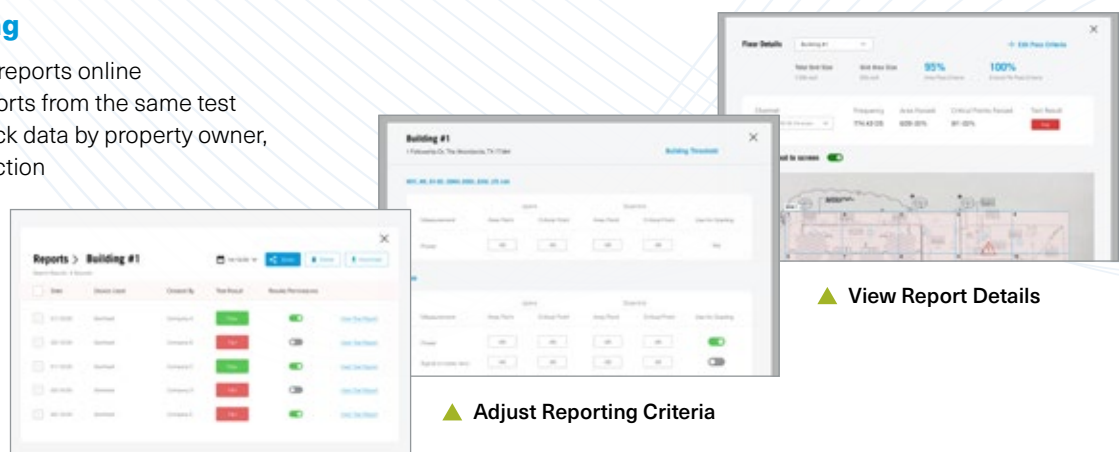
- Share instantly with customers, jurisdictions or across teams
- Secure individualized logins for multiple stakeholders



▲ SeeHawk Central

Instant Reporting

- View and generate reports online
- Create multiple reports from the same test
- Summarize and track data by property owner, company, or jurisdiction



▲ View Report Details

▲ Adjust Reporting Criteria

▲ Access Historical Data

SeeHawk™ Central User Benefits

With SeeHawk Central, it's easier to test, manage, share data, and evaluate in-building critical communications, WiFi, and cellular networks.

System Integrators and Testing Services

- Save time and improve workflows
- Securely share data with customers, team members, and jurisdictions
- Manage all of your tests in one place
- Impress customers with value-added reporting
- Generate more business



Building Owners

- Accelerate building code approvals
- Track retesting dates
- Verify critical communications, WiFi, and cellular coverage
- Manage all nationwide properties in one platform
- Find service providers in your area



AHJs (Authorities Having Jurisdiction)

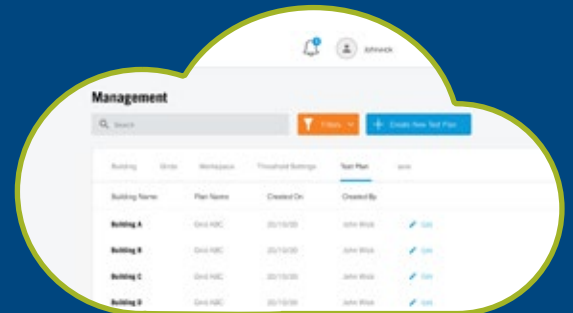
- Simplify code enforcement
- Access all in-building grid test data in one platform
- Track all of your jurisdiction's buildings
- View data and summary reports in a specialized dashboard
- Integrate with your existing systems



WORKFLOW AUTOMATION

Manage Your Team Efficiently with SeeHawk Central

- Set up tests centrally for remote SeeHawk® Touch devices
- Standardize testing methods
- Connect the field and back back office



Critical Communications Testing: Public Safety, Life Safety, Business Critical

PCTEL's Public Safety Network Testing Solution combines the precision measurement capabilities of the IBflex® scanning receiver with our tablet-based SeeHawk® Touch software. Choose the kit and options that meet your testing needs.



"I'm able to do my on-site pre-walks in half or even one-third of the time as before when I had to do a more manual walk through the building to record every single frequency."

– Joseph Rohlic Program Manager and Director of Construction Services at Radio One

Kits	IBflex® Scanning Receiver	SeeHawk® Touch Software	Accessories
	Lightweight multi-band, multi-technology radio receiver with Bluetooth® connectivity	Data collection, spectrum analysis, and reporting tools on an Android™ tablet	
Public Safety Network Testing Solution – In-Building P25, DMR, or TETRA	<ul style="list-style-type: none"> Measure all frequencies 10 MHz - 1 GHz P25, DMR, or TETRA downlink signal decoding 5-Year Warranty 	<ul style="list-style-type: none"> Grid test radio channel power (any technology) Grid test P25, DMR, or TETRA signal quality (SINR and BER) Grid test uplink (2nd kit with uplink or SeeHawk™ Monitor system required at radio site) Grid test noise channel power Equipment room test Indoor walk test Signal Analyzer 	<ul style="list-style-type: none"> Android™ tablet Battery pack Back or side pack Walk test antennas Carrying case A/C charger
Public Safety Network Testing Solution – In-Building P25 & ATT-VZW-TMO	All P25 kit features, plus: <ul style="list-style-type: none"> Decode 4G LTE All Verizon, T-Mobile and AT&T LTE bands 	All P25 kit features, plus: <ul style="list-style-type: none"> Grid test LTE signal quality 	
Public Safety Network Testing Solution – P25 & Cellular	All P25 kit features, plus: <ul style="list-style-type: none"> All cellular bands 10 MHz - 6 GHz Decode all 2G, 3G and 4G cellular technologies 	All P25 kit features, plus: <ul style="list-style-type: none"> Grid test LTE and UMTS/WCDMA signal quality Outdoor mode for drive test Antenna Verification Testing (AVT) 	All P25 or TETRA kit features, plus: <ul style="list-style-type: none"> Vehicular rooftop antennas Car charger
P25 Uplink (add-on option for 2nd kit connected to radio site)	<ul style="list-style-type: none"> Single P25 traffic channel uplink signal decoding Uplink channel power (any technologies, multiple channels) 	<ul style="list-style-type: none"> Test P25 uplink traffic channel signal quality (SINR and BER) – one channel per kit Automatically synchronizes measurements with grid-based testing and reporting on primary kit 	
Additional options	<ul style="list-style-type: none"> Decode DMR, P25, TETRA, WiFi, 5G NR, NB-IoT, LTE-LAA, or LTE MIMO technologies 	<ul style="list-style-type: none"> Additional software licenses for planning and reporting 	<ul style="list-style-type: none"> Certification training CW transmitter Additional batteries

Solving Complex Wireless Challenges

PCTEL is a leading global provider of wireless technology solutions, including purpose-built Industrial IoT devices, antenna systems, and test and measurement products. Trusted by our customers for over 25 years, we solve complex wireless challenges to help organizations stay connected, transform, and grow.

For more information on Public Safety Network Testing, contact your sales representative or visit pctel.com/public-safety-testing-solution



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