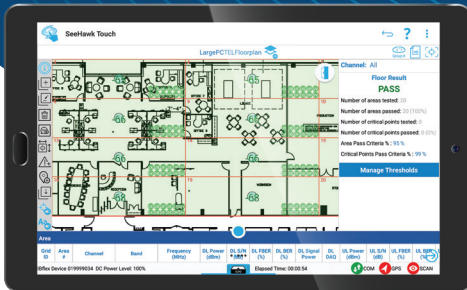# PUBLIC SAFETY NETWORK TESTING SOLUTION

Verify and Document Critical Communications Coverage

Grid-Based Testing and Reporting

- Ensure in-building coverage for First Responders and Business Critical communications
- Simultaneously test coverage and signal quality across multiple LMR, cellular, and WiFi networks
- Comply with NFPA 1221, IFC 510, and local code requirements for grid testing
- Automatically generate real-time pass/fail results and printable reports
- Streamline the building approval process

PCTEL

AUTOMATED TESTING SAVES TIME & MONEY

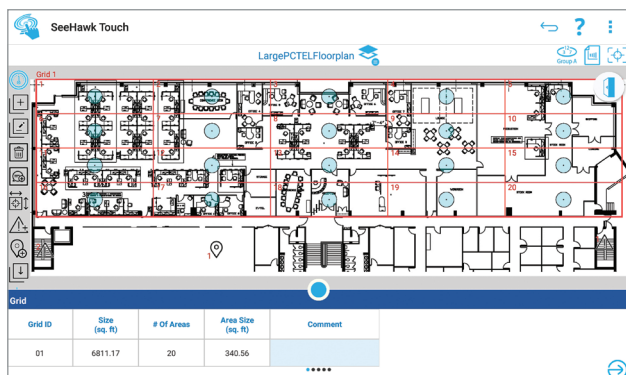## Prepare. Measure. Report. It's That Easy.

Replace manual processes and ensure critical communications radio 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 Radio Responder Coverage (ERRC). 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

- Import a floorplan
- Add grids per floor
- 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.

Floorplans, Design →
← Measurement Data

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 noise channels, radio channels, bands and technologies

View pass/fail results in real time

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

Automated, objective signal quality measurements

Incorporate Delivered Audio Quality (DAQ) and uplink measurements for automated reporting

POLICE   FIRE

EMS   BUSINESS CRITICAL / LIFE SAFETY

CELLULAR   WiFi

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 (VSELP) (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."
>
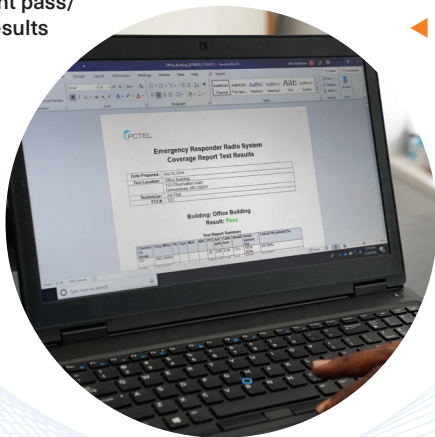> *– Jason Chambers, Day Wireless Area Service Manager*

③ REPORT

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

- Generate reports in real-time or on demand, by building, by floor, or by channel
- Automatically incorporate equipment room test results
- Save printable reports within minutes
- Customize pass/fail criteria to meet local government or business requirements
- Create multiple reports from one test
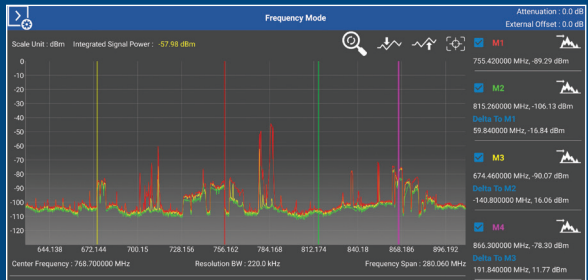

▲ Instant pass/ fail results

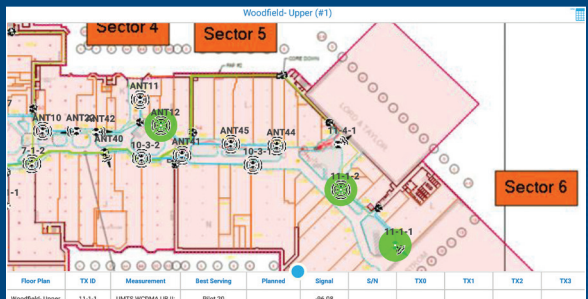◄ Save as Excel or Word document

GET EVEN MORE DONE, FASTER

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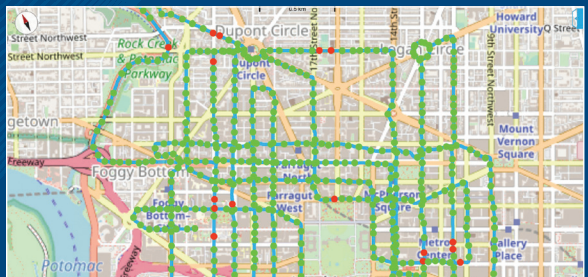

▲ Indoor walk testing: detailed data for DAS and small cell network design, baseline testing and optimization

▲ 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

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

PCTEL's Public Safety Network Testing Solution combines the precision measurement capabilities of the IB*flex*® 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	IB*flex*® Scanning Receiver	SeeHawk® Touch Software	Accessories
	Lightweight multi-band, multi-technology precision radio receiver with Bluetooth® connectivity	Data collection, spectrum analysis, and reporting tools on an Android™ tablet	
Public Safety Radio: P25, DMR, or TETRA	• Measure all frequencies 10 MHz - 1 GHz • P25, DMR, or TETRA signal decoding • 5-Year Warranty	• Grid test radio channel power (any technology) • Grid test P25, DMR, or TETRA signal quality (SINR and BER) • Grid test noise channel power • Equipment room test • Indoor walk test • Signal Analyzer	• Android™ tablet • Battery pack • Back or side pack • Walk test antennas • Carrying case • A/C charger
Public Safety Radio P25 plus FirstNet ATT/Verizon LTE	All P25 kit features, plus: • LTE Layer 3 • FirstNet Band class 14 and all Verizon, ATT LTE bands	All P25 kit features, plus: • Grid test LTE signal quality • Outdoor mode for drive test • Antenna Verification Testing (AVT)	All P25 kit features, plus: • Vehicular rooftop antennas • Car charger
Public Safety Radio plus all cellular bands	All P25 or TETRA kit features, plus: • Decode all 2G, 3G and 4G cellular technologies • All cellular bands 10 MHz - 6 GHz	All P25 or TETRA kit features, plus: • Grid test LTE and UMTS/WCDMA signal quality • Outdoor mode for drive test • Antenna Verification Testing (AVT)	All of the above, plus: • Vehicular rooftop antennas • Car charger
DMR, P25, or TETRA add-on option	• DMR, P25, or TETRA signal decoding	• Grid test DMR, P25, or TETRA signal quality (SINR and BER)	
WiFi add-on option	• 2.4 and 5 GHz WiFi bands	• Grid test WiFi RSSI	
Additional options	• 5G New Radio, NB-IoT, LTE-LAA and LTE-MIMO	• Additional software licenses for planning and reporting	• Certification training • Additional batteries

Solving Complex Wireless Challenges

PCTEL is a leading global provider of wireless technology, including purpose-built Industrial IoT devices, antenna systems, and test and measurement solutions. 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

PCTEL

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