

WX90 User Manual

Wi-Fi Expert Test Toolkit



P/N D07-00-178P RevA00

Please direct all questions to your local VeEX® Sales Office, Representative, or Distributor. Or, contact VeEX technical support at www.veexinc.com.

No part of this user manual may be reproduced, translated into a foreign language, or be transmitted electronically without prior agreement and written consent of VeEX Incorporated as governed by International copyright laws. Information contained in this manual is provided "as is" and is subject to change without notice. Trademarks of VeEX Incorporated have been identified where applicable, however the absence of such identification does not affect the legal status of any trademark.

Copyright ©2026 VeEX Incorporated. All rights reserved.

Table of Contents

General Information	6
Customer Support	6
Product Technical Support Contact Information	6
Warranty	7
Patent Information	7
Documentation Conventions	7
Safety Information	8
Lithium-ion Battery Precautions	8
Optical Connectors	9
Electrical Connectors	9
Introduction	10
Key Features	11
Getting Started	12
Ports	12
Key Platform Elements	13
Battery	15
Charging the battery	15
Battery Safety Precautions	15
System Features & Settings Menu	16
Date and Time	19
About/SoftwareOptions	21
Activate Options/License	21
Storage	21
Global Settings	23
File Manager - Results, Profiles & Screenshots	25
NoApp® Contactless Results Transfer via NFC and QR	28
Enable QR Code Generation on Test Set	29
Using NFC Wireless Transfer	30
Cloud Services	31
Registration Requirements	31
Registering the Test Set	31

Unregistering the Test Set	32
Uploading Results to R-Server (from Cloud Services App)	32
Uploading Results to R-Server (from Files App)	33
Downloading Profiles from R-Server	34
Downloading and Installing Software from R-Server	34
Remote Access (EZ Remote/Web Remote)	36
EZ Remote	36
Connect Test Set to the EZ Remote Service	36
Connect to the Remote Test Set	38
Web Remote	39
Connect to Test Set via Web Remote	39
Bluetooth	40
Test Applications	41
Wi-Fi Test Application	41
AP Scan	42
AP Graph	45
Signal Level View	46
Channel View	47
Client Scan	49
Test Wi-Fi Speed	50
Wi-Fi Heatmap	51
Configuration	51
Map Source	53
Recalibration	56
Access Points	57
Operation	58
Options	59
Measurement Views	59
Wi-Fi Heatmap Test Report	60
Multi-Room (Site Survey)	61
Configuration	61
Display Mode	61
Measurement Options	63

Specify AP Location (optional)	65
Select Test Location (required)	66
Start the Multi-Room Test	68
Test Results Options	69
Multi-Room Test Report	70
Spectrum Analyzer	71
Levels View - Live Signal Snapshot	72
Density View - Channel Usage Over Time	72
Waterfall View - Signal Behavior Over Time	73
Test Application Settings and Functions Menu	73
Ethernet Settings/Connection	76
Internet Access Speed Test	79
Perform Internet Access Speed Test	79
Speed Test Configuration	81
Speed Test Results	82
iPerf/V-PERF TCP/UDP Speed Test	84
Key Features	84
Access iPerf3/V-PERF Test	85
iPerf3/V-PERF Configuration	85
iPerf3/V-PERF Throughput (Speed Test) Results	90
iPerf3 Results (Wi-Fi)	90
V-PERF Results (RJ45)	91
Ping Test	93
Software Update Process	95
Using a Web Browser	95
Using USB Memory Sticks	96
Using R-Server	97
Certifications and Declarations	99
About VeEX	101
Customer Care	101

General Information

This user manual is suitable for novice, intermediate, and experienced users and is intended to help use the features and capabilities of VeEX Inc. products successfully. It is assumed that the user has basic computer experience and skills, and is familiar with telecommunication and other concepts related to VeEX Inc. product usage, terminology, and safety.

Every effort was made to ensure that the information contained in this user manual is accurate. Information is subject to change without notice and we accept no responsibility for any errors or omissions. In case of discrepancy, the web version takes precedence over any printed literature. The content in this manual may vary from the software version installed in the unit. For condition of use and permission to use these materials for publication in other than the English language, contact VeEX Inc.

© Copyright VeEX Inc. All rights reserved. VeEX, Sunrise Telecom, Digital Lightwave, Air Expert, CaLan, FaultScout, Fiberizer, MPA, MTT, RXT, VeGrade, VeriPHY, and VeSion, among others, are trademarks or registered trademarks of VeEX Inc. and/or its affiliates in the USA and other countries. All trademarks or registered trademarks are the property of their respective companies. No part of this document may be reproduced or transmitted electronically or otherwise without written permission from VeEX Inc.

This manual describes software and/or a device that uses software either developed by VeEX Inc. or licensed by VeEX Inc. from third parties. The software is confidential and proprietary of VeEX Inc. The software is protected by copyright and contains trade secrets of VeEX Inc. or VeEX's licensors. The purchaser of this device and/or software, downloaded or embedded, agrees that it has received a license solely to use the software as embedded in the device and/or provided by VeEX Inc., and to use it solely as intended and described in this manual. The purchaser is prohibited from copying, reverse engineering, decompiling, or disassembling the software.

Customer Support

For more technical resources, visit www.veexinc.com.

For assistance or questions related to the use of this product, go to www.veexinc.com/company/contactus. You can also call or e-mail our customer care department for customer support. Before contacting our customer care department, have the product model, serial number, and software version ready. Please locate the serial number on the back of the chassis. Please provide this number when contacting VeEX Inc. customer care.

Support hours may vary depending on the product.

Product Technical Support Contact Information

Hours: Support is generally available 8:00 AM to 8:00 PM, Eastern Standard Time, Monday to Friday.

Phone: +1 510 651 0500

E-mail: customercare@veexinc.com

Warranty

For warranty information on VeEX Inc. products, go to www.veexinc.com.

To activate the warranty, please register your product at www.veexinc.com/Support/ProductRegistration.

Patent Information

VeEX Inc. product hardware and software may be protected by one or more patents on file with the United States Patent Office.

Documentation Conventions

Icons used in this manual:

	Marks a helpful tip (action or method), which can save time and improve usability of the product.
	Provides important information needed to use this product and avoid mis-steps.
	Cautions against an action or inactivity, which can hinder productivity.
	Strongly warns against a condition, an action, or inactivity which can lead to a health hazard, injury, equipment damage, data loss, and/or financial losses.
	Stop and read before continuing.

Safety Information



Safety precautions should be observed during all phases of operation of this instrument. The instrument has been designed to ensure safe operation; however, please observe all safety markings and instructions. Do not operate the instrument in the presence of flammable gases or fumes or any other combustible environment. VeEX Inc. assumes no liability for the customer's failure to comply with safety precautions and requirements.

Lithium-ion Battery Precautions

Lithium-ion (Li-ion) battery packs are compact and offer high capacity and autonomy, which make them ideal for demanding applications, like providing long lasting power to portable test equipment. For safety reasons, due to their high energy concentration, these batteries packs and products containing them must be used, charged, handled, and stored properly, according to the manufacturer's recommendations.

Li-ion battery packs contain individual Li-ion cells as well as battery monitoring and protection circuitry, sealed in its plastic container that shall not be disassembled or serviced.

The test set unit's battery pack is also fitted with a safety connector to prevent accidental short circuits and reverse polarity.

- Always charge the unit's battery pack inside the test platform battery bay using the AC/DC adapter supplied by VeEX.
- Do not charge or use the battery pack if any mechanical damage is suspected (shock, impact, puncture, crack, etc).
- Do not continue charging the battery if it does not recharge within the expected charging time.
- Storage: For long term storage, the battery pack should be stored at 20°C/68°F (room temperature), charged to about 30 to 50% of its capacity. Spare battery packs should be charged and used at least once a year to prevent over-discharge (rotate them regularly).
- It is recommended to charge and use battery packs at least every three months. Battery packs shall not go without recharging (reconditioning) for more than six months.

- After extended storage, battery packs may reach a deep discharge state or enter into sleep mode. For safety reasons, Li-ion batteries in deep discharge state may limit the initial charging current (pre-charge) before starting their regular fast charging cycle. The pre-charging state may take several hours.
- Air transportation of Li-ion batteries is regulated by United Nations' International Air Transportation Association (IATA) Dangerous Goods Regulations and by country-specific regulations. Please check local regulations and with common carriers before shipping Li-ion battery packs or products containing relatively large Li-ion battery packs.

Optical Connectors

The test sets display a laser warning icon when the laser source is active to alert the user about a potentially dangerous situation. It is recommended to:

1. Deactivate the laser before connecting or disconnecting optical cables or patchcords.
2. Never look directly into an optical patchcord or an optical connector interface (SFP+) while the laser is enabled. Even though optical transceivers are typically fitted with Class 1 or 2 lasers, which are considered eye safe, optical radiation for an extended period can cause irreparable damage to the eyes.
3. Never use a fiber microscope to check the optical connectors when the laser source is active.

Electrical Connectors

Telephone lines may carry dangerous voltage. Always connect the electrical test ports to known test interfaces which carry low level signals.

Introduction

The WX90 delivers robust Wi-Fi testing with a spectrum analyzer spanning 2.4, 5, and 6 GHz. Its Internet QoE validation empowers technicians to quickly diagnose, optimize, and maintain high-speed Wi-Fi networks, making it essential in both residential and enterprise environments.

- Optimized for field technicians installing, verifying, troubleshooting, and maintaining high-speed Wi-Fi networks
- Robust and ergonomic handheld design for field environments
- Large and bright high-resolution color display for easy viewing
- Fast boot-up time
- Intuitive graphical user interface (GUI)
- Easy to use and responsive capacitive touchscreen with gesture support
- Large internal data storage for test results
- Built-in Wi-Fi connectivity
- Built-in Near Field Communication (NFC) transceiver, compatible with NoApp® cloud service, for immediate test result transfer and sharing
- Cloud-based NoApp service (included) allows for data transfer via mobile phone or tablet. Secured and always up to date. No installation or updates required.
- Generate and save test results in HTML file format and export to PDF
- Built-in web access server for remote control access
- USB-C PD interface for charging, memory sticks and LAN adapters
- Rechargeable Li-Ion battery includes a low voltage alarm and an auto-off function, providing one full day of typical operation and testing

Key Features

- Comprehensive and easy-to-use: Provides reliable installation procedures, full performance testing and end-user experience validation under traffic load
- Internet Speed Testing: Support Ookla® Speedtest® and iPerf for robust internet performance validation
- Built-in 1000BASE-T Port: Enables 1G speed testing, network performance validation, and PoE (Power over Ethernet) detection
- Advanced Wi-Fi Testing: Supports Wi-Fi (802.11 a/b/g/n/ac/ax or 802.11 a/b/g/n/ac/ax/be, hardware dependent) across 2.4, 5, and 6 GHz bands, including scan, coverage verification, and speed tests
- Discovers networks and displays Access Points, Clients, and Channels in table or graphical format
- Identifies SSID, BSSID, channels, security, data rates, signal/noise levels, associated clients and more
- Coverage issues through signal and noise level tracking
- Analyzes channel usage by utilization and number of APs
- Detects both associated and non-associated Wi-Fi clients
- Optional Spectrum Analyzer: Identifies Wi-Fi and non-Wi-Fi interference sources for 2.4, 5, and 6 GHz bands
- Customizable Test Profiles: Allows for tailored profiles to match various services and test points
- Multi-User Support: Accommodates multiple user profiles for shared test set use

Getting Started

Ports



Spectrum: Spectrum analyzer for 2.4, 5, and 6 GHz to easily detect and identify both Wi-Fi and non-Wi-Fi interference (Factory-installed hardware option).

Ethernet: RJ45 10/100/1000BASE-T test port for wired Internet access speed test (QoE) validations.

Wi-Fi: Built-in 802.11 a/b/g/n/ac/ax (2.4, 5 and 6 GHz) wireless interface for coverage verification and Internet access speed test (QoE) validations.

Key Platform Elements



1. **Connector Panel** - Test Port.
2. **LCD Screen** with capacitive touchscreen.
3. **Power Button** - Press and hold to turn ON. Press and hold to turn OFF.
4. **USB Type-C Port** - For DC charging and optional external dongles (e.g., memory stick, Ethernet adapter).
 - Requires USB-C PD (Power Delivery) compatible charger and cable. **Use the charger and cable supplied by VeEX!** The smart USB-C PD charger must be capable of delivering 15 VDC and up to 3.0 Amps. See [Can Any USB-C Charger be Used to Charge a V90-series Test Set?](#) for more information on chargers.

5. **Smart NFC Tag** – Hold a smartphone close to the Near Field Communication transceiver to quickly transfer information from the test set to the web browser. Refer to ["Using NFC Wireless Transfer" on page 30](#).
6. **System & Test Features Menu** - Swipe down from the top of the screen to reveal system information, configuration and access the test set's main test features.
7. **Test Application Functions, Options & Settings** – Swipe up from the bottom of the screen to reveal the active Test Application's functions and settings.
8. **Previous Page** - Swipe right to go back to the previous page.
9. **Next Page** - Swipe left to go to the next page available.
10. **Screen Capture** - Swipe down, from the middle of the screen, using three fingers to capture a screenshot of the content currently being displayed. The image is saved in the File Manager with a generic timestamped (YYYYMMDD_hhmmss) name.

Wi-Fi® & Bluetooth® - Built-in hardware for Wi-Fi and Bluetooth management and remote access. Optional built-in hardware for Wi-Fi testing. Refer to the datasheet for further details on versions and bands supported.

Battery

The testers are equipped with smart rechargeable Li-ion batteries. Refer to the product data sheet for specific battery information related to the unit. The battery will be partially charged upon delivery, so it is recommended to charge the battery fully before use. Please charge the battery at room temperature to preserve its life and to obtain maximum charge. The battery is charged during operation provided the unit is connected to the AC Mains using the supplied AC adapter.

The battery status is shown on the main screen:



Battery Status - Displays current battery charge level, charging status, time to reach full charge or remaining operation time (under the current load conditions). A small power status icon is also displayed on the top bar.

- A power LED above the screen indicates whether the test set is ON (green), OFF with charger plugged in (orange), or OFF without charger plugged (off).
- In Low Battery condition, the test set will start beeping warning that it needs to be recharged. If a charger is not plugged in on time, the test set will power itself OFF.

Charging the battery

Charge the battery by connecting the **VeEX Inc.-supplied** USB-C PD charger and AC cable to the USB-C port on the side of the unit.

The smart USB-C PD (Power Delivery) charger and cable that VeEX supplies with the tester are capable of handling up to 45W (15V @ 3A) and have the required PD communication channel. The USB-C chargers shipped with VeEX products may come with a permanently attached USB-C cable, to avoid cable mismatch or misplacing them.



Use the charger and cable supplied by VeEX! The warranty does not cover the use of any charger or cable other than one provided by VeEX Inc. for the test set. Using unauthorized accessories will void the warranty.

Battery Safety Precautions

For more information on safety precautions for batteries, see [Lithium-ion Battery Precautions](#) in [Safety Information](#).

System Features & Settings Menu

Swipe down from the top to reveal the System, Settings & Tools menu. Swipe left or right to show more options and information. Swipe up from the bottom, or tap the Swipe-up icon , to close.



 **Date & Time** - Displays current date and time. Tap to adjust the system's date, time, time format, time zone, etc.

 If connected to R-Server™, the Date and Time settings may be disabled, since R-Server provides a centralized/common time of day (ToD) to the test sets.

 **About** - Provides test set's serial number, information, software version, licenses/options, and system's internal storage details.

 **Global Settings** - General system configuration, including language, Telnet/SSH permission, default setting for [NoApp® QR code generation](#), and [Cloud Services \(R-Server\)](#).

 **Calculator** - Calculator application.

 **Screen Copy** - The screenshot (screen capture) function saves the content of the screen (being displayed prior to opening the System Menu) into the [File Manager](#), in PNG format, and by file type. This is similar to using the three-finger swipe down gesture. The image is stored in the File Manager with a YYYYMMDD_hhmmss naming convention.



Screen Lock - Touch this button to LOCK the touchscreen and prevent accidental operations. When locked, the screen will be grayed out, except for an  **Unlock** button (location of button differs). Touch and hold the  Unlock button to UNLOCK the touchscreen.



Cloud SaaS - Provides access to R-Server cloud services. VeSion® R-Server provides access to (optional) advanced cloud/hosted service that manages test set fleets, test results, data aggregation and analysis, workflow and job closing, reporting, asset management, software updates and protection. To enable uploads to R-Server, go to Global Settings.



File Manager - Access and manage test results, test profiles (configurations), and screenshots (screen capture image files). Files can be renamed, deleted, locked, shared, uploaded to R-Server or transferred to/from USB memory sticks.



EZ-Remote™ - Remote control cloud service (basic service provide free of charge). Enable/Disable remote access (Internet access required for the test set and the controlling PC, tablet or smartphone).

- Press the **Connect** button to register the test set on the EZ Remote server (free cloud service) to make it available for others to use, from remote locations, using the web browser on any PC, tablet or smartphone (no installation required).
- Scan the QR code, with a smartphone or tablet, to send an **Email** of **SMS/TXT** notification with instructions. A direct link will be included in the messages, along with any comments and passwords edited into them, so remote users just have to click (or manually go to <https://ezremote.veexinc.net> and enter the test set's Serial Number and Password). The default password is "pass1".



Wi-Fi® - Scan for local 802.11 b/g/n/ac/ax access points (AP) to establish wireless Ethernet/IP connectivity. The test set's IP address will be displayed on the bottom-left corner of the screen.



Bluetooth® - Bluetooth transceiver ON/OFF and pairing. A small Bluetooth indicator icon is also displayed on the top bar, when Bluetooth is ON and the test set is discoverable. Initiate the pairing process from the computing device (PC/tablet/phone) and use the last four digits of the S/N as PIN.



Battery Status - Displays current battery charge level, charging status, time to reach full charge or remaining operation time (under the current load conditions). A small power status icon is also displayed on the top bar.

- A power LED above the screen indicates whether the test set is ON (green), OFF with charger plugged in (orange), or OFF without charger plugged (off).
- In Low Battery condition, the test set will start beeping warning that it needs to be recharged. If a charger is not plugged in on time, the test set will power itself OFF.



Brightness Control - Touch the screen (LCD) backlight button and drag it UP and DOWN to increase and decrease the backlight intensity. By default, it is set to 50%, which should be good for indoor environments. Increase the intensity for outdoors use or decrease it for darker rooms (e.g., equipment rooms) or to extend the battery autonomy.



Ethernet - Configure the local (wired) Ethernet connection for the optional 1000BASE-T adapter (USB-C dongle). The test set's IP address will be displayed on the bottom-left corner of the screen.



Software Upgrade - Copy the valid software update file ending in .tar.gz or .tar.xz to the root directory of a USB drive. Once the unit detects the the update file on the inserted USB memory stick, the Upgrade icon becomes active. The system automatically identifies the newer version and upgrades to it when **Upgrade** is clicked.



PIN Lock - Enables or disables the six-digit PIN Lock, which prevents the test set from being used until the PIN is entered at boot-up. The PIN can only be changed by the owner or primary user, or reset by VeEX Inc. The test set will not obtain a network IP address until it has been unlocked. (This feature requires a software license.) See [Boot Up PIN Code \(Lock/Unlock\)](#) for more information.



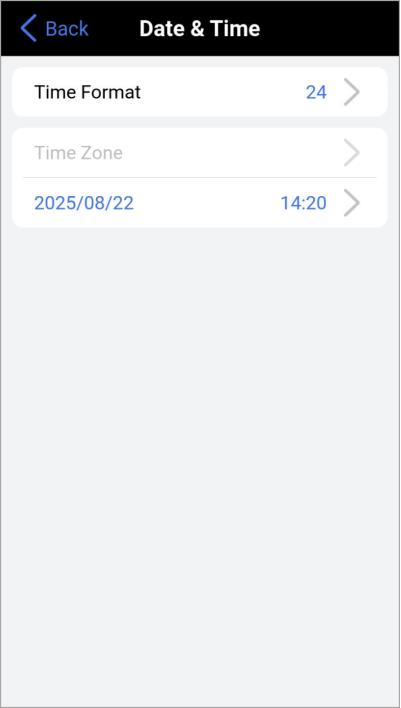
VeEX is not responsible for any loss of productivity, loss of use, incurred costs, loss of revenue, inconveniences or any other collateral damages that may be caused by lost PINs or misuse of this feature. It is the sole user/owner's responsibility.

Date and Time



Select the **Date/Time** widget to reveal the Date & Time screen and configure settings for the date, time, time format, and time zone, etc.

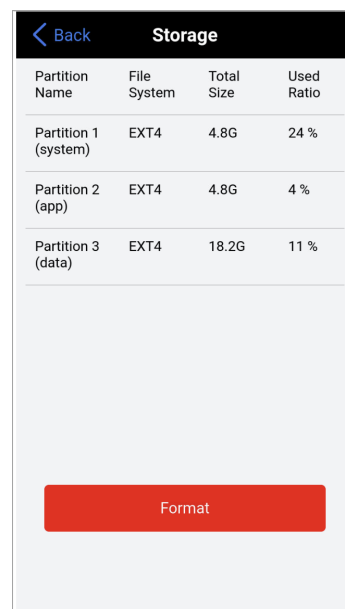
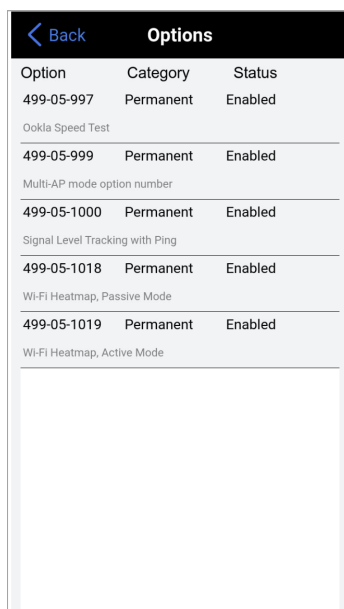
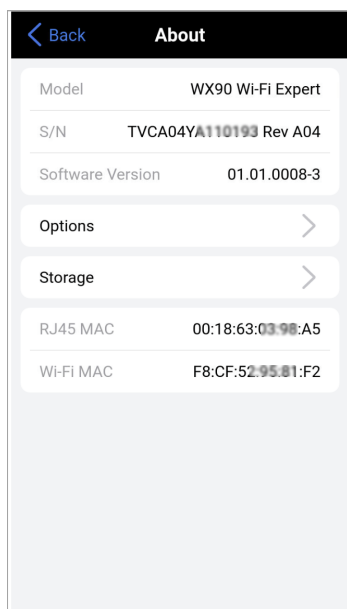
- **Time Format:**
 - 12 - Shows time in two 12-hour cycles with a.m. and p.m. indicators. Useful when technicians need a quick visual cue for morning vs. afternoon/evening during field work or log reviews.
 - 24 - Shows time from 00:00 to 23:59 with no a.m./p.m. distinction. Reduces ambiguity in timestamps and event logs.
- **Time Zone:** Pick the entry that matches your operating location (for example, UTC-05:00 — Eastern Time (US & Canada)). This ensures the software aligns with local daylight-saving rules and regional offsets. After setting the time zone, check the time on the main **Settings** screen to confirm it reflects the correct local time.
- **Date and Time:** Use the calendar control to select the correct year, month, and day. Confirm that the displayed date matches your local region's format (MM/DD/YYYY or DD/MM/YYYY) and enter the current local time using the selected time format (12-hour or 24-hour). Then, ensure the hour, minutes, and a.m./p.m. (if applicable) are correct.



About/SoftwareOptions



Select **About** to see the test set's serial number, information, software version, licenses/options, and system's internal storage details. This information may be required when contacting Customer Support.



Activate Options/License

If company policy doesn't allow access to the public internet or the test sets are used within a secured network, request License Keys for manual activation. License keys must be requested at the time new options are purchased.

To activate new features, select the option and enter the activation code received from VeEX, VeEX partner or manager. Select **Activate** to complete the licensing process. Each activation code is specific to a test set and a feature.

If multiple features are ordered, individual activation codes will be sent for each of them. Manually activated features are specific to a test set and can't be shared with other test sets.

Storage

The Storage screen shows the test set's partition capacity where all saved files, such as profiles, test results, and screen shots, are stored. If the flash storage is nearly full, use the File Manager to backup files to external storage, such as a memory stick, then delete the individual files from the test set.

The internal storage contains the operating system, test application software, and all user stored data. Do not attempt to remove or reformat the storage outside of the test set.

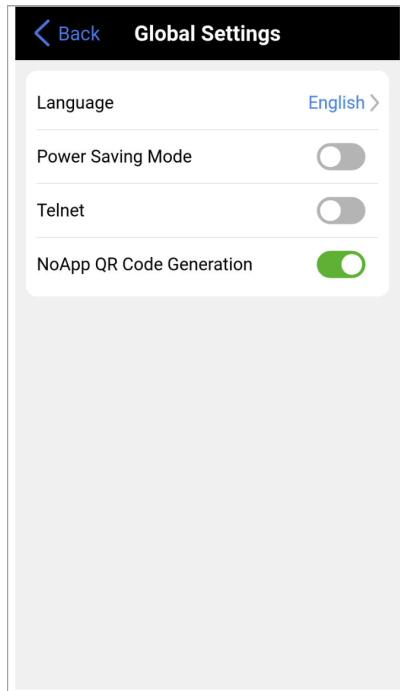


The **Format** function is exclusively a maintenance tool. Use **ONLY** when instructed by a VeEX Customer Care representative. **It erases ALL of the information stored in the test set!**

Global Settings



Select **Global Settings** to configure system-wide options that apply to all shared features, such as language, NoApp® QR codes, and Telnet.



- **Language:** Select an alternative language for the user interface.
- **Power Saving Mode:** Reduces power consumption to help extend battery life.
- **Telnet:** Enables incoming Telnet and SSH connection requests. Enable Telnet and SSH services only if instructed by VeEX's Customer Support team while troubleshooting any issues. To learn more about Telnet, see [How to Establish a Telnet Connection with a VeEX Portable Test Set](#) in the VeEX Knowledgebase.



Keep Telnet disabled whenever the test set's management port is exposed to a public IP address or has Internet access, since this prevents security risks associated with unencrypted remote access.

- **NoApp QR Code Generation:** Enables NoApp®¹ *to transfer test result data, generate, upload and share test reports, via QR Code and NFC.*

¹ NoApp® is a Registered Trademark of VeEX Inc. Its methods and procedures are protected under US Patents 12,190,199 B1 (QR code) and 12,321,807 B1 (NFC).

File Manager - Results, Profiles & Screenshots

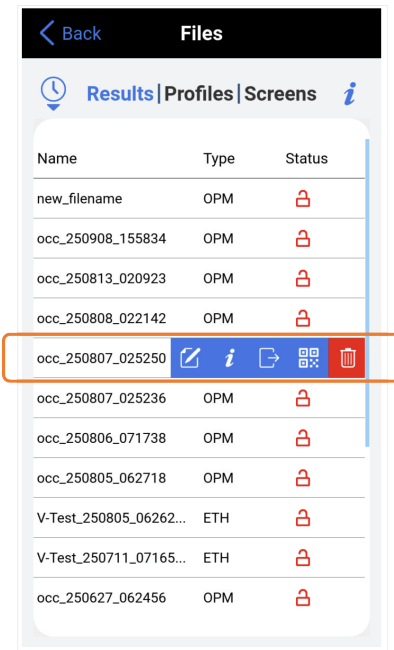
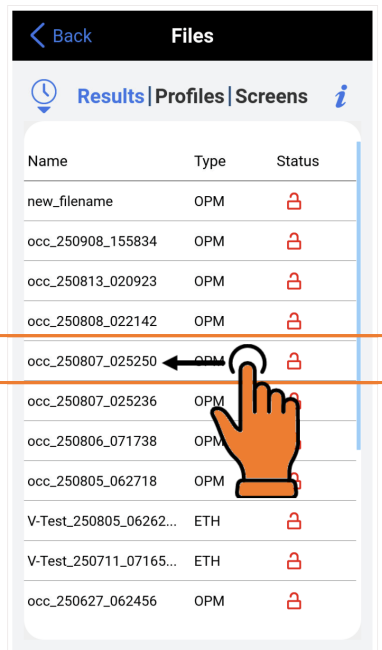


Swipe down from the top of the screen to reveal the **System, Settings & Tools** menu, then tap the **Files** button to access and manage stored test results, test profiles (configurations) and screenshots (screen capture image files). A list of stored files is displayed.

Tap **Results** | **PCAPs** | **Profiles** | **Screens** section tabs to select the type of files to be displayed. The current type is highlighted in blue. Use the and to sort the files in descending or ascending order, based on file name or timestamp. The provides information about the percentage of internal storage used and the number of files currently stored in each section.

Individual File Functions

☞ To manage individual files, select the desired file and swipe half-way to the left, to open the individual file Edit menu.



Rename - Renames file.



File Information - Shows basic test results details and Lock/Unlock function. Locked files can't be deleted.

 **Transfer File** - Shares file to a  Bluetooth device (paired), attached  USB memory stick, or to a registered (backup)  R-Server ([Cloud Services](#)).

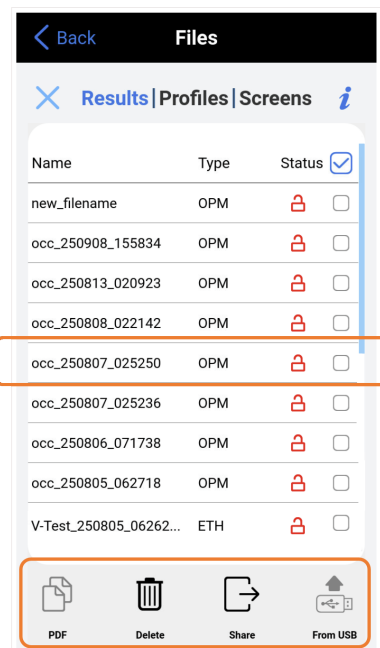
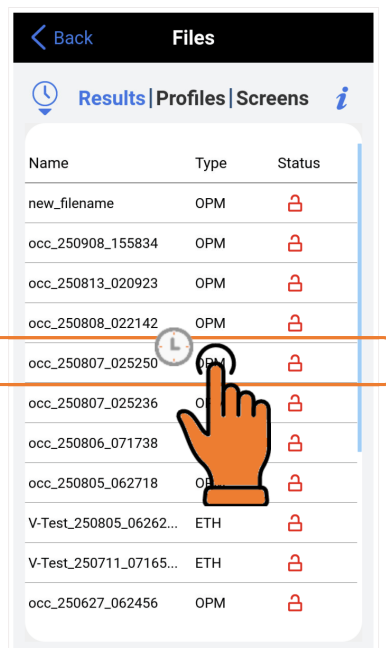
 **Generate QR Code** - Transfers test results to mobile device with [NoApp® cloud services](#). (QR generation must be enabled in [Global Settings](#).)

 Use NoApp®¹ to transfer test result data, generate, upload and share test reports, via QR Code and NFC.

 **Delete individual file** - Deletes file. Files can be  locked to prevent accidental deletion. To lock a file, swipe right on the file, select  and turn on the lock feature for the file.

Multi-File Functions

 Touch and hold one of the files to access the multi-file functions, select the files to apply, then select an option at the bottom. Tap  **Close** when finished. There must be at least one file stored in the test set for this to work.



 **PDF** - Generates a PDF copy of the file and stores it in an attached USB memory stick (required).

¹ NoApp® is a Registered Trademark of VeEX Inc. Its methods and procedures are protected under US Patents 12,190,199 B1 (QR code) and 12,321,807 B1 (NFC).



Delete - Deletes all unlocked test reports that are selected with checkmarks.



Share - Shares selected files to a paired Bluetooth device, attached USB memory stick, or a registered [R-Server \(Cloud Services\)](#).



From USB - Restores (loads) previously exported test results, profiles and screenshots from an attached USB memory stick.

NoApp® Contactless Results Transfer via NFC and QR

VeEX's NoApp®¹ is a productivity feature that allows users of supported VeEX products to easily transfer test results and key performance indicators (KPI) to Internet-connected mobile devices, using a QR Code or NFC, without having to install any application (app), sign in to a service, share contact information, or requiring any configuration. Save the test results on the test set and use the mobile device's camera to read the generated QR code, or just bring it closer to the NFC logo, to get the data transferred from the test set to the mobile device.

Once the test results data is on an internet-connected mobile device, the NoApp cloud service automatically interprets the data. It converts it to a report, with the required graphics, tables, and formatting. Use the NoApp cloud service to:

- Augment the test report with comments, pictures, documents, and a geolocation tag (obtained from the mobile device),
- Generate PDF reports to store locally or share with others via email and SMS text messages,
- Upload to the centralized VeSion R-Server Cloud-Based Workflow and Asset Management System.

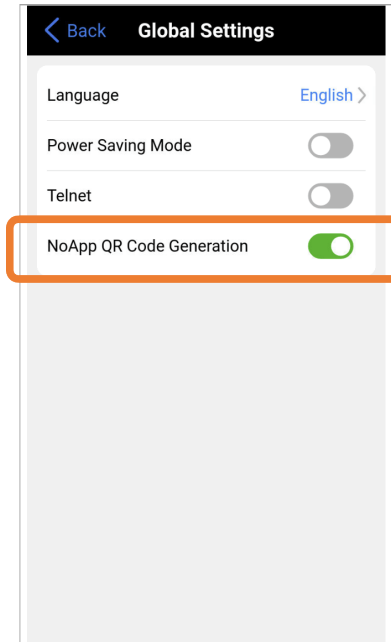
Additionally, use NoApp® to consolidate multiple test results belonging to the same job, including those coming from different types of instruments.

¹NoApp® is a Registered Trademark of VeEX Inc. Its methods and procedures are protected under US Patents 12,190,199 B1 (QR code) and 12,321,807 B1 (NFC).

Enable QR Code Generation on Test Set

QR Code generation must be enabled on the test set and mobile device, or it can be launched later, from the File Manager by tapping on the QR icon. QR Result generation is only supported by some test applications.

Tap  Global Settings and enable the **NoApp® QR Code Generation**.



Using NFC Wireless Transfer



NFC provides easy access to the last saved test result of any application.

To use Near Field Communications (NFC), save the test results and bring the top of a modern smartphone close to the instrument's NFC logo. An NFC website notification should immediately appear. Tap the pop-up message to access the test report.



Adds/Removes location (GPS coordinates) from results report; customize report with logo.



Generates complete report in PDF format, which can be shared with the customer (subscriber) or emailed to a supervisor.



Exports to JSON format, for third-party integration or processing.



Adds extra job-related information to the report (e.g., Job ID, technician's information, comments, pictures, etc.).



Uploads test result KPIs to R-Server (for R-Server users).



Texts current test report via SMS/MMS messaging.



Emails current test report.



Creates a new project for results so multiple test results, from the same or different test sets, can be combined into a single job report.

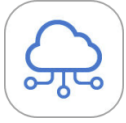


Opens knowledge base.



Opens documentation resources for test set.

Cloud Services



Swipe down from the top of the screen to reveal the **System, Settings & Tools** menu, then tap the **Cloud Services** button to use cloud services to download test profiles (configurations), upload test results, and install software updates. To enable uploads to R-Server, go to  [Global Settings](#).

Part of VeEX's VeSion centralized monitoring and management solutions, the VeSion R-Server™ Workflow and Asset Management system provides crucial tools to manage fleets of technicians, test equipment, standardized test profiles, thresholds, centralized test results collection, reporting, jobs/ticketing, and software update delivery to create coordinated and efficient disciplined workforce and test procedures. R-Server enhances the workflow to achieve the level of quality and repeatability required by telecommunications service providers, MSOs and their contractors. The flexible R-Server can be deployed in cloud, hosted, and corporate networks, on physical or virtualized servers.

Supervisors can preset and upload test parameters which are provided to the test sets as profiles. Technicians can download profiles, run tests, and upload results to a centralized system that stores and secures the data.

Registration Requirements

A test set must be **registered** to an R-Server before it can upload results. If it is not registered, a reminder message will appear when attempting to upload.

When the **Server Address/URL** field contains a valid R-Server address, the test set automatically checks its registration status when opening the **Cloud Services** option.

If the status is unknown or needs to be refreshed, press  **Check** on the R-Server screen.

If the unit is not registered, complete the registration steps below.

Registering the Test Set

1. Open  **Cloud Services** .
2. Contact the R-Server administrator and/or supervisor for the IP address/URL of the R-Server and required information.
3. Enter the following fields:
 - **Server Address/URL:** R-Server IP address or URL
 - **Tech ID:** Registered technician ID
 - **Tech Name:** Registered technician name

- **Company:** Company name
- **Supervisor ID:** Supervisor ID (ties the test set to the correct organizational group/Org Chart)



4. Press **Register** to submit the registration request. A confirmation message appears when the request is successfully submitted.
5. The R-Server manager must authorize the registration before access is granted.
6. After approval, an authorization message appears the next time **Cloud Services** is accessed. Once authorized, result uploads and profile downloads are enabled.

Unregistering the Test Set

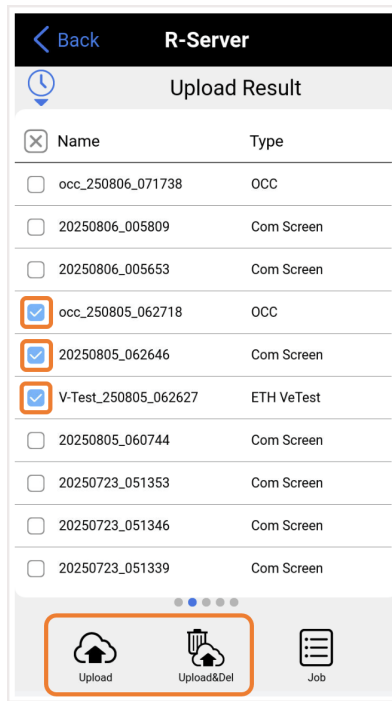


1. Press **UnRegister**. The first press moves the test set into Inventory Management.
2. Press **UnRegister** again to remove the test set from the R-Server account completely.

Uploading Results to R-Server (from Cloud Services App)



1. Open **Cloud Services**.
2. Swipe left to the **Upload Result** screen, then select the files to upload.

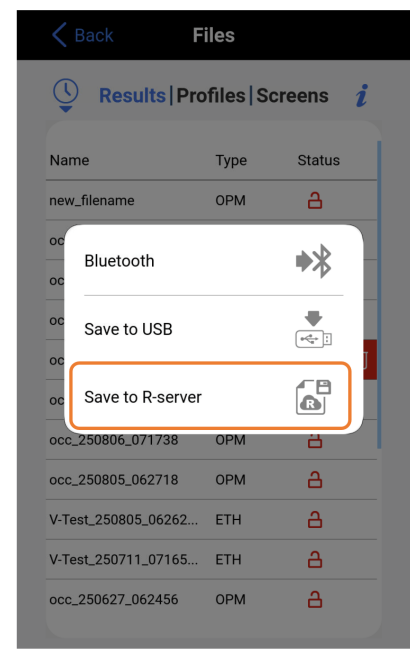
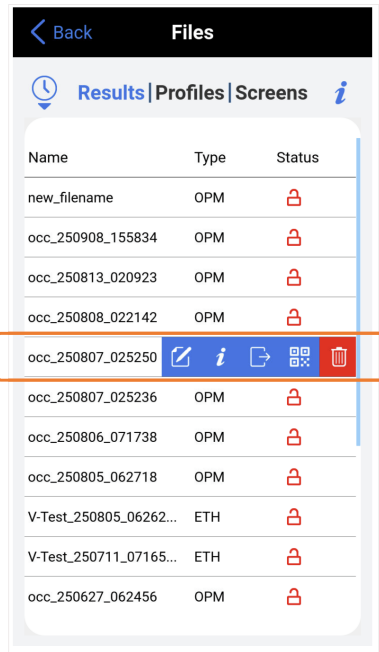
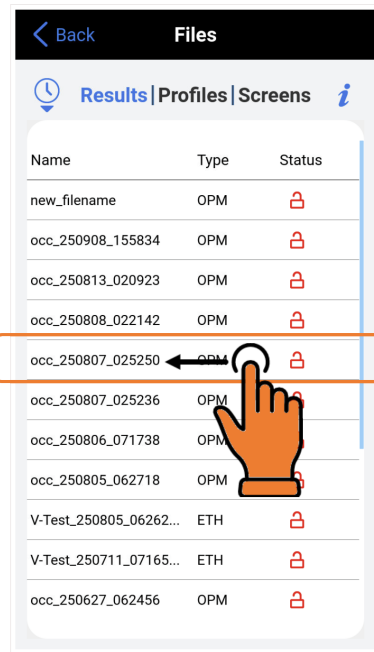


3. Choose one of the following:

-  **Upload**: Transfers the selected result file(s) and keeps them on the test set.
-  **Upload&Del**: Transfers the file(s) and deletes them from the test set after upload.

Uploading Results to R-Server (from Files App)

- Open  **File Manager**.
- Swipe left on the desired result.
- Tap the  **Transfer Files** icon.
- Select **Save to R-Server** . A confirmation message appears when the upload is complete.



Downloading Profiles from R-Server

1. Open  **Cloud Services** .
2. Swipe left to the **Download** screen. If new files are available, **NEW** appears next to the file name.
3. Select **Download** to retrieve the required files. When the download completes, a confirmation message appears.
4. Press **OK** to restart the unit.

Downloading and Installing Software from R-Server

1. Verify that the test set's battery has >50% charge, it is connected to its charger, and charging. The unit must remain connected to the AC/DC charger during the entire update process.
2. Establish a LAN or WLAN (Wi-Fi) connection , then select  **Cloud Services** and register the test set, if needed. Refer to "Registering the Test Set" on page 31.

3. In Cloud Services, swipe left until the **Software** screen is displayed. If new software is available, **NEW** will be shown next to the software version.
4. Select the update file, then at the bottom select  **Upgrade**. Depending on the file size and connection speed, this may take a few minutes. The new version of the software will download to the test set from R-Server and begin the update process. Let the test set go through the process, uninterrupted. This will take a few minutes. After the update process finishes, the test set reboots automatically.
5. The test set may reboot multiple times during the process.



DO NOT turn the test set OFF until the software update process has finished.

6. After the software upgrade is completed, confirm the software version on the [About screen](#).



Due to potential Internet bandwidth limitations, the software versions distributed through R-Server may be in the form of smaller incremental update packages, with previous version prerequisites.

For alternate methods of updating test set software, refer to ["Software Update Process"](#) on page 95.

Remote Access (EZ Remote/Web Remote)

There are different ways to control or access the test set and the information it contains, from a local (LAN) or remote (WAN) connected PC. [EZ Remote](#) is recommended for long distance WANs and for quick/temporary collaboration tasks. [Web Remote](#) is a better option when the test set is connected to the same LAN environment as the controlling device (or connected through VPN to a different LAN/location)

Web Remote also offers the added ability to push software updates to the test set.

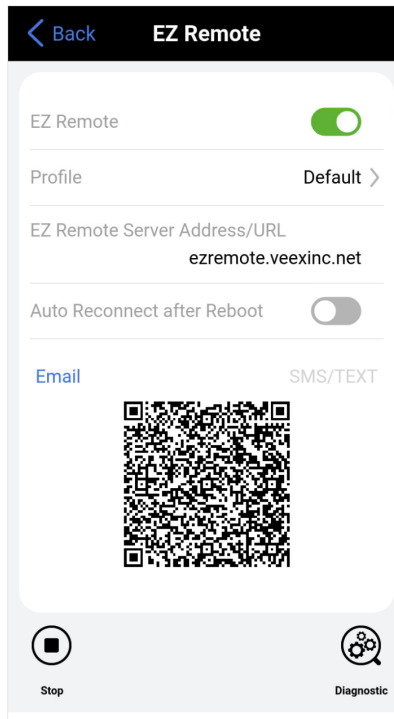
EZ Remote



EZ Remote is a cloud service provided (free of charge) by VeEX Inc. for its handheld test sets. It allows users to access and operate test sets from a remote location or on a different network, for collaboration, training, mentoring, support, expert analysis, troubleshooting, etc.

Connect Test Set to the EZ Remote Service

1. Connect the test set to the Internet via [Ethernet](#) or [Wi-Fi](#) and verify it gets a valid IP address. Make sure the test set gets a local IP address and the LAN/WLAN provides access to the public internet (web).
2. Tap  **EZ Remote** and enable **EZ Remote**.
3. Tap **Profile** to save a customized profile.
4. Press the **Connect** button to register the test set on the EZ Remote server (free cloud service) to make it available for others to use.



5. Scan the QR code, with a smartphone or tablet, to send an email or SMS text notification with a direct link, along with any comments and passwords edited into them, so remote users just have to click (or manually go to <https://ezremote.veexinc.net/> and enter the test set's serial number and password).

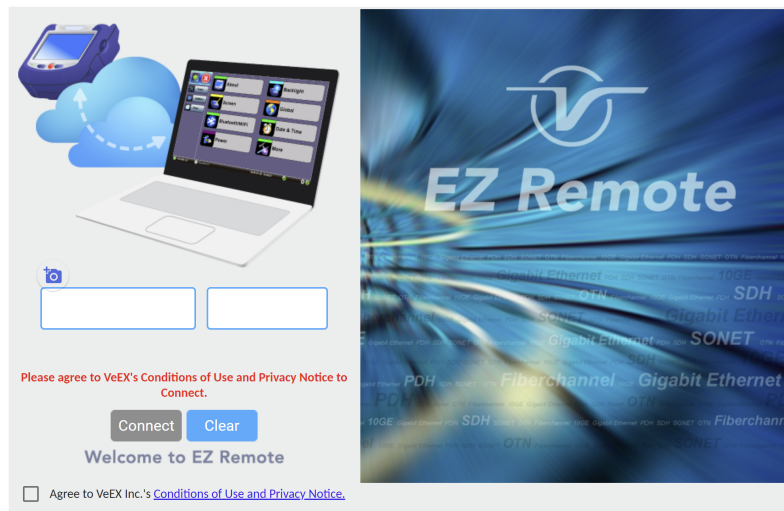
Connect to the Remote Test Set

To connect to the remote test set automatically, click the link sent over email or text. The test set's serial number and password will be embedded in the link sent from the EZ Remote server.

Manual Connection with Session ID and Password

If the session ID and password is sent outside of a link from the server, manually connect to the test set.

1. Using a browser, go to <https://ezremote.veexinc.net/>.
2. Enter the Session ID in the **Serial Number** field and the **Password** (case sensitive).
3. Check the box to agree on the Terms and Conditions and tap **Connect**. Once connected, the remote user can access and control the test set.



Web Remote

Web Remote uses a web browser to remotely control a test set within the same LAN and/or WLAN/Wi-Fi network environment. Use the mouse (PC) or touch screen (tablet, smartphone) to navigate and operate the test set as normally done locally. Access information stored in the remote test set, such as Test Results, Test Profiles, and Screenshots.

Connect to Test Set via Web Remote

1. Connect the test set to the Internet via [Ethernet](#) or [Wi-Fi](#) and verify it gets a valid IP address. Make sure the test set gets a local IP address and that the LAN/WLAN provides access to the public internet (web).



In cases where VPN access is needed, [EZ Remote](#) is recommended.

2. Using a standard web browser on a Win/Mac/Linux PC or iOS/Android tablet or smart phone, enter the test set's IP address in the address/search bar, and a Web Remote Access page (locally hosted by the test set) will be displayed.
3. Select **Remote Control**, from the menu on the left, enter the **Password** and click **OK**. The mirrored test set screen will be displayed. The test set can be operated exactly as when using the built-in LCD touch screen.

The default password is *pass1*. It is highly encouraged to change the password. This password allows full control of the test set. A secondary password, *pass2*, allows users to view the content of the test set screen; however, it doesn't allow control of the test set.



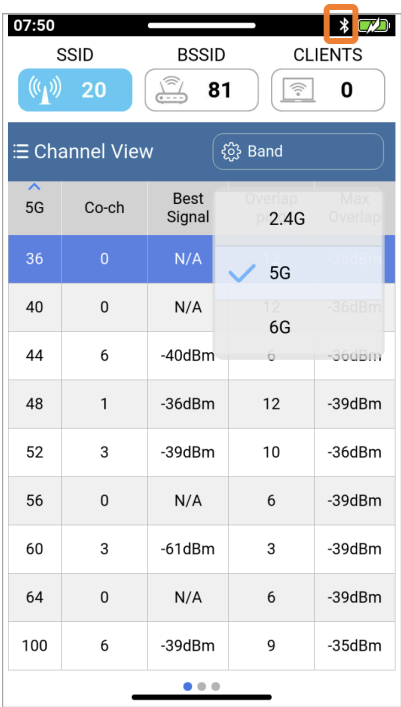
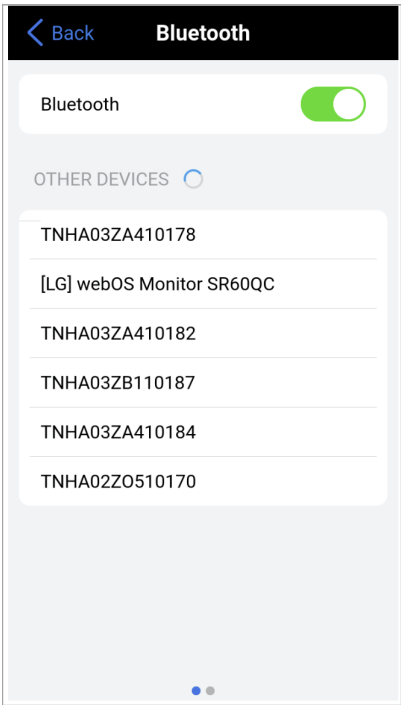
Do not leave test sets connected directly to public IP addresses, due to network cybersecurity exposure.

Bluetooth



Built-in Bluetooth support offers wireless connectivity up to 10 meters (30 feet), providing an untethered connection between the tester and other Bluetooth compatible devices such as a PCs and smart phones, enabling users to transfer test results and other files.

Select the **Bluetooth** button  to access the **Bluetooth** screen.



Toggle the Bluetooth transceiver ON. The test set scans for Bluetooth discoverable devices within range. A small Bluetooth indicator icon  is also displayed on the top bar, when Bluetooth is ON and the test set is discoverable.

Initiate the pairing process from the computing device (PC/tablet/phone) and use the last four digits of the test set S/N as PIN.

Test Applications

Wi-Fi Test Application



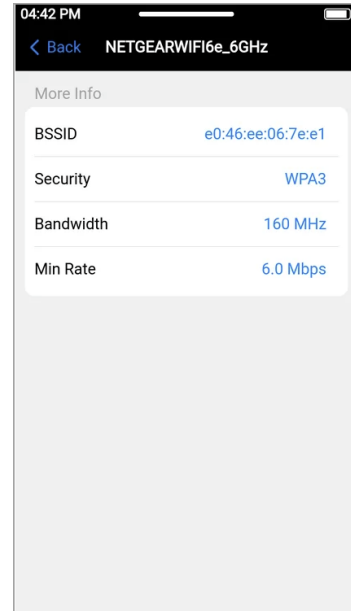
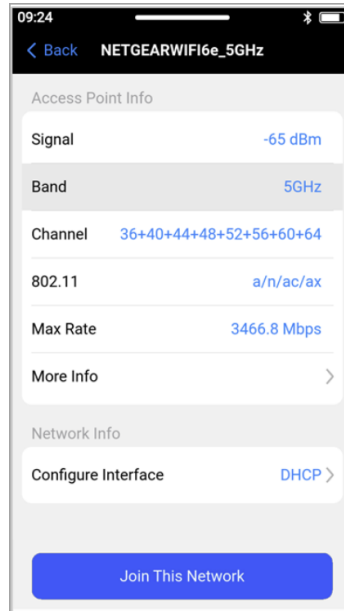
Swipe down from the top to open the System & Tools menu, then tap the Wi-Fi button to select the Wi-Fi WLAN interface for testing. Scan for available networks and view all access points' (AP) detailed information along with SSID, signal strength, channel allocation, supported Wi-Fi standards, and maximum PHY Rates.

The test set can connect to Access Points with WEP, WPA, WPA2 and WPA3 encryption and run Ookla® Speedtest® or iPerf3 to verify the wireless network's speed test performance and confirm that the network has been properly installed and provisioned.

- Scans for Access Points scan and displays signal level and detailed AP information to help identify weak coverage areas.
- Supports 2.4 GHz, 5 GHz and 6 GHz bands, for 802.11a/b/g/n/ac/ax/be networks.
- Discovers Clients and Channel information in table format.
- Supports WPA3, WPA2, WPA1 and WEP encryptions.

AP Scan

After selecting the Wi-Fi Test mode, the AP Scan screen displays a list of detected Wi-Fi Access Points (APs) along with basic information for each network. Use the  funnel to filter the list by SSID, BSSID, 802.11, and/or Channel and Band. Use  to sort the list by signal strength.



Tap the  **SSID** (Service Set IDentifier) button to group all access points that broadcast the same network name into a single expandable entry. Expand the SSID by clicking '+' to view all individual access points (BSSIDs) associated with that network. Tap the  **BSSID** (Basic Service Set IDentifier) button to display all the individual access points available. Modern Wi-Fi routers often broadcast multiple access points across different frequency bands under the same SSID.

Tap the AP of interest to get its details. Tap **More Information** to get more details about the AP.

By default, the Wi-Fi interface obtains an IP Address automatically using DHCP. To assign a static IP address, tap **Configure Interface** and select Static IP Address.

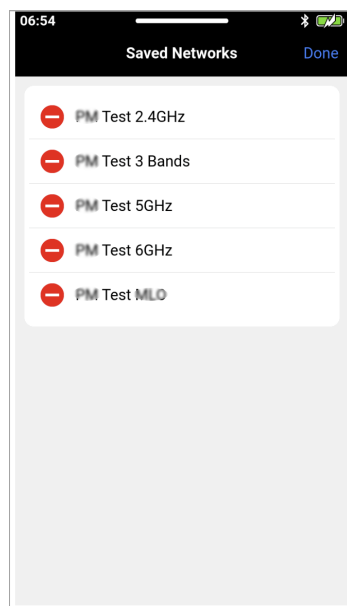
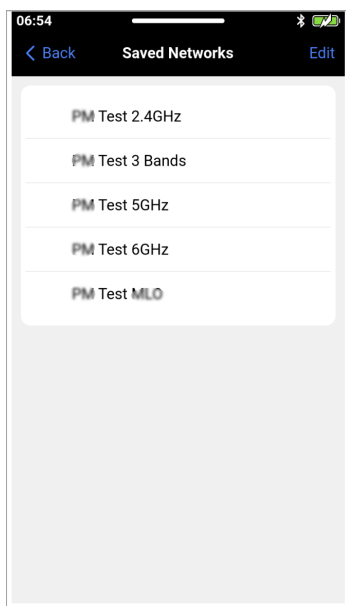
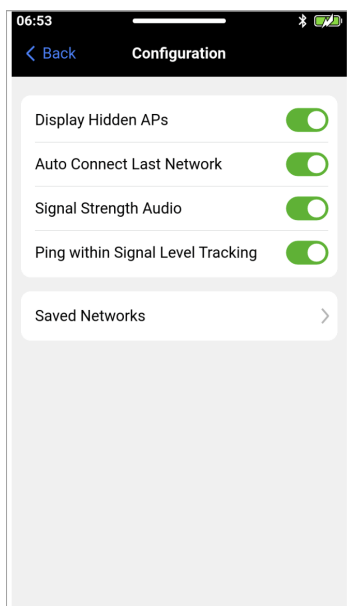
To save the results of the current scan, open the **Functions** menu by swiping up from the bottom of the screen, then tapping  **Save**. Tap  **Refresh** to perform a new scan.

The  **Config** setup menu, accessible by swiping up from the bottom, allows to configure Wi-Fi scanning, connection and Signal Level View settings.

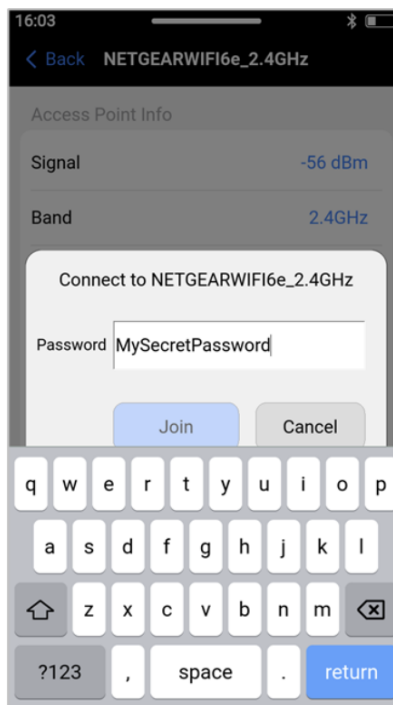
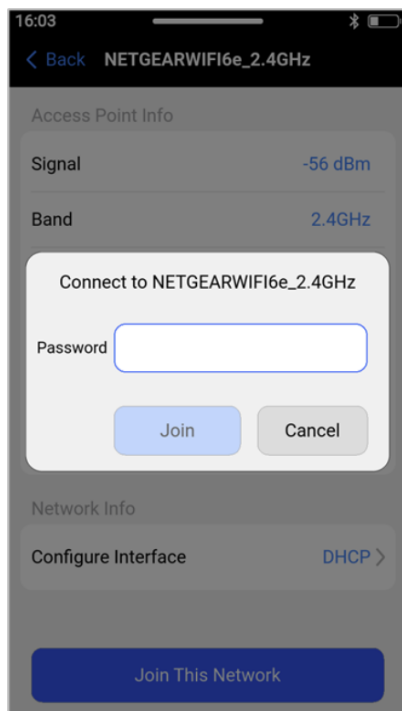
Saved Networks displays previously saved wireless networks. On the top right of the screen, select **Edit** to remove access points that are no longer required for regular use.

Signal Strength Audio provides an audible indication of the received signal level while performing **Signal Level Tracking**. The beep frequency increases as the signal becomes stronger and decreases as the signal becomes weaker.

Ping within Signal Level Tracking enables continuous ping to the default gateway of the connected Access Point while simultaneously monitoring signal strength, noise level, and signal to noise ratio (SNR). This option requires the test set to be connected to the selected Access Point. When disabled, **Signal Level Tracking** is in passive mode without connecting to the Access Point and monitors only the wireless signal characteristics.



To connect to the selected Access Point, tap the **Join This Network** button, enter the network password in the **Password** field, and then tap the **Join** button.

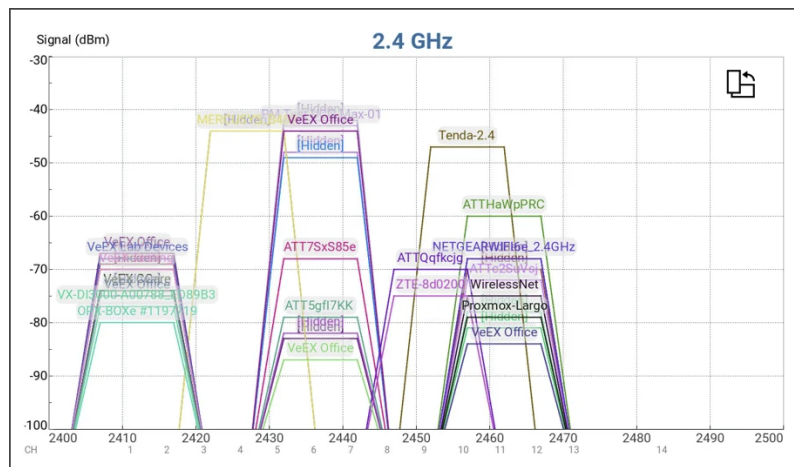
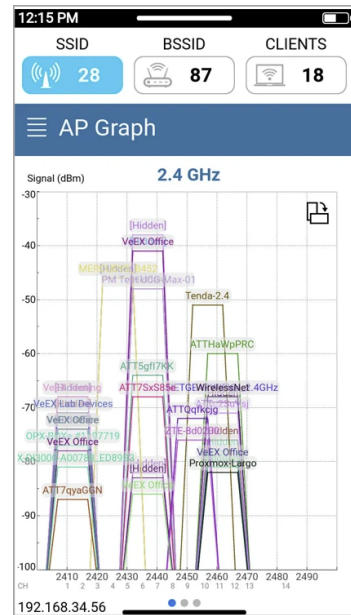
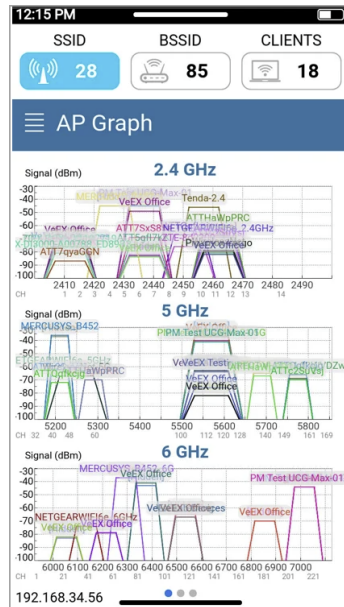
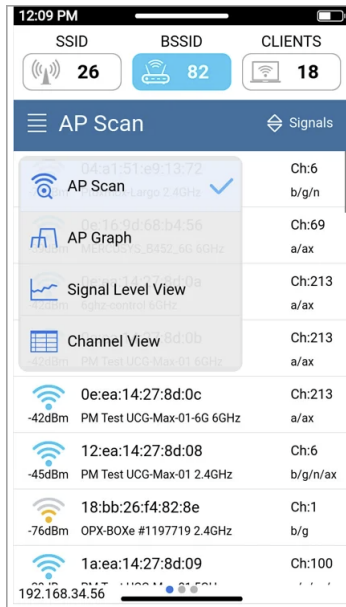


AP Graph

From the AP Scan Page, tap  and select **AP Graphs**.

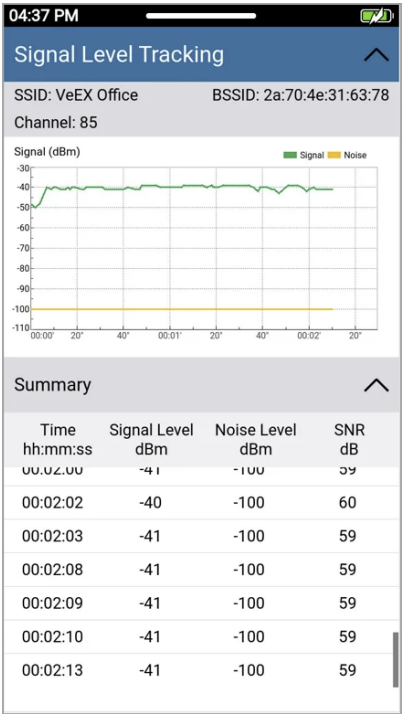
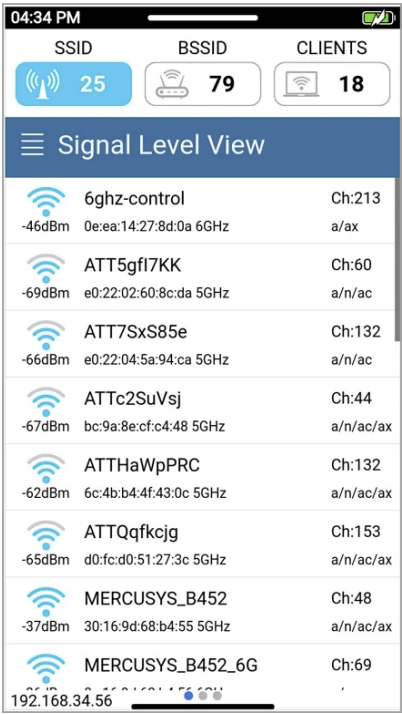
AP Graph displays detected Wi-Fi Access Points in a graphical format and updates continuously as the network scan runs. The main page presents graphs for all three bands: 2.4GHz, 5GHz, and 6GHz. Swipe left to view each band individually. Tap  to switch the graph to landscape view, and tap  to return to the previous view.

 The [Settings & Tools menu](#) cannot be accessed by swiping down from the landscape view. Switching between the 2.4GHz, 5GHz, and 6GHz band graphs is also not available in landscape view.



Signal Level View

From the AP Scan Page, tap  to get to the **Signal Level View**. Select an SSID from the list to start tracking its Signal Strength, Noise Level, and Signal-to-Noise Ratio (SNR) in real time. Swipe up from the bottom of the screen to open **Functions** menu, then tap **Save** to save the results. Swipe right to stop tracking and return to the **AP Scan** page.



 Additional Signal Level Tracking options, including **Signal Strength Audio** and **Ping** within Signal Level Tracking, are available from the [Config menu](#).

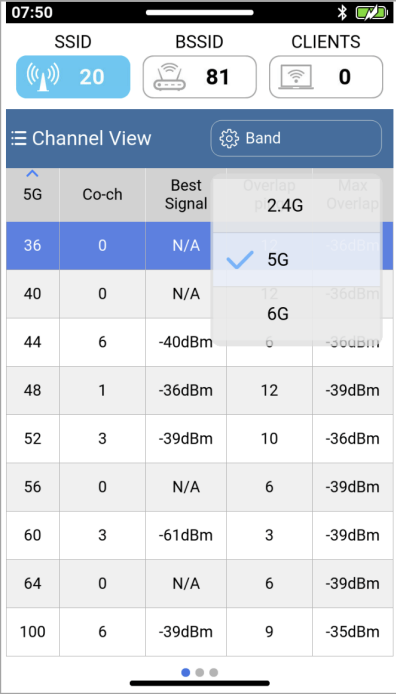
Channel View

From the AP Scan Page, tap  to get to the **Channel View**. The Channel View displays a summary of detected APs by channel for the 2.4GHz, 5GHz, and 6 GHz frequency bands. The results update continuously while the Wi-Fi scan is running. Tap the Band in the upper right corner to switch to the desired band.

The table contains the following information:

- **Channel:** Wi-Fi Channel number
- **Co-channel:** Number of Access Points operating on the same channel
- **Best Signal:** Strongest signal level received from an Access Point on that channel
- **Overlapping:** Number of Access Points operating on overlapping channels that may cause adjacent channel interference
- **Max Overlap:** Strongest signal level received from an Access Point on an overlapping channel.

Tap any column header to sort the channel table in ascending or descending order by the column selected. An up arrow on top of the header indicates ascending order, while a down arrow indicates descending order.



5G	Co-ch	Best Signal	Overlapping	Max Overlap
36	0	N/A	✓ 5G	
40	0	N/A	12	-36dBm
44	6	-40dBm	6	-39dBm
48	1	-36dBm	12	-39dBm
52	3	-39dBm	10	-36dBm
56	0	N/A	6	-39dBm
60	3	-61dBm	3	-39dBm
64	0	N/A	6	-39dBm
100	6	-39dBm	9	-35dBm

Tap any of the table rows to open the Channel Details View.

07:53

< Back

Channel Details

Channel	44
Co-channel APs	6
Best Signal	-40 dBm
Overlapping APs	6
Max Overlap	-36 dBm
Min Freq	5210 MHz
Center Freq	5220 MHz
Max Freq	5230 MHz
More Info	>

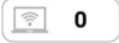
07:54

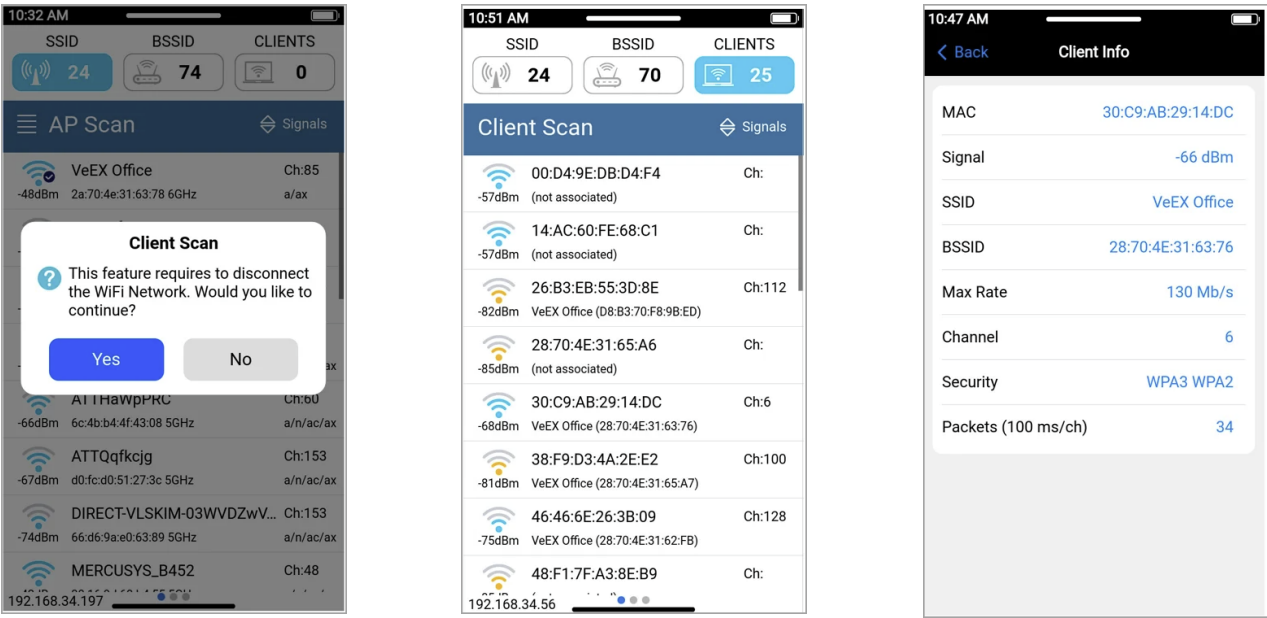
< Back

Channel Details

List of overlapping APs:		
VeEX Office	28:70:4e:31:64:b7	-61dBm
VeEX Guest	32:70:4e:31:64:b7	-62dBm
VeEX Office	d8:b3:70:f8:9b:ed	-60dBm
VeEX Guest	e2:b3:70:f8:9b:ed	-60dBm
ATTQqfkcjg	d0:fc:d0:51:27:38	-36dBm
List of co-channel APs:		
VeEX Office	f0:9f:c2:6e:5e:12	-52dBm
ATTc2SuVsj	bc:9a:8e:cf:c4:48	-40dBm
VeEX Guest	02:9f:c2:6e:5e:12	-50dBm
V-AMPLIFI-Router...	fe:92:bf:94:2b:98	-56dBm
[Hidden]	f6:9f:c2:6e:5e:12	-63dBm

Client Scan

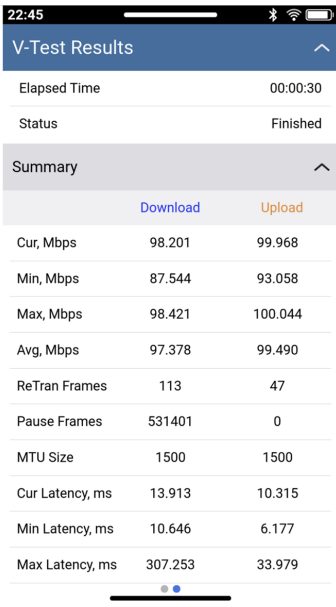
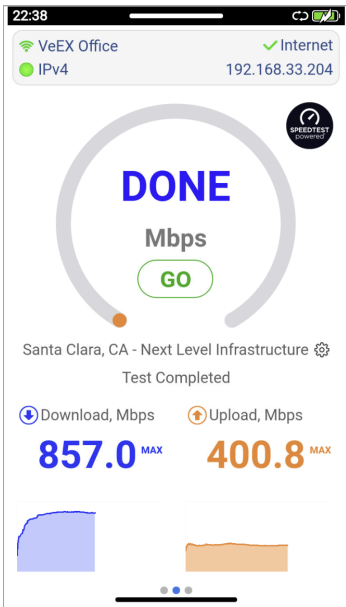
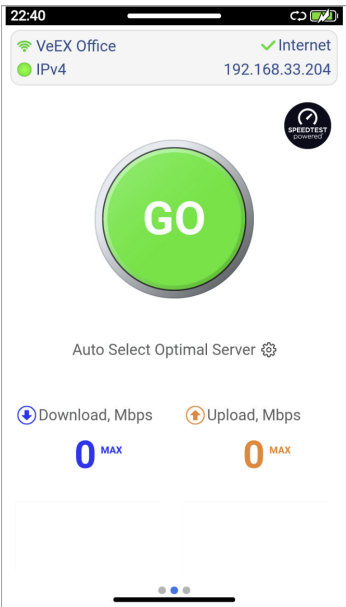
From the AP Scan Page, tap  **0** to start the **Client Scan**. If the test set is currently connected to an AP, a notification message will appear requesting confirmation before disconnection. Client Scan displays the detected wireless clients, including their signal strength, MAC address, associated AP SSID, and the channel used by the associated SSID. Tap the Client of interest to view its additional details.



Tap **< Back** to go to the Scan results, swipe left to find the Speed Test page and select between **Ookla®Speedtest®** or **iPerf3** test modes.

Test Wi-Fi Speed

To test the Wi-Fi speed, swipe left on the **AP Scan** page to reveal the Speed Test screen and press **GO** to initiate testing. Refer to "Perform Internet Access Speed Test" on page 79 for more details about running a speed test.



Wi-Fi Heatmap

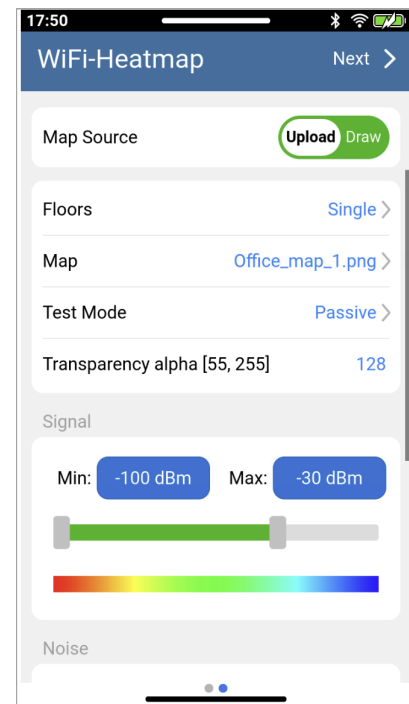
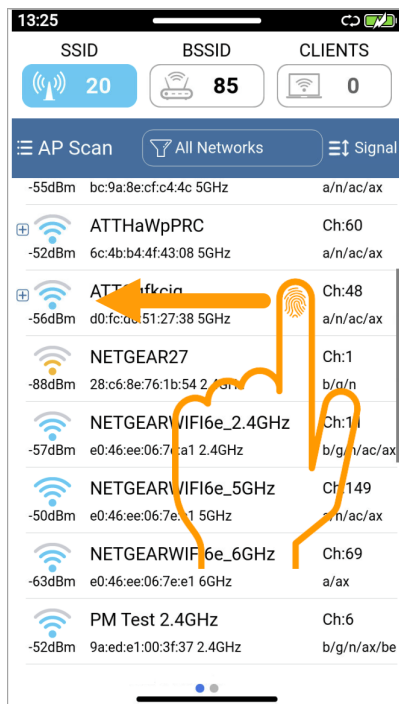


Select the **Heatmap** button, then swipe left on the AP Scan screen to access the configuration screen for the Passive Wi-Fi Heatmap menu.

The Wi-Fi Heatmap shows a map of the signal strength across the entire space. It visualizes signal coverage across a site without connecting to the network. First, load a floor plan, then walk the area. The unit automatically maps the strongest access point signal at each location in real time. Results are displayed on a single map, identifying weak coverage zones and verifying overall Wi-Fi performance.

The test set scans without connecting to any network. Thus, it can run on any environment and captures what every client device in that space would experience, not just what one connected device sees.

Configuration



22:03

WiFi-Heatmap

Next >

Map Source

Upload Draw

Floors

Single >

Map

Office_map_1.png >

Test Mode

Passive >

Transparency alpha [55, 255]

128

Signal

Min: -99 dBm Max: 0 dBm

Noise

Min: -120 dBm Max: -60 dBm

SNR

Min: 20 dB Max: 120 dB

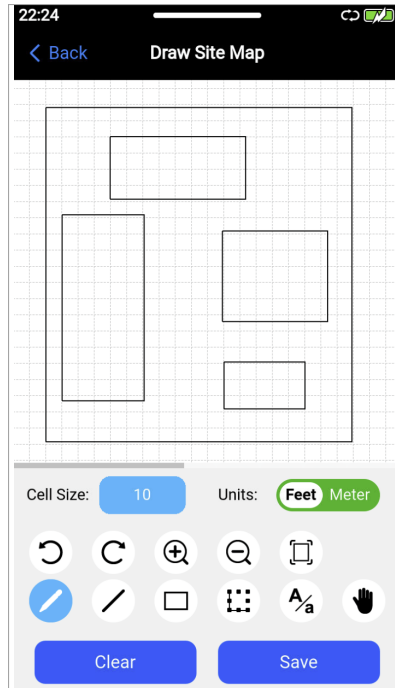
Map Source

Maps can be uploaded from a USB stick, uploaded through Web Remote, or drawn on the test set using tools provided on the interface.

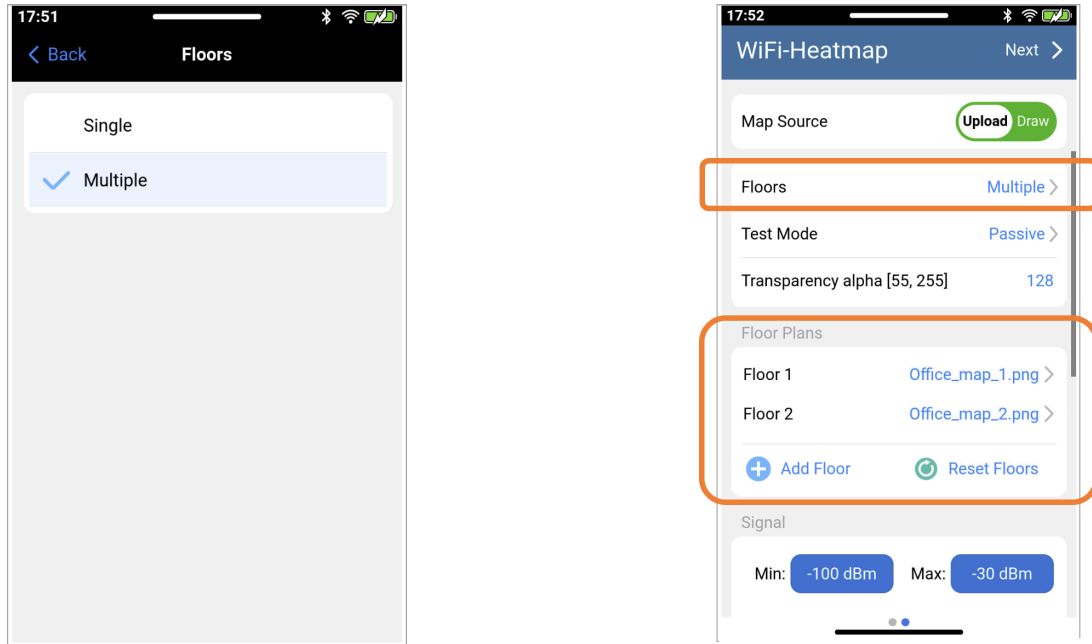
Select the **Map** option to choose a previously uploaded map. To upload a map from a USB stick, select the  Upload icon and choose the map file to upload. Supported file formats are .jpg and .png.

Draw Site Map

Select **Draw** to show the **Draw Site Map** screen. Use the tool icons at the bottom to draw the map, then select **Save**. Select **Close** to return to the Configuration screen.



Floors



- **Single floor:** When Single Floor is selected, one map is used for the heatmap test.
- **Multiple floor:** When Multiple Floors is selected, a specific map can be assigned to each floor. During the test, switch between floors and collect measurements on the corresponding map.

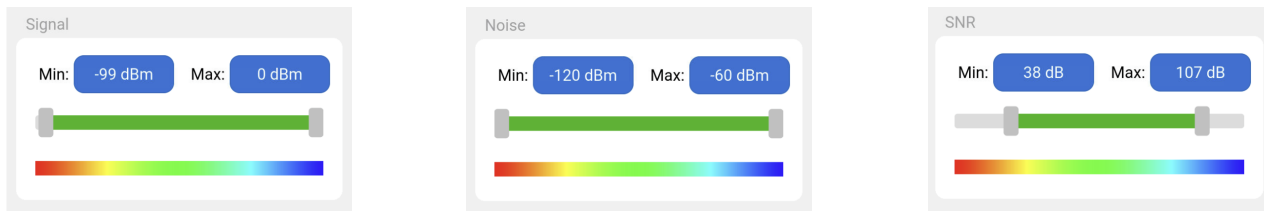
Test Mode

- **Passive:** Use when no direct connection to an access point is required.
- **Active:** *Available in a future release.*

Set the **Transparency alpha** for the amount of opacity in the heat map colors. The higher the number the darker the shade.

Measurement Settings

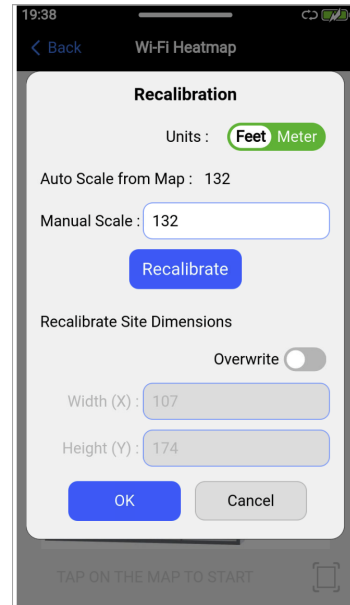
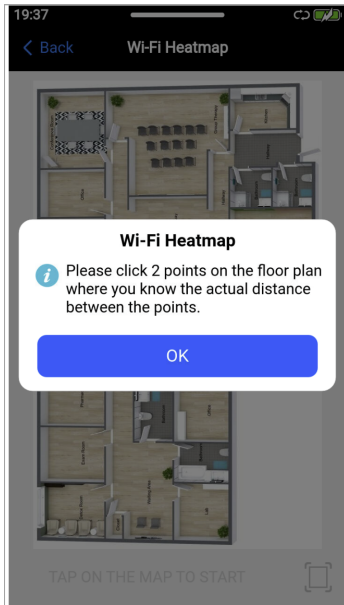
Signal, Noise, and SNR (Signal-to-Noise Ratio) range settings can be configured for the heat map. Select the Min/Max fields to enter the range or use the slider bar from both ends to choose the range. The color bar represents the colors for the full array. After setting the range, the section of the color bar that lines up between the two end point of the range will be used on the heat map.



Recalibration

When finished with the configuration screen, select **Next**. A prompt appears asking if the site dimensions should be recalibrated.

For the distances to be accurate, the device needs a reference point for scale. Draw a line between two known points on the imported floor plan, then enter the actual distance. Everything else is calculated from that ratio. If the scale looks off, it can be overridden manually.

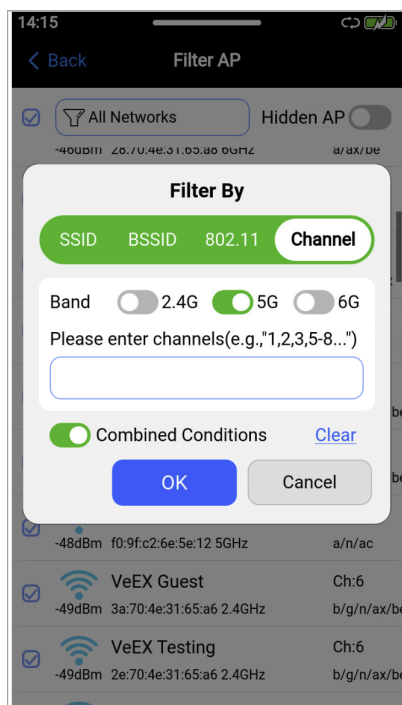


Enter the actual distance between the two selected points on the map in feet or meters, then select **OK**.

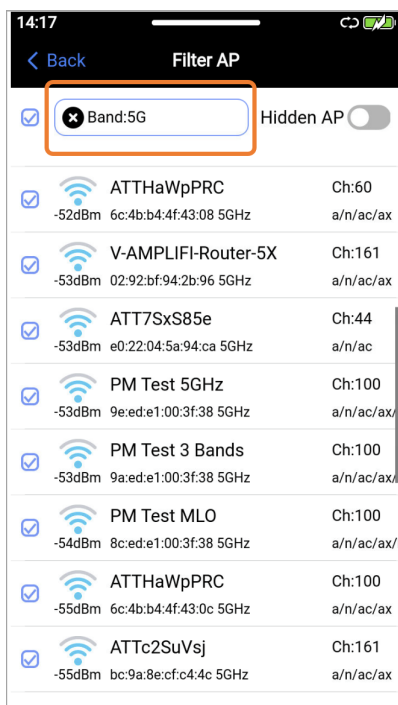
Access Points

Select the access points to measure. The **Filter AP** screen can narrow down the list to show specific access points.

Use filters to display only the desired access points. Filters can be applied by SSID, BSSID, 802.11 standard, and channel, and multiple filter criteria can be combined.



AP List Filter Options



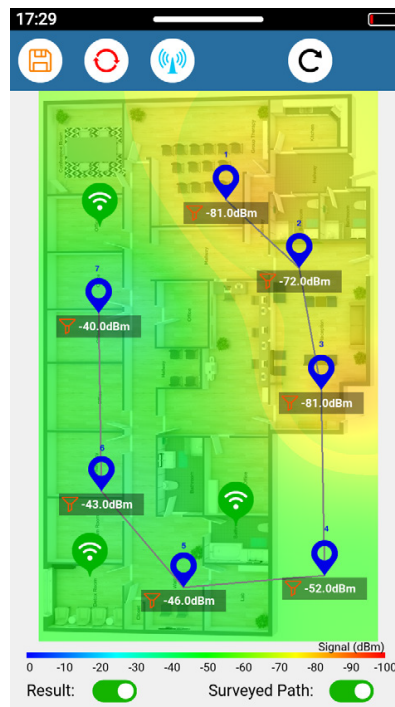
Filtered AP List

Select **Back** when finished to see the **Map** screen and begin collecting measurements.

Operation

i Choose at least two points for the heat map to generate accurate coverage. Place one test point near the AP and another further away to improve interpolation across the measured area.

1. Tap the map to begin. Double-tap to place the first test point.
2. If signal data is not collected automatically, tap  **Record**.
3. Walk the space with the test set, collecting signal measurements at each test point. The heat map estimates signal values between measurement points, with locations closer to a measurement point influenced more strongly by that point's signal strength. This creates smooth color transition across the map instead of abrupt changes. At each measurement point, the test set compares signal strength across all selected APs and plots the strongest signal. The resulting heat map highlights areas with strong coverage, weak coverage, and potential dead zones.



4. When finished, tap  **Save** at the top of the screen and enter the filename for the results.

Options

- **Result:** Shows/Hides the measurementpoints on the map.
- **Surveyed Path:** Shows/Hides the recorded walking path.



Records the measurements and walking path along the map.



Saves all recorded measurements into a single consolidated report.



Restarts the test from the beginning. All previously recorded measurements will be lost.



Restarts the test for the current location. All measurements for this location will be lost.



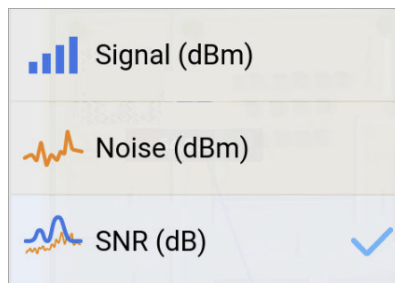
Undoes the previous action.



AP Marker allows the user to drag and drop access point markers onto the map for graphical representation only. The markers help correlate measurement results with AP locations and do not affect the heat map calculations.

Measurement Views

On the top left of the Map screen, select the menu icon  and choose which measurement to show on the map.



- **Signal:** Shows where the AP reaches.
- **Noise:** Shows where interference is hiding. A range of -95 to -85 dBm is expected usually. Any reading above -75 dBm indicates interference.
- **SNR:** Shows where the best experience will be. A ratio of 25 dB or above is considered reliable; below 15 dB is poor.

Wi-Fi Heatmap Test Report

After saving results from the Heatmap Test, swipe down and select  **Files** to see the report.



Multi-Room (Site Survey)



Select the Multi-Room (Site Survey) button to perform a site survey across multiple rooms, using either a floor plan or location labels in a table format.

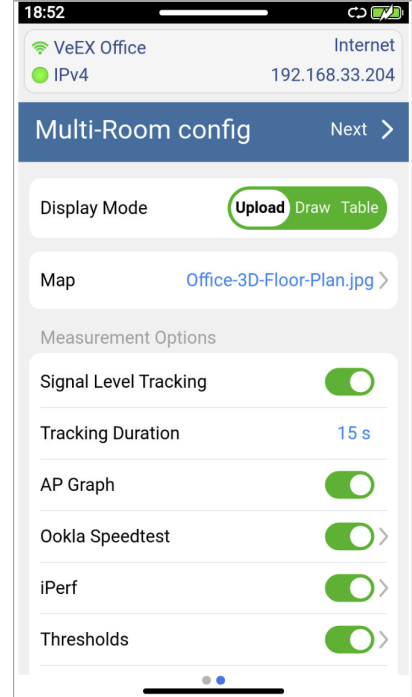
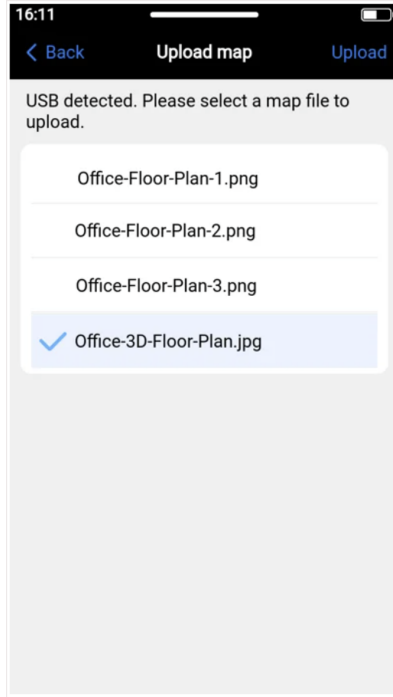
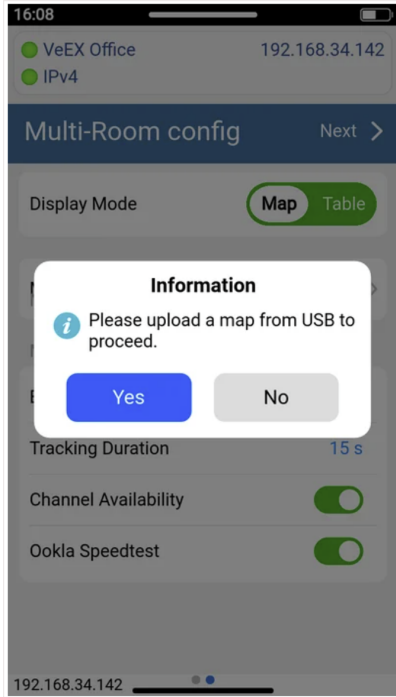
Configuration

The Multi-Room Configuration screen first appears after selecting the Multi-Room test application button. If the AP Scan screen appears, swipe left to access the Configuration screen. After selecting the Display Mode (Upload, Draw, or Table), specify AP locations, and select test points, the test can be performed.

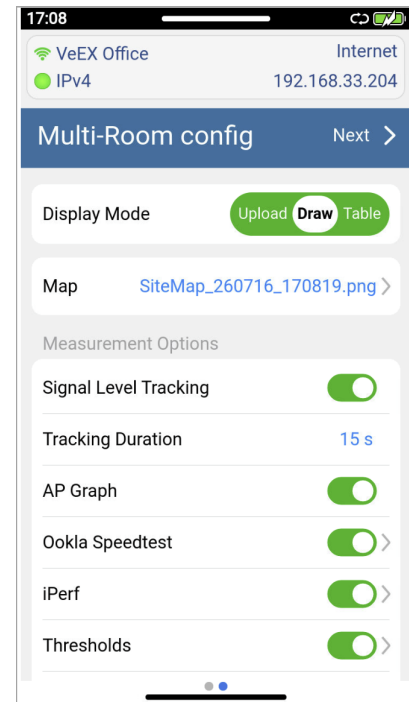
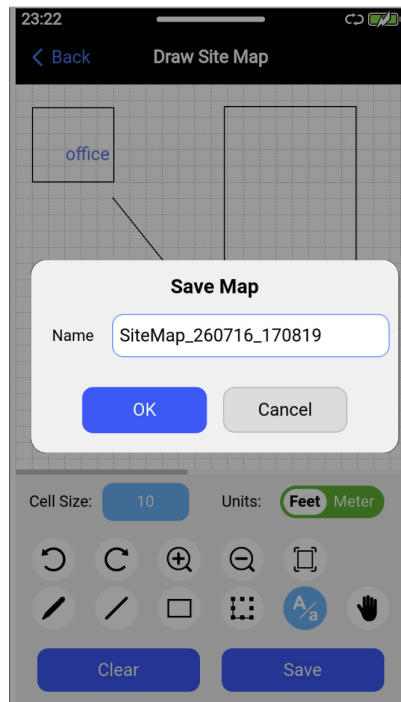
Display Mode

Select to upload a floor plan map, draw one using the test set tools, or select from a list of pre-defined formats in a table format.

- **Upload Mode:** Upload the floor plan map file from a USB stick inserted into the unit's USB-C port or via Web Remote. Supported file formats are **JPEG** and **PNG**. Select the map file to upload, and then tap **Upload**. Check if all preferred measurement options are enabled, then tap **Next**. The map will be automatically resized to fit the screen. Measurement points can then be added by tapping on specific rooms or locations directly on the map.

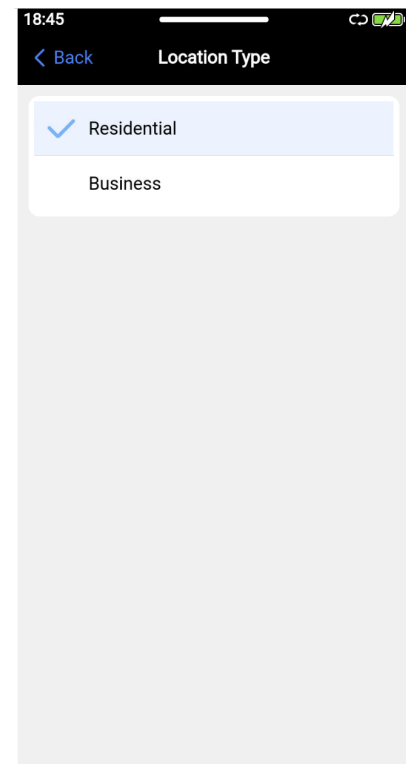
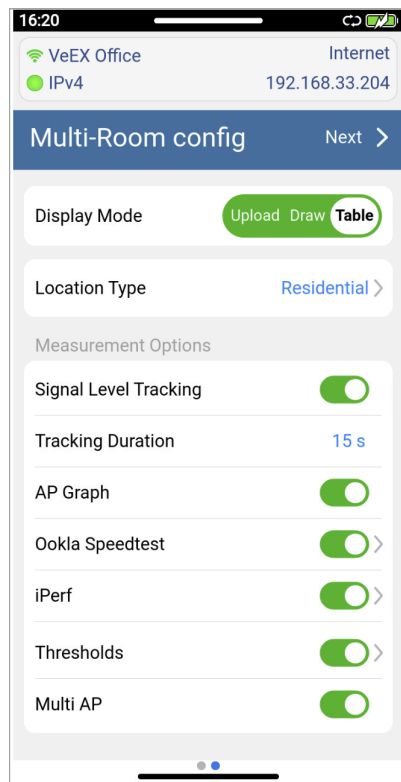


- **Draw Mode:** Draw a floor plan using the tools provided on the **Draw Site Map** screen.



- **Table Mode:** Locations can be added manually or selected from a predefined list. All measurement data will be recorded in structured table format.

Choose **Business** or **Residential** as the location type. This selection will display a list of pre-defined location labels that reflect the most common areas where site surveys are typically performed.



Measurement Options

- **Signal Level Tracking** - tracks signal strength, noise level, and SNR for the SSID you are connected to. You can configure the measurement duration (default is 15 seconds).
- **AP Graph** - displays a graph representing the channel width of the access point (20, 40, 80, 160, or 320 MHz). The **X-axis** shows the channel number, and the **Y-axis** displays signal level in dBm. The graph also provides visibility into:
 - **Co-channel APs** (APs operating on the same channel)
 - **Adjacent-channel APs** (APs on overlapping channels)

- **Ookla Speedtest®** - Adds a speed test measurement to the test. Select option to choose a server.
Auto is recommended.

- **Auto** - Default setting, which uses Ookla's closest server selection algorithm.
- **Manual** - Select a specific Host (server) to test against.

Refer to "[Internet Access Speed Test](#)" on page 79 for information on other Test Modes.

- **iPerf** - Adds a iPerf test to the test report (for basic throughput testing).
 - **Mode - Client** mode is the default and most common configuration for testing from the customers' premises towards a centralized known/trusted remote iPerf3 server. Server mode is also available for certain isolated test scenarios.
 - **Server IP** - The IP address of the iPerf3 server. The server must be reachable from the test site.
 - **Server Port** - The TCP port used for all iPerf3 traffic.
 - **Direction** - Select the test direction(s): both **Upload & Download** (default), **Upload** only (Client to Server), or **Download** only (Server to Client).
 - **Protocol** - Select between **TCP** (Transmission Control Protocol) and **UDP** (User Datagram Protocol).
 - **Streams** - Number of concurrent test streams used for the test (up to 16). The optimum number of streams depend on several factors, including the server configuration, service under test, and test procedure.
 - **Throughput Mode** - Set the Duration or File Size for each direction.
 - **Duration/File Size** - Defines whether the throughput test ends after a specified time interval or amount of data that has been transferred.
 - **Bottleneck Bandwidth** - Sets the target bandwidth limit in Mbps (Mbit/s) or Gbps (Gbit/s).
 - **Throughput Thresholds** - Specifies the upper and lower throughput limits used to evaluate test results. A visual notification is displayed on the Speedometer and details pages when the

measured throughput falls outside the configured range. The configured thresholds are also displayed on speed test screen as a reference.

Refer to "[iPerf/V-PERF TCP/UDP Speed Test](#)" on [page 84](#) for more information.

- **Thresholds** - Select thresholds (Ookla®, iPerf, Signal) for test.
- **Multi AP** - Software option that allows measurements to be collected from multiple Access Points within a single test. At each measurement point, the user can choose to continue using the current Access Point or connect to a different one before taking the measurement.



Only Signal Level Tracking is enabled by default. Other options must be enabled manually.

After setting configuration options tap **Next** to specify the access point and select test points.

Specify AP Location (*optional*)

Specify the location of the access point. This step is optional and can be skipped if needed.

- **Map Mode** - Tap the map to mark the location of the AP you are connected to. A green pin  will appear where you tap.
- **Draw Mode** - Tap the drawn site map to mark the location of the AP you are connected to. A green pin  will appear where you tap.
- **Table Mode** - Specify the AP location from the list. The AP location won't appear in the table, but it may still be helpful in the final report.
 - Tap  to rename or overwrite any label in the list.
 - Tap  to add a custom location label.
 - Tap to  remove a label.



Map Mode

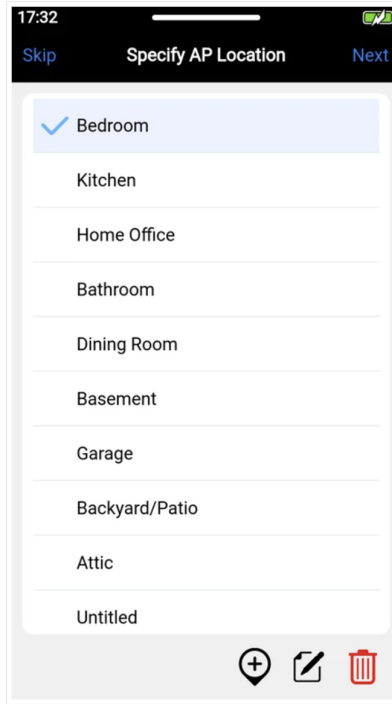
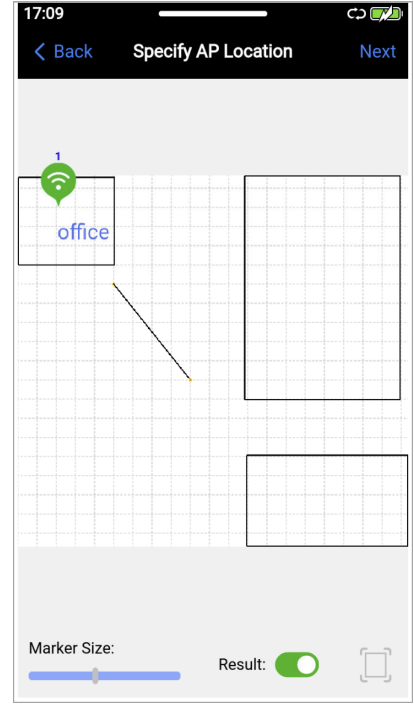


Table Mode



Draw Mode

On the **Specify AP Location** screen, tap **Next**. Choose to select an AP location or skip this step. The **Select Test Location** screen will be shown next.

Select Test Location *(required)*

Select the location for the test.

- **Map Mode** - Tap the map to indicate the test location. A blue pin  will mark the selected spot.
- **Table Mode** - Select the test location from the list. Use the icons at the bottom of the screen to rename, add, or remove a label.
- **Draw Mode** - Tap the drawn site map to indicate the test location. A blue pin  will mark the selected spot.



Map Mode

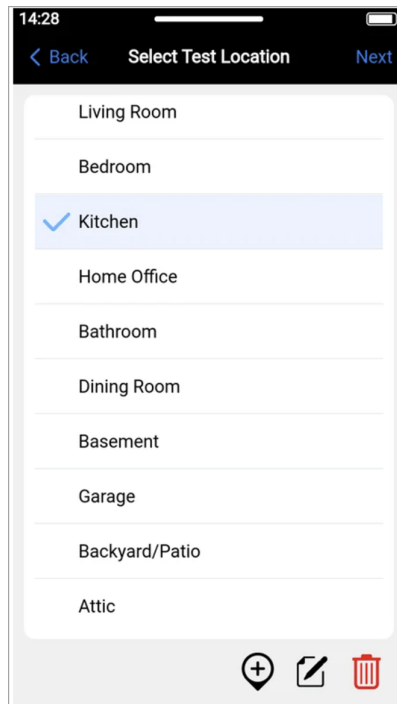
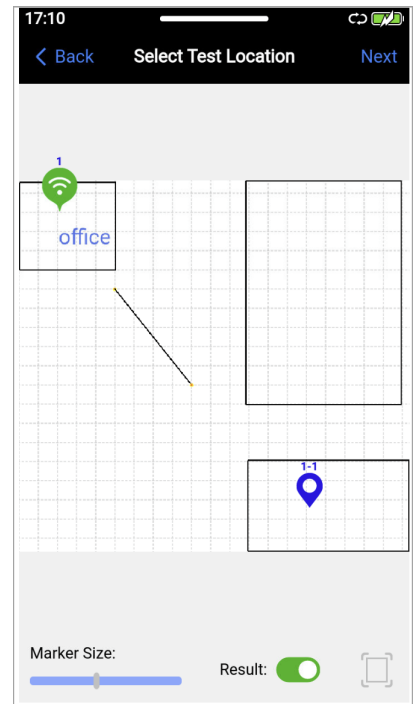


Table Mode



Draw Mode

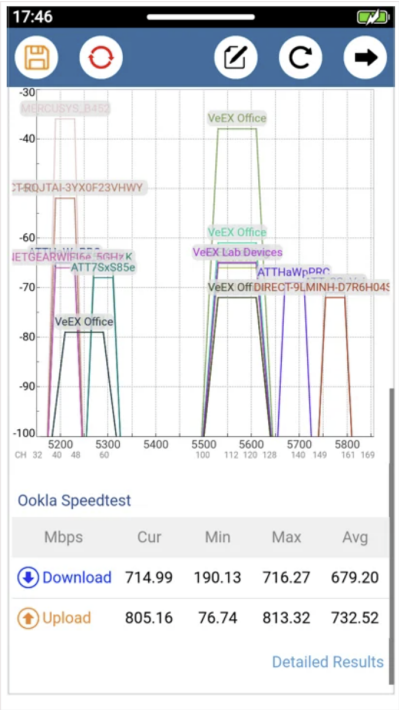
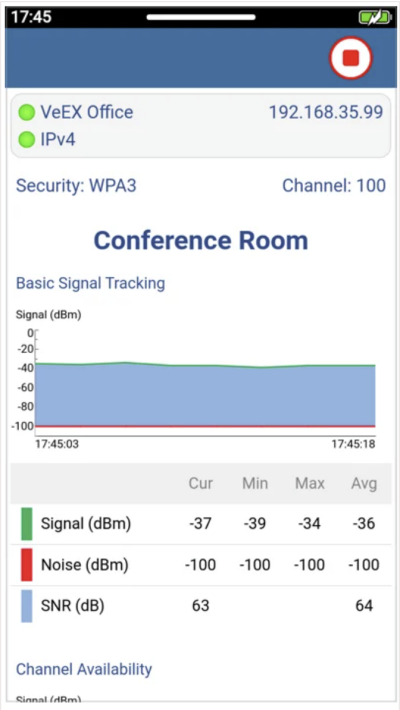
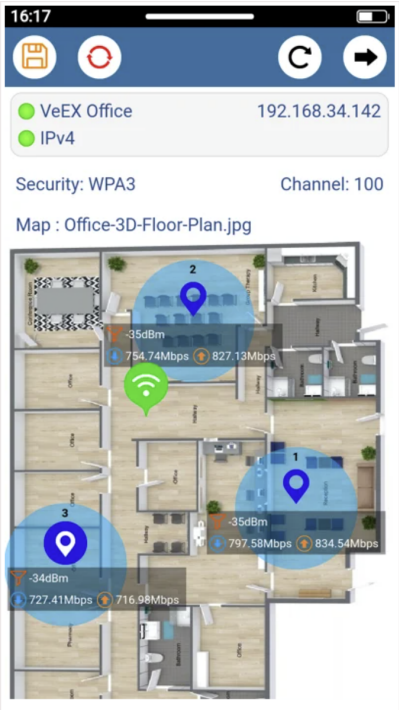
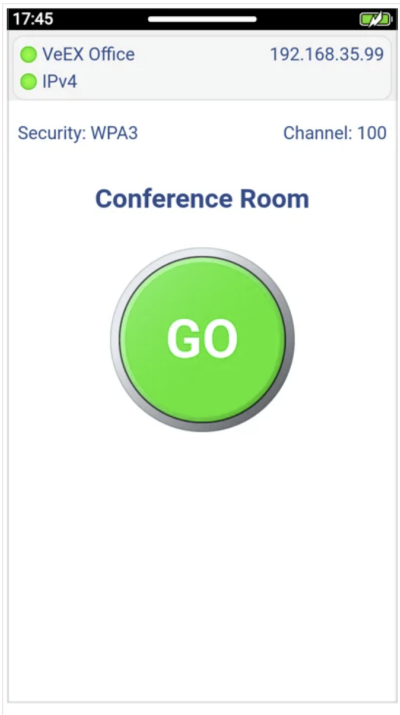


Swipe right at any point before starting the test to return to the previous screen.

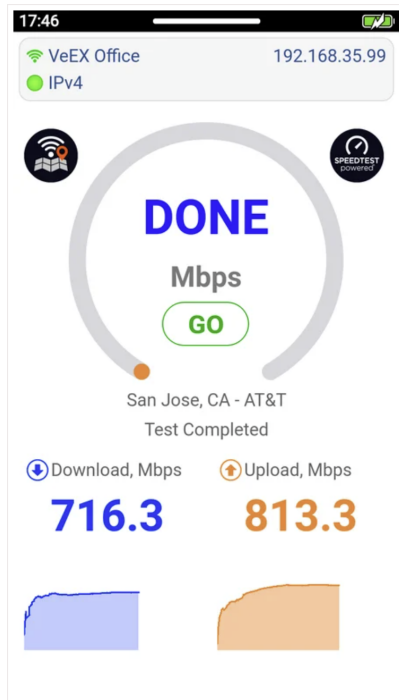
Tap **Next** to begin testing.

Start the Multi-Room Test

Tap **GO** to begin the Multi-Room Test.



To access full Ookla® Speedtest® details, tap **Detailed Results** located at the bottom of the section.



18:17

Ookla Results

Elapsed Time 00:00:22

Status Finished

Summary

	Download	Upload
Cur, Mbps	714.993	805.156
Min, Mbps	190.125	76.744
Max, Mbps	716.275	813.322
Avg, Mbps	679.195	732.522
Cur Latency, ms	13.047	9.059
Min Latency, ms	10.019	8.125
Max Latency, ms	20.473	31.927
Avg Latency, ms	13.308	10.642
Idle Latency, ms	4.552	

Mbps

1000

Test Results Options



Saves the test report for **all locations** where measurements have been performed. All test data is appended into a single, consolidated report.



Restarts the test from scratch. All previously recorded measurements will be lost. **Edit** the location label.



Restarts the test for the current location. All measurements for this location will be lost.

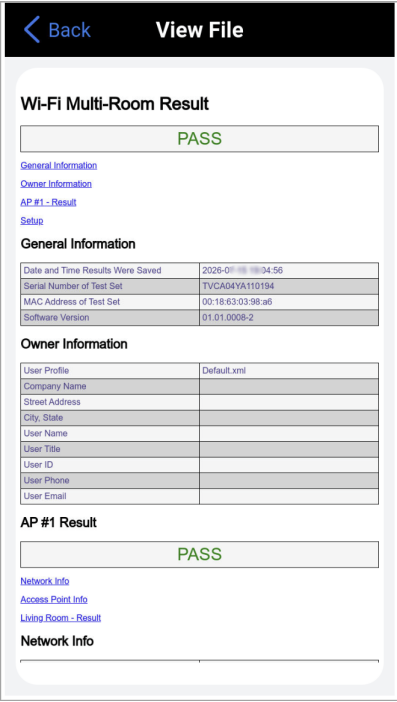
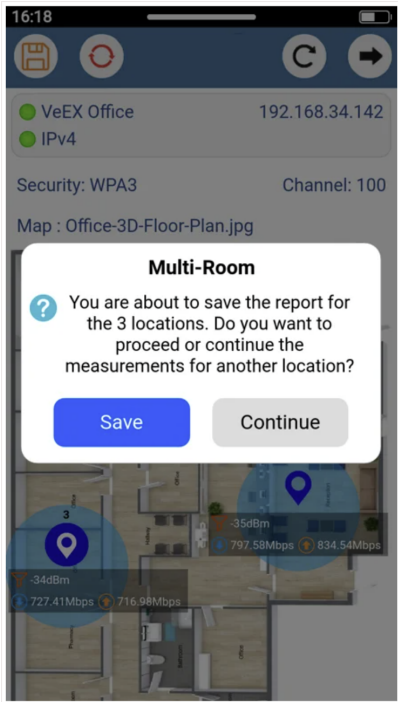


Proceeds to another location for measurements.

Multi-Room Test Report

To save all test point locations in a single consolidated report, tap the save icon . Choose whether to save or continue to add another measurement.

Access the report from the  **Files** menu. Refer to "File Manager - Results, Profiles & Screenshots" on page 25.

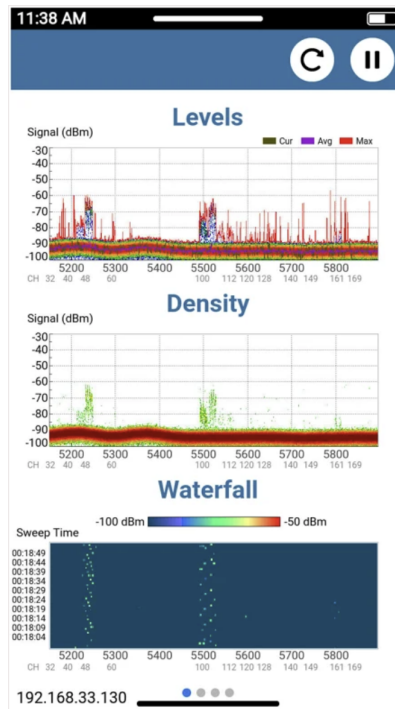


Spectrum Analyzer

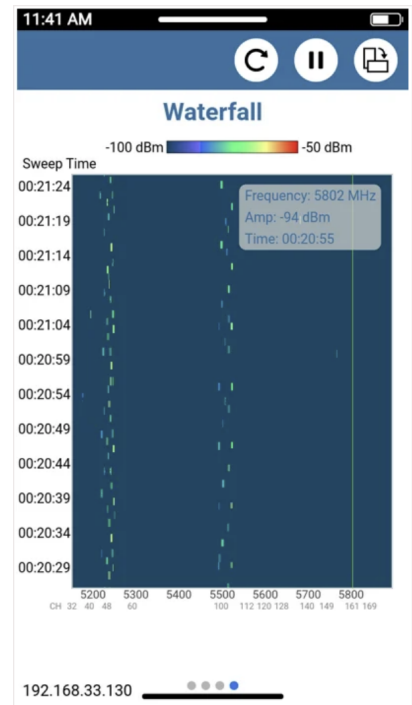
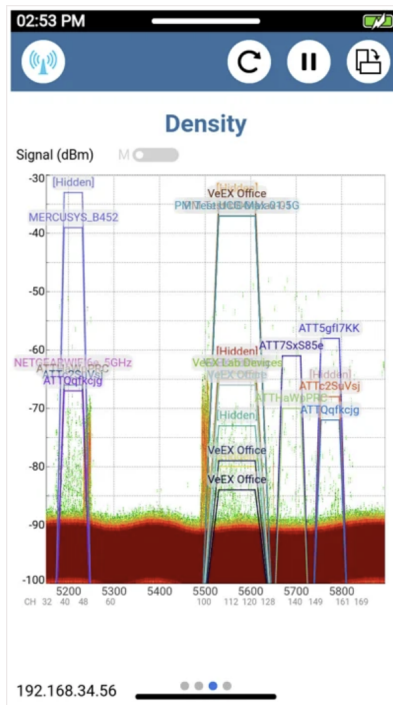
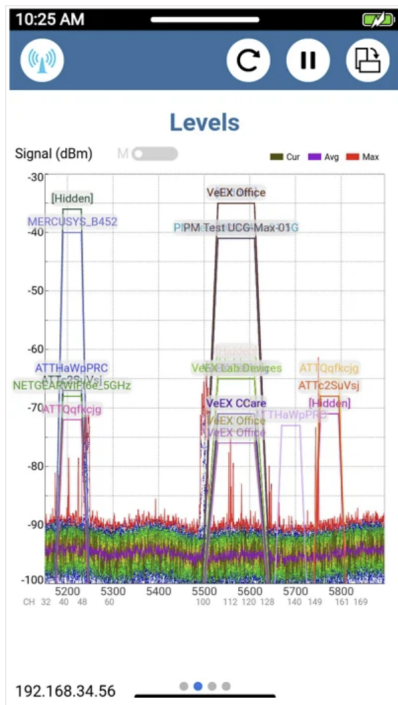


Swipe down from the top, to open the System & Tools menu, then tap on the **Spectrum** button to access the Spectrum Analyzer menu. The spectrum Analyzer is a hardware option. It displays all RF spectrum activity in the Wi-Fi 2.4, 5, and 6 GHz bands.

The Spectrum Analyzer application quickly identifies the best available WLAN channels for optimal performance, providing visualization and localization of RF signals in the 2.4, 5, and 6 GHz spectrums. It also helps detect and resolve interference from competing access points.



The default view displays the Levels Graph, Density Graph, and Waterfall View for 5GHz on a single screen. Tap a specific view to expand it for more details. Swipe left or right to navigate through all the views.



Levels View - Live Signal Snapshot

A real-time snapshot of all RF activity, Wi-Fi and non-Wi-Fi, across the band.

Use it to instantly spot:

- Crowded channels
- High-power interferers
- Overlapping APs

Density View - Channel Usage Over Time

Adds a time dimension to show how often signals occur at each frequency. High density means heavy usage, either from normal Wi-Fi traffic or hidden interference.

Perfect for catching things like:

- Hidden APs
- Background devices causing congestion
- Misleading "clean" channels that are actually busy over time

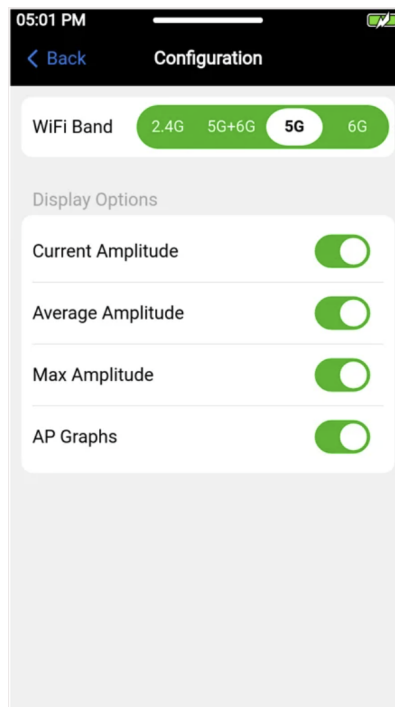
Waterfall View - Signal Behavior Over Time

Displays signal activity across frequency and time, with color indicating signal strength. Highlights when a signal appears, its intensity, and how long it persists.

Useful for detecting intermittent interference from sources like microwaves, Bluetooth devices, or cordless phones.

Test Application Settings and Functions Menu

To save all detected access points detected from the current scan, along with images of the Levels Graph, Density Graph, and Waterfall View, swipe up from the bottom to open the Functions menu, and select  **Save**.



Swipe up from the bottom to access the **Configuration** setup menu , which provides options for both **Wi-Fi Band** selection and **Display Settings**. The available Wi-Fi bands are 2.4 GHz, 5 + 6 GHz, 5 GHz, or 6 GHz. Display options such as **current**, **average**, and **maximum amplitude** (all enabled by default) can be adjusted, and the AP Graph overlay can be applied to the spectrum graph.

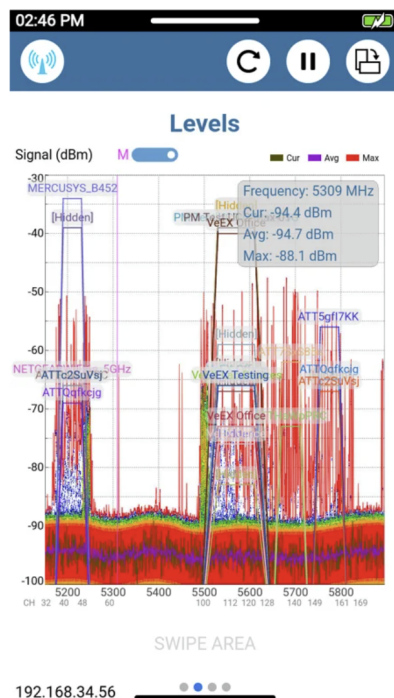


On the Top Navigation Bar, the following actions buttons are available:

- Tap  to open the **Access Point List** and **filter** the APs to overlay on the spectrum graph.
- Tap  to clear all previous measurements and **restart** the spectrum measurement.
- Tap  to **pause** the measurement, and tap  to **resume**.
- Tap  to view the graph in **horizontal view**.

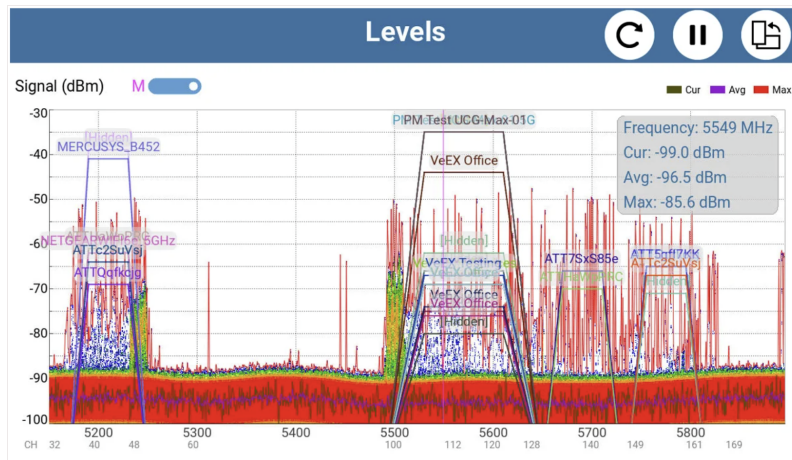
Tap anywhere on the graph to display corresponding measurements, including frequency, current, average and maximum signal strength. Move the marker left or right for precise adjustments. Toggle the M switch off  to disable the marker.

 When the marker is enabled, the swipe area for switching between views is limited to the space below the graph to avoid confusion with marker positioning. When the marker is disabled, swiping left or right anywhere on the screen is allowed.



Filter AP		
	VeEX Office	Ch:100
-36dBm	28:70:4e:31:63:77 5GHz	a/n/ac/ax
	MERCUSYS_B452	Ch:48
-38dBm	30:16:9d:68:b4:55 5GHz	a/n/ac/ax
	PM Test UCG-Max-01-5G	Ch:100
-39dBm	1e:ea:14:27:8d:09 5GHz	a/n/ac/ax
	PM Test UCG-Max-01	Ch:100
-39dBm	1a:ea:14:27:8d:09 5GHz	a/n/ac/ax
	VeEX CCare	Ch:116
-62dBm	32:70:4e:31:62:fb 5GHz	a/n/ac/ax
	VeEX Office	Ch:116
-62dBm	28:70:4e:31:62:fb 5GHz	a/n/ac/ax
	VeEX Testing	Ch:100
-63dBm	32:70:4e:31:65:a7 5GHz	a/n/ac/ax
	VeEX Lab Devices	Ch:100
-63dBm	36:70:4e:31:65:a7 5GHz	a/n/ac/ax
	VeEX Office	Ch:100
-63dBm	28:70:4e:31:65:a7 5GHz	a/n/ac/ax
	ATTc2SuVsj	Ch:44
-64dBm	bc:9a:8e:cf:c4:48 5GHz	a/n/ac/ax
	ATT7SxS85e	Ch:132
-65dBm	e0:22:04:5a:94:ca 5GHz	a/n/ac
	NETGEARWIFI6e 5GHz	Ch:44

Tap  to switch to horizontal view. In this mode, swipe gestures (up/down, left/right) are disabled. To access the System, Tools & Settings Menu, or Configuration, return to vertical view (.



Ethernet Settings/Connection

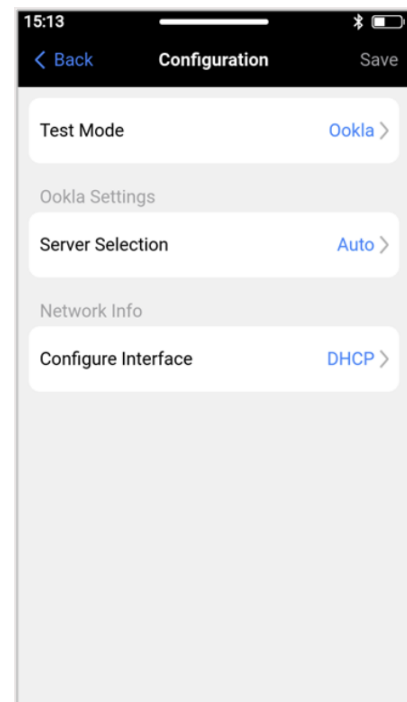
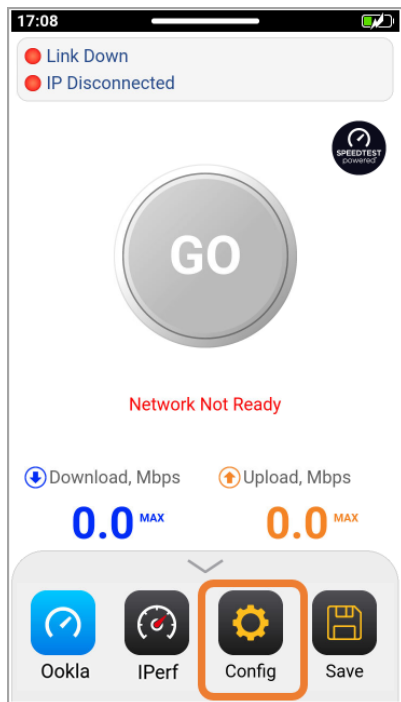


Swipe down from the top, to open the System & Tools menu, then tap on the Ethernet button to select the RJ45 LAN interface for testing and/or connectivity. The RJ45 test interface is capable of testing full-duplex Internet access speeds up to 1 Gbit/s over wired Ethernet interfaces.

The test set can be connected to ONTs, modems, routers, and switches to run V-TEST (including Ookla® Speedtest®) or V-PERF to verify the link or network's speed test performance and confirm that it has been properly installed and provisioned.

- 10/100/1000BASE-T test interface
- Power over Ethernet (PoE) detection. (Yes/No)
- Provides local and remote LAN management access to the test set (e.g. R-Server, EZ Remote Control) via the USB-C port using a USB-C to RJ45 adapter.

After selecting the Ethernet Test mode, the screen shows the Speed Test GUI. Swipe up from the bottom to reveal the Functions menu and tap the  **Config** button to setup the 10/100/1000BASE-T interface.



On the Network Information section, tap the **Configure Interface** parameter (in blue) to select the IP operation mode. Use the **Protocol** selector to choose the IP version/connection type for the test: **IPv4**, **IPv6**, or **PPPoE**.

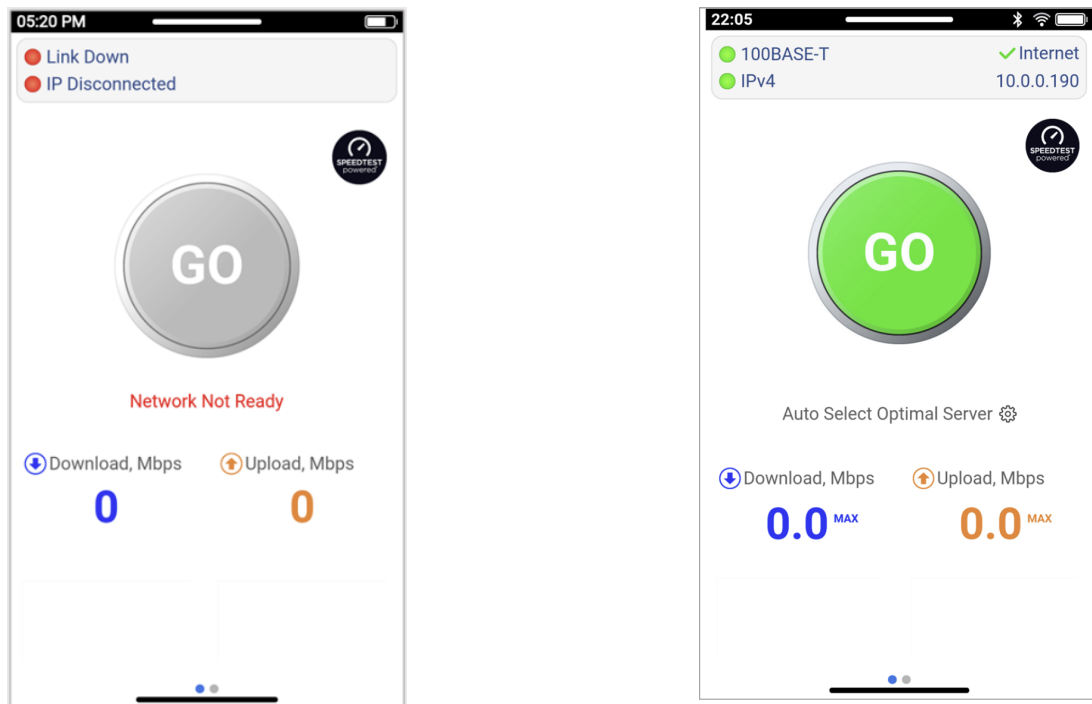
- **DHCP** for dynamic IP Address, assigned by the modem, gateway, router or the network. The **Lease Time** field displays the duration for which the assigned IP address remains valid before renewal is required.
- **Static** to enter the designated fixed IP Address, Subnet, Gateway and DNS information. The **Test Port MAC** field displays the MAC address of the RJ45 test port.

The screenshot shows the 'Configure Interface' screen at 17:29. The 'Protocol' is set to 'IPv4' and 'IP Mode' is set to 'DHCP'. The 'Auto Allocated' section is highlighted in gray, indicating it is not active. The fields for IP Address, Subnet, Gateway, DNS1, DNS2, and Lease Time are all empty. The 'VLAN' field is set to 'None'.

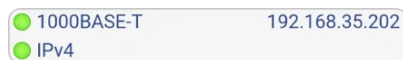
The screenshot shows the 'Configure Interface' screen at 17:28. The 'Protocol' is set to 'IPv4' and 'IP Mode' is set to 'Static'. The 'Static Assigned' section is highlighted in gray, indicating it is active. The fields for IP Address (192.168.0.102), Subnet (255.255.255.0), Gateway, DNS1, and DNS2 are all empty. The 'VLAN' field is set to 'None' and the 'Test Port MAC' field is set to '00:18:63:03:a7:16'.

Once configured to match the link under test, connect the test set's RJ45 test port to the service under test and the IP connection will be active (in DHCP mode the appropriate IP addresses assigned to the test set will be displayed in gray). Tap < **Back** to go to the previous menu and select the **Test Mode**, between **Ookla® Speedtest®** or **iPerf3**.

The main speed test page shows the Link Status and assigned IP Address. A round  or  Link Status soft LED indicates that the active test interface is RJ45 10/100/1000BASE-T. The Speed Test **GO** (start) button may be in gray (not ready) or green (ready).



Tap the Connection Status summary box, on the top, to see more detailed information about the current LAN connection and quickly change the test port's IP configuration.



 If going back and forth between Ethernet and Wi-Fi testing, these two test interfaces will have different IP addresses.

Refer to "[Internet Access Speed Test](#)" on the next page for more information.

Internet Access Speed Test

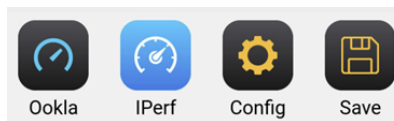


This commonly used Internet speed test evaluates the TCP protocol performance of the access network by testing against ubiquitous Ookla's Speedtest® servers. This Layer 4+ test stresses the link and service up to the test interface's maximum line rate, providing key performance indicators (KPI) such as connection time to the server, data transfer time, and line rate throughput rates, all reported during the test.

Perform Internet Access Speed Test

1. Connect to Wi-Fi or 10/100/1000BASE-T test interface. Refer to ["Wi-Fi Test Application" on page 41](#) and ["Ethernet Settings/Connection" on page 76](#).

2. Swipe-up from the bottom to reveal the Test Application menu.



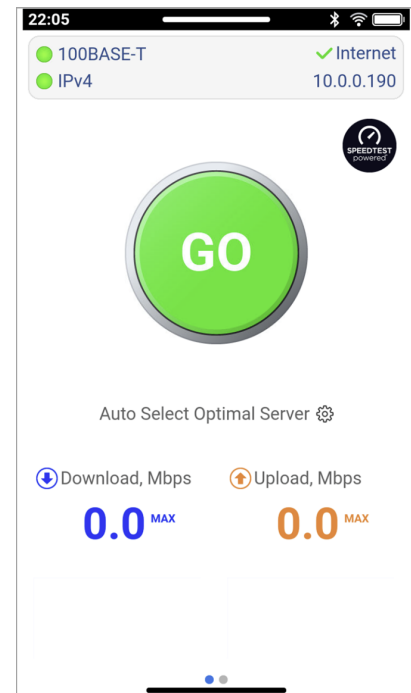
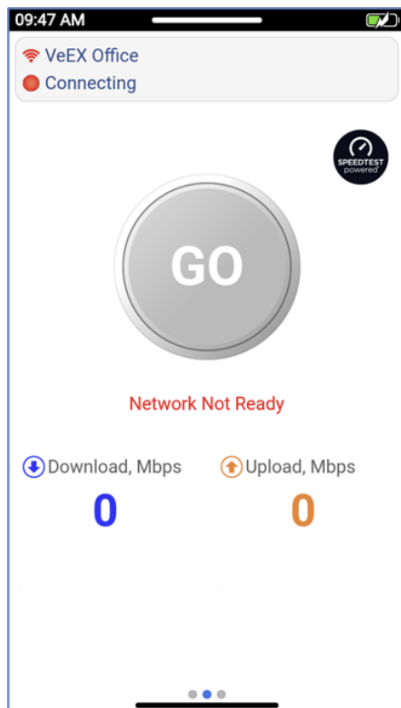
3. Tap the  **Config** button (or the Speedtest Powered™  icon) to setup the Speed Test test parameters. Refer to ["Speed Test Configuration" on page 81](#).
4. Press **GO** to initiate testing. The download test starts next, followed by the upload test. If Ping mode is enabled, the test set first performs a Ping test. Ping Response results will appear in the detailed results.
5. After running a test, tap the  **Save Results** button to store the current test results. Users can overwrite the default File Name with a custom name, as well as add extra information such as Job ID, Node ID (Location or Site), subscriber's Account. Tap **OK** to save. Refer to ["File Manager - Results, Profiles & Screenshots" on page 25](#).

In Speedtest Powered™ mode, the test follows Ookla’s methodology and tests to the Speedtest Server Network™. In this mode, the test is compatible with Ookla’s protocol/methodology; it scans nearby servers in the local market and tests against the server with the fastest (lowest latency) response.

- Works with wired Ethernet and Wi-Fi links.
- Compatible with public Ookla® Netgauge servers.

The Speedtest Powered™ icon will remain visible on the main test page, to remind users of the current/active Test Mode.

The main speed test screen page shows the Link Status and assigned IP Address on the top of the screen. A 📶 or 🟢 Link Status icon indicates that the active test interface is Wi-Fi. The Speed Test GO (start) button may be shown in gray (not ready) or green (ready).



Tap the Connection Status summary box, on the top, to see more detailed information about the current Access Point being used.

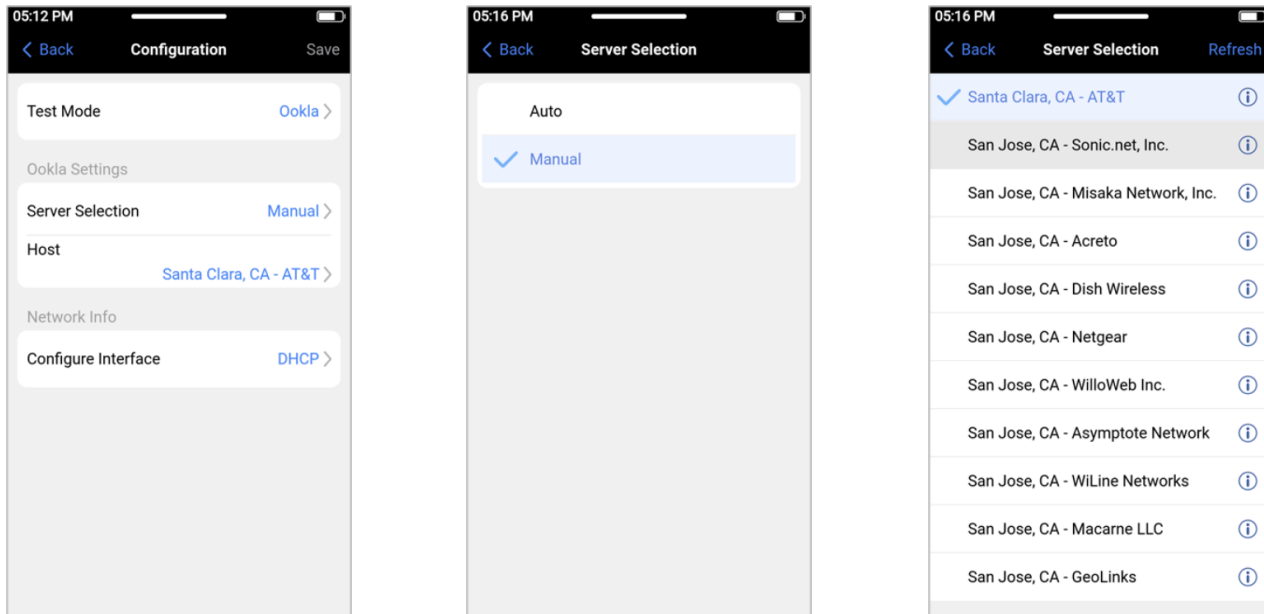


Connection status summary box

💡 If going back and forth between Ethernet and Wi-Fi testing, these two test interfaces will have different IP addresses..

Speed Test Configuration

On the **Configuration** page, make sure the Test mode is set to Ookla® Speedtest® mode. The **Server Selection** is set to **Auto** by default, using Ookla's closest server selection algorithm, or can be set to **Manual** to select a specific target **Host** (server) to test against.

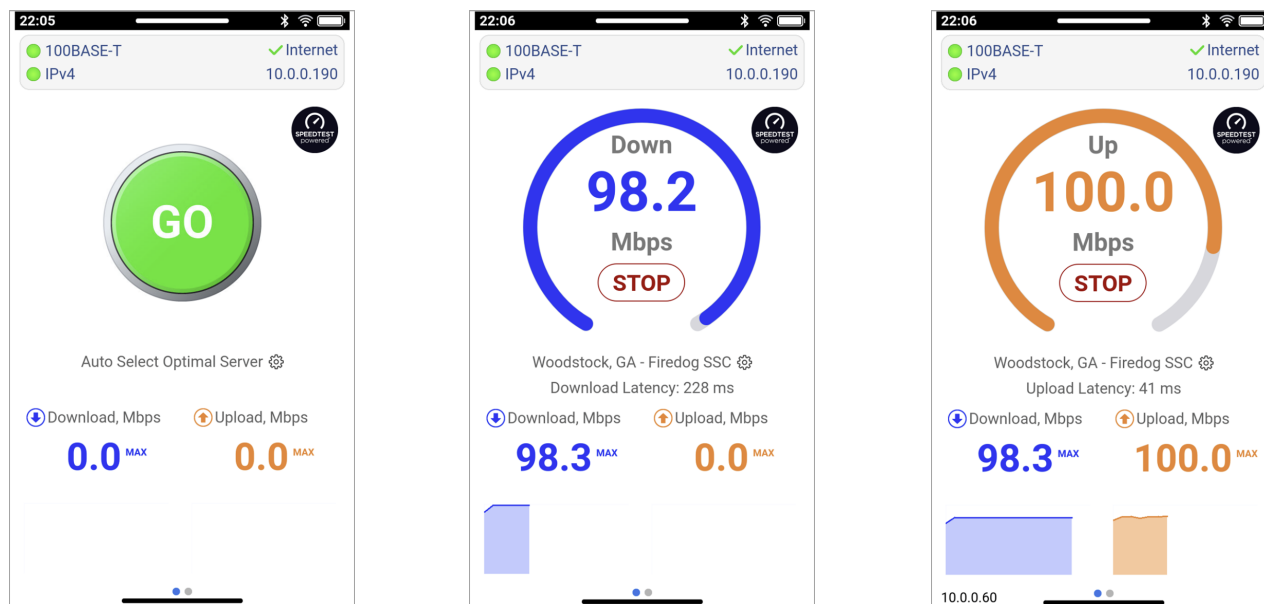


Use the **Configure IP Mode** field to set the test interface's IP Address behavior, **DHCP** (dynamic) or **Static**.

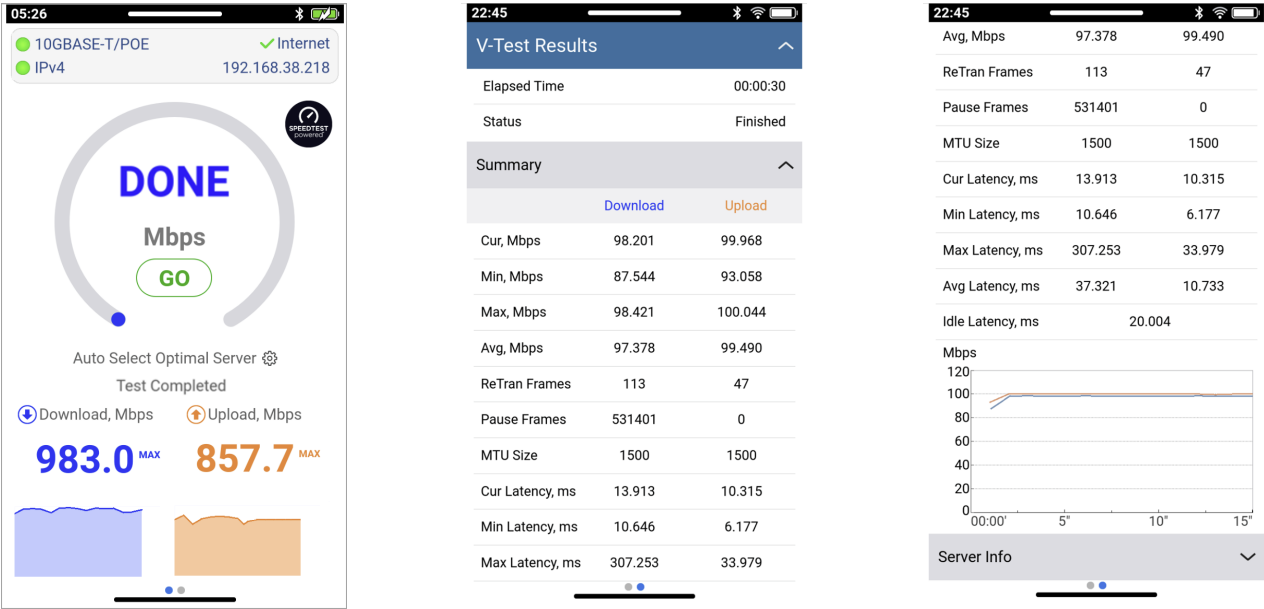
Tap **< Back** (or swipe right) to go back to the main Speed Test page. Make sure to establish the appropriate connections, the Ethernet (LAN) or Wi-Fi (WLAN) link is active and the GO button is green. Press **GO** to start the test.

Speed Test Results

After pressing the GO button, the test set starts by measuring the attainable throughput speeds for the **Down-load** (downstream) and then the **Upload** (upstream). Each of the tests (upload and download) may take up to 15 seconds. The test duration is determined automatically and may vary depending on the server location, bandwidth, latency, etc.



When the test has finished, it displays DONE.



Swipe left to see the detailed Test Report. Scroll up and down to go through all the details. The different sections of the report can be collapsed or expanded, to better focus on the key performance indicators (KPI) and information preferred by the user.

Swipe up and tap the  **Save** button to store the current test results or swipe right to run a new test.

iPerf/V-PERF TCP/UDP Speed Test



The V-PERF/iPerf is an advanced Layer 4+ network performance validation tool that measures the maximum achievable bandwidth between two devices and provides insights into throughput, stability, and potential network issues. It supports both TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) testing, in two test modes:

- **V-PERF** - VeEX's full implementation of the RFC6349 TCP throughput test methodology, supported on RJ45 and SFP+ test interfaces and built for formal Ethernet service validation.
- **iPerf** - an industry-standard throughput tool, fully compatible with third-party iPerf clients and servers, available for Wi-Fi testing and best suited for basic throughput verification.

The TCP test measures the highest achievable bandwidth while ensuring reliable data delivery, reporting metrics such as bandwidth, latency, and retransmissions. As a stateful protocol, TCP maintains an active connection and manages acknowledgments, retransmissions and congestion control. This makes it ideal for service providers validating customer-facing services such as high-speed internet, where consistent throughput and reliability are essential.

Alternatively, the UDP test measures bandwidth without error correction, making it ideal for validating real-time applications like video streaming. As a stateless protocol, UDP does not establish or maintain a continuous connection or track individual packets, which allows for faster transmission but with possible packet loss. The UDP test provides additional insights into performance through metrics such as bandwidth, packet loss, and jitter.

Key Features

- Operates over wired Ethernet and Wi-Fi links.
- Supports TCP or UDP Throughput testing.
- Performs stateful TCP or stateless UDP Tests at the test interface's maximum line rate.
- Functions in both TCP/UDP Client and Server modes.
- Fully compatible with third-party iPerf3 Clients and Servers.
- Measures TCP or UDP upstream and downstream Throughput rates (current, minimum, maximum, average), TCP retransmissions, UDP packet loss, UDP packet jitter.

Access iPerf3/V-PERF Test

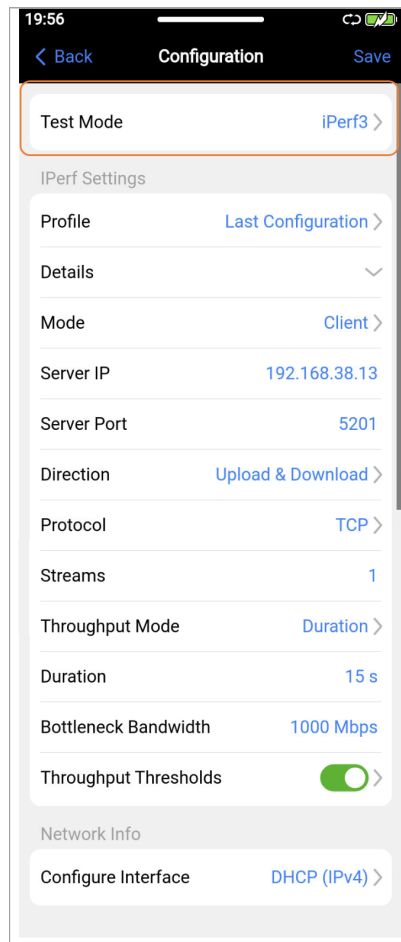
- At the bottom of the main screen, swipe left to view the test application options. Tap  **Ethernet** or  **Wi-Fi**, depending on the interface to be tested .
- When operating within a different test application, swipe up from the bottom of the screen to open the Test Application menu. Then, tap the  **iPerf3/V-PERF** button to set it as the active Test Mode.

On the **Speed Test** screen, tap the  **Settings** icon (or the  speedometer icon) to configure the iPerf3/V-PERF test parameters. The  **iPerf3/V-PERF** speedometer icon will remain visible on the main test page, to show the current/active Test Mode.

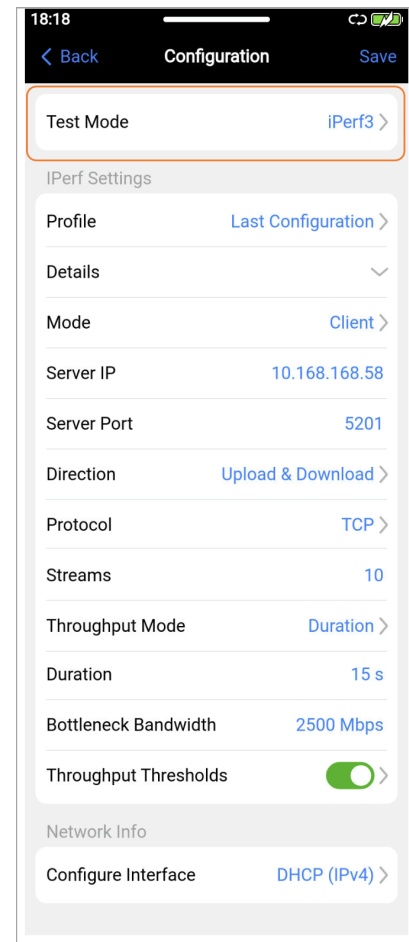
After running a test, swipe up from the bottom and tap the  **Save Results** button to store the current test results. Overwrite the default filename with a custom name, as well as add extra information such as Job ID, ID (Location or Site), subscriber's Account. Tap the **OK** button to save the results to the unit. Refer to "[File Manager - Results, Profiles & Screenshots](#)" on page 25.

iPerf3/V-PERF Configuration

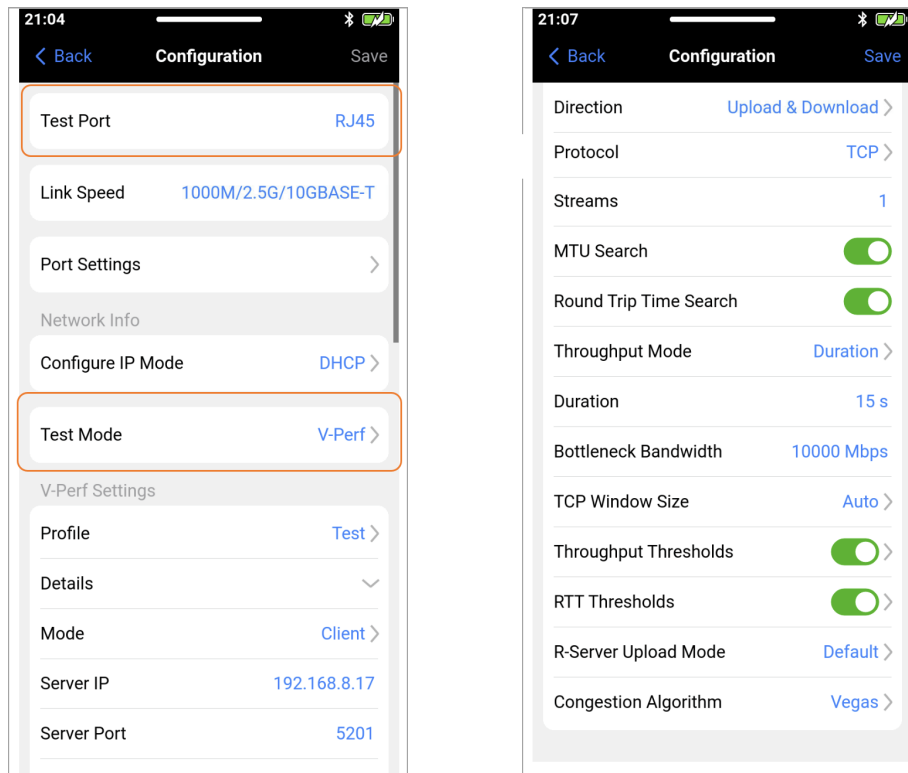
On the **Configuration** page, verify that the Test mode is set to **iPerf3** or **V-PERF** speed test mode. On the **iPerf3/V-PERF Settings** section, set the target Server to test against, by selecting a test **Profile**. Expand the **Details** section to configure the test parameters. .



iPerf3 Configuration (RJ45)



iPerf3 Configuration (Wi-Fi)



PERF Configuration (RJ45)

The configurations and target server settings can be saved as **Profiles**, allowing the same configuration to be recalled for future use.

- **Mode - Client** mode is the default and most common configuration for testing from the customers' premises towards a centralized known/trusted remote iPerf3 server. Server mode is also available for certain isolated test scenarios.
- **Server IP** - The IP address of the iPerf3 server. The server must be reachable from the test site.
- **Server Port** - The TCP port used for all iPerf3 traffic.
- **Direction** - Select the test direction(s): both **Upload & Download** (default), **Upload** only (Client to Server), or **Download** only (Server to Client).
- **Protocol** - Select between **TCP** (Transmission Control Protocol) and **UDP** (User Datagram Protocol).

- **Streams** - Number of concurrent test streams used for the test (up to 16). The optimum number of streams depend on several factors, including the server configuration, service under test, and test procedure.
- **Throughput Mode** - Set the Duration or File Size for each direction.
- **Duration/File Size** - Defines whether the throughput test ends after a specified time interval or amount of data that has been transferred.
- **Bottleneck Bandwidth** - Sets the target bandwidth limit in Mbps (Mbit/s) or Gbps (Gbit/s).
- **Throughput Thresholds** - Specifies the upper and lower throughput limits used to evaluate test results. A visual notification is displayed on the Speedometer and details pages when the measured throughput falls outside the configured range. The configured thresholds are also displayed on speed test screen as a reference.

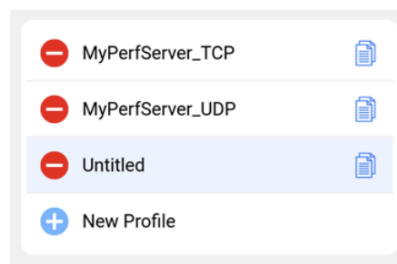
Additional V-PERF settings include:

- **MTU Search** - Determines the maximum packet size that can be transmitted across the network without fragmentation . The Path MTU search complies with RFC4821 (Packetization Layer Path MTU Discovery).
- **Round Trip Time (RTT) Search** - Measures the time required for a TCP segment to travel to the server and for the corresponding acknowledgment to be received. Accurate RTT measurements require a network with minimal congestion to avoid delays caused by network buffering.
- **TCP Window Size** - Specifies the amount of unacknowledged data that can be transmitted before an acknowledgment is required. Larger window sizes may improve throughput on high latency or high bandwidth networks.
- **RTT Thresholds** - Specifies the upper and lower RTT limits used to evaluate latency. A visual notification is displayed on the speedometer and details pages when the measured RTT falls outside the configured range.
- **R-Server Upload Mode** - Specifies the format used by R-Server to process uploaded test data. Select **Default** to upload data in HTML and XML formats, or **CSV** to upload data in Comma

Separated Values (CSV) format.

- **Congestion Algorithm** - Selects the TCP congestion control algorithm used to regulate the data transmission rate and optimize throughput under varying network conditions.
 - **Reno** - Increases the transmission rate until packet loss is detected , then reduces the transmission rate to relieve network congestion.
 - **Vegas** - Adjusts the transmission rate based on changes in network delay before packet loss occurs.
 - **CUBIC** - Optimizes throughput on high-speed, high latency networks using a loss-based congestion control algorithm.

After completing the test setup, **Save** it as a Profile using a unique descriptive name. To create new profiles, on the **Profile** page, tap **Edit** and use the  **Add** function or use the  **Copy** function to clone an existing profile and use it as a starting point for the  **New** one. Use the delete function for the profiles no longer needed.



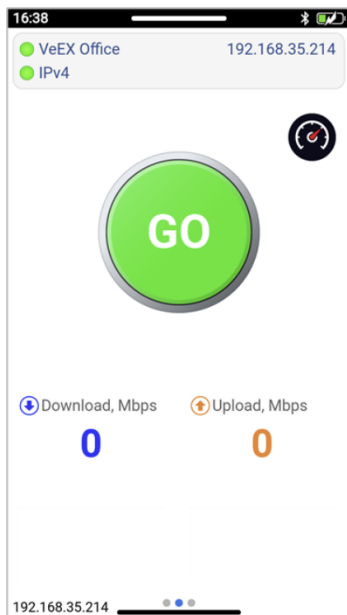
Use the **Configure Interface** field to set the test interface's IP Address behavior, **DHCP** (dynamic) or **Static**.

Tap **< Back** (or swipe right) to return to the main iPerf3/V-PERFscreen. Verify that the appropriate connections are established, the Ethernet (LAN) or Wi-Fi (WLAN) link is active, and the **GO** button is green. Press **GO** to start the test.

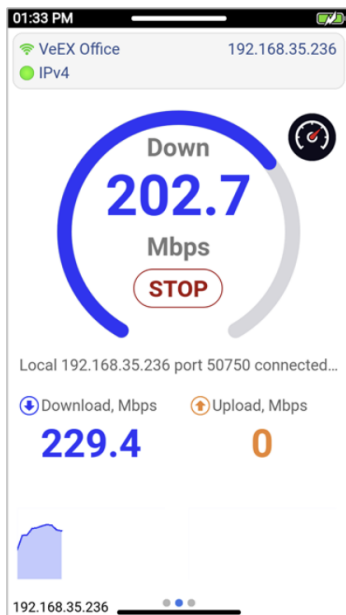
iPerf3/V-PERF Throughput (Speed Test) Results

After pressing the **GO** button, the test begins by measuring the attainable throughput speeds for the Download (downstream), followed by Upload (upstream). When the test is complete, the status changes to DONE, PASS, or FAIL, depending on the configured throughput thresholds.

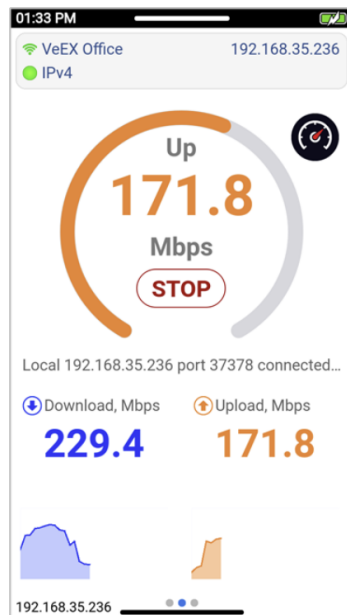
iPerf3 Results (Wi-Fi)



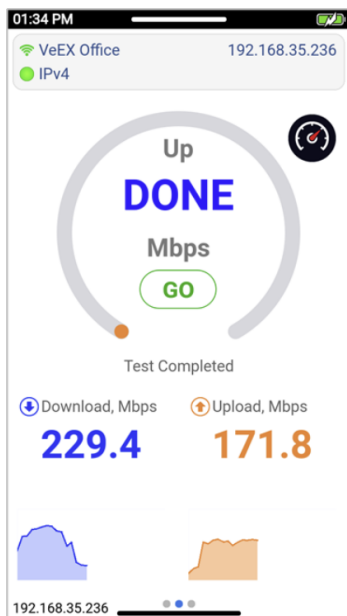
iPerf3 GO Button



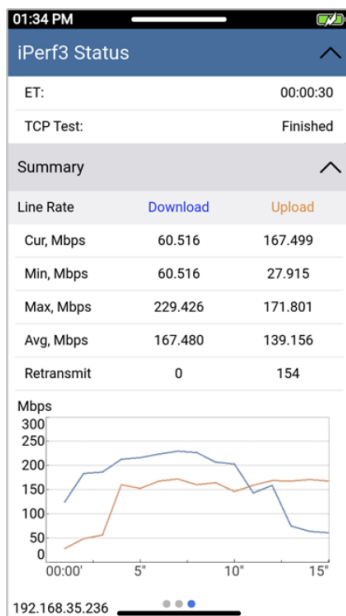
iPerf3 Download



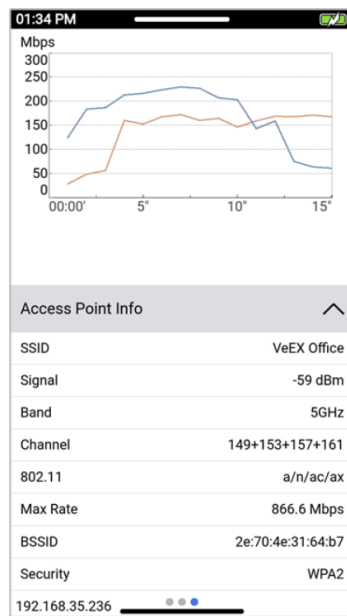
iPerf3 Upload



iPerf3 Completed Test

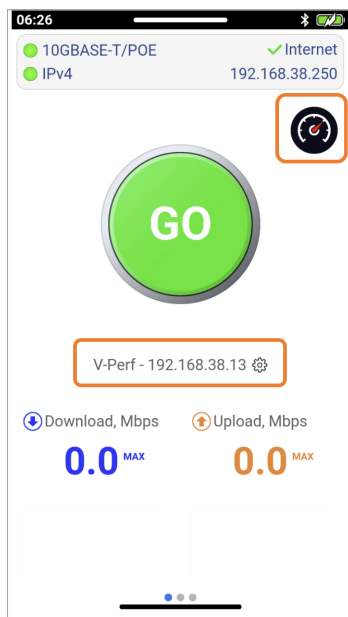


iPerf3 Results Summary

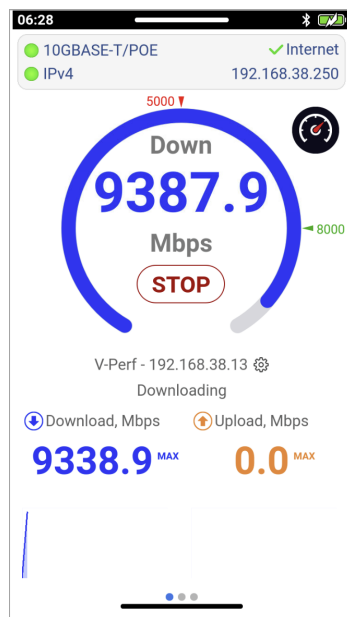


iPerf3 Results Summary
(continued)

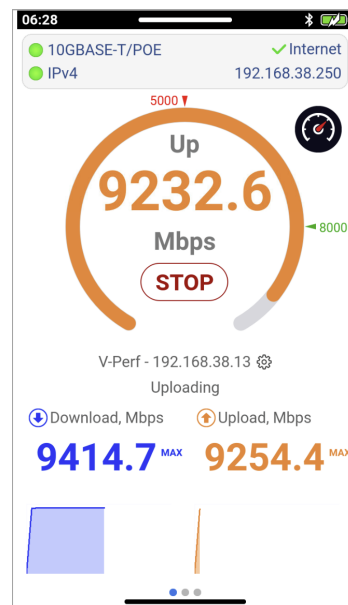
V-PERF Results (RJ45)



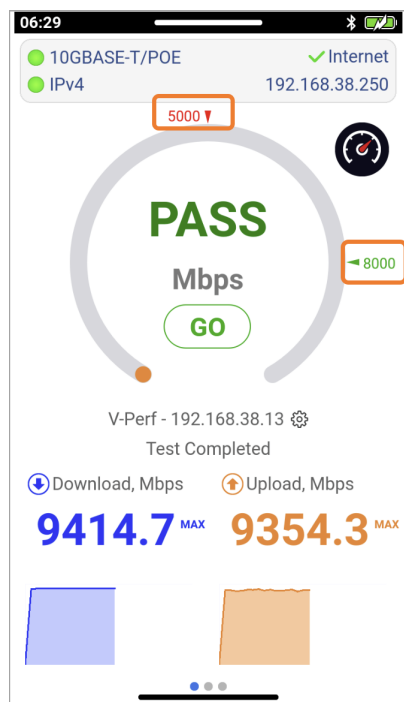
V-PERF GO Button



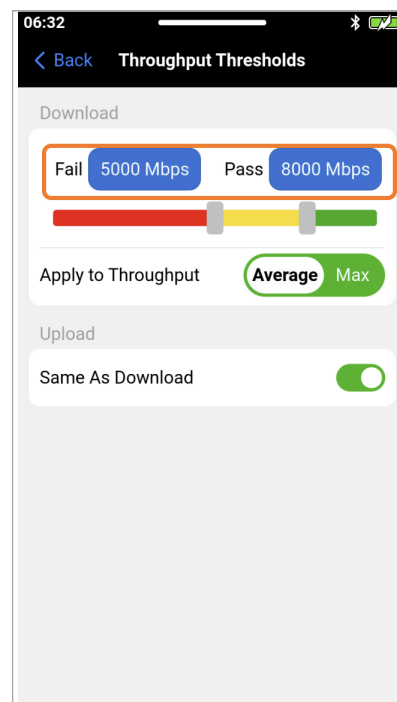
V-PERF Download



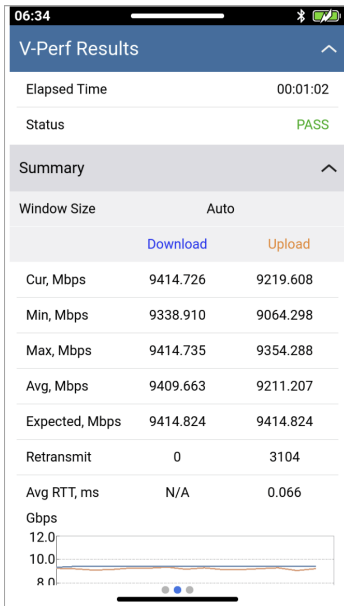
V-PERF Upload



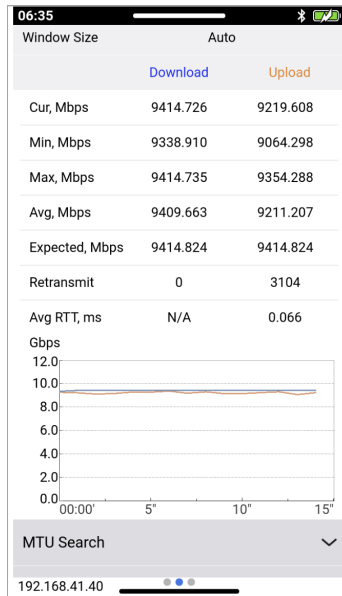
V-PERF Completed Test



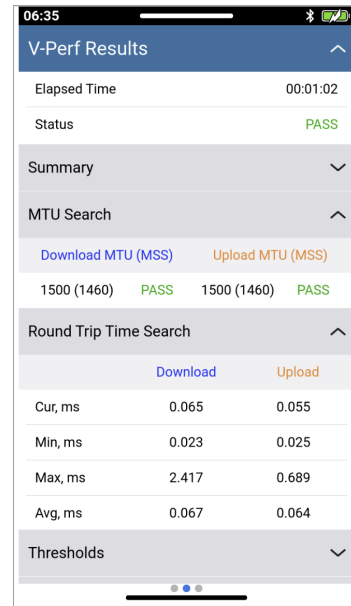
V-PERF Enabled Test Thresholds (noted on test screen)



V-PERF Results Summary



V-PERF Results Summary (continued)



V-PERF Results MTU & RTT

Swipe left to see the detailed Test Report. Scroll up and down to go through all the details. The different sections of the report can be collapsed or expanded, to better focus on the key performance indicators (KPI) and preferred information.

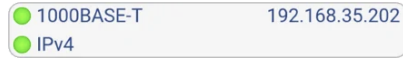
Swipe up and tap the  **Save** button to store the current test results or swipe right to run a new test. Access the results saved to the unit at any time by tapping  **Files** on the main platform screen. Refer to "[File Manager - Results, Profiles & Screenshots](#)" on page 25.

Ping Test

The ICMP echo request or Ping test is a basic troubleshooting tool, commonly used to verify IP connectivity against a remote server, device or client, and to measure latency (round-trip delay).

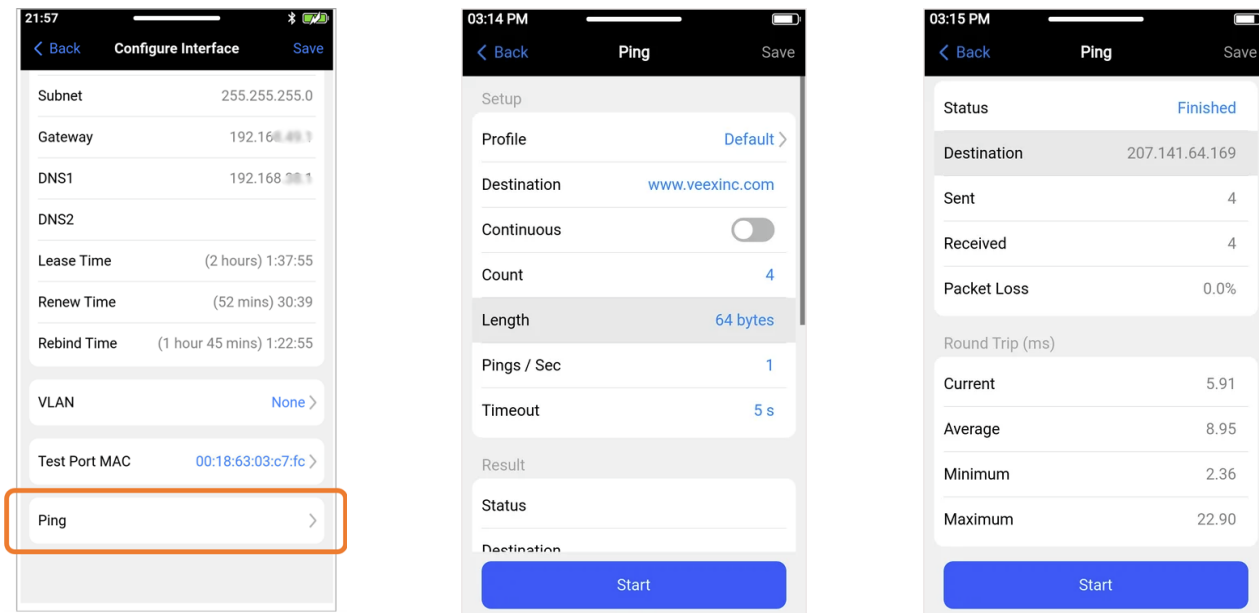
The test set includes built-in ping testing capabilities, which can be accessed by either:

- Tapping the top Status Bar to open the **Configure Interface** menu, then scroll down to select **Ping**.



Connection status summary box

- In Ethernet mode, swipe up from the bottom to open the Test Application menu and select **Config**. Tap **Configure Interface** and then tap **Ping**.
- In Wi-Fi mode, go to the **AP Scan** results page and tap the Access Point the test set is currently connected to (indicated by a checkmark). Tap **Configure Interface** and then **Ping**.



Enter the target URL or IP address, the number of pings (Count), packet Length (64 to 1518 Bytes), rate (Pings/Sec, 1 to 100) and press **Start**.

The Ping page will display the test results. To make changes to the ping test configuration, scroll up to the **Setup** section.

Save Ping Settings

For frequently used URLs or IP addresses, use the **Save** function (upper-right corner) to store the target as a Profile for future use. Tap the **Destination** field to enter the desired address, press **Start** to verify connectivity,

then tap **Save**. Enter a descriptive name for the profile and tap **OK** to save.

Software Update Process



Once the unit detects the the update file on the inserted USB memory stick, the Upgrade icon becomes active. The system automatically identifies the newer version and upgrades to it when **Upgrade** is selected.



Back up all the test results and test profiles before performing software upgrades.

Download the installer package provided by VeEX and unzip (uncompress) the **wx90-veex-arm.tar.gz** installer package.



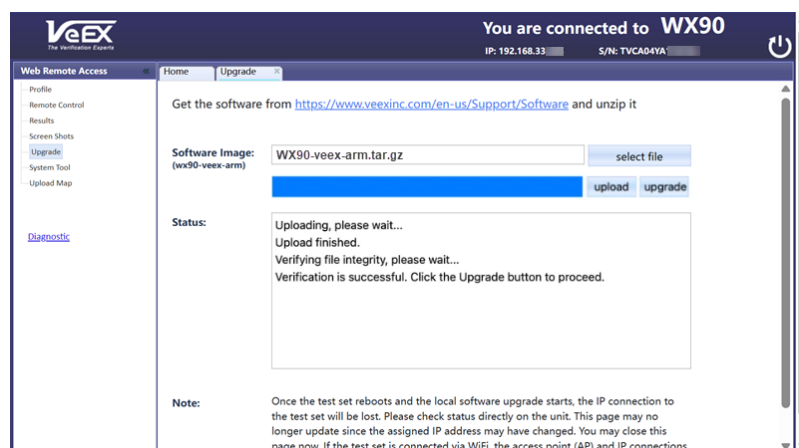
The computer may identify it with a compressed folder icon; however, there is no need to further uncompress it.

Using a Web Browser

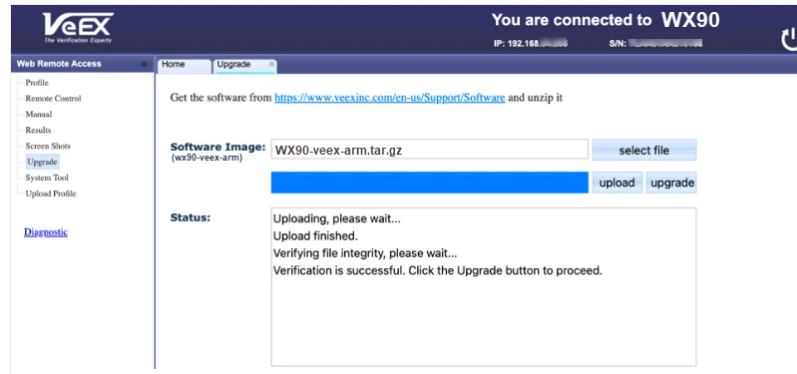
1. [Verify that the test set's battery has >50% charge, it is connected to its charger, and charging.](#) The unit must remain connected to the AC/DC charger during the entire update process.
2. [Establish a LAN or WLAN \(Wi-Fi\) connection](#) and note the test set's IP address.
3. On a computer, connected to the same network, open a web browser and point it to the test set's IP address, to open its Web Remote Access page.



In DHCP environments, the remote test set may get a different IP address after a reboot (static or reserved IPs are recommended).



4. Select **Upgrade** from the left menu.



5. Tap the **Select File** button and use the file browser to select the uncompressed installer package, then select **Upload** to transfer it to the test set. Depending on the file size and connection speed, this may take a few minutes.
6. Once the file upload has finished and has been verified, click the **Upgrade** button, then select **OK** to start the software update process in the test set. Let the test set go through the process, uninterrupted. This will take a few minutes. If the file verification fails, due to link or transmission errors, try uploading it again.
7. The test set may reboot multiple times during the process.



DO NOT turn the test set OFF until the software update process has finished.

8. After the software upgrade is completed, confirm the software version on the [About screen](#).

Using USB Memory Sticks

1. [Verify that the test set's battery has >50% charge, it is connected to its charger, and charging.](#) The unit must remain connected to the AC/DC charger during the entire update process.
2. Copy the **wx90-veex-arm.tar.gz** file to the root directory of a USB memory stick.
3. Insert the USB-C memory stick into the test set. (If using a USB-A memory stick, use the USB-A to USB-C adapter.)

4. Swipe down to **System Settings** and locate the  Memory Stick **Upgrade** icon. Once the unit detects the image, the icon becomes active. Tap the icon and on the Upgrade screen, select  **Check** to refresh the content, if necessary.

 **DO NOT** downgrade the test set software, unless specifically instructed by VeEX Customer Support.

5. Tap  **Upgrade** to initiate a software upgrade. The test set may reboot multiple times during the process.

 **DO NOT turn the test set OFF until the software update process has finished.**

6. After the software upgrade is completed, confirm the software version on the

Using R-Server

1. Verify that the test set's battery has >50% charge, it is connected to its charger, and charging. The unit must remain connected to the AC/DC charger during the entire update process.
2. Establish a LAN or WLAN (Wi-Fi) connection , then select  **Cloud Services** and register the test set, if needed. Refer to "Registering the Test Set" on page 31.
3. In Cloud Services, swipe left until the **Software** screen is displayed. If new software is available, **NEW** will be shown next to the software version.
4. Select the update file, then at the bottom select  **Upgrade**. Depending on the file size and connection speed, this may take a few minutes. The new version of the software will download to the test set from R-Server and begin the update process. Let the test set go through the process, uninterrupted. This will take a few minutes. After the update process finishes, the test set reboots automatically.
5. The test set may reboot multiple times during the process.

 **DO NOT turn the test set OFF until the software update process has finished.**

6. After the software upgrade is completed, confirm the software version on the About screen.

 Due to potential Internet bandwidth limitations, the software versions distributed through R-Server may be in the form of smaller incremental update packages, with previous version prerequisites.

Refer to "[Cloud Services](#)" on page 31 for more information on R-Server and its features.

Certifications and Declarations



Declaration of Conformity

What is CE?

The CE marking is a mandatory European marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European Directives. To permit the use of a CE mark on a product, proof that the item meets the relevant requirements must be documented.

Use of this logo implies that the unit conforms to requirements of European Union and European Free Trade Association (EFTA). EN61010-1

For a copy of the CE Declaration of Conformity relating to VeEX products, please contact [VeEX customer service](#).



ROHS Statement

RoHS ComplianceVeEX QUALITY AND ENVIRONMENTAL POLICY

Our quality and environmental policy is to limit and progressively eliminate the use of hazardous substances and chemicals in the design and manufacture of our products.

VeEX products are classified as Monitoring and Control Instruments under Article 2, Section (1), Category 9 of the WEEE 2002/96/EC Directive.

RoHS and WEEE Position Statement

The Council of the European Union and the European Parliament adopted Directive 2002/95/EC (January 27, 2003), to Reduce the use of certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment, and Directive 2002/96/EC on Waste Electrical and Electronics Equipment (WEEE), with the purpose of reducing the environmental impact of waste electrical and electronic equipment. Both were later recast by Directives 2011/65/EU and 2012/19/EU respectively. All VeEX products being placed on the EU market conform with these directives.

Additional RoHS substance restrictions for the Monitoring and Control Instruments were adopted by EU Directive 2015/863 (March 31, 2015). These new restrictions will take effect from July 22, 2021. VeEX has established a program to ensure that from July 22, 2021, all its products to be sold and shipped into the EU market will conform with (EU) 2015/863.

VeEX Inc. is committed to comply with RoHS and WEEE Directives to minimize the environmental impact of our products.

For more information about RoHS as it relates to VeEX Inc, go to www.veexinc.com/company/rohscompliance.

About VeEX

VeEX Inc., a customer-oriented communications test and measurement company, develops innovative test and monitoring solutions for next generation telecommunication networks and services. With a blend of advanced technologies and vast technical expertise, VeEX products address all stages of network deployment, maintenance, field service turn-up, and integrate service verification features across copper, fiber optics, CATV/DOCSIS, mobile 4G/5G backhaul and fronthaul, next generation transport network, Fibre Channel, carrier & metro Ethernet technologies, WLAN and synchronization.

Visit us online at www.veexinc.com for the latest updates and additional documentation.

VeEX Incorporated
2827 Lakeview Court
Fremont, CA 94538
USA
Tel: +1 510 651 0500
Fax: +1 510 651 0505



Customer Care

Tel: + 1 510 651 0500
Email: customercare@veexinc.com