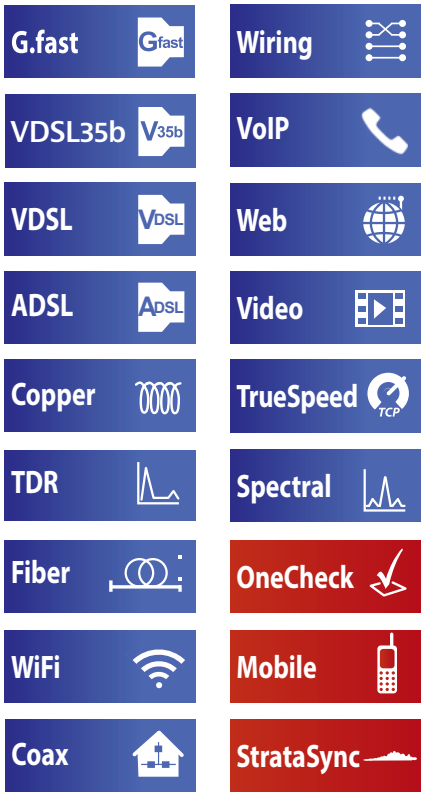
OneExpert™ For xDSL, G.fast & FTTH

Fast, consistent, and complete!

Consistently achieve high-performance results when deploying ultra-fast residential broadband over xDSL, G.fast, and FTTH.

OneExpert helps field technicians fix problems right the first time, every time. A multitouch, user-friendly interface and OneCheck™ automated tests ease complex tasks with clear pass/fail results. And, its future-proof modules ensure years of use supporting access and home networks.



Key Benefits and Features

- One button OneCheck™ TDR auto identifies fault types and locations right away
- Prove the true customer experience with a standardized TrueSpeed™ test (RFC-6349)
- OneCheck™ automates field tests and simplifies Copper and DSL results to consistently close jobs correctly
- StrataSync™ cloud-enabled asset and test data management provides visibility for test results and completed tasks and keeps track of used instrument inventory
- Modular platform scales for new WiFi, fiber, and xDSL technology including VDSL Profile 35b and G.fast
- OneExpert™ app uses everyday mobile devices for remote control, data enhancements, and connectivity

StrataSync™ ENABLED

Open, Modular Design

OneExpert offers the advantages of integrated cloud-based applications, touch screen interfaces, smartphones, and tablets. OneExpert helps technicians perform more efficiently and fix problems faster while ensuring service providers can invest in a long-term, open platform.

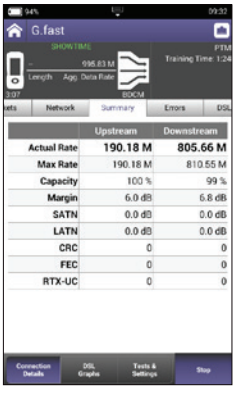
OneExpert Feature	What It Does	Why It Is Needed
Modular hardware	Ensures tester can be updated in line with technology and market advancements	Future-proofs your investment
Remote software upgrades	Software can be enhanced and upgraded in the field	Keeps hardware updated with the latest best-practice test applications
Multitouch user interface	Includes pinch-to-zoom, scrolling, flick, and more	Enhances ease-of use by leveraging a user's mobile and tablet experience
Large screen	Complete graphs appear on a single screen	Improved ergonomics, particularly with TDR trace reading
Bluetooth®/WiFi-ready connectivity	Optional wireless connectivity	Easy communication with mobile devices, PCs and cloud
OneCheck Copper and OneCheck DSL	Automated Viavi suite of tests, many with pass/fail results	Leverages best practices to make complex tasks easy
StrataSync	Cloud-based solution manages Viavi instrument assets and field data results	Plug-and-play back-office integration

xDSL Testing up to G.fast

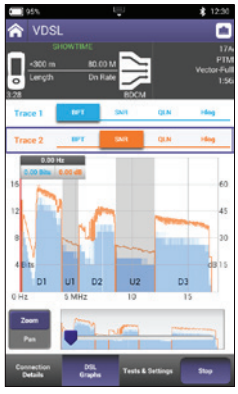
A sync test is essential in characterizing DSL link quality (bandwidth rates, margins, errors, and likelihood for errors). This test also helps determine whether issues are coming from the equipment (CPE or DSLAM/DPU ports) or from the profile settings. It shows important results on a single DSL summary screen page.

OneExpert supports:

- ADSL/2+ on a single and dual pair
- VDSL single line up to profile 30a
- VDSL single line vectoring, bonded and bonded vectoring up to profile 17a
- VDSL profile 35b
- G.fast



DSL/G.fast summary



Bits-per-tone (BPT) vs SNR graph

DSL Test	What It Does	Why It Is Needed
Synchronization test	Synchronization in auto mode or with a dedicated profile	Verifies the DSL service has been activated on the line under test
Profile	Displays the VDSL2 profile in use on the connection	Mismatch between DSLAM/DPU profile, CPE settings, and customer's expectations
Margins and attenuation	Alllows verification that SNR margins and attenuations are within acceptable limits	Copper loops are exposed to external noise. Adequate noise margins maintain DSL connection quality. Higher attenuation results in lower SNR.
DSL errors	CRC, FEC, LOS, LOF, and LOM	DSL errors will transfer to application layers such as IP video
DSL RTX (G.INP)	DSL retransmission: status, retransmitted DTUs, corrected DTUs, uncorrected DTUs, INP REIN	DSL RTX support to match CPE and statistics to highlight DSL lines at risk, already using retransmission

BPT graph	Displays the bit-loading per tone	Can help to identify disturbers and interferers present on the line
Hlog graph	Loop attenuation component of the channel transfer function (during the modem training phase)	Can detect bridged taps, degraded contacts, and bad joints
QLN graph	Noise floor of the DSL line	Shows frequency of potential disturbers/ interferers on the DSL line

Single Test-Lead Connection

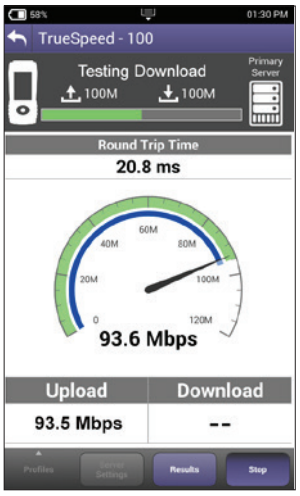
When connecting copper test leads, technicians will try to reduce the expense of multiple test cables as well the incidence of errors resulting from using the wrong lead. It is critical to get a proper connection with a good ground, or risk rendering meaningless test results. However, swapping between DSL testing and copper testing during troubleshooting adds time and risks losing test-lead connection quality.

OneExpert lets technicians focus on test leads once, regardless of the number of DSL and copper tests that follow, saving time and, more importantly, avoiding misleading or incorrect results.

Single Test-Lead Connection	What It Tests	Why It Is Needed
All tests are conducted from a single test-lead connection	DSL and copper thru a single test- lead connection	Reduces the risk of misleading results from bad test lead connections

TrueSpeed (TCP RFC-6349 Speed Testing)

Broadband IP networks and their throughput speeds are non-deterministic and their behavior is unpredictable. OneExpert TrueSpeed provides a standardized RFC-6349 speed test to measure the throughput at the TCP application layer just as a user would experience it. Other methods, such as FTP upload/download, cannot accurately test ultra-fast broadband rates provided by technologies like Super Vectoring and G.fast..



OneExpert TrueSpeed throughput test up to 1Gbps

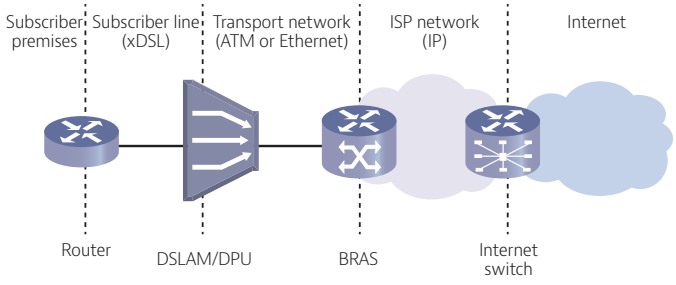
TrueSpeed Test	What it Tests	Why is it Needed?
Actual rate (up/ down)	Actual achieved TCP throughput up to 1Gbps	Measure throughput as customers experience it at the application layer
Ideal rate (up/ down)	Baseline for achievable TCP throughput without physical layer overhead	Provides a baseline for an ideal-expected-TCP throughput based on the physical layer rate
TCP Efficiency	Ratio of Successful TCP transmitted without retransmission to the total TCP transmitted	A large throughput isn't very useful for the customer if a lot of IP packets need to be retransmitted
Round trip time (RTT)	Baseline round-trip delay measurement	Calculate the bandwidth delay product (BDP) to identify impact of RTT to network throughput
Maximum segment size (MSS)	Test-optimized segment size to achieve maximum throughput speed	Per RFC-4821 to ensure that the TCP payload remains unfragmented and unnecessary IP overhead is avoided

TCP
TrueSpeed™ VNF

IP Data — Web

Internet subscribers demand reliable connectivity and new applications require higher data throughput and network-delay time performance. DSL error protection using interleave delay and error recovery mechanisms, like those for IP video, counteract time-sensitive data throughput using TCP/IP with acknowledgment and retransmission. The OneExpert tester allows technicians to quickly test internet connectivity using the built-in web browser. It tests the data rates provided by VDSL vectoring with FTP/HTTP throughput as key reference tests for TCP/IP applications. Mature tests like IP ping delay are still necessary, especially for real–time applications, such as online gaming.

IP Data Test	What It Tests	Why It Is Needed
User authentication	IPoE, PPPoE, IPv4, and IPv6	Customer service turn-up
Web browser	Connection to any website	Differentiates between network problems and web-server downtimes and isolates customer PC or mobile devices as points of failure
IP ping and TraceRoute	Delay time through the network and routing	Network delay is crucial, especially with high- interaction applications such as gaming
FTP/HTTP throughput	Upload and download rates	DSL profile parameters, such as INP, delay, and network aggregation issues, determine user-experienced data speeds

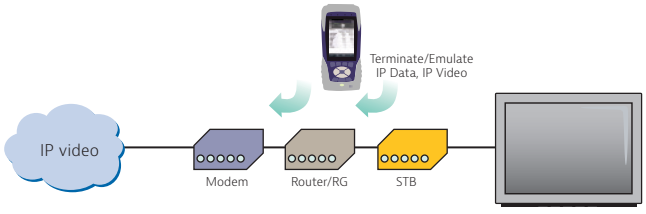


IP Video

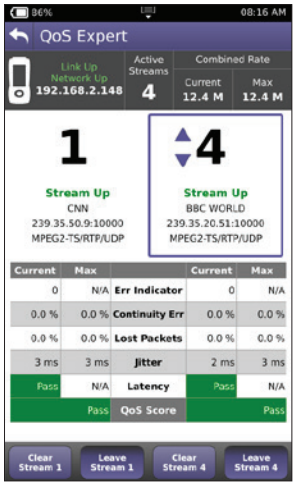
OneExpert can test multiple standard and high-definition television (SDTV/HDTV) streams regardless of compression format (MPEG-2, MPEG-4p10/H.264, VC-1, and others) and automatically detects the stream type with the Broadcast Auto feature. The OneExpert IP Video application allows for termination of the IP video stream anywhere in the access network using the DSL or Ethernet interface.

Key performance indicators for real-time protocol (RTP) lets the One-Expert DSL precisely measure network QoS and QoE. QoS Expert easily compares critical quality-of-service metrics such as error indicator, continuity error, lost packets, jitter, and latency between two active streams.

IP Video Test	What It Tests	Why It Is Needed
IP video stream availability	Access to one or more SDTV or HDTV streams	Content might come from different sources; possible bandwidth limitations if more than one stream is active
Quality of service	Key IP video performance indicators such as jitter, loss, latency, error indicator; includes QoS Expert to compare performance between two streams	Easy-to-understand pass/ fail metrics if IP video is of good quality
Packet loss analysis	Minimum distance, maximum period, RTP loss and errors	Detailed analysis on on Quality of Experience impact
Rates analysis	Video, audio, and data substream rates	Bandwidth consumption in relation to total available rates
PID map	PID for video, audio, data	Availability of all stream components



IP Video QoS testing



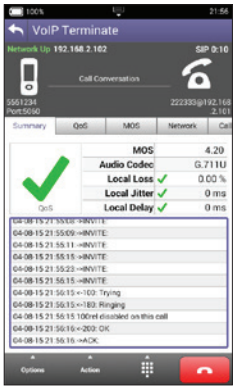
OneExpert IP Video — QoS Expert

VoIP

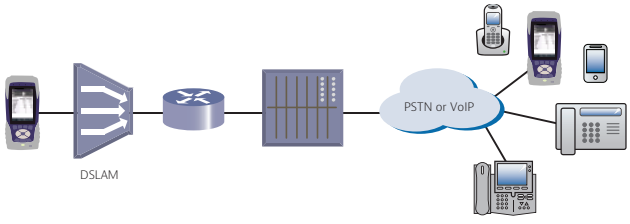
The OneExpert is the ideal test tool to quickly place VoIP calls and verify QoS via mean opinion score (MOS) values. A DSL or Ethernet TE interface tests VoIP anywhere in the access network, replacing either the DSL modem, VoIP phone, or both. The OneExpert also includes an Auto Answer mode in which the unit automatically responds to an incoming call. Viavi provides a wide range voice decoding controls such as G.711, G.722, G.723, G.726, and G.729.

VoIP Test	What It Tests	Why It Is Needed
Service setup/ provisioning	Registration with gateway as a SIP VoIP client	User setup and server availability. VoIP clients and servers can have complex setups — preclude setup errors
Connectivity beyond signaling gateway	Placing test calls on and off network	Call connection from VoIP-to-VoIP and VoIP-to- public switched telephone network (PSTN)
Call quality	MOS, near- and far-end QoS with packet loss, jitter, delay, and R-Factor	Test how VoIP calls are transferred through the network and received at the customer premises

VoIP Test Selection



VoIP Call Summary

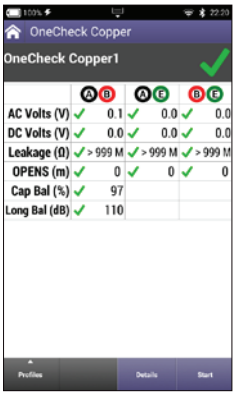


OneExpertDSL tests VoIP throughuot the IP network registration with gateway, test calls on and off the network, and measures near- and far-end IP QoS and MoS.

OneCheck Copper

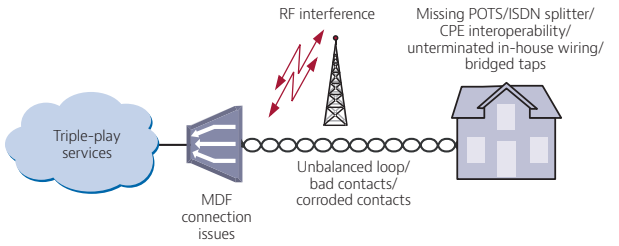
It is critical to test the copper prior to turning up DSL. What may have worked for POTS or lower-speed DSL may not work for VDSL or as the plant degrades. OneExpert's OneCheck Copper function simplifies copper testing for field technicians with repeatable pass/fail results.

Copper Tests	What It Tests	Why It Is Needed
Voltage	Foreign voltages	Safety and identifies cross-battery impairments
Resistance	Insulation between tip-A and ring-B and between tip-A, ring-B, and ground-E	Leakage resistance affects DSL sync and performance
Opens (capacitance)	Loop length and capacitive balance	Cable damage, one side open, loop length must be acceptable for DSL
Balance	Longitudinal balance, resistive balance, capacitive balance	Robustness against noise, otherwise reduced BPT
Load coil	Presence of load coils	Load coils act as low-pass filters and must be removed for DSL to work properly
Ground check	Ground connection check for balance	Poor or lack of ground leads to incorrect results, hides possible impairments



OneCheck Copper

Inexperienced technicians often will call in a copper expert as soon as they are unable to find a fix, even without being sure the copper is faulty, extending repair times and increasing OpEx. OneCheck Copper lets any tier-1 technician assess copper-pair health automatically by testing the copper circuit as a single-ended line test (SELT) to rule out foreign voltages, opens, shorts, or load coils are on the line. It also tests whether the line is balanced enough for noise rejection so that it does not interfere with the DSL signal.



Copper-loop issues such as foreign voltage, opens shorts, and load coils can impact DSL and triple-play performance

OneCheck™ TDR

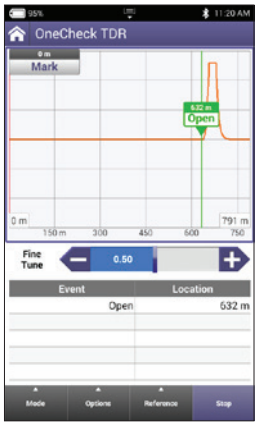
OneCheck TDR allows for both simplicity and accuracy to avoid false TDR readings—not one or the other, as with most TDRs. The automated TDR fault identification mode using patented time varying gain (TVG) and adaptive pulse width technologies precisely locates faults in access copper loops and inside home networks. OneCheck™ TDR is a fast test that provides real-time updates.

TDR Test	What It Tests	Why It Is Needed
Loop length	Location of the cable end	VDSL requires shorter loop lengths than ADSL2+; loop lengths must be acceptable for the technology used.
Bridged taps	Length of bridged taps	Bridged taps cause unwanted reflections at the splice point and tap ends. The reflected signal, or circuit noise, degrades DSL performance. Also, bridged taps can act as an antenna picking up external noise along the tap. Bridged taps should be removed when possible to improve DSL performance.
Opens, shorts	Opens and shorts	Cable damage.
Corroded contacts	Presence of corroded contracts	Corroded contacts act as resistive (imbalance) or capacitive (opens) faults that especially impact the pair's continuity and overall balance making it more susceptible to noise, thus degrading DSL performance.
Bad splices	Presence of bad splices	Bad splices cause unwanted reflections similar to resistive faults that impact the pair's overall balance making it more susceptible to noise, thus degrading DSL performance.
Load coil	Location of load coils	Load coils act as low-pass filters and must be removed for DSL to work.

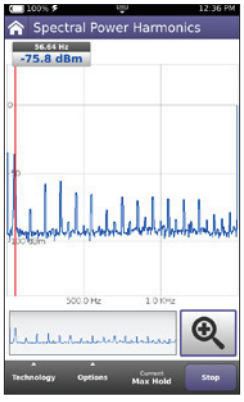
Locate Copper Impairments

Pristine copper plant enables error free service and high data rates. Qualify the severity of copper impairments and locate copper faults.

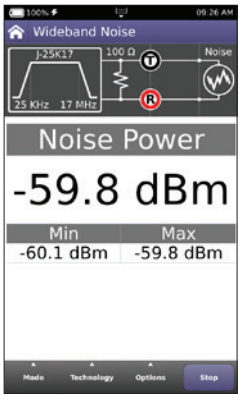
Copper Test	What It Tests	Why It Is Needed
Spectral	Identifies precise amplitude and frequency of disturbers; includes technology selection for ADSL2+/ VDSL2 and power harmonics; max hold or actual values	Noise disturbers can impact DSL performance
WB noise	Quickly identifies if noise across bandwith predefined or custom definable filter settings is an issue	Crosstalk and noise can impact DSL performance
WB impulse noise	Impulse noise across filter band based on technology selection; counts impulse noise disturbers; shows impulse noise disturber signature in frequency and time domain	Impulse noise disturbers might not be recoverable and can cause intermittent DSL failures
WB receive tones	Receive power levels	DSL performance is depending on loop length
Resistive fault locator (RFL)	Resistive path from either wire in a pair to battery or ground or across the pair; distance to fault; includes UFED support	Resistive faults impact DSL performance by upsetting pair balance or subjecting the pair directly to increased noise; lowers SNR; fewer bits per tone
K-test	Pairs with a fault on both wires (double-sided resistive fault); distance to faults; includes UFED support	Resistive faults impact DSL performance by upsetting pair balance or subjecting the pair directly to increased noise; lowers SNR; fewer bits per tone



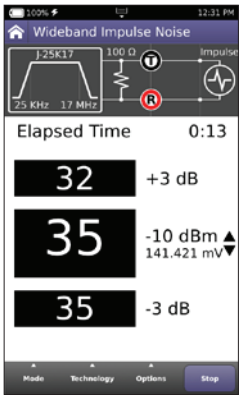
OneCheck TDR mode



Spectral Power Harmonics



Wideband Noise



Wideband Impulse Noise

POTS Dialer

OneExpert reduces the number of test tools a technician needs to carry by providing an integrated butt set. Technicians can use the POTS dialer to verify a line's continuity to the exchange and that it works without conflicting with the customer's broadband equipment due to an eventual missing or defective POTS splitter.

Copper Test	What It Tests	Why It Is Needed
POTS	DTMF and pulse POTS calls, caller ID	Connectivity to exchange and determining if POTS is available, dial test line facilities in an exchange

POTS Dialer

OneExpert UltraFED

The UltraFED connects the far end of the pair under test while the OneExpert controls it remotely. One technician with one piece of equipment can now perform two-ended pair testing. This makes testing easier and faster as it eliminates driving to the other end of the cable in order to change line conditions.

UltraFED Function	What it Does	Why It is Needed
TDR Helper	Alternately opens and shorts the line across Tip (A) and Ring (B)	TDR Helper lets technicians quickly identify the end of the cable or the location of the UltraFED by observing up (open)/dip down (shorted) status
RFL Strap	Remotely sets the short/strap line condition	RFL test requires a far-end short between Tip (A) and Ring (B); K-Test is a two-step procedure started with an open, followed by a short at the far end between Tip (A) and Ring (B)
Open All	Disconnects Tip (A), Ring (B), and Ground (Earth) from the cable pairs	Isolate the pair under test **
Tip (A) / Ring (B) Short	Strap mode: Connects Tip (A) to Ring (B)	Used with Loop Resistance or RFL measurements **
Tip (A) / Ring (B) / Ground (Earth) Short	Connects Tip (A), Ring (B) and Ground (Earth) to Ground (Earth). Also called strap mode	Used while measuring Resistive Balance **
Quit Termination	Terminates the pair at the far end	Copper testing for Noise, Impulse Noise, Spectral should be run with a proper termination at the far end as it makes the pair look like it is with real equipment on each end **
Single Tone	Connects a tone generator across Tip (A) to Ring (B)	Loss measurement **
Trace Tone	Connects a tone generator across Tip (A) to Ring (B) and sends 577 and 1004 Hz tones with cadence High-Low or Low-Low-High	Identifying pair under test **
Off/THRU	Connects Tip (A) and Ring (B) to the CO Tip (A) and Ring (B)	Maintain "in-service" customer connection and "out-of-service" as necessary during test**

OneExpert UltraFED saves time and simplifies copper testing

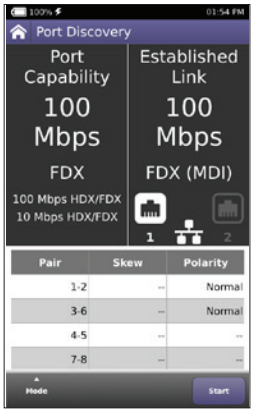
Wiring Tools

Where available, Ethernet cabling is typically preferred for home networks because it delivers optimal data rates and quality of service. OneExpert wiring tools allow for Ethernet CAT5/6/7 or phone- wiring CAT3 testing. Technicians can quickly set up a home network using the Wire Mapping Smart Remote and resistive IDs as remote probes. Further, OneExpert supports Hub Flash, port discovery and a ping tool against multiple targets including gateway, DNS and target host/IP addresses.

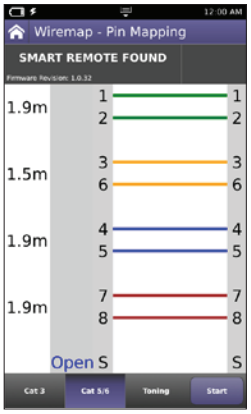
Wiring Tool	What It Tests	Why It Is Needed
Wire mapping	Uses the Wire Mapping Smart Remote to test for physical-layer issues	Locate improper wire connections
Loop length	Loop length per pair	Verify cable run lengths
Opens, shorts	Location of opens, shorts	Cable damage, splices, or port connections
Cable identification	Cable run identification with resistive IDs	Multiple cable runs in the wired home network
Hub flash	Determine to which port the cable is connected	Ports at residential gateways (RG) might have different functional assignments

Wiring Tool	What It Tests	Why It Is Needed
Port discovery	Identifies an Ethernet connection and reports speed of link, signal to noise ration, skew	Ethernet port configuration or cable wiring might limit the port capabilities within a range of 10, 100, 1000 Mbps, half- or full duplex.
Ping tool	Connectivity to various network resources such as the gateway, DSN, and selected IP addresses	Network connectivity segmentation – home network versus Internet

Wire Mapping Smart Remote



Port discovery

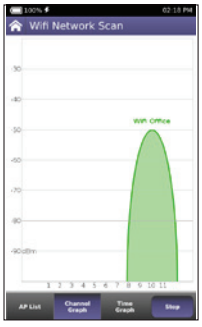


Wire mapping

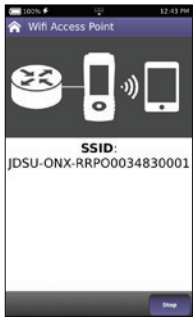
WiFi (Internal)

The use of wireless devices and networks is becoming a common part of every household. With the OneExpert WiFi Scan, technicians are equipped with wireless 802.11b/g/n (2.4 GHz) testing capability to show the signal strength, secure set identification (SSID), configured channel, security, MAC address, and 802.11 protocol at the test location of each wireless 802.11b/g/n network in the area. It also indicates whether a network is secure or vulnerable to security threats.

WiFi Test	What It Tests	Why It Is Needed
WiFi scan	WiFi access point (AP) station scan	Discover potential interfering networks (which could cause slow data transfer speeds), and locate weak spots in the WiFi signal to suggest a better location of the router
WiFi AP	Connect OneExpert via Ethrnet cable to a router or residential gateway to configure as a WiFi AP (Ethernet bridge to WiFi)	Verify Internet connectivity, configure CPE, and run tests from mobile devices



WiFi Network Scan



OneExpert providing WiFi access point

WiFi Advisor

With support for the WiFi Advisor accessory on the OneExpert, technicians can evaluate wireless network performance seamlessly for both 2.4 and 5 GHz networks. With support for 802.11 standards a/b/g/n and ac, the ONX and WiFi Advisor combination make WiFi problem solving easier.

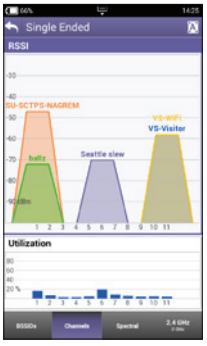
Using a single WFED-300AC device, users can quickly visualize, optimize, and troubleshoot WiFi networks with BSSID, Channel, and Spectral views. BSSID view provides quick visibility into active wireless networks and identifies the least-crowded channel to use for an access point. Channel view finds the best channels for an access point byshowing utilization, noise, co-channel interferers, adjacent channel interferers, and an overall channel score for each channel. Spectral view shows damaging RF interference with a real-time spectral analyzer configurable by 802.11 band, channel, and channel width.

WiFi Test	What It Tests	Why It Is Needed
BSSID details	View information for a specific AP	Determine whether an AP is running in legacy mode or with outdated security settings
BSSID view	View all APs by channel	See the WiFi environment across 2.4 GHz and 5 GHz bands to visually determine crowded channels
Channel view	Displays channel utilization, noise, channel score, and best channels	Quickly determine the best channel for WiFi deployment and troubleshooting
Spectral analyzer	Real time 802.11 and non-802.11 spectrum	Locate interference sources such as Bluetooth devices and microwave ovens

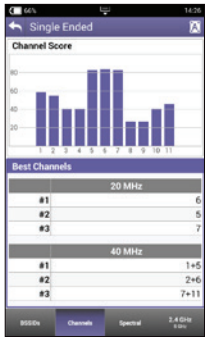
WiFi Test	What It Tests	Why It Is Needed
Site Assessment Assistant	Works with WiFi Advisor to determine throughput of a WiFi system	TrueMargin™ is the measure of throughput in the actual environment

OneExpert controls the Wifi Advisor for Single Ended Operation with Best Channel

OneExpert supports the Wifi Advisor Dual-ended mode of operation providing TrueMargin and allows optimization of the Access Point placement



RSSI view per channel



The test application identifies the best channel for WiFi service

Fiber

Broadband DSL networks and broadband triple-play services often rely on fiber networks. Examples are fiber-to-the-cabinet (FTTC) or fiber- to-the-distribution-point (FTTdp) that bring the DSLAM closer to the customer for greater VDSL bandwidth. The DSLAM is served with fiber back to the exchange to carry broadband signals. Another example is business customers connected to their service providers via ADSL2+/VDSL and via fiber. This drives the need for field technicians who work in these environments to have both DSL and fiber test capabilities.

For point-to-point fiber installations such as FTTC or business connections, field technicians can use the OneExpert together with the Viavi Solutions MP-60 or MP-80 USB optical power meter (OPM) to ensure that fiber cable attenuation meets system requirement performance and is ready to survive network aging and environmental impacts.

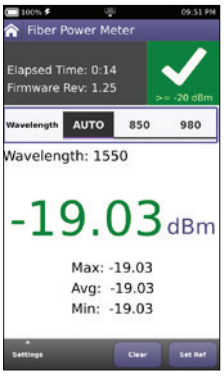
MP-60 optical power meter

P5000i optical fiber scope

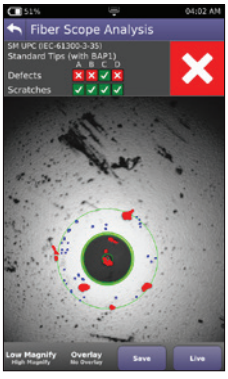
In combination with a Viavi SmartPocket optical laser source (OLS), the OneExpert equipped with an MP-60 or MP-80 OPM can automatically perform optical link loss measurement at different wavelengths—resulting in a faster and more comprehensive fiber test.

Using the P5000i optical fiber scope, technicians can test the #1 cause for troubleshooting in optical networks—contaminated fiber connectors. The P5000i provides pass/fail analysis based on user-selectable acceptance profiles.

Fiber Test	What It Tests	Why It Is Needed
Optical fiber scope	Pass/fail against predefined profile; includes dual magnification	Contaminated fiber connectors are the #1 cause for troubleshooting in optical networks
Optical power level	Optical power level with pass/fail and reference values	Optical loss must be within budget at ONU site



Fiber Power Meter



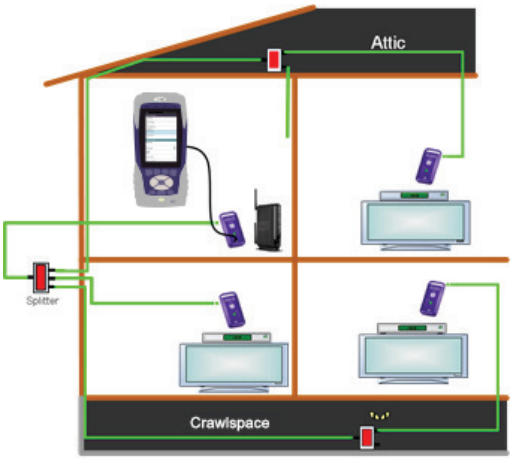
Fiber Scope Analysis

Coax

Problematic coax cable accounts for most repeat calls as well as video, voice, data, and multiroom DVR installation problems. Most home coax has never even been tested at the frequency ranges that support these services so problems become more apparent after service installation.

The powerful OneExpert in conjunction with the optional Viavi SmartID coax probes can verify in-home coax (quality and topology) and service distribution to quickly display and certify subscriber

coax topology. It immediately identifies and locates physical-layer impairments that affect both triple-play and multiroom DVR services saving valuable troubleshooting time and eliminating the need for repeatedly segmenting the network, making changes, and then retesting. Technicians use the information the device provides to determine whether they can quickly fix the drop, replace it with a new one, or use an alternative means to supply service to the location.



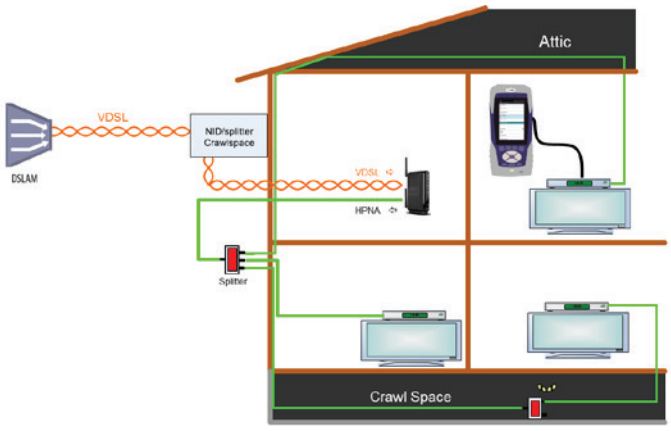
Coax home network under test with SmartIDs

After completing physical-layer testing with SmartIDs, technicians can use the HPNA test to verify the coax network with CPE.

Smart ID Coax Test Sequence	What It Tests	Why It Is Needed
Bidirectional FDR	Events that cause excessive loss or reflectance	Locates bad splitters and connectors in the network
HPNA frequency sweep	All legs and in both directions	Ensures services like whole-home DVR will work
Noise ingress measurements	Each endpoint in the home	Identifies HPNA interferers

HPNA

The HPNA technology standard developed by the Home Phoneline Network Alliance (HomePNA™) builds on Ethernet to connect and integrate all the home network components over an unpredictable wiring topology. The HPNA communication is used to pass information around a home to other HPNA-connected devices.



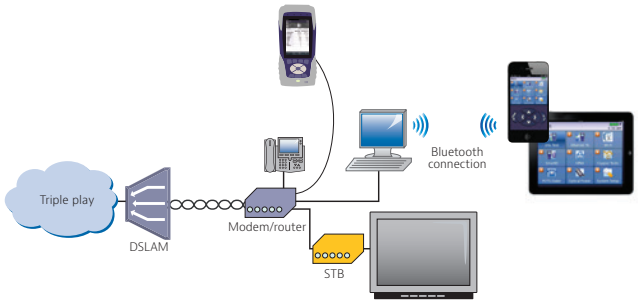
In the HPNA test, OneExpert connects to the HPNA network via CPE and communicates with the HPNA network host to initiate the test. Each communication path between all HPNA network nodes will be tested, letting users segment problem node paths, node-to-node communication issues, and verify that the whole network is functioning correctly. OneExpert can verify that HPNA networks are operating within expected service quality metrics and users can set up pass/fail limits to help simplify testing.

Mobile App

Testing with the OneExpert mobile iOS app is quicker and more efficient because technicians can leave the test set plugged in at one location and run tests remotely using the mobile app. Manage job files and export completed jobs to a server.

Providers need back-office integration to expand the benefits of collecting daily field test results . The mobile app leverages smartphones or tablets to link internal databases to instrument test results.

Mobile Device Integration	What It Does	Why It Is Needed
Job manager	Helps manage and enrich test results	Back-office integration
Remote access	Lets users remotely control the unit from a mobile device	Inconvenient test set access or several locations to fix between the test point and the fault
Extra information	Delivers tutorials, manuals, photos of all part numbers	Helps technicians in the field

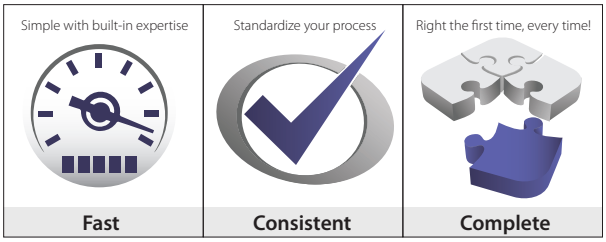


StrataSync

Field operation groups face a challenge keeping track of their test equipment inventory: types of instruments, firmware versions, options, and automated test configurations that match standardized methods and procedures. The challenge increases every time a change must be deployed. Without a means to collect and analyze test data, valuable information about network health is missed.

StrataSync is a hosted, cloud-based solution that manages assets, configurations, and test data for Viavi instruments to ensure they are all equipped with the latest software and installed options. It manages inventory, test results, and performance data from anywhere with browser-based ease improving both technician and instrument efficiency. StrataSync manages and tracks test instruments and collects data from the entire network that can be leveraged for results analysis, and informs and trains the workforce.

StrataSync	What It Does	Why It Is Needed
Asset management	Manages and tracks test instruments by displaying assets, modules, versions, and locations. Maintains accurate instrument configuration and setup. Provides visibility into instrument utilization.	Save time by eliminating time wasted on instrument setup. Reduce repeats with correctly configured instruments. Improve results and reduce operating costs.
Data-result management	Collects and analyzes results with centralized collection and storage, secure visibility from anywhere, and consolidated test data/ metrics.	Access more data with centrally collected results for better use. Speed problem resolution by sharing data for faster troubleshooting. Drive compliance by tracking and comparing technician performance.
Updates the workforce	Informs and trains the workforce through alerts, release notes and manuals, and a comprehensive product-knowledge library.	Inform the workforce using a single source for instrument status, new capabilities, and educational content. Improve performance with quick access to training and troubleshooting information.Stay current with alerts for expiring warranties and overdue calibrations.



Specifications

DSL Modems

*Specifications apply to all modems listed unless a modem part is listed after the specification. When listed in the specification, it only applies to parts listed after the specification.

Test Interface

Replaceable test module; test access over copper test leads (tip A, ring B leads for single channel; T/A, R/B, T1/A1, R1/B1 for bonding) or 8-pin modular (RJ45 type) with pin assignments 4 and 5 for DSL single pair and 3, 4, 5, 6 for DSL bonding.

Modem Chipset and Version

Catalog #	*Chipset*	*Configuration*
ONX-BDCM-GFAST	Broadcom 63138	OneExpert Broadcom 63138 (ADSL/VDSL Bonded, G.fast) Test Module
ONX-BDCM-DSL-BONDED	Broadcom 63138	OneExpert Broadcom 63168 (ADSL/VDSL Bonded)
ONX-BDCM-DSL-ANXAB	Broadcom 63168	OneExpert Broadcom 63168 (VDSL, ADSL2+ ANX A/B) test module

G.fast (Fast access to subscriber terminals) Standard Compliance

ITU-T G.9700 for module ONX-BDCM-GFAST

ITU-T G.9701 for module ONX-BDCM-GFAST

VDSL Standard Compliance

Standard compliance as supported by the Broadcom 63168 and 63138 chipsets

ITU-T G.993.2 — VDSL2

ITU-T-G.998.1 — ATM bonding for module ONX-BDCM-DSL-BONDED and for ONX-BDCM-GFAST

ITU-T-G.998.2 — PTM bonding for module ONX-BDCM-DSL-BONDED and for ONX-BDCM-GFAST

ITU-T-G.993.5 — Self-FEXT cancellation (vectoring)

ITU-T-G.998.4 — Improved impulse noise protection for DSL transceivers

Single-pair profiles: 8a/8b/8c/8d, 12a/12b, 17a, 30a for module ONX-BDCM-GFAST, ONX-BDCM-DSL-BONDED and ONX-BDCM-DSL-ANXAB

Vectoring profiles single-pair: 8a/8b/8c/8d, 12a/12b, 17a for module ONX-BDCM-DSL-BONDED and ONX-BDCM-DSL-ANXAB

Dual-pair profiles: 8a/8b/8c/8d, 12a/12b, 17a for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST

Vectoring profiles single-pair: 8a/8b/8c/8d, 12a/12b, 17a, 35b for module ONX-BDCM-GFAST

Vectoring profiles dual-pair: 8a/8b/8c/8d, 12a/12b, 17a for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST

Band plan 997 and 998, U0 band

ITU G.993.2 Annex Y vector-friendly mode

ADSL Standard Compliance

Standard compliance as supported by the Broadcom 63168 and 63138 chipsets

ITU-T G.992.1 Annex A, (ADSL)

ITU-T G.992.1 Annex A, B (ADSL) for module ONX-BDCM-DSL-ANXAB

ITU-T G.992.3 Annex A, L (ADSL2)

ITU-T G.992.3 Annex A, B, J, L, M (ADSL2) for module ONX-BDCM-DSL-ANXAB

ITU-T G.992.5 Annex A, M (ADSL2+)

ITU-T G.992.5 Annex A, B, J, M (ADSL2+) for module ONX-BDCM-DSL-ANXAB

ITU-T-G.998.1 ATM bonding for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST
ITU-T-G.998.2 PTM bonding for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST
ANSI T1.413-1998, Issue 2
ITU-T G.992.5 INP Amendment 3
General Settings and Features
Auto sync
DSL technology modes G.fast, ADSL, VDSL, auto
PTM mode for ADSL2, ADSL2+, VDSL and G.fast
ATM mode for ADSL, ADSL2, ADSL2+, VDSL2
Auto, ATM, PTM modes configurable
Vectoring for VDSL2
Bonded vectoring support for VDSL2 for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST
Vectoring, vector-friendly, vectoring off modes configurable
DSL RTX (G.INP) configurable for upstream/downstream
PhyR configurable for upstream/downstream
Seamless rate adaption (SRA) on/off
Bitswapping on/off
Configurable V.43 carrier set
24 k interleaving depth on/off
Modem Status and General Information
VDSL Aggregate Attenuation
Modem state — synchronization status
Training time
Synchronization time
ADSL mode, VDSL profile
Transport ATM/PTM/auto
Single-pair or bonding status
Vectoring status information
Estimated loop length
Download rate
Modem Summary Results
Aggregated Data Rate for ONX-BDCM-GFAST
Actual rate per pair
Maximum attainable bit rate per pair
Group actual rate for DSL bonding for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST
Group maximum attainable bit rate for DSL bonding for module ONX-BDCM-DSL-BONDED and ONX-BDCM-GFAST
Line capacity per pair
SNR margin
CRC errors and FEC errors
RTX-UC
LATN (line attenuation)
SATN (signal attenuation)
Graphical Results
Signal-to-noise ratio per tone (SNR)
Bits per tone (BPT)
Quiet-line noise per tone (QLN)
Hlog
Two traces comparable
DSL Errors
Forward error correction (FEC)
Forward error correction errors per minute (FEC/min)
Cyclic redundancy check errors per minute (CRC)
Cyclic redundancy check (CRC/min)
Errored seconds (ES)
Severely errored seconds (SES)
Unavailable seconds (UAS)
Loss-of-frame alarm seconds (LOF)
Loss-of-signal alarm seconds (LOS)
Loss-of-margin alarm seconds (LOM)
DSL RTX (G.INP)
Retransmitted DTUs (RTX-TX)
Corrected DTUs (RTX-C)
Uncorrected DTUs (RTX-UC)
DSL Signal
Sync count
Time in synchronization state (uptime)
ELE (kl0)
Estimated Loop Length
Vectoring status
Interleaving status (path)
Interleave delay
Actual INP
Signal attenuation (SATN)
Line attenuation (LATN)
TX power
Per Band VDSL2 Statistics
Loop attenuation (LATN)
Signal attenuation (SATN)
SNR margin
Tx power
DSL Identity
Hardware type (chipset)
Hardware revision (chipset revision)
Vendor code
Vendor revision
Vendor software revision
Vendor PHY revision
10/100/1000 Ethernet TE
Test Interface
10/100/1000 Ethernet, RJ45
2 ports
Test Results
Link status, speed, duplex
Network
Test Interface
ADSL2+/VDSL2/G.fast modem
Ethernet 10/100/1000 (ports 1 and 2; non-blocking switching between ports)
Network Types
DSL/G.fast terminate
DSL/G.fast Trough-router
DSL/G.fast through-bridge
Ethernet terminate
Data Mode
IPoE, PPPoE, multi-VLAN, data off
IP Mode
IPv4, IPv6, IPv4/IPv6 dual stack
IPoA, PPPoA for xDSL and G.fast

MAC Setting

Factory default, user-defined

PPP/IP Connectivity

BRAS: PAP/CHAP, IPCP

RFCs 2516, 1483, 2684

VLAN Setting

Tag on/off

VLAN interface count 1 to 6

ID selection 0-4095

Priority selection 0-7

LAN Server for DSL Through-Router

NAT disable/enable

IPv4 Server address

Netmask

DHCP Server disable/enable

Forward Multicast disable/enable

IP Setup and Status

WAN/LAN status

Gateway/DNS

Static or DHCP

DHCP user class

DHCP vendor class

IP release/renew

DNS support WAN and LAN

IPV6 mode manual, stateless, DHCPv6 stateful

DHCPv6 option IA_PD, IA_NA

IPv6 global address

Local address mode: manual, automatic

Local IPv6 address

Subnet prefix length

IPv6 gateway

DNS server

Network Results

Network status, IP address, net mask, gateway, DNS, MAC address

Packet statistics rate, bytes, frames, errors, drops, collisions

Skew and polarity per pair

IP Data

Test Interface

ADSL2+/VDSL2, RJ45 and copper test leads

Ethernet 10/100/1000, RJ45

IP Ping

IP ping mode: IPv4, IPv6

Echoes sent/received, ping delay (cur/average/max/min)

Lost count/percentage, packet size

Supports IP address or DNS name destination

TraceRoute

Destination, Hop count, delay per hop

IPv4/IPv6 Address, DNS Name

Transmit Type UDP or ICMP

DNS Lookup disabled/enabled

File Transfer Throughput Test — Speedtest

Transfer rate, bytes transferred, transfer status

Transfer protocols FTP, HTTP, HTTPS

Transfer direction download, upload

HTTP authentication type none, basic, digist

Concurrent download disabled, 1, 2, 3

Auto repeat disabled, enabled

Web Browser

Web connectivity through browser

TrueSpeed Option

Test Interface

10/100/1000 Ethernet, RJ45

ADSL2+/VDSL2, RJ and copper test leads

Settings

Primary server

Fallback server

Profile with committed information rate (CIR) for upload and download

Measured and Calculated Results

Actual rate download/upload

Ideal rate download/upload

TCP efficiency

Round trip time (RTT)

Maximum segment size (MSS)

Standards

Viavi TrueSpeed VNF

RFC-6349

IP Video Option

Test Interface

xDSL, RJ45 and copper test leads

Ethernet 10/100/1000, RJ45

Modes

Terminate

Set-Top Box Emulation

IGMPv2 and v3 emulation client

RTSP emulation client

Service Selection

Broadcast auto

Broadcast MPEG2-TS/UDP

Broadcast MPEG2-TS/RTP/UDP

Broadcast RTP/UDP

Broadcast rolling stream

Broadcast TTS/UDP

Broadcast TTS/RTP/UDP

RTSP MPEG2-TS/(RTP)/UDP

RTSP MPEG2-TS/(RTP)/TCP

RTSP RTP/UDP

RTSP RTP/TCP

Video Settings

IPv4 IGMP version 2, 3

RTSP port

RTSP interoperability normal, Oracle, Siemens

IPv6 MLD version 2, 3

Video Source Address Selection

IP address and port number

IP address, port number, and VoD URL extension

RTSP port select

RTSP vendor select

Video Analysis Per Video Stream

Simultaneous stream support
6 terminate
Number of active streams
Combined rate, current/max
QoS
Error indicator current/score
IGMP latency current/score
RTSP latency current/max/score
PCR jitter current/max/score/history
RTP packet jitter current/max/score/history
RTP lost current/max/score/history
Continuity error lost current/max/score/history
Overall current/max/score/history
Packet Loss Statistics
RTP loss distance errors current/max/total
RTP loss period errors current/max/total
Minimum RTP loss distance
Maximum RTP loss period
RTP packets lost count
RTP OOS count
RTP errors count
Continuity errors count
Ethernet RX errors, RX drops count
Video Stream Data Results
Total current/min/max/average
IP current/min/max/average
Video current/min/max/average
Audio current/min/max/average
Data current/min/max/average
Unknown current/min/max/average
Transport Stream Statistics
Error indicator count
Continuity errors count
Sync errors count
PAT errors count
PMT errors count
PID timeouts count
Service name
Program name
QoS Expert
Compare two streams for error indicator, lost packets, jitter, latency
PID Analysis (each stream)
PID number
PID type (video, audio, data, unknown)
PID description
Layer Correlation
Combined result view for Ethernet RX errors, RX dropped, video continuity error, video RTP lost, video loss distance total, video loss period total
Standards
RFC 2236, IGMP
RFC 2326, RTSP
ISO (IEC 13818), video transport stream and analysis
ETSI TR 10-290 V2.1, video measurements
TFC 1483, RFC-2684, ATM AAL5

VoIP Software Option	
Test Interface	
xDSL, RJ45 and copper test leads	
Ethernet 10/100/1000, RJ45	
Supported Signaling Protocols	
SIP RFS 3621	
Supported Codec Configurations	
ITU-T G.711 u-law/A-law (PCM/64 kbps)	
ITU-T G.722 64K	
ITU-T G.723.1 (ACELP/5.3, 6.3 kbps)	
ITU-T G.726 (ADPCM/32 kbps)	
ITU-T G.729a (GS-ACELP/8 kbps)	
VoIP Settings	
Auto-answer	
Local alias	
Outbound alias	
Proxy gateway	
Call control port	
100Rel support	
SIP interoperability	
Audio codec	
Frame interval	
Jitter buffer size	
Mute line	
User-selectable transmit source (live voice conversation, tone transmit, IP voice announcement)	
User-selectable silence suppression, jitter buffer	
RTP Port, IP ToS	
QoS	
Call Actions	
Clear, mute	
DTMF in-band	
Summary Results	
Network and call status	
State log	
QoS pass/fail	
MOS, audio codec, local loss, local jitter, local delay	
QoS Results	
Local overall QoS	Actual/history
Remote overall QoS	Actual/history
Delay	Min/actual/max
Local jitter	Min/actual/max
Remote jitter	Min/actual/max
Local packet loss	Count/actual%/max%
Remote packet loss	Count/actual%/max%
MOS Software Option Results (requires VoIP software option)	
Conversational MOS	
Listener MOS	

R-Factor	Conversational, listener, G.107, burst, gap, maximum possible, maximum codec
Degradation	Packet loss%, codec%, delay%, recency%, discard%
Network	
Local throughput	Rate, bytes, packets, packets OOS
Remote throughput	Bytes, packets
Delay	Network, packetization, encoding, buffering, total
Call Info	
Call duration	
Far end IP	
Far end name	
Far end alias	
RTCP used	
Codec RX	
Codec packetization interval RX	
Silence suppression	
Codec TX	
Codec packetization interval TX	
Jitter buffer replayed	
Jitter buffer dropped	
Wiring Tools	
Test Interface	
RJ45 and RJ11 (Wire Mapping)	
Tests	
Wire mapping with Wire Mapping Smart Remote	
Locate cable runs with resistive IDs	
Hub flash	
Port discovery	
Ping tool	
Wire Mapping Results	
Pin assignment mapping	
Loop length per pair	
Opens	
Shorts	
Resistive ID Results	
Label ID number	
Pin pairs	
Resistance value	
Auto-detect interface RJ11 or RJ45	
Hub Flash Results	
Remote Ethernet port flash for 10/100/1000 Mbps Ethernet ports	
Port Discovery Results	
Port capability, duplex, established link, skew and polarity per pair	
Ping Tool Results	
Ping reply and delay to Gateway, DNS, Host/IP	
WiFi (internal)	
Test Interface	
802.11 b/g/n (2.4 GHz)	
Tests	
WiFi scan	
WiFi access point	
WiFi Scan Results	
SSID (secure set identification)	
Channel	
Security setting	
Power level	
MAC address	
WiFi Scan Modes	
AP List (Access Point)	
Channel graph	
Time graph	
WiFi Access Point	
Configure OneExpert as WiFi access point (Ethernet to WiFi bridge)	
WiFi Advisor (sold separately)	
Test Device	
WFED-300AC	
Test Interface	
802.11 a/b/g/n/ac 3x3	
Band support for 2.4 GHz and 5GHz	
BSSID View	
Real-time RSSI	
Noise	
SSID	
BSSID/MAC	
Channel utilization	
Channel width	
Security	
Standard	
SNR	
Channel View	
RSSI	
Channel utilization	
Noise	
Channel score by channel	
Best channels recommendation	
Spectral View	
Real-time spectral measurements	
Max hold	
Site Assessment Assistant	

TrueMargin™ measurement
Coaxial Cable Testing
Test Interface
Coax using SmartID or SmartID Plus
Test Probes (near end)
SmartID, SmartID Plus
Settings
Supports any cable coax type with configurable velocity of propagation (VOP) and cable compensation
Tests
Locate cable runs with active RFIDs (requires SmartID Plus)
Single-ended coax map (SECM)
Tests Using SmartIDs as Remote Probes
Locate cable runs with SmartIDs
Dual-ended coax map (DECM)
VDSL home-run check tests home coax runs for VDSL service use
Whole-home check tests the entire coax network physical layer prior to HPNA test
Test Results
Noise ingress and frequency sweep test summary with pass/fail results
Mapped overview of coax network
Detailed view of cable lengths, faults, splitters, filters, amplifiers
Graphically depicts frequency sweep data
HPNA Network Test
Test Interface
Ethernet RJ45 interface to CPE
Tests
Quick and chronic test
Settings

Configurable minimum PHY rate	12 – 256
Configurable SNR	0 – 40
Configurable max packet loss	0 – 99 (quick)
	0 – 9,999 (chronic)
Payload length size	6 – 1482
Number of packets to send	0 – 5,000 (quick)
	0 – 5000,000 (chronic)

General Connection Status
Station list including indication of the host
Device ID number
Device MAC address
Device HPNA CopperGate® chipset firmware and version identification
HPNA Network Results
Segment specific rate, constellation, and baud
Segment specific packet error rate (PER)
Segment specific SNR
Segment specific receive power
Segment MAC addresses

Fiber Test	
Optical Fiber Power Meter	
USB optical power meter	MP-60, MP-80
Min/max/average optical power level and wavelength	dBm, mW
Connector input	Universal 2.5 and 1.25 mm connectors
Power source	USB port
Selectable pass/fail threshold	
Signal QoS	
Reference value	
Optical Fiber Scope	
USB optical fiber scope	P5000i
Results for zone defects	Pass/fail
Results for zone scratches	Pass/fail
Low mag field-of-view (FOV)	Horizontal 740 µm, vertical 550 µm
High mag field-of-view (FOV)	Horizontal 370 µm, vertical 275 µm
Particle size detection	<1 µm
Power source	USB port
Setting for profile, tip, focus meter, button action	
Actions for live mode, test mode, high magnification	
Probe model, serial, firmware	

Copper Test - DVOM		
Test Interface		
Tip/A – ring/B – ground/earth		
Range	***Resolution***	***Accuracy***
AC Volts		
0 – 300 V peak	1 V	2% ±1 V
DC Volts		
0 – 300 V	1 V	2% ±1 V
Resistance		
0 – 999 Ω	1 Ω	2% ±2.5 Ω
1 – 9.99 kΩ	10 Ω	2%
10 – 99.9 kΩ	100 Ω	2%
100 – 999 kΩ	1 kΩ	2%
1.0 – 9.9 MΩ	10 kΩ	6.5%
10.0 – 100 MΩ	100 kΩ	2%
Leakage		
0 – 49.99 Ω	1 Ω	2% ±2.5 Ω
50 – 999 Ω	1 Ω	5% ±2.5 Ω
1.0 – 9.99 kΩ	10 Ω	2%
10.0 – 99.9 kΩ	100 Ω	2%
100 – 999 kΩ	1 kΩ	2%
1.0 – 9.9 MΩ	10 kΩ	5%
10 – 99.9 MΩ	100 kΩ	10%
100 – 999MΩ	1 MΩ	15%
Distance to Short (conversion from resistance measurement depending on cable setup)		
0 – 30 k ft (0 – 10 km)		
Capacitance/Opens (conversion from capacitance measurement depending on cable setup)		
0 – 47.1 nF	1% ±15 pF	

47.1 nf – 1.57 uF	2%	
0 – 3 k ft (0 – 999 m)	1 ft (1 m)	
3 – 10 k ft (1 – 3.3 km)	10 ft (1 m)	
10 –100 k ft (1 – 33.3 km)	100 ft (10 m)	
DC Current		
0 – 110 mA		
Longitudinal Balance		
28 – 70 dB	1 dB	±2 dB
70 – 120 dB	1 dB	Indication only
Calculated Balance		
Power Influence (PI) – Noise to Ground		
+45 to +120 dBr n	1 dB	±2 dB
–45 to +30 dBm	1 dB	±2 dB
Metallic Noise		
+5 to +50 dBr n	1 dB	±2 dB
–85 dBn to –40 dBm	1 dB	±2 dB
Calculated Balance		
28 to 95 dB	1 dB	±2 dB
Filters		
IEEE 743 C-Message (dBr nC), IEEE 743 3K Flat (dBr n), O.41 Psophometric (dBmP)		
Load Coil Counter		
up to 5 ±1		
TDR		
Test Interface		
Tip A – ring B		

Range	***Accuracy***
0 to 30 k ft (0 to 10 km)	0.5% of distance

Test Modes
OneCheck TDR
Standard
SmartGain TDR
In-home
OneCheck TDR
Features
World view
Peak hold
QuickRange
Reference trace set, show, save, load
Stress TDR
Typical Test Case
500 ft (150 m) bridged tap visible at 18 k ft (5500 m) on a 20 k ft (6000 m)
24 AWG cable/0.5 mm cable
Short Range

0 to 1000 ft (0 to 305 m)	0.3 ft (0.1 m)	1 ft (0.3 m)

TDR at VOP = 0.67 (AWG=24 or 0.5 mm)
UFED
TDR helper
POTS
Test Interface
RJ11, tip A – ring B
POTS Dialer
DTMF or pulse-dial mode
Ring detect
Caller ID (Bellcore Telcordia TR-TSY-000030)
Call log (last 10 calls)
Phonebook (quick dial)
Copper TIMS Option
Wideband Characteristics

Range	***Resolution***	***Accuracy***
Frequency		
10 kHz to 30 MHz		50 ppm
Amplitude		
–80 to +10 dBm	0.1 dB	±2 dB

Termination 100 Ω, 120 Ω, 135 Ω
Narrowband (VF) Characteristics

Frequency		
200 Hz to 10 kHz		50 ppm
Amplitude		
–40 to +10 dBm	0.1 dB	±0.5 dB
50 to 100 dBr n	0.1 dB	±0.5 dB

Termination 100 Ω, 120 Ω, 135 Ω
Technology Filter Selection
Custom, ADSL, ADSL2+, VDSL 8 MHz, VDSL 12 MHz, VDSL 12 MHz ISDN, VDSL 17 MHz, VDSL 17 MHz ISDN, HDSL, G-filter, G2-filter, J-25K8, J-138K8, J25K12, J-138K12, J-25K17, J-138K17, E-filter, F-filter, E1, no filter, power influence
Spectral Test
Technology filter selection
Spectral Power Influence test
Set reference, show reference
Max hold
Configurable external bridge

Power spectral density	dBm, dBm / Hz, dBr n

Span Selection	***Range***	***Resolution***	***Accuracy***
Narrowband Frequency Range			
Power influence	0 Hz to 1.5 kHz	1.9 Hz	50 ppm
POTS	0 Hz to 10 kHz	2.9 Hz	50 ppm
Wideband Frequency Range			
ADSL2+	20.484 kHz to 2.2 MHz	1.078 KHz	50 ppm
VDSL 8 MHz	21.562 kHz to 7.5 MHz	2.156 KHz	50 ppm
VDSL 12 MHz	21.562 kHz to 7.5 MHz	2.156 KHz	50 ppm
VDSL 17 MHz	17.25 kHz to 17.3 MHz	4.3125 KHz	50 ppm
VDSL 30 MHz	17.25 kHz to 30 MHz	8.625 KHz	50 ppm
Custom range selection			
Amplitude			
	–80 dBm to 0 dBm	0.1 dB	±2 dB
	–130 dBm/Hz to –40 dBm/Hz	0.1 dB	±2 dB
Viewable range			
	–130 dBm to 30 dBm		
	–160 dBm/Hz to –20 dBm/Hz		

Narrowband and Wideband RX Tones and Loss	
Meter and list view	
Configurable External Bridge	
Power level	dBm, dBr n
Narrowband and Wideband Noise	
Technology filter selection	
Configurable external bridge	
Custom filter	
Noise power actual/min/max	dBm, dBr n
Wideband Impulse Noise	
Technology filter selection	
Elapsed Time counter	
Threshold, +3 dB threshold, -3 dB threshold	
Configurable external bridge	
Configurable dead time	
Timeline view	dBm, dBr n, mV
Counter view	dBm, dBr n, mV
Wideband Impulse Noise Capture	
Technology filter selection	
Single and continuous capture	
Trigger threshold	
Time and frequency domain capture	dBm, dBr n
Capture display	10%, 50%, 90%
RFL Test Option	
Resistive Fault Locator	
Single and multiple gauge selection	
Temperature adjustment	
UFED support	

Results for distance to short (DTS), distance to fault (DTF), distance short to fault (DSTF), resistance to short (RTS), resistance to fault (RTF), fault resistance

	Range	***Accuracy***
Fault resistance (RF)	0 to 20 MΩ	
Loop resistance	0 to 7 kΩ	
Resistance to Fault (RTF)	RTS 1 Ω to 99 Ω	0.1% RTS ±0.1Ω ±RF/10MΩ
	RTS 100 Ω to 999 Ω	0.2% RTS ±0.1Ω ±RF/5MΩ

K-Test
Two-sided fault test
Results include fault resistance 1, fault resistance 2
UFED support

	Range	***Accuracy***
Fault resistance (RF)	0 to 20 MΩ	
Loop resistance	0 to 7 kΩ	
Resistance to fault (RTF)	RTS 100 Ω to 999 Ω	3% of Resistance to strap (RTS)

Mobile Device Application	
iOS Support	
8.0 to 9.1	
StrataSync	
Asset management	
Data management	
General	
Power Supply	
Battery	Li-ion internal rechargeable, 7.4 V nominaL voltage, 6600 mAh
Operating time >4 hours for typical use cases	
Auto power down (adjustable)	
AC line operation via external adapter/car charger	
Connector	
DSL test module	8-pin modular (RJ45 type)
Ethernet	2 x 8-pin modular (RJ45)
T/A, R/B, T1/A1, R1/B1 and ground/Earth	2 mm recessed banana
POTS	8-pin modular (RJ45) and tip A – ring B
USB	2 x USB 2.0 client ports
Connectivity	
USB flash drive	
Remote operation	
Mobile device application	
Bluetooth	
Standard	Bluetooth 2.1 + EDR, Bluetooth 4.0 ready
WiFi	
Standard	802.11 b/g/n (2.4 GHz)
Audio Support	
Speaker/microphone	
Bluetooth headset	
USB headset	
Permissible Ambient Temperature	
Nominal range of use	0 to 50°C (32 to 122°F)
Storage and transport	–10 to 60°C (14 to 140°F)
Humidity	
Operating humidity	10 to 90%
Water/Dust Ingress	
Complies with IP54	Designed to comply with IP54
Display	
127 mm (5 in) diagonal color WVGA (800 x 480 pixels) backlit LCD with projected capacitive multitouch screen	
Physical	

Ordering Information

The OneExpert can be ordered fully configured for high-end ADSL2+/VDSL2 /G.fast and copper test demands or scaled for specific needs and applications, such as all fiber only without copper.

Included Test Applications (all mainframes and package orders except noted differently below)
Copper on mainframe ONX-580
TDR
OneCheck Copper
DVOM
Opens
Longitudinal balance
Load coil
POTS TDR
Wiring Tools
Wire map on mainframe ONX-580
Hub flash
Port discovery
Ping tool
IP Data Tests
Web browser
IP ping
FTP/HTTP speed test
WiFi
Scan
Access point
Coax — SmartID[1]
Locate IDs
Single-ended coax map
Dual-ended coax map
Whole home check
StrataSync
1-year asset management

Description	**Part Number**
Mainframe	
OneExpert; ONX-580[2]	ONX-580
OneExpert; ONX-580A[2]	ONX-580A
Battery	ONX580-BATTERY-48WH
AC universal power adapter	AC-CHARGER
Module	
OneExpert Broadcom 63168 (bonded ready) test module	ONX580-BDCM-DSL-BONDED
OneExpert Broadcom 63168 (VDSL, ADSL2+ ANX A/B) test module	ONX-BDCM-DSL-ANXAB
OneExpert cover module	ONX-COVER
Software Options	
ADSL/VDSL bonding option for module ONX-BDCM-DSL-BONDED	ONX580-BONDED
G.fast option for module ONX-BDCM-GFAST	ONX580-GFAST
VDSL2 profile 35b option for module ONX-BDCM-GFAST	ONX580-V35B
Apple device connectivity	ONX580-APPLE-001
Bluetooth	ONX580-BLUETOOTH
HPNA	ONX580-HPNA
TrueSpeed	ONX-TRUESPEED
IP video	ONX580-IPVIDEO
VoIP	ONX-VOIP
MOS[3]	ONX-MOS
Resistive fault locator	ONX580-RFL
Transmission impairments and spectral[4]	ONX580-TIMS

Description	**Part Number**
Cables	
CAT5 cable, shielded, RJ45	CB-016994
Lineman dual pair DSL/copper, bed of nails clips	CB-008502
Lineman dual pair DSL/copper, telco clips	CB-008501
Single pair DSL/copper, T/R/GND – A/B/Earth, bed of nails clips	CB-PAIR1-BON-GND
Single pair DSL/copper, T1/R1 – A1/B1, bed of nails	HSTDVOM-BON-YW-BL
Pair 1 DSL/copper cable 4 mm safety banana, T/R - A/B	HSTDVOM-4MM-RED-BLK
Pair 2 DSL/copper cable 4 mm safety banana, T1/R1 - A1/B1	HSTDVOM-4MM-YW-BL
Ground/earth lead — regular telco clip	HSTDVOMCLIPGREEN
Pair 1 DSL/copper WB2 4 mm safety banana, T/R/GND - A/B/Earth	CB-00686
Pair 2 DSL/copper WB2 4 mm safety banana, T1/R1 - A1/B1	CB-00688
Telco clip package for 4 mm banana	CB-CLIPS
Spectral monitor cable	CB-SPE-MON
SmartID USB cable 6 ft	SMARTID-USBCABLE-6FT
SmartID USB cable 3 ft	SMARTID-USBCABLE-3FT
Accessories	
Large carrying case	CC-034601
Small carrying case	CC-CARRYING-CASE-SMALL
Test Module case	CC-MODULE-CASE
Soft glove	AC-GLOVE
Strand hook	HST-000-098-01
Hand strap	AC-HANDSTRAP
Shoulder strap	AC-005101
Car adapter	AC-CAR-CHARGER
USB headset	CUSB-HEADSET
Bluetooth headset	AC-BLUETOOTH-HEADSET
SmartID Plus incl. micro USB cable	SMARTID-PLUS-1PC-TELCO
SmartID Plus 1 unit	SMARTID_PLUS_1PC
SmartID, 6 units	SMARTID-6PC-TELCO-KIT
SmartID accessory kit	SMARTID-ACCKIT-TELCO
Wire mapping smart remote; RJ11, RJ45	AC-WIREMAP-REMOTE
UFEDIIB bonded far end device with standard accessories	UFEDIIB-PKG-1
SDI-100 WAND	SDI-100
MP-60 – USB optical power meter	MP-60A
P5000i – USB fiber scope	FBP-P5000I
Wifi Advisor	
Wifi Advisor Basic Package	WFED300AC-1PC
WiFi Advisor Installer Package	WFED300AC-2PC
Services and Support Plans	
Bronze Support Plan 5 years	BRONZE-5
Silver Support Plan 3 years	SILVER-3
Silver Support Plan 5 years	SILVER-5

1. Requires SmartID and SmartID Plus to be ordered separately.
2. Includes test applications as specified above. Requires selection of battery, AC universal power adapter, and power cord.
3. Requires VoIP software option.
4. Enables copper RX tones, spectral, WB noise, wideband impulse noise, wideband impulse noise capture.

Packages

Package Description	Test Module			Software Options			Test Cables						Probes		Part Number
	ONX580-BDCM-DSL-BONDED	ONX-BDCM-DSL-ANXAB	ONX-COVER	DSL Bonded	RFL	TIMS	5-leads BON	3-leads BON	2-leads 4 mm banana + earth telco	3-leads WB2 4 mm banana	CB-CLIPS	CAT-5	Wire Map Remote	UFED	
ONX-580 DSL bonded standard	✓			✓			✓								ONX580-DSL-BONDED-P1
ONX-580 DSL bonded advanced	✓			✓	✓	✓	✓								ONX580-DSL-BONDED-P2
ONX-580 DSL bonded complete	✓			✓	✓	✓	✓							✓	ONX580-DSL-BONDED-P3
ONX-580 DSL bonded home standard	✓			✓			✓					✓	✓		ONX580-DSL-HOME-P4
ONX-580 DSL bonded home advanced	✓			✓	✓	✓	✓					✓	✓		ONX580-DSL-HOME-P5
ONX-580 DSL bonded home complete	✓			✓	✓	✓	✓					✓	✓	✓	ONX580-DSL-HOME-P6
ONX-580 DSL standard	✓								✓		✓	✓	✓		ONX580-DSL-P7
ONX-580 DSL advanced	✓				✓	✓			✓		✓	✓	✓		ONX580-DSL-P8
ONX-580 DSL complete	✓				✓	✓			✓		✓	✓	✓	✓	ONX580-DSL-P9
ONX-580 DSL ANX-A-B standard		✓							✓		✓	✓	✓		ONX580-DSL-ANXAB-P14
ONX-580 DSL ANX-A-B advanced		✓			✓	✓			✓		✓	✓	✓		ONX580-DSL-ANXAB-P15
ONX-580 DSL ANX-A-B complete		✓			✓	✓			✓		✓	✓	✓	✓	ONX580-DSL-ANXAB-P16
ONX-580 DSL ANX-A-B-30 MHz advanced package		✓				✓				✓	✓	✓	✓		ONX580-DSL-ANXAB-P18
ONX-580 Copper BON Standard			✓					✓					✓		ONX580-Copper-BON-P20
ONX-580 Copper (4mm) Standard			✓						✓		✓		✓		ONX580-Copper-P23

5 leads BON and 3-leads BON (Red, Black, Green)

2-leads 4mm banana + earth telco

CB-CLIPS

CAT-5

SmartRemote/ Wire Map Remote

Standard Equipment

All packages include ONX-580 mainframe, battery, AC universal power adapter, glove, handstrap, large carrying case, and strand hook.

Power cord choice varies by country

Contact Us **+1 844 GO VIAVI**
(+1 844 468 4284)

To reach the Viavi office nearest you, visit viavisolutions.com/contacts.

oneexpert-ds-cab-tm-ae
30175818 907 0616