VIAVI Solutions

Data Sheet

VIAVI
OneExpert CATV

A full-featured handheld for technicians at any skill level

OneExpert™ CATV helps field technicians fix problems right—the first time. A technician-friendly interface and OneCheck™ automated tests ease complex tasks with a simple dashboard that shows clear pass/fail results. And its future-proof modularity ensures years of use supporting CATV networks.

Comprehensive Tools Increase Productivity

We built expertise into OneExpert so that technicians at any skill level can quickly optimize performance. With a modular platform that adapts easily to rapidly changing technologies, OneExpert CATV is:

- Simple — Auto channel identification eliminates channel plan build, maintenance, and deployment overhead and enables automated testing without the potential for channel plan related test failures
- Fast — OneCheck uses powerful processing and exceptional speed to make more complete testing practical: a tech can run a comprehensive test, including MER and BER on all channels, in about a minute
- Powerful — More intelligent, powerful algorithms running in the background while testing enables the meter to point out any problems and suggest next troubleshooting steps

Benefits

- Simplifies and speeds testing and troubleshooting
- Improves compliance and audit performance
- Reduces rework
- Turns any technician into an expert

Features

- Real-time channel identification eliminates the need for channel plans and plan-related errors
- DOCSIS®, WiFi, Multi-Gigabit Ethernet capable, and TrueSpeed™ option
- Field-exchangeable DOCSIS/RF module
- A unique dual-diplexer design supports transition to extended return band
- WiFi, wireless personal area network, and StrataSync™ enabled
- Simultaneous ingress and downstream testing
- Optional fiber scope and power meter
- Optional ISDB-T Module

Applications

- Troubleshooting QAM carriers/home networks
- Verifying WiFi networks
- Testing Gigabit DOCSIS services
- Installing PON/RFoG including inspection, power levels, and RF performance
- Optional QAM video MPEG analysis for RPD activation
- Optional home leakage testing
- Network maintenance with forward and reverse sweep

Specifications

Frequency Range		
Automatically Switching Diplexer	**Upstream**	**Downstream**
42/85	4-42 MHz and 4-85 MHz	54-1,004 MHz and 108-1,218 MHz
42/204 MHz	4-42 MHz and 4-204 MHz	54-1,004 MHz and 258-1,218 MHz
65/204	4-65 MHz and 4-204 MHz	83-1,218 MHz and 258 MHz-1,218 MHz
85/204	4-85 MHz and 4-204 MHz	108-1,218 MHz and 258-1,218 MHz
Accuracy	±10 ppm typical @25°C	

Downstream Analysis — Port 1	
AutoChannel plan builder	Auto detection of channel parameters (analog/digital, symbols, QAM)
Max input power	60 dBmV total integrated power
Dynamic Range	>80 dB at 44 kHz RBW
Operation on powered tap	Operate with up to 90 V AC/DC on input port
Power detection/ notification	Notify of AC/DC power presence on port 2 above 2 Volts
Return loss	>9 dB

Upstream Analysis — Port 2	
Ingress spectrum scan	0.5 – 204 MHz
Sensitivity	–45 dBmV
RBW	300 kHz
Min detectable level upstream	–55 dBmV
Dynamic range	ONX-630 – 60dB; ONX-620 – 50dB
Max total integrated power	55 dBmV, 4 – 10 MHz; 60 dBmV, 10 to 204 MHz
Accuracy	±2 dB typical at 25°C
Sampling rate	Hyper Spectrum™ FFT gapless technology - no missed samples, spans 0.5 -110 MHz, 110 to 160 MHz, and 160 to 204 MHz
Return loss	>9.5 dB
Operation on powered tap	Operate with up to 90 V AC/DC on input port
Power detection/ notification	Notify of AC/DC power presence on port 2 above 2 Volts

Upstream Signal Generator	
Number of signals generated simultaneously	From 1 to 8
Signal types	signals either all CW or all modulated
Modulation supported	QPSK, 16 QAM, and 64 QAM
Symbol rates supported	5.12, 2.56, 1.28, 0.64, 0.32, and 0.16 Msym/s

Specifications Continued

Analog Channel Measurement	
Video and audio levels (dual)	
Standards	NTSC , PAL, SECAM
Min detectable signal	–50 dBmV (single channel)
Level accuracy	±1.5 dB from –20 dBmV to +50 dBmV typical at 25°C; ±2.0 dB, –10°C to +50°C
RBW	300 kHz
Carrier to Noise	
Channel types	NTSC , PAL, SECAM, non-scrambled
Range	30 to 51 dB (NTSC, 4 MHz measurement bandwidth)
Required input level	0 to +40 dBmV with 77 analog channels present, maximum ±15 dB tilt 50 to 1,000 MHz
Accuracy	±2.0 dB within specified measurement range ≤ 600 MHz
Downstream Digital Channel Analysis	
Calibrated power levels	-20 dBmV to +50 dBmV
Level accuracy	±1.5 dB from -20 dBmV to +50 dBmV typical at 25°C; ±2.0 dB, -10°C to +50°C
Modulation(s)	64, 128, and 256 QAM, OFDM
Annex A: 5.057 to 6.952 MSPS Annex B: 5.057 for 64 QAM and 5.361 MSPS for 256 QAM Annex C: 5.274 MSPS for 64 QAM and 5.361 MSPS for 256 QAM	
Regional demods	DVB-C
Full span MER	
Ingress under carrier — full span ingress noise trace	
Group delay and in-channel frequency response (ICFR)	
Digital quality index (DQI) over time	
Errored/severely errored seconds	
Level, measured symbol rate, carrier frequency, modulation, interleaver depth	

Hum Specification	
Hum frequency range	25 Hz to 1000 Hz
Minimum MER	33 dB
Accuracy up to 5% hum	+/- 0.8%
From 5 to 10%	+/- 1.0%
OFDM Signal Performance Metrics	
OFDM Channels	24 - 192 MHz wide - up to 3 active OFDM channels
Level — max, min, average, standard deviation	relative to a 6 MHz carrier per CableLabs©
MER — max, min, average, standard deviation, percentile	12 to 50 dB
MER channel band graph	max, min, avg across entire OFDM carrier
Noise	max
Echo	dBc
ICFR	in-carrier frequency response (dB)
Spectrum/IUC	spectrum display, including carrier and ingress under carrier
OFDM Profile Analysis	
Profiles A, B, C, D, NCP, and PLC (more profiles as implemented) Lock status, codeword errors (corrected and uncorrected)	
DOCSIS Testing	
Supports DOCSIS 3.1 bonding up to 32 SC-QAM + 2 OFDM downstream channels, 8 SC-QAM + 2 OFDMA upstream channels	
Compliant with CableLabs® specifications for DOCSIS 3.1	
Compliant with CableLabs® specifications for DOCSIS 3.0 (32x8 bonding)	

Specifications Continued

Displayed DOCSIS Results	
Top level	Number of bonded channels, min receive level, max BER (pre-FEC), min and max MER, max transmit level, max ICFR (in-channel frequency response)
Details	Downstream SC-QAM (over time charts: level, MER, BER, DQI), Upstream (charts: transmit over time, upstream ICFR, upstream EQ taps
Service tests	Registration, Throughput, Ping/ Traceroute, Packet Quality; cable modem pass-through
OFDM	OFDM selected in scan, number of subcarriers, PLC lock status, frequency, level, and MER, CWE (corr, uncorr); OFDM channel(s) - Level variation (max, min, avg), MER variation (max, min, avg), ICFR, profile analysis (locked, CWE corr, CWE uncorr)
Downstream	
Frequency range	54/85/108/258 to 1,000/1,218 MHz (dependent on currently active diplexer frequency)
Upstream	
Frequency range	5 to 204 MHz (dependent on currently active diplexer frequency)
OFDMA channels	≥2, per DOCSIS specification
Transmit level range (max)	+61 to +48 dBmV depending on modulation format and number of bonded carriers, per DOCSIS specification
SC-QAM channels	up to 8 per DOCSIS specification

MER		
Specified range[1] (with input level -5 to +20 dBmV)	21 to 40 dB, 64 QAM; 28 to 40 dB, 256 QAM; 16 to 44 dB OFDM	
Max displayable range	50 dB	
Resolution	0.1 dB	
Accuracy	±2 dB typical at 25°C	
Minimum lock level	–15 dBmV	
BER — ChannelCheck and DOCSISCheck mode	Down to 1E-9 (pre and post FEC)	
BER — OneCheck mode	Down to 1E-8 (pre and post FEC) default; 1E-9 user selectable	
Interleaver depth	128, 8 max	
Display/Interface/Usability		
High-brightness color LCD (800 x 480)	5 inch diagonal	
Touch screen	Capacitive	
Hard key navigation capable		
Boot time	Approximately 20 sec	
Environmental		
For indoor/outdoor use	IP 54 light rain (0.5 in/hr; 1.27 cm/ hr)	
Pollution	2°	
Drop	1 m (3.3 ft) onto concrete	
Temp range	Operating	–10 to 50°C (14 to 122°F)
	Storage temp	–20 to 60°C (-4 to 140°F)
Humidity	10 – 90% RH non-condensing	
RF immunity	8.5 V/m (for CATV measurements)	
Maximum altitude	4000 m (13,123 ft)	

[1]MER range declines as input levels decrease. Expected MER range at MIN LOCK level of –15 dBmV.

Specifications Continued

Input/Outputs	
RF (2)	F connectors replaceable
Port 1	Downstream 54/85/108/258 MHz depending on diplexer
Port 2	Upstream 4 – 204 MHz and TDR
USB host (2)	
Ethernet (2)	RJ45 10/100/1000T
Power	Polarized
Remote Access/Connectivity	
VNC accessible via IP address HTTPS file access via IP address Mobile application via wireless personal area network	
Battery	
Field replaceable 96 W/hr 10.4 V, 10-cell LiIon	
Typical battery life	6 – 8 hr continuous, 15 – 20 hr typical usage
Battery charge time	4 Hrs (90%) 6 - 8 Hrs 100% (AC charger)
StrataSync Reporting Capability	
Session based (job/work order) file saving of results gathered at TAP, GB, and CPE	
Measurement screen capture save and recall	
StrataSync Core	Asset and data management
StrataSync Plus	Optional extended data management (6 years)
Weight	
ONX-620 & ONX-630	5.95 lb (2.7 kg)
Protective case and shoulder strap	0.95 lb
WiFi	
Test interface	802.11 a/b/g/n (2.4/5 GHz)
Tests	WiFi scan; WiFi access point (2.4 GHz only)
Scan results	SSID (secure set identification); Channel; Security setting; Power level; MAC address
Scan modes	AP list (access point); Channel graph; Time graph
Access point (IPX, TSX models only)	Configure OneExpert CATV as WiFi access point (Ethernet to WiFi bridge)

TrueSpeed Option	
Test Interface	Ethernet 10/100/1000, RJ45; 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)
Report Results	Committed information rate (CIR); Actual throughput; Target throughput; Saturation window; Target TCP throughput; Maximum segment size (MSS); Maximum transmit unit (MTU); Round trip time (RTT); Round trip time base; Maximum average throughput; Maximum peak throughput; Maximum window size; Window size per connection; Connections; Aggregate window; Actual throughput; Target throughput; Buffer delay; TCP efficiency; Total retransmits
Standards	VIAVI TrueSpeed VNF; RFC-6349
IP Video Option	
Test Interface	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

Specifications Continued

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 (current/min/max/average)	Total, IP, Video, Audio, Data, Unknown
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	Ethernet 10/100/1000, RJ45
Supported Signaling Protocols	SIP RFC 3621
Supported Codec Configurations (ITU-T)	G.711 u-law/A-law (PCM/64 kbps); G.722 64K; G.723.1 (ACELP/5.3, 6.3 kbps); G.726 (ADPCM/32 kbps); G.729a (GS-ACELP/8 kbps)
VoIP Settings	Auto-answer; Local alias; Outbound alias; Proxy gateway; Call control port; 100Rel support; SIP interoperability
VoIP MOS	Optimal measurement support

Specifications Continued

Fiber Test	
Optical Fiber Power Meter	
USB optical power meter	MP-60, MP-80
Measurement units	dBm, mW, dB
Connector input	Universal 2.5 and 1.25 mm connectors
Power source	USB port
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	
Home Network Test SmartID - 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)
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
Frequency Range	2 to 1,600 MHz
Standard Accessories	
Protective case with hand strap and detachable shoulder strap	
AC power supply with choice of country-specific adaptor plug	
Quick start guide	
StrataSync Core support	
ISDB-T Module	**Specifications**
Frquency Range	130-767 MHz
Resolution	0.1 MHz
Channel Bandwidth	6 MHz
ISDB-T Measurements	
Modulation type TMCC Parameters	DQPSK, QPSK, 16 QAM 64QAM(Auto Detection) TMCC parameters: Mode, GI, Layers (Auto Detection)
Lock Range	45 to +110 dBuV (total integrated power)
MER Range	33dB
MER Accuracy	+/- 2dB typical @ 25C[2]
BER	Pre-RS BER range[3]: 1E-2~1E-9 Post-RS BER: Pass/fail
Constellation	
Channel Parameters identified	Modulation, GI, Segments, CCR, Mode, Interleaver
User Selection	Channel Center Frequency Layer A, B, or C

[2] MER Accuracy Range: 15~27dB Single Channel Input level: 60~100 dBµV Additional ±0.5 dB from -10 to 50°C Temp MER is not supported when DQPSK is on a non-partial reception layer.

[3] BER performance optimized for 200-760 MHz, Typical performance in network 1E-8

Ordering Information

Description		Part Number
ONX-620 Packages		
	Dual Diplexer	
Basic	42/85	ONX-620D31-4285-1010-BAS
	65/204	ONX-620D31-6520-1212-BAS
IPX	42/85	ONX-620D31-4285-1010-IPX
	65/204	ONX-620D31-6520-1212-IPX
	42/204	ONX-620D31-4220-1012-IPX
	85/204	ONX-620D31-8520-1212-IPX
TSX	42/85	ONX-620D31-4285-1010-TSX
	65/204	ONX-620D31-6520-1212-TSX
	42/204	ONX-620D31-4220-1012-TSX
	85/204	ONX-620D31-8520-1212-TSX
ONX-630 Packages		
NTX	42/85	ONX-630D31-4285-1012-NTX
	65/204	ONX-630D31-6520-1212-NTX
	42/204	ONX-630D31-4220-1012-NTX
	85/204	ONX-630D31-8520-1212-NTX
SWX	42/85	ONX-630D31-4285-1012-SWX
	65/204	ONX-630D31-6520-1212-SWX
	42/204	ONX-630D31-4220-1012-SWX
	85/204	ONX-630D31-8520-1212-SWX
Options		
TrueSpeed		ONX-TRUESPEED
IP video		ONX-CATV-IPVIDEO
DOCSIS 3.1		ONX-CATV-SW-D31
VoIP		ONX-VOIP
Forward Sweep		ONX-CATV-SW-FWD-SWEEP
Reverse Sweep		ONX-CATV-SW-REV-SWEEP
Reverse Sweepless Sweep		ONX-CATV-SW-REVSWPLSSWP
Reverse alignment		ONX-CATV-SW-REV-ALIGN
Ingress expert		ONX-CATV-SW-INGRESS-EXP
Return signal generator		ONX-CATV-SW-RSG
Return signal generator w/ loop-back		ONX-CATV-SW-RSG-LOOP
HomeTDR		ONX-CATV-SW-HOMETDR

Description	Part Number
Seeker Home Leakage Test Kit	TRI-LKG-HL-METER-KIT
Home Leakage Software Option	ONX-CATV-SW-HL-LKG
OneExpert CATV QAM Video MPEG verification option	ONX-CATV-SW-QAM-VIDEO
Return Path SNR Option	ONX-CATV-SW-RP-SNR-OCE
Rapid Reverse Sweep Option*	ONX-CATV-RAPIDREVSW
Field Upgrades	
ONX-630 42/204 MHz Sweep Ready Upgrade module	UPG-ONX-D31-S-4220-1012
ONX-620 42/204 MHz Upgrade Module	UPG-ONX-D31-4220-1012
ONX-620/630 85/204 MHz Upgrade Module	UPG-ONX-D31-S-8520-1212 (RF module only; requires trade-in)
Field Upgrade (via StrataSync) QAM Video option	UPG-ONX-CATV-SW-QAMVIDEO
Field Upgrade (via StrataSync) Return Path SNR option	UPG-ONX-CATV-SW-RP-SNR
HomeTDR Software Upgrade via StrataSync	UPG-ONX-CATV-SW-HOMETDR
Field Upgrade (via StrataSync) Rapid Reverse Sweep option	UPG-ONX-CATV-RAPIDREVSW

*Included on SWX models

Ordering Information continued

Description	Part Number
Bronze and Silver Warranty Extensions	
Five-year warranty	BRONZE-5
One calibration	SILVER-3
Five-year warranty and two calibrations	SILVER-5
Optional Accessories	
Replacement Charger (no power cord)	AC-CHARGER
Car Charger	AC-CAR-CHARGER
Replacement Fitted Case	ONX-CATV-STD-ACCY-KIT
Strand Hook	1019-00-1366
Replacement 96 W/Hr Battery	ONX-CATV-BATT-96WHR
Replacement screen protector (5 pack)	ONX-SCREEN-PROTECTION
Large accessory bag, fitted case, 12V adapter, strand hook, Ethernet patch cord (1 m), extra hand strap	ONX-CATV-DLX-ACCY-KIT
MP-80 USB optical power meter	MP-80A
MP-60 USB optical power meter	MP-60A
FI-60 live fiber identifier	FI-60
P5000i USB fiber scope	FBP-P5000I

Feature Matrix

		ONX-620			ONX-630	
		ONX Feature Bundle				
Feature		**Basic**	**IPX**	**TSX**	**NTX**	**SWX**
OneCheck	Dashboard with ingress scan, downstream summary, DOCSIS summary, and Session Expert summary	■	■	■	■	■
OneCheck details screens	Ingress scan — full graphic view	■	■	■	■	■
OneCheck downstream details	Full scan with channel details — level, hum, MER, BER, C/N, Echo, GD, ICFR	■	■	■	■	■
	System view (max dB delta, max video delta)	■	■	■	■	■
	Favorites	■	■	■	■	■
	Tilt	■	■	■	■	■
	Smart scan			■	■	■
	MER graph — all channels			■	■	■
	BER graph — all channels			■	■	■
	Off-air ingress detection (downsteam ingress under carrier)	■	■	■	■	■
OneCheck DOCSIS details	Downstream DOCSIS channel scan with channel details — level, MER, BER, C/N, echo, GD, ICFR	■	■	■	■	■
	Upstream DOCSIS channel scan with channel details — TX level, modulation type, ICFR		■	■	■	■
	DOCSIS throughput		■	■	■	■
	DOCSIS packet quality		■	■	■	■
OneCheck — Session Expert details	Problems detected table	■	■	■	■	■
	Suggested actions table	■	■	■	■	■
	Ingress comparison between TAP and GB	■	■	■	■	■
	Drop analysis between TAP and GB	■	■	■	■	■
	Detailed downstream comparison between TAP, GB, and CPE	■	■	■	■	■
	Detailed SmartScan comparison between TAP, GB, and CPE			■	■	■
	Detailed Off-air ingress comparison between TAP, GB and CPE	■	■	■	■	■
	Detailed DOCSIS comparison between TAP, GB, and CPE	■	■	■	■	■
	Detailed DOCSIS service test comparison between TAP, GB, and CPE		■	■	■	■

Feature Matrix

		ONX-620			ONX-630	
		ONX Feature Bundle				
Feature		**Basic**	**IPX**	**TSX**	**NTX**	**SWX**
ChannelCheck	Full scan with channel details — level, hum, MER, BER, C/N, Echo, GD, ICFR	■	■	■	■	■
	DS Spectrum w/ Ingress under the carrier (7-channels wide)	■	■	■	■	■
	System view (max dB delta, max video delta)	■	■	■	■	■
	Favorites graph (up to 16 Ch)	■	■	■	■	■
	Tilt	■	■	■	■	■
	DQI over time	■	■	■	■	■
	Level over time			■	■	■
	MER over time			■	■	■
	BER over time			■	■	■
	Downstream in-channel response graph			■	■	■
	SmartScan™			■	■	■
	Constellation	■	■	■	■	■
DOCSIS 3.1 testing	OFDM signal detection and identification in scan - automatic	Optional	Optional	Optional	■	■
	OFDM signal measurement	Optional	Optional	Optional	■	■
	OFDM signal MER throughout channel band over time	Optional	Optional	Optional	■	■
	OFDM signal level variation	Optional	Optional	Optional	■	■
	OFDM ingress under carrier analysis	Optional	Optional	Optional	■	■
	PLC detection, lock status, level, MER, CWE	Optional	Optional	Optional	■	■
	NCP lock status, CWE	Optional	Optional	Optional	■	■
	Profile analysis - lock status, CWE	Optional	Optional	Optional	■	■
	Bonding verification, SC-QAM and OFDM	Optional	Optional	Optional	■	■
	Throughput testing to 1 Gbps Ethernet and 2.5 Gbps DOCSIS	Optional	Optional	Optional	■	■

Feature Matrix

			ONX-620			ONX-630	
			ONX Feature Bundle				
Feature			**Basic**	**IPX**	**TSX**	**NTX**	**SWX**
DOCSISCheck	Downstream DOCSIS channel scan with channel details — level, MER, BER, C/N, echo, GD, ICFR		■	■	■	■	■
	DQI over time		■	■	■	■	■
	Level over time				■	■	■
	MER over time				■	■	■
	BER over time with ES/SES				■	■	■
	Downstream in-channel response graph				■	■	■
	Upstream DOCSIS channel scan with channel details — TX level, modulation type, ICFR		■	■	■	■	■
	Transmit over time		■	■	■	■	■
	DOCSIS upstream in-channel frequency response graph				■	■	■
	Speed Check – throughput			■	■	■	■
	Packet quality — packet loss, round trip delay, jitter			■	■	■	■
	Ping/trace route			■	■	■	■
	Pass through modem RJ-45 port			■	■	■	■
Ethernet testing	Ethernet			■	■	■	■
	OneCheck Ethernet			■	■	■	■
	Speed Check - throughput			■	■	■	■
	Ping/Trace route			■	■	■	■
	FTP/HTTP upload/download			■	■	■	■
	Web browser		■	■	■	■	■
	VoIP SIP			■	■	■	■
	VoIP MOS			Optional	Optional	Optional	Optional
	IP video			Optional	Optional	Optional	Optional
	TrueSpeed™			Optional	Optional	Optional	Optional
WiFi testing	Ethernet			■	■		
	Ping			■	■		
	TrueSpeed			Optional	Optional		
	WiFi - 2.4GHz and 5GHz	SSID survey - graphical and tabular	■	■	■	■	■
		SSID levels over time	■	■	■	■	■
		Local WiFi access point		■	■	■	■

Feature Matrix

		ONX-620			ONX-630	
		ONX Feature Bundle				
Feature		**Basic**	**IPX**	**TSX**	**NTX**	**SWX**
Expert modes	Test point templates, custom limit plans and live/stored measurement comparisons				■	■
	Channel Expert				■	■
	DOCSIS Expert				■	■
	Ingress Expert	Optional	Optional	Optional	■	■
	Quick Check Expert	Optional	Optional	Optional	■	■
Return signal generator	Transmit up to 8 CW or QAM signals	Optional	Optional	Optional	■	■
Return signal generator with loopback	Transmit and receive up to 8 CW or QAM signals with simultaneous power level measurements	Optional	Optional	Optional	■	■
Sweep testing	Sweepless Sweep™				■	■
	Forward Sweep				Optional	■
	Reverse Sweep				Optional	■
	Reverse Sweepless Sweep™				Optional	Optional
	Reverse Alignment				Optional	■
Mobile app integration		■	■	■	■	■
Wireless personal area network		■	■	■	■	■
SmartID support	SmartID and SmartID Plus	■	■	■	■	■
WiFi Advisor support	WFED-300AC; SmartChannel Wizard	■	■	■	■	■
Optical fiber scope support — P5000i		■	■	■	■	■
Optical power meter support — MP-60, MP-80, FI-60 Fiber identifier		■	■	■	■	■
HomeTDR		Optional	Optional	Optional	Optional	Optional
Home Leakage Test		Optional	Optional	Optional	Optional	Optional
QAM Video MPEG verification					Optional	Optional
Return Path SNR		Optional	Optional	Optional	Optional	Optional
Rapid Reverse Sweep					Optional	■

*DOCSIS is a trademark of CableLabs.

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