

## VIAVI OneExpert DSP

Installation/service meter with ONX DNA, making it unequalled in speed, simplicity and value. The OneExpert DSP (ONX-220) is fast, complete, and follows up testing with simple cloud data storage to enable real-time close-out and reporting.

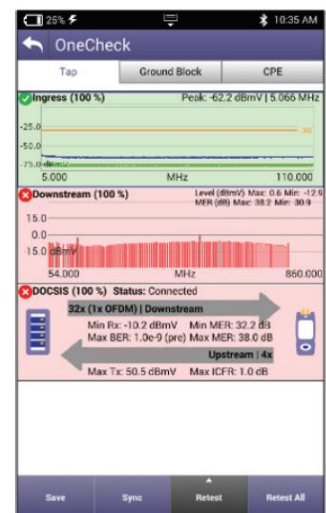


- Most powerful meter in this price range
- Fast, complete, and precise analog and digital signal measurements, including DOCSIS 3.1 OFDM, with a fast boot time, location-based auto tests, and auto-channel plans
- Powerful processing for faster measurements and complete autotest results in less than two minutes
- Complete measurement dashboards with simple Pass/Fail results for novice technicians and ability to drill down for more detailed measurement results
- Works right out-of-the-box with each unit being factory synced to the customer's StrataSync account, so any configurations and limits are automatically configured upon arrival
- Gigabit Ethernet, DOCSIS, and WiFi throughput testing
- Wireless (802.11 ac 2.4/5 GHz with 3x3 MIMO) survey with signal strength, SSID, channels, security, MAC, and protocols.
- Expandable to perform optical power measurements, fiber optic end face inspection to ensure clean connections

### KEY FEATURES

- **AutoChannel** instantaneous channel lineup detection eliminates need for lineup editing, updating and deploying
- **OneCheck** comprehensive mistakeproof automated tests, including: ingress, downstream channels and DOCSIS carriers at three demarcation points (Tap, GB, CPE)
- **DOCSISCheck** real-time analysis and powerful DOCSIS carrier and data service troubleshooting; upstream and/or downstream
- **ChannelCheck** real-time analysis and powerful downstream QAM, OFDM, and Analog carriers troubleshooting
- **DQI (Digital Quality Index)** focuses on raw information condition on the physical path, immediately detects intermittent and sustained issues within the stream
- Integrated Bluetooth connectivity enables leveraging mobile device GPS and multimedia capabilities with VIAVI Android/iOS Mobile Tech App
- Ready for high-speed Gigabit Ethernet and DOCSIS and WiFi\* service testing, unavailable with other low-cost competing products
- Compatible with P5000i optical inspection scope, MP-60/80 optical power meter

\* Network service testing is included only on Advanced and Pro models.



OneCheck dashboard simplifies identifying RF issues



## SPECIFICATIONS

| FREQUENCY  |   |                            |  |
|--|---|----------------------------|--|
| Range  | Diplexer  | Upstream                   | Downstream                             |
| Automatically Switching Diplexer   | 42/85   | 4 - 42 MHz and 4 - 85 MHz  | 54 - 1,004 MHz and 108 - 1,218 MHz     |
| Accuracy   | 65/204  | 4 - 65 MHz and 4 - 204 MHz | 83 - 1,218 MHz and 258 MHz - 1,218 MHz |
| ±10 ppm typical @25°C  |   |                            |  |
| DOWNSTREAM ANALYSIS  |   |                            |  |
| AutoChannel plan builder   | Auto detection of channel parameters (analog/digital, symbols, QAM)   |                            |  |
| Max input power  | 38 dBmV total integrated power  |                            |  |
| Power detection/notification   | Notify of AC/DC power presence above 2 Volts  |                            |  |
| Return loss  | >6 dB   |                            |  |
| UPSTREAM ANALYSIS  |   |                            |  |
| Ingress spectrum scan  | 0.5 – 204 MHz   |                            |  |
| Sensitivity  | -38 dBmV  |                            |  |
| RBW  | 300 kHz   |                            |  |
| Min detectable level upstream  | -38 dBmV  |                            |  |
| 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  | >6 dB   |                            |  |
| ANALOG CHANNEL MEASUREMENT   |   |                            |  |
| Video and audio levels (dual)  |   |                            |  |
| Standards  | NTSC , PAL  |                            |  |
| Min detectable signal  | -50 dBmV (single channel)   |                            |  |
| Level accuracy   | ±1.5 dB from -20 dBmV to +15 dBmV typical at 25°C; ±2.0 dB, -10°C to +50°C  |                            |  |
| RBW  | 300 kHz   |                            |  |
| Carrier to Noise   |   |                            |  |
| Channel types  | NTSC , PAL, non-scrambled   |                            |  |
| Range  | 30 to 51 dB (NTSC, 4 MHz measurement bandwidth)   |                            |  |
| Required input level   | 0 to +15 dBmV with 77 analog channels present, maximum ±15 dB tilt 50 to 1,000 MHz                                  |                            |  |
| Accuracy   | ±2.0 dB within specified measurement range<br>≤ 600 MHz   |                            |  |
| DOWNSTREAM DIGITAL CHANNEL ANALYSIS  |   |                            |  |
| Calibrated power levels  | -20 dBmV to +15 dBmV  |                            |  |
| Level accuracy   | ±1.5 dB from -20 dBmV to +15 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  |   |                            |  |
| 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  | 16 to 44 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)   |   |                            |  |

**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 <sup>1</sup> (with input level - 5 to +15 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)<br>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)  |

**INPUT/OUTPUTS**

|             |   |
|-------------|---|
| RF          | F connector replaceable<br>Downstream 54/85/108/258 MHz depending on diplexer<br>Upstream 4 – 204 MHz |
| Charge Port | USB-C   |
| USB Port    | USB 2.0 (Type A)  |
| Ethernet    | RJ45 10/100/1000T   |
| Power       | USB-C   |

**REMOTE ACCESS/CONNECTIVITY**

VNC accessible via IP address  
HTTPS file access via IP address  
Mobile application via Bluetooth

**BATTERY**

|  |   |
|--|---|
| Field replaceable 48 W/hr 10.4 V, 4-cell Lilon |   |
| Typical battery life                           | 8 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) |

| WARRANTY   |  |
|--|--|
| Instrument   | 1-year warranty (See <a href="http://www.viavisolutions.com/services-and-support/support/warranty-termsand-conditions">http://www.viavisolutions.com/services-and-support/support/warranty-termsand-conditions</a> for warranty details) |
| Accessories and battery  | One-year warranty  |
| DIMENSIONS   |  |
| Width  | 5.27 in (133.88 mm)  |
| Height   | 9.96 in (252.89 mm)  |
| Depth  | 2.23 in (57.33 mm)   |
| WEIGHT   |  |
| Device (without protective case)   | 3.10 lb (1.41 kg)  |
| Protective case and shoulder strap   | 1.10 lb (0.50 kg)  |
| WIFI (PLUS & PRO MODELS ONLY)  |  |
| Test interface   | 802.11 a/b/g/n/ac (2.4/5 GHz)  |
| Tests  | WiFi scan  |
| Scan results   | SSID (secure set identification); Channel; Security setting; Power level; MAC address  |
| Scan modes   | Channel graph; Time graph  |
| FIBER TEST   |  |
| Optical Fiber Power Meter  |  |
| USB optical power meter  | MP-60, MP-80, FI-60 Fiber Identifier   |
| 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  |  |
| STANDARD ACCESSORIES   |  |
| Protective case with hand strap and detachable shoulder strap                                  |  |
| AC power supply with choice of country-specific adaptor plug (USA, UK, Euro, Australia, China) |  |
| Quick start guide  |  |
| StrataSync Core support  |  |

## ORDERING INFORMATION

| DESCRIPTION                             |                      | PART NUMBER             |
|---|----------------------|-------------------------|
| <b>ONX-220 Packages</b>                 | <b>Dual Diplexer</b> | <b>Model</b>            |
| Base                                    | 42/85 MHz            | ONX-220-42-85-D31-BASE  |
|   | 65/204 MHz           | ONX-220-65-204-D31-BASE |
| Plus                                    | 42/85 MHz            | ONX-220-42-85-D31-PLUS  |
|   | 65/204 MHz           | ONX-220-65-204-D31-PLUS |
| Pro                                     | 42/85 MHz            | ONX-220-42-85-D31-PRO   |
|   | 65/204 MHz           | ONX-220-65-204-D31-PRO  |
| OPTIONS                                 |                      |                         |
| Home Leakage Software Option            |                      | ONX-DSP-SW-OPT-HL-LKG   |
| HL Leakage Test Kit                     |                      | TRI-LKG-HL-METER-KIT    |
| Source Transmitter                      |                      | ONX-DSP-SW-OPT-SRC      |
| Frequency-Domain Reflectometer          |                      | ONX-DSP-SW-OPT-FDR      |
| BRONZE AND SILVER WARRANTY EXTENSIONS   |                      |                         |
| Three-Year Warranty                     |                      | BRONZE-3                |
| Five-Year Warranty                      |                      | BRONZE-5                |
| Three-Year Warranty and One Calibration |                      | SILVER-3                |
| Five-Year Warranty and Two Calibrations |                      | SILVER-5                |

**OPTIONAL ACCESSORIES**

|   |                           |
|---|---------------------------|
| OneExpert DSP - Fitted Case                               | ONX-DSP-FITTED-CASE       |
| AC USB-C 45W Power Adapter with International Power Plugs | PWR-ADPT-WALL-AC-USBC-45W |
| DC USB-C 45W Vehicle Power Adapter                        | PWR-ADPT-VEH-DC-USBC-45W  |
| USB-A to USB-C Charging Cable                             | PWR-CBL-DC-USBA-USBC      |
| Strand Hook   | 1019-00-1366              |
| Replacement Screen Protector (5 Pack)                     | ONX-SCREEN-PROTECTION     |
| Large Accessory Bag                                       | ONX-CATV-DLX-ACCY-KIT     |
| MP-80 USB Optical Power Meter                             | MP-80A                    |
| MP-60 USB Optical Power Meter                             | MP-60A                    |
| P5000i USB Fiber Scope                                    | FBP-P5000I                |

**ONX-220 FEATURE MATRIX**
**ONECHECK – DASHBOARD**

|                     | ONX-220 |      |     |
|---------------------|---------|------|-----|
| Measurement Feature | BASE    | PLUS | PRO |
| Ingress Scan        | ■       | ■    | ■   |
| Downstream Summary  | ■       | ■    | ■   |
| DOCSIS Summary      | ■       | ■    | ■   |

**ONECHECK – DOWNSTREAM DETAILS**

|  | ONX-220 |      |     |
|--|---------|------|-----|
| Measurement Feature                          | BASE    | PLUS | PRO |
| Full Channel Scan                            | ■       | ■    | ■   |
| Basic Channel Details – Level, MER, BER, C/N | ■       | ■    | ■   |
| Advanced Channel Details – Echo, GD, ICFR    |         |      | ■   |
| System View – Max dB Delta, Max Video Delta  | ■       | ■    | ■   |
| Favorites (up to 16 Channels)                | ■       | ■    | ■   |
| Tilt   | ■       | ■    | ■   |
| Off-Air Ingress Detection (Downstream IUC)   | ■       | ■    | ■   |
| MER & BER Graph (All Channels)               |         |      | ■   |
| Smart Scan                                   |         |      | ■   |

**ONECHECK – DOCSIS DETAILS**

|  | ONX-220 |      |     |
|--|---------|------|-----|
| Measurement Feature  | BASE    | PLUS | PRO |
| Downstream DOCSIS Channel Scan                             | ■       | ■    | ■   |
| Basic Downstream Channel Details – Level, MER, BER, C/N    | ■       | ■    | ■   |
| Advanced Downstream Channel Details – Echo, GD, ICFR       |         |      | ■   |
| Upstream DOCSIS Channel Scan                               | ■       | ■    | ■   |
| Basic Upstream Channel Details – Tx Level, Modulation Type | ■       | ■    | ■   |
| Advanced Upstream Channel Details – ICFR                   |         |      | ■   |
| DOCSIS Throughput  |         | ■    | ■   |
| DOCSIS Packet Quality                                      |         | ■    | ■   |

**CHANNELCHECK**

|  | ONX-220 |      |     |
|--|---------|------|-----|
| Measurement Feature                          | BASE    | PLUS | PRO |
| Full Channel Scan                            | ■       | ■    | ■   |
| Basic Channel Details – Level, MER, BER, C/N | ■       | ■    | ■   |
| Advanced Channel Details – Echo, GD, ICFR    |         |      | ■   |
| System View – Max dB Delta, Max Video Delta  | ■       | ■    | ■   |
| Favorites (up to 16 Channels)                | ■       | ■    | ■   |
| Tilt   | ■       | ■    | ■   |
| DQI Over Time                                |         |      | ■   |
| Level Over Time                              |         |      | ■   |
| MER Over Time                                |         |      | ■   |
| BER Over Time                                |         |      | ■   |
| Downstream ICFR                              |         |      | ■   |
| Downstream IUC                               |         |      | ■   |
| SmartScan                                    |         |      | ■   |
| Constellation                                | ■       | ■    | ■   |

**DOCSISCHECK**

| Measurement Feature  | ONX-220 |      |     |
|--|---------|------|-----|
|  | BASE    | PLUS | PRO |
| Downstream DOCSIS Channel Scan                             | ■       | ■    | ■   |
| Basic Downstream Channel Details – Level, MER, BER, C/N    | ■       | ■    | ■   |
| Advanced Downstream Channel Details – Echo, GD, ICFR       |         |      | ■   |
| DQI Over Time  |         |      | ■   |
| Level Over Time  |         |      | ■   |
| MER Over Time  |         |      | ■   |
| BER Over Time with ES/SES                                  |         |      | ■   |
| Downstream ICFR  |         |      | ■   |
| Downstream IUC   |         |      | ■   |
| Upstream DOCSIS Channel Scan                               | ■       | ■    | ■   |
| Basic Upstream Channel Details – Tx Level, Modulation Type | ■       | ■    | ■   |
| Advanced Upstream Channel Details – ICFR                   |         |      | ■   |
| Transmit Over Time   |         |      | ■   |
| Upstream ICFR  |         |      | ■   |
| Speed Check – Throughput                                   |         | ■    | ■   |
| Packet Quality – Packet Loss, Round Trip Delay, Jitter     |         | ■    | ■   |
| Ping & Traceroute  |         | ■    | ■   |
| Pass Through Modem RJ-45 Port                              |         | ■    | ■   |

**SERVICE TROUBLESHOOTING MODES**

| Measurement Feature  | ONX-220 |        |        |
|--|---------|--------|--------|
|  | BASE    | PLUS   | PRO    |
| Return Signal Generator (Transmit up to 8 CW or QAM Signals) | Option  | Option | Option |
| HomeFDR  | Option  | Option | Option |
| Home Leakage Test  | Option  | Option | Option |
| SmartID Support  | ■       | ■      | ■      |

**NETWORK CONNECTIVITY MODES**

| Measurement Feature           | ONX-220 |      |     |
|-------------------------------|---------|------|-----|
|                               | BASE    | PLUS | PRO |
| DOCSIS Cable Modem            | ■       | ■    | ■   |
| Pass Through Modem RJ-45 Port |         | ■    | ■   |
| Ethernet                      | ■       | ■    | ■   |
| WiFi                          | ■       | ■    | ■   |
| Bluetooth                     | ■       | ■    | ■   |
| Mobile App Integration        | ■       | ■    | ■   |

**DOCSIS 3.0 TESTING**

| Measurement Feature  | ONX-220 |        |        |
|--|---------|--------|--------|
|  | BASE    | PLUS   | PRO    |
| Automatic SC QAM Signal Detection, Identification, and Measurement in Scan | ■       | ■      | ■      |
| Bonding Verification – SC QAM (32 x 8)                                     | ■       | ■      | ■      |
| Basic Downstream Channel Details – Level, MER, BER, C/N                    | ■       | ■      | ■      |
| Advanced Downstream Channel Details – Echo, GD, ICFR                       |         |        | ■      |
| Basic Upstream Channel Details Tx Level, Modulation Type                   | ■       | ■      | ■      |
| Advanced Upstream Channel Details – ICFR                                   |         |        | ■      |
| Web Browser  | ■       | ■      | ■      |
| Ping & Trace Route   |         | ■      | ■      |
| FTP/HTTP Upload/Download   |         | ■      | ■      |
| Speed Check – Throughput   |         | ■      | ■      |
| Speedtest (Ookla)  |         | ■      | ■      |
| TrueSpeed  |         | Option | Option |

**DOCSIS 3.1 TESTING**

| Measurement Feature  | ONX-220 |        |        |
|--|---------|--------|--------|
|  | BASE    | PLUS   | PRO    |
| Automatic SC QAM Signal Detection, Identification, and Measurement in Scan | Option  | Option | Option |
| Bonding Verification SC QAM (32 x 8) and OFDM (2 x 2)                      | Option  | Option | Option |
| OFDM Signal Level Variation – Min/Avg/Max                                  | Option  | Option | Option |
| PLC – Detection, Lock Status, Level, MER, and CWE                          | Option  | Option | Option |
| NCP – Lock Status and CWE  | Option  | Option | Option |
| Profile Analysis – Lock Status and CWE                                     | Option  | Option | Option |
| OFDM Ingress Under Carrier Analysis  | Option  | Option | Option |
| Web Browser  | ■       | ■      | ■      |
| Ping & Trace Route   |         | ■      | ■      |
| FTP/HTTP Upload/Download   |         | ■      | ■      |
| Speed Check – Throughput   |         | ■      | ■      |
| Speedtest (Ookla)  |         | ■      | ■      |
| TrueSpeed  |         | Option | Option |

**ETHERNET TESTING**

| Measurement Feature      | ONX-220 |        |        |
|--------------------------|---------|--------|--------|
|                          | BASE    | PLUS   | PRO    |
| Web Browser              | ■       | ■      | ■      |
| Ping & Trace Route       |         | ■      | ■      |
| FTP/HTTP Upload/Download |         | ■      | ■      |
| Speed Check – Throughput |         | ■      | ■      |
| Speedtest – Ookla        |         | ■      | ■      |
| TrueSpeed                |         | Option | Option |

**WIFI TESTING**

| Measurement Feature  | ONX-220 |        |        |
|--|---------|--------|--------|
|  | BASE    | PLUS   | PRO    |
| 2.4 & 5 GHz Network Scan                                   | ■       | ■      | ■      |
| Wireless Access Point                                      | ■       | ■      | ■      |
| WiFi Advisor Support SmartChannel Wizard & Coverage Expert | ■       | ■      | ■      |
| Web Browser  | ■       | ■      | ■      |
| Ping & Trace Route   |         | ■      | ■      |
| FTP/HTTP Upload/Download                                   |         | ■      | ■      |
| Speed Check – Throughput                                   |         | ■      | ■      |
| Speedtest – Ookla  |         | ■      | ■      |
| TrueSpeed  |         | Option | Option |
| Wireless Client Scan & Device Finder                       | Option  | Option | Option |
| Multi Channel Usage Scan                                   | Option  | Option | Option |
| Single Channel Usage Over Time                             | Option  | Option | Option |

**FIBER OPTIC MODES**

| Measurement Feature                    | ONX-220 |      |     |
|--|---------|------|-----|
|  | BASE    | PLUS | PRO |
| Optical Fiber Scope Support – P5000i   | ■       | ■    | ■   |
| Optical Power Meter Support – MP 60/80 | ■       | ■    | ■   |
| SmartOTDR Support                      | ■       | ■    | ■   |