



OneExpert CATV Software Release Notes

ONX-620 / ONX-630
Version 4.8.16

February 3, 2022

Table of Contents

OneExpert CATV Software Release Notes	1
Table of Contents	2
Release Management.....	3
Significant Feature Enhancements Added	4
Significant Bugs Fixed	6
Known Limitations	8
<i>Channel Plan Build Limitations</i>	8
<i>StrataSync Limitations</i>	8
<i>Video Analysis Limitations</i>	8
<i>Job Manager support:</i>	8
<i>Supported firmware version on Fiber devices</i>	8
Options	9
<i>SW Option Descriptions</i>	9
<i>HW Option Descriptions</i>	11
Upgrade Management for Releases 1.0 and 2.1	13
Caution against Downgrade.....	13
Contact Information.....	14

Release Management

This release is currently available in Stage StrataSync and applies to all OneExpert CATV DOCSIS 3.0 and DOCSIS 3.1 meters. This release adds improvements to TDR, OneCheck Expert Video Analysis and Sweep modes. It also adds many other minor improvements/bug-fixes as requested by various customers. These new features support network maintenance and home installation technicians. It is ok to directly upgrade to this release from any previous released version.

This release has no DOCSIS Cable Modem code updates from the prior firmware release.

Main Package Version: 4.8.16

Original Build File Name: ONXCBL.004.008.016.oxu

MD5 sum: bcb6a4df2f0fbd82b033f6ecd73437d0

It currently includes the following sub-package version numbers:

- Base: 10.8.16
- Cable: 4.8.16
- Measurement Software Version 3385: 1.6.420
- DOCSIS Cable Modem Version 3385: P.14.1.3385
- Measurement Software Version 3390: 1.7.719
- DOCSIS Cable Modem Version 3390: 19.2
- FPGA: 7.8.5, 8.0.5

Significant Feature Enhancements Added

The following feature enhancements have been added since the last official release and are included in this firmware. New features may be protected by the new options. Please contact your marketing, sales, or engineering representative to coordinate the deployment of new options to your meter.

- OneCheck
 - Added support for Ingress Scan to handle different limit levels for different frequency spans
 - Added support for OFDM channels to handle different limits levels for different frequency spans.
 - Reports for onechecksessionexpert will show failing min/max values for first failing OFDM channel, which might not be overall min/max of all OFDM Channels if others have not failed.

- Ingress Scan
 - Added support for Ingress Scan to handle different limit levels for different frequency spans

- Channel Check
 - Added support for OFDM channels to handle different limits levels for different frequency spans

- DOCSIS Check
 - Added support for OFDM channels to handle different limits levels for different frequency spans

- Quick Check
 - Added support for OFDM channels to handle different limits levels for different frequency spans

- OneCheck Expert
 - Added capability to retest individual tests for Ingress, Downstream, Video Analysis, and/or DOCSIS segments
 - Added support for Ingress Scan to handle different limit levels for different frequency spans
 - Added support for OFDM channels to handle different limits levels for different frequency spans.
 - Reports for onechecksessionexpert will show failing min/max values for first failing OFDM channel, which might not be overall min/max of all OFDM Channels if others have not failed.

- Channel Expert
 - Added support for OFDM channels to handle different limits levels for different frequency spans.

- DOCSIS Expert
 - Added support for OFDM channels to handle different limits levels for different frequency spans.

- Quick Check Expert
 - Added support for OFDM channels to handle different limits levels for different frequency spans.

- OneCheck Fiber
 - Improved the oneCheckFiber report to show a summary of the individual tests from that run
 - Added to report low magnification and high magnification images for Fiber Scope tests
 - Show profile filename during setup of OneCheck Fiber test
 - Updated save process after passing results – save file shortcuts shown

- OneCheck WiFi
 - Show profile filename during setup of OneCheck WiFi test

- OneCheck Ethernet
 - Show profile filename during setup of OneCheck Ethernet test
 - Added support for Viavi's Speed Check test in configuration profile
 - Speed Check test results uploaded and visible in StrataSync

- Job Manager
 - Added extra information for when a test cannot be launched due to missing application, missing profile, or invalid location

- StrataSync
 - Added capability to create/edit OneCheck Fiber profiles
 - Added capability to create/edit OneCheck WiFi profiles
 - Modified Limit Plan configuration to allow setup and deployment of:
 - Ingress Scan limits over different frequency spans
 - OFDM specific limits over different frequency spans
 - All other limits are listed under "System Limits" and apply to all frequency spans

- Misc
 - Metadata improvements for Fiber, WiFi and Ethernet applications
 - Added pop-up notifying when ONX is having less than 20% available disk space
 - CATV auto saved reports are updated so that creation time is now the actual date when report is stopped, not the session time.
 - onechecksessionexpert reports will continue to operate as they have prior and will keep using the session time as creation time.
 - Added Czech as a language selection

Significant Bugs Fixed

The following bugs have been fixed since the last official release and are included in this firmware:

- OneCheck
 - Better representation of OFDMA channels with exclusion zones in the DOCSIS Upstream widget
 - TAC C054999 – improved handling of data to avoid mismatched status between metadata and report
- DOCSIS Check
 - Better representation of OFDMA channels with exclusion zones in the DOCSIS Upstream widget
- DOCSIS Expert
 - Better representation of OFDMA channels with exclusion zones in the DOCSIS Upstream widget
- OneCheck Expert
 - Better representation of OFDMA channels with exclusion zones in the DOCSIS Upstream widget
 - TAC C058951 – improved handling of data to avoid mismatched status between metadata and report
- Sweepless Sweep
 - TAC C041115 – improved the AGC when diplexer selection is AUTO and channels line up with high diplexer
- Quick Check Expert
 - Improved OFDM PLC measurement
- OneCheck Fiber
 - Corrected test timestamp timezone issue in the report
- Fiber Scope
 - Fixed issue with import FiberChekPRO profiles
- Job Manager
 - Improved handling of tests when the same name is used for profiles of multiple modes
- StrataSync
 - Fixed sync issue when using UTF-8 characters for the Tech ID
 - Added support for TLS 1.2 when syncing with StrataSync
 - TAC C062375 – fixed issue with options list visible in StrataSync when activating subscription on packages
 - TAC C062375 – improved visibility of options list in StrataSync

- Misc
 - Improved pinch to zoom experience on graphs
 - Manufacturing date is now correctly displayed on ONX and StrataSync
 - Fixed issue when crop is used twice in screenshot editor
 - Improved pdf reports to highlight top level header
 - Improved screenshot editor
 - Fixed WARN OFDM limits reported as None (no color) instead of Pass (green color) in CATV reports
 - Removed limit check for profile lock on OFDM channels that are not limit checked

Known Limitations

Channel Plan Build Limitations

- Non-FDC Digital Channels with bandwidth less than 6 MHz are not detected.
- DAB+ channels are not detected.

StrataSync Limitations

- Sync via IPv6 only connection is not supported.

Video Analysis Limitations

- Video Analysis only works in systems where the logical channel plan is communicated via the DSG.

Job Manager support:

- OneCheck
- TDR
- Ingress Scan
- Channel Check
- DOCSIS Check
- Spectrum
- QuickCheck
- OneCheck Expert
- OneCheck Fiber
- OneCheck Ethernet
- OneCheck WiFi

Supported firmware version on Fiber devices

Instrument	Version
MP-60	1.28
MP-80	1.28
FiberChek	2.2.983.3387
P5000i	2.1.295.3401
SmartOTDR	21.14
Optimeter	21.14

Options

Options will typically be deployed to a meter at manufacturing. StrataSync can also be used to deploy permanent and demo options to ONX's in the field. Please contact your sales support representative for assistance with option deployment.

SW Option Descriptions

The ONX currently supports the following software options:

1. **ONX-610** – identifies the meter as an ONX-610 (available only at manufacturing)
 - Enables 16x4 DOCSIS
 - Enables lower triplexer selection only.
2. **ONX-620** – identifies the meter as an ONX-620 (available only at manufacturing)
 - When deployed, this option also enables the following SW options:
 - ONX BLUETOOTH SW OPT
 - ONX MOBILE SW OPT
 - ONX DOCSIS 32x8 BONDING
 - Enables multiple triplexer frequency selections, low, high or AUTO depending on HW variant.
3. **ONX-630** – identifies the meter as a sweep capable ONX-630 (available only at manufacturing)
 - When deployed, this option also enables the following SW options:
 - VoIP
 - Ookla Speedtest
 - IPX PACKAGE
 - TSX PACKAGE
 - NTX PACKAGE
 - ONX BLUETOOTH SW OPT
 - ONX MOBILE SW OPT
 - ONX DOCSIS 32x8 BONDING
 - ONX DOCSIS 3.1 OFDM
 - INGRESS EXPERT
 - RSG LOOPBACK
 - Ookla Speedtest
 - OneCheck Expert
 - Enables multiple triplexer frequency selections, low, high or AUTO depending on HW variant.
4. **ONX BLUETOOTH SW OPT** – enables Bluetooth communication. This allows Bluetooth pairing with an iPad for remote UI viewing and also for Bluetooth enabled SmartIDs.
5. **ONX MOBILE SW OPT** – enables remote communication with an iPad or other mobile devices that are running our ONX-CATV application for remote interface viewing.
6. **Ookla Speedtest** – enables the Speedtest by Ookla application from within Ethernet mode
7. **SmartAccess Anywhere** – enables the SmartAccess Anywhere feature on ONX which allows remote access to the device without having to have a public IP on the ONX.
8. **VOIP MOS** – enables the MOS section of testing for VoIP tests in Ethernet test mode.
9. **ONX IP VIDEO SW OPT** – enables IP Video tests from within the Ethernet test application.
10. **TrueSpeed** – enables TrueSpeed testing from within the Ethernet test application.
11. **VoIP** – enables VoIP tests from within the Ethernet Test app.
12. **IPX PACKAGE** – enables service layer tests over DOCSIS. This includes Throughput, Packet Quality, Ping and Trace Route.
 - When deployed, this option also enables the following SW options:

- VoIP
 - Ookla Speedtest
- 13. **TSX PACKAGE** – enables all IPX-Package capabilities plus advanced RF troubleshooting measurements. For a complete list, please reference marketing material.
 - When deployed, this option also enables the following SW options:
 - VoIP
 - IPX PACKAGE
 - Ookla Speedtest
- 14. **ONX DOCSIS 32x8 BONDING** – allows for selection of DOCSIS 3.0 24x8 and DOCSIS 3.0 32x8 channel bonding when performing DOCSIS Tests.
- 15. **ONX DOCSIS 3.1 OFDM** – enables DOCSIS 3.1 OFDM testing and connection capabilities.
 - When deployed, this option also enables the following SW options:
 - ONX DOCSIS 32x8 BONDING
- 16. **ONX FORWARD SWEEP** – enables forward sweep testing on sweep hardware capable meters (ONX-630)
- 17. **ONX REVERSE SWEEP** – enables reverse sweep testing on sweep hardware capable meters (ONX-630)
 - When deployed, this option also enables the following SW options:
 - REVERSE ALIGNMENT
- 18. **ONX MoCA** – enables MoCA testing on MoCA hardware capable meters (reserved for future software capabilities).
- 19. **NTX PACKAGE** – enables network expert test modes (e.g. Channel Expert) in the CATV Network application group.
 - When deployed, this option also enables the following SW options:
 - VoIP
 - IPX PACKAGE
 - TSX PACKAGE
 - INGRESS EXPERT
 - RSG LOOPBACK
 - Ookla Speedtest
 - OneCheck Expert
- 20. **SWX PACKAGE** – enables all sweep test modes (e.g. Forward Sweep) in the CATV Network application group on sweep hardware capable.
 - When deployed, this option also enables the following SW options:
 - VoIP
 - IPX PACKAGE
 - TSX PACKAGE
 - NTX PACKAGE
 - ONX FORWARD SWEEP
 - ONX REVERSE SWEEP
 - SWEEPLESS SWEEP
 - REVERSE ALIGNMENT
 - INGRESS EXPERT
 - RSG LOOPBACK
 - Ookla Speedtest
 - OneCheck Expert
- 21. **SWEEPLESS SWEEP** – enables sweepless sweep mode.
- 22. **REVERSE ALIGNMENT** – enables reverse alignment on sweep hardware capable meters (ONX-630).
- 23. **INGRESS EXPERT** – enables Ingress Expert.
- 24. **RSG LOOPBACK** – enables RSG Loopback App (Return Signal Generator with TX, RX and Loopback capabilities)

25. **ONX DOCSIS** – enables all DOCSIS functionality on the meter. This option is displayed only if it is not enabled.
26. **RSG TX** – enables RSG TX App (Return Signal Generator with TX only mode of operation).
27. **HOME TDR** – enables the Home TDR App in the CATV application group.
28. **Ookla Speedtest** – enables Ookla Speedtest in Ethernet Test.
29. **HL Leakage** – enables HL Leakage App in the CATV application group.
30. **Field View** – enables Field View App in the CATV Network application group.
31. **Field View with RSG** – enables Field View with RSG App in the CATV Network application group.
 - When deployed, this option also enables the following SW options:
 - Field View
32. **DataBase Mining** – enables saving database data with all files instead of just the sessionexpert or onechecksessionexpert result files.
33. **OneCheck Expert** – enables the OneCheck Expert mode.
34. **ONX REVERSE SWEEPLESS SWEEP** – enables Reverse Sweepless Sweep
35. **Return Path SNR** – enables Return Path SNR in OneCheck Expert
36. **ONX QAM Video** – enables QAM Video Analysis in OneCheck Expert
37. **Rapid Reverse Sweep** – enables Rapid Reverse Sweep capabilities.
38. **OneCheck WiFi** – enables OneCheck WiFi.

HW Option Descriptions

The ONX currently reports the following HW options to StrataSync. Hardware options are used to help identify the hardware capabilities of the ONX.

1. **DOCSIS 3.0 HW capable** – this option identifies that the ONX has the hardware necessary to accomplish a DOCSIS 3.0 connection. ONX that report this option do not have the hardware necessary to perform a DOCSIS 3.1 OFDM connection.
2. **DOCSIS 3.1 HW capable** – this option identifies that the ONX has the hardware necessary to perform a DOCSIS 3.1 OFDM connection.
3. **Low Diplexer** – this option specifies the low triplexer frequency range (e.g. 42 – 1002 MHz.)
4. **High Diplexer** – this option specifies the high triplexer frequency range (e.g. 85 – 1002 MHz).
5. **INGRESS SCAN RANGE 4-110 MHz** – This option specifies that the port 2 ingress scan has the range 4 – 110 MHz
6. **INGRESS SCAN RANGE 4-204 MHz** – This option specifies that the port 2 ingress scan has the range 4 – 204 MHz.
7. **Sweep Capable** – This option identifies that the ONX has the hardware necessary to perform forward and reverse sweep measurements.
8. **DOCSIS 3.0 Euro BPI+ Certs** – This option indicates that DOCSIS 3.0 Euro BPI+ Certs have been successfully deployed to the ONX.
9. **MoCA 2.0 Bonding Capability** – This option indicates that the ONX has the hardware necessary to perform MoCA 2.0 bonding.
10. **MoCA 2.0 Capability** – This option indicates that the ONX has the hardware necessary to perform MoCA 2.0 (bonding not supported).
11. **WiFi Country** – This option reports the two letter WiFi country code that the meter is currently configured to use.
12. **WiFi Region** – This option reports the configured WiFi region (FCC/IC or ETSI).
13. **Port 2 Clamping** – This option indicates the presence of a clamping diode on port 2.

14. **HL Leakage Capable** – This option indicates that the ONX has the hardware necessary to perform HL Leakage.
15. **Field View Capable** – This option indicates that the ONX has the hardware necessary to perform Field View.
16. **Large Flash** – This option indicates which flash part is on the module.
17. **Digital Hum Capable** – This option indicates that the ONX has the hardware necessary to perform Digital Hum Measurements.
18. **Atypical EEPROM** – This option indicates that you might want to call TAC.
19. **Video Analysis Capable** – This option indicates that the ONX has the hardware necessary to perform Video Analysis Measurements

Upgrade Management for Releases 1.0 and 2.1

Please use the following procedure when updating the firmware on your OneExpert CATV if it is running any version prior to 2.0.655. This procedure can be used for newer releases also.

1. On the OneExpert CATV meter:
 - a. Power on your meter, connect it to power and/or make sure it has greater than 50% battery.
 - b. Open the Network application that is under the System group at the bottom of the page.
 - i. Do not open the Ethernet application. If you do, please reboot and start over. (1.0.0 and 1.0.1 only)
 - c. Verify that you have a valid IP address. You may have to press the "Ethernet" button (soft key 2) at the bottom of the screen to enable the network connection.
 - i. If your IP address starts with 192.168.0.*, you may have difficulties with downloading the file. We recommend either of the following:
 1. Reconfigure the modem/router to use anything but 192.168.0.*
 2. Perform upgrade via USB with no cable attached to either Ethernet port. If you perform the upgrade via USB, be sure to cancel the upgrade in StrataSync or it will attempt to upgrade your meter again on next sync.
 - d. Once you have a valid IP address, press the home button.
2. On StrataSync:
 - a. Deploy the desired SW update to your meter from StrataSync.
3. On the OneExpert CATV:
 - a. Open the StrataSync application that is under the System group at the bottom of the page.
 - b. Start a Sync, the meter should prompt you to "Click OK to accept the update", accept the update and allow the meter to upgrade.
 - i. If the meter does not prompt you to "Click OK to accept the upgrade", redeploy the upgrade from StrataSync and Sync again.
 - c. The ONX will automatically power off when the upgrade completes successfully.

Caution against Downgrade

The OneExpert CATV applications will not work if you downgrade from this release to any version prior to 2.2.86. Appropriate use of StrataSync generally prevents downgrading the meter. If you downgrade the OneExpert CATV and it doesn't work as desired, please upgrade it back to this release or later to restore normal operation. We recommend that you not downgrade your OneExpert CATV.

If your meter has the **DOCSIS 3.1 HW capable** and the **Port 2 Clamping** hardware options, then attempts to downgrade to versions earlier than 3.4.8 or 3.4.11 will probably fail. Your meter will be unusable until you re-upgrade to release 3.4.17 or newer. It will likely require two attempts to successfully upgrade your meter back to this release should you decide to disregard this warning.

If your meter has the **Sweep Capable** hardware option and doesn't have the **Large Flash** hardware option, the ONX will become useless if it is downgraded to any software image earlier than 3.10.4. It will likely require two attempts to successfully upgrade your meter back to this release should you decide to disregard this warning.

If you downgrade a meter from 3.17.x to an earlier revision, work order data may be lost and permanently consume file system space until you re-upgrade to 3.17.x or later. You can avoid this by performing a manual purge prior to performing the downgrade.

If your meter has the **Sweep Capable** hardware option and **Low Diplexer 42-1002 MHz** and **High Diplexer 204-1218 MHz**, the ONX will become useless if it is downgraded to any software image earlier than 4.2.20. It will likely require two attempts to successfully upgrade your meter back to this release should you decide to disregard this warning.

Starting approximately Sept 2021, to preserve hardware compatibility newly manufactured meters will not be able to downgrade to software version 4.2.20 or older.

Starting approximately Nov 2021, to preserve hardware compatibility newly manufactured meters will not be able to downgrade to software version 4.4.18 or older.

Contact Information

For help, please consult the User's Guide or contact VIAVI Support

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