VIAVI

OneExpert CATV Software Release Notes

ONX-620 / ONX-630
Version 4.12.12

March 10, 2022

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Release Management 4.12.7

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 new features and major improvements to various modes. It also adds other minor improvements and 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: 4.12.7
Original Build File Name: ONXCBL.004.012.007.oxu
MD5 sum: 70015d5a40a9abe70974b8059ba82772
It currently includes the following sub-package version numbers:
- Base: 10.12.7
- Cable: 4.12.7
- Measurement Software Version 3385: 1.6.420
- DOCSIS Cable Modem Version 3385: P.14.1.3385
- Measurement Software Version 3390: 1.7.922
- DOCSIS Cable Modem Version 3390: 19.2
- FPGA: 7.8.5, 8.0.5

Release Management 4.12.12

This release is currently available in StrataSync and applies to all OneExpert CATV DOCSIS 3.0 and DOCSIS 3.1 meters. This small release improves user experience with several bug fixes as well as a couple small feature improvements to sweep modes. These updates 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: 4.12.12
Original Build File Name: ONXCBL.004.012.012.oxu
MD5 sum: f37555c347af162e917b12da077228f8
It currently includes the following sub-package version numbers:
- Base: 10.12.12
- Cable: 4.12.12
- Measurement Software Version 3385: 1.6.420
- DOCSIS Cable Modem Version 3385: P.14.1.3385
- Measurement Software Version 3390: 1.7.925
- DOCSIS Cable Modem Version 3390: 19.2
- FPGA: 7.8.5, 8.0.5

Significant Feature Enhancements Added in 4.12.7

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
    - DOCSIS based Throughput testing now exceeds >3Gbps download speeds
    - Display Downstream and Upstream Provisioning in the Registration and Throughput widgets in DOCSIS test

- DOCSIS Check
    - DOCSIS based Throughput testing now exceeds >3Gbps download speeds
    - Display Downstream and Upstream Provisioning in the Registration and Throughput widgets in DOCSIS

- OneCheck Expert
    - DOCSIS based Throughput testing now exceeds >3Gbps download speeds
    - Display Downstream and Upstream Provisioning in the Registration and Throughput widgets in DOCSIS

- DOCSIS Expert
    - DOCSIS based Throughput testing now exceeds >3Gbps download speeds
    - Display Downstream and Upstream Provisioning in the Registration and Throughput widgets in DOCSIS
    - Added Configuration for DOCSIS Throughput Duration
        - Allow either Downstream or Upstream Throughput test time to be configured for Default, 45 sec, 1min, 1.5min, 2min, or continuous

- Misc
    - OOB QPSK Channel detection updated based on Diplexer
        - 42 MHz diplexer: OOB scan now from 70 MHz to 370 MHz.
        - 65 MHz diplexer: OOB scan now from 77 MHz to 377 MHz.
        - 85 MHz diplexer: OOB scan now from 94 MHz to 394 MHz.
        - 204 MHz diplexer: OOB scan now from 250 MHz to 550 MHz.
    - Full support for new 85 / 204 MHz hardware module

Significant Feature Enhancements Added in 4.12.12

The following feature enhancements have been added since the last official release (4.12.7) and are included in this firmware.

- Forward and Reverse Sweep – Auto Diplexer updates for 204MHz networks
    - Updated scenarios for 204MHz plants when the ONX selects the best diplexer based on telemetry frequency and sweep points in the plan

Significant Bugs Fixed in 4.12.7

The following bugs have been fixed since the last official version 4.10 release and are included in this firmware:

- OneCheck
    - TAC Case C082844: OFDM Channel Plan Build - Incorrectly shows Exclusion Zones When Not Present

- OneCheck Expert
    - TAC Case C082844: OFDM Channel Plan Build - Incorrectly shows Exclusion Zones When Not Present
    - TAC Case - The SNR/SIR indicators are missing in OneCheck Expert -> Upstream widget

- Ingress Expert
    - Improved UCD Noise values when measuring SNR / SIR values on OFDMAs

- ChannelCheck
    - TAC CASE C090247 Periodic DQI measurement interruptions
    - TAC Case C082844: OFDM Channel Plan Build - Incorrectly shows Exclusion Zones When Not Present
    -

- Channel Expert
    - TAC CASE C090247 Periodic DQI measurement interruptions
    - TAC Case C082844: OFDM Channel Plan Build - Incorrectly shows Exclusion Zones When Not Present

- StrataSync
    - TAC CASE C085290 Updated Job Template Logic when synced with StrataSync
        - Requires StrataSync update to fully resolve

Significant Bugs Fixed in 4.12.12

The following bugs have been fixed since the last official release (4.12.7) and are included in this firmware release:

- StrataSync and Syncing
    - TAC CASE C101971 – Fixed some instances where the ONX was only attempting to use the RF DOCSIS connection for all syncing purposes – even when RF was not available but the Ethernet or WiFi connections were available.
    - TAC Case C106048 ONX-620: For older hardware units, the connection app was being forced to be used in 4.12.7 – even when a DOCSIS connection was currently active
- Channel Check / Channel Expert
    - TAC CASE C105549 ChannelCheck ONX-630 : DQI measurements would sometimes be missing or disappear from the displayed metrics in 4.12.7

- o Some systems with exclusion zones in OFDM carriers would see lower MER for subcarriers on the edges of the OFDM channel – appears as curved edges in the MER graphs of the subcarriers
- Reverse Sweep
  - o Removed incorrect yellow highlighting of Port 1's diplexer range when Sweeping up to 204 MHz out of Port 2 which does not have a diplexer limitation to 204MHz
- Reverse Sweepless Sweep
  - o TAC CASE C096103 - The ONX now waits longer after bonding is compete for the system to provide channel change and bonding requests
  - o Corrected for a bug in some instances where the ONX was advertising as a different modem configuration than expected

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)
   o Enables 16x4 DOCSIS
   o Enables lower triplexer selection only.
2. **ONX-620** – identifies the meter as an ONX-620 (available only at manufacturing)
   o When deployed, this option also enables the following SW options:
     - ONX BLUETOOTH SW OPT
     - ONX MOBILE SW OPT
     - ONX DOCSIS 32x8 BONDING
   o 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)
   o 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
   o 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.
    o 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.
   o 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.
   o 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)
   o 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.
   o 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.
   o 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.
    o 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 to 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 5-42 / 54-1002 MHz** and **High Diplexer 5-204 / 258-1218 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.

If your meter has the hardware with **Low Diplexer 5-85 / 108-1218 MHz** and **High Diplexer 5-204 / 258-1218 MHz**, the ONX will become useless if it is downgraded to any software image earlier than 4.10.12. It will likely require two attempts to successfully upgrade your meter back to this release should you decide to disregard this warning.

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

Starting approximatively 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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