

Hanwha Vision

Network Camera Version 2.21

Release Note

v2.21

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Network Camera Version 2.21

This document describes the new and changed features of Hanwha Vision network camera version 2.21

 Released on September 23, 2024

Common Features

[New features]

- Added the icon at the top right of the web viewer to display the status of the recording devices [v2.21.01, PNM-C7083RVD] [v2.21.01, PNM-C12083RVD]
- Added auto tracking function [v2.21.02, QNP-6320, QNP-6250, QNP-6320H, QNP-6250H] [v2.21.02, QNP-6320R, QNP-6250R] [v2.21.04, QNP-6320, QNP-6250, QNP-6320H, QNP-6250H, QNP-6320H1]
- Supports SLA-T2880BA lens [v2.21.01 XNB-6002]
- The existing AI functions are now supported in the WiseAI application. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added an event rule function. You can register a trigger for each event rule and set an event action for the camera when an event occurs. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Increased the installation space of the WiseAI application to 150MB. To update the firmware, you need a bridge firmware. Once updated, the firmware cannot be downgraded. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-

A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]

- Added a [Wise detector] function to the WiseAI application, where it displays a bestshot out of the objects detected by Wise Detector. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added support for the MQTT protocol. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR]
- Added support for Encoding From Memory (EFM) [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- An alarm now goes off in case of changes in WiseAI settings. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- You can now type Japanese in OSD. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added support for LLDP for POE+. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added a [Slip & fall detection] function to the WiseAI application. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-

A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]04

- Added AI features to the thermal image channel. Setting the camera sensor mode to 30 or 25 fps enables AI in only one of the real or thermal channels, while setting it to 15 fps enables AI in both the channels. (Only applied when Opensdk_App_WiseAlBi_1.09.00_R708 is installed) [v2.21.01, TNM-C4940TD] [v2.21.01, TNM-C4950TD, TNM-C4960TD]
- Added 15fps, 25 fps, and 30fps values to the sensor mode settings [v2.21.01, TNM-C4940TD] [v2.21.01, TNM-C4950TD, TNM-C4960TD]
- Added video analytics features ([People counting], [Heatmap], [Queue management], and [Vehicle counting]) [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R] [v2.21.10, QNV-C9011R] [v2.21.10, QNV-C8011R] [v2.21.10, QNV-C8012]
- Added WiseStream 3 features [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R] [v2.21.10, QNV-C9011R] [v2.21.10, QNV-C8011R] [v2.21.10, QNV-C8012]
- Added a [Customize] option to the [Duration] list under the [Day/Night] tab [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R] [v2.21.10, QNV-C9011R] [v2.21.10, QNV-C8011R] [v2.21.10, QNV-C8012]
- Added a video overlay feature [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R] [v2.21.10, QNV-C9011R] [v2.21.10, QNV-C8011R] [v2.21.10, QNV-C8012]
- Made TLS version optional [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R] [v2.21.10, QNV-C9011R] [v2.21.10, QNV-C8011R] [v2.21.10, QNV-C8012]
- Added the [Noise reduction] feature that reduces audio noise [v2.21.10, QNV-C9083R, QNO-C9083R] [v2.21.10, QNV-C8083R, QNO-C8083R]
- Enables the Wisenet RoadAI app installed on the TNO-7180RLP model to recognize US license plates [v2.21.01, TNO-7180RLP]
- Added the [Feet (ft)] option to [Unit] on the [LPR setup] page [v2.21.01, TNO-7180RLP]
- Added the [Night exposure] feature to the [Camera setup] page. You can configure the settings for minimum shutter, maximum shutter, prefer shutter, iris, iris F-No, AGC, and levels (manual & max. gain). [v2.21.01, TNO-7180RLP]
- Added support for the Cisco Discovery Protocol (CDP) used in CISCO switches [v2.21.03, PNM-C12083RVD] [v2.21.04, PNM-C7083RVD]

- Added a banner feature to SMT-series PVM monitors that displays banner images on the video screen [v2.21.10, SMT-3231PV, SMT-2731PV]
- Added support for AI Pack. Note that you need an individual license to install each application. [2.21.15, PNB-A9001] [2.21.15, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [2.21.08, PNB-A6001] [2.21.08, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]

[Improvement]

- When you set the privacy zone, the privacy zone now becomes transparent while setting the zoom threshold. [v2.21.02, QNP-6320, QNP-6250, QNP-6320H, QNP-6250H] [v2.21.02, QNP-6320R, QNP-6250R] [v2.21.04, QNP-6320, QNP-6250, QNP-6320H, QNP-6250H, QNP-6320H1]
- Improved the phenomenon of object saturation in IR LED proximity conditions [v2.21.01, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNM-C12083RVD] [v2.21.03, PNM-C7083RVD]
- If you click the [Delete] button while Wisenet WAVE app is installed, a warning message is displayed [v2.21.01, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNV-A6081R-E1T, PNV-A6081R-E2T]
- When the camera time zone changes, it is automatically reflected and synchronized in the Wisenet WAVE app [v2.21.01, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNV-A6081R-E1T, PNV-A6081R-E2T]
- Updated some time zones and DST information to the latest [v2.21.01, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNV-A6081R-E1T, PNV-A6081R-E2T]
- Changed the corporate name to Hanwha Vision in the web viewer as the name changed to Hanwha Vision [v2.21.01, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.02, PNV-A6081R-E1T, PNV-A6081R-E2T] [v2.21.01, XNF-9013RV] [v2.21.01, TNM-C4940TD] [v2.21.01, TNM-C4950TD, TNM-C4960TD]
- Improved functionality to obtain TTA security certification [v2.21.02, PNM-C9022RV]
- Fixed language error in Japanese version [v2.21.02, PNM-C9022RV]
- Fixed HTTPS bugs [v2.21.01, MGL-D8080] [v2.21.01, MGC-F9010LI] [v2.21.01, MGC-D8080LI, MGC-D8080]

- Changed the default value of [Day/Night] from [Auto] to [Color] after factory reset [v2.21.01, MGC-D8080LI, MGC-D8080]
- When setting the H.264/H.265 codec, you can set the minimum bitrate to 10 kbps. [v2.21.02, PNM-C7083RVD]
- TLS1.0/TLS1.1 not supported for SRTP (port:322) [v2.21.01, XNF-9013RV]
- Added a function where you can select attributes to send to object metadata. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Improved analysis performance in object detection. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- The [Face mask detection], [social distance detection], and [People counting] functions that were supported in [Analytics] are now supported in the WiseAI application. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added support for Profile M of ONVIF. [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Deleted a PTZ channel. A PTZ profile is now supported. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R]
- Improved the image quality of low light images. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]

- Changed default bitrate values from 12MB to 8MB. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R]
- Changed default bitrate values from 4MB to 2MB. [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Allows you to create passwords up to 64 characters [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- You can now give administrative rights to other users. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added a function where you can designate a specific application as a default application out of the applications you installed. [v2.21.13, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added a shortcut icon and Open App list to the toolbar in the web viewer [v2.21.01, TNM-C4940TD] [v2.21.01, TNM-C4950TD, TNM-C4960TD]
- Expanded the ROI area for temperature detection and improved the functionality [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR]
- Provide temperature data and coordinate values [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR]
- Added setting conditions for temperature detection [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR]
- Added rule-based event settings [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR]

- Added a live reading feature to provide temperature data of the whole area and the ROI area for temperature detection [v.2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v.2.21.00, TNO-L4030TR]
- Added a pixel reading feature to provide temperature data of pixels [v.2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v.2.21.00, TNO-L4030TR]
- Added a one-time reading request feature to provide temperature data when requested [v.2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v.2.21.00, TNO-L4030TR]
- Stabilized the event-triggered performance in case of the detection of parking-area occupancy [v.2.21.02, MGC-F9010LI] [v.2.21.02, MGC-D8080LI, MGC-D8080]
- Fixed an error with UI text on the [Temperature detection] page [v.2.21.01, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v.2.21.01, TNO-L4030TR] [v.2.21.10, TNO-L4030T] [v.2.21.10, TNO-L4030TR] [v.2.21.11, TNO-L4030T] [v.2.21.11, TNO-L4030TR]
- Improved SUNAPI API of the [Temperature detection] feature [v.2.21.01, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v.2.21.01, TNO-L4030TR] [v.2.21.10, TNO-L4030T] [v.2.21.10, TNO-L4030TR] [v.2.21.11, TNO-L4030T] [v.2.21.11, TNO-L4030TR]
- Made the [Privacy mask] feature available even if the [DetectionShot] feature is activated [v.2.21.10, QNV-C9083R, QNO-C9083R] [v.2.21.10, QNV-C8083R, QNO-C8083R] [v.2.21.10, QNV-C9011R] [v.2.21.10, QNV-C8011R] [v.2.21.10, QNV-C8012]
- Corrected an error where the IP speaker wasn't connected to the cameras that support the [Handover] feature [v.2.21.10, QNV-C9083R, QNO-C9083R] [v.2.21.10, QNV-C8083R, QNO-C8083R] [v.2.21.10, QNV-C9011R] [v.2.21.10, QNV-C8011R] [v.2.21.10, QNV-C8012]
- Corrected an issue where the admin password wasn't changed when you tried changing the admin password using the ONVIF protocol [v.2.21.03, PNM-C12083RVD] [v.2.21.04, PNM-C7083RVD]
- Improved the sync performance to ensure that overlay boxes that are drawn according to metadata are in sync with the video while the camera is connected to Wisenet WAVE [v.2.21.01, PNM-C16013RVQ]
- Added AI features to the WAVE application [v.2.21.03, PNV-A6081R-E1T, PNV-A6081R-E2T]
- Changed the setting so that [Mode] both under [Day/Night] and [IR] is automatically set to [Auto] when you select [Off] under [Mode] in [Camera setup]<[LED light] [v.2.21.01, QNE-C9013RL] [v.2.21.01, QNE-C8013RL]

- Changed the setting so that [Mode] both under [Day/Night] and [IR] is automatically set to [Auto] when you select [Light alarm] under [Mode] in [Camera setup]>[LED light] [v2.21.01, QNE-C9013RL] [v2.21.01, QNE-C8013RL]
- Added an LED-flashing feature to allow you to visually check whether the camera is booting up. The LED will flash when the camera boots up and stop blinking when the boot is complete. [v2.21.01, TNS-9050IBC]
- Displays UI text in 16 languages, including French, Russian. To change the language, go to [System]>[Product information]>[Language]. [v2.21.01, TNS-9050IBC]

[Bug fixes]

- Corrected an issue that delayed triggering temperature-detection events [v2.21.01, TNO-C3010TRA, TNO-C3020TRA, TNO-C3030TRA] [v2.21.01, TNO-C3012TRA, TNO-C3022TRA, TNO-C3032TRA]
- Corrected an issue that intermittently missed the ping command [v2.21.12, QNV-C8011RMG]
- Fixed the problem that the temperature of the [Include area] which is ROI was displayed incorrectly [v2.21.10, TNO-L4030T] [v2.21.10, TNO-L4030TR] [v2.21.11, TNO-L4030T] [v2.21.11, TNO-L4030TR]

Application Improvements

- Added [People counting], [Vehicle counting], and [Crowd counting] features (Only applied when Opensdk_App_WiseAI_1.02.01_R728 is installed [installable only for P-AI series cameras]) [v2.21.13, PNB-A9001], [v2.21.13, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001], [v2.21.06, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001], [v2.21.14, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001], [v2.21.07, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R]
- Added attributes that show 8 directions of object movement to the [BestShot] feature (Only applied when Opensdk_App_WiseAI_1.02.01_R728 is installed [installable only for P-AI series cameras]) [v2.21.13, PNB-A9001], [v2.21.13, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.06, PNB-A6001], [v2.21.06, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A6081R] [v2.21.14, PNB-A9001], [v2.21.14, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.07, PNB-A6001], [v2.21.07, PNO-A6081R, PND-A6081RF, PND-A6081RV, PNV-A9081R]

PNV-A6081R]

- Added a feature to encode BestShot to Base64 format, allowing metadata to be transmitted via Real-Time Streaming Protocol (RTSP). (Only applied when Opensdk_App_WiseAI_1.02.04_R1605 is installed [installable only for P-AI series cameras]) [v2.21.15, PNB-A9001] [v2.21.15, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.08, PNB-A6001] [v2.21.08, PNO-A6081R, PND-A6081RV, PNO-A6081RV, PND-A6081RF, PNV-A6081R]
- Added an add-on license feature. (Note: To use this feature, ensure that an add-on application is activated.) (Only applied when Opensdk_App_WiseAI_1.02.04_R1605 is installed [installable only for P-AI series cameras]) [v2.21.15, PNB-A9001] [v2.21.15, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.08, PNB-A6001] [v2.21.08, PNO-A6081R, PND-A6081RV, PNO-A6081RV, PND-A6081RF, PNV-A6081R]
- Added a [FLEX AI] feature. You can link this feature with [Object detection], [Line crossing], [IVA area], and [BestShot] features when you assign the models trained in the Cloud to the WiseAI application. (Note: To use the [FLEX AI] feature, ensure that an add-on license is activated.) (Only applied when Opensdk_App_WiseAI_1.02.04_R1605 is installed [installable only for P-AI series cameras]) [v2.21.15, PNB-A9001] [v2.21.15, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.08, PNB-A6001] [v2.21.08, PNO-A6081R, PND-A6081RV, PNO-A6081RV, PND-A6081RF, PNV-A6081R]
- Added a [Blocked exit detection] feature, which detects objects obstructing the entrance within a designated area. (Note: To use this feature, ensure that an add-on license is activated.) (Only applied when Opensdk_App_WiseAI_1.02.04_R1605 is installed [installable only for P-AI series cameras]) [v2.21.15, PNB-A9001] [v2.21.15, PNO-A9081R, PND-A9081RF, PND-A9081RV, PNV-A9081R] [v2.21.08, PNB-A6001] [v2.21.08, PNO-A6081R, PND-A6081RV, PNO-A6081RV, PND-A6081RF, PNV-A6081R]

Security Improvements

- Addressed the vulnerability of DoS of WS Discovery and Hanwha proprietary discovery services where the discovery function may be disabled after EMPTY packets are injected into the 3702 / 7701 ports used for device discovery of ONVIF/Device Manager. (Issued CVE-

2023-31994) [v2.21.01, XNF-9013RV] [v2.21.00, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.21.00, TNO-L4030TR] [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]

- Addressed the vulnerability of Authenticated Command Injection where a Linux command may be executed after a command is randomly injected into the folder mount point of the NAS function (Issued CVE-2023-31996) [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Addressed the vulnerability of Authenticated XSS where the script may be executed after it is injected into the imageData/backupfileData parameters of /home/setup/imagedownload.cgi (Issued CVE-2023-31995) [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Fixed an error where commands operate with a modified packet [v2.21.01, XNF-9013RV]
- Addressed the issue caused by the use of a weak block cipher mode by excluding CIPHER suites or converting the mode into compatibility mode [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Made HTTPS default [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Excluded TLS 1.0 & 1.1 from default settings [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Fixed an error where the SNMP port opened while SNMP did not operate [v2.21.03, QNP-6320R, QNP-6250R] [v2.21.05, QNP-6320R, QNP-6250R]
- Strengthened security by verifying the digital signature when you install WAVE server packages. Packages that fail the digital-signature verification won't be installed. [v2.21.03, PNV-A6081R-E1T, PNV-A6081R-E2T]

Affected Products

Table 1. Product Family Based On Version 2.21

Major Model	Model Name
PNM-C7083RVD	PNM-C7083RVD
PNM-C12083RVD	PNM-C12083RVD
XNB-6002	XNB-6002

Major Model	Model Name
PNV-A6081R-E1T	PNV-A6081R-E1T PNV-A6081R-E2T
PNM-C9022RV	PNM-C9022RV
MGL-D8080	MGL-D8080
MGC-F9010LI	MGC-F9010LI
MGC-D8080LI	MGC-D8080LI MGC-D8080
XNF-9013RV	XNF-9013RV
QNP-6320H	QNP-6320 QNP-6250 QNP-6320H QNP-6250H QNP-6320H1
TNM-C4940TD	TNM-C4940TD
TNM-C4950TD	TNM-C4950TD TNM-C4960TD
TNO-4040TR	TNO-4030TR TNO-4040TR TNO-4041TR
TNO-L4030TR	TNO-L4030TR
TNO-L4030T	TNO-L4030T
PNO-A9081R	PND-A9081RF PND-A9081RV PNO-A9081R PNV-A9081R
PNB-A9001	PNB-A9001
PNO-A6081R	PND-A6081RF PND-A6081RV PNO-A6081R PNV-A6081R
PNB-A6001	PNB-A6001
QNV-C9083R	QNV-C9083R QNO-C9083R
QNV-C8083R	QNV-C8083R QNO-C8083R
QNV-C9011R	QNV-C9011R
QNV-C8011R	QNV-C8011R

Major Model	Model Name
QNV-C8012	QNV-C8012
TNO-7180RLP	TNO-7180RLP
TNO-C3010TRA	TNO-C3010TRA TNO-C3020TRA TNO-C3030TRA
TNO-C3012TRA	TNO-C3012TRA TNO-C3022TRA TNO-C3032TRA
QNE-C9013RL	QNE-C9013RL
QNE-C8013RL	QNE-C8013RL
SMT-3231PV	SMT-3231PV SMT-2731PV
QNV-C8011RMG	QNV-C8011RMG
TNS-9050IBC	TNS-9050IBC

Network Camera Version 2.12

This document describes the new and changed features of Hanwha Vision network camera version 2.12

 Released on May 02, 2024

Common Features

[New features]

- Added support for Genetec Sipelia 2.13 [v2.12.00, TID-600R]
- Added the feature to send video via SRTP when making SIP calls [v2.12.01, TID-600R]

[Improvement]

- Corrected an issue where the [Time schedule] feature did not intermittently work after the camera rebooted [v2.12.00, TNF-9010]
- Corrected an issue where the admin password wasn't changed when you tried changing the admin password using the ONVIF protocol [v2.12.00, TNF-9010]
- Changed the corporate name to Hanwha Vision in the web viewer as the name changed to Hanwha Vision [v2.12.01, TID-600R]
- Applied [AAC] as a default value for audio codec [v2.12.01, TID-600R]
- Improved audio quality, including microphone input and speaker output [v2.12.01, TID-600R]
- Improved algorithms to enhance the accuracy of parking-area-occupancy detection [v2.12.10, TNF-9010]

Affected Products

Table 2. Product Family Based On Version 2.12

Major Model	Model Name
TID-600R	TID-600R
TNF-9010	TNF-9010

Network Camera Version 2.11

This document describes the new and changed features of Hanwha Vision network camera version 2.11

 Released on May 09, 2023

Common Features

[New features]

- Added an input and output selection function to [Alarm I/O] [v2.11.06, PNO-A9081R, PNB-A9001] [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Added a function to be able to add or delete channel 2 [v2.11.06, PNO-A9081R, PNB-A9001]
- Added [AI-based prefer shutter control] function [v2.11.06, PNO-A9081R, PNB-A9001]
- Added [Wise NR II] function [v2.11.06, PNO-A9081R, PNB-A9001]
- Added [WiseStream III] function [v2.11.06, PNO-A9081R, PNB-A9001]
- ONVIF profile M support [v2.11.06, PNO-A9081R, PNB-A9001]
- The [Comparison view] function to view the video before and after changing the setup will be provided in the [Camera setup] menu. [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Added the Detection Shot feature [v2.11.01, XND-C6083RV, XNO-C6083R, XNV-C6083R, XND-C7083RV, XNO-C7083R, XNV-C7083R] [v2.11.01, XND-C9083RV, XND-C8083RV, XNO-C8083R, XNV-C8083R, XNO-C9083R, XNV-C9083R] [v2.11.01, XNV-9083R, XND-9083RV, XNO-9083R, XNB-9003, XNV-8083R, XND-8083RV, XNO-8083R, XNB-8003, XNV-8093R, XND-8093RV] [v2.11.01, XNV-6083R, XND-6083RV, XNO-6083R, XNB-6003] [v2.11.01, XNV-6123R, XNO-6123R] [v2.11.02, XND-C6083RV, XND-C7083RV, XNV-C6083R, XNV-C7083R, XNO-C6083R, XNO-C7083R] [v2.11.02, XND-C8083RV, XND-C9083RV, XNV-C8083R, XNV-C9083R, XNO-C8083R, XNO-C9083R] [v2.11.02, XNO-C8083R, XNO-C9083R] [v2.11.02, XNB-9003] [v2.11.02, XNB-8003] [v2.11.02, XNB-6003] [v2.11.03, XNV-C9083R, XND-C9083RV, XNO-C9083R, XNV-C8083R, XND-C8083RV, XNO-C8083R] [v2.11.03, XNV-C7083R, XND-C7083RV, XNO-C7083R, XNV-C6083R, XND-C6083RV, XNO-C6083R, XNV-C6083R]

- Added the [Direct Point] function to adjust the DPTZ position in the quad view [v2.11.02, QNF-9010]
- Added the UI to adjust the video image position of each sensor in order to correct the alignment of the video images [v2.11.02, PNM-9031RV] [v2.11.03, PNM-9031RV]
- Added certificate management function [v2.11.06, PNO-A9081R, PNB-A9001] [v2.11.02, TID-600R]
- Added new options such as [Query string] and [TCP message], etc. for [Handover] settings [v2.11.02, TID-600R]
- Added SIP proxy server setting and call test function [v2.11.02, TID-600R]
- Added the function to connect web relay device to camera [v2.11.03, TID-600R]
- Added the function to set the audio codecs for SIP calls [v2.11.03, TID-600R]

[Improvement]

- Changed the default minimum duration for defocus detection to 30 seconds. [v2.11.01, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Output support for Goodshot instead of Bestshot [v2.11.06, PNO-A9081R, PNB-A9001] [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Changed the minimum/maximum default value of object size [v2.11.06, PNO-A9081R, PNB-A9001]
- Added AI library version to product version information [v2.11.06, PNO-A9081R, PNB-A9001] [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Improved object tracking performance [v2.11.06, PNO-A9081R, PNB-A9001]
- Improved [Social distancing detection] performance [v2.11.06, PNO-A9081R, PNB-A9001] [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Supported 3 additional types of Wi-Fi USB dongle (When installing the camera, you can connect from the camera via Wi-Fi communication using a smartphone application through Wi-Fi USB dongle) [v2.11.06, PNO-A9081R, PNB-A9001]
- Added [TCP] option for [IP Type] in Handover [v2.11.06, PNO-A9081R, PNB-A9001]
- Added [Reference] option in Heatmap [v2.11.06, PNO-A9081R, PNB-A9001]
- The SNMP community string has been changed to be left empty by default so that the value

can be entered by users. [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]

- Added [Focal length] option to set the focal length of lens [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Fixed an error in the certificate management function [v2.11.07, PNO-A9081R, PNB-A9001]
- Fixed an error when setting up WDR v2.11.01, XND-C6083RV, XNO-C6083R, XNV-C6083R, XND-C7083RV, XNO-C7083R, XNV-C7083R] [v2.11.01, XND-C9083RV, XND-C8083RV, XNO-C8083R, XNV-C8083R, XNO-C9083R, XNV-C9083R] [v2.11.01, XNV-9083R, XND-9083RV, XNO-9083R, XNB-9003, XNV-8083R, XND-8083RV, XNO-8083R, XNB-8003, XNV-8093R, XND-8093RV] [v2.11.01, XNV-6083R, XND-6083RV, XNO-6083R, XNB-6003] [v2.11.02, XND-C6083RV, XND-C7083RV, XNV-C6083R, XNV-C7083R, XNO-C6083R, XNO-C7083R] [v2.11.02, XNO-C6083R, XNO-C7083R] [v2.11.02, XND-C8083RV, XND-C9083RV, XNV-C8083R, XNV-C9083R, XNO-C8083R, XNO-C9083R] [v2.11.02, XNO-C8083R, XNO-C9083R] [v2.11.02, XNB-9003] [v2.11.02, XNB-8003] [v2.11.02, XNB-6003] [v2.11.03, XNV-C9083R, XND-C9083RV, XNO-C9083R, XNV-C8083R, XND-C8083RV, XNO-C8083R] [v2.11.03, XNV-C7083R, XND-C7083RV, XNO-C7083R, XNV-C6083R, XND-C6083RV, XNO-C6083R, XNV-C6083]
- Adjusted the RTP Payload buffer to improve compatibility with specific NVRs [v2.11.01, XNV-6123R, XNO-6123R]
- Improved the handover function so that its camera is compatible with WAVE (video management software) [v2.11.01, XNV-6123R, XNO-6123R]
- Improved the problem that the camera's day/night mode does not switch from [Black & White] to [Color] in an LED fluorescent lamp (high-color light source) environment [v2.11.01, XNV-6123R, XNO-6123R]
- Modified to create a profile for each channel [v2.11.02, QNF-9010]
- Improved to apply circle mask to remove unnecessary image data around fisheye source view [v2.11.02, QNF-9010]
- Reflected improvement in manufacturing and process efficiency (no impact on users and product usability) [v2.11.01, QNP-6250R, QNP-6320R] [v2.11.01, QNP-6250, QNP-6320, QNP-6250H, QNP-6320H]
- Replaced LED driver IC [v2.11.02, XNV-9083R, XNV-8093R, XNV-8083R, XND-9083RV, XND-8093RV, XND-8083RV, XNO-9083R, XNO-8083R] [v2.11.02, XND-6083RV, XNV-6083R, XNO-

6083R] [v2.11.02, XNO-6123R, XNV-6123R]

- Modified termination resistor settings for RS-485 [v2.11.01, XNZ-L6320A]
- Added functions related to TTA authentication [v2.11.00, PNB-A900101] [v2.11.00, PNO-A9081R01, PNV-A9081R01, PND-A9081RV01]
- Improved Web UI for selecting TLS protocol version to use for encrypted communication [v2.11.02, TID-600R]
- Improved interworking between SIP call and VMS [v2.11.02, TID-600R]
- Improved [Tampering switch] event settings [v2.11.02, TID-600R]
- Improved [Touchless call] event settings [v2.11.02, TID-600R]
- Improved audio qualities (echo cancellation and noise reduction) [v2.11.02, TID-600R]
- Deleted the [Sound classification] feature [v2.11.02, TID-600R]
- Reduced one-point NUC calculation time [v2.11.10, TNO-3010T, TNO-3020T, TNO-3030T, TNO-3040T, TNO-3050T, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNO-L3030T, TNU-4041T, TNU-4051T] [v2.11.10, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.11.10, TNO-L4030TR] [v2.11.10, TNO-L4030T]
- Improved pan/tilt speed [v2.11.10, TNU-4041T, TNU-4051T]
- Supports alarm output event actions for [Call button push] event and [Touchless call detection] event [v2.11.03, TID-600R]
- Added the [Microphone operation] option which includes a [Only during a call] option in which the microphone works only during a call and an [Always] option in which the microphone is always in operation [v2.11.03, TID-600R]
- Improved functionality to obtain TTA security certification [v2.11.05, PNM-9031RV]
- Fixed language error in Japanese version [v2.11.05, PNM-9031RV]
- Added an option to choose a TLS version [v2.11.03, QNF-9010]

[Bug fixes]

- When streaming the video of the DPTZ profile in the camera web viewer, object detection area is not displayed and BestShot information is not updated [v2.11.02, PNO-A6081R, PNB-A6001, PND-A6081RF, PNV-A6081R, PND-A6081RV]
- Fixed an issue where the "opensdk_dynamicEvent()" API worked abnormally when the

network was disconnected and reconnected [v2.11.02, PNB-A9001ROP, PNO-A9081ROP, PNV-A9081ROP]

- Fixed an issue where the IPCameraManifest.xml file could not be read and written intermittently when the camera was powered on or off [v2.11.02, PNB-A9001ROP, PNO-A9081ROP, PNV-A9081ROP]
- Fixed the issue of CVBS output [v2.11.02, QNF-9010]

Note: When the firmware is upgraded from a version earlier than 2.11.02, it is necessary to first upgrade to QNF-9010_2.10.00b_20220513_cvbs.img and then upgrade to the latest firmware.

- Fixed timestamp errors [v 2.11.10, PNO-A9081R, PNV-A9081R, PND-A9081R, PND-A9081RV, PND-A9081RF] [v2.11.03, PNO-A6081R, PNV-A6081R, PND-A6081R, PND-A6081RV, PND-A6081RF] [v2.11.03, PNO-A9081ROP, PNV-A9081ROP, PND-A9081ROP, PND-A9081RVOP, PND-A9081RFOP] [v2.11.03, PNB-A6001] [v2.11.10, PNB-A9001] [v2.11.01, PNB-A9001/KMC] [v2.11.03, PNB-A9001OP] [v2.11.01, XNZ-6320A, XNZ-L6320A]
- Fixed the problem that the temperature of the [Include area] which is ROI was displayed incorrectly [v2.11.11, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.11.11, TNO-3040T, TNO-3050T] [v2.11.11, TNO-3010T, TNO-3020T, TNO-3030T] [v2.11.11, TNU-4041T, TNU-4051T] [v2.11.11, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.11.11, TNO-L3030T] [v2.11.11, TNO-L4030T] [v2.11.11, TNO-L4030TR]
- Fixed an issue with SD card not overwriting [v2.11.04, PNM-9031RV]

Security Improvements

- Addressed the vulnerability of Authenticated Command Injection where a Linux command may be executed after a command is randomly injected into the folder mount point of the NAS function (Issued CVE-2023-31996) [v2.11.03, QNF-9010]
- Addressed the vulnerability of DoS of WS Discovery and Hanwha proprietary discovery services where the discovery function may be disabled after EMPTY packets are injected into the 3702 / 7701 ports used for device discovery of ONVIF/Device Manager. (Issued CVE-2023-31994) [v2.11.03, QNF-9010]
- Addressed the vulnerability of Authenticated XSS where the script may be executed after it is injected into the imageData/backupfileData parameters of

/home/setup/imagedownload.cgi (Issued CVE-2023-31995) [v2.11.03, QNF-9010]

- Addressed the issue caused by the use of a weak block cipher mode by excluding CIPHER suites or converting the mode into compatibility mode [v2.11.03, QNF-9010]
- Made HTTPS default [v2.11.03, QNF-9010]
- Excluded TLS 1.0 & 1.1 from default settings [v2.11.03, QNF-9010]

Affected Products

Table 3. Product Family Based On Version 2.11


Major Model	Model Name
PNO-A6081R	PNO-A6081R PND-A6081R PND-A6081RF PNV-A6081R PND-A6081RV
PNB-A6001	PNB-A6001
PNO-A9081R	PNO-A9081R PNV-A9081R PND-A9081R PND-A9081RV PND-A9081RF
PNB-A9001	PNB-A9001
PNB-A9001OP	PNB-A9001OP
XND-C9083RV	XNV-C9083R XND-C9083RV XNO-C9083R XNV-C8083R XND-C8083RV XNO-C8083R
XND-C7083RV	XNV-C7083R XND-C7083RV XNO-C7083R XNV-C6083R XND-C6083RV XNO-C6083R XNV-C6083

Major Model	Model Name
XND-9083RV	XNV-9083R XND-9083RV XNO-9083R XNB-9003 XNV-8083R XND-8083RV XNO-8083R XNB-8003 XNV-8093R XND-8093RV
XND-6083RV	XNV-6083R XND-6083RV XNO-6083R XNB-6003
XNV-6123R	XNV-6123R XNO-6123R
QNF-9010	QNF-9010
QNP-6320H	QNP-6320 QNP-6250 QNP-6320H QNP-6250H
QNP-6320R	QNP-6320R QNP-6250R
PNM-9031RV	PNM-9031RV
PNB-A9001ROP	PNB-A9001ROP
PNO-A9081ROP	PNO-A9081ROP PNV-A9081ROP PND-A9081ROP PND-A9081RVOP PND-A9081RFOP
XNZ-6320A	XNZ-6320A
XNZ-L6320A	XNZ-L6320A
PNB-A900101	PNB-A900101
PNO-A9081R01	PNO-A9081R01 PND-A9081RV01 PNV-A9081R01
TID-600R	TID-600R

Major Model	Model Name
TNO-3010T	TNO-3010T TNO-3020T TNO-3030T
TNO-3050T	TNO-3040T TNO-3050T
TNO-4030T	TNO-4030T TNO-4040T TNO-4041T TNO-4050T TNO-4051T
TNO-4040TR	TNO-4030TR TNO-4040TR TNO-4041TR
TNO-L3030T	TNO-L3030T
TNO-L4030T	TNO-L4030T
TNO-L4030TR	TNO-L4030TR
TNU-4041T	TNU-4041T TNU-4051T

Network Camera Version 2.10

This document describes the new and changed features of Hanwha Vision network camera version 2.10.

 Released on January 8, 2024

Common Features

[New features]

- Added certificate management function [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM] [v2.10.01, KNB-2000, KNO-2080RN, XNB-6000, XNO-6080R, XNO-6080RS, XNB-6001, KND-2080RN, XND-6080, XND-6080R, XND-6080RV, XND-6080RW, XND-6080V, XND-K6080N, XNV-6080, XNV-6080R, XNV-6080RS, XNV-6080RSA, XNV-6080RW, XND-6085, XND-6085V, XNV-6085, XNF-8010R, XNF-8010RV, XNF-8010RVM, XNF-8010RVW, XNF-8010RW, KNO-2120RN, XNO-6120R, XNO-6120RS, XNV-6120, XNV-6120R, XNV-6120RS, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H, XNV-6011, XNV-6011W] [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-

6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Added a function to add virtual channels to show the dewarped video of the fisheye camera [v2.10.01, XNF-8010R, XNF-8010RV, XNF-8010RVM, XNF-8010RVW, XNF-8010RW]
- Added the [Exclusive PTZ control] function that restricts multiple users from controlling the PTZ at the same time [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM] [v2.10.01, KNB-2000, KNO-2080RN, XNB-6000, XNO-6080R, XNO-6080RS, XNB-6001, KND-2080RN, XND-6080, XND-6080R, XND-6080RV, XND-6080RW, XND-6080V, XND-K6080N, XNV-6080, XNV-6080R, XNV-6080RS, XNV-6080RSA, XNV-6080RW, XND-6085, XND-6085V, XNV-6085, XNF-8010R, XNF-8010RV, XNF-8010RVM, XNF-8010RVW, XNF-8010RW, KNO-2120RN, XNO-6120R, XNO-6120RS, XNV-6120, XNV-6120R, XNV-6120RS, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H, XNV-6011, XNV-6011W] [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-

6010] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080VA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] [v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Added new options such as [Query string] and [TCP message], etc. for [Handover] settings [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM] [v2.10.01, KNB-2000, KNO-2080RN, XNB-6000, XNO-6080R, XNO-6080RS, XNB-6001, KND-2080RN, XND-6080, XND-6080R, XND-6080RV, XND-6080RW, XND-6080V, XND-K6080N, XNV-6080, XNV-6080R, XNV-6080RS, XNV-6080RSA, XNV-6080RW, XND-6085, XND-6085V, XNV-6085, XNF-8010R, XNF-8010RV, XNF-8010RVM, XNF-8010RVW, XNF-8010RW, KNO-2120RN, XNO-6120R, XNO-6120RS, XNV-6120, XNV-6120R, XNV-6120RS, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H, XNV-6011, XNV-6011W] [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ,

XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Added the option to use the Internet Control Message Protocol (ICMP) timestamp request message [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-

3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Added the [Simple focus schedule] function [v2.10.03, XNF-8010R, XNF-8010RV, XNF-8010RVM, XNF-8010RVW, XNF-8010RW]

[Improvements]

- Modified so that the storage path can also be specified as a subdirectory when saving recorded video on the NAS [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM]
- Added the option to display the IP address and MAC information of the camera [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM]
- Fixed to move the location of the overlay image using the curser [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM] [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, XNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, XND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, XND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, XND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-

L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Add the [PEAPv0/MSCHAPv2] option to EAP type for 802.1x [v2.10.00, XNV-9082R, XND8082RV, XND-9082RF, XND8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV8082R, XND-9082RV, XNO-8082R] [v2.10.00, XNF-9010RV, XNF-9010RVM]
- In [Double Panorama] mode, tilt operation of PTZ is supported (Only PTZ pan operation was supported in the earlier version) [v2.10.00, XNF-9010RV, XNF-9010RVM]
- Fixed the problem that [Day/Night] mode did not work in some cameras depending on the camera settings after upgrading the firmware [v2.10.01, XNV-9082R, XNF-9010RV] [v2.10.03, XNF-9010RV, XNF-9010RVM, XNF-9010RS]
- When setting the privacy area, the area can be set to a quadrilateral shape instead of a rectangle [v2.10.01, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, KNP-2120HN, XNP-6120H]
- Fixed the issue where the video was intermittently broken in some decoders [v2.10.02, XNB-9002, XNB-8002, XND-9082RV, XND-9082RF, XND-8082RV, XND-8082RF, XNV-9082R, XNV-8082R, XNO-9082R, XNO-8082R] [v2.10.03, XNB-8002, XNB-9002, XND-8082RF, XND-8082RV, XND-9082RF, XND-9082RV, XNO-8082R, XNO-9082R, XNV-8082R, XNV-9082R]
- Adjusted the RTP Payload buffer to improve compatibility with specific NVRs [v2.10.02, XNB-9002, XNB-8002, XND-9082RV, XND-9082RF, XND-8082RV, XND-8082RF, XNV-9082R, XNV-8082R, XNO-9082R, XNO-8082R] [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R,

XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R] [v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] [v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM] [2.10.03, XNB-8002, XNB-9002, XND-8082RF, XND-8082RV, XND-9082RF, XND-9082RV, XNO-8082R, XNO-9082R, XNV-8082R, XNV-9082R]

- Improved Web UI for selecting TLS protocol version to use for encrypted communication [v2.10.02, QNP-6230RH] [v2.10.02, XNP-6040H] [v2.10.02, KNP-2120HN, XNP-6120H] [v2.10.02, KNP-2320RH, KNP-2320RHA, XNP-6250RH, XNP-6320RH] [v2.10.02, XNP-6341RH] [v2.10.02, XNP-6371RH] [v2.10.02, KNP-2550RHA, XNP-6550RH] [v2.10.02, QNP-6230, QNP-6230H, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6321, XNP-6321H] [v2.10.02, XNB-6005, XNO-6085R] [v2.10.02, XNO-6085] [v2.10.02, KNB-5000N, KNO-5080RN, XNB-8000, XNO-8080R, XNO-8080RW] [v2.10.02, XND-6011F, XND-8020F] [v2.10.02, KND-2020RN, XND-6020R, XNV-6020R] [v2.10.02, KND-5020RN, XND-8020R, XND-8020RW, XND-8030R, XND-8040R, XNV-8020R, XNV-8020RMN, XNV-8020RMP, XNV-8030R, XNV-8040R] [v2.10.02, KND-5080RN, XND-8080R, XND-8080RV, XND-8080RW, XNV-8080R, XNV-8080RS, XNV-8080RSA, XNV-8080RW] [v2.10.02, KNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, KNO-5020RN, XNO-8020R, XNO-8030R, XNO-8040R] [v2.10.02, XND-6010, XNV-6010] [v2.10.02, XNZ-6320] [v2.10.02, XNZ-L6320] [v2.10.02, XNO-6120] [v2.10.02, XNO-L6120R] [v2.10.02, XND-6081FZ, XND-6081VZ, XNV-6081Z, XND-8081FZ, XND-8081VZ, XNV-8081Z] [v2.10.02, TNO-6010M] [v2.10.02, TNV-7010RC] [v2.10.02, XNV-6081, XNV-6081R, XND-6081F, XND-6081RF, XND-6081RV, XND-6081V, XND-8081RF, XND-8081RV, XNV-8081R] [v2.10.02, XND-L6020R]

[v2.10.02, XNO-L6020R] [v2.10.02, XNO-L6085R] [v2.10.02, XND-L6080R, XND-L6080RV, XND-L6080V, XNO-L6080R, XNV-L6080, XNV-L6080R] [v2.10.02, XND-L6080RVA, XND-L6080VA, XNO-L6080RA, XNV-L6080A, XNV-L6080RA] [v2.10.02, QNF-8010] v2.10.02, TNB-6030] [v2.10.02, XND-6081REV, XNV-6081RE] [v2.10.02, XND-8081REV, XNV-8081RE] [v2.10.02, TNO-4030TR, TNO-4040TR, TNO-4041TR] [v2.10.02, TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T] [v2.10.02, TNU-4041T, TNU-4051T] [v2.10.02, TNO-3030T, TNO-3020T, TNO-3010T] [v2.10.02, TNO-3040T, TNO-3050T] [v2.10.02, XNO-6085RA] [v2.10.02, XNO-L6085RA] [v2.10.02, XNV-6012, XNV-6012M, XNV-6013M, XNV-6022R, XNV-6022RM]

- Added setting option to enable or disable simple focus function after [Day/Night] mode operation [v2.10.03, XNB-6000, XNB-8000]
- Changed the initial value of [Zoom speed] from [Fast] to [Medium] [v2.10.03, XNP-6371RH, XNP-6341RH]
- When setting the H.264/H.265 codec, you can set the minimum bitrate to 10 kbps. [v2.10.04, XNB-6001] [v2.10.04, XNO-6120R] [v2.10.04, XNV-6080R, XND-6080RV] [v2.10.05, XNO-6080R] [v2.10.04, XNF-8010R, XNF-8010RW, XNF-8010RV, XNF-8010RVM] [2.10.05, XNB-6001]
- Improved SUNAPI API of Events status [v2.10.03, XND-8080R, XND-8080RV, KND-5080R, XNV-8080R, XNV-8080RS, XNV-8080RSA] [v2.10.04, XNB-8000, KNB-5000, TNC-8090RH, XNO-8080R, ANO-X5080R, KNO-5080R] [v2.10.06, XNB-6000, KNB-2000, XNO-6080R, ANO-X2080R, KNO-2080R]
- Applied SUNAPI API improvements for event status to models that were not previously affected [v2.10.03, XNO-8020R] [v2.10.03, XND-8020R]

[Bug fixes]

- Resolved an issue of a response error in the SUNAPI API for event status [v2.10.04, XND-8080R, XND-8080RV, KND-5080R, XNV-8080R, XNV-8080RS, XNV-8080RSA] [v2.10.05, XNB-8000, KNB-5000, TNC-8090RH, XNO-8080R, ANO-X5080R, KNO-5080R]
- Fixed language error in Japanese version [v2.10.04, XNB-6001] [v2.10.04, XNO-6120R] [v2.10.04, XNV-6080R, XND-6080RV] [v2.10.05, XNO-6080R] [v2.10.04, XNF-8010R, XNF-8010RW, XNF-8010RV, XNF-8010RVM] [2.10.05, XNB-6001]
- Corrected an issue where the [Time schedule] feature did not intermittently work after the camera rebooted [v2.10.05, XND-6080RV, XND-6080R, XND-6080V, XND-6080, XNV-6080R,

XNV-6080] [v2.10.05, KND-2080R]

- Corrected an issue that disabled streaming and stopped Common Gateway Interface (CGI) working in certain circumstances when you access the web viewer after adding a camera to Genetec using the ONVIF protocol [v2.10.03, XND-8080R, XND-8080RV, KND-5080R, XNV-8080R, XNV-8080RS, XNV-8080RSA] [v2.10.04, XNB-8000, KNB-5000, TNC-8090RH, XNO-8080R, ANO-X5080R, KNO-5080R] [v2.10.06, XNB-6000, KNB-2000, XNO-6080R, ANO-X2080R, KNO-2080R]
- Corrected an issue where the RTP timestamp appearing on the NVR's recorded video didn't match the actual time when you use an external company's VMS (video management system) to stream multicast video [v2.10.03, XND-8080R, XND-8080RV, KND-5080R, XNV-8080R, XNV-8080RS, XNV-8080RSA] [v2.10.04, XNB-8000, KNB-5000, TNC-8090RH, XNO-8080R, ANO-X5080R, KNO-5080R] [v2.10.06, XNB-6000, KNB-2000, XNO-6080R, ANO-X2080R, KNO-2080R]

Affected Products

Table 4. Product Family Based On Version 2.10

Major Model	Model Name
XNV-9082R	XNV-9082R XND-8082RV XND-9082RF XND-8082RF XNO-9082R XNB-8002 XNB-9002 XNV-8082R XND-9082RV XNO-8082R
XNF-9010RV	XNF-9010RV XNF-9010RVM XNF-9010RS
XNB-6000	KNB-2000 KNO-2080RN XNB-6000 XNO-6080R

Major Model	Model Name
	XNO-6080RS ANO-X2080R KNO-2080R
XNB-6001	XNB-6001
XND-6080R	KND-2080RN XND-6080 XND-6080R XND-6080RV XND-6080RW XND-6080V XND-K6080N XNV-6080 XNV-6080R XNV-6080RS XNV-6080RSA XNV-6080RW
XND-6085	XND-6085 XND-6085V XNV-6085
XNF-8010R	XNF-8010R XNF-8010RV XNF-8010RVM XNF-8010RVW XNF-8010RW
XNO-6120R	KNO-2120RN XNO-6120R XNO-6120RS XNV-6120 XNV-6120R XNV-6120RS
XNP-6320H	QNP-6230 QNP-6230H XNP-6320 XNP-6320H XNP-6320HS XNP-6321 XNP-6321H

Major Model	Model Name
XNV-6011	XNV-6011
	XNV-6011W
QNP-6230RH	QNP-6230RH
XNP-6040	XNP-6040H
XNP-6120	KNP-2120HN
	XNP-6120H
XNP-6320RH	KNP-2320RH
	KNP-2320RHA
	XNP-6250RH
	XNP-6320RH
XNP-6341RH	XNP-6341RH
XNP-6371RH	XNP-6371RH
XNP-6550RH	KNP-2550RHA
	XNP-6550RH
XNB-6005	XNB-6005
	XNO-6085R
XNO-6085	XNO-6085
XNB-8000	KNB-5000N
	KNO-5080RN
	XNB-8000
	TNC-8090RH
	KNB-5000
	XNO-8080R
	XNO-8080RW
	ANO-X5080R
	KNO-5080R
XND-6011	XND-6011F
	XND-8020F
XND-6020R	KND-2020RN
	XND-6020R
	XNV-6020R
XND-8020R	KND-5020RN
	XND-8020R
	XND-8020RW
	XND-8030R
	XND-8040R

Major Model	Model Name
	XNV-8020R
	XNV-8020RMN
	XNV-8020RMP
	XNV-8030R
	XNV-8040R
XND-8080R	KND-5080RN
	XND-8080R
	XND-8080RV
	XND-8080RW
	XNV-8080R
	XNV-8080RS
	XNV-8080RSA
	XNV-8080RW
XNO-6020R	KNO-2010RN
	XNO-6010R
	XNO-6020R
XNO-8040R	KNO-5020RN
	XNO-8020R
	XNO-8030R
	XNO-8040R
XNV-6010	XND-6010
	XNV-6010
XNZ-6320	XNZ-6320
XNZ-L6320	XNZ-L6320
XNO-6120	XNO-6120
XNO-L6120R	XNO-L6120R
XND-6081VZ	XND-6081FZ
	XND-6081VZ
	XNV-6081Z
	XND-8081FZ
	XND-8081VZ
	XNV-8081Z
TNO-6010M	TNO-6010M
TNV-7010RC	TNV-7010RC
XNV-6081	XNV-6081
	XNV-6081R

Major Model	Model Name
	XND-6081F
	XND-6081RF
	XND-6081RV
	XND-6081V
	XND-8081RF
	XND-8081RV
	XNV-8081R
XND-L6020R	XND-L6020R
XNO-L6020R	XNO-L6020R
XNO-L6085R	XNO-L6085R
XNV-L6080R	XND-L6080R
	XND-L6080RV
	XND-L6080V
	XNO-L6080R
	XNV-L6080
	XNV-L6080R
XNV-L6080A_KME	XND-L6080RVA
	XND-L6080VA
	XNO-L6080RA
	XNV-L6080A
	XNV-L6080RA
QNF-8010	QNF-8010
TN-B6030	TNB-6030
XND-6081REV	XND-6081REV
	XNV-6081RE
XND-8081REV	XND-8081REV
	XNV-8081RE
TNO-4040TR	TNO-4030TR
	TNO-4040TR
	TNO-4041TR
TNO-4050T	TNO-4030T
	TNO-4040T
	TNO-4041T
	TNO-4050T
	TNO-4051T
TNU-4041T	TNU-4041T

Major Model	Model Name
	TNU-4051T
TNO-3030T	TNO-3030T
	TNO-3020T
	TNO-3010T
TNO-3050T	TNO-3040T
	TNO-3050T
XNO-6085RA	XNO-6085RA
XNO-L6085RA	XNO-L6085RA
XNV-6012	XNV-6012
	XNV-6012M
	XNV-6013M
	XNV-6022R
	XNV-6022RM
KND-2080R	KND-2080R

Network Camera Version 2.01

This document describes the new and changed features of Hanwha Vision network camera version 2.01.

 Released on February 28, 2023

Common Features

[New Features]

- Supports LLDP [v2.01.02, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Supports to connect an external I/O box to the camera (The alarm input/out and audio input/output features can be used when I/O box is conned to camera) [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- When setting the privacy area, the area can be set to a quadrilateral shape instead of a rectangle [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Added [IR shift] option to [Focus save] function (When [IR shift] is enabled, the focus is moved to match the location of the saved focus on visible light) [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Added a function to change the order where each privacy mask area is saved [v2.01.04, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250, XNP-6400R, XNP-6400] [v2.01.06, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Added a function to set the permission to control the PTZ for each user account [v2.01.04, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250, XNP-6400R, XNP-6400] [v2.01.06, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Supports SLA-T28XX lens [v2.01.03, PNM-9000QB]
Note: SLA-T28XX lenses are not supported if you downgrade the firmware to a version lower than 2.01.03. Change to an older lens or perform a factory reset before downgrading.
- Allows you to create passwords up to 64 characters [v2.01.02, XNP-6400R (for Wells Fargo)]

[Improvements]

- Changed SD file system default to EXT4 [v2.01.01, XNV-9082R, XND-8082RV, XND-9082RF, XND-8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV-8082R, XND-9082RV, XNO-8082R]
- Enhanced stability of high capacity SD card [v2.01.01, XNV-9082R, XND-8082RV, XND-9082RF, XND-8082RF, XNO-9082R, XNB-8002, XNB-9002, XNV-8082R, XND-9082RV, XNO-8082R]
- Fixed an out-of-focus issue when zoom ratio reaches out 32x [v2.01.01, TNU-6321]
- Improved temperature display accuracy for subjects with high temperature in the [Estimated body temperature detection] mode [v2.01.01, TNM-3620TDY]
- Improved temperature display accuracy when compensating for temperature using blackbody in the [Estimated body temperature detection] mode [v2.01.01, TNM-3620TDY]
- Modified the firmware in accordance with the change of Gyro sensor module [v2.01.02, XNV-9082R] [v2.01.02, TNM-3620TDY] [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Improved auto tracking performance [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Downgrade to version 2.01.02 is not possible, if the firmware is updated to version 2.01.03. [v2.01.03, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Improved the issue of camera time failing to periodically sync with that of the NTP server [v2.01.02, TNM-3620TDY] [v2.01.04, XNP-9300RW, XNP-6400RW] [v2.01.02, XNP-9250R, XNP-6400R, TNU-6321] [v2.01.01, SPM-4210, TNV-8010C, TNF-1200, PNM-9000QB] [v2.01.01, PNM-9022V] [v2.01.01, PNM-8082VT] [v2.01.02, PNM-9000QB]
- Improved accuracy in displaying Fahrenheit temperature values [v2.01.02, TNM-3620TDY]
- Improved RTC driver setting error [v2.01.01, QNV-6012RG] [v2.01.02, QNV-6012RG] [v2.01.03, QNV-6012RG]
- Improved the issue of camera time failing to periodically sync with that of the NTP server [v2.01.01, QNV-6012RG]
- Renewed UL CAP (Cybersecurity Assurance Program) authentication [v2.01.05, XNP-9300RW, XNP-8300RW, XNP-6400RW] [v2.01.03, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250, XNP-6400R, XNP-6400] [v2.01.07, XNP-9300RW, XNP-8300RW] [v2.01.10, XNP-6400RW] [v2.01.05, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250] [v2.01.06, XNP-6400R, XNP-6400]
- Adjusted the RTP Payload buffer to improve compatibility with specific NVRs [v2.01.04, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250, XNP-6400R, XNP-6400] [v2.01.06, XNP-9300RW, XNP-8300RW, XNP-6400RW]
- Reflected improvement in manufacturing and process efficiency (no impact on users and

product usability) [v2.01.01, XNP-9300RWG, XNP-8300RWG, XNP-6400RWG] [v2.01.02, XNP-9300RWG, XNP-8300RWG, XNP-6400RWG]

- Added function that goes back to the "Set home" automatically if the Digital PTZ function is not being used during setup [v2.01.11, TNF-9010]
- Added a caution message about using the [Set home] button on the setup web page [v2.01.11, TNF-9010]
- Improved PTZ response when controlling PTZ with ONVIF [v2.01.07, XNP-9300RW, XNP-8300RW] [v2.01.10, XNP-6400RW] [v2.01.05, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250] [v2.01.06, XNP-6400R, XNP-6400] [v2.01.02, XNP-9300RWG, XNP-8300RWG] [v2.01.03, XNP-6400RWG]
- Improved functionality to obtain TTA security certification [v2.01.11, XNP-9300RW, XNP-8300RW, XNP-6400RW] [v2.01.07, XNP-9250R, XNP-8250R, XNP-6400R, XNP-9250, XNP-8250, XNP-6400]
- Fixed language error in Japanese version [v2.01.11, XNP-9300RW, XNP-8300RW, XNP-6400RW] [v2.01.07, XNP-9250R, XNP-8250R, XNP-6400R, XNP-9250, XNP-8250, XNP-6400]
- Fixed an issue where Pan and Tilt operate beyond the maximum Pan/Tilt movement range set in the [PT Limit] menu [v2.01.11, XNP-9300RW, XNP-8300RW, XNP-6400RW] [v2.01.07, XNP-9250R, XNP-8250R, XNP-6400R, XNP-9250, XNP-8250, XNP-6400]
- Fixed an issue where [Loitering] event was continuously sent to the NVR even though the loitering event had ended [v2.01.11, XNP-9300RW, XNP-8300RW, XNP-6400RW] [v2.01.07, XNP-9250R, XNP-8250R, XNP-6400R, XNP-9250, XNP-8250, XNP-6400]
- When setting the H.264/H.265 codec, you can set the minimum bitrate to 10 kbps. [v2.01.04, PNM-9000QB] [v2.01.02, PNM-9022V]

[Bug fixes]

- Fixed timestamp errors [v2.01.01, TNU-6322E, TNU-6322ER] [v2.01.01, TNO-6322ER] [v2.01.03, TNU-6321] [v2.01.07, XNP-9300RW, XNP-8300RW] [v2.01.10, XNP-6400RW] [v2.01.05, XNP-9250R, XNP-9250, XNP-8250R, XNP-8250] [v2.01.06, XNP-6400R, XNP-6400] [v2.01.02, XNP-9300RWG, XNP-8300RWG] [v2.01.03, XNP-6400RWG]
- Corrected an issue where zoom-in operation caused the pan and tilt operation to malfunction [v2.01.04, XNP-6400RWG]

- Corrected an issue that caused the [Auto focus] feature to malfunction at high temperatures [v2.01.10, XNP-6400RW] [v2.01.06, XNP-6400R, XNP-6400] [v2.01.03, XNP-6400RWG]
- Corrected an issue where firmware issued after 2022 did not upgrade properly [v2.01.02, XNP-6400R (for WellsFargo)]
- Corrected an issue where the [Motion detection] feature did not work [v2.01.02, XNP-6400R (for WellsFargo)]

Affected Products

Table 5. Product Family Based On Version 2.01

Major Model	Model Name
XNV-9082R	XNV-9082R XND-8082RV XND-9082RF XND-8082RF XNO-9082R XNB-8002 XNB-9002 XNV-8082R XND-9082RV XNO-8082R
TNU-6321	TNU-6321
XNP-9300RW	XNP-9300RW XNP-8300RW XNP-6400RW
TNM-3620TDY	TNM-3620TDY
XNP-9250R	XNP-9250R XNP-6400R XNP-9250 XNP-8250R XNP-8250 XNP-6400
SPM-4210	SPM-4210
TNV-8010C	TNV-8010C
TNF-1200	TNF-1200
TNF-9010	TNF-9010

Major Model	Model Name
PNM-9000QB	PNM-9000QB
PNM-8082VT	PNM-8082VT
PNM-9022V	PNM-9022V
QNV-6012RG	QNV-6012RG
XNP-9300RWG	XNP-9300RWG XNP-8300RWG XNP-6400RWG
TNO-6322ER	TNO-6322ER
TNU-6322ER	TNU-6322E TNU-6322ER

Network Camera Version 1.42

This document describes the new and changed features of Hanwha Vision network camera version 1.42

 Released on March 29, 2024

Common Features

[New Features]

- Allows you to create passwords up to 64 characters [v1.42.00, XND-6081RV (for WellsFargo)] [v1.42.00, XND-8080R (for WellsFargo)]
- Added options to configure GOV, dynamic GOV, and dynamic FPS settings of the recording profile. In case of configuration, however, the video may not be recorded properly. [v1.42.01, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNO-8081R, QNV-8081R, QND-8011, QND-8021, QNE-8011R, QNE-8021R, QND-8012, QND-8022]

[Improvements]

- Added the DLL auto-tune function to address the camera-rebooting issue caused by the fixed DLL value [v1.42.01, ANE-L7012L] [v1.42.02, ANE-L7012L]
- Addressed an issue where activating the camera's WDR feature resulted in too much noise in dark areas of the video image [v1.42.01, ANE-L7012L] [v1.42.02, ANE-L7012L]
- Fixed an issue where the camera failed to reconnect to a NAS device after disconnecting from it. It now tries to reconnect every 30 seconds for 10 minutes and every 10 minutes thereafter. [v1.42.01, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNO-8081R, QNV-8081R, QND-8011, QND-8021, QNE-8011R, QNE-8021R, QND-8012, QND-8022]

[Bug fixes]

- Corrected an issue where firmware issued after 2022 did not upgrade properly [v1.42.00,

XND-6081RV (for WellsFargo)] [v1.42.00, XND-8080R (for WellsFargo)]

- Corrected an issue where the [Motion detection] feature did not work [v1.42.00, XND-6081RV (for WellsFargo)] [v1.42.00, XND-8080R (for WellsFargo)]

Affected Products

Table 6. Product Family Based On Version 1.42

Major Model	Model Name
ANE-L7012L	ANE-L7012L
QNO-8080R	QNO-8010R
	QNO-8020R
	QNO-8030R
	QNO-8080R
	QNV-8010R
	QNV-8020R
	QNV-8030R
	QNV-8080R
	QND-8010R
	QND-8020R
	QND-8030R
	QND-8080R
	QNE-8011R
	QNE-8021R
	QND-8011
	QND-8021
	QNO-8081R
	QNV-8081R
	QND-8012
	QND-8022

Network Camera Version 1.41

This document describes the new and changed features of Hanwha Vision network camera version 1.41.

 Released on February 2, 2024

Common Features

[New Features]

- Supports Open Platform event: NUC Active state [1.41.02, TNO-3010T, TNO-3020T, TNO-3030T]
- Updated to ANPR application version 2.16 (application version is shown in the [Open Platform] menu) [v1.41.02, XNO-L6085RA, XNO-6085RA]
- After a factory reset, the motion detection setting is enabled by default [v1.41.02, QNV-6024RM, QNV-6023R] [v1.41.11, LNO-6072R, LND-6012R, LNO-6032R, LNV-6032R, LND-6022R, LND-6072R, LNO-6022R, LNV-6012R, LNV-6072R, LND-6032R, LNV-6022R, LNO-6012R]
- Analyzes after sorting age groups and gender when linking with Retail Insight [v1.41.02, PNO-A9081R, PND-A9081RV, PND-A9081RF, PNV-A9081R, PNB-A9001]
- Supports the function of uploading and playing back audio clip [v1.41.02, PNO-A9081R, PND-A9081RV, PND-A9081RF, PNV-A9081R, PNB-A9001]
- Analyzes after sorting age groups and gender when linking with Retail Insight [v1.41.02, PNO-A9081R, PND-A9081RV, PND-A9081RF, PNV-A9081R, PNB-A9001]
- Supports the function of uploading and playing back audio clip [v1.41.02, PNO-A9081R, PND-A9081RV, PND-A9081RF, PNV-A9081R, PNB-A9001]
- Added face mask detection function [v1.41.03, PNO-A9081R, PNB-A9001]
- Added mask attributes in AI metadata [v1.41.03, PNO-A9081R, PNB-A9001]
- Added [Social distancing detection] function [v1.41.05, PNO-A9081R, PNB-A9001]
- SLA-C-I3910 lens additionally supported [v1.41.05, PNB-A9001]
- Added Dynamic FPS Function [v1.41.01, ANO-L6012R, ANO-L6022R, ANV-L6012] [v1.41.02,

ANE-L6012R, ANO-L6082R, ANV-L6082R]

- Added options to configure GOV, dynamic GOV, and dynamic FPS settings of the recording profile. In case of configuration, however, the video may not be recorded properly. [v1.41.06, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.16, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.06, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.06, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021, QNO-8081R, QNV-8081R] [v1.41.16, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QNV-8081R, QNO-8081R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.15, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.16, QND-6012R, QND-6022R, QND-6032R, QND-6072R, QND-6082R, QNO-6012R, QNO-6022R, QNO-6032R, QNO-6072R, QNO-6082R, QNV-6012R, QNV-6022R, QNV-6032R, QNV-6072R, QNV-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R]
- Allows you to create passwords up to 64 characters [v1.41.07, XNF-8010R (for WellsFargo)]

[Improvements]

- Improved motion detection sensitivity. [1.41.01 QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021, LNO-6072R, LND-6012R, LNO-6032R, LNV-6032R, LND-6022R, LND-6072R, LNO-6022R, LNV-6012R, LNV-6072R, LND-6032R, LNV-6022R, LNO-6012R]
- Fixed an issue where HTTPS behavior error in Chrome browser version 80. [1.41.01 QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-

6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021, LNO-6072R, LND-6012R, LNO-6032R, LNV-6032R, LND-6022R, LND-6072R, LNO-6022R, LNV-6012R, LNV-6072R, LND-6032R, LNV-6022R, LNO-6012R]

- Changed the default value of Flip / Mirror for the Flat Eye model. [1.41.01 QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]
- Modified the distance range of auto focus in [Quick Focus] mode [1.41.02 QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]
- Supports the original image of Open Platform in the Hallway view mode [1.41.02, TNO-3010T, TNO-3020T, TNO-3030T]
- Supports Stratocast [1.41.10, LNO-6072R, LND-6012R, LNO-6032R, LNV-6032R, LND-6022R, LND-6072R, LNO-6022R, LNV-6012R, LNV-6072R, LND-6032R, LNV-6022R, LNO-6012R, QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021]
- Added a function to configure the administrator account ID [v1.41.03, PNM-9030V]
- Applied Genetec requests regarding Audio track and audio multicast [v1.41.03, PNM-9030V]
- Supports two more types of lenses (THEIA-SL410P/SL1250P) [v1.41.02, PNB-A9001]
- Supports four highest resolution modes (32M, 24M, 15M, 8M) [v1.41.01, TNB-9000]
- Supports 4K video output on the Live screen of Web Viewer [v1.41.01, TNB-9000]

- Fixed an issue where network IP and DNS settings were changed after firmware update [v1.41.04, PNM-9030V]
- Adjusted the size of QVGA IR sensor window [v1.41.03, TNO-3030T, TNO-3020T, TNO-3010T]
- Improved audio sensitivity of the internal microphone [1.41.10, QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021], [1.41.02, QNB-8002]
- 4 mega camera mode supports 16:9 resolution (2560*1440, 320*240 or 320*180) [1.41.03, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021], [1.41.02, QNB-8002]
- Modified the firmware in accordance with the change of Gyro sensor module [v1.41.02, QNP-6230RH] [v1.41.01, XNO-L6085R, XNO-L6085RA, XNO-6085RA, XND-6081REV, XND-8081REV] [v1.41.03, XNP-6320HG, XNP-6371RHG01] [v1.41.02, XNP-6320RHG] [v1.41.01, XNP-6341RH]
- Improved RTC driver setting error [v1.41.02, QNV-6025RM]
- Improved the issue of camera time failing to periodically sync with that of the NTP server [v1.41.02, QNV-6025RM]
- Supports ONVIF Test Tool v20.06 [1.41.03, XNP-6320HG] [1.41.02, XNP-6320RHG] [v1.41.01, XNO-L6120RG, XND-8080RG, XNO-6120RG] [v1.41.03, XNO-6120RG] [v1.41.03, XND-8080RG] [v1.41.04, XNO-6120RG]
- Logs are provided when changing presets in [Camera setup] [1.41.11 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021] [1.41.04 QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [1.41.12 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021]

- Improved compatibility with NVR [1.41.11 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021] [1.41.04 QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [1.41.12 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021]
- Modified the firmware in accordance with the change of a real-time clock IC (RTC IC) [v1.41.04, XNP-6320HG] [v1.41.06, XNP-6320HG]
- Adjusted the RTP Payload buffer to improve compatibility with specific NVRs [v1.41.02, QNV-6024RM, QNV-6023R] [v1.41.11, LNO-6072R, LND-6012R, LNO-6032R, LNV-6032R, LND-6022R, LND-6072R, LNO-6022R, LNV-6012R, LNV-6072R, LND-6032R, LNV-6022R, LNO-6012R] [v1.41.01, XNB-6000G01, XNP-6120HG] [v1.41.02, XNP-6120HG] [1.41.02, KND-5080RG, XNO-6120RG] [v1.41.03, XNP-6320RHG, XNO-L6120RG] [v1.41.04, XNP-6320RHG] [v1.41.04, XND-6080RG, XND-6080RG01, XNO-6080RG, XNO-6080RG01, XNO-6085RG, XNO-6085RG01] [v1.41.06, XNO-6085RG] [v1.41.05, XNP-6302HG, XNP-6371RHG01] [v1.41.05, XNO-L6120RG] [v1.41.07, XNO-6085RG]
- Supports two more types of lenses (THEIA-SL410P/SL1250P) [v1.41.02, PNB-A9001]
- Fixed an issue that does not send metadata when BestShot is disabled [v1.41.04, PNO-A9081R, PNB-A9001]
- [Handover] function added to [Object detection] settings [v1.41.05, PNO-A9081R, PNB-A9001]
- [No. of people] and [Occupancy] parameters added to [Queue management] function [v1.41.05, PNO-A9081R, PNB-A9001]
- The Open Platform API 'Upload File Data' and 'App Command 2' have been added, and the overall API execution speed has been improved [v1.41.02, PNB-A9001LP, PNO-A9081RLP, PNV-A9081RLP]
- Fixed an error in the Open Platform API opensdk_getMountSize when mounting ext4 format SD card [v1.41.02, PNB-A9001LP, PNO-A9081RLP, PNV-A9081RLP]

- Fixed a problem that the NTP server time was not reset to match the changed NTP server when the NTP server address setting was changed [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]
- Added option to grant user permission to access and set settings on [Video profile], [Camera setup], and [Video and focus setup] ([Video setup] for models that do not support focus function) pages [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.13, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021]

- Fixed language error in Japanese version [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]
- Fixed an error where [Tampering detection] function did not operate after a certain time [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R,

QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

- Added the ability to set the minimum bitrate of a profile to 10 kbps [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R,

LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

- Fixed an issue where the camera failed to reconnect to a NAS device after disconnecting from it. It now tries to reconnect every 30 seconds for 10 minutes and every 10 minutes thereafter. [v1.41.06, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.16, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.06, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.06, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021, QNO-8081R, QNV-8081R] [v1.41.16, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QNV-8081R, QNO-8081R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.15, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.16, QND-6012R, QND-6022R, QND-6032R, QND-6072R, QND-6082R, QNO-6012R, QNO-6022R, QNO-6032R, QNO-6072R, QNO-6082R, QNV-6012R, QNV-6022R, QNV-6032R, QNV-6072R, QNV-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R]
- Added the DLL auto-tune function to address the camera-rebooting issue caused by the fixed DLL value [v1.41.07, QND-7082R, QNO-7082R, QNV-7082R, QND-7012R, QND-7022R,

QND-7032R, QNO-7012R, QNO-7022R, QNO-7032R, QNV-7012R, QNV-7022R, QNV-7032R] [v1.41.16, QND-7082R, QNO-7082R, QNV-7082R, QND-7012R, QND-7022R, QND-7032R, QNO-7012R, QNO-7022R, QNO-7032R, QNV-7012R, QNV-7022R, QNV-7032R] [v1.41.04, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.16, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.04, ANO-L7082R, ANV-L7082R] [v1.41.04, ANE-L7012R] [v1.41.16, ANE-L7012R, ANO-L7082R, ANV-L7082R]

- Improved functionality of the session timeout to obtain TTA security certification [v1.41.06, XNO-6080RG01] [v1.41.06, XND-6080RG01] [v1.41.07, XNO-6085RG01] [v1.41.10, XNP-6371RHG01] [v1.41.07, XND-6080RG01] [v1.41.07, XNO-6080RG01] [v1.41.10, XNO-6085RG01] [v1.41.11, XNP-6371RHG01]
- Upgraded to the latest firmware [v1.41.17, QNB-8002]
- Upgraded to the latest firmware. You cannot downgrade to a firmware lower than the following firmware, respectively.
 - QNO6082R_WW_ALL: 1.41.12_20211026_R286
 - QNO6082R1_WW_ALL: 1.41.01_20211012_R19
 - QNO7082R_WW_ALL: 1.41.02_210907_R102
 - QNO6084R_WW_ALL: 1.41.01_20210907_R81

[v1.41.17, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QNO-6072R, QNO-6082R, QNO-6082R, QNO-6083R, QND-6072R, QND-6082R, QND-6082R, QND-6083R, QNV-6072R, QNV-6082R, QNV-6082R, QNV-6083R, QND-6011, QND-6021] [v1.41.17, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.17, QND-7012R, QND-7022R, QND-7032R, QND-7082R, QNO-7012R, QNO-7022R, QNO-7032R, QNO-7082R, QNV-7012R, QNV-7022R, QNV-7032R, QNV-7082R] [v1.41.17, QNO-6014R, QNO-6084R, QNV-6014R, QNV-6084R]

[Bug fixes]

- Fixes a problem that occurs when the camera integrates with Retail Insight. [1.41.00 QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-

6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]

- Fixed an error where the pan does not reset when the pan is driven more than 3,000 times in one direction and out of step. [1.41.01 QNP-6230RH]
- Fixed an issue where the size of the object is not set in the motion detection when [Hallway view] is set to [90] or [270]. [v1.41.01, TNO-3030T]
- Improved the camera booting issue incurred by memory leak [v1.41.02, XNO-L6085RA, XNO-6085RA]
- Improved the issue of camera failing to boot due to Gyro sensor recognition error [v1.41.02, XNO-6085RA]
- Fixed the problem that if a smart codec is set while a profile that does not support smart codec is being played, the smart codec setting is applied even to a profile that does not support smart codec [1.41.11 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021] [1.41.04 QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [1.41.12 QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QND-6083R, QNO-6072R, QNV-6072R, QND-6072R, QND-6073R, QNV-6083R, QNV-6082R, QNO-6073R, QNV-6073R, QNO-6083R, QND-6082R, QND-6011, QND-6021]
- Fixed issue of IR setting option not being visible on the camera setting menu [1.41.02, XNO-L6120RG]
- Fixed the problem that the Wisenet logo and online help icon were not visible in the camera web viewer [v1.41.05, XND-6080RG, XNO-6080RG, XNO-6085RG] [v1.41.06, XND-6080RG] [v1.41.06, XNO-6080RG]
- Fixed timestamp errors [v1.41.01, PNB-A9001LP] [v1.41.01, PNO-A9081RLP, PNV-A9081RLP, PND-A9081RLP, PND-A9081RVLP, PND-A9081RFLP]

- Fixed a problem that the NTP server time was not reset to match the changed NTP server when the NTP server address setting was changed [v1.41.03, QNO-7082R] [v1.41.02, QNO-6084R] [v1.41.13, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021]
- Fixed an issue that, when [Video Rotation]'s [Hallway View] option is set to [90°] or [270°] and one of the [Flip] or [Mirror] options had been applied, the [Overlay] which displays the locations detected in IVA malfunctions. [v1.41.01, ANO-L7012R, ANO-L7022R, ANV-L7012R] [v1.41.01, ANE-L7012R, ANO-L7082R, ANV-L7012R]
Note: On the ANO-L7012R, ANO-L7022R, and ANV-L7012R models, be sure to reset [Image preset mode] on the [Camera setup] page or perform a factory reset on the [Upgrade/Restart] page after upgrading from version 1.41.00 to another version.
- Corrected an issue where firmware issued after 2022 did not upgrade properly [v1.41.07, XNF-8010R (for WellsFargo)]
- Corrected an issue where the [Motion detection] feature did not work [v1.41.07, XNF-8010R (for WellsFargo)]
- Corrected an issue where the Wisenet Road AI application failed to transfer the vehicle image (BestShot) to the VMS after detecting vehicles and triggering an event [v1.41.03, PNB-A9001LP, PNO-A9081RLP, PNV-A9081RLP]

Security Improvements

- Applied the X Series 1.4 software patch for security enhancement. [1.41.00 QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]
 - Added a function to control Pan and Tilt individually in [Setup] > [Video & Audio] > [PTRZ Setup].
 - Added a function to configure the administrator account ID (admin).
 - Added a function to configure the MTU (Maximum Transmission Unit) size between 1,280 and 1,500 in [Setup] > [Basic] > [IP & Port] > [IP address].
 - Added the [Change host name] option to use the Common Name of a unique certificate

instead of the host name of the camera, when the secure connection system is to HTTPS (Secure connection mode using a unique certificate).

- Improved motion detection algorithm to increase the detection rate of recognize objects.
- Changed the Moscow time zone from UTC+4 to UTC+3.
- Allowed to use special characters (spaces # * + - / () _ ,) for the camera OSD title in [Setup] > [Video & Audio] > [Camera Settings] > [OSD].
- Supported for using TL-WN823N (v2, v3) as a Wi-Fi dongle.
- Fixed an issue where the system restarts intermittently more than 49 days after starting the camera system.
- Added function to send email about the account lockout event to administrators if login fails more than 5 consecutive times (SMTP email must be enabled). [v1.41.03, PNM-9030V]
- Added encryption function to use SD card after authentication with password when saving video to SD card. [v1.41.05, PNM-9030V]
- Applied X series 3rd and 4th changes [v1.41.02, PNO-A9081R, PND-A9081RV, PND-A9081RF, PNV-A9081R, PNB-A9001]
 - Saves sensitive information (password) in plain text
 - Executes system command using SNMP setup logic
 - Uses a low version of the net-snmp open source
 - Cannot enter snmp community string special characters
 - Uses the 3DES Cipher suite during the communication through TLS encryption
- Added the ability to use HTTP and HTTPS at the same time [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12,

LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

- Fixed an error where the SNMP port opened while SNMP did not operate [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-

6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

- Fixed an error where commands operate with a modified packet [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]
- Fixed an error where ONVIF discovery communication was not available between a camera and Wisenet Device Manager in a certain circumstance [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]

[v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

- Removed unnecessary PHP scripts [v1.41.05, QNO-8080R, QNV-8010R, QNO-8010R, QNV-8020R, QND-8020R, QND-8010R, QND-8030R, QNV-8030R, QNO-8020R, QNV-8080R, QND-8080R, QNO-8030R, QNE-8011R, QNE-8021R, QND-8011, QND-8021] [v1.41.14, QND-6012R, QNO-6012R, QNV-6032R, QND-6022R, QNV-6012R, QND-6032R, QNO-6022R, QNO-6032R, QNV-6022R, QNO-6082R, QNO-6072R, QND-6072R, QNV-6072R, QNV-6082R, QND-6082R, QND-6011, QND-6021, QND-6073R, QND-6083R, QNO-6073R, QNO-6083R, QNV-6073R, QNV-6083R, AND-2010R, AND-2020R, KND-L2010R, KNO-L2022R] [v1.41.03, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.16, ANO-L6012R, ANO-L6022R, ANV-L6012R] [v1.41.03, ANO-L7012R, ANO-L7022R, ANO-L7072R, ANV-L7012R, ANV-L7072R] [v1.41.03, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.16, ANE-L6012R, ANO-L6082R, ANV-L6082R] [v1.41.03, ANE-L7012R, ANO-L7082R, ANV-L7082R] [v1.41.12, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6032R, LNO-6072R]

6022R, LNO-6032R, LNO-6072R] [v1.41.13, LND-6012R, LND-6022R, LND-6032R, LND-6072R, LNV-6012R, LNV-6022R, LNV-6032R, LNV-6072R, LNO-6012R, LNO-6022R, LNO-6032R, LNO-6072R] [v1.41.05, QND-7082R, QNV-7082R, QND-7012R, QND-7022R, QNV-7022R, QNV-7032R, QND-7032R, QNO-7022R, QNV-7012R, QNO-7032R, QNO-7012R, QNO-7082R] [v1.41.05, QNV-6014R, QNV-6084R, QNO-6014R, QNO-6084R] [v1.41.05, QNV-6024RM, QNV-6023R] [v1.41.16, QNV-6024RM, QNV-6023R] [v1.41.05, QNB-8002] [v1.41.16, QNB-8002] [v1.41.05, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1] [v1.41.16, QND-6012R1, QND-6022R1, QND-6032R1, QND-6072R1, QND-6082R1, QNO-6012R1, QNO-6022R1, QNO-6032R1, QNO-6072R1, QNO-6082R1, QNV-6012R1, QNV-6022R1, QNV-6032R1, QNV-6072R1, QNV-6082R1]

Protocol Improvements

- Supports ONVIF Profile T (with ONVIF protocol to delete the default video profile). [v1.41.03, PNM-9030V]

Open Platform Version 3.52 Patch

- Added NUC Active state event for Thermal cameras (The version 3.52 patch file should be installed in the Open Platform SDK with the 3.52 version installed.). [1.41.02, TNO-3010T, TNO-3020T, TNO-3030T]

Affected Products

Table 7. Product Family Based On Version 1.41

Major Model	Model Name
XNP-6320RH	QNP-6230RH
TNO-3030T	TNO-3030T TNO-3020T TNO-3010T

Major Model	Model Name
QNO-6082R	QNO-6072R
	QNO-6073R
	QNO-6082R
	QNO-6083R
	QND-6072R
	QND-6073R
	QND-6082R
	QND-6083R
	QNV-6072R
	QNV-6073R
	QNV-6082R
	QNV-6083R
	QND-6012R
	QND-6022R
	QND-6032R
	QNO-6012R
	QNO-6022R
	QNO-6032R
	QNV-6012R
	QNV-6022R
	QNV-6032R
	QND-6011
	QND-6021
	AND-2010R
	AND-2020R
	KND-L2010R
	KNO-L2022R
QNO-8080R	QNO-8010R
	QNO-8020R
	QNO-8030R
	QNO-8080R
	QNV-8010R
	QNV-8020R
	QNV-8030R
	QNV-8080R
	QND-8010R
	QND-8020R
	QND-8030R

Major Model	Model Name
	QND-8080R QNE-8011R QNE-8021R QND-8011 QND-8021 QNO-8081R QNV-8081R
LNO-6072R	LNO-6072R LND-6012R LNO-6032R LNV-6032R LND-6022R LND-6072R LNO-6022R LNV-6012R LNV-6072R LND-6032R LNV-6022R LNO-6012R
PNM-9030V	PNM-9030V
TNB-9000	TNB-9000
QNB-8002	QNB-8002
XNO-L6085R	XNO-L6085R
XNO-L6085RA	XNO-L6085RA
XNO-6085RA	XNO-6085RA
XND-6081REV	XND-6081REV
XND-8081REV	XND-8081REV
XNP-6320HG	XNP-6320HG
XNP-6320RHG	XNP-6320RHG
XNP-6371RHG01	XNP-6371RHG01
QNV-6025RM	QNV-6025RM
XNP-6341RH	XNP-6341RH
XNO-L6120RG	XNO-L6120RG
QNV-6024RM	QNV-6024RM QNV-6023R
XNB-6000G01	XNB-6000G01
XNP-6120HG	XNP-6120HG

Major Model	Model Name
KND-5080RG	KND-5080RG
XNO-6120RG	XNO-6120RG
XNO-L6120RG	XNO-L6120RG
XND-6080RG	XND-6080RG
XND-6080RG01	XND-6080RG01
XNO-6080RG	XNO-6080RG
XNO-6080RG01	XNO-6080RG01
XNO-6085RG	XNO-6085RG
XNO-6085RG01	XNO-6085RG01
XNP-6302HG	XNP-6302HG
XNP-6371RHG01	XNP-6371RHG01
PNO-A9081R	PNO-A9081R PND-A9081RV PND-A9081RF PNV-A9081R PNB-A9001
PNO-A9081RLP	PNO-A9081RLP PNV-A9081RLP PND-A9081RLP PND-A9081RVLP PND-A9081RFLP
PNB-A9001LP	PNB-A9001LP
QNO-7082R	QNO-7082R QND-7082R QNV-7082R QND-7012R QND-7022R QNV-7022R QNV-7032R QND-7032R QNO-7022R QNV-7012R QNO-7032R QNO-7012R
QNO-6084R	QNO-6084R QNV-6014R QNV-6084R

Major Model	Model Name
	QNO-6014R
ANO-L6012R	ANO-L6012R ANO-L6022R ANV-L6012R
ANO-L7012R	ANO-L7012R ANO-L7022R ANO-L7072R ANV-L7012R ANV-L7072R
ANO-L6082R	ANE-L6012R ANO-L6082R ANV-L6082R
ANO-L7082R	ANE-L7012R ANO-L7082R ANV-L7082R
QNO-6082R1	QND-6012R1 QND-6022R1 QND-6032R1 QND-6072R1 QND-6082R1 QNO-6012R1 QNO-6022R1 QNO-6032R1 QNO-6072R1 QNO-6082R1 QNV-6012R1 QNV-6022R1 QNV-6032R1 QNV-6072R1 QNV-6082R1

Network Camera Version 1.40

This document describes the new and changed features of Hanwha Vision network camera version 1.40.

 Released on June 24, 2022

Common Features

[New Features]

- Added a function to control Pan and Tilt individually in [Setup] > [Video & Audio] > [PTRZ Setup].
- Added a function to configure the administrator account ID (admin).
- Added a function to configure the MTU (Maximum Transmission Unit) size between 1,280 and 1,500 in [Setup] > [Basic] > [IP & Port] > [IP address].
- Added a [Set pan ground position] function to set the current pan angle to zero degrees in [Setup] > [PTZ] > [PT limit]. [v1.40.00, XNP-6120H, XNP-6371RH, XNP-6550RH, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6320RH, XNP-6250RH] [v1.40.04, XNP-6321, XNP-6321H]
- Added a [Location setup] function that enables you to set to display direction information on the camera video. [v1.40.00, XNP-6120H, XNP-6040H, XNP-6371RH, XNP-6550RH, XNP-6320, XNP-6320H, XNP-6320HS, XNP-6320RH, XNP-6250RH] [v1.40.04, XNP-6321, XNP-6321H]
- Added an overlay option to display azimuth over the camera images in [Setup] > [Video & Audio] > [Camera Settings] > [OSD]. (PTZ cameras)
- Added a function to set up a trace using a preset already specified in [Setup] > [PTZ] > [PTZ setup] > [Trace]. (PTZ cameras)
- Added the [Change host name] option to use the Common Name of a unique certificate instead of the host name of the camera, when the secure connection system is to HTTPS (Secure connection mode using a unique certificate).
- Added the [Event activation time] function so that the people counting events are only received on a specific schedule in [Setup] > [Statistics] > [People counting] > [Setup]. (People

counting supported cameras)

- Added a Rainbow 2 mode to the color palette. (Add purple to existing Rainbow mode) [1.40.02]
- Supports Open Platform event: NUC Active state [1.40.05 TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNU-4041T, TNU-4051T] [1.40.05, TNO-4030TR, TNO-4040TR, TNO-4041TR]
- Added a slide show function, which plays a slide show on the monitor screen [1.40.03, TNB-6030]
- Enabled the [CVBS] option in the camera Web viewer [1.40.04, XNV-8081R, XND-8081RV, XND-8081RF]
- Default value of [Face detection] is set to off [1.40.05, TNB-6030, TNB-6031]
- Default value of [OSD] is set to off [1.40.05, TNB-6030, TNB-6031]

[Improvements]

- Improved motion detection algorithm to increase the detection rate of recognized objects.
- Changed the Moscow time zone from UTC+4 to UTC+3.
- Allowed to use special characters (spaces # * + - / () _ ,) for the camera OSD title in [Setup] > [Video & Audio] > [Camera Settings] > [OSD].
- Supported for using TL-WN823N (v2, v3) as a Wi-Fi dongle.
- Increased the maximum number of multicast connections from 20 to 128. (PTZ cameras)
- Increased the maximum number of privacy areas from 24 to 32. (PTZ cameras)
- Changed the default WDR level for WDR mode from Medium to High. [1.40.02]
- Improved auto-correction algorithms so that normal lines on objects captured by the camera are not regarded as defective lines. [v1.40.03 TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNU-4041T, TNU-4051T] [v1.40.03, TNO-4030TR, TNO-4040TR, TNO-4041TR]
- Modified the distance range of auto focus in [Quick Focus] mode [v1.40.03, XNO-L6080R, XNV-L6080, XNV-L6080R, XND-L6080V, XND-L6080R, XND-L6080RV, XNO-L6080RA, XNV-L6080A, XNV-L6080RA, XND-L6080VA, XND-L6080RVA]
- Supports the original image of Open Platform in the Hallway view mode [v1.40.05 TNO-

4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNU-4041T, TNU-4051T] [v1.40.05, TNO-4030TR, TNO-4040TR, TNO-4041TR]

- Fixed an issue where focus was lost when restoring settings using the setting backup file of a camera of the same model [v1.40.03 XNO-6080R, XNB-6000, XND-6080, XND-6080R, XNV-6080, XNV-6080R, XND-6080V, XND-6080R, XNF-8010R, XNF-8010RV, XNF-8010RVM]
- Fixed an issue where the F-number value changed when simple focus was activated after setting the F-number in Iris manual mode [v1.40.03 XNO-6080R, XNB-6000, XND-6080, XND-6080R, XNV-6080, XNV-6080R, XND-6080V, XND-6080RV]
- Fixed a case where no sound may be heard when setting ANR (audio noise reduction) [v1.40.04, XNV-6080, XNV-6080R, XND-6080, XND-6080R, XND-6080V, XND-6080RV, XNF-8010R, XNF-8010RV, XNF-8010RVM]
- Modified the firmware in accordance with the change of Gyro sensor module [v1.40.03, XND-6081RV, XND-8081RV, TNV-7010RC, XNZ-6320, XNP-6120H, XNP-6550RH, XNP-6371RH, XNP-6320, XNP-6320RH, XNP-6320RH, XNP-6250RH, XND-6085]
- Enhanced the stability of open application [v1.40.04, XNB-6000, XNO-6080R] [v1.40.03, XNB-6005, XNO-6085R, XNB-8000, XNO-8080R]
- Supports ONVIF Test Tool v20.06 [v1.40.02, XNP-6040HG] [v1.40.04, XNP-6040HG] [v1.41.05, XNP-6040HG]
- Modified the firmware in accordance with the change of a real-time clock IC (RTC IC) [v1.40.05, QNP-6230, XNP-6321H, QNP-6230H, XNP-6320H, XNP-6320, XNP-6321, XNP-6320HS]
- Adjusted the RTP Payload buffer to improve compatibility with specific NVRs [v1.40.02, XNV-6080RG] [v1.40.03, XNP-6040HG] [v1.40.03, XNV-6080RG]

[Bug fixes]

- Fixed an issue where the system restarts intermittently more than 49 days after starting the camera system.
- Fixed an issue where the camera system restarts intermittently when installing certificates in [HTTPS] or [802.1x]. [1.40.02]
- Fixed an issue where the detected face area is not displayed in the video when a face detection event occurs. [1.40.02]
- Fixed an issue where the alarm inputs do not work properly when setting multiple alarm

inputs. [1.40.02]

- Fixed an issue where fast-forward and fast-backward do not work properly when playing video recorded with MJPEG on the web viewer. [1.40.02]
- Fixed an issue where the size of the object is not set in the motion detection when [Hallway view] is set to [90] or [270]. [v1.40.04, TNO-4050T, TNO-4040TR, TNU-4051T]
- Fixed an issue where the detected area was not displayed in HDMI video when detecting a face after power was supplied for the first time. [v1.40.04, TNB-6030]
- Fixed an issue where the lens did not return to its previous position intermittently after initializing the lens. [v1.40.03, XNP-6320RH, XNP-6250RH]
- Fixed issue of IR setting option not being visible on the camera setting menu [1.40.05, XNO-L6120R]
- Fixed issue of moving to PTZ preset location and moving to home functions when PTZ is in motion. [1.40.05, XNO-L6120R]

Security Improvements

- Revised security vulnerability by filtering special characters. [1.40.02]

Open Platform Version 3.52 Patch

- Added NUC Active state event for Thermal cameras (The version 3.52 patch file should be installed in the Open Platform SDK with the 3.52 version installed.). [1.40.05 TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNU-4041T, TNU-4051T] [1.40.05, TNO-4030TR, TNO-4040TR, TNO-4041TR]

Affected Products

Table 8. Product Family Based On Version 1.40

Major Model	Model Name
XNB-6000	XNB-6000 KNB-2000

Major Model	Model Name
XNB-6001	XNB-6001
XNB-6005	XNB-6005
XNB-8000	XNB-8000 KNB-5000N
XND-6010	XND-6010
XND-6011F	XND-6011F
XND-6020	KND-2020RN
XND-6020R	XND-6020R
XND-6080	XND-6080 XND-K6080N
XND-6080R	XND-6080R KND-2080RN
XND-6080RV	XND-6080RV
XND-6080V	XND-6080V
XND-6081RV	XND-6081V XND-6081RV XNV-6081 XNV-6081R XND-6081RF XND-6081F
XND-6085	XND-6085
XND-6085V	XND-6085V
XND-8020F	XND-8020F
XND-8020R	KND-5020RN XND-8020R XND-8020RW
XND-8030R	XND-8030R
XND-8040R	XND-8040R
XND-8080R	KND-5080RN XND-8080R XND-8080RW
XND-8080RV	XND-8080RV
XND-8081RV	XND-8081RV XNV-8081R XNV-8081 XND-8081RF

Major Model	Model Name
XND-L6020R	XND-L6020R
XND-L6080R	XND-L6080R
XND-L6080RV	XND-L6080RV
XND-L6080V	XND-L6080V
XNF-8010R	XNF-8010R XNF-8010RW
XNF-8010RV	XNF-8010RV XNF-8010RVW
XNF-8010RVM	XNF-8010RVM
XNO-6010R	XNO-6010R KNO-2010RN
XNO-6120R	XNO-6020R KNO-2120RN
XNO-6080R	XNO-6080R XNO-6080RA KNO-2080RN
XNO-6080RS	XNO-6080RS
XNO-6085R	XNO-6085R
XNO-6120R	XNO-6120R KNO-2120RN
XNO-6120RS	XNO-6120RS
XNO-8020R	XNO-8020R KNO-5020RN
XNO-8030R	XNO-8030R
XNO-8040R	XNO-8040R
XNO-8080R	XNO-8080R XNO-8080RW KNO-5080RN
XNO-L6020R	XNO-L6020R
XNO-L6120R	XNO-L6120R
XNP-6040H	XNP-6040H
XNP-6120H	XNP-6120H KNP-2120HN
XNP-6320	XNP-6320 QNP-6230 QNP-6230H XNP-6321

Major Model	Model Name
	XNP-6321H
XNP-6320H	XNP-6320H
XNP-6320HS	XNP-6320HS
XNP-6320RH	XNP-6320RH XNP-6250RH
XNP-6371RH	XNP-6371RH
XNP-6550RH	XNP-6550RH
XNV-6010	XNV-6010
XNV-6011	XNV-6011 XNV-6011W
XNV-6012	XNV-6012
XNV-6012M	XNV-6012M
XNV-6013M	XNV-6013M
XNV-6020R	XNV-6020R
XNV-6022R	XNV-6022R
XNV-6022RM	XNV-6022RM
XNV-6080	XNV-6080
XNV-6080R	XNV-6080R
XNV-6080RS	XNV-6080RS
XNV-6081Z	XNV-6081Z XND-6081VZ XND-6081FZ
XNV-6085	XNV-6085
XNV-6120	XNV-6120
XNV-6120R	XNV-6120R
XNV-6120RS	XNV-6120RS
XNV-8020R	XNV-8020R
XNV-8020RM	XNV-8020RMN XNV-8020RMP
XNV-8030R	XNV-8030R
XNV-8040R	XNV-8040R
XNV-8080R	XNV-8080R XNV-8080RW
XNV-8080RS	XNV-8080RS
XNV-8081Z	XNV-8081Z XND-8081VZ XND-8081FZ

Major Model	Model Name
XNV-L6080	XNV-L6080 XNO-L6080R
XNV-L6080A	XNO-L6080RA XND-L6080RVA XNV-L6080RA XND-L6080VA XNV-L6080A
XNV-L6080R	XNV-L6080R
XNZ-6320	XNZ-6320
TNV-7010RC	TNV-7010RC
TNB-6030	TNB-6030 TNB-6031
TNO-6010M	TNO-6010M
TNO-4050T	TNO-4030T TNO-4040T TNO-4050T TNO-4041T TNO-4051T
TNO-4040TR	TNO-4030TR TNO-4040TR TNO-4041TR
TNU-4051T	TNU-4041T TNU-4051T
XNP-6040HG	XNP-6040HG
XNO-L6120RG	XNO-L6120RG
XNV-6080RG	XNV-6080RG
XNP-6040HG	XNP-6040HG

Network Camera Version 1.31

This document describes the new and changed features of Hanwha Vision network camera version 1.31

 Released on August 07, 2023

Common Features

[Improvements]

- Improved functionality of the session timeout to obtain TTA security certification [v1.31.02, KNP-2550RHG01] [v1.31.04, KNP-2550RHG01] [v1.31.02, KNP-2550RHG] [v1.31.03, KNP-2550RHG]

Affected Products

Table 9. Product Family Based On Version 1.31

Major Model	Model Name
XNP-6550RHG	KNP-2550RHG01 KNP-2550RHG

Network Camera Version 1.30

This document describes the new and changed features of Hanwha Vision network camera version 1.30.

 Released on July 02, 2019

Caution

- Please note that you need to follow the steps below when you upgrade to 1.30 version from previous versions. [TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T]
 - 1) Upgrade to the bridge firmware. (Please do not use this version firmware other than upgrade purpose. We cannot guarantee anything with this version firmware)
 - 2) Upgrade to version 1.30 or later.
 - Please note that OSD configuration values will be reset when you upgrade 1.30 version from previous versions. [TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T]
 - Please note that OSD font change in all resolutions is not supported and OSD is not supported in 320x240 resolution from the version 1.30 or later. [TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T]
 - Please note that firmware downgrade from version 1.30 or later to lower version is not allowed. [TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T]
- Please note that downgrading to a version earlier than 1.30.01 may cause the following constraints [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]:
 - More than 25 privacy zones can not be deleted or modified.
 - If the camera name contains special characters (space # * + - / () ,), you can not delete or modify the camera name.

Please fix them before downgrading the system, or reset the system to factory default with [Except network parameter & open platform] selected.

Common Features

[New Features]

- Added a handover function in accordance with temperature detection event. [TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T] [TNO-4030TR, TNO-4040TR, TNO-4041TR]

[Improvements]

- Supported a production automation function (nothing changed in user perspective). [1.30.01]
- Added a [Set pan ground position] function under [Setup] > [PTZ] > [PTlimit] to set the current pan angle to zero degrees. [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]
- Increased the maximum number of privacy areas from 24 to 32. [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]
- Increased the maximum number of multicast connections from 20 to 128. [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]
- Allowed a user to use special characters (space # * + - / () _ ,) as camera name under [Setup] > [Camera setup] > [OSD] > [Title overlay]. [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]
- Added a function to save the predefined preset paths when setting the trace path for auto tracking. [1.30.01 XNP-6320, XNP-6320H, XNP-6320HS, XNP-6371RH]

[Bug fixes]

- Fixed an issue where white or black pixels appear on the upper right of the image due to an error in the image calibration algorithm. [1.30.02 TNO-4030T, TNO-4040T, TNO-4050T, TNO-4041T, TNO-4051T, TNU-4041T, TNU-4051T] [1.30.02, TNO-4030TR, TNO-4040TR, TNO-4041TR]

Security Improvements

- Supported ONVIF Profile T (with ONVIF protocol to delete the default video profile).
- Added function to email account lockout events to administrators if login fails more than 5

consecutive times (SMTP email must be enabled).

- Added encryption setting function to use SD card after password authentication when saving video to SD card.

Affected Products

Table 10. Product Family Based On Version 1.30

Major Model	Model Name
XNB-6000	XNB-6000 KNB-2000
XNB-6001	XNB-6001
XNB-6005	XNB-6005
XNB-8000	XNB-8000 KNB-5000N
XND-6010	XND-6010
XND-6011F	XND-6011F
XND-6020	KND-2020RN
XND-6020R	XND-6020R
XND-6080	XND-6080 XND-K6080N
XND-6080R	XND-6080R KND-2080RN
XND-6080RV	XND-6080RV
XND-6080V	XND-6080V
XND-6081RV	XND-6081V XND-6081RV XNV-6081 XNV-6081R XND-6081RF XND-6081F
XND-6085	XND-6085
XND-6085V	XND-6085V
XND-8020F	XND-8020F
XND-8020R	XND-8020R KND-5020RN
XND-8030R	XND-8030R
XND-8040R	XND-8040R

Major Model	Model Name
XND-8080R	XND-8080R KND-5080RN
XND-8080RV	XND-8080RV
XND-8081RV	XND-8081RV XNV-8081R XNV-8081
XND-L6080R	XND-L6080R
XND-L6080RV	XND-L6080RV
XND-L6080V	XND-L6080V
XNF-8010R	XNF-8010R XNF-8010RW
XNF-8010RV	XNF-8010RV XNF-8010RVW
XNF-8010RVM	XNF-8010RVM
XNO-6010R	XNO-6010R KNO-2010RN
XNO-6020R	XNO-6020R
XNO-6080R	XNO-6080R XNO-6080RA KNO-2080RN
XNO-6080RS	XNO-6080RS
XNO-6085R	XNO-6085R
XNO-6120R	XNO-6120R KNO-2120RN
XNO-6120RS	XNO-6120RS
XNO-8020R	XNO-8020R KNO-5020RN
XNO-8030R	XNO-8030R
XNO-8040R	XNO-8040R
XNO-8080R	XNO-8080R XNO-8080RW KNO-5080RN
XNO-L6020R	XNO-L6020R
XNO-L6120R	XNO-L6120R
XNP-6040H	XNP-6040H
XNP-6120H	XNP-6120H KNP-2120HN

Major Model	Model Name
XNP-6230	XNP-6230
XNP-6230H	XNP-6230H
XNP-6320	XNP-6320
	XNP-6320H
	XNP-6320HS
XNP-6320	QNP-6230
	QNP-6230H
	XNP-6321
	XNP-6321H
XNP-6371RH	XNP-6371RH
XNP-6550RH	XNP-6550RH
XNV-6010	XNV-6010
XNV-6011	XNV-6011
	XNV-6011W
XNV-6012	XNV-6012
XNV-6012M	XNV-6012M
XNV-6013M	XNV-6013M
XNV-6020R	XNV-6020R
XNV-6022R	XNV-6022R
XNV-6022RM	XNV-6022RM
XNV-6080	XNV-6080
XNV-6080R	XNV-6080R
XNV-6080RS	XNV-6080RS
XNV-6081Z	XNV-6081Z
	XND-6081VZ
	XND-6081FZ
XNV-6085	XNV-6085
XNV-6120	XNV-6120
XNV-6120R	XNV-6120R
XNV-6120RS	XNV-6120RS
XNV-8020R	XNV-8020R
XNV-8020RM	XNV-8020RMN
	XNV-8020RMP
XNV-8030R	XNV-8030R
XNV-8040R	XNV-8040R
XNV-8080R	XNV-8080R
XNV-8080RS	XNV-8080RS

Major Model	Model Name
XNV-8081Z	XNV-8081Z XND-8081VZ XND-8081FZ
XNV-L6080	XNV-L6080 XNO-L6080R
XNV-L6080A	XNO-L6080RA XND-L6080RVA XNV-L6080RA XND-L6080VA XNV-L6080A
XNV-L6080R	XNV-L6080R
XNZ-6320	XNZ-6320
TNO-4050T	TNO-4050T TNO-4051T TNO-4040T TNO-4041T TNO-4030T
TNU-4041T	TNU-4041T TNU-4051T
TNO-4040TR	TNO-4041TR TNO-4040TR TNO-4030TR
TNB-6030	TNB-6030
TNV-7010RC	TNV-7010RC

Network Camera Version 1.22

This document describes the new and changed features of Hanwha Vision network camera version 1.22

 Released on March 14, 2023

Common Features

[New Features]

- Allows you to create passwords up to 64 characters [v1.22.00, XNB-6001 (for WellsFargo)] [v1.22.00, XND-6080 (for WellsFargo)]

[Bug fixes]

- Corrected an issue where firmware issued after 2022 did not upgrade properly [v1.22.00, XNB-6001 (for WellsFargo)] [v1.22.00, XND-6080 (for WellsFargo)]
- Corrected an issue where the [Motion detection] feature did not work [v1.22.00, XNB-6001 (for WellsFargo)] [v1.22.00, XND-6080 (for WellsFargo)]

Network Camera Version 1.21

This document describes the new and changed features of Hanwha Vision network camera version 1.21.

 Released on March 18, 2019

Common Features

[Improvements]

- Added function to push BI (People Counting / Queue Management / Heatmap) meta data to Wisenet Retail Insight. [1.21.12 XND-6010/XNV-6010, XNF-8010R/XNF-8010RV/XNF-8010RVM]
- Fixed an issue where the web page menu would not change after upgrading firmware due to remained browser cache. In some case, cache refresh (F5 reload key) is required to display properly. [1.21.10]
- Added automatic correction function for horizontal noise that appears intermittently in image. [1.21.01 TNO-4040TR, TNO-4041TR, TNO-4030TR]
- Changed the maximum shutter value to 1/5000, when [Video & Audio] > [Camera Setup] > [Backlight] mode is set to WDR. [1.21.02 QNO-6072R, QNO-6073R, QNO-6082R, QNO-6083R, QND-6072R, QND-6073R, QND-6082R, QND-6083R, QNV-6072R, QNV-6073R, QNV-6082R, QNV-6083R, QND-6012R, QND-6022R, QND-6032R, QNO-6012R, QNO-6022R, QNO-6032R, QNV-6012R, QNV-6022R, QNV-6032R, QND-6011, QND-6021, QNO-8010R, QNO-8020R, QNO-8030R, QNO-8080R, QNV-8010R, QNV-8020R, QNV-8030R, QNV-8080R, QND-8010R, QND-8020R, QND-8030R, QND-8080R, QNE-8011R, QNE-8021R, QND-8011, QND-8021]
- Fixed an issue where the camera image appears in upside down or side to side. [1.21.02 QNE-8011R, QNE-8021].

[Bug fixes]

- Fixed an issue where in some case, an SD card was not recognized after booting. [1.21.12 TNO-4050T, TNO-4051T, TNO-4040T, TNO-4041T, TNO-4030T, TNU-4041T, TNU-4051T]

- Fixed an issue where an SD card error happened with EXT4 file system. [1.21.12 TNU-4041T, TNU-4051T]
- Fixed an issue where the live monitoring page would be stuck on the IE11 / Windows 10 OS in case Plugin-Free profile configuration is higher than 20fps / 1920x1080 resolution. Now it will be reverted to 20fps automatically. [1.21.10]
- Fixed an issue where with 1.20 and 1.21 version, Genetec VMS didn't receive IVA events. [1.21.11]
- Fixed an issue where in some cases, creating a profiles didn't work through SUNAPI. [1.21.11]
- Fixed an issue of incorrect CropAreaCoordinate value in attributes.cgi through SUNAPI. [1.21.11]
- Fixed an issue where with 1.20 and 1.21 version, Genetec VMS didn't draw overlay boxes through metadata. [1.21.11]
- Fixed an issue where a camera would restart when a user changes sensitivity value in Camera [setup] > [Video & Audio] > [Audio setup] > [Audio in] > [Noise reduction] after upgrading to version 1.20 or 1.21. [1.21.11 TNO-4040T, TNO-4050T, TNO-4051T, TNO-4041T, TNO-4030T]

Affected Products

Table 11. Product Family Based On Version 1.21

Major Model	Model Name
XNB-6000	XNB-6000 KNB-2000 KNO-2080RN XNO-6080R
XNO-6010R	XNO-6010R KNO-2010RN XNO-6020R
XND-6010	XND-6010 XNV-6010
XND-6020	KND-2020RN

Major Model	Model Name
XND-6080	XND-6080 XND-K6080N KND-2080RN XND-6080R XND-6080RV XND-6080V XNV-6080 XNV-6080R XNV-6080RS
XNB-8000	XNB-8000 KNB-5000N
XNO-8020R	XNO-8020R XNO-8030R XNO-8040R
XND-8020R	XND-8020R KND-5020RN XND-8030R XND-8040R KNO-5020RN XNV-8020R XNV-8030R XNV-8040R
XND-8080R	XND-8080R KND-5080RN XND-8080RV XNV-8080R XNV-8080RS
XNF-8010R	XNF-8010R XNF-8010RW XNF-8010RV XNF-8010RVW XNF-8010RVM

Major Model	Model Name
XNO-6120R	XNO-6120R KNO-2120RN XNO-6120RS XNV-6120 XNV-6120R XNV-6120RS
XND-L6080R	XND-L6080R XND-L6080RV XND-L6080V XNV-L6080 XNV-L6080R
XNV-6012	XNV-6012 XNV-6012M XNV-6013M XNV-6022R XNV-6022RM
XNB-6001	XNB-6001 XNB-6005 XND-6085 XND-6085V XNO-6085R
XNB-6005	XNB-6005 XND-6085 XND-6085V XNO-6085R
XND-6011F	XND-6011F
XND-8020F	XND-8020F
XNP-6040H	XNP-6040H
XNP-6120H	XNP-6120H KNP-2120HN
XNP-6320	XNP-6320 XNP-6320H XNP-6320HS QNP-6230 QNP-6230H
XNP-6371RH	XNP-6371RH

Major Model	Model Name
XNV-6011	XNV-6011 XNV-6011W
XNV-6085	XNV-6085 XND-6085 XND-6085V
TNB-6030	TNB-6030
XNZ-6320	XNZ-6320
TNO-4050T	TNO-4050T TNO-4051T TNO-4040T TNO-4041T TNO-4030T
TNU-4041T	TNU-4041T TNU-4051T
TNO-4040TR	TNO-4041TR TNO-4040TR TNO-4030TR
QNO-6082R	QNO-6072R QNO-6073R QNO-6082R QNO-6083R QND-6072R QND-6073R QND-6082R QND-6083R QNV-6072R QNV-6073R QNV-6082R QNV-6083R QND-6012R QND-6022R QND-6032R QNO-6012R QNO-6022R QNO-6032R QNV-6012R QNV-6022R

Major Model	Model Name
QNO-8080R	QNV-6032R
	QND-6011
	QND-6021
	QNO-8010R
	QNO-8020R
	QNO-8030R
	QNO-8080R
	QNV-8010R
	QNV-8020R
	QNV-8030R
	QNV-8080R
	QND-8010R
	QND-8020R
	QND-8030R
	QND-8080R
	QNE-8011R
	QNE-8021R
	QND-8011
	QND-8021

Network Camera Version 1.20

This document describes the new and changed features of Hanwha Vision network camera version 1.20.

 Released on October 12, 2018

Common Features

[New Features]

- Added a function called Frame Lock to always maintain the number of frames/sec (fps) of one user selected profile when multi profiles are used.
- Added a function to configure the codec of profiles 1, 2 and 3.
- Added a hostname function.
- Supported LLDP as a steady-state power device.
- Added a function to configure overlay box for detected objects in motion detection, IVA, and face detection.
- Added a function to configure minimum/maximum object size in motion detection.
- Added a function to configure minimum duration in motion detection and Intrusion detection (up to 5 secs).
- Added an audio noise reduction function under Setup – Audio Setup – Audio Setup – Audio in.
- Added the USB connect/disconnect message in SNMP Trap Service.
- Added a function to enable/disable USB port under the Setup – Video & Audio - Video Setup.
- Added a function to configure home position and execute auto run (optical zoom cameras).
- Added queue management, heatmap, people counting (Mobile cameras).
- Added an option of new P-IRIS Tamron lens (P-IRIS supported cameras).
- Added a function to control pan/tilt, area zoom by mouse drag and control zoom by mouse wheel scroll in web viewer (optical zoom cameras and PTZ cameras).

- Added a shock detection function (XNV-6085, XND-6085, XND-6085V, XNP-6120H, XNP-6320H).

[Improvements]

- Improved a function to configure pan/tilt control speed (PTZ cameras).
 - Increased proportional PT mode options to 8 stages and setting is applied at 1x zoom ratio.
- Changed the factory defaults values of UPnP, Bonjour, and Link-Local IPv4 address to disable.
- Improved a function to configure all image parameters other than sensor mode for predefined image preset mode and added 2 UserPreset options.
 - After upgrading firmware from prior to 1.2 version, the previous UserPreset configuration will be applied to UserPreset1 and all schedule configurations will be reset.
- Improved the schedule configuration.
 - Expressed day of the week instead of date.
 - Changed the image preset schedule configuration to same as other schedule configuration.
- Improved indoor representation of WDR low and middle levels.
- Changed the default value of minimum shutter speed to provide optimized value to keep framerate.
- Improved day/night switching timing (Built-in IR LED models).

[Bug fixes]

- Fixed an issue that anti flicker configuration in UserPreset mode is not be applied after reboot.
- Fixed an issue that a certain key data does not work correctly in 802.1x certificate.
- Fixed an issue that the focus does not work correctly via Pelco-D protocol. (External RS-485 control supported models.)
- Fixed an issue that AF operation does not work due to Gyro sensor (PTZ cameras having Gyro sensor).

Security Improvements

- Removed Active-X/NPAPI plug-ins from the web viewer.
- Removed the PHP module from the web viewer.
- Added an SRTP function (TCP /UDP unicast).

Protocol Improvements

- Added a feature to send time data whit UTC format when a user searches recorded data in SD/NAS via SUNAPI protocol.
- Added an attribute that specifies the DPTZ, PTZ, and Zoom capabilities via SUNAPI protocol.
- Improved ONVIF features.
 - Supported motion area configuration in VideoAnalytics service.
 - Supported VideoSourceModes in Media service.
 - Supported UTF-8 format OSD control in Media service.
 - Supported PTZ PresetTour in PTZ service.
 - Supported firmware upgrade.
 - Supported "tns1: VideoSource/MotionAlarm" event.
- Applied the unified SNMP MIB. (Keep backward compatibility, the previous MIB files can be used.)
- Added the likelihood data of sound classification via metadata streaming.

Open Platform Version 3.50 Upgrade

- Added a function to create a profile.
 - Added APIs to use the SUNAPI protocol.
 - Added a feature to write and save system/event log data.
- ※ Open Platform SDK should be upgraded to 3.50 version.

Affected Products

Table 12. Product Family Based On Version 1.20

Major Model	Model Name
XNB-6000	XNB-6000 KNB-2000 KNO-2080RN XNO-6080R XNO-6080RA XNO-6080RS
XNO-6010R	XNO-6010R KNO-2010RN XNO-6020R
XND-6010	XND-6010 XNV-6010
XND-6020	XND-6020R KND-2020RN XNV-6020R
XND-6080	XND-6080 XND-K6080N KND-2080RN XND-6080R XND-6080RV XND-6080V XNV-6080 XNV-6080R XNV-6080RS
XNB-8000	XNB-8000 KNB-5000N KNO-5080RN XNO-8080R XNO-8080RW
XNO-8020R	XNO-8020R XNO-8030R XNO-8040R

Major Model	Model Name
XND-8020R	XND-8020R KND-5020RN XND-8030R XND-8040R KNO-5020RN XNV-8020R XNV-8020RMN XNV-8020RMP XNV-8030R XNV-8040R
XND-8080R	XND-8080R KND-5080RN XND-8080RV XNV-8080R XNV-8080RS
XNF-8010R	XNF-8010R XNF-8010RW XNF-8010RV XNF-8010RVW XNF-8010RVM
XNO-6120R	XNO-6120R KNO-2120RN XNO-6120RS XNV-6120 XNV-6120R XNV-6120RS
XND-L6080R	XND-L6080R XND-L6080RV XND-L6080V XNV-L6080 XNV-L6080R
XNV-6012	XNV-6012 XNV-6012M XNV-6013M XNV-6022R XNV-6022RM

Major Model	Model Name
XNB-6001	XNB-6001 XNB-6005 XND-6085 XND-6085V XNO-6085R
XNB-6005	XNB-6005 XND-6085 XND-6085V XNO-6085R
XND-6011F	XND-6011F
XND-8020F	XND-8020F
XNP-6040H	XNP-6040H
XNP-6120H	XNP-6120H KNP-2120HN
XNP-6320	XNP-6320 XNP-6320H XNP-6320HS QNP-6230 QNP-6230H
XNP-6371RH	XNP-6371RH
XNV-6011	XNV-6011 XNV-6011W
XNV-6085	XNV-6085 XND-6085 XND-6085V
TNO-4050	TNO-4050 TNO-4040 TNO-4051 TNO-4041 TNO-4030
TNB-6030	TNB-6030

Attachment A. Camera version management

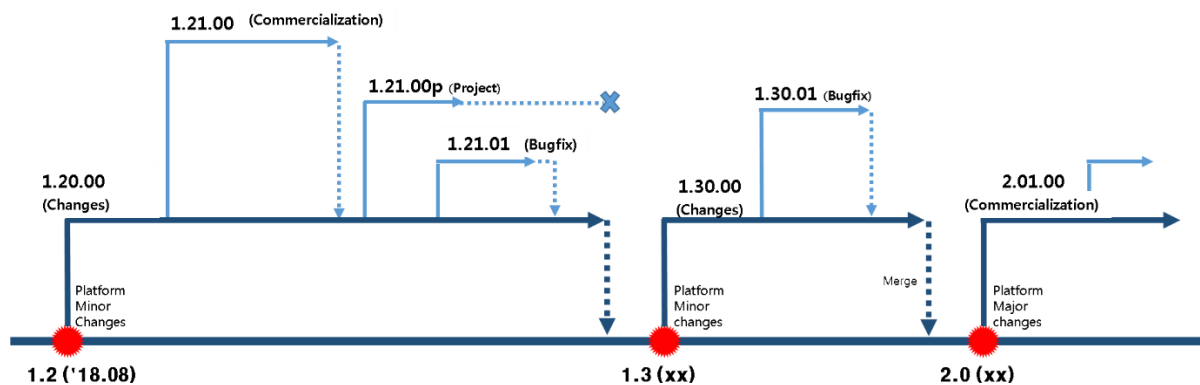
This describes the Hanwha Vision network camera version rule. A camera version is updated when new features are added or bugs are fixed, and there are the following two categories:

- Platform change: Version update due to changes in the software platform structure and major feature changes
- Product change: Version update to fix reported bugs and solve potential problems

Camera Version Management Procedure

The firmware of Hanwha Vision camera products is being developed based on the common platform, and this is developed across all camera product development.

Any features developed for a product firmware will be consolidated into the common platform and applied to new camera products accordingly.



Camera Version Rules

The camera version is structured as below and it is generated using the following rules.

<PlatformMajor>.<PlatformMinor> <ProductMajor>.<ProductMinor>

Platform: Specifies the release version of the common platform

- Major: Reflects any changes in platform structure and major feature changes.
- Minor: Reflects upgrade with new features and consolidated changes that apply to all models.

Product: Specifies the product release version

- Major: Reflects the addition of major product features and changes.
- Minor: Reflects firmware changes for minor fixes that solve reported bugs and potential problems

Each firmware release is displayed using a unique number given to each release type and is a combination of a platform version and a product version. The following examples explain the version rules.



Version 1.20.00 indicates the combination of platform version 1.2 and product version 0.00. It represents the first product that is applied with the common platform version 1.2.



Version 1.22.10 indicates the combination of platform version 1.2 and product version 2.10. It represents a product that is applied with the common platform version 1.2 and updated twice.