

Hanwha Techwin

# Network Camera Version 2.21

## Release Note

v2.21

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### Contact Information

Hanwha Techwin Co., Ltd.

Hanwha Techwin R&D Center, 6, Pangyo-ro 319beon-gil,  
Bundang-gu, Seongnam-si, Gyeonggi-do, 13488, Korea

[www.hanwha-security.com](http://www.hanwha-security.com)

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# HTW Network Camera Version 2.21

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

Released on June 30, 2022

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## 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, PNM-C12083RVD]

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## Affected Products

Table 1. Product Family Based On Version 2.21.

Major Model	Model Name
PNM-C7083RVD	PNM-C7083RVD
PNM-C12083RVD	PNM-C12083RVD

# HTW Network Camera Version 2.11

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

Released on July 5, 2022

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## 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, XNV-C9083R, XND-C9083RV, XNO-C9083R, XNV-C8083R, XND-C8083RV, XNO-C8083R, XNV-C7083R, XND-C7083RV, XNO-C7083R, XNV-C6083R, XND-C6083RV, XNO-C6083R, XNV-9083R, XND-9083RV, XNO-9083R, XNB-9003, XNV-8083R, XND-8083RV, XNO-8083R, XNB-8003, XNV-8093R, XND-8093RV, XNV-6083R, XND-6083RV, XNO-6083R, XNB-6003] ] [v2.11.01, XNV-6123R, XNO-6123R]
- 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]

**[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, XNV-C9083R, XND-C9083RV, XNO-C9083R, XNV-C8083R, XND-C8083RV, XNO-C8083R, XNV-C7083R, XND-C7083RV, XNO-C7083R, XNV-C6083R, XND-C6083RV, XNO-C6083R, XNV-9083R, XND-9083RV, XNO-9083R, XNB-9003, XNV-8083R, XND-8083RV, XNO-8083R, XNB-8003, XNV-8093R, XND-8093RV, XNV-6083R, XND-6083RV, XNO-6083R, XNB-6003]
- 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]

### [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]

## Affected Products

Table 2. Product Family Based On Version 2.11.

Major Model	Model Name
PN0-A6081R	PNO-A6081R PND-A6081R PND-A6081RF PNV-A6081R PND-A6081RV
PNB-A6001	PNB-A6001
PN0-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
XND-9083RV	XNV-9083R XND-9083RV XNO-9083R XNB-9003 XNV-8083R XND-8083RV XNO-8083R XNB-8003 XNV-8093R



Major Model	Model Name
	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

# HTW Network Camera Version 2.10

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

Released on April 21, 2022

## 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-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 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]

## [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 cursor [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, 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, 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]
- 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]
- 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, XNB-5000N, XNO-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, XNO-2010RN, XNO-6010R, XNO-6020R] [v2.10.02, XNO-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]

- 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]



## Affected Products

Table 3. 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 XNO-6080RS
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

Major Model	Model Name
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
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

Major Model	Model Name
	KNO-5080RN
	XNB-8000
	XNO-8080R
	XNO-8080RW
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
	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


Major Model	Model Name
	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
	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

Major Model	Model Name
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
	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



# HTW Network Camera Version 2.01

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

 Released on May 16, 2022

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## 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]

### [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, PNM-8082VT, PNM-9022V] [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]
- 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]
- 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]
- 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]




## Affected Products

Table 4. 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
PNM-9000QB	PNM-9000QB
PNM-8082VT	PNM-8082VT
PNM-9022V	PNM-9022V
XNP-9300RWG	XNP-9300RWG XNP-8300RWG XNP-6400RWG

# HTW Network Camera Version 1.41

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

 Released on June 24, 2022

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## 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]
- [Social distancing detection] function added [v1.41.05, PNO-A9081R, PNB-A9001]
- SLA-C-I3910 lens additionally supported [v1.41.05, PNB-A9001]

### [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]
- 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]
- 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] [1.41.02, KND-5080RG, XNO-6120RG] [v1.41.03, XNP-6320RHG, XNO-L6120RG] [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]
- 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]

## [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]
- Fixed timestamp errors [v1.41.01, PNB-A9001LP] [v1.41.01, PNO-A9081RLP, PNV-A9081RLP, PND-A9081RLP, PND-A9081RVLP, PND-A9081RFLP]

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## 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

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## Protocol Improvements

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

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## 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]

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## Affected Products

Table 5. Product Family Based On Version 1.41

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




Major Model	Model Name
	QND-6012R QND-6022R QND-6032R QNO-6012R QNO-6022R QNO-6032R QNV-6012R QNV-6022R QNV-6032R QND-6011 QND-6021
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
LNO-6072R	LNO-6072R LND-6012R LNO-6032R LNV-6032R LND-6022R LND-6072R LNO-6022R LNV-6012R LNV-6072R LND-6032R LNV-6022R

Major Model	Model Name
	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
KND-5080RG	KND-5080RG
XNO-6120RG	XNO-6120RG
XNP-6320RHG	XNP-6320RHG
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

Major Model	Model Name
	PNV-A9081RLP PND-A9081RLP PND-A9081RVLP PND-A9081RFLP
PNB-A9001LP	PNB-A9001LP

# HTW Network Camera Version 1.40

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

 Released on June 24, 2022

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## 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, 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]
- Modified the distance range of auto focus in [Quick Focus] mode [1.40.03, 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 [1.40.05 TNO-4030T, TNO-4040T, TNO-4041T, TNO-4050T, TNO-4051T, TNU-4041T, TNU-4051T, 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 [1.40.03 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 [1.40.03 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) [1.40.04, 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 [1.40.04, XNB-6000, XNO-6080R] [1.40.03, XNB-6005, XNO-6085R, XNB-8000, XNO-8080R]
- Supports ONVIF Test Tool v20.06 [1.40.02, XNP-6040HG] [v1.40.04, 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]

### [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]

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## Security Improvements

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

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## 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, TNO-4030TR, TNO-4040TR, TNO-4041TR]

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## Affected Products

Table 6. Product Family Based On Version 1.40

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

Major Model	Model Name
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
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



Major Model	Model Name
	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 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

Major Model	Model Name
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
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

Major Model	Model Name
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

# HTW Network Camera Version 1.30

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

Released on JUL 02, 2019

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## 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.

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## 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, TNO-4030TR, TNO-4040TR, TNO-4041TR, TNU-4041T, TNU-4051T]

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## 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 7. 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
XND-8080R	XND-8080R KND-5080RN
XND-8080RV	XND-8080RV
XND-8081RV	XND-8081RV

Major Model	Model Name
	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
XNP-6230	XNP-6230
XNP-6230H	XNP-6230H
XNP-6320	XNP-6320 XNP-6320H


Major Model	Model Name
XNP-6320	XNP-6320HS
	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
XNV-8081Z	XNV-8081Z
	XND-8081VZ
	XND-8081FZ
XNV-L6080	XNV-L6080



Major Model	Model Name
	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

# HTW Network Camera Version 1.21

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

 Released on MAR 18, 2019

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## 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 3. 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

# HTW Network Camera Version 1.20

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

 Released on OCT 12, 2018

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## 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 UserPerset 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).

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## 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 4. 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

Major Model	Model Name
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
XND-8020R	XND-8020R KND-5020RN XND-8030R XND-8040R KNO-5020RN XNV-8020R XNV-8020RMN XNV-8020RMP XNV-8030R XNV-8040R

Major Model	Model Name
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
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

Major Model	Model Name
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. HTW camera version management

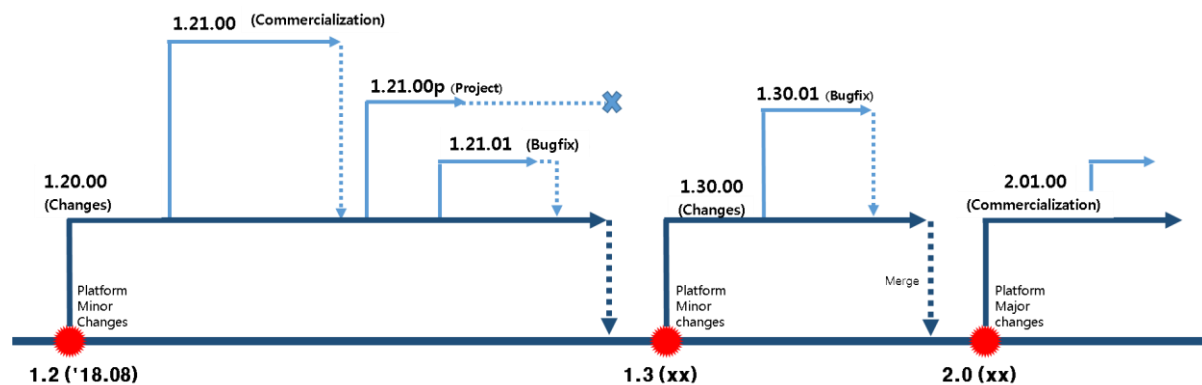
This describes the Hanwha Techwin network camera version rule. A camera version is updated when new features are added or bugs are fixed, and there are the following two categories:

- 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 Techwin camera products are 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.



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## 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.