



January 2023 Product Introduction

PM Team | 01.01.2023

WISENET





Agenda

- **PNM-C9022RV 8MP IR AI Panoramic**
- **XNF-9013RV 12MP IR AI Fisheye**
- **XNB-6002 Wisenet 7 Remote Head Camera**
- **Installation Solutions**
- **QRN-830S NVR**
- **New Generation WAVE Servers**
- **Wisenet SKY Bridge 504+ and HD15 Subscription Service**



PNM-C9022RV

8 MP AI IR Panoramic Camera



Content

1. Panoramic AI

- 1-1. Object Classification: Person/Vehicle
- 1-2. Object Detection
- 1-3. Supports WiseAI App & Best Shot
- 1-4. AI Based Virtual Area
- 1-5. AI Based Virtual Line
- 1-6. IVA Event Triggered by a Classified Object

2. Key Features

- 2-1. Improved Noise Reduction (WiseNR II)
- 2-2. Improved Motion Blur Reduction
- 2-3. AI Based Bandwidth Reduction - WiseStream III
- 2-4. Next Level Cybersecurity
- 2-5. Reinforced Durability
- 2-6. Improved Environmental Protection
- 2-7. Wi-Fi Access
- 2-8. Event Notification
- 2-9. Event Rule
- 2-10. IR Coverage with no Blind Spots

3. Specification & Accessory

- 3-1. Specifications
- 3-2. Accessory Guide of Panoramic AI Camera
- 3-3. Installation Guide
- 3-4. New Model Naming Rule

1. Panoramic Cameras Meet AI

- 1-1. Reducing False Alarm Based on AI
- 1-2. Classified Object Type Based on AI Engine (Person, Vehicle)
- 1-3. WiseAI App
- 1-4. AI Based Virtual Area
- 1-5. AI Based Virtual Line
- 1-6. IVA Event Triggered by a Classified Object Detection



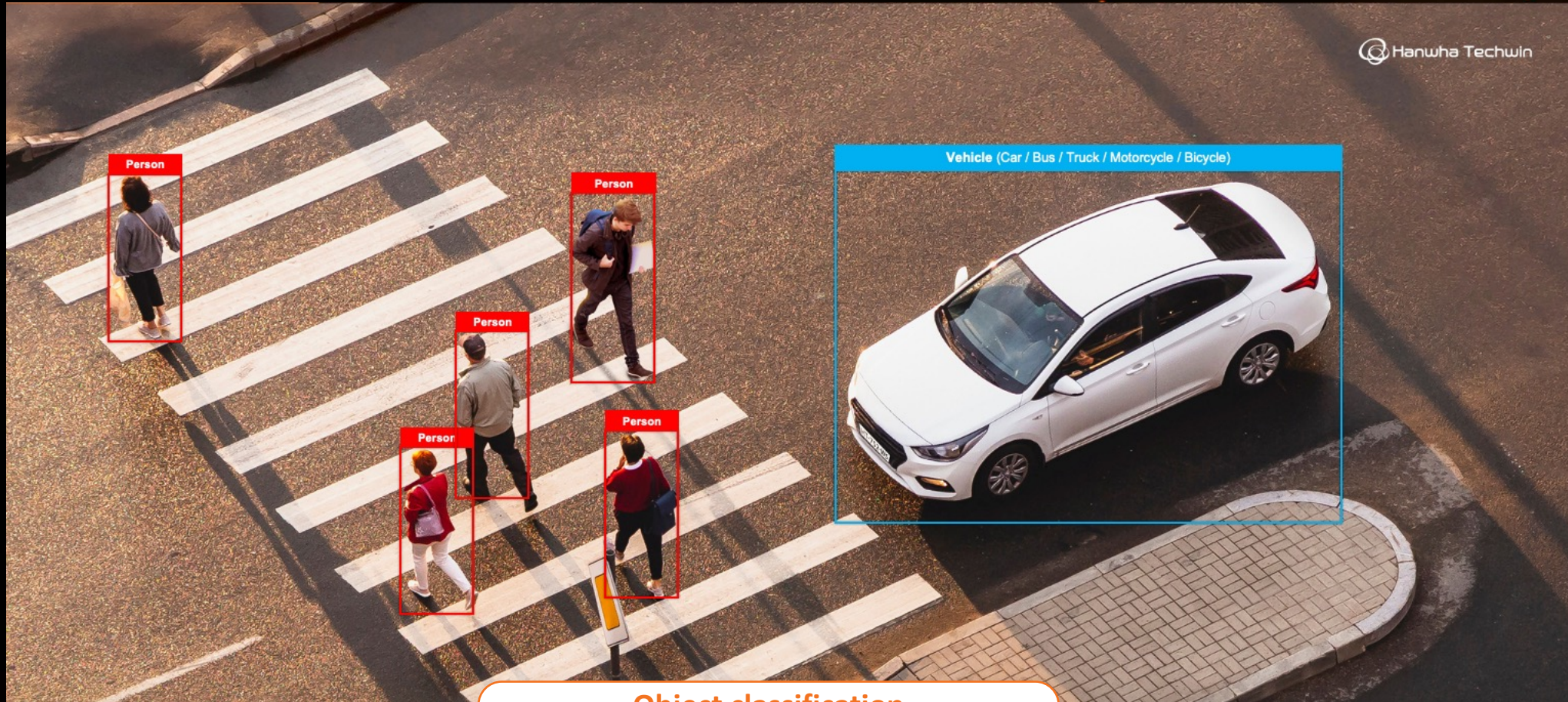
1-1. False Alarm Reduction and Forensic Search



Panoramic AI cameras

The new panoramic AI camera can detect and classify people and vehicles in real time, greatly enhancing video analytics accuracy and allowing AI algorithms to distinguish classified objects and separate them from their surroundings, such as waving trees, shadows, or animals. Panoramic AI cameras can help improve operator efficiency by enabling **forensic search during playback.**

1-2. Object Classification Based on AI engine

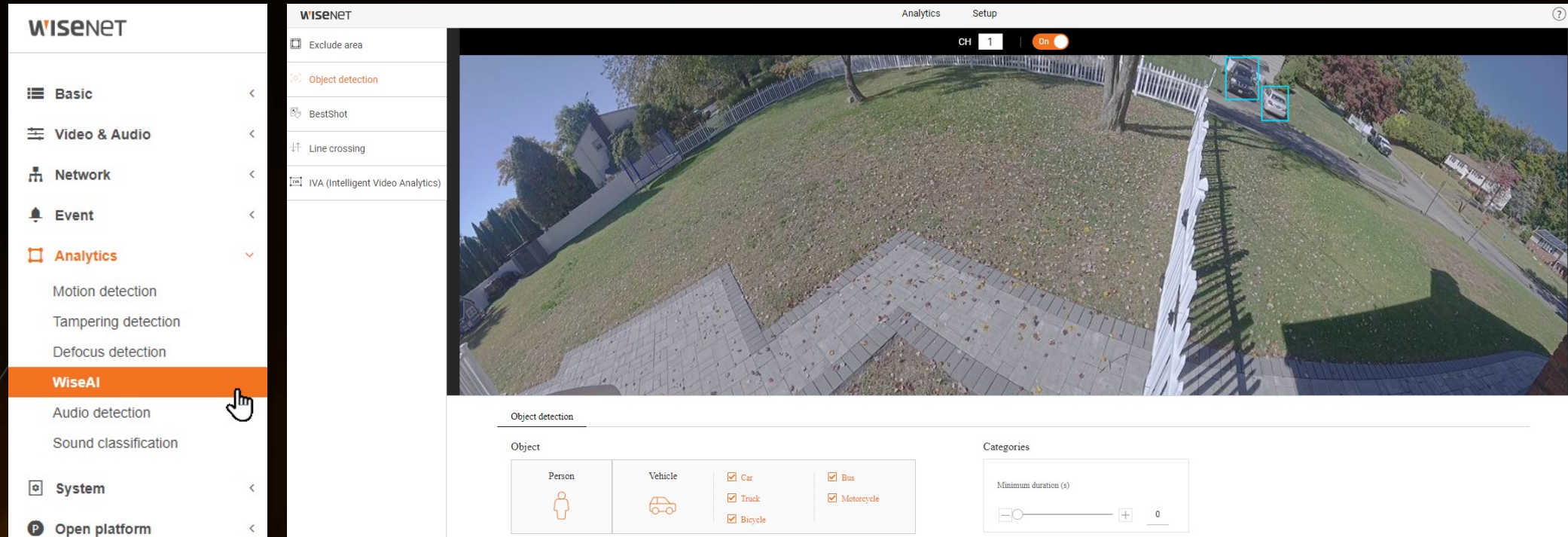


Object classification

The camera generates metadata that includes object type (person, and vehicle), which is sent to the VMS/NVR to be used for forensic search.

Forensic search dramatically enhances the search efficiency and reduces time spent looking for events

1-3. WiseAI App



Open Platform – WiseAI App

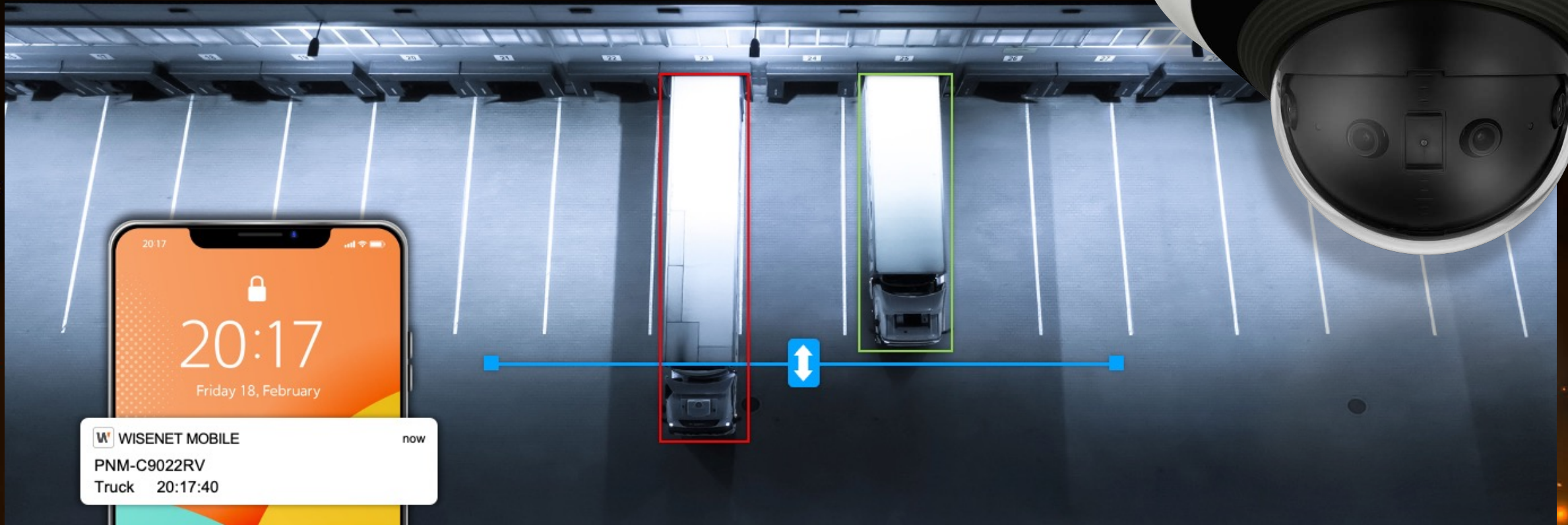
WiseAI app is where the user can create an event triggered by detecting People and Vehicles. In addition, the Wise AI app allows the separation of Deep Learning and Video Analytics from the camera firmware, so the firmware and app can be updated separately.

1-4. AI Based Virtual Area



The intelligent video analytics on the camera utilizes AI person / vehicle detection to trigger events.
The virtual area setup allows enter & exit triggers of detected AI objects.

1-5. AI Based Virtual Line



IVA – Virtual Line

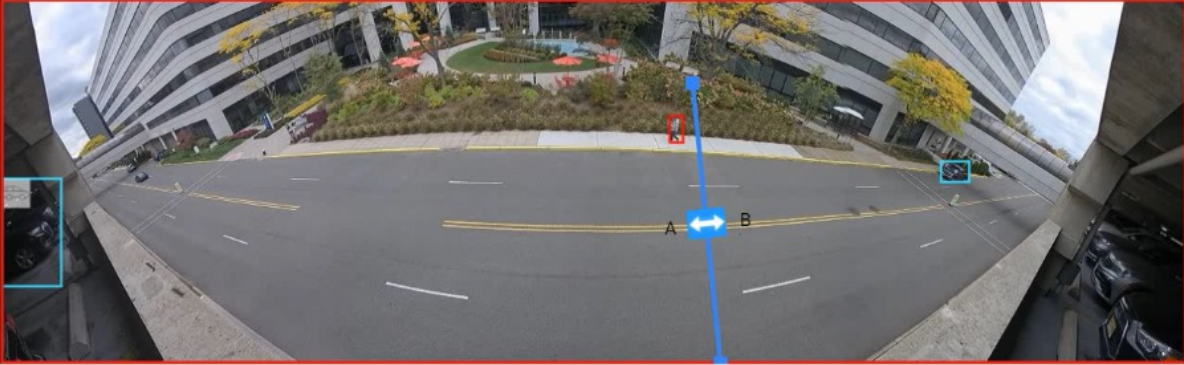
The intelligent video analytics on the camera utilizes AI object detection to trigger events. The virtual line setup allows for the creation of virtual lines that can trigger on detected AI objects crossing in the specified directions.

1-6. IVA Event Triggered by a Classified Object

WISeNET Analytics Setup

CH 1 | On

Line 1/8



Line crossing

Chart

No.	Name
1	name1

Object

Person

Vehicle

- Car
- Truck
- Bicycle
- Bus
- Motorcycle

1. Key Features

- 2-1. Improved Noise Reduction (WiseNR II)
- 2-2. Improved Motion Blur Reduction
- 2-3. AI Based Bandwidth Reduction - WiseStream III
- 2-4. Next Level Cybersecurity
- 2-5. Reinforced Durability
- 2-6. Improved Environmental Protection
- 2-7. Wi-Fi Access
- 2-8. Semi-modular Design
- 2-9. Event Notification
- 2-10. Event Rule
- 2-11. Reducing Total Cost of Ownership



2-1. Improved Noise Reduction (WiseNR II)



The newly applied noise reduction technology, WiseNR II, functions based on AI object detection allows for optimization of image noise and motion blur depending on object movement (person / vehicle).

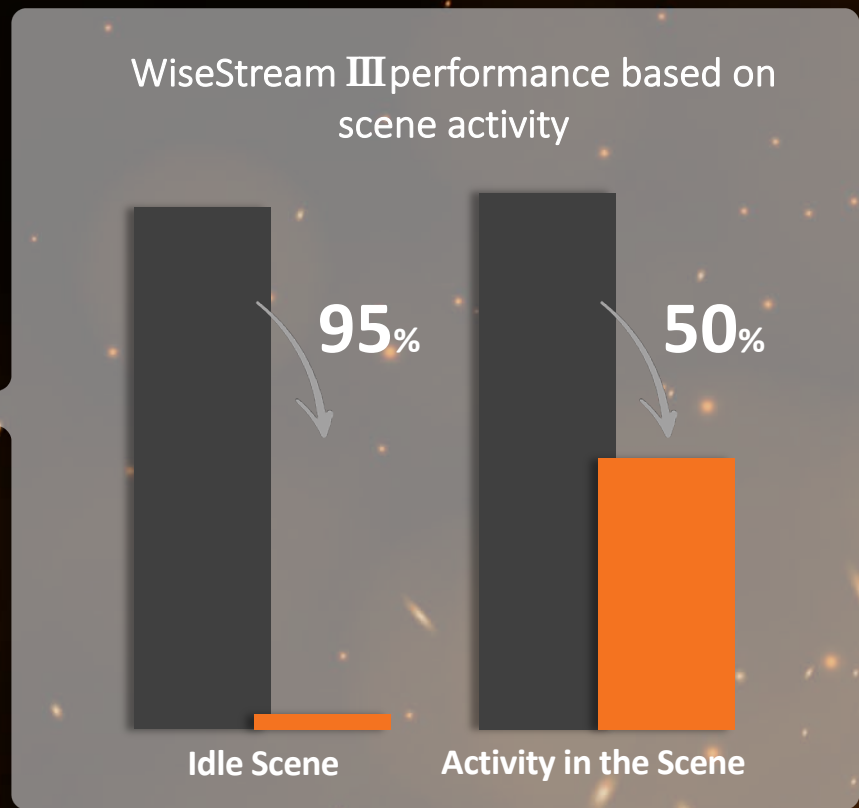
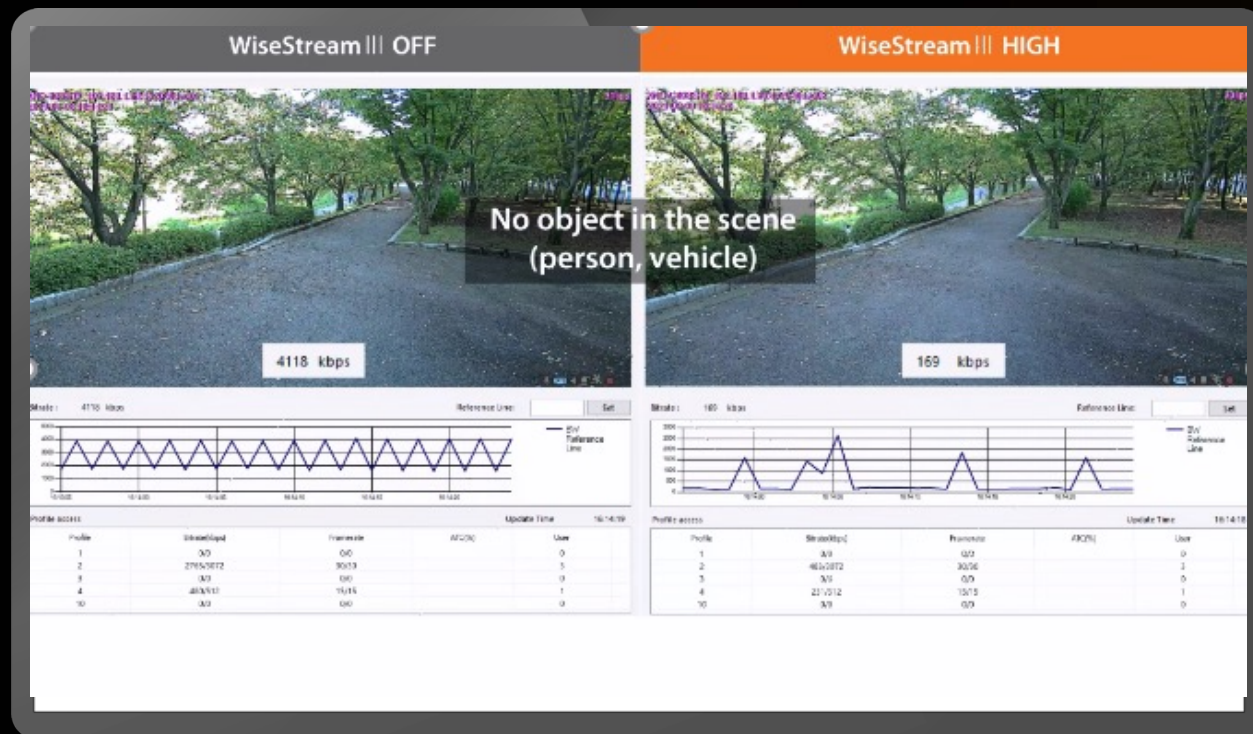
2-2. Improved Motion Blur Reduction



Auto Prefer Shutter Control

The Prefer Shutter Speed feature uses the latest AI technology to identify the appearance and movement of objects and readjusts the Prefer Shutter value to an optimal level to reduce motion blur effects.

2-3. AI Based Bandwidth Reduction - WiseStream III



WiseStream III

A new cutting-edge video compression technology, WiseStream III, operates based on the object detection accomplished by AI algorithms. When combined with the H.265 compression technology, bandwidth can be reduced by up to 80% without compromising the video quality, enabling efficient video management.

2-4. Next Level Cybersecurity



TPM is a hardware module that creates hard to predict 'randomized numbers' and provides enhanced security compared to software producing similar random numbers. Encryption keys can also be saved within the TPM for dual protection.

This allows TPM to serve as secure storage.

Panoramic AI cameras has applied TPM 2.0 certified FIPS 140-2.

FIPS, (The United states 'Federal Information Process Standards), is a security standard for cryptographic modules for federal governments in the US, UK, Canada.

With this certified TPM, users can utilize cameras more securely.

Reinforced Durability



Metal shielded RJ-45

Metal-shielded RJ-45 terminal and enhanced grounding frame can protect the camera from transient voltage (lightning, static electricity).

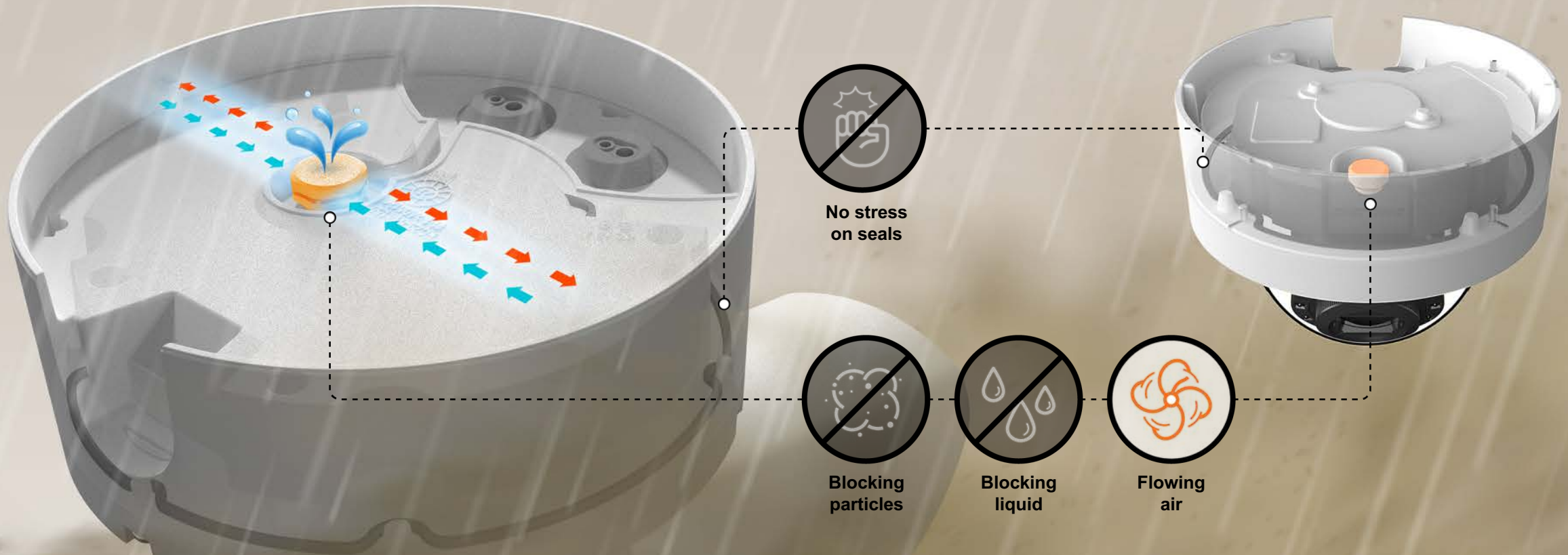
※ Using STP(shielded twisted pair) cables is recommended.



Hard-coated dome bubble

Hard-coated dome bubble provides better resistance to scratches from external stimuli (debris, service handling, etc.). This allows for prolonged visual clarity as abrasions are minimized.

Improved Environmental Protection



Humidity control with Air vent

Air vent prevents condensation and maintain performance of long-term use through water vapor control. Also, it can prevent damage to components and seals through pressure equilibrium.

Wi-Fi for Ease of Installation



Easy connection with camera via Wi-Fi direct

Wisenet installation app by Hanwha Techwin and Wi-Fi dongle can connect camera directly to a Smart Phone.

Allows installers to check the scene position and manually adjust pan/tilt, screen capture.

※ Wisenet installation app can be downloaded from the app store (Wi-Fi dongle and USB OTG cable not included)

2-8. Semi-modular Design




Intuitive camera installation


The new AI Panoramic camera design includes an integrated installation plate. The integrated installation plate with Gang box compatibility and $\frac{3}{4}$ " conduit entrance allows for quick and easy installation


2-9. Event Notification




 Record

 Image | FTP

 Play Audio clip

 Notification/Image | E-mail

 Alarm out

 Notification

- HTTP
- HTTPS
- TCP



When event occurred

Variety of after actions event

Event action can use HTTP/HTTPS/TCP to provide notifications to other devices when an event occurs. This allows for easy integration. It can also be used to trigger a PTZ camera to go to a specific preset on an event trigger.

※ This notification function can be found in the Handover menu

2-10. Event Rule

The screenshot displays the WISENET Event Rule configuration interface. The modal window is titled "Event rule" and shows the configuration for "Rule1".

Event trigger

- CH1 X
IVA Area (WiseAI)
name1
- CH1 X
Sound classification
- CH1 X
Object detection (WiseAI)
 Invert

Event action settings

- Alarm output 1: Off
- E-mail: Enable
- FTP: Enable
- Record: Enable
- Audio clip: Off
- Handover: Off

Duration: 60
Activation time: Always

Buttons: OK, Cancel

Boolean Logic

The newly added Boolean Logic rule opens up new possibilities when setting up event actions. In order to generate an **Event action**, up to 3 **Event triggers** can be grouped together.

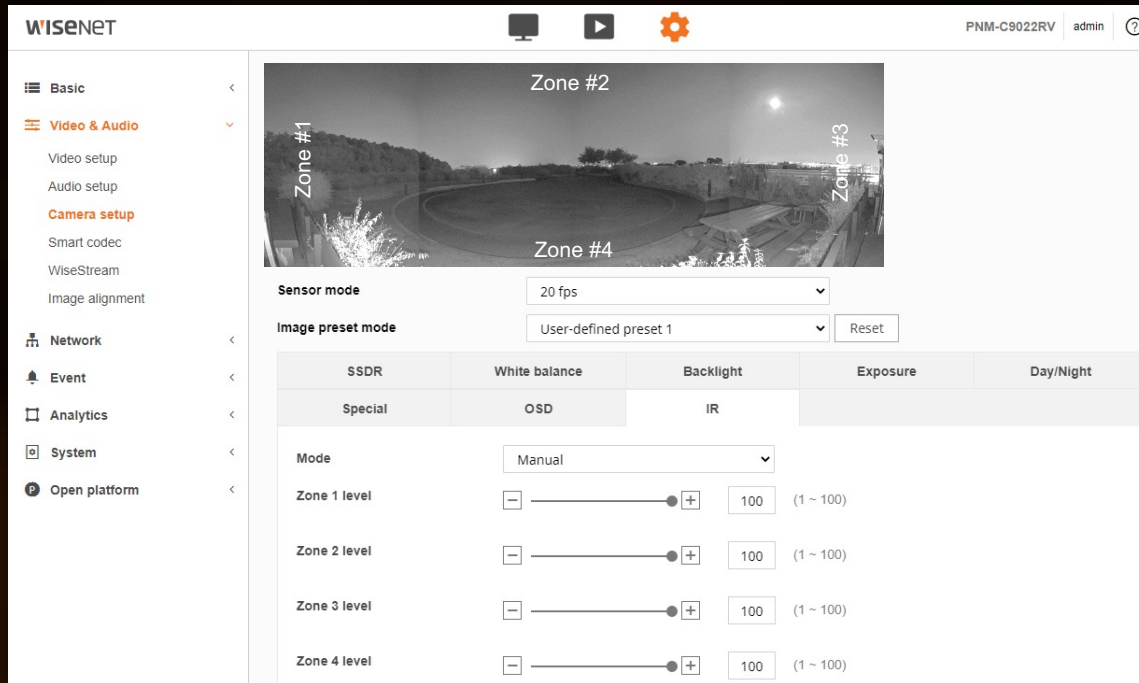
2-11. Reducing Total Cost of Ownership



Monitoring large areas with a single panoramic camera

The panoramic camera can monitor large areas with 209° horizontal FoV, which reduces installation costs, network runs, switch ports, and accessories to reduce the Total Cost of Ownership

2-13. Four Independent IR Zones with no Blind Spots.



Wise IR

The new AI Panoramic camera has four independent IR zones with no coverage blind spots and up to 20m (based on scene) IR viewable length distance. Each zone's IR intensity can be manually adjusted to reduce potential reflection from a nearby object.

3. Specification and Accessory

3-1. Specifications

3-2. Accessory Guide of Panoramic AI Cameras












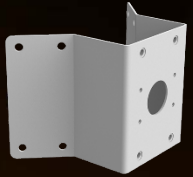
3-1. Specifications

Panoramic AI cameras

- **Fixed Focal lens**
 - ✓ H:209° / V: 60°
- **Frame Rate**
 - ✓ 8 MP @ 20fps
- **WiselR: 20m (65.5ft) 4 Individual zones**
- **Next level cybersecurity**
 - ✓ TPM 2.0 (FIPS 140-2 certified)
- **Panoramic FOV (H: 209°, V: 60°)**
- **Reinforced durability**
 - ✓ IP66, IK10, NEMA4X
 - ✓ Metal shielded RJ-45
 - ✓ Hard-coated dome bubble
 - ✓ Humidity control with Air vent
- **Micro SD/SDHC/SDXC 2 slot: 512GB x 2**
- **Easy installation**
 - ✓ Installation plate
 - ✓ Easy connection with camera via Wi-Fi direct
- **AI technology**
 - ✓ Object detection (Person/Vehicle)
 - * Vehicle (Car/Truck/Bus/Bike/Bicycle)
 - ✓ IVA based on classified object (Person/Vehicle)
- **AI Based features:**
 - ✓ WiseNR II
 - ✓ Auto Prefer shutter control
 - ✓ WiseStream III



3-2. Accessory Guide of AI Panoramic Cameras

				
Hanging Mount SBP-276HMW	Ceiling Mount SBP-300CMW	Ceiling Mount SBP-156CMW	Wall Mount SBP-300WMW	Wall Mount SBP-300WMM1
				
Wall Mount SBP-390WMM2	Parapet Mount SBP-156LMW	Parapet Mount SBP-300LMW	Pole Mount SBP-300PMW1	Corner Mount SBP-300KMW1



X AI Fisheye Camera

XNF-9013RV



WISENET

© 2022 Hanwha Techwin Co., Ltd. All rights reserved.



1. Fisheye meet AI



1. Fisheye camera meet AI

1-1. Demo video

1-2. False alarm reduction and Forensic search

1-3. Object classification based on AI engine

1-4. AI based Virtual area

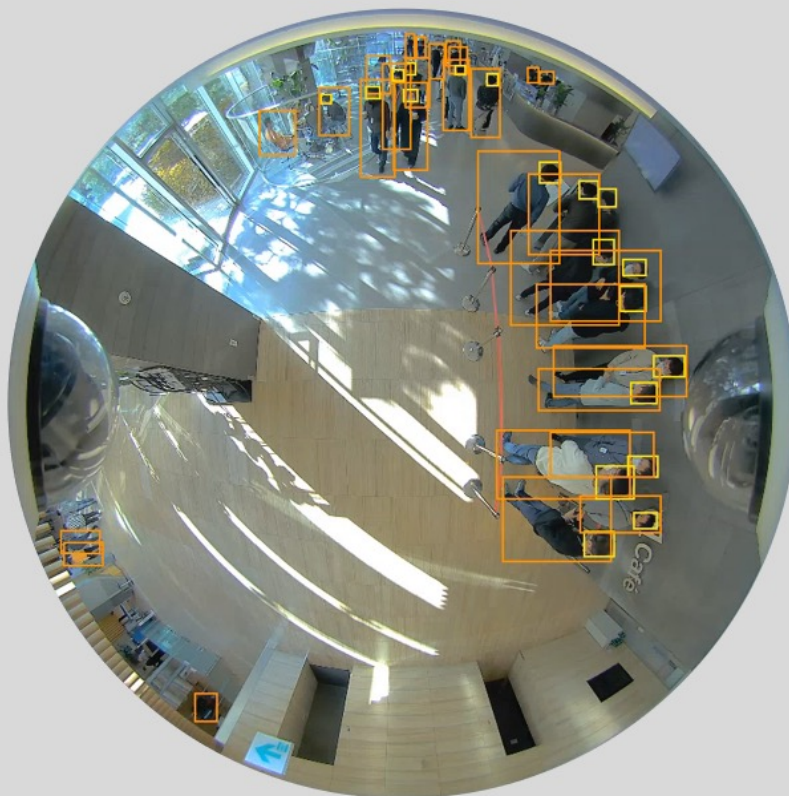
1-5. AI based Virtual line

1. Fisheye camera meet AI

1-1. Demo video

Indoor

Ceiling view



Outdoor

Wall-mode view



AI technology

Classified object type : Person/Face/Vehicle/License plate, Support Detection Shot, Object detection, Virtual line (Crossing/Direction), Virtual area (Loitering/Intrusion/Enter/Exit)

1. Fisheye camera meet AI

1-2. False alarm reduction and Forensic search

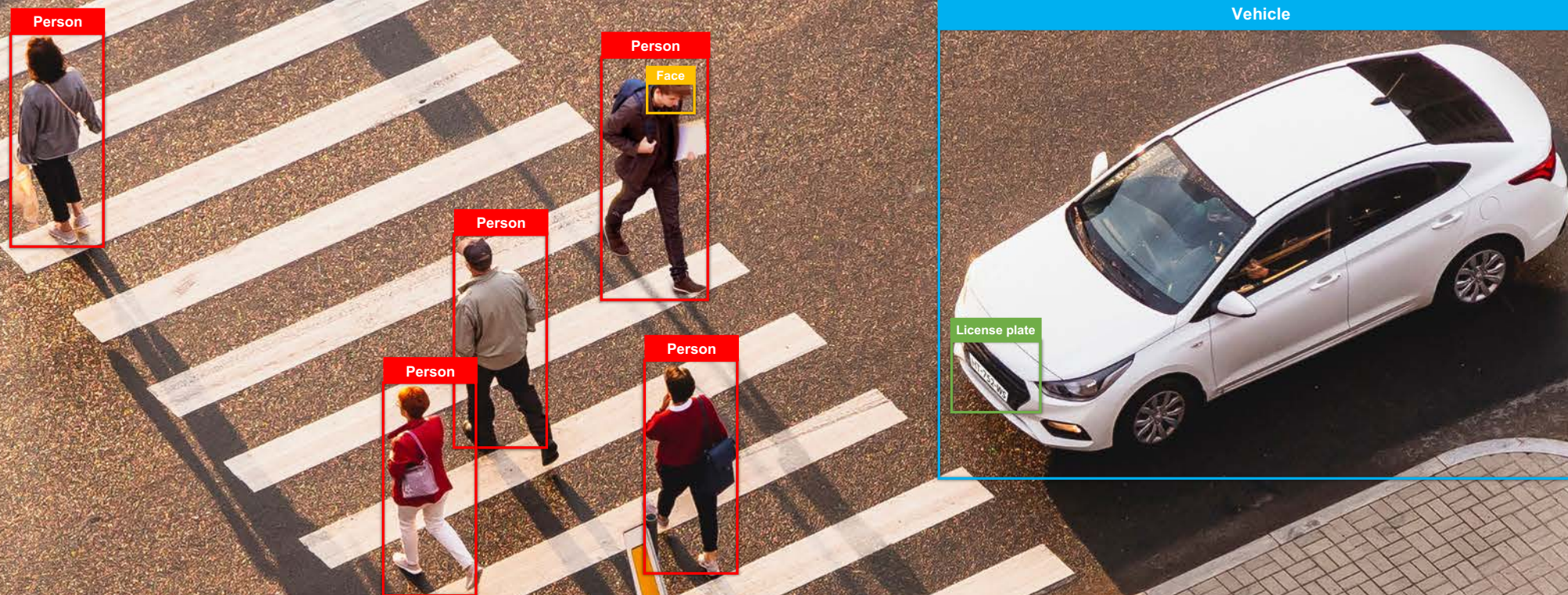


X AI Camera

The new X AI cameras detect and classify people, vehicles, faces, and license plates in real time, greatly enhancing video analytics accuracy and allowing forensic search during playback. AI algorithms can distinguish classified objects and separate them from their surroundings, such as waving trees, shadows, or animals. Thus, X AI cameras can help improve operator efficiency.

1. Fisheye camera meet AI

1-3. Object classification based on AI engine

**Object classification**

The camera generates metadata that includes object type (person, face, vehicle, license plate), which is sent to the VMS/NVR to be used for forensic search. Forensic search dramatically enhances the search efficiency and reduces time spent looking for events

1. Fisheye camera meet AI

1-4. AI based Virtual Area

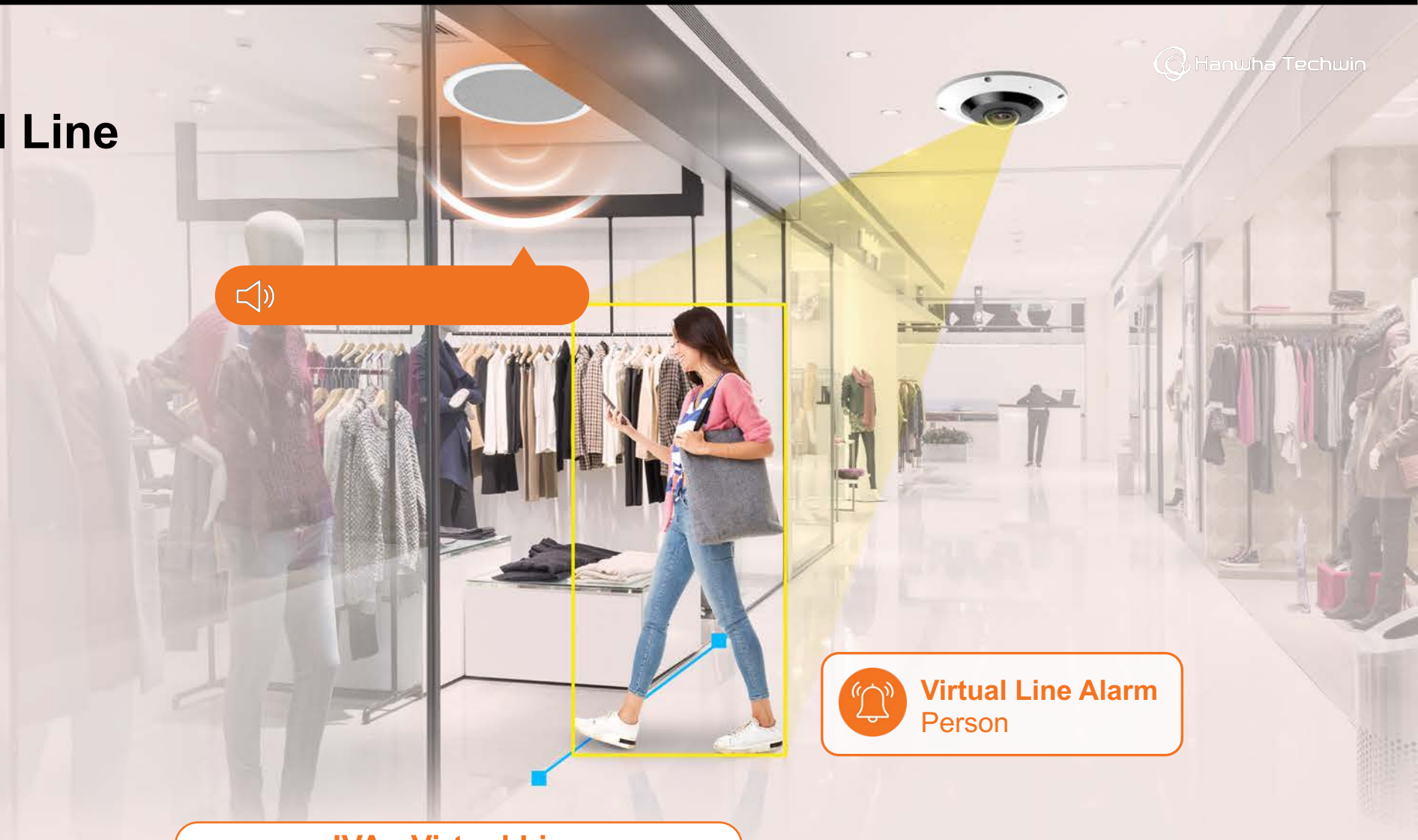


IVA - Virtual Area

The intelligent video analytics on the camera utilizes AI object detection to trigger events. The virtual area supports loitering, intrusion, enter & exit triggers of detected AI objects.

1. Fisheye camera meet AI

1-5. AI based Virtual Line



IVA - Virtual Line

The intelligent video analytics on the camera utilizes AI object detection to trigger events. The **virtual line** allows line crossing in a specified direction to trigger detected AI objects.

2. Key features

- 2-1. Virtual channel support
- 2-2. Improved noise reduction
- 2-3. Improved motion blur reduction
- 2-4. AI based bandwidth reduction
- 2-5. Improved WDR

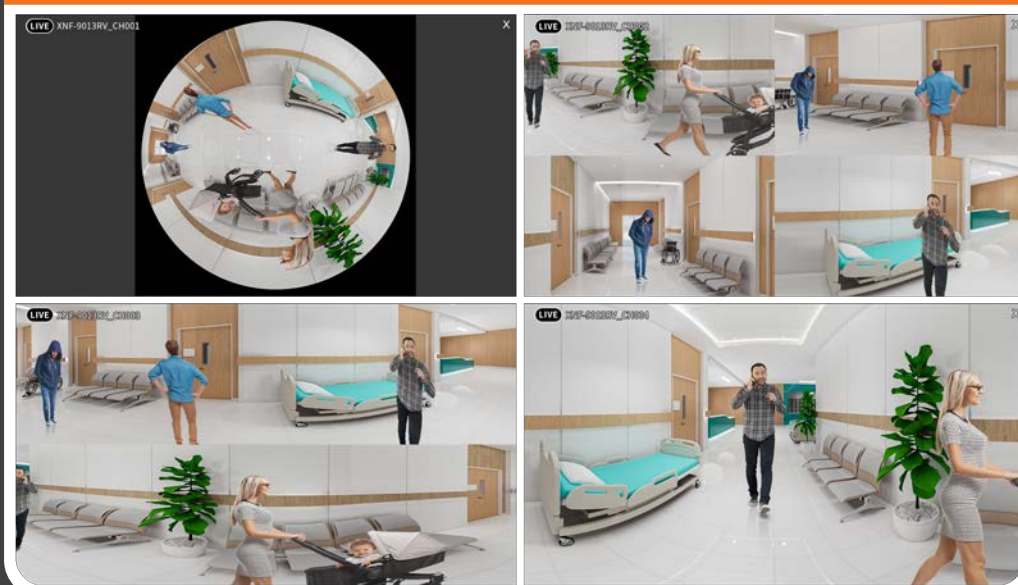
- 2-6. Advanced IR control
- 2-7. WisePower
- 2-8. Improved audio performance
- 2-9. Proprietary Wisenet7 SoC equipped
- 2-10. Next level cybersecurity

- 2-11. Reinforced durability
- 2-12. Event rule
- 2-13. Event notification
- 2-14. Easy Install Design
- 2-15. Compatible VMS

2. Key features

2-1. Virtual channel support

Virtual channel monitoring



Streaming performance

Up to 5 virtual channel support for original view and four quad view monitoring

- **H.265/H.264**
Original view-30fps@(3008x3008~480x480)
Double panorama-30fps@(3584x1792~640x320)
Single panorama-30fps@(3584x896~640x160)
Quad view-30fps@(3584x2688~640x480)
Quad1/2/3/4-30fps@(1792x1344~640x480)
- **MJPEG** : 30fps@1080x1080
- **Multiple streaming** (Up to 10 profiles)

Onboard dewarping

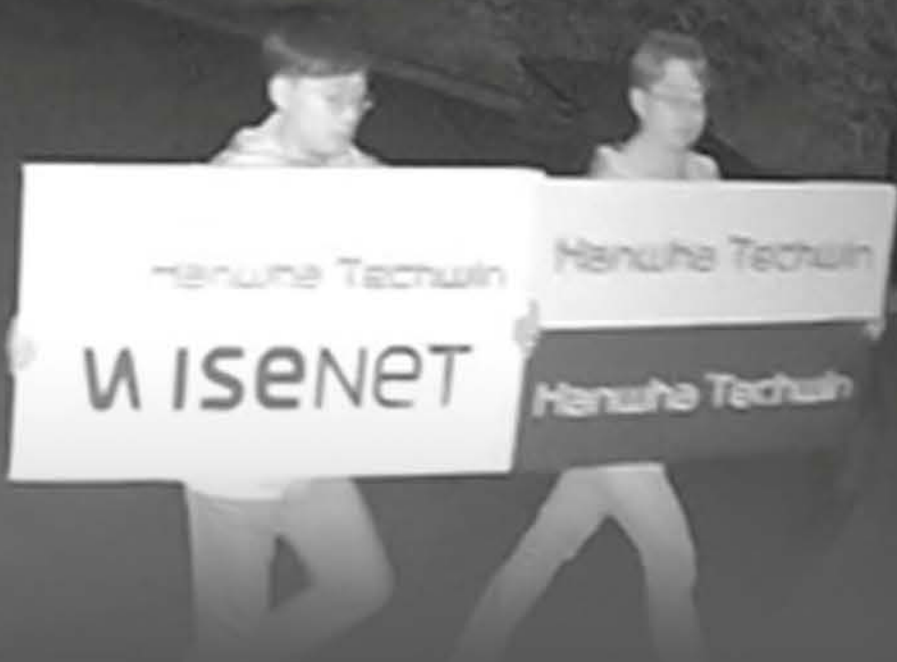
Hanwha's Fisheye camera supports simultaneous output of up to 5 channels, providing convenient real-time monitoring. Original view, Double panorama, Single panorama, Quad view, Quad1, Quad2, Quad3, Quad4 can be selected and configured.

Camera appears as a multi-directional to VMS for easy integration.

2. Key features

2-2. Improved noise reduction

OFF WiseNRII



WiseNRII ON



WiseNRII

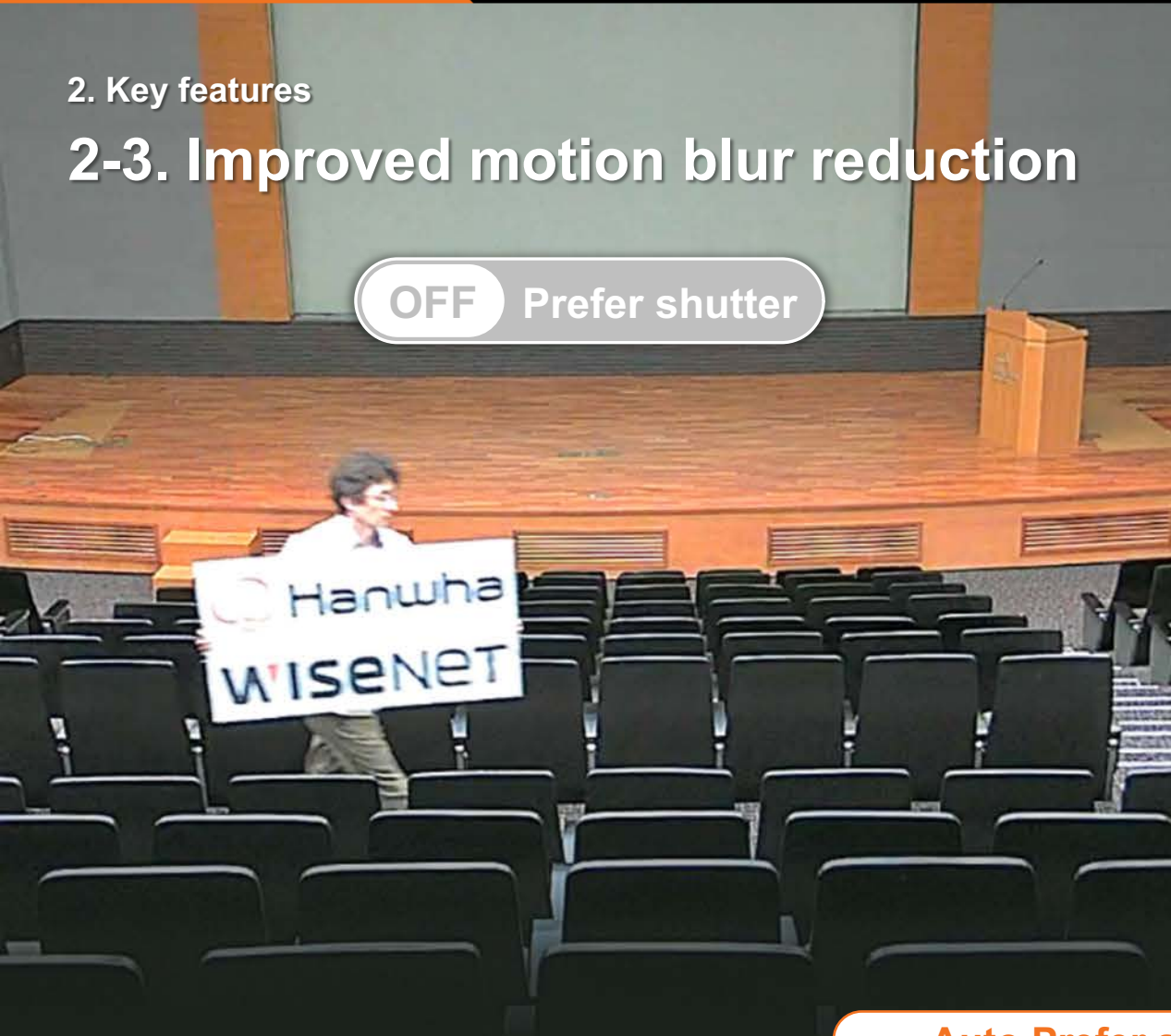
The newly applied noise reduction technology, WiseNRII, functions based on AI object detection allows for optimization of image noise and motion blur depending on object movement (person / vehicle).

2. Key features

2-3. Improved motion blur reduction

OFF Prefer shutter

Prefer shutter ON

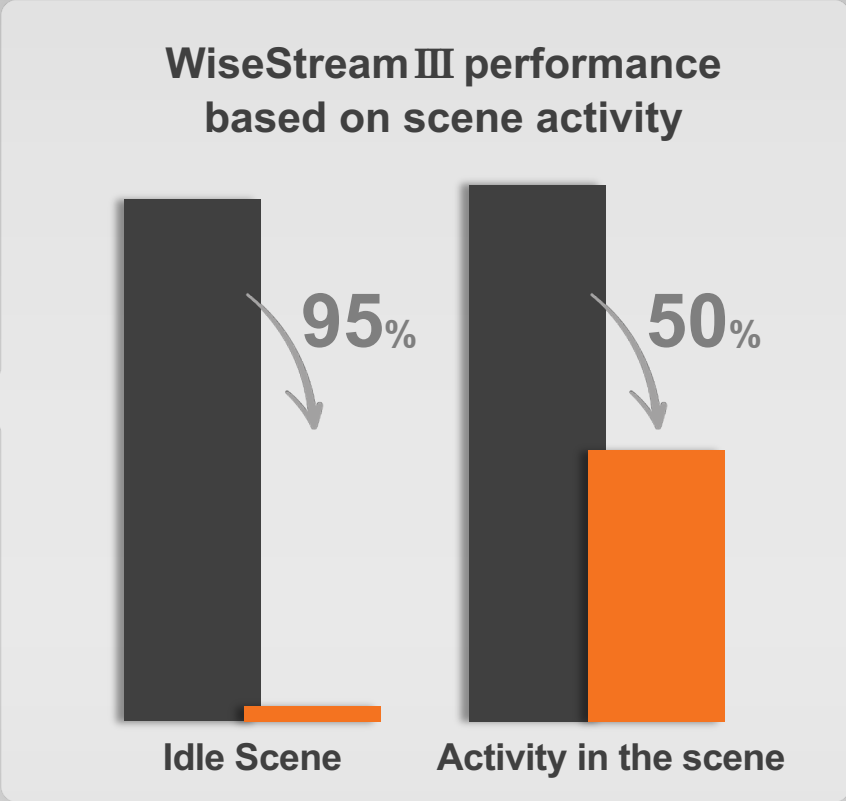
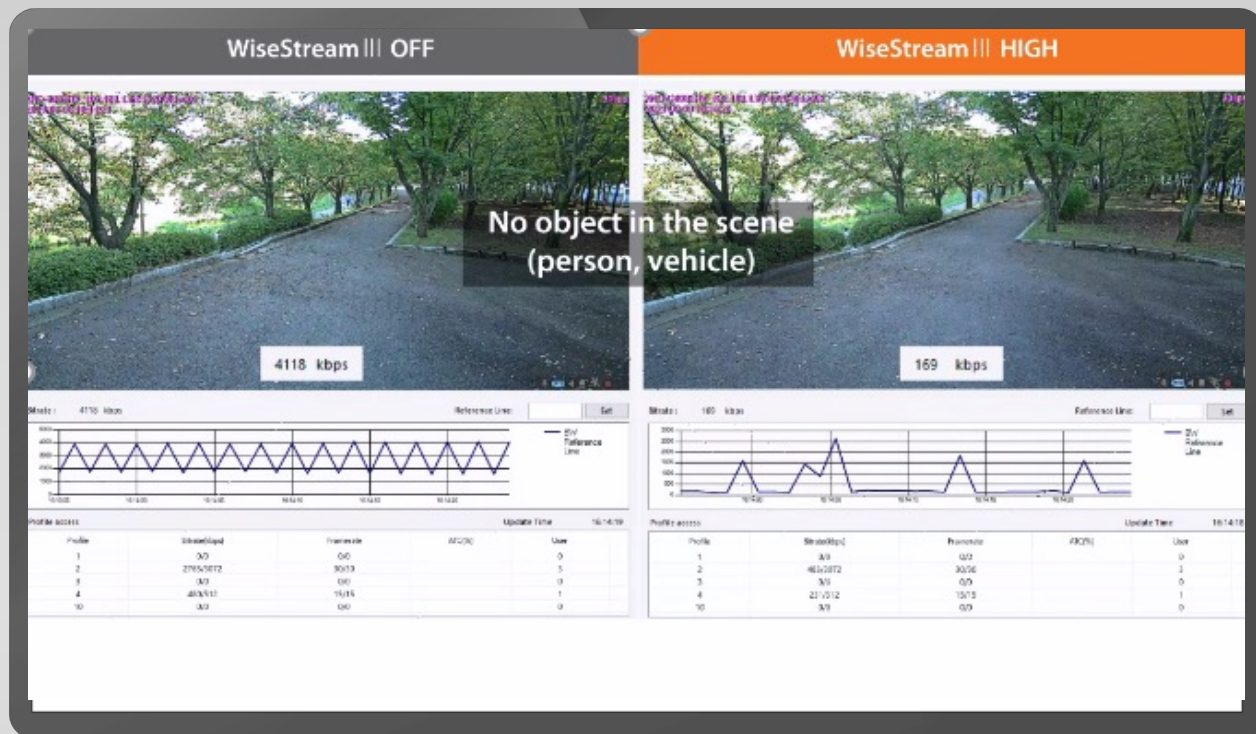


Auto Prefer shutter control

The Prefer Shutter Speed feature uses the latest AI technology to identify the appearance and movement of objects and readjusts the Prefer Shutter value to an optimal level to reduce motion blur of fast moving objects.

2. Key features

2-4. AI based bandwidth reduction



WiseStream III

A new cutting edge video compression technology WiseStream III operates based on the object detection accomplished by AI algorithms. When combined with the H.265 compression technology, bandwidth can be reduced by up to 80% without compromising the video quality, enabling efficient video management.

2. Key features

2-5. Improved WDR

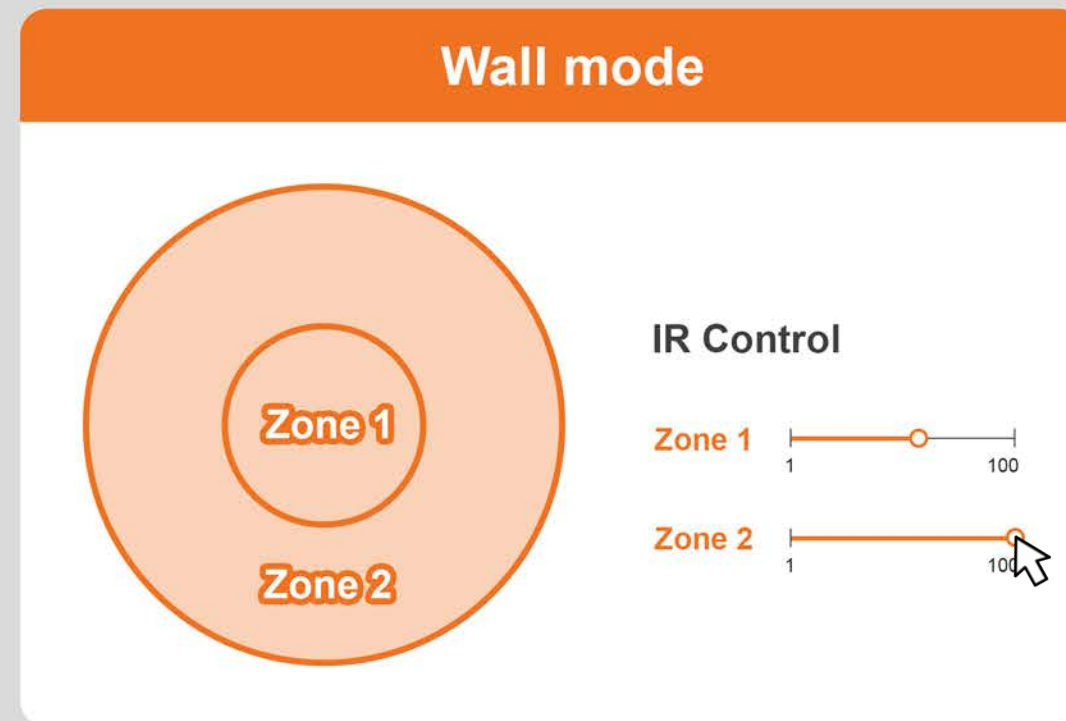
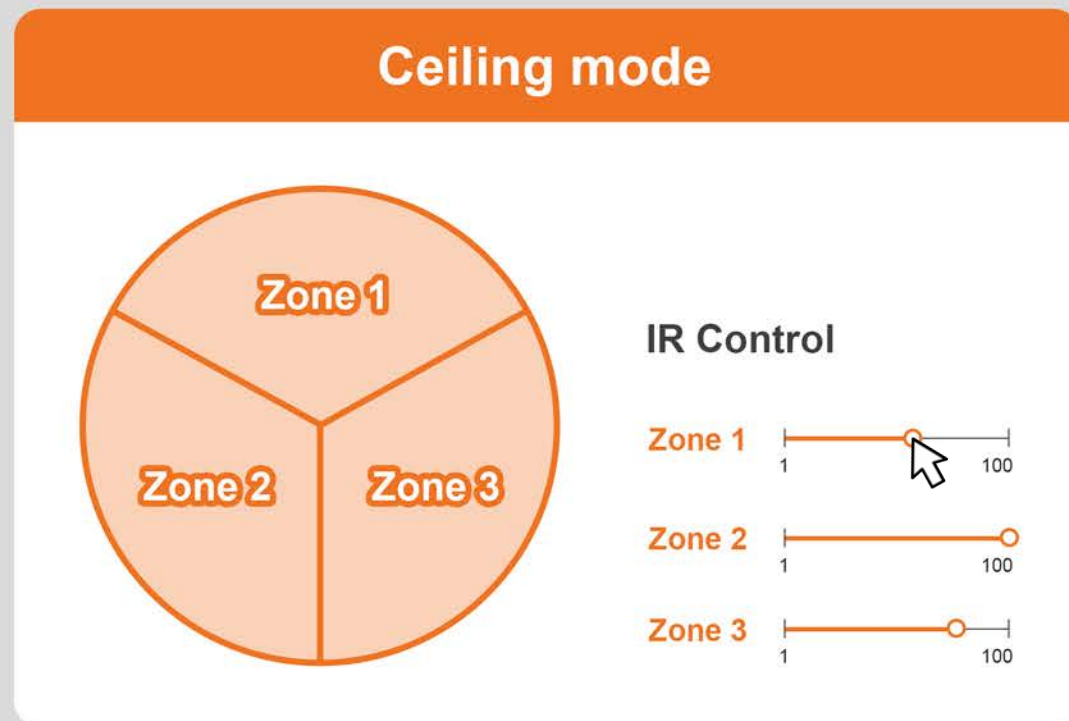


extremeWDR

extremeWDR uses scene analysis technology to minimize motion artifacts by optimizing differences such as tone and contrast during frame synthesis. In addition, local contrast enhancement technology, which emphasizes hazy(or blurred) areas step by step, improves the detail and clarity of images.

2. Key features

2-6. Advanced IR control



WiseIR, PoE mode

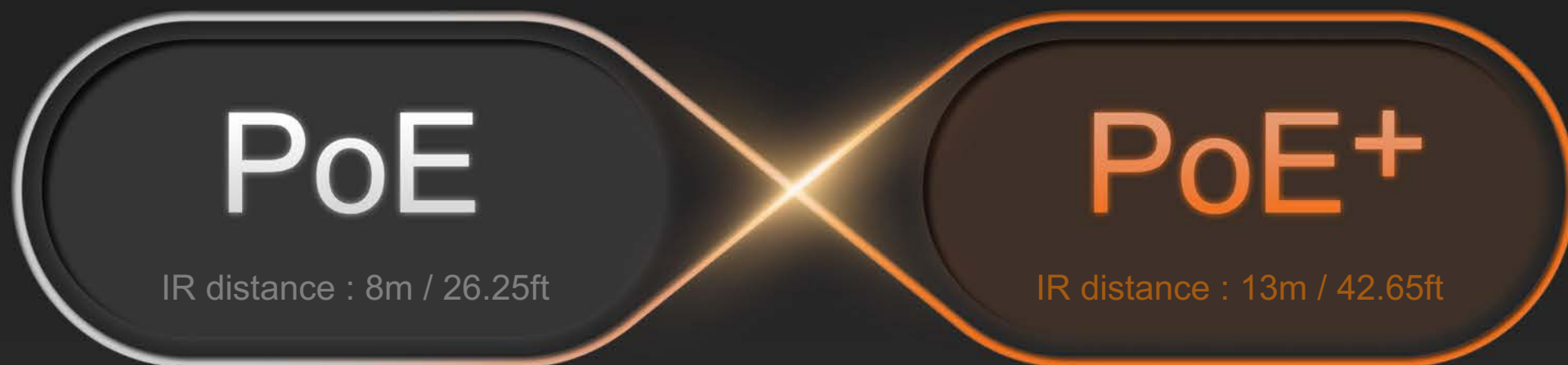
WiseIR is an advanced IR function of Hanwha Techwin. The WiseIR function allows the user to manually select a zone and switch IR on/off or adjust the IR power level. WiseIR helps to prevent over saturation. There are two different layouts according to the installation type.

2. Key features

2-7. WisePower

Easy Management of PoE / PoE+ usage

The only spec change between PoE / PoE+ is the IR distance.



PoE mode

The XNF-9013RV supports two power modes: PoE and PoE+. This allows it to work according to the customer's system environment. In addition, it automatically tests the performance of the power source when switching to PoE+ mode, and if the power source is not sufficient, it automatically switches back to PoE mode for safe operations. If PoE+ isn't required, PoE saves power, lowered switch costs, etc.

2. Key features

2-8. Improved audio performance

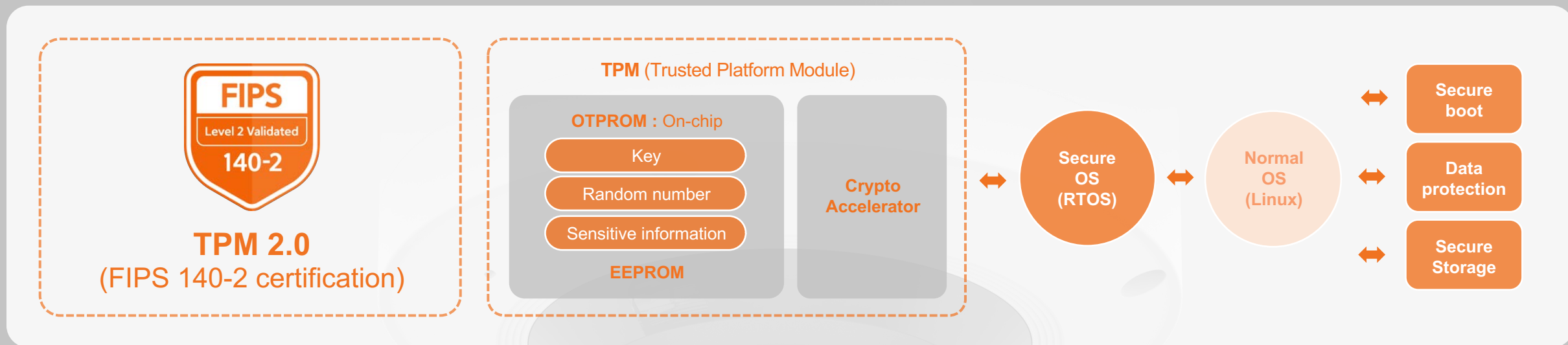


The XNF-9013RV camera supports both Built-in MIC and Line-in/out. It is useful for real-time monitoring of audio, and audio recording and playback. The built-in MIC provides audio usage without additional mic device installation. Additional Wisenet Audio speaker installation options also can help with designing the perfect customer solution.

2. Key features

2-10. Next level cybersecurity

The cybersecurity of the new X AI camera validates the boot process, securely stores key information, and preempts hacking risk with unauthorized access blocking. Our cameras also have been certified as Secure by default and includes a device certificate from our Root CA. As a result, we can provide industry-leading end-to-end cybersecurity to the customer.



✓ Data Protection

- Secure Storage/OS

✓ Improved security

- TPM 2.0(FIPS 140-2 level2), Secure by Default Certified
- Hanwha Techwin private device certificate Root CA

✓ Integrity

- Secure Boot
- Secure Open Platform App
- Verify Firmware Forgery

✓ Secured Hardware

- Secure JTAG

2. Key features

2-11. Reinforced durability



Metal shielded RJ-45

Metal-shielded RJ-45 terminal and enhanced grounding frame structures can protect the camera from transient voltage (lightning, static electricity).

※ Using STP (shielded twisted pair) cables is recommended.



Non-coated vs Hard-coated

Hard-coated dome bubble

Hard-coated dome bubble provides better resistance to scratches from external stimuli (sand, hand, etc.).

The degradation of resolution due to scratches can be minimized.

2. Key features

2-12. Event rule

Event trigger Settings


IVA Area + Person

+


Line crossing

+


Object detection

➔



- IVA Area + Person ✓
- Line crossing
- Object detection ✓

No Alarm

VS



- IVA Area + Person ✓
- Line crossing ✓
- Object detection ✓

Alarm


Boolean Logic


Newly added Boolean Logic rule to our fisheye cameras opens up new possibilities when setting up event action. In order to generate single **Event action**, up to 3 **Event triggers** can be grouped together.


2. Key features


2-13. Event notification



 **Record**

 **Alarm out**
 ※ Via SPM-4210 I/O box

 **Image** | **FTP**

 **E-mail**
 Notification/
 Image


When event occurred

 **Notification** |

- HTTP
- HTTPS
- TCP

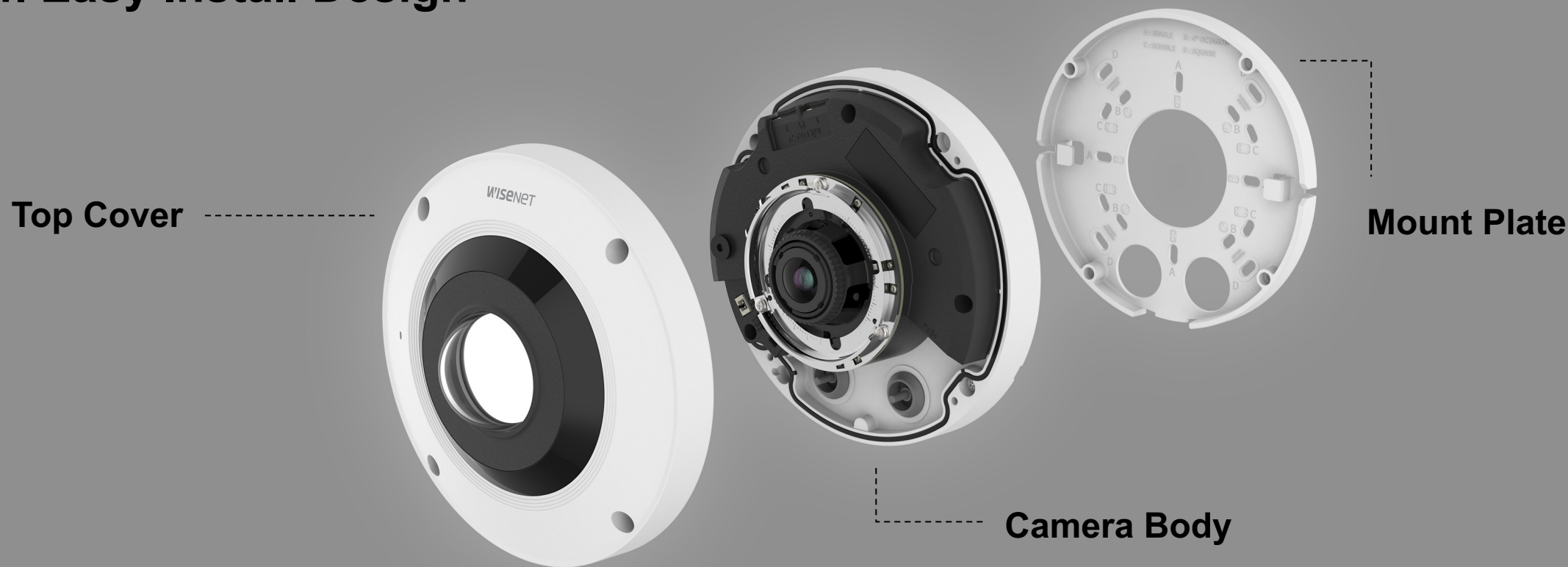
Variety event action

An event action has been added that uses HTTP/HTTPS/TCP to give notifications to other devices when an event occurs. This allows for easy integration. It can even be used to trigger a PTZ to go to a preset on an event.

※ You can find the notification function in the Handover menu

2. Key features

2-14. Easy Install Design



Intuitive camera installation

The fisheye camera design includes an integrated installation plate.

The Integrated installation plate has Gang box compatibility and $\frac{3}{4}$ " conduit entrance for quick and easy installation

3. Specification and Accessory

3-1. Specifications

3-2. Model description

3-3. Accessory guide

3. Specification & Accessory

3-1. Specifications







12MP Sensor, 1.08mm fisheye lens

- **Resolution/Framerate**
Original view-30fps@3008x3008
Double panorama-30fps@3584x1792
Single panorama-30fps@3584x896
- **AI technology**
Classified object type: Person/Face/Vehicle/License plate
Support Detection Shot
Object detection - Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit)
- **Improved image quality**
extreme WDR by Scene Analysis and Local contrast enhancement
WiseNR II, Auto prefer shutter control based on AI
- **WiseStream III based on AI**
- **Next level cybersecurity**
Device Certificate(Hanwha Techwin Root CA, pre-installed)
TPM 2.0 (FIPS 140-2 certified), Secure OS/boot/storage, Verified FW forgery
- **IR distance: PoE+ mode - 13m, PoE mode - 8m**
- **Micro SD/SDHC/SDXC 2 slot: Maximum 1TB (512GB x 2)**
- **Reinforced durability**
IP66, NEMA4X, IK10, Metal shielded RJ-45
Hard-coated dome bubble
- **Additional accessory**
Black Skin cover (SBC-160BF)
Tilted wall mount (SBP-160TMW1)

3. Specification & Accessory






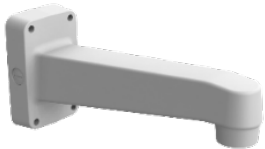







3-2. Model description

X fisheye lineup

Image	Model name	Description
	XNF-9013RV (New)	<p>X series 12 MP sensor 360° Outdoor Fisheye <u>Object detection/IVA(Based on AI engine)</u> 1.08mm Stereographic type lens, Max 30fps(3008x3008), WDR(120dB), Wise IR, PoE : 8m(26.25ft)/PoE+ : 13m(42.65ft), TPM 2.0(FIPS 140-2 certified), 2 microSD slot, IP66/NEMA 4X/IK10, NDAA compliant</p>
	XNF-9010RV	<p>X series 12 MP sensor 360° Outdoor Fisheye 1.08mm Stereographic type lens, Max 30fps(3008x3008), WDR(120dB), Wise IR, PoE : 8m(26.25ft)/PoE+ : 13m(42.65ft), TPM 2.0(FIPS 140-2 certified), 2 microSD slot, IP66/NEMA 4X/IK10, NDAA compliant</p>
	XNF-9010RVM	<p>X series 12 MP sensor 360° Outdoor Fisheye (Mobile) <u>M12 Mobile connector, EN50155 class T3 mobile certified</u> 1.08mm Stereographic type lens, Max 30fps(3008x3008), WDR(120dB), Wise IR, PoE : 8m(26.25ft)/PoE+ : 13m(42.65ft), TPM 2.0(FIPS 140-2 certified), 2 microSD slot, IP66/NEMA 4X/IK10, NDAA compliant</p>
	XNF-9010RS	<p>X series 12MP sensor Stainless Steel IR Fisheye <u>NSF/ANSI Standard 169 Special Purpose Food Equipment and Devices</u> 1.08mm Stereographic type lens, Max 30fps(3008x3008), WDR(120dB), Wise IR, PoE : 8m(26.25ft)/PoE+ : 13m(42.65ft), TPM 2.0(FIPS 140-2 certified), 2 microSD slot, IP66/IP67/IP6K9K/IK10+/NEMA4X, NDAA compliant</p>

3. Specification & Accessory

3-3. Accessory guide of XNF-9013RV / 9010RV / 9010RVM

		Plenum 		
<p>Hanging Mount SBP-167HMW</p>	<p>Ceiling Mount SBP-300CMW</p>	<p>In-ceiling Housing SHD-1600FPW(white)</p>	<p>Wall Mount SBP-300WMW1</p>	<p>Wall Mount SBP-300WMW</p>
				
<p>Wall Mount SBP-390WMW2</p>	<p>Wall Mount Base SBP-300BW</p>	<p>Pole Mount SBP-300PMW1</p>	<p>Corner Mount SBP-300KMW1</p>	<p>Parapet Mount SBP-300LMW</p>
				
<p>Installation Box SBP-300NBW</p>	<p>Tilt Mount SBP-160TMW1</p>	<p>Skin Cover SBC-160BF (※ XNF-9013RV Only)</p>		

Ceiling

(XNF-9013RV / 9010RV / 9010RVM)



Ceiling Mount



SBP-300CMW



Hanging Mount



SBP-167HMW

In-ceiling Housing

Plenum



SHD-1600FPW

Wall

(XNF-9013RV / 9010RV / 9010RVM)



Tilt Mount



SBP-160TMW1

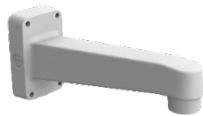


Wall Mount

Option



Installation Box
SBP-300NBW



SBP-390MMW2



Option



Installation Box
SBP-300NBW



Wall Mount Base
SBP-300BW



SBP-300MMW1



SBP-300MMW



SBP-167HMW

Hanging Mount

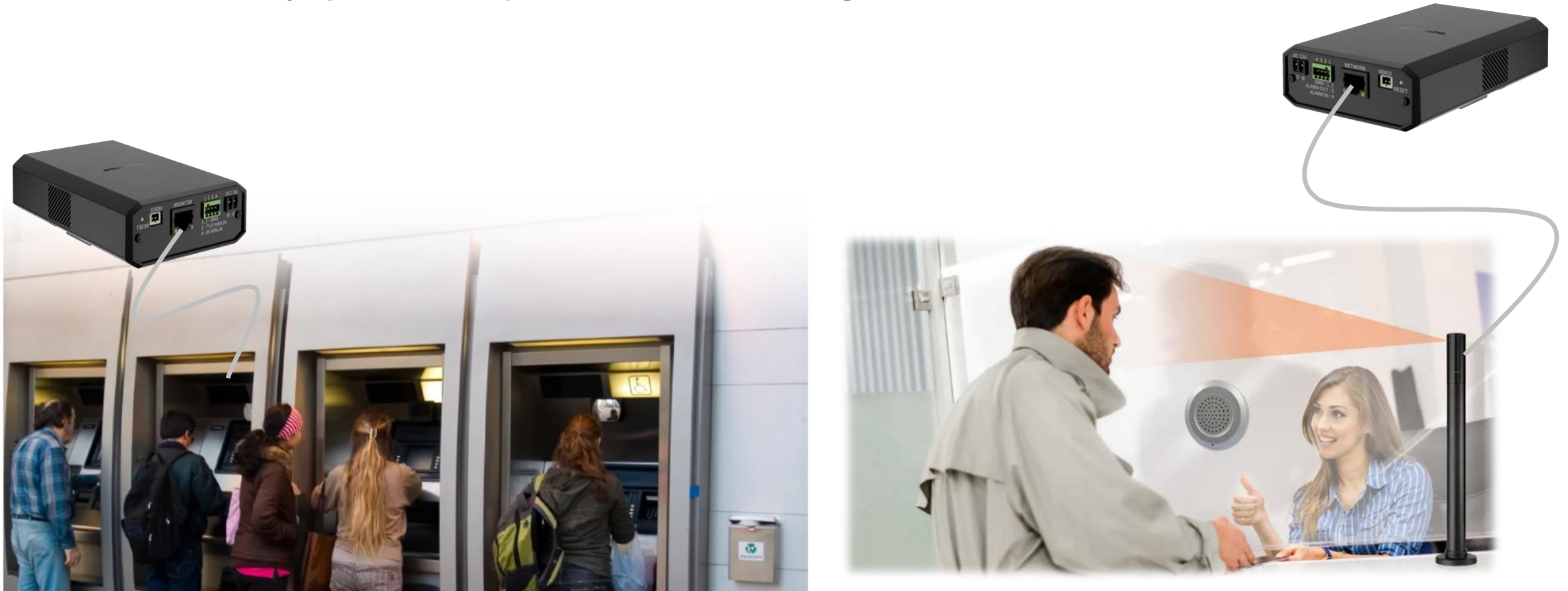
Remote Head Camera XNB-6002



XNB-6002

Remote head camera

WN7 X series covert camera is a perfect solution for the banking vertical to secure ATMs, Tellers, or any space that requires discrete monitoring.



Remote Head Camera

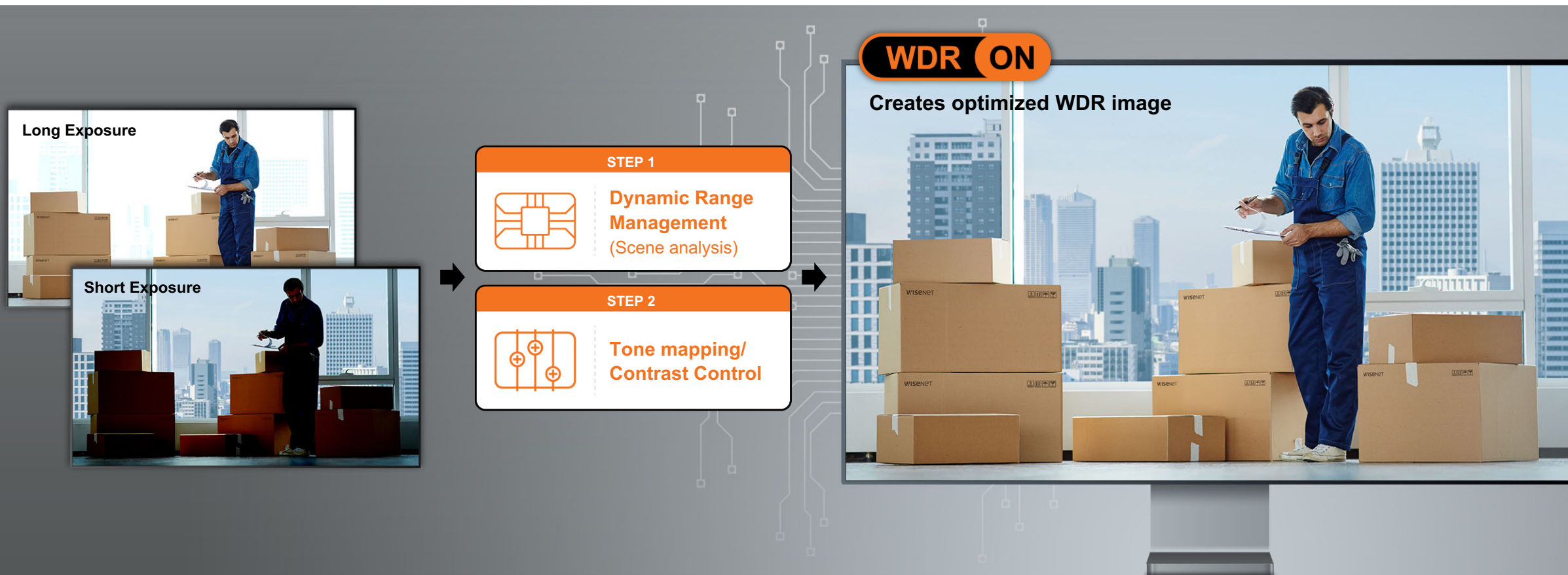
- **Based on WN7 SoC that brings improved video quality**
- 2 Megapixel (1920 x 1080) resolution
- H.265, H.264, MJPEG codec support,
- 60fps@2MP (H.265 / H.264)
- extremeWDR (120dB)
- Defog, DIS, WiseStreamII
- Tampering, Loitering, Directional detection, Fog detection
- Audio detection, Heatmap, Sound classification
- Queue management, Face detection, People counting
- Motion detection, Handover
- **Next level cybersecurity:**
 - Device Certificate(Hanwha Techwin Root CA, pre-installed)**
 - TPM 2.0 (FIPS 140-2 certified), Secure OS/boot/storage, Verified FW forgery**
- *Compatible with "A" revision lenses*
- PoE/12vDC, Audio I/O, Alarm I/O, 1 microSD (up to 1TB), removable shielded RJ-45 – RJ12 connector for easy installation



Improved image quality

extremeWDR

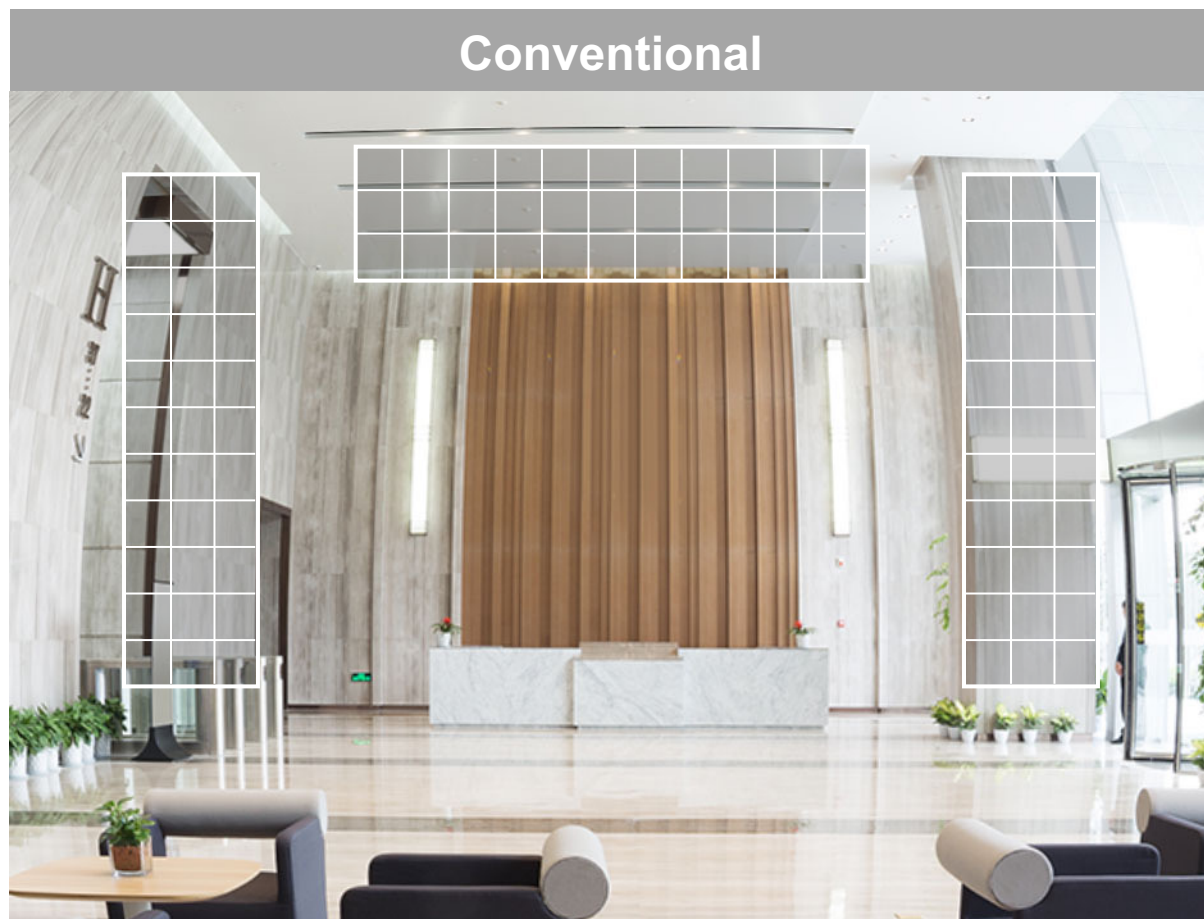
extremeWDR that using scene analysis technology by optimizing differences such as tone and contrast when occur during frame synthesis minimize motion artifact. In addition, local contrast enhancement technology, which emphasizes hazy(or blurred) areas step by step, improves the detail and clarity of images.



Improved image quality

Lens distortion correction

The LDC function supports Fill / Stretch mode to correct distorted images. The operator can select mode depending on the monitoring environment.



User convenience



Record



Play
Audio clip



Alarm out



Image

FTP



Notification/
Image

E-mail



When event
occurred



Notification

- HTTP
- HTTPS
- TCP

Variety event action

An event action has been added that uses HTTP/HTTPS/TCP to give notifications to other devices when an event occurs. This allows for easy integration. It can even be used to trigger a PTZ to go to a preset on an event.

※ You can find the notification function in the Handover menu

Next level cybersecurity

TPM 2.0 (FIPS 140-2 certification)



TPM is a hardware that creates hard to predict 'actual random numbers' and provides enhanced security compared to software producing similar random numbers. Also, encryption keys can be saved within TPM for dual protection.

So, TPM can serve as a secure storage.

XNB-6002 cameras has applied FIPS 140-2 certified TPM.

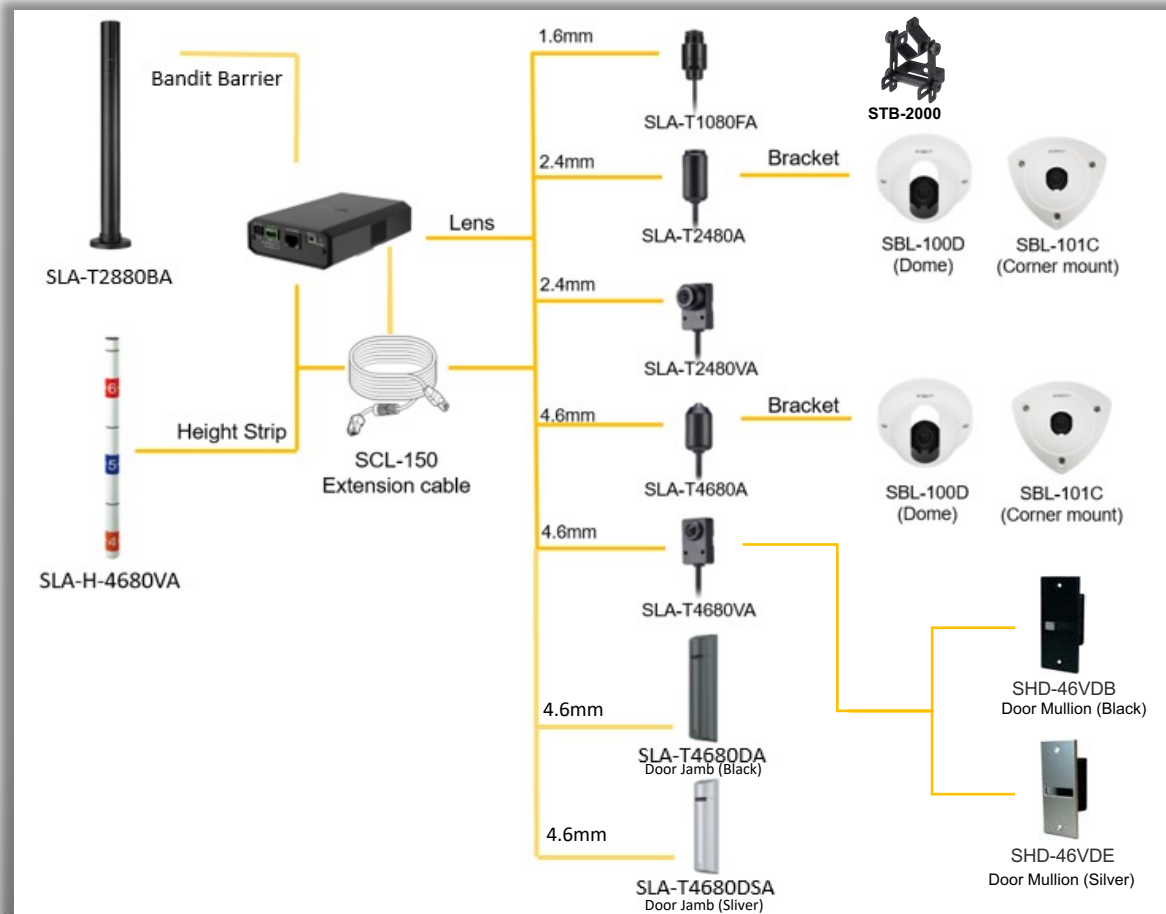
FIPS(The United states 'Federal Information Process Standards) is a security standard for cryptographic modules the federal governments in the US, UK, Canada used to approve whether TPM is securely designed and implemented.

With this certified TPM, users are using cameras more securely.

XNB-6002

Remote head camera - accessory

The remote head camera is compatible with various lenses to fit most applications. For example, 2.4mm straight lenses is compatible with the most popular ATM models





Installation Solutions

Telescopic Pendant Mount for PVM Monitor (Black Color mount)

SBP-917PVMB1

Black color Pole mount accessory

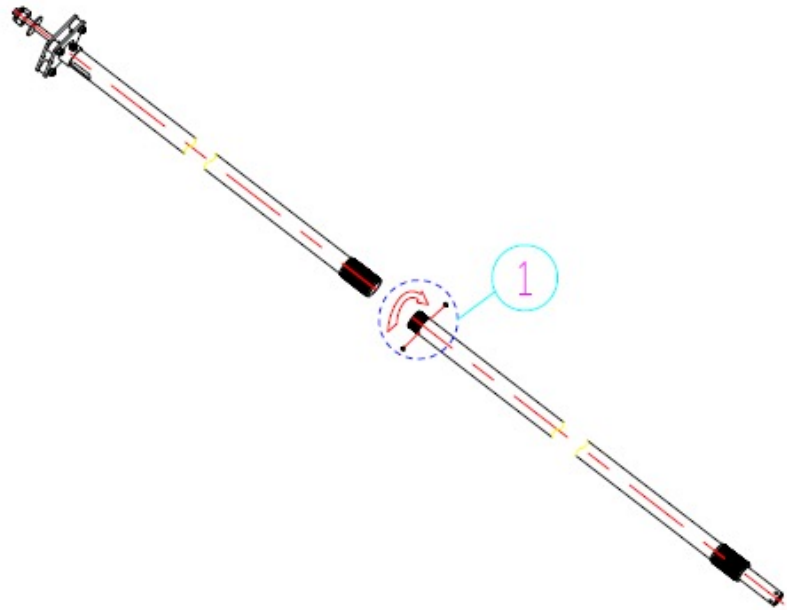


- Aluminum and steel construction
- Extends from 9ft to 17ft
- VESA 75 Mount
- +0°/-25° Tilt Angle
- 360° rotation
- Redesigned package length is less than 6ft. to ship via common carrier
- Composed of 2 fixed sections and 1 telescoping section

SBP-917PVMB1

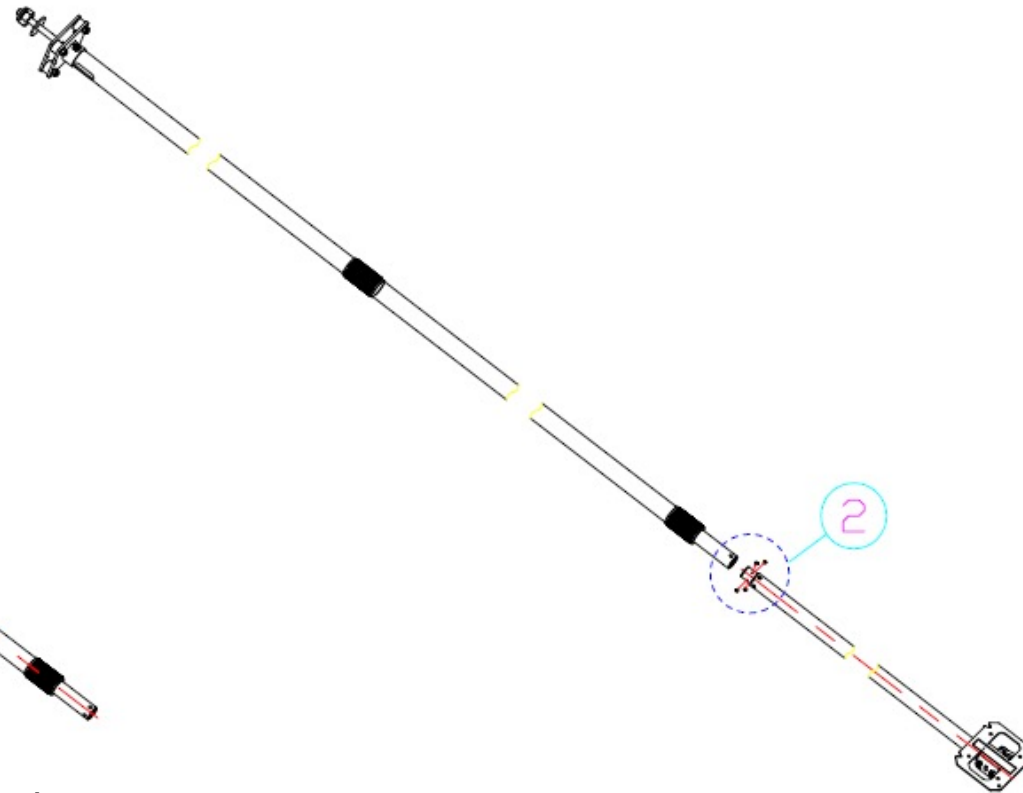
Telescopic Pendant Mount for PVM Monitor (Black Color mount)

SBP-917PVMB



Current mount: Required special shipping due to longer pole mount and as a result needed special carrier shipment

SBP-917PVMB1



New Mount: Added three piece pole adapter to accommodate standard carrier shipment

Note: White color pendant mount (**SBP-917PVMW1**) is already available with this modification



QRN-830S



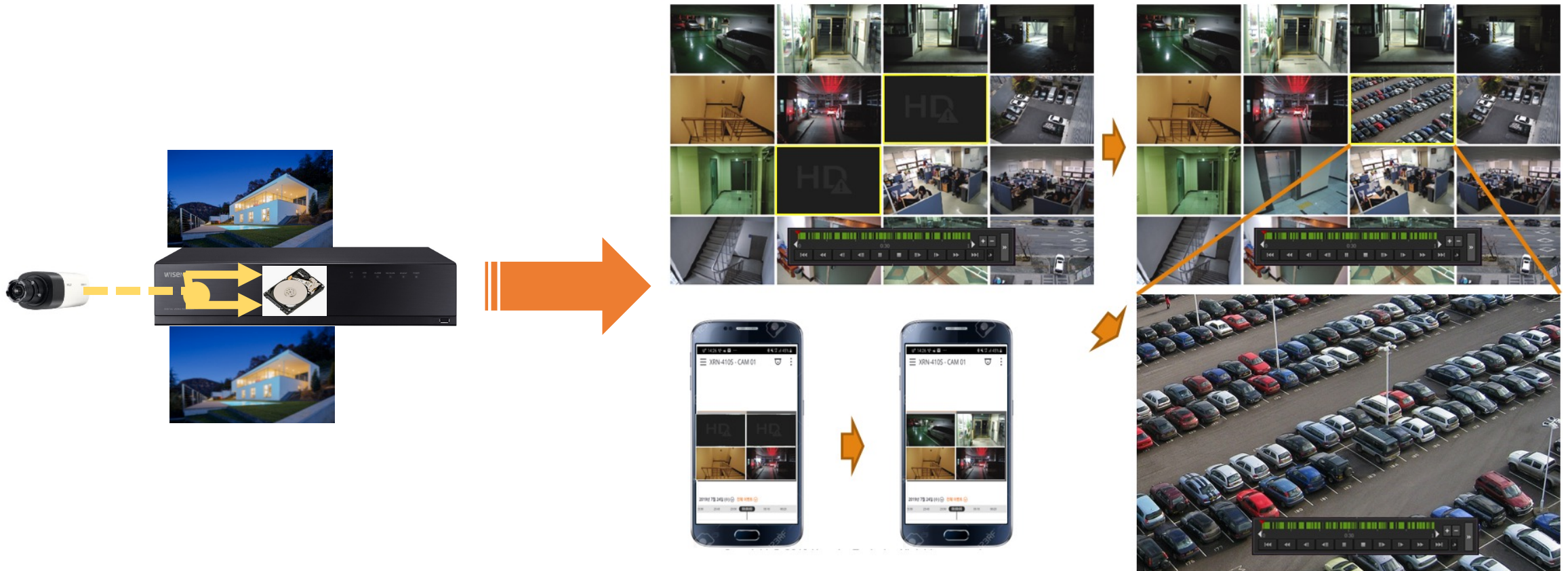
QRN-830S

8 Channel PoE NVR

- NDAA Compliant
- Triple Codec recording (H.265, H.264, and MJPEG)
- 8 PoE Ports (65 Watt Budget)
- Up to 80mbps recording bandwidth / Playback Bandwidth up to 32mbps
- 1 SATA HDD for up to 6TB of storage
- ARB Support
- QR code for P2P service
- HDMI (4K)
- Up to 8MP resolution per channel
- Maximum number of users: Search(3), Live Unicast(10), Multicast(20)
- AI camera support

Dual-Track Recording

- It can record high-resolution and low-resolution streams simultaneously
- It enables smooth playback when searching/playing.
- Also allows for continuous recording @ low resolution while recording an event @ high resolution.



QR Code for easy connection

- Easily connect to your NVR from anywhere with your smartphone/Wisenet Viewer without having to set up port forwarding.
- Install it free of charge through the Wisenet Mobile App and connect it directly using QR code



Event Notification

- **Event push service** allows you to check events directly on your smartphone.
- No matter where you are, you'll check the event with **your smartphone** and help you respond quickly.



※The screen that you see when you receive push events may change depending on the mobile settings.



WISENET WAVE

New Generation WAVE Servers



Contents

1. New Generation WAVE Servers

1-1. EOL & Replacement SKUs

1-2. WRR-P

1-3. WRT-P

1-4. WWT-P

1-1. EOL & Replacement SKUS

Discontinued SKUS	Replacement SKU
WRR-P-E200W2	WRR-P-E200W3
WRR-P-E200S2	WRR-P-E200S3
WRR-P-E200L2	WRR-P-E200L3
WRT-P-5201W	WRT-P-5202W
WRT-P-5201L	WRT-P-5202L
WRT-P-3101W	WRT-P-3102W
WRT-P-3101L	WRT-P-3102L
WRT-P-3100MW	WRT-P-3101MW
WWT-P-7200MW	WWT-P-7201MW
WWT-P-3201W	WWT-P-3202W
WWT-P-3201L	WWT-P-3202L
WWT-P-7401W	WWT-P-7402W
WWT-P-7401L	WWT-P-7402L

1-2. WRR-P-E200x3

Hanwha Model	WRR-P-E200W3	WRR-P-E200S3	WRR-P-E200L3
Form factor	Rack	<--- SAME	<--- SAME
CPU	Xeon E-2324G	<--- SAME	<--- SAME
RAM	16GB	<--- SAME	<--- SAME
NIC	(2) 1 Gigabit + Addon Ports	<--- SAME	<--- SAME
OS	Windows 10 IoT Ent LTSC	Windows Server 2019 Std	Ubuntu 20.04 LTS
OS Drive	(1) 480GB SSD	<--- SAME	<--- SAME
HDD Bays (3.5")	4 (one bay used for OS)	<--- SAME	<--- SAME
Max Storage Range	8TB - 48TB	<--- SAME	<--- SAME
PSU	450W	<--- SAME	<--- SAME
Mgmt Interface	iDRAC Express	<--- SAME	<--- SAME
RAID Controller	n/a	<--- SAME	<--- SAME
Warranty	5YR NBD On-Site + KYHD	<--- SAME	<--- SAME



- E200x3 Recording Throughput: 470 Mbps

1-3. WRT-P (3102 & 5202)

Hanwha Model	WRT-P-3102W	WRT-P-3102L
Form factor	Tower	<<<<< SAME
CPU	Intel Core i3-12100	<<<<< SAME
RAM	16GB	<<<<< SAME
NIC	(1) 1 Gigabit + Addon	<<<<< SAME
OS	Windows 10 IoT Ent LTSC	Ubuntu 20.04 LTS
OS Drive	256GB SSD	<<<<< SAME
HDD Bays (3.5")	3	<<<<< SAME
Max Storage Range	Up to 48TB	<<<<< SAME
PSU	550W	<<<<< SAME
Warranty	5YR NBD On-Site + KYHD	<<<<< SAME

Hanwha Model	WRT-P-5202W	WRT-P-5202L
Form factor	Tower	<<<<< SAME
CPU	Intel Core i5-12500	<<<<< SAME
RAM	16GB	<<<<< SAME
NIC	(1) 1 Gigabit + Addon	<<<<< SAME
OS	Windows 10 IoT Ent LTSC Value	Ubuntu 20.04 LTS
OS Drive	256GB SSD	<<<<< SAME
HDD Bays (3.5")	3	<<<<< SAME
Max Storage Range	Up to 48TB	<<<<< SAME
PSU	550W	<<<<< SAME
Warranty	5YR NBD On-Site + KYHD	<<<<< SAME



- WRT-P-3102 Recording Throughput: 170 Mbps
- WRT-P-5202 Recording Throughput: 470 Mbps

1-3.1. WRT-P-3101MW

Hanwha Model	WRT-P-3101MW
Form factor	Micro
CPU	Intel Core i3-12100T
RAM	8GB
NIC	(1) 1 Gigabit
OS	Windows 10 IoT Ent LTSC
OS Drive	256GB SSD
HDD Bays (3.5")	1
Max Storage Range	Up to 2TB
PSU	65W



- WRT-P-3101MW Recording Throughput: 45 Mbps

1-4. WWT-P (3202 & 7402)

Hanwha Model	WWT-P-3202W	WWT-P-3202L
Form factor	SFF Tower	<<<<< SAME
CPU	Intel Core i3-12100	<<<<< SAME
RAM	8GB	<<<<< SAME
NIC	(1) 1 Gigabit Port	<<<<< SAME
OS	Windows 10 IoT Ent LTSC	Ubuntu 20.04 LTS
OS Drive	256GB M.2 SSD	<<<<< SAME
GPU	Quadro T400	<<<<< SAME
PSU	180W	<<<<< SAME
Warranty	5YR NBD On-Site + KYHD	<<<<< SAME

Hanwha Model	WWT-P-7402W	WWT-P-7402L
Form factor	SFF Tower	<<<<< SAME
CPU	Intel Core i7-12700	<<<<< SAME
RAM	16GB	<<<<< SAME
NIC	(1) 1 Gigabit Port	<<<<< SAME
OS	Windows 10 IoT Ent LTSC	Ubuntu 20.04 LTS
OS Drive	256GB M.2 SSD	<<<<< SAME
GPU	Quadro T400	<<<<< SAME
PSU	300W	<<<<< SAME
Warranty	5YR NBD On-Site + KYHD	<<<<< SAME



- WWT-P-3202: Dual Display Monitors
- WWT-P-7402: Quad Display Monitors

1. New Generation WAVE Servers

1-4.1. WWT-P-7201Mx

Hanwha Model	WWT-P-7201MW	WWT-P-7201ML
Form factor	Micro	<<<<< SAME
CPU	Intel Core i7-12700T	<<<<< SAME
RAM	16GB	<<<<< SAME
NIC	(1) 1 Gigabit	<<<<< SAME
OS	Windows 10 IoT Ent LTSC	Ubuntu 20.04 LTS
OS Drive	256GB SSD	<<<<< SAME
HDD Bays (2.5")	1	<<<<< SAME
PSU	130W	<<<<< SAME
Warranty	5YR NBD On-Site + KYHD	<<<<< SAME



- WWT-P-7402: Quad Display Monitors



**Wisenet SKY
Bridge 504+
HD15 Subscription Service**

Bridge 504+

- **Key Features and Benefits**
 - Our most powerful compact bridge
 - Supports 50 4MP IP cameras
 - Support up to 20 cameras utilizing bridge video analytics
 - Leverages same performance, hardware lifetime, and installation benefits of Wisenet SKY compact bridges
- **Specifications to be aware of**
 - Physical dimensions are a bit larger than the other compact bridges
 - Includes an internal fan for additional heat dissipation - environmental noise conditions should be considered when choosing this bridge model



Compact ‘+’ Bridge Comparison



MODEL	Bridge 304+	Bridge 306+	Bridge 404+	Bridge 504+
Max Cameras (4MP)	20 IP	25 IP	35 IP	50 IP
Max Analytic Count	5	10	15	20
Unit Weight	2.65 lbs	2.65 lbs	2.72 lbs	3.75 lbs
Dimensions	180x 127 x 64 mm 7.08 x 5.00 x 2.50 in	180x 127 x 64 mm 7.08 x 5.00 x 2.50 in	180x 127 x 64 mm 7.08 x 5.00 x 2.50 in	229x 127 x 83 mm 9.02 x 5.00 x 3.27 in
Operating Temperature Range	-10-50° C 14-122° F	-10-50° C 14-122° F	-10-50° C 14-122° F	-10-50° C 14-122° F
Certifications	FCC, UL, CE, UKCA, NOM, ACM, RoHS, CTick	FCC, UL, CE, UKCA, NOM, ACM, RoHS, CTick	FCC, UL, CE, UKCA, NOM, ACM, RoHS, CTick	FCC, UL, CE, UKCA, NOM, ACM, RoHS, CTick
MSRP (USD)	\$870	\$1,219	\$1,742	\$2,615
MSRP (CAD)	\$1,139.70	\$1,596.89	\$2,282.02	\$3,425.65

Key Benefits:

- Ruggedized aluminum chassis
- Broader operating temperature range
- Enhanced reliability and operating lifetime
- Shelf and wall mount support
- On-bridge display providing connectivity and operational information
- Compact and lightweight design

HD15 Subscription Service

- HD15 is a new subscription service that is available for cameras higher than 11 Megapixels.
(Height x Width > 11,000,001 pixels)
- You would have the option for Full Video Recording to the cloud in any of the resolutions below, dependent on the camera capabilities:

Resolution Reference Chart:

SD1 - 0 through 600,000 pixels

HD1 - 600,001 pixels through 1,400,000 pixels

HD2 - 1,400,001 pixels through 2,400,000 pixels

HD3 - 2,400,001 pixels through 3,200,000 pixels

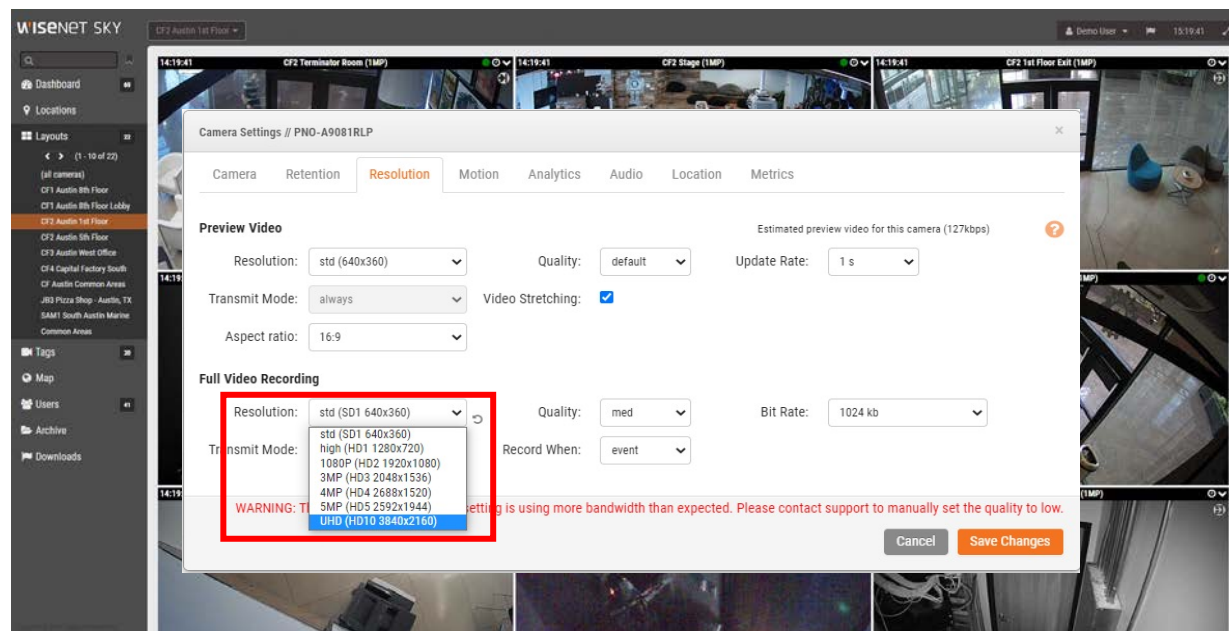
HD4 - 3,200,001 pixels through 4,100,000 pixels

HD5 - 4,100,001 pixels through 5,100,000 pixels

HD10 - 5,100,001 pixels through 11,000,000 pixels

HD15 - 11,000,001 pixels and above

- Accounts are only billed for the Full Video Recording resolution and not for the preview video resolution.



- Adjusting the resolution that the camera records and sends to the cloud has a direct impact on the subscription plan attached to the camera.
- Increasing or decreasing the resolution of a camera's full video recording will increase or decrease the cost of the subscription plan.

Thank You