



Network

BOX

# PNB-A9001

4K AI Box Camera



## Key Features

- Maximum 4K resolution
- 0.03Lux@F1.2(Color)
- Day & Night(ICR), WDR(120dB), WiseNR II (Using AI engine), Prefer Shutter
- H.265, H.264, MJPEG codec, WiseStream II, WiseStreamIII (Using AI engine)
- Video Analytics based on AI
  - Object detection and classification(Person, Face, Vehicle, License Plate)
  - Face mask detection, Social distancing detection
  - Attribute, BestShot
- Requires camera firmware v1.41.03 or later to use Face Mask Detection
- System requirements
  - SSM v2.10.8 or later, Genetec plugin v1.0 or later, Milestone plugin v1.0.2 or later

## Compatible Devices



SHB-4301HP



STB-4150V



Occupancy  
Monitoring  
Application



AI Plug-in

# PNB-A9001

4K AI Box Camera



## Specifications

| Video                       |                       |                                                                                                                                                                                       |
|-----------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Imaging Device              | Size                  | 1/1.8"                                                                                                                                                                                |
|                             | Type                  | CMOS                                                                                                                                                                                  |
| Resolution                  |                       | 3840x2160, 3072x1728, 2688x1520, 2592x1944, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360 |
| Max. Framerate              | H.265/H.264           | 30fps/25fps(60Hz/50Hz)                                                                                                                                                                |
|                             | MJPEG                 | 30fps                                                                                                                                                                                 |
| Min. Illumination (Lux)     | Color(1/30sec, 30IRE) | 0.03                                                                                                                                                                                  |
|                             | BW(1/30sec, 30IRE)    | 0.003                                                                                                                                                                                 |
| Video Out                   |                       | CVBS: 1.0 Vp-p / 75Ω composite for installation,<br>USB: Micro USB Type B. Preview and installation ONLY. Requires WiFi dongle.                                                       |
| Lens                        |                       |                                                                                                                                                                                       |
| Focus Control               |                       | Simple focus                                                                                                                                                                          |
| Lens Type                   |                       | DC auto iris, P iris(IR corrected), Manual, I-CS                                                                                                                                      |
| Mount Type                  |                       | C mount, CS mount                                                                                                                                                                     |
| Operational                 |                       |                                                                                                                                                                                       |
| Day & Night                 |                       | Auto(ICR)                                                                                                                                                                             |
| Backlight Compensation      |                       | BLC, WDR, SSDR                                                                                                                                                                        |
| Wide Dynamic Range (dB)     |                       | 120                                                                                                                                                                                   |
| Digital Noise Reduction     |                       | WiseNR II (Based on AI engine), SSNR V                                                                                                                                                |
| Digital Image Stabilization |                       | Support(built-in gyro sensor)                                                                                                                                                         |
| Motion Detection            | Quantity              | 8ea                                                                                                                                                                                   |
|                             | Shape                 | 8point Polygonal zones                                                                                                                                                                |
| Privacy Masking             | Quantity              | 6ea                                                                                                                                                                                   |
|                             | Shape                 | Rectangular zones                                                                                                                                                                     |
|                             | Color / Option        | Gray, Black, White                                                                                                                                                                    |
| Gain Control                |                       | Low, Middle, High                                                                                                                                                                     |
| White Balance               |                       | ATW, AWC, Manual, Indoor, Outdoor                                                                                                                                                     |
| LDC                         |                       | Support                                                                                                                                                                               |

Design and specifications are subject to change without notice. The latest product information / specification can be found at [HanwhaVision.com](https://www.hanwhavision.com)  
Hanwha Vision is formerly known as Hanwha Techwin.

## Operational

|                                          |             |                                                                                                                                                                                                                                       |
|------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electronic Shutter                       | Mode        | Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)                                                                                                                                                            |
|                                          | Speed Range | 1/5~1/12,000sec                                                                                                                                                                                                                       |
| Video Rotation                           |             | Flip, Mirror, Hallway view(90°/270°)                                                                                                                                                                                                  |
| Serial Interface                         |             | RS-485(Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell)                                                                                                                                                              |
| Alarm Interface                          | In/Out      | 2 configurable I/O ports                                                                                                                                                                                                              |
|                                          | Others      | 12VDC output                                                                                                                                                                                                                          |
| Alarm Triggers                           |             | Analytics, Network disconnect, Alarm input, App event, Time schedule, MQTT subscription                                                                                                                                               |
| Alarm Events When Alarm Trigger Occurred |             | File upload(image): e-mail/FTP,<br>Notification: e-mail,<br>Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output,<br>Handover: PTZ preset,send message by HTTP/HTTPS/TCP,Audio clip playback,<br>MQTT: publication |
| Audio In                                 |             | Selectable(mic in/line in), Built-in mic                                                                                                                                                                                              |
| Audio Out                                |             | Line out                                                                                                                                                                                                                              |

## Analytics

|                        |                    |                                                                                                                                                                                |
|------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classified Object Type |                    | Person, Face, Vehicle, License plate                                                                                                                                           |
| Attributes             | Person             | Upper/Lower clothes color, Gender, Bag                                                                                                                                         |
|                        | Vehicle            | Type(car, bus, truck, motorcycle, bicycle), Color                                                                                                                              |
|                        | Face               | Age, Gender, Face mask, Glasses                                                                                                                                                |
| Thumbnail              |                    | BestShot                                                                                                                                                                       |
| Analytics Events       | Based on AI Engine | Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit), Face mask detection, Social distancing detection, Slip & fall detection      |
|                        | Normal             | Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Appear/Disappear), WiseDetector for adding custom objects |
| Business Intelligence  | Based on AI Engine | People counting, Queue management, Heatmap, Vehicle counting, Crowd counting                                                                                                   |

## Network

|                   |                    |                                                                                                                               |
|-------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Ethernet          |                    | Metal shielded RJ-45(10/100/1000BASE-T)                                                                                       |
| Video Compression |                    | H.265/H.264: Main/High, MJPEG                                                                                                 |
| Audio Compression |                    | G.711 u-law /G.726 selectable,G.726(ADPCM) 8kHz,G.711 8kHz,<br>G.726: 16kbps,24kbps,32kbps,40kbps,<br>AAC-LC: 48kbps at 16kHz |
| Smart Codec       |                    | Manual, WiseStreamIII                                                                                                         |
| Bitrate Control   |                    | H.265/H.264: CBR or VBR,<br>MJPEG: VBR                                                                                        |
| Streaming         | Unicast            | Up to 10 users                                                                                                                |
|                   | Multicast          | Support                                                                                                                       |
|                   | Multiple Streaming | Up to 5 profiles                                                                                                              |

## Network

|                                   |        |                                                                                                                                                                                                                    |
|-----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protocol                          |        | IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMPv2, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP(TCP, UDP Unicast), MQTT |
| Application Programming Interface | ONVIF  | S, G, T, M                                                                                                                                                                                                         |
|                                   | Others | SUNAPI(HTTP API), Hanwha Vision Open Platform                                                                                                                                                                      |
| Direct Cloud Connection           |        | Support                                                                                                                                                                                                            |

## Security

|                        |  |                                                                         |
|------------------------|--|-------------------------------------------------------------------------|
| OS / Firmware Protect  |  | Encrypted firmware, Secure boot, Signed firmware                        |
| User authentication    |  | Digest authentication, Prevent brute-force attack                       |
| Network authentication |  | IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)                      |
| Secure Communication   |  | HTTPS, WSS(WebSocket Secure), SRTP                                      |
| Access Control         |  | IP-based access control                                                 |
| Data Protect           |  | Encryption credentials, Encrypt compress for live recording file export |
| Audit                  |  | Access / System / Event Log management                                  |
| Device ID              |  | Device certificate(Hanwha Vision Root CA)                               |
| Secure Storage         |  | SDcard partition encrypt(AES-256)                                       |
| Security Certificate   |  | IACS Component Security Requirements Certification (IEC 62443-4-2)      |

## General

|              |                    |                                 |
|--------------|--------------------|---------------------------------|
| Memory       | RAM                | 4GB                             |
|              | Flash              | 512MB                           |
| Edge Storage | Micro SD/SDHC/SDXC | Max. 256GB x 2slot(Total 512GB) |

## Environmental & Electrical

|                           |             |                                  |
|---------------------------|-------------|----------------------------------|
| Operating Condition       | Temperature | -10°C~+55°C(+14°F~+131°F)        |
|                           | Humidity    | 0~90% RH(non-condensing)         |
| Storage Condition         | Temperature | -50°C~+60°C(-58°F~+140°F)        |
|                           | Humidity    | 0~90% RH(non-condensing)         |
| Input Voltage             |             | PoE+(IEEE802.3at, Class4), 12VDC |
| Power Consumption         | PoE         | Max 16.50W, typical 12.50W       |
|                           | 12VDC       | Max 13.50W, typical 10.80W       |
| Power Redundance Failover |             | Support                          |

## Mechanical

|                    |  |                              |
|--------------------|--|------------------------------|
| Color              |  | Black                        |
| Material           |  | Aluminum                     |
| Product Dimensions |  | 81x67x165mm(3.19x2.64x6.48") |
| Product Weight     |  | 880g(1.94lb)                 |

PNB-A9001  
4K AI Box Camera



CAD

Unit: mm [inch]

