



# VN-MS4MPBOUT-IPC

## Multi-Directional IP camera



Launched by VirUniTechnology, is a full portfolio of solutions composed of project-oriented products including IPC,IVSS,NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, it provides precise, reliable and comprehensive AI solutions for verticals.

### Series Overview

The splicing camera supports a 180° panoramic view and 4-channel hardware splicing to realize HD panoramic surveillance. The camera supports crowd situation analysis, vehicle situation analysis, and perimeter protection. It is widely applied in various scenes such as squares, airports, safe city, and traffic.

### Functions

#### Panoramic Splicing

With advanced splicing algorithm, VirUni Panoramic Splicing technology deletes overlapped area and splices multiple images to be a complete panorama. The field of view of the spliced image can be up to 360°, which largely improves surveillance efficiency and user experience. Generally, after splicing, the field of view of four-sensor camera can be 180°, and the field of view of eight-sensor camera can be 360°.

#### Perimeter Protection

With deep learning algorithm, VirUni Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion, fast moving, parking detection, loitering detection and gathering detection) are largely reduced.

#### Vehicle Density

With deep learning algorithm, VirUni Vehicle Density technology analyses the vehicle situation in the image, such as vehicle number in selected area. You can set threshold, and when the number is larger or smaller than the threshold, it triggers linkage.

#### Features:

- 4 x 4-MP 1/1.8" CMOS image sensors, low luminance, and high definition image.
- Outputs max. 16 MP (5520 x 2700)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Three streams for HD video display.
- Built-in IR LED, and the max. illumination distance is 30 m.

- Wide Dynamic Range(WDR), 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Alarm: 2 in, 2 out; audio: 1 in, 1 out; RS-485; BNC; supports max. 256 G Micro SD card.
- 12 VDC/24 VAC/Power Over Ethernet power supply, easy for installation.
- Tamper proof and dust proof, IP67 and IK10 protection.



#### Cyber Security

VirUni network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

#### Perimeter Protection

With deep learning algorithm, VirUni Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion, fast moving, parking detection, loitering detection and gathering detection) are largely reduced.

#### EPTZ

With advanced target detection and tracking algorithms, VirUni EPTZ technology can simultaneously zoom in and track multiple humans and vehicles that trigger alarms. It provides rich details and a panoramic view at the same time.

#### Crowd Density

With deep learning algorithm, VirUni Crowd Density technology can detect the crowd density on the image, and display it on heat map; it can detect people quantity and density in selected area and set threshold. When the number or density is larger or smaller than the threshold, it triggers linkage.

## Technical Specification

### Camera

|                            |                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------|
| Image Sensor               | 1/1.8" CMOS                                                                               |
| Max. Resolution            | 5520 (H) × 2700 (V)                                                                       |
| ROM                        | 8 GB                                                                                      |
| RAM                        | 4 GB                                                                                      |
| Scanning System            | Progressive                                                                               |
| Electronic Shutter Speed   | Auto/Manual 1/3 s–1/100,000 s                                                             |
| Min. Illumination          | 0.001 lux@F1.6 (Color, 30 IRE)<br>0.0001 lux@F1.6 (B/W, 30 IRE)<br>0 lux (Illuminator on) |
| S/N Ratio                  | >56 dB                                                                                    |
| Illumination Distance      | 30 m (98.43 ft) (IR LED)                                                                  |
| Illuminator On/Off Control | Auto; Manual                                                                              |
| Illuminator Number         | 8 (IR LED)                                                                                |
| Pan/Tilt/Rotation Range    | Tilt: 0°–90°<br>Rotation: 0°–360°                                                         |

### Lens

|                      |                                                                                        |
|----------------------|----------------------------------------------------------------------------------------|
| Lens Type            | Fixed-focal                                                                            |
| Lens Mount           | M16                                                                                    |
| Focal Length         | 2.8 mm                                                                                 |
| Max. Aperture        | F1.6                                                                                   |
| Field of View        | H: 180°; V: 100°                                                                       |
| Iris Control         | Fixed                                                                                  |
| Close Focus Distance | 1.3 m (4.27 ft)                                                                        |
|                      | Detect      Observe      Recognize      Identify                                       |
| DORI Distance        | 58.9 m (193.24 ft)      23.6 m (77.43 ft)      11.8 m (38.71 ft)      5.9 m (19.37 ft) |

### Intelligence

|                            |                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------|
| EPTZ                       | Yes                                                                                                              |
| IVS (Perimeter Protection) | Tripwire; Intrusion                                                                                              |
| Vehicle Density            | Vehicle density; parking upper limit; vehicle congestion alarm                                                   |
| Crowd Distribution Map     | Crowd map, global people counting; people counting in area                                                       |
| Smart Search               | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos. |

### Video

|                   |                                                                                                                                                                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Compression | H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)                                                                                                                                                                                                    |
| Smart Codec       | Smart H.265+; Smart H.264+                                                                                                                                                                                                                                                |
| Video Frame Rate  | Main Stream: 5520 × 2700@(1-25/30 fps)<br>Sub Stream: 1280 × 620@(1-25/30 fps)<br>Third Stream: 1920 × 940@(1-25/30 fps)<br>*The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity. |

|                          |                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------|
| Stream Capability        | 3 streams                                                                                          |
| Resolution               | 5520 × 2700; 4600 × 2252; 3840 × 1880; 2880 × 1408; 1280 × 620; 1024 × 496; 1920 × 940; 1366 × 668 |
| Bit Rate Control         | CBR/VBR                                                                                            |
| Video Bit Rate           | H.264: 96 kbps–16384 kbps<br>H.265: 38 kbps–12544 kbps                                             |
| Day/Night                | Auto(ICR)/Color/B/W                                                                                |
| BLC                      | Yes                                                                                                |
| HLC                      | Yes                                                                                                |
| WDR                      | DWDR                                                                                               |
| White Balance            | Auto; natural; street lamp; outdoor; manual; regional custom                                       |
| Gain Control             | Auto; Manual                                                                                       |
| Noise Reduction          | 3D NR                                                                                              |
| Region of Interest (RoI) | Yes (4 areas)                                                                                      |
| Defog                    | Yes                                                                                                |
| Privacy Masking          | 8 areas                                                                                            |

### Audio

|                   |                                    |
|-------------------|------------------------------------|
| Audio Compression | G.711a; G.711Mu; G.726; G.723; PCM |
|-------------------|------------------------------------|

### Alarm

|             |                                                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Event | No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; tamper proof; scene changing; audio detection; voltage detection; external alarm; security exception; crowd distribution map; tripwire; intrusion detection; traffic congestion; parking upper limit; people counting, heat map |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Network

|                     |                                                                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Port        | RJ-45 (10/100/1000 Base-T)                                                                                                                                                                                                                                |
| SDK and API         | Yes                                                                                                                                                                                                                                                       |
| Network Protocol    | IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; SNMP                                                                                                  |
| Interoperability    | ONVIF Compliant(Profile S/Profile G/Profile T); CGI                                                                                                                                                                                                       |
| User/Host           | 20                                                                                                                                                                                                                                                        |
| Browser             | With plug-in:<br>IE: IE 9 and later<br>Chrome: Chrome 86 and later<br>Firefox: Firefox 86 and later<br>Without plug-in:<br>Edge<br>Chrome: Chrome 86 and later<br>Firefox: Firefox 86 and later                                                           |
| Management Software | Smart VSS; VSS; VNSS                                                                                                                                                                                                                                      |
| Cyber Security      | Configuration encryption; trusted execution; Digest; security logs; WSSE; account lockout; syslog; video encryption; 802.1x; IP/MAC filtering; HTTPS; trusted upgrade; trusted boot; firmware encryption; generation and importing of X.509 certification |