KX-F16440MSPN2

16 MP Multi-Sensor 360° Panoramic PTZ Hubble Network Camera

- Channel 1 (Panoramic): 8 × 2 MP 1/1.8" CMOS image sensors. Field of View:Horizontal: 1 × 360°, Vertical: 103°.
  Channel 2 (PTZ): 1 × 4 MP 1/1.8" CMOS image sensors.
- Channel 2 (PTZ): 40x optical zoom, 16x digital zoom.
- Channel 2 (PTZ): Illumination distance up to 400 m.
- Channel 1 (Panoramic): Three switchable intelligent resources: Perimeter protection, Crowd map, Vehicle density.
- Channel 2 (PTZ): Three switchable intelligent resources: Perimeter protection, Video metadata, Face recognition.
- AR panorama technology; various AR tags can be overlaid.
- Smart tracking. GPS/BDS positioning.
- Smart H265+/H264+ encoding.
- WDR, 3D NR, HLC, BLC, applicable to various monitoring scenes.
- Alarm: 7 in, 3 out; audio: 2 in, 2 out; 1 channel BNC, 1 channel RS–485 (baud rate can be set). supports max. 512 G SD card.

16Mp	Panoramic Splicing	AR Panorama	Smart Tracking	Perimeter Protection	Crowd Density
Vehicle Density	Video Metadata	Face Recognition	BNC	IP66	Smart Codec

Technical Specification

Camera

Image Sensor	Channel 1 (Panoramic): 1/1.8" 2 Megapixel progressive CMOS Channel 2 (PTZ): 1/1.8" 4 Megapixel progressive CMOS
Pixel	Channel 1 (Panoramic) : 16 MP Channel 2 (PTZ): 4 MP
Max. Resolution	Channel 1 (Panoramic): 8192 (H) × 1800 (V) Channel 2 (PTZ): 2560 (H) × 1440 (V)
ROM	Channel 1 (Panoramic): 8 GB Channel 2 (PTZ): 8 GB
RAM	Channel 1 (Panoramic): 4 GB Channel 2 (PTZ): 2 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	Channel 1 (Panoramic): 0.0005 lux@F1.0 (Color,30 IRE) 0.0001 lux@F1.0 (B/W,30 IRE) Channel 2 (PTZ): 0.001 lux@F1.4 (Color,30 IRE) 0.0005 lux @F1.4(B/W,30 IRE); 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	Channel 1 (Panoramic): No Channel 2 (PTZ): ≥ 400 m (1312.34 ft)

Illuminator On/Off Control	Auto; Manual; Zoomprio
Illuminator Number	Channel 1 (Panoramic): No Channel 2 (PTZ): 7 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0° to 360° Tilt:-11° to 90°
Built-in Battery	Channel 1 (Panoramic): Horizontal welding/lithium battery/3 V Channel 2 (PTZ): Horizontal welding/lithium battery/3 V

Lens

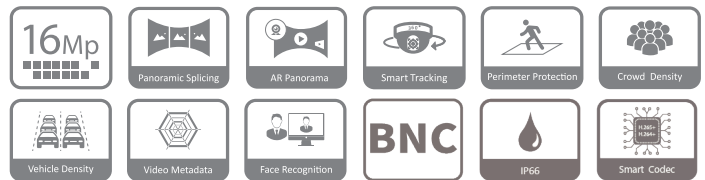|	
Lens Type	Channel 1 (Panoramic) : Fixed-focal Channel 2 (PTZ): Vari-focal
Lens Mount	Channel 1 (Panoramic) : M16 Channel 2 (PTZ): Module
Focal Length	Channel 1 (Panoramic) : 2.8 mm Channel 2 (PTZ): 5.5 mm–220 mm
Max. Aperture	Channel 1 (Panoramic) : F1.0 Channel 2 (PTZ): F1.4
Field of View	Channel 1 (Panoramic): H: 360° V: 103° Channel 2 (PTZ): H: 2.2°–61.8° V: 1.3°–36.3° D: 2.4°–69.2°

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Iris Control	Channel 1 (Panoramic): No Channel 2 (PTZ): P-iris
Close Focus Distance	Channel 1 (Panoramic): 1.4 m (4.59 ft) Channel 2 (PTZ): 0.5 m–2 m (1.64 ft–6.56 ft) (T to W)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	Channel 1 (Panoramic)	57.9 m (189.96 ft)	23.2 m (76.11 ft)	11.6 m (38.06 ft)	5.8 m (19.03 ft)
	Channel 2 (PTZ)	3030 m (9940.94 ft)	1204 m (3950.13 ft)	606 m (1988.19 ft)	303 m (994.10 ft)

Smart Event

IVS	Channel 1 (Panoramic): Yes Channel 2 (PTZ): Yes

Intelligence

Intelligence Description	Channel 1 (Panoramic): Perimeter protection, crowd map, vehicle density. Channel 2 (PTZ): Perimeter protection, video metadata, face recognition
IVS (Perimeter Protection)	Channel 1 (Panoramic): Tripwire; intrusion; parking detection Channel 2 (PTZ):Tripwire; intrusion; parking detection;crossing virtual fence, fast moving, abandoned object, missing object, crowd gathering, loitering detection
Face Recognition	Channel 1 (Panoramic): No Channel 2 (PTZ): Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes (gender, age, glasses, expressions, mask, and beard) and 8 expressions (angry, sad, disgusted, scared, surprised, calm, happy, confused); face snapshot set as face or one-inch photo; snapshot strategies (real-time snapshot, quality priority and optimization snapshot) Supports adding 5 group face databases; registering person one by one or in batches; setting face similarity; and supports face comparison with the face database containing up to 10,000 face pictures
Vehicle Density	Channel 1 (Panoramic):Vehicle density; parking upper limit; traffic congestion alarm Channel 2 (PTZ): No
Crowd Distribution Map	Channel 1 (Panoramic):Crowd map, global crowd density; crowd density in area; people counting in area; Channel 2 (PTZ): No
Video Metadata	Channel 1 (Panoramic): No Channel 2 (PTZ): Motor vehicle, non-motor vehicle, face, and human body detection; snapshot; snapshot optimization; optimal face snapshot upload. Motor vehicle attributes: License plate, plate color, vehicle type, vehicle color, vehicle logo, vehicle model/year, sun visor, seatbelt., smoking, calling, ornament, and annual inspection sticker. Non-motor vehicle attributes: Type, vehicle color, number of people, top type and color, and hat. Human body attributes: Top and bottom type and color, bag, hat, gender, and umbrella. Face attributes: Gender, age, expressions, glasses, face mask, and bread

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.264+ Smart H.265+
Video Frame Rate	Channel 1 (Panoramic) : Main stream: 8192 × 1800 @(1–25/30 fps) sub stream: 2048 × 452 @ (1–25/30 fps) third stream: 3840 × 832 @ (1–25/30 fps) Channel 2 (PTZ): Main stream: 2560×1440@ (1–25/30 fps) sub stream: 704×576@ (1–25/30 fps) third stream:1920×1080@ (1–25/30 fps)
Stream Capability	3 streams
Resolution	Channel 1 (Panoramic) : Main stream: 8192 × 1800; 7680 × 1680; 5760 × 1264; 4096 × 900 sub stream: 2048 × 452 third stream: 3840 × 832; 2560 × 560 Channel 2 (PTZ): Main stream: 2560 × 1440; 1920 × 1080; 1280 × 960; 1280 × 720 sub stream: 704 × 576; 640 × 480; 352 × 288 third stream: 1920 × 1080; 1280 × 960; 1280 × 720
Bit Rate Control	CBR/VBR
Video Bit Rate	Channel 1 (Panoramic): H.264: 96 Kb/s–32768 Kb/s H.265: 38 Kb/s–29362 Kb/s Channel 2 (PTZ): H.264: 32 Kb/s–15872 Kb/s H.265: 12 Kb/s–9472 Kb/s
Day/Night	Channel 1 (Panoramic): No Channel 2 (PTZ): ICR
BLC	Yes
HLC	Yes
WDR	Channel 1 (Panoramic): DWDR Channel 2 (PTZ): 120 dB
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto; Manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Default Bit Rate with Default Resolution	Channel 1 (Panoramic): 6144 kb/s (8192 × 1800) Channel 2 (PTZ): 6144 kb/s (2560 × 1440)
Region of Interest (RoI)	Channel 1 (Panoramic) : Yes (4 areas) Channel 2 (PTZ): Yes (8 areas)
Image Stabilization	Channel 1 (Panoramic): No Channel 2 (PTZ): No

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Defog	Channel 1 (Panoramic): No Channel 2 (PTZ): Optical defog
Privacy Masking	Channel 1 (Panoramic) : 4 areas Channel 2 (PTZ): 24 areas (8 for each preset)
Image Correction	Channel 1 (Panoramic): No Channel 2 (PTZ): No

Audio

Audio Compression	PCM; G.711a; G.711Mu; G.726; G.723, G.711a by default
Audio Sampling	8 kHz; 16 kHz; 32 kHz; 48 kHz; 64 kHz

Alarm

Alarm Event	Channel 1 (Panoramic): External alarm; No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; voltage detection; motion detection; video tampering; scene changing; audio detection; intensity change; tripwire; intrusion; parking detection; crowd density; traffic congestion; parking upper limit Channel 2 (PTZ): Tripwire; intrusion; parking detection;crossing virtual fence, fast moving, abandoned object, missing object, crowd gathering, loitering detection; face recognition; video metadata

Network

Network Port	RJ-45 (10/100/1000 Base-T)
SDK and API	Yes
Cyber Security	Video encryption; firmware encryption; configuration encryption; Digest; WSSE; account lockout; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x; trusted boot; trusted execution; trusted upgrade
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; P2P
Interoperability	ONVIF (Profile S/Profile G/ Profile T); CGI
User/Host	20 (Total bandwidth: 400 M)
Storage	FTP; SFTP; Micro SD card (support max. 512 GB); NAS; SMB
Browser	IE: IE11 Chrome Firefox

PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: −11° to 90°, auto flip 180°
Manual Control Speed	Pan: 240°/s Tilt: 100°/s
Telephoto Speed Limit	Yes
Positioning Accuracy	Pan: 0.1° Tilt: 0.1°
Positioning Accuracy Automatic Calibration	Yes

Remote Lens Reset	Yes
Remote PTZ Reset	Yes
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Idle Motion	Preset; Pattern; Tour; Scan
Time Task	Yes
3D Positioning	Yes
PTZ Limit	Yes
Position Display	Yes
Information Display	Yes
Time Display	Yes
PTZ Restart	Yes

Port

RS-485	1 (baud rate range:1200 bps–115200 bps)
Audio Input	2 channels (terminal)
Audio Output	2 channels (terminal)
Alarm Input	7 channels in: 5mA 3V–5V DC
Alarm Output	3 channels out: 1,000mA 30V DC/500mA 50V AC
Analog Output	1 channel (CVBS output: BNC)

Power

Operating Voltage	36 VDC (±50%)
Power Supply	36 VDC
Power Consumption	Basic: 59 W (36 VDC) Max. (Basic power consumption + WDR + intelligence on + IR on + PTZ operation): 99 W (36 VDC)

Environment

Operating Temperature	−40 °C to +70 °C (−40 °F to +158 °F)
Operating Humidity	≤95%
Storage Temperature	−40 °C to +70 °C (−40°F to +158°F)
Storage Humidity	≤95%
Protection	IP66

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Structure

Casing	Metal + plastic
Product Dimensions	Φ383 mm × 462 mm (15.08" × Φ18.19")
Packaging Dimensions	500 mm × 500 mm × 658 mm (19.69" × 19.69" × 25.91") (L × W × H)
Net Weight	14.4 kg (31.75 lb)
Gross Weight	20.3 kg (44.75 lb)
Installation	Wall mount; ceiling mount; pole mount
Power Adapter	Included
Lens	Included
Power Output	NA

Others

Calibration	Manual/Auto

Dimensions (mm[inch])