dahua TECHNOLOGY

DHI-TPC-SDA8441
Thermal Network Smart Linkage Camera

- Vanadium oxide uncooled focal plane detector.
- Starlight 1/1.8" 4Megapixel progressive scan CMOS.
- Thermal PTZ: Pan: 0° to 190°, tilt: −5° to 180°.
- Visible PTZ: Pan: 0° to 360°, tilt: −30° to 90°.
- Visible lens offers 45× optical zoom.
- Thermal and visible channel linkage tracking.
- Offers various AI functions such as tripwire, target filtering and intrusion detection.
- Two-way audio, sound and light alarm.
- IR illumination distance ≥250 m.
- Wide input voltage of 36 VDC ± 25%.
- IP66 rated.

Featuring thermal and visible channels with independent PTZ, Thermal Network Smart Linkage Camera supports the linkage tracking of the two channels, offering monitoring for the panorama and details. With various AI functions such as tripwire, intrusion, human/vehicle classification, and boat detection, the camera is widely applied in outdoor scenes of the medium-distance perimeter protection.

Technical Specification

Thermal

Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	400 (H) × 300 (V)
Pixel Pitch	17 µm
Spectral Range	8 µm–14 µm
Sensitivity (NETD)	<35 mK (@f/1.0)
Focal Length	25 mm; 50 mm
Field of View	25 mm: H: 15.5°; V: 11.6° 50 mm: H: 7.8°; V: 5.8°
Thermal Focus Control	Fixed-focal
Close Focus Distance	25 mm: 1 m (3.28 ft) 50 mm: 1 m (3.28 ft)
Digital Detail Enhancement (DDE)	Yes
Digital Zoom	19 levels
Thermal AGC	Auto/Manual
Thermal Noise Reduction	2D NR/3D NR
Image Flip	180°; Mirror
Color Palettes	18 (white hot/black hot/fusion/rainbow/golden autumn/midday/iron red/amber/jade/sunset/icefire/ painting/pomegranate/emerald /spring/summer/ autumn/winter)

Visible

Image Sensor	1/1.8" CMOS
Max. Resolution	2560 (H) × 1440 (V)
Pixel	4 MP
Min. Illumination	Color: 0.001 lux@F1.4 Black & white: 0.0001 lux@F1.4 0 lux (IR on)
Visible AGC	Auto/Manual
Visible Noise Reduction	2D NR/3D NR
S/N Ratio	≥55 dB
White Balance	Auto; manual; indoor; outdoor; tracking; sodium lamp; street lamp; natural
Defog	Electronic defog
Electronic Shutter Speed	1 s–1/30,000 s (auto/manual)
BLC	Yes
WDR	Yes
HLC	Yes
Digital Zoom	Yes
Day/Night	Auto (ICR); Color; B/W
Iris Control	Auto
Image Flip	180°
Exposure Compensation	Yes
Visible Focus Control	Auto/semi-auto/manual
Focal Length	5.5 mm–248 mm
Zoom Speed	<7 s

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Field of View	H: 61.8°–2.2° V: 36.3°–1.3° D: 69.2°–2.4°
Close Focus Distance	0.5 m–2 m (1.64 ft–6.56 ft)
Optical Zoom	45×
Aperture	F1.4–F4.5
Illuminator On/Off Control	Auto/Manual
Illumination Distance	250 m (820.21 ft)

Audio and Video

Video Compression	H.265; H.264; H.264H
Resolution	Thermal: Main stream: 1280 × 1024; 1280 × 960 ; 720p (1280 × 720); 400 × 300; 1280 × 960 (default) Sub stream: 640 × 512; 640 × 480; 400 × 300; 400 × 300 (default) Visible: Main stream: 4 MP (2560 × 1440); 1080p (1920 × 1080); 720p (1280 × 720); D1 (704 × 576); 1080p (default) Sub stream: D1 (704 × 576); CIF (352 × 288); D1 (704 × 576) (default)
Video Frame Rate	Thermal: Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default Visible: Main stream: 1 fps–25 fps, 25 fps by default Sub stream: 1 fps–25 fps, 15 fps by default
Audio Compression	G.711a; G.711mu; PCM
Image Encoding Format	JPEG

PTZ

Pan/Tilt Range	Thermal: Pan: 0° to +190° Tilt: −5° to +180° Visible: Pan: 0° to 360° Tilt: −30° to +90°
Manual Control Speed	Thermal: Pan: 0.1°/s to 100°/s Tilt: 0.1°/s to 90°/s Visible: Pan: 0.1°/s to 180°/s Tilt: 0.1°/s to 100°/s
Preset Speed	Thermal: Pan: 0.1°/s to 100°/s Tilt: 0.1°/s to 90°/s Visible: Pan: 0.1°/s to 180°/s Tilt: 0.1°/s to 100°/s
Preset	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Yes
Privacy Masking	4 by default
Idle Motion	Preset; Pattern; Tour; Scan; Horizontal Rotation

Function

Two-way Audio	Yes
Sound and Light Alarm	Yes

Network Protocol	HTTPS; HTTP; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; DDNS; PPPOE; IPv4/v6; SNMP; QoS; UPnP; NTP
Region of Interest (RoI)	Yes (customizable)
Storage	Micro SD card
Micro SD Card (Max.)	512 GB
Interoperability	CGI
Browser	IE: IE8 and later Chrome: 42 and earlier Firefox: 42 and earlier
User/Host	Up to 20 (total bandwidth: 64 MB)
Security	Authorized username and password; attached MAC address; encrypted HTTPS; IEEE 802.1x; controlled network access
User Management	Up to 20 users; supports multi-level user permissions (2 levels): management group and user group
Malfunction Detection	Network disconnection detection; IP conflict detection; memory card state detection; memory space detection
PIP	Yes

Intelligence

Cold/Hot Spot Trace	Yes
IVS (Perimeter Protection)	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification
Target Tracking	Single-scene tracking; multi-scene tracking; panoramic tracking; manual tracking; alarm linked tracking
Boat Detection	Yes

Port

Network Port	1 × RJ-45 (10/100 Base-T)
Alarm Input	7
Alarm Output	2
Audio Input	1
Audio Output	1
RS-485	1

Power

Power Supply	36 VDC/5A ± 25%
Power Consumption	Basic: 30 W Max: 58 W (illuminator)

Environment

Operating Temperature	−40 °C to +65 °C (−40 °F to +149 °F)
Operating Humidity	≤95%

Physical Characteristics

Protection	IP66
Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV

Structure

Product Dimensions	484.8 mm × 267 mm × 476.5 mm (19.09" × 10.51" × 18.76") (L × W × H)

Packaging Dimensions	708 mm × 380 mm × 580 mm (27.87" × 14.96" × 22.83") (L × W × H)
Net Weight	15.9 kg (35.05 lb)
Gross Weight	21.5 kg (47.40 lb)

Perimeter Protection Distance (IVS Distance)

Focal Length	Distance (Vehicle)	Distance (Human)
25 mm	525 m (1,722.44 ft)	175 m (574.15 ft)
50 mm	1,050 m (3,444.88 ft)	350 m (1,148.29 ft)

Note:
The table displays the measured distances obtained from using the target sizes 1.8 m × 0.5 m (human) and 1.4 m × 4 m (vehicle) for testing in an environment where the temperature is 23 °C and the relative humidity is below 60%.
The table is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more.

DRI Distance

Focal Length	Detection Distance①	Recognition Distance②	Identification Distance③
25 mm	Vehicle: 2,255 m (7,398.29 ft); Human: 735 m (2,411.42 ft)	Vehicle: 564 m (1,850.39 ft); Human: 184 m (603.67 ft)	Vehicle: 282 m (925.20 ft); Human: 92 m (301.84 ft)
50 mm	Vehicle: 4,510 m (14,796.59 ft); Human: 1,471 m (4,826.12 ft)	Vehicle: 1,127 m (3,697.51 ft); Human: 368 m (1,207.35 ft)	Vehicle: 564 m (1,850.39 ft); Human: 184 m (603.67 ft)

①Detection Distance: Detects objects, but cannot recognize their characteristics (objects must cover more than 1.5 pixels of the image).
②Recognition Distance: Classifies objects into general categories, such as human, vehicle (the object must cover more than 6 pixels of the image).
③Identification Distance: Classifies objects into specific categories based on their characteristics, such as engineering truck, car (the object must cover more than 12 pixels of the image).

Note:
The table is the standard theoretical calculation and is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more. For the intelligent detection distance, refer to the table of Perimeter Protection Distance (IVS Distance) above.

Ordering Information

Type	Model	Description
Thermal Camera	DHI-TPC-SDA8441-B25Z45-BM-S22	Thermal: 25 mm; Visible: 5.5 mm–248 mm
	DHI-TPC-SDA8441-B50Z45-BM-S22	Thermal: 50 mm; Visible: 5.5 mm–248 mm
Accessories (Optional)	PFB710W	Wall mount bracket
	PFB710C + PFA153	Pole mount bracket + hang mount bracket (pole mount) (horizontal)
	PFB710W + PFA153	Pole mount bracket + wall mount bracket (pole mount) (vertical)

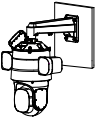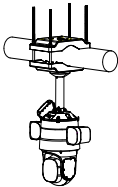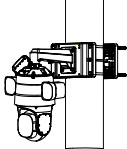## Accessories

Optional:

PFB710W
Wall mount bracket

PFB710C+PFA153
Pole mount bracket + hang mount bracket (pole mount) (horizontal)

PFB710W + PFA153
Pole mount bracket + wall mount bracket (pole mount) (vertical)

Wall Mount	Pole Mount(Horizontal)	Pole Mount(Vertical)
PFB710W	PFB710C+PFA153	PFB710W+PFA153

Dimensions (mm[inch])

484.8 [19.09]
476.5 [18.76]
456.5 [17.97]
267.0 [10.51]