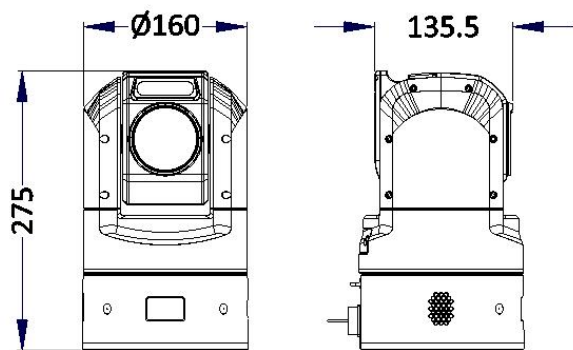


### 4MP 33X Starlight 5G Thermal & Optical Dual-Spectrum PTZ



- 640x512, 12μm/25mm Uncooled Amorphous Silicon Focal Plane Arrays Detector
- 1/2.8" Progressive Scan 4MP CMOS
- 5.5~180mm, 33X Optical Zoom, 16X Digital Zoom
- Starlight Technology
- Built-in 5G Wireless Transmission; Fully compatible with 5G, 4G
- Built-in GPS & WIFI Wireless Transmission
- Built in Information Display Screen
- Aluminum Alloy Structure & Stainless Steel handle and level instrument in order to be easy to install and operate
- Waterproof, Shock-Proof, suitable for magnetic base for Vehicle/Marine application or tripod mount

Model No.	CB-33X-TH2540
<b>Thermal Module</b>	
Detector Type	VOx Uncooled Amorphous Silicon FPA Detector
Effective Pixels	640(H) * 512(V)
Pixel Pitch	12μm
Spectral Range	8μm~14μm
Sensitivity (NETD)	≤ 50mK@F1.0
Focal Length	25mm
Field of View (H) / (V)	17.4° / 13.9°
Min. Focus Distance	23M
Detection Distance	Vehicles: 1.4*4.0m / 5556M, Humans: 1.8*0.5m) / 2500M
Recognition Distance	Vehicles: 1.4*4.0m / 1389M, Humans: 1.8*0.5m) / 625M

Identification Distance	Vehicles: 1.4*4.0m / 694M, Humans: 1.8*0.5m) / 312.5M
Focus Control	Auto / Semiautomatic / Manual
Digital Zoom	1X, 2X, 4X, 8X
Digital Detail Enhancement	Yes
Thermal Image Stabilization	Electronic Image Stabilization (EIS)
Thermal AGC	Auto / Manual
Thermal Noise Reduction	2D NR / 3D NR
Image Flip	180°
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)

### Optical Camera Module

Digital Video Processor	1/2.8" 4MP CMOS Sensor
RAM & ROM	1GB RAM / 8GB ROM
Frame Rate	2560*1440
Minimum Illumination	Color: 0.0005Lux@F1.5(AGC ON), B/W: 0.0001 Lux@F1.5(AGC ON)
Shutter Speed	Auto / 1/25s-1~100'000s
Slow Shutter	Support
Aperture	DC drive
Day & Night Switch	Auto, Dual IR-Cut Filter (Day / Night / Auto / Schedule)
IR Illuminator / Wavelength	Up to 50M / 850nm

### LENS

Lens Type	5.5~180mm Motorized 33X Optical Zoom Lens
Optical Zoom	33X
Digital Zoom	16X
Focus Control	Auto / Semi-Auto / Manual
Iris Control	Auto Iris
Aperture Value	Max. F1.5~F4.0

### F.O.V.

Field of View (H)	58.9°~2.4° (Wide~Tele)
Field of View (V)	33.6°~1.4° (Wide~Tele)
Field of View (D)	67.2°~2.8° (Wide~Tele)
Minimum Working Distance	100mm~1500mm
Zoom Speed	Approximately 3.5s

### DORI

DORI	Lens (mm)	Detect (m)	Observe (m)	Recognize (m)	Identify (m)
	5.5mm	43	43	21	17
	180mm	1200	1200	700	560

### Compression Standard

Video Compression	H.265 Main Profile / H.264 High Profile / H.264 Main Profile / H.264 Baseline Profile / MJPEG
Video Bit Rate	32Kbps~16Mbps
Audio Compression	G.711a / G.711u / G.722.1 / G.726 / MP2L2 / AAC / PCM
Audio Bit Rate	64Kbps(G.711) / 16Kbps(G.722.1) / 16Kbps(G.726) / 32-192Kbps(MP2L2) / 16-64Kbps(AAC)

Max. Resolution	2560*1440@25/30fps
Main Stream	50/60Hz: 25/30fps(2560*1440/1920*1080/1280*960/1280*720)
Sub Stream	50/60Hz: 25/30fps(704*576/640*480/352*288)
Third Stream	50/60Hz: 25/30fps(704*576)
Image Setting	Saturation, Brightness, Contrast, Sharpness adjustable by Client Soft. Or Browse
Exposure Mode	Auto Exposure / Aperture Priority / Shutter Priority / Manual Exposure
Focus Mode	Auto Focus / One Step / Manual Focus / Semi-Auto Focus
Area Exposure / Focus	Support
Gain Control	Auto / Manual
BLC	Support
White Balance	Auto / Manual / Tracking / Outdoor / Indoor / Auto Sodium Lamp / Sodium Lamp
Defog	Support
Day/Night Switch	Auto, Manual, Timing, Alarm Trigger
Flip	Normal / Flip Vertical / Flip Horizontal / 180° / 90°Clockwise / 90°Anti-clockwise
HLC	Support
Image Stabilization (EIS)	Support
DNR	2D + 3D DNR
WDR	≥ 140dB
S/N Ratio	≥ 60dB
Picture Overlay Switch	Support BMP 24-bit image overlay, customizable area
Region of Interest (ROI)	Support 3 streams and 4 fixed areas
Privacy Mask	On/Off, (8 Areas, Rectangle)

### WIFI

Protocol Standard	IEEE 802.11a / IEEE 802.11an / IEEE 802.11ac
Communication Speed	866Mbps
Channel Selection	36~165 Band
Band Width	20 / 40 / 80MHz <b>(Optional)</b>
WIFI Security	WPA-PSK, WPA2-PSK, WPA-PSK, WPA2-PSK

### 5G Wireless Transmission

Protocol Standard	3GPP Release 15	
Network Mode	NSA/SA	
Working Band & Frequency	5G NR	DL 4x4 MIMO (n1/41/77/78/79), DL 2x2 MIMO (n20/28)
		UL 2x2 MIMO (n41/77/78/79), DL 256 QAM, UL 256 QAM
	LTE	DL 2x2 MIMO (b1/2/3/4/5/7/8/20/26/28/34/38/39/40/41)
		DL 256 QAM, UL 64 QAM
	WCDMA	B1/8
SIM Card	Support dual NANO SIM Card	

### Positioning System

Positioning System	GPS Navigation Satellite System
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### Battery

Battery Type	Quick removable Lithium battery with high capacity
Capacity	14.4V 6700mah (96.48wh)
Duration	10 hours (IR Closed, Low Power Mode)
<b>Network</b>	
Protocols	IPv4/IPv6, HTTP, HTTPS, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTP, TCP/IP, UDP, DHCP, PPPoE, QOS, IGMP, ICMP, 802.1x
API	Onvif (Profile S, Profile G), SDK
Baud Rate	1200 / 2400 / 4800 / 9600bps (Default:115200bps)
Streaming Method	Unicast / Multicast
Simultaneous	Live View Up to 20 Channels
User/Host	5 Users
Security	Password Protection, Complicated Password, HTTPS Encryption, IP Address Filter, Control Timeout Settings
Video Management Software	IE / Web / PC Client Software / App
WEB	IE10/11, Safari V12.1 above, Firefox V.52 above, Google Chrome V.57 above, Edge V.79 above
Mobile Client	iOS, Android
P2P	Support iOS / Android / PC
<b>PTZ</b>	
3D Intellectual	Support
Horizontal Rotation Range	0~360° endless
Horizontal Rotation Speed	Pan Speed: Configurable from 0.06° to 80°/s
Tilt Rotation Range	-25~90°
Tilt Rotation Speed	Tilt Speed: Configurable from 0.05° to 60°/s
Preset Points	255
Patrol Scan	6 Patrols, up to 18 Presets per patrol
Pattern	4 Patterns, with total recording time not less than 10mins
A-B Scan	User Programmable
A-B Scan Speed	8 Levels Setting Available (1-8)
3D Positioning	Support
PWR On Action	Memory / Pattern 1 / Tour 1 / 360° Scan / A-B Scan / Preset 1-18 / None
Park Time	5~720s available
Dwell Preset	10~120s available
Power-Off Memory	Support
Anti-Flash	50Hz / 60Hz
<b>Infrared</b>	
IR Distance	Up to 50M
IR Intensity	Automatically adjusted, depending on the zoom ratio
<b>Interface</b>	
SIM Card Interface	NANO SIM Slot*2, Dual SIM Cards, Single Standby
SD Card Interface	Support 256G Micro SD / SDHC / SDXC offline local storage, NAS (NFS, SMB / CIFS support)
Ethernet Interface	RJ45*1, 10M/100M self-adaptive
Power Interface	DC5.5*2.1F
Alarm	1CH Input, 1CH Output

Audio	2CH Input, 2CH Output,
Microphone	Built-in Microphone*2
Speaker	Built-in Speaker*2
RS-485	RS-485*1
Video Output	1CH Thermal Imaging Video, Network Video, 1CH HD Video, Network Video (via RJ-45)
<b>Alarm</b>	
Snapshot	Remote Timing Snapshot, Mobile View Images Snapshot
Motion Detection	Intelligent Multiple Detection Zones (Max. 4 Zones)
Alarm Linkage	E-mail Alert and Upload Snapshot to FTP, Relay Out, Mobile Phone App
<b>Event</b>	
Basic Event	Motion Detection, Alarm Input and Output
Smart Tracking	Auto Tracking
Alarm Linkage	Upload to FTP, E-mail, Trigger Alarm Output, Trigger Recording
<b>General Parameter</b>	
Operating Temp.	Indoor: 0~40°, Outdoor: -40°~+65°
Humidity	≤ 95% Non Condensing
Power	DC 12V~24V
Power Consumption	≤ 45W
Dimension	160(W)*275(H)mm
Weight	4.5KG
Protection Level	IP66, TVS 4000V Lightning Protection, Surge Protection
Mounting Bracket	Vehicle Mount, Ceiling Mount, Tripod Mount
<b>Approvals</b>	
Certification	CE / FCC / RoHS
ISO	ISO9001

**Note:**

Detection Range: In order to distinguish an object from the background, the object must be covered by 1.5 or more pixels.

Recognition Range: In order to classify the object (animal, human, vehicle, etc.), the object must be covered by 6 or more pixels.

Identification Range: In order to identify the object and describe it in details, the object must be covered by 12 or more pixels.

