Hanwha Vision

Network   Thermal

TNM-C4940TDR
Bi-spectrum AI IR Thermal Camera

Key Features

• Radiometry AI Bi-Spectrum for Outdoor environment
• Bi-spectrum monitoring with 8MP visible & VGA thermal
• AI based Object classification with Both Channels (person/vehicle)
• Remote Temperature Monitoring within -20 ~ 130°C range
• 10 of polygonal ROI areas for temperature monitoring
• Improved All-in-One installation solution (wall&pole)

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Specifications

Video

Video		Thermal	Visible
Imaging Device	Size		1/1.8"
	Type	Uncooled micro bolometer (640x480)	CMOS
Resolution		1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	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)	30fps/25fps(60Hz/50Hz)
	MJPEG	3fps	1fps
	Others	Max. 15fps when both channel AI on	Max. 15fps when both channel AI on
Spectral Range		8~14㎛	
NETD		≦60mK	
Pixel Size		12㎛	
Min. Illumination (Lux)	Color(1/30sec, 30IRE)		0.06
	BW(1/30sec, 30IRE)		0.004
Video Out		USB: Micro USB Type B	

Lens

Lens		Thermal	Visible
Focal Length (mm)		9.1	4.4~9.3
Max Aperture Ratio (F number)	Wide	1.0	1.3
	Tele		2.15
Angular Field of View	Horizontal	50.0°	112.1°~47.5°
	Vertical	37.0°	58.0°~26.6°
	Diagonal	63.8°	137.5°~54.6°
iFoV		1.319mRad	
Min. Object Distance		3.5m(11.48ft)	1.75m(5.74ft)
Focus Control		Fixed	Simple focus

Pan / Tilt / Rotate

Pan / Tilt / Rotate			
Pan / Tilt / Rotate Range	Pan	-170° ~+170°	
	Tilt	-40°~50°	

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
Electronic Shutter	Mode		Minimum, Maximum, Anti flicker, Prefer shutter control(Based on AI engine)
	Speed Range		1/5~1/12,000sec
Alarm Interface	In/Out	4 configurable I/O ports	
Alarm Triggers		Analytics, Network disconnect, Alarm input, MQTT subscription	
Alarm Events When Alarm Trigger Occurred		File upload(image): e-mail/FTP, Notification: e-mail, Recording: SD/SDHC/SDXC or NAS recording at event triggers,Alarm output, Handover: PTZ preset,send message by HTTP/HTTPS/TCP, MQTT: publication	
Audio In		Selectable(mic in/line in)	
Audio Out		Line out	
Light Type		IR LED	
Light Viewable Length	IR	30m(98.42ft)	
IR Wavelength		850nm	
Color Pallettes		Whitehot, Blackhot, Rainbow, Rainbow2, Sepia, Red, Iron, Custom	

Analytics

Classified Object Type		Person, Vehicle	Person, Face, Vehicle, License plate
Attributes	Vehicle		Type(car, bus, truck, motorcycle, bicycle)
Thumbnail		BestShot	BestShot

Analytics

Analytics Events	Based on AI Engine	Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit)	Object detection, Virtual line(Crossing/Direction), Virtual area(Loitering/Intrusion/Enter/Exit)
	Normal	Motion detection, Temperature detection	Defocus detection, Motion detection, Tampering, Audio detection, Sound classification, Shock detection, Virtual area(Lotering, Intrusion, Enter/Exit, Appear/Disappear)

Radiometry

Temperature Detect Range	-20°C~130°C	
Temperature Accuracy	±5°C(≤100°C), ±20%(>100°C)	
Temperature Detection ROI Zones	Quantity	10ea
	Shape / Option	Polygonal
Hybrid Pallettes	Support	
Spot Temperature Reading	Support	
ROI Condition Monitoring	Above, Below, Increase, Decrease	

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, G.726: 16kbps,24kbps,32kbps,40kbps, AAC-LC: 48kbps at 16kHz	
Smart Codec	WiseStream II	Manual, WiseStreamIII
Bitrate Control	H.265/H.264: CBR or VBR, MJPEG: VBR	
Streaming	Unicast	Up to 6 users
	Multicast	Support
	Multiple Streaming	Up to 3 profiles
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, CDP, SRTP(TCP, UDP Unicast), MQTT	
Application Programming Interface	ONVIF	S, 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
Network authentication	IEEE 802.1X(EAP-TLS, EAP-LEAP, EAP-PEAP, MSCHAPv2)
Secure Communication	HTTPS, WSS(WebSocket Secure)
Access Control	IP-based access control

Security

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	HTPM(Hanwha Trusted Platform Module), SDcard partition encrypt(AES-256)
Security Certificate	TPM 2.0 with FIPS 140-2 level2

General

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

Environmental & Electrical

Operating Condition	Temperature	-40°C~+60°C(-40°F~+140°F)
	Humidity	0~95% RH(non-condensing)
	Others	Start up should be done at above -30°C
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. 25.5W, Typical 16.0W
	12VDC	Max. 21.5W, Typical 14.0W

Mechanical

Color	White
Material	Aluminum
RAL Code	RAL9003
Product Dimensions	353.4(W)x287.5(H)x191.2(D)mm(13.92x11.32x7.53")
Product Weight	4.53kg(9.99lb)

Certifications & Standards

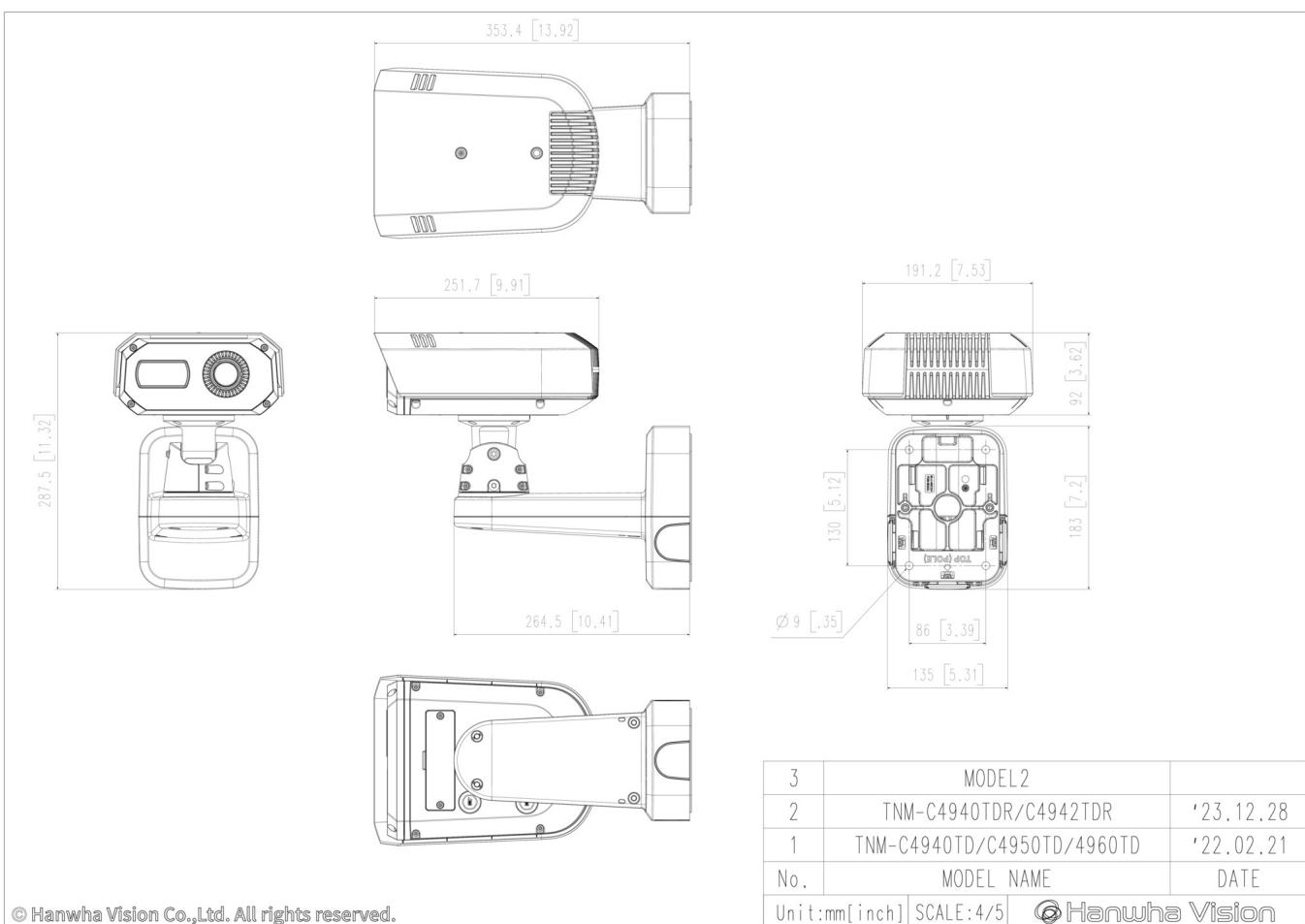| EMC	FCC 47 CFR 15 Subpart B Class A, ICES-3(A)/NMB-3(A), CE/UKCA - EN55032 Class A, EN 50130-4, EN 61000-3-2, EN 61000-3-3, VCCI CISPR 32 Class A, RCM AS-NZS CISPR 32 Class A
Safety	UL 62368-1, CAN/CSA C22.2 NO. 62368-1
Environment	IEC 60529 IP66, IEC 60529 IP67, IEC 62262 IK10, NEMA 250 type 4X, NEMA TS 2-2013 (2.2.8, 2.2.9)

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CAD

3	MODEL2	
2	TNM-C4940TDR/C4942TDR	'23.12.28
1	TNM-C4940TD/C4950TD/4960TD	'22.02.21
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:4/5	Hanwha Vision

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