TRUEN

TCB Series

Autofocus IP Zoom Module

TCB-2244A

- 1/2“ Sony CMOS Sensor
- 44X Optical Zoom, 16X Digital Zoom
- Max 60FPS @ 1920 x 1080
- H.265 / H.264 / MJPEG
- Autofocus
- True WDR
- SRT (Secure Reliable Transport)
- RTSP/RTMP/MPEG-TS
- ONVIF, PSIA Compliant

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Exmor CMOS Sensor

TCB-2244A Specifications

Basic Specifications	
Image Sensor	1/2 Sony CMOS Sensor
Minimum Illumination	Color : 0.07 Lux at 1/30sec, 50IRE BW : 0 .0025Lux at 1/30sec, 50IRE
Analog Gain / Digital Max Gain	1 to 30
Shutter Speed	1/1 to 1/100000
Maximum Aperture Ratio	F1.4 ~ F5.0
Defog	YES
Noise Reduction	2D, 3D
Gamma	0, 1, 2, Auto(Normal), Auto(Clear), Auto(Bright), Auto(Fine)
Wide Dynamic Range	Level 1 to Level 7
White Balance	Auto Tracing White, Auto White, Manual
AE (Auto Exposure Mode)	Auto, Flat, Spot, Center
Lens (wide to tele)	44x optical zoom ; f= 6.3mm to 278mm, F1.4 to F5.0
Digital Zoom	16x
Angle of View	Horizontal : 61.6°(wide) ~ °1.9(tele) / Vertical : 36.0°(wide) ~ °1.1(tele) / Diagonal : 69.5°(wide) ~ °2.2(tele)
Minimum Focus Length	1 m to 10 m

Video	
Compression	H.265/H.264/MJPEG
Frame rate	Max 60fps @ 1920x1080
Bitrate	Primary : 32Kbps ~ 16Mbps, Secondary x3 : 32Kbps ~ 4Mbps
Resolution	352x240 ~ 1920x1080
Streaming	Primary : H.265/H.264, Secondary x 3 : H.265/H.264/MJPEG
Burn-in OSD	Multi-lingual

Audio	
Compression	G.711 / AAC
Sampling rate	G.711 : 8 KHz, AAC : 32 kHz / 44.1 kHz / 48 kHz
Bitrate	G.711 : 64Kbps, AAC: 64Kbps/128Kbps
Streaming	G.711 : Full-duplex, AAC : Full-duplex
Input/Output	1 x Line-In (mono), 1 x Line-Out (mono) - IN / OUT Connector : 0.4mm PITCH CONNECTOR FOR 30pin MICRO COAXIAL CABLE (KEL)

Network	
Protocol	IPv4/v6, TCP, UDP, IGMP(Multicast), ICMP, DHCP, HTTP, HTTP, FTP, SNMP, SMTP, UPnP, WS-Discovery, Zero Configuration, NTP, SRT, MPEG-TS, RTP, RTSP, RTMP, DDNS
Security	Password protection, IP address filtering, HTTPS encryption, SRT
API	Truen protocol/SDK, ONVIF, PSIA
Interface	Ethernet 10/100/1000base-T / Connector : 1.25mm Conn - Connector : 1.25mm PITCH wire to board CONNECTOR (8pin of 12pin)

Event and Alarm	
Event Source	Motion, Sensor input, Client disconnection, Intrusion, Line crossing, Tampering, Face detection, Sound detection, User defined event
Event actions	Notification(E-mail), FTP, PTZ preset, Alarm control, Recording

General	
Power Supply & Power Consumption	Min DC12V/2A & DC12V: Max 13.6 W
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)
Operating Humidity	20% ~ 80% RH
Edge Storage	SD/SDHC/SDXC slot (Max 256GB) / Connector : Micro-Coaxial
Dimensions (W x H x D)	73.3mm X 77.24mm X 173.65mm
Weight	724g

Fast & Accurate Focusing Performance

In low-light conditions, TCB series can accurately focus on complex photo scenes based on large amounts of data accumulation from various experiences.

Focus

PTZ Control: Focus Near, Focus Far, Auto Focus
Minimum Focus Length: Adjust minimum length of focus between 10cm to 10m
Advanced Focus settings:
Auto focus after zoom control, One shot AF after PTZ, AF sensitivity – adjust sensitivity of auto focus
AF area (Auto, Full, Center, Peak)

Wide Range of Zoom Ratio

With various optical x36/x40/x44, it's available to monitor any objects in long distance. Image stabilizer and optical/digital zoom are combined to enhance picture quality while maintaining the original horizontal angle of view. This ensures no compromise in image size, and reduces blurring.

De-fog

When the surrounding area of the subject is foggy and low contrast, the defog mode will reduce the effects of the fog and make the subject appear clearer

Day & Night Mode

The TCB series deliver color images during the day. As light diminishes bellow a certain level, the camera can automatically switch to night mode(Black and White mode), removing the IR-cut filter to boost sensitivity for clear pictures in near-darkness to maintain good image quality.
(Auto, Day, Night, External Sensor)

Powerful Encoding Performance

The latest H.265 codec is available with various application such as IVS(Intelligent Video System), LPR(License Plate Recognition) and AI Solution.

Various PTZ Protocol

More than 40 protocols including Visca, Pelco D/P are included for PT system or Speed Dome Camera that allows developers to integrate the TCS Series with their systems easily.

Capture crisp, clear Full-HD and 4K images

The high-performance Sony image sensor achieves superb Full-HD and 4K picture quality, even in lowlight environments. Progressive scanning assures smoother pictures with reduced blur – ideal for capturing the detail in moving images.

Image Enhancement

AE: A variety of AE functions are available for optimal output of subjects in lighting conditions that range from low to high (Auto, Flat, Center)
AWB: Auto Tracing White, Auto White, Manual Mode
BLC: Adjusts exposure of the entire image to properly expose the subject in foreground.
DIS: Reduces the level of blur or distortion in pictures that can result from unsteady or shaky movement.
IRIS Mode: Based on zoom magnification, close IRIS when zoom in or when low exposure (able to set limit F. Number)

Wide Dynamic Range

Wide Dynamic Range
Wide Dynamic Range mode is image processing technology which gives the ability to see clear, detailed images in high-contrast or backlit environments.

Privacy Zone Masking

Privacy Zone masking protects private objects and areas such as house windows, entrances, and exits which are within the camera's range of vision but not subject to surveillance. Privacy zone masking can be masked on the monitor to protect privacy. Mask can be displayed on 8 regions per screen and individual on/off is available.

Extreme low light performance

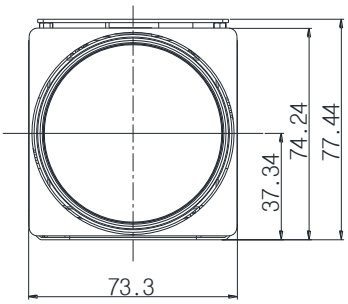
The high performance image sensors provide superb Full HD and 4K picture quality even in low light environment.

Visibility Enhancer

Depending on the imaging scene, the Visibility Enhancer function makes the darker part of a camera image brighter, and automatically correct brightness and contrast to show bright parts clearly.

Dimensions

< Front>



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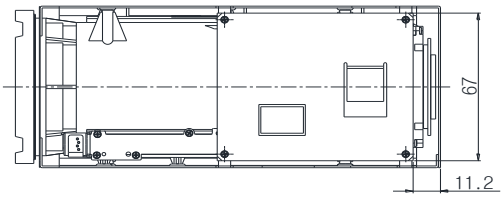

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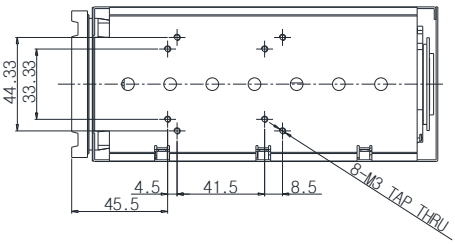

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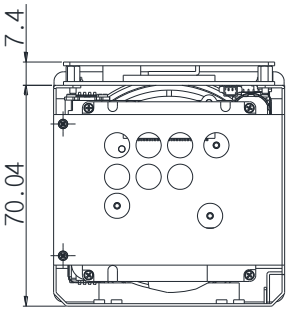

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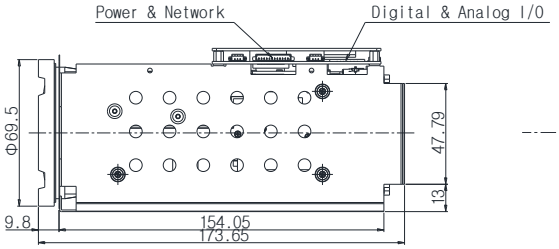

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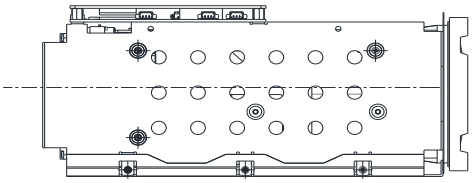

Pin Assignment & Connector

R0M-J4							
Pin No.	Signal	Dir	Description	Pin No.	Signal	Dir	Description
1	EXT_RTX+	I/O	RS-485 +	16	5V	PWR	DC 5V Output (Max 100mA)
2	EXT_RTX-	I/O	RS-485 -	17	Reserved	I/O	Reserved
3	AC_IN_L	I	Audio Line input	18	Reserved	I/O	Reserved
4	AC_OUT_L	O	Audio Line output	19	GND	PWR	Ground
5	IP_RESET	I	Factory reset Input(Active Low)	20	Reserved GPIO0	I/O	GPO(For Alarm Output, 3.3V Signal output)
6	DAC_CVBS	O	CVBS output	21	Reserved GPIO1	I/O	GPI(For Sensor Input, 3.3V Signal input)
7	Reserved	O	Reserved	22	3.3V	PWR	DC 3.3V Output (Max 100mA)
8	Reserved	O	Reserved	23	3.3V	PWR	DC 3.3V Output (Max 100mA)
9	Reserved	O	Reserved	24	SDIO0_DETECT	I	SDIO 0 card detection signal, active low
10	Reserved	I	Reserved	25	SDIO0_CLK	O	SDIO 0 output working clock for the card
11	INTER_Tx1	O	Connect to INTER_Rx2	26	SDIO0_CMD	I/O	SDIO 0 command
12	INTER_Rx1	I	Connect to INTER_Tx2	27	SDIO0_DATA 0	I/O	SDIO 0 data 0
13	INTER_Tx2	O	Connect to INTER_Rx1	28	SDIO0_DATA 1	I/O	SDIO 0 data 1
14	INTER_Rx2	I	Connect to INTER_Tx1	29	SDIO0_DATA 2	I/O	SDIO 0 data 2
15	5V	PWR	DC 5V Output (Max 100mA)	30	SDIO0_DATA 3	I/O	SDIO 0 data 3

R0M-J1			
Pin No.	Signal	Dir	Description
1	NETWORK_D-	IO	Ethernet Negative Data 4
2	NETWORK_D+	IO	Ethernet Positive Data 4
3	NETWORK_C-	IO	Ethernet Negative Data 3
4	NETWORK_C+	IO	Ethernet Positive Data 3
5	NETWORK_B-	IO	Ethernet Negative Data 2
6	NETWORK_B+	IO	Ethernet Positive Data 2
7	NETWORK_A-	IO	Ethernet Negative Data 1
8	NETWORK_A+	IO	Ethernet Positive Data 1
9	VIN	PWR	Supply Voltage DC12V
10	VIN	PWR	Supply Voltage DC12V
11	GND	PWR	Ground
12	GND	PWR	Ground

Accessories

- ▶ Micro Coaxial Cable
- ▶ Interface Board

* For detailed information, please contact us at os@truen.co.kr

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