

Intelligent Thermal Engine Module

QUANTUM RED

Vision, beyond the limits.



HANWHA SYSTEM'S TRSM Module | THE BENEFITS

Accuracy
±0.01° accuracy in High Quality Imaging

Expandability
Supports Various Video Formats

Efficiency
Low Cost, Space Free, Comfortable, Easy Installation

Key Features

Micro Temperature Reference Source Module (TRSM) (Temp. Reference Source Module)

Simple & Cost effective solution compared with Black Body
TRSM Stability & Accuracy (±0.01)
Able to adjust temperature by user

High Performance Edge Processor

Digital Detailed Enhancement(DDE)
On-Device AI (Embedded GPU Core)

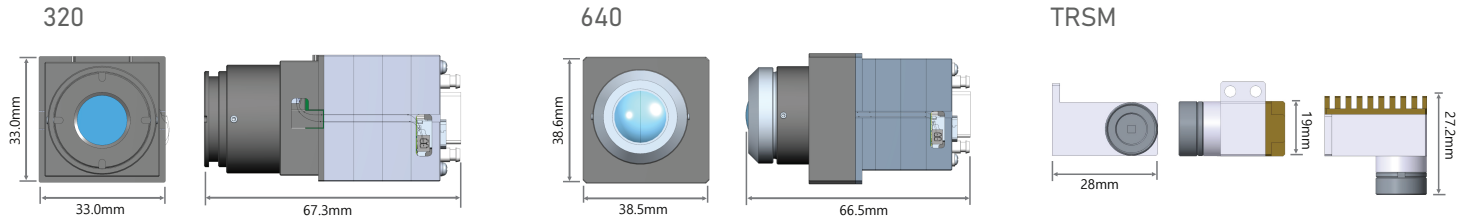
Video Interface

User friendly video interface including USB 3.0, MIPI

User selected FOV

Standard C-Mount applied
Athermal lens design

Product Dimensions



Technical Specifications

Focal Plane Array

Detector Type	Uncooled LWIR Thermal Imager
Array Size	VGA(640x480), QVGA(320x240)
Pixel Pitch	12μm
Spectral Band	8 ~ 14μm
Sensitivity (NETD)	≤ 60mK @F/1.0 @ Room Temperature

Video

Frame Rates	30Hz
Video Format	RS-170, Camera Link(LVDS), BT656, BT1120, RGB, MIPI
NUC	Factory Calibrated
E - Zoom	x2, x4, x8
Time to image	≤ 3 seconds

Mechanical (W/O Optic)

Dimensions	Varies by configuration, as small as 33 x 33 x 30mm
Weight	Varies by configuration, as light as 55g

Configurations

BASE	Detector, Detector Interface board Vision Processing Board, Power Board (BT656, BT1120, RGB, RS-170)
Video Interface	Camera Link(LVDS), USB3.0, MIPI
Option	Optical Lens, Tripod Mount

Power

Input Voltage	5.0V
Power Dissipation (nominal)	Varies by Configuration as low as 1.2W (BASE)

Environmental

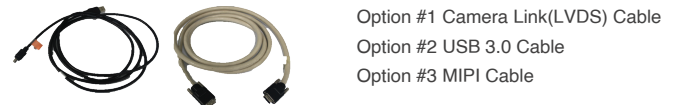
Operating Temp. Range	- 40°C ~ + 80°C
Storage Temp. Range	- 45°C ~ + 85°C

Accessories

Video Interface Options

Camera Link (LVDS)		Power Supply: USB3.0 Video Interface: Camera Link(LVDS) Control Channel: USB3.0 (UART, I2C, SPI)
USB 3.0		Power Supply USB3.0 Video Interface: USB3.0 Control Channel: USB 3.0 (UART, I2C, SPI)
MIPI		Power Supply USB3.0 Video Interface: MIPI Control Channel: USB3.0 (UART, I2C, SPI)

Camera Interface Cable



Temperature Reference Source Module (TRSM)



Operating Temp. Range	+10°C ~ +30°C
Target Temp. Range	+35°C ~ +40°C
Accuracy	±0.3°@ +15°C ~ +25°C (±0.5°@ other ranges)

Optical Lens (Athermalized)



QVGA	HFOV 36° HFOV 33° HFOV 28° HFOV 11.5°	VGA	HFOV 75° HFOV 22.8°
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Tripod-mount



Tripod-Mount Adaptor

Configuration

1		2		3				4		5		6		7	
Resolution		Lens		HFOV				Frame Rate		Grade		Interface Option		TRSM Module Option	
Type	Mark	Type	Mark	Type	Mark	Type	Mark	Type	Mark	Type	Mark	Type	Mark	Type	Mark
640 (640x480)	640	O	A	HFOV 36°	360	HFOV 75°	750	60Hz	6	Performance : ≤ 50 mK	P	Camera Link	C	with TRSM	T
320 (320x240)	320	X	X	HFOV 33°	330	HFOV 22.8°	228	30Hz	3	Mainstream : ≤ 60 mK	M	USB3.0	U	without TRSM	S
				HFOV 28°	280							MIPI	M		
				HFOV 11.5°	115										

- Part-Numbering sample : **640A2806PMT**

1	2	3	4	5	6	7
640	A	280	6	P	M	T

The specifications above are subject to change without prior notice for quality improvement.