Uncooled Thermal Modules

STPLUG / STPLUG-R Series

2023 V2

For customized projects please Contact us:

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STPLUG Uncooled Thermal Modules (Imaging Only)

The STPLUG Series Uncooled thermal modules integrate GST metal package infrared detector, unique image processing algorithm and professional hardware platform. With high performance IR detector, the thermal module can provide superior performance, clear images, edge sharpening and enhanced details at any harsh environments.

✓ Play and play for easy integration
- DVP/LVDS multiple image output interfaces.
- Standard optical interface with complete lens options

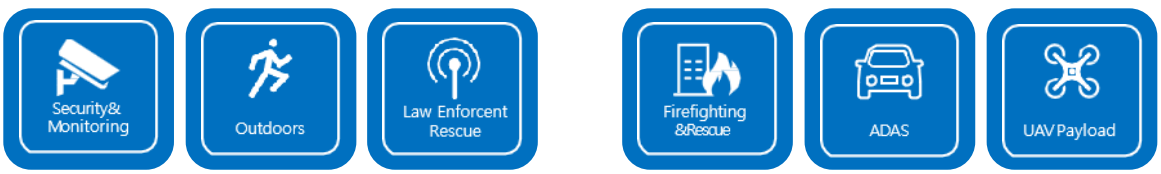
✓ Clear images & rich details
- High thermal sensitivity, NETD < 30mK
- IDE/AGC intelligent algorithm

✓ Good stability
- Adapt to various harsh environments

✓ Various expansion components
- USB3.0/VPC/Cameralink/HDMI/Gig-E network port

Applications

The STPLUG series thermal modules are equipped with various common industrial interfaces and optical lenses, which cater for all specific integration requirements.



STPLUG1212 - 1280x1024 Uncooled Thermal Modules for Imaging Only

STPLUG1212 is one of the STPLUG Series Uncooled Thermal imaging module offered by SIMTRUM. Consisting of a high definition 1280×1024/12μm uncooled thermal imaging sensor, full series of optical components, a signal processing circuit, and a unique image processing algorithm, the STPLUG1212 uncooled LWIR camera core provides a clear image and superior performance.

Feature

- NETD<50mk, High Sensitivity
- Stable Performance
- Clear Image Quality & Details
- Easy Integration & Plug-in
- Strong Environmental Adaptability

Specifications

Model	STPLUG1212
IR Detector Performance	
Resolution	1280x1024
Pixel Pitch	12μm
Spectral Range	8~14μm
Typical NETD	<50mK
Image Processing	
Frame Rate	25Hz
Start-up Time	25s
Analog Video	/
Digital Video	RAW/YUV/BT1120
Extension Component	USB/Camerlink/HDMI
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction （NUC);Auto Gain Control （AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	5±0.3V (Fixed Focus) 12V±1V (Continuous Zoom)
Typical Power Consumption	2W/5V@23±5℃ (Fixed Focus) 4.2W/12V@23±5℃ Continuous Zoom)
Physical Characteristic	
Dimension	56×56×44 (Without Lens)
Weight	220g±5g (Without Lens)
Environmental Adaptation	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed Focus Athermal: 14mm/19mm/25mm Continuous Zoom: 30-90mm, 30-180mm

STPLUG612 - 640x512 Uncooled Thermal Modules for Imaging Only

STPLUG612 is one of the STPLUG Series Uncooled IR Thermal camera modules offered by SIMTRUM. Consisting of a 640x512/12μm uncooled thermal sensor, full series of optical components, a signal processing circuit, and a unique image processing algorithm, the STPLUG612 thermal imaging core provides a clear image and superior performance.

Feature

- NETD<40mk, High Sensitivity
- Stable Performance
- Clear Image Quality & Details
- Easy Integration & Plug-in
- Strong Environmental Adaptability

Specifications

Model	STPLUG612
IR Detector Performance	
Resolution	640x512
Pixel Pitch	12μm
Spectral Range	8~14μm
NETD	<40mK
Image Processing	
Frame Rate	9Hz/25Hz/30Hz/50Hz
Start-up Time	10s
Analog Video	PAL/NTSC
Digital Video	RAW/YUV/BT656/LVDS
Extension Component	USB/VPC/Cameralink/Gig-E
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction (NUC); Auto Gain Control (AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	4~6V
Typical Power Consumption	1.4W
Physical Characteristic	
Dimension	44.5x44.5x36.6
Weight	85g±3g
Environmental Adaptation	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed Focus Athermal: 19mm/24mm

STPLUG617 - 640x512 Uncooled Thermal Modules for Imaging Only

STPLUG617 is one of the STPLUG Series Uncooled Thermal camera modules offered by SIMTRUM. Consisting of a 640x512/17μm uncooled thermal camera sensor, full series of optical components, a signal processing circuit, and a unique image processing algorithm, the STPLUG617 LWIR thermal imaging module provides a clear image and superior performance.

Feature

- NETD<30mk, High Sensitivity
- Mature Technology
- Stable Performance
- Clear Image Quality & Details
- Strong Environmental Adaptability

Specifications

Model	STPLUG617
IR Detector Performance	
Resolution	640x512
Pixel Pitch	17μm
Spectral Range	8~14μm
Typical NETD	<30mK
Image Processing	
Frame Rate	9Hz/25Hz/30Hz/50Hz
Start-up Time	10s
Analog Video	PAL/NTSC
Digital Video	RAW/YUV/BT656/LVDS
Extension Component	USB/VPC/Cameralink/Gig-E
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction（NUC);Auto Gain Control（AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	4~6V
Typical Power Consumption	1.4W
Physical Characteristic	
Dimension	44.5×45.95×37.3
Weight	90g±3g
Environmental Adaptation	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed focus athermal: 7.5mm/13mm/19mm/25mm/ 35mm/50mm/60mm/100mm Motorized lens: 75mm/100mm/150mm Continuous optical zoom: 30-150mm

STPLUG417 - 384x288 Uncooled Thermal Modules for Imaging Only

STPLUG417 is one of the STPLUG Series Uncooled Thermal camera infrared camera modules offered by SIMTRUM. Consisting of a 384x288/17μm uncooled thermal camera sensor, full series of optical components, a signal processing circuit, and a unique image processing algorithm, the STPLUG417 thermal imaging module provides a clear image and superior performance.

Feature

- NETD<30mk, High Sensitivity
- Stable Performance
- Clear Image Quality & Details
- Easy Integration & Plug-in
- Strong Environmental Adaptability

Specifications

Model	STPLUG417
IR Detector Performance	
Resolution	384×288
Pixel Pitch	17μm
Spectral Range	8~14μm
NETD	<30mK
Image Processing	
Frame Rate	9Hz/25Hz/30Hz/50Hz/60Hz
Start-up Time	10s
Analog Video	PAL/NTSC
Digital Video	RAW/YUV/BT656/LVDS
Extension Component	USB/VPC/Cameralink/Gig-E
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction (NUC);Auto Gain Control (AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	4.5~6V
Typical Power Consumption	1.4W
Physical Characteristic	
Dimension	44.5x44.5x36.6
Weight	85g±3g
Environmental Adaptation	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optional lens	Fixed Focus Athermal: 7.5mm/13mm/19mm/25mm/35mm/50mm/60mm/100mm

STPLUG-R Uncooled Thermal Modules (Thermography Only)

The STPLUG-R series come with additional temperature measurement function based on the STPLUG series imaging modules. It provides radiometric temperature data for each pixel, which ensures the accurate temperature measurement and professional thermographic inspections. With the powerful SDK database, you can design your own thermographic IR camera just with a housing for the STPLUG-R series.

✓ Plug and play for easy integration

- Standard 50pin interface, multiple expansion board options
- Standard optical interface ; a full set of infrared lenses
- Perfect SDK database, ongoing update and optimization

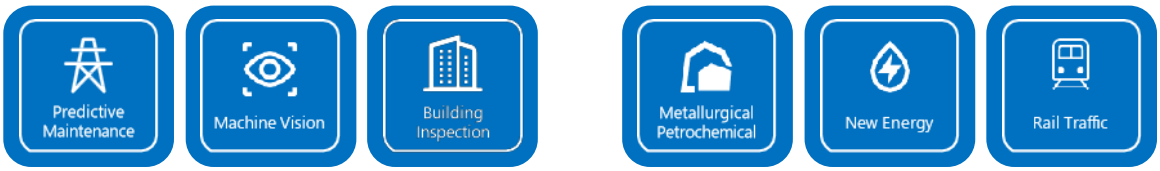
✓ For industrial inspection & thermography

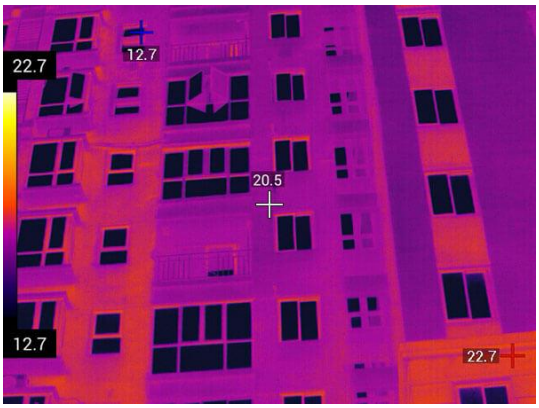
- Support high thermal sensitivity, NETD < 30mK
- With optional temperature measurement function and customizable temperature range

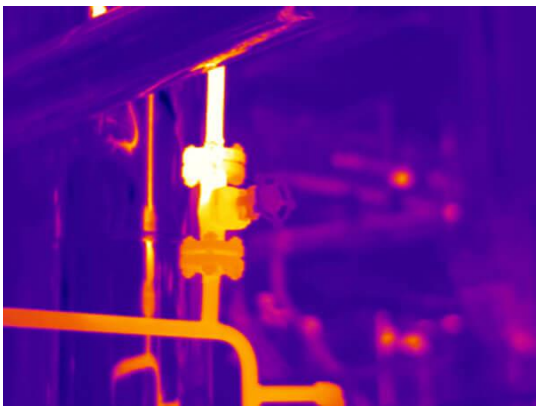
✓ Various expansion components

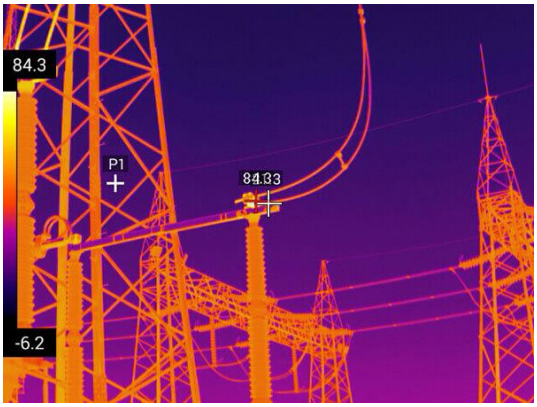
- USB3.0/VPC/Cameralink/HDMI/Gig-E network port

Applications









STPLUG1212R - 1280x1024 Uncooled Thermal Modules(Thermography Only)

STPLUG1212R is one of the STPLUG-R Series Uncooled infrared camera module offered by SIMTRUM. With the large array of 1280x1024 resolution, the STPLUG1212R uncooled thermal module could present more image details and supports a larger field of view .The reduced 12μm pixel size offers better spatial resolution and matches shorter optical lens focus to achieve the same range mission. It is widely used in areas such as Predictive Maintenance, Metallurgical Petrochemical, Machine Vision, Building Inspection, New Energy, Rail Traffic and other industries.

Feature

- Pixel pitch: 12um
- Resolution: 1280x1024
- Spectra Range: 8μm -14μm
- NETD<50mk, High Sensitivity
- Temperature Range: -20℃~150℃, 0℃~550℃
- Temperature Accuracy: Greater of ±3℃ or ±3%
- High reliability & Strong Environmental Adaptability.

Specifications

Model	STPLUG1212R
IR Detector Performance	
Resolution	1280x1024
Pixel Pitch	12μm
Spectral Range	8~14μm
NETD	<50mK
Image Processing	
Frame Rate	25Hz
Start-up Time	25s
Digital Video	RAW/YUV/BT1120
Extension Component	USB 3.0/Cameralink/HDMI
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction（NUC);Auto Gain Control（AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	5V±0.3V
Typical Power Consumption	2W/5V (@23±5℃)
Temperature Measurement	
Operating Temperature Range	-10℃ ~50℃
Temperature Range	-20℃~150℃, 0℃~550℃
Temperature Accuracy	Greater of ±3℃ or ±3%
SDK	Support ARM/Windows/Linux SDK, Achieve Full Screen Thermography
Physical Characteristic	
Dimension	56×56×44 (Without Lens)
Weight	220g±5g (Without Lens)
Environmental Adaptation	
OperationTemperature	-40℃ ~+70℃
StorageTemperature	-45℃ ~+85℃
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed Focus Athermal: 14mm/25mm

STPLUG617R - 640x512 Uncooled Thermal Modules (Thermography Only)

STPLUG617R is one of the STPLUG-R Series Uncooled Thermal camera modules offered by SIMTRUM. Consisting of a 640x512/17μm uncooled FPA infrared detector, full series of optical components, professional signal processing circuit and image processing algorithm. STPLUG617R infrared thermal sensor module is a kind of uncooled camera module applied in the field of industrial thermal imaging and teperature measurement. The temperature range is customizable, which can meet the specific requirements of industrial thermography and present a clear thermal image.

Feature

- NETD<30mk, High Sensitivity
- Easy Integration & Plug-in
- Stable Performance
- Clear Image Quality & Details
- Cusomizable Temperature Range
- Strong Environmental Adaptability

Specifications

Model	STPLUG617R
IR Detector Performance	
Resolution	640x512
Pixel Pitch	17μm
Spectral Range	8~14μm
NETD	<30mK
Image Processing	
Frame Rate	25Hz/30Hz
Start-up Time	15s
Analog Video	PAL/NTSC
Digital Video	RAW/YUV/BT656/LVDS
Extension Component	USB/VPC/Cameralink/Gig-E
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction（NUC);Auto Gain Control（AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	4~6V
Typical Power Consumption	1.5W
Temperature Measurement	
Operating Temperature Range	-10ºC ~50ºC
Temperature range	-20℃~150℃，0℃~550℃
Temperature Accuracy	Greater of ±2℃ or ±2%
SDK	Support ARM/Windows/Linux SDK, Achieve Full Screen Thermography
Physical Characteristic	
Dimension	44.5×45.95×36.6
Weight	90g±3g
Environmental	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed Focus Athermal: 7.5mm/13mm/19mm/25mm

STPLUG417R - 384×288 Uncooled Thermal Modules (Thermography Only)

STPLUG417R is one of the STPLUG-R Series Uncooled Thermal IR camera modules offered by SIMTRUM. Consisting of a 384x288/17μm uncooled infrared detector, full series of optical components, a professional signal processing circuit and an image processing algorithm. The STPLUG417R is a kind of uncooled infrared thermal imaging module applied in the field of industrial thermal imaging and temperature measurement. The temperature range is customizable, which can meet the specific requirements of industrial thermography and present a clear thermal image.

Feature

- NETD<30mk, High Sensitivity
- Easy Integration & Plug-in
- Stable Performance
- Clear Image Quality & Details
- Cusomizable Temperature Range
- Strong Environmental Adaptability

Specifications

Model	STPLUG417R
IR Detector Performance	
Resolution	384×288
Pixel Pitch	17μm
Spectral Range	8~14μm
NETD	<30mK
Image Processing	
Frame Rate	25Hz/30Hz/50Hz/60Hz
Start-up Time	15s
Analog Video	PAL/NTSC
Digital Video	RAW/YUV/BT656/LVDS
Extension Component	USB/VPC/Cameralink/Gig-E
Dimming	Linear/Histogram/Mixed three modes
Digital Zoom	1~8X continual Zoom, Step size 1/8
Image Display	Black hot/White hot/Pseudo color
Image Direction	Horizontally/Vertically/Diagonally Flip
Image Algorithm	Non-uniformity Correction（NUC);Auto Gain Control（AGC);Image Detail Enhancement (IDE)
Electrical Specification	
Standard External Interface	50pin_HRS interface
Communication Mode	RS232-TTL, 115200bps
Supply Voltage	4.5~6V
Typical Power Consumption	2W
Temperature Measurement	
Operating Temperature Range	-10ºC ~50ºC
Temperature Range	-20℃~150℃，0℃~550℃
Temperature Accuracy	Greater of ±2℃ or ±2%
SDK	Support ARM/Windows/Linux SDK, Achieve Full Screen Thermography
Physical Characteristic	
Dimension	44.5×44.5×36.6
Weight	77g±3g
Environmental Adaptation	
OperationTemperature	-40ºC ~+70ºC
StorageTemperature	-45ºC ~+85ºC
Humidity	5%~95%, non-condensing
Vibration	Random Vibration 5.35grms, 3 axis
Shock	Half-sine wave, 40g/11ms, 3 axis 6 direction
Optics	
Optional lens	Fixed Focus Athermal: 7.5mm/13mm/19mm/25mm

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