

ORBEC[®]A 3D Camera

Persee 2

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statement

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revision note

edition	date	Revised records
V1.0	2022.06.01	Write the first edition
V1.1	2022.08.25	Correct some product specifications and parameters Add functional instructions

catalogue

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ORBEC[®] 3D smart camera

Product

Orbbec Persee 2 is a 3D smart camera developed based on the new generation of binocular structured light camera technology and high computing power ARM platform computing board;

Persee 2 3D Smart camera is equipped with Amlogic A311D AI computing power platform, support 5 Tops computing power; and equipped with a new depth chip MX6600, greatly improve the depth image FOV, the level reaches 90°, diagonal over 100°, can collect high quality depth images of objects in the range of 0.15m-10m. It also provides six-axis IMU / inertial sensing data and high-quality RGB images, and supports the camera hardware depth image and color image space alignment function, provides a variety of depth working modes, adapt to different application scenarios, in addition, it provides flexible and rich frame synchronization function, and supports cross-platform development kit ORBBEC SDK.

Persee 2 Rich hardware interface, support Gigabit Ethernet; support RTC function, support WOL function, support camera interface separate control function; support fan, and the wind speed adjustable; support 4 MIC microphone array; support HDMI display interface; dual frequency WIFI and Bluetooth; support Gigabit Ethernet; meet the development requirements of 3D developers for different application scenarios;

Product

Application

- Persee 23D The smart camera is equipped with high computing power ARM computing power platform and high-performance RGB-D depth camera;
- The camera uses a new generation of deep computing processor: MX6600 ASIC Chip; where the depth image D-FOV> 100°, depth image working range 0.15m-10m; multi-resolution Rate / frame rate depth image output: Gemini 2 The camera supports multi-resolution D2C ;
- The whole machine hardware interface is rich;
- Hardware functions rich support RTC function, support WOL function, fan speed control function
- Meet the 3D vision development needs of different

- 3D scan
- AR/VR
- Intelligent security
- somatosensory interaction
- Analysis of customer flow of supermarket

Product specifications

Persee 2	parameter	specifications
essential parameter	name	Persee 2
	model	P53300-0111
	master control	Amlogic A311D
	Camera principle	Binocular structure light
	applicable scene	Indoor / semi-outdoor
	Depth measurement range ^[1]	0.15m - 10m
	Ideal range	0.2m – 5m
	base line	50mm
	internal storage	4GB
	memory	32GB
	wireless network	2.4G / 5G dual-band WIFI 5
	Wireless system	802.11b/802.11g/802.11n/802.11a/802.11ac
	modulation mode	GFSK/ $\pi/4$ -DQPSK /8-DPSK DBPSK/DQPSK/CCK(DSSS)BPSK/QPSK/16QAM/64 QAM/256QAM(OFDM)
	frequency range	BT : 2402-2480MHz WLAN : 2412-2472MHz 5180-5240MHz 5745-5825MHz (not used for Japan)
	emission frequency	BT (2402-2480MHz) : < 10dBm (EIRP) WLAN : 2412-2472MHz < 20dBm (EIRP) 5180-5240MHz < 20dBm (EIRP)

		5745-5825MHz < 13.98dBm (EIRP)
	antenna gain	2.4G : 2.8dBi 5.1G : 4.2dBi 5.8G : 3.3dBi
	Cable network	Gigabit Ethernet
	NPU	5Tops
Depth parameters	Relative measurement accuracy ^[2]	≤ 2% (1280 x 800 @ 2m & 81% ROI)
	Deep working mode	Unbinned Dense Default Unbinned Sparse Default Binned Sparse Default
	Depth image resolution @ frame rate	Up to 1280 x 800 @ 30 fps / 640 x 400 @ 60 fps ^[3]
	degree of depth FOV	H91° / V66° / D101° ± 3° @ 2m
	Deep-depth sensor technology	Global shutter
Infrared parameters	Infrared camera resolution @ frame rate	Up to 1280 x 800 @ 30 fps / 640 x 400 @ 60 fps ^[3]
	IR picture FOV	H93° / V66.5° / D102° ± 3°
Color parameters	Color image resolution @ frame rate	Up to 1920 x 1080 @ 30 fps / 1280 x 720 @ 60 fps ^[3]
	color picture FOV	16:9 H86° / V55° / D94° ± 3° 4:3 H63° / V50° / D75° ± 3°
	Color-based sensor technology	Curtain shutter
functional parameter	FOV of the color image after D2C	16:9 H86° / V55° / D94° ± 3° @ 2m 4:3 H63° / V50° / D75° ± 3° @ 2m
	LDP ^[4]	A wavelength of 940nm Range range: 0mm-500mm
	IMU	6 Axis
	The IR image AE function	support

	UVC RGB Function	support
	data transmission interface	USB 3.0 / USB 2.0
Electrical parameters	power dissipation	The average power consumption is <7W Peak power consumption ^[5] <15W
	working temperature	0°C - 30°C
	Working humidity	5 %RH - 95 %RH
	Storage temperature	-20°C - 60°C
	Laser safety level	Class1
Physical parameters	Displays the interface	HDMI 2.0
	Audio output interface	3.5mm audio
	RTC	CR2032; 3V
	System firmware burning interface	USB OTG Type C
	Store the expansion interface	The TF slot supports up to a 128GB extension
	Cable network	R J 45 Gigabit network port
	Audio input	4 MIC linear microphone array
	Infrared remote control receiving	infrared sensor
	Power supply port	12V 2A DC for power supply
	Camera size	180mm*76.5mm*45mm
	The weight of the machine	324g
	Dust and waterproof	Foundation dust
	Camera	Horizontal bottom bracket placement / TV

	installation	suspension / bracket (remove bracket) / bracket lifting (remove bracket)
	Heat dissipation method	Active heat dissipation + passive heat dissipation
other	attestation	Class 1、ROHS、FCC、CE、Reach、SRRC ,TELEC , PSE
	life length	Three years

pour:

[1] The measured object reflectivity is > 10% and can provide depth data of 10m, but the actual accuracy varies with distance and the measured object.

[2] The test object is the reflectivity > 80% plane, and the reference range is 81% FOV (81% FOV refers to the area of the remaining center 81% after cutting 5% on the top, left and right of the depth map), calculating the root mean square of the distance sequence of all the effective points to the fitting plane in the area.

[3] The 60 * fps of the depth images were used in the Binned Sparse Default mode.

[4] The LDP output value domain is 0mm-500mm in 1mm.

[5] When the depth mode of peak power consumption is Unbinned Dense Default or Unbinned Sparse Default, open RGB and Depth data flow: RGB-1920x1080@30 fps MJPEG, exposure 1000us; Depth-1280x800@30 fps RLE, exposure 5000, SDK sets laser level to 5.

[6] The average power consumption is the actual power consumption operating in the typical working mode: the typical working mode is

pattern	resolution ratio	remarks
Binned Sparse Default	Depth : 640x400@30fps Y14	
	R GB : 1920x1080@30 MJPEG	

1 introduce

1.1 Purpose and scope of this document

This document describes the ORBEC®Persee 2 3D Smart camera product specifications and part of the design details, as well as for developers to understand and use related products.

1.2 term

- Table 12-1 Terminology description table

term	description
Baseline	Distance between the imaging centers of the left and right infrared cameras
Depth	The deep video stream is basically consistent with the color video stream, except that each pixel value represents the spatial depth of the observed object from the camera, rather than the color information in the color image
FOV	Field of view, used to describe the Angle range of the camera to observe a given scene, is mainly horizontal field of view (HFOV), vertical field of view (VFOV) and diagonal field of view (DFOV)
Depth Processor	Deep computing processor, dedicated ASIC chips used to implement depth computing algorithms and output depth images, such as MX6000
IR Camera	Infrared camera, or an infrared camera
LDMP/LDM	Laser modules, also known as infrared projectors (IR projector), etc., are used to emit structured light patterns
Depth Camera	It only includes the depth imaging module and the external interface, and the depth imaging module is generally composed of infrared projector, infrared camera and depth calculation processor
PS	Proximity Sensor, A proximity sensor used for laser safety protection

I2C	I2C bus is a simple, two-way second-line synchronous serial bus developed by Philips Company. It requires only two wires to transmit information between devices connected to the bus
ISP	Image signal processor, used for the post-processing of the image
LDP	Proximity sensor (Proximity Sensor), used for laser safety protection
IR Flood	IR flood light, using infrared light to illuminate the environment, is used to fill the light for infrared imaging
Lens	Lens set, used for imaging in an infrared camera, color camera, and for projection in a laser diffuser
MIPI	MIPI Alliance, the Mobile Industry Processor Interface (Mobile Industry Processor Interface MIPI) Alliance. MIPI (Mobile Industry Processor Interface) is an open standard and a specification for mobile application processors initiated by the MIPI Alliance
SoC	System on Chip The abbreviation, called the chip level system, also known as the chip system, means that it is a product, is an integrated circuit with dedicated goals, which contains the complete system and has the entire content of the embedded software
ASIC	The ASIC is considered to be an integrated circuit designed for specialized purposes. It refers to the integrated circuit designed and manufactured for specific user requirements and the needs of specific electronic systems. ASIC is characterized by facing the needs of specific users. ASIC has the advantages of smaller volume, lower power consumption, improved reliability, improved performance, enhanced confidentiality, and cost reduction in mass production. In this document, it mainly refers to MX6000
PCBA	Circuit board, carrying depth computing processor, memory and other electronic devices
TBD	To be determined, information will be provided in later revisions

2 product composition

2.1 Component composition

This section will introduce the basic structure of the Persee 2 camera. Structural size data and pictures may cause subtle differences due to differences in product configuration, please refer to the physical object.

2.1.1 Product physical picture



Figure 2-1-1 Physical picture



Figure 2-1-2 Backview physical picture

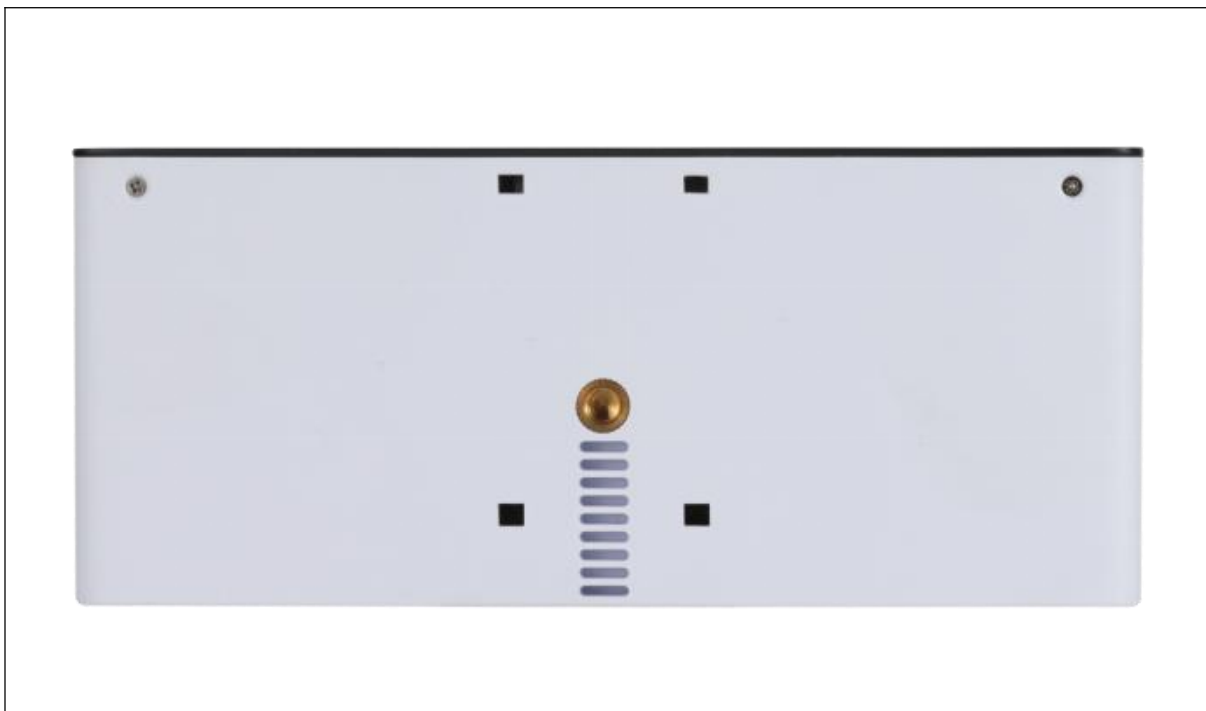


Figure 2-1-3 Physical view (including support)



Figure 2-1-3 Physical view (excluding support)

2.1.2 Machine size

Table 2-1-1 Persee 2 Complete Machine Size (including support base)

size	representative value	unit
long	180.0mm±0.2	mm
wide	76.5mm±0.2	mm
thickness	45.7mm±0.2	mm

Table 2-1-1 Persee 2 Machine Size (excluding support base)

size	representative value	unit
long	180.0mm±0.2	mm
wide	76.5mm±0.2	mm
thickness	34.0mm±0.2	mm

Persee 2 Schematic diagram of the camera size and structure, as shown in the following figure:

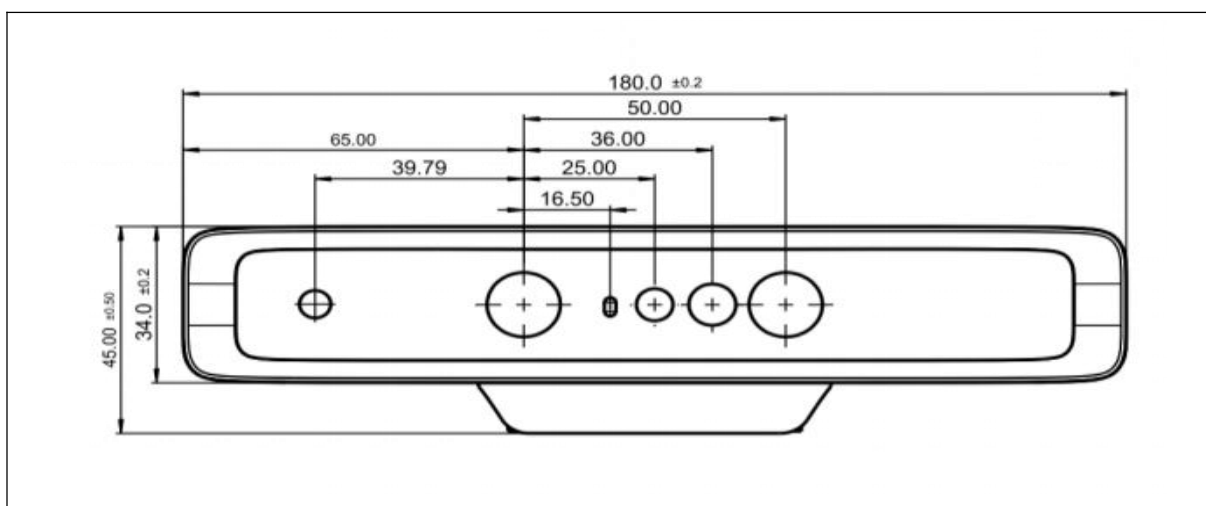


Figure 2-1-4, and Fig

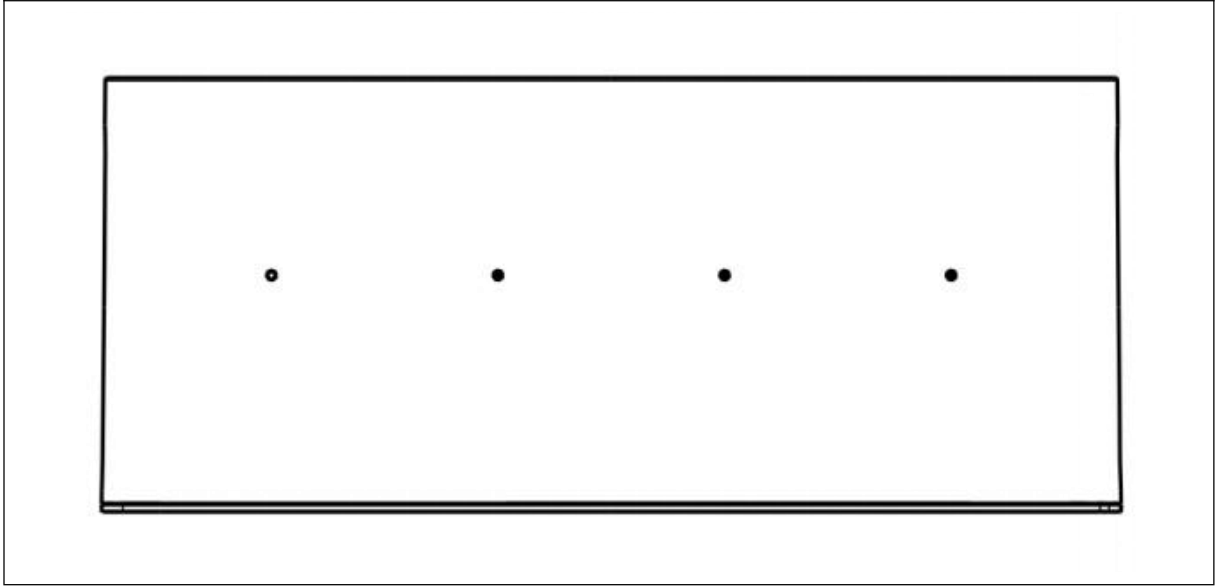


Figure 2-1-5 Top view view annotation map

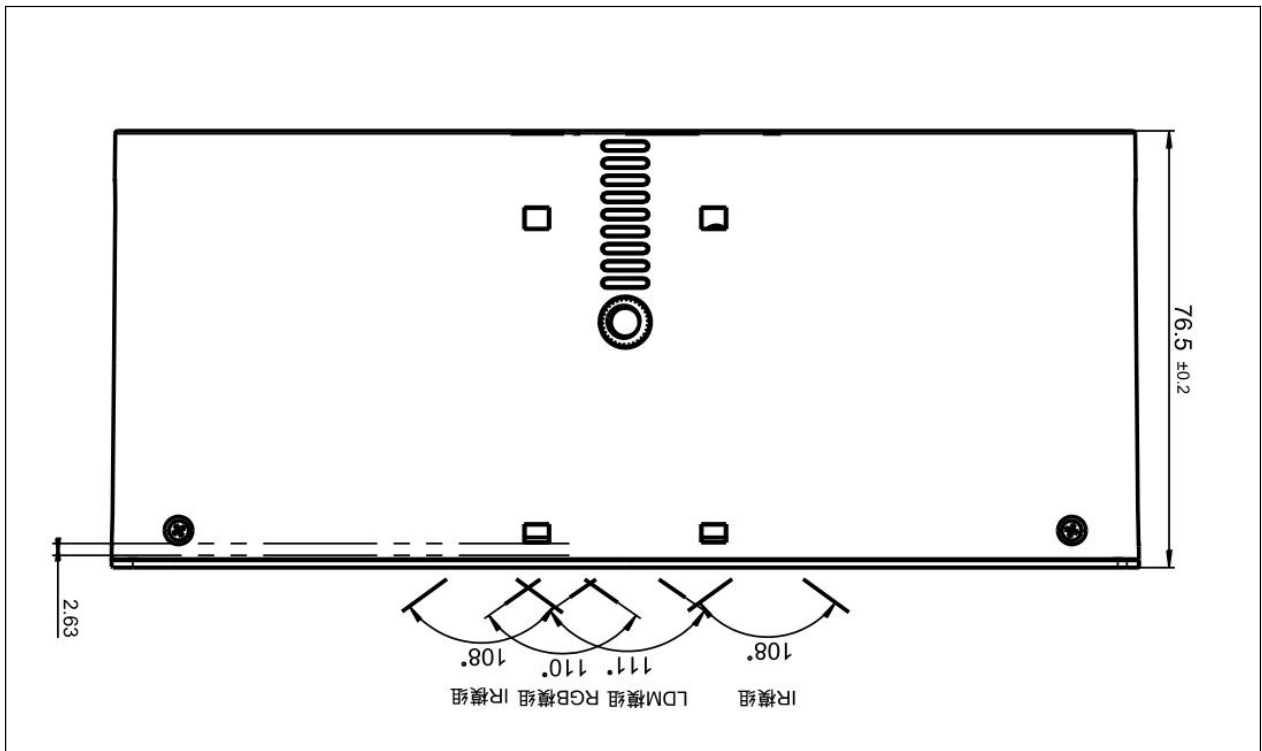


Figure 2-1-6 bottom view (excluding stent)

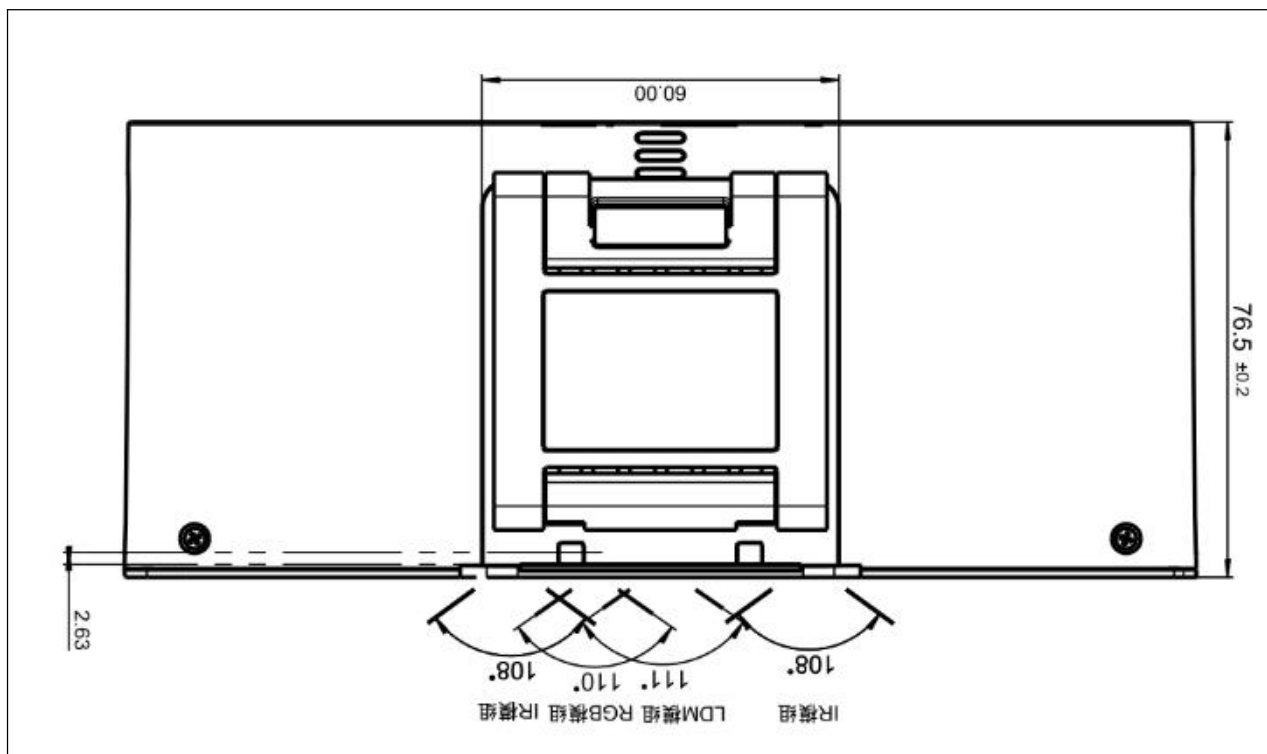


Figure 2-1-6 Top view view annotation drawing (including stent)

2.2 Component instructions

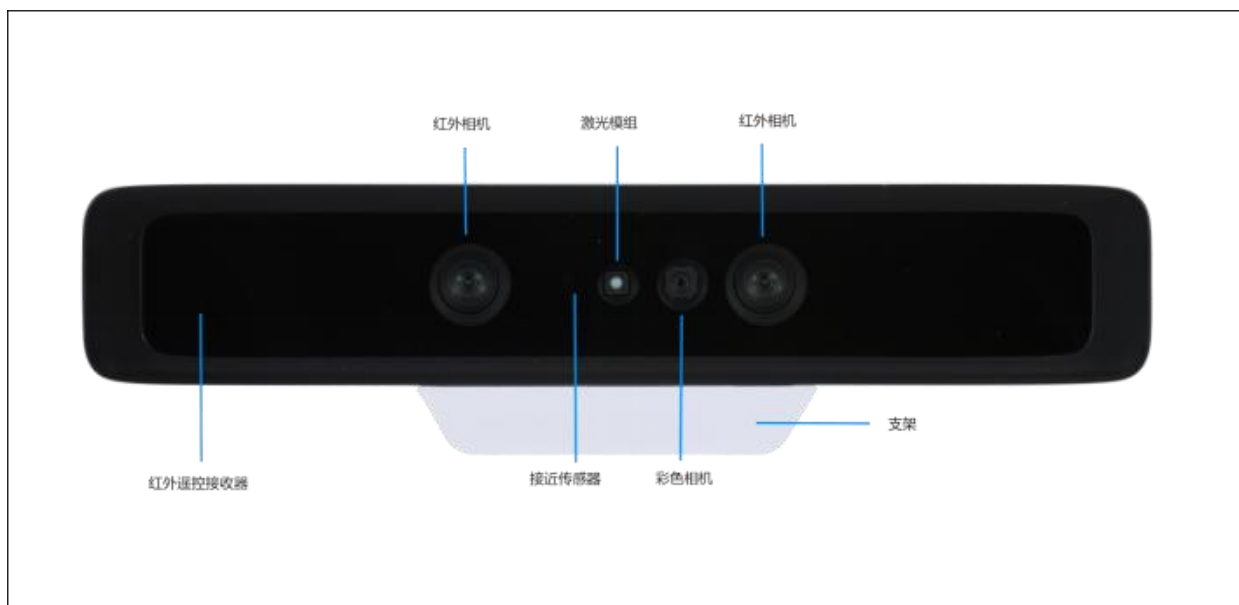


Figure 2-2-1 Physical picture of Persee 2 products

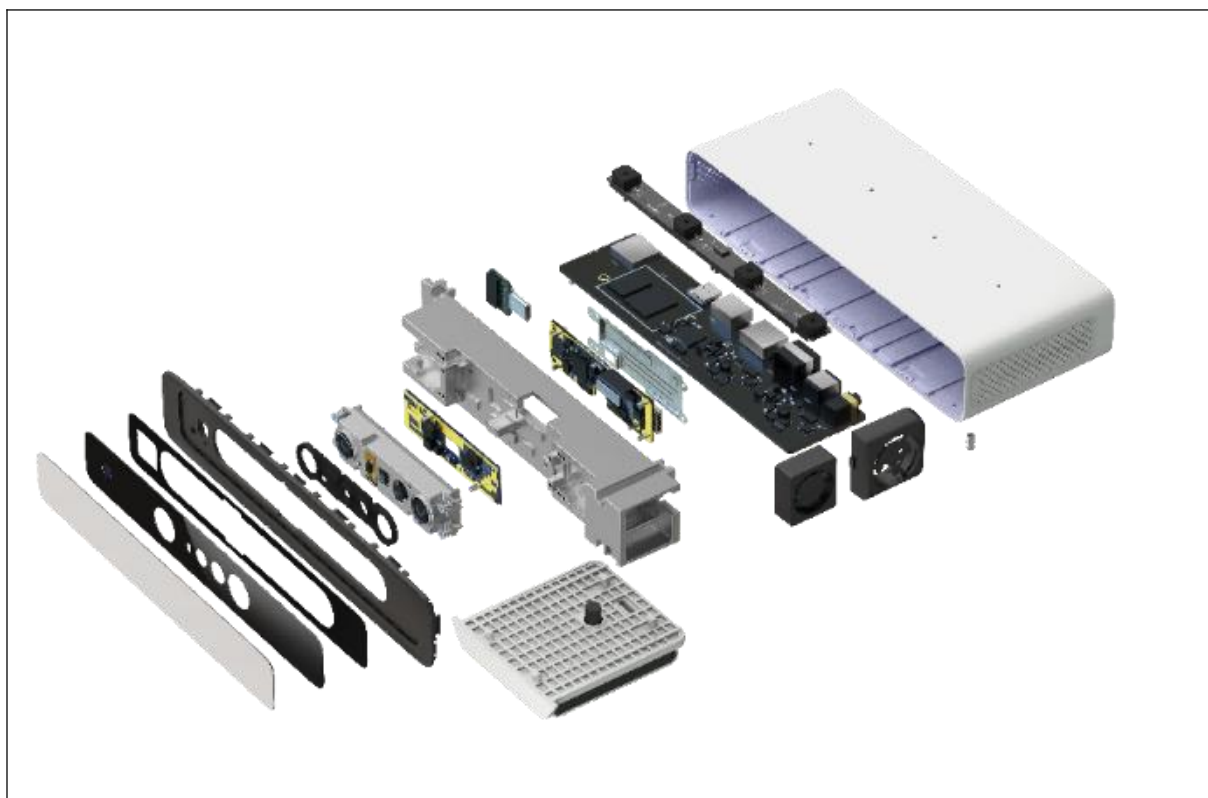


Figure 2-2-2 Explosion diagram of the Persee 2 structural components

- Table 22-1 Persee 2 camera component table

system constituent	Persee 2
SOC	√
ASIC	√
ISP	×
RGB module	√
IRM module	√
LDM module	√
SPI NOR Flash	√
Computing power of the PCBA	√
internal storage	√
memory	√
WIFI/ PDA	√
Gigabit Ethernet	√
Mic array	√
hull	√

2.3 Deep engine

The depth computing processor MX6000 is mainly used to perform the depth image computing. The main processor or upper computer computer communicates with the depth camera through USB and receives the image data from the depth computing processor.

2.4 Computing power platform

The computing power platform adopts the Amlogic A311D AI computing power platform;

parameter	Persee 2
CPU	ARM A73x4 + A53x2
GPU	ARM G52 -MP4
internal storage	4GB
memory	32GB
NPU	5Tops (INT8)

2.5 Persee 2 Camera module

2.5.1 infrared camera

parameter	Persee 2
Effective pixel	1280 x 800
length-width ratio	16 : 10
focal distance	Fixed coke
Shutter type	global shutter
signal interface	MIPI
horizontal FOV	93°
perpendicular FOV	66.5°
diagonal FOV	102°

FOV error	$\pm 3.0^\circ$
-----------	-----------------

Table 2-4-1 infrared camera parameters

2.5.2 Laser module

The laser module (LDM), also known as the laser emitting module, consists of a vertical cavity surface emitting laser array and a spot diffuser. By projecting static infrared patterns on the scene to increase the texture of the low-texture scene, the ability of the 3D camera system to detect depth information is improved. Under normal circumstances, the Persee 2 laser module meets the class 1 laser safety requirements.

Table 2-4-2 Table of laser module parameters

parameter	Persee 2
type	infrared
Lighting components	Vertical cavity surface laser emitter (VCSEL) + optical device
Laser controller	impulse
laser wave length	850nm
horizontal FOV	101°
perpendicular FOV	72.5°
FOV error	$\pm 3.0^\circ$

2.5.3 Color camera

Table 2-4-3 Color camera parameter table

parameter	Persee 2
Effective pixel	1920 x 1080
length-width ratio	16:9
form	MJPEG&YUYV
Filter Type	Blue-glass, IR-CUT
Focus method	Fixed coke
The depth of the field	0.39m - ∞
Shutter type	rolling shutter
signal interface	MIPI
horizontal FOV	86.2°
perpendicular FOV	55.2°
diagonal FOV	94.2°
FOV error	$\pm 3.0^\circ$

2.5.4 proximity transducer

Persee 2 Support PS (PROXIMITY SENSOR), PS (PROXIMITY SENSOR) detects close objects to achieve laser safety protection.

The PS (PROXIMITY SENSOR) protection standard is 10cm.

The PS function test method is as follows:

When the baffle is close to the 3D camera, the system will turn off the laser to achieve laser protection, and the IR image brightness value will decrease. When the

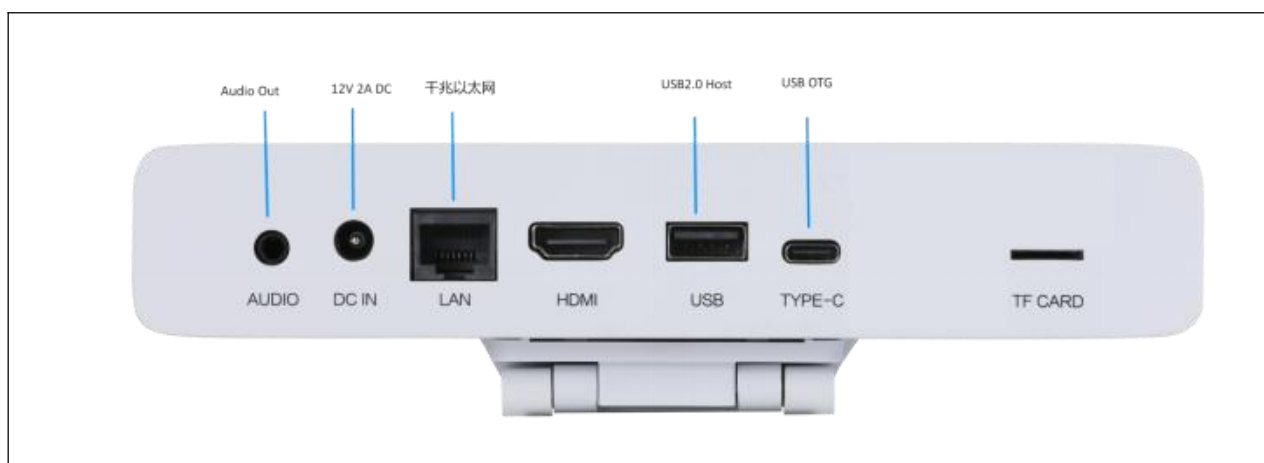
brightness is less than the set value, it indicates that the laser safety protection function is normal. When the baffle is removed, the laser should be opened normally, and the IR image will become brighter. Determine whether the brightness value is greater than the set value again.

Table 2-4-4 Proximity sensor test distance data

Working mode: Unbinned Dense Default					
The final state of the laser	Laser protection range / mm (typical measurements)				
	wall space	plank	Skin of dorsum of hand	Brown leather	carton
Laser open (Test object distance module from near to far)	102	100	104	101	101
Laser closed (Test object distance module from far to near)	100	100	100	100	101

2.5.5 Persee 2 Interface

Persee 2 The interface supports various hardware interfaces, as shown in the figure below:



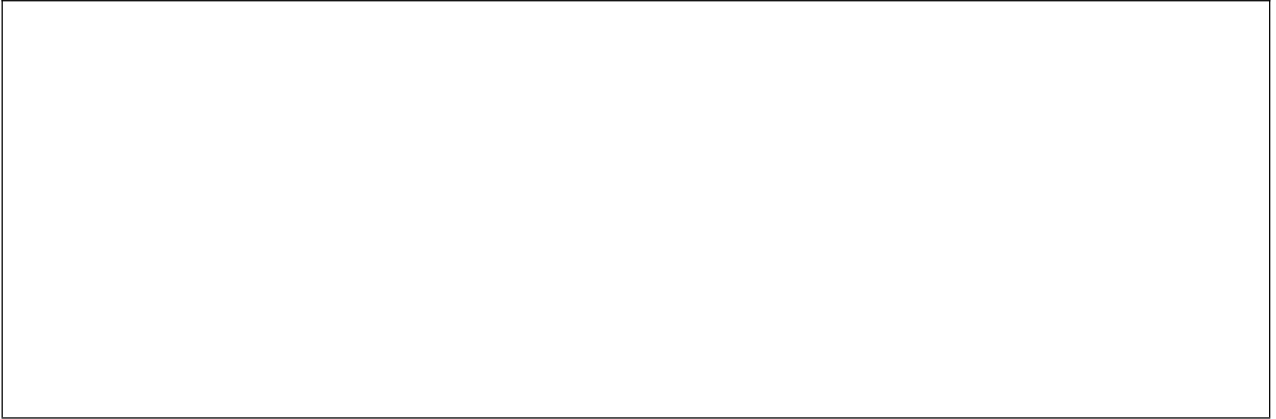


Figure 2-4-1 Persee 2 hardware interface diagram 1

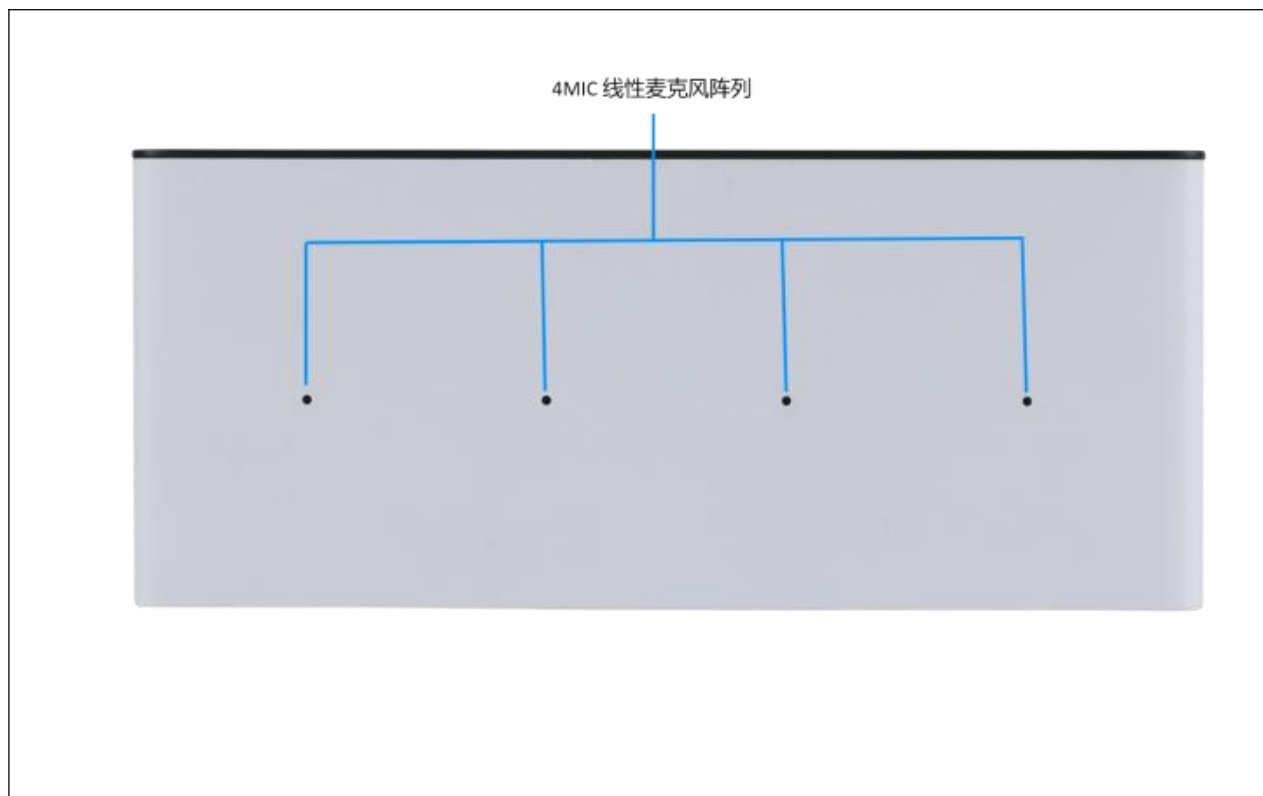


Figure 2-4-1 Persee 2 hardware interface diagram 2

3 Functional specification

3.1 Description of the application platform performance

.0Persee 2 3D The smart camera is installed with Android 9 operating system by default, and supports Ubuntu 18.04 operating system; the two operations can be switched freely; to download and update, please enter the 3D vision developer community: developer.orbbec.com.cn :

Table 3-1-1 Performance of the Persee 2 Application Platform

	system
system	Android 9.0/Ubuntu 18.04
USB joggle	USB 2.0

processor	Amlogic A311D AI Processor, quad-core A73 + dual-core A53 12nm, process process
RAM	4GB RAM
ROM	32GB EMMC

3.2 Deep field of view angle

The following table shows the reference value of deep field FOV for Persee 2, including horizontal FOV, vertical FOV, diagonal FOV and error range.

Table 3-2-1 Persee 2 depth FOV

Persee 2 Deep field of view @2m	numeric value
	Level of FOV 91°
	Vertical FOV 66°
	Diagonal line, FOV 101°
	The FOV error is $\pm 3.0^\circ$

3.3 Deep data acquisition and output function

Persee 2 The depth of data acquisition and output can be provided. Depth data is generated by binocular structure light technology, which can collect and output the depth data of the object between 0.15m and 10m, respectively. The depth map output format is Y14 / RLE.

The following table gives the reference values for the LDP ranging accuracy of Persee 2.

Table 3-3-1 Persee 2 LDP ranging accuracy reference value

	distance	numeric value	unit
LDP ranging accuracy	$\geq 200\text{mm}$	± 5	%
	100mm – 200mm	± 10	mm
	20mm – 100mm	± 15	mm

3.4 Color Data Acquisition and Output function (UVC)

Persee 2 Can collect and output depth data, and can collect color image data. The color camera supports collecting and exporting color image data between 0-objects. The color image output is MJPEG and YUYV.

3.5 Depth and color highlight the data flow format

Persee 2 Provide high-quality, multi-resolution depth image data, as well as high-definition color image data. The deep image data format Y14 / RLE is the camera output format, and the SDK output format is Y16. The color image data format output by the camera is MJPEG / YUYV, and the SDK supports the output MJPEG / YUYV / RGB888 format.

Table 3-5-1 Persee 2 (USB 3.0) image format

Image format	resolution ratio	frame rate (FPS)	remarks
Y14H14	1280 x 800	5, 10, 15, 30	Deep image
	640 x 400	5, 10, 15, 30, 60*	



	320 x 200	5, 10, 15, 30, 60*	
RLE	1280 x 800	5, 10, 15, 30	
	640 x 400	5, 10, 15, 30, 60*	
	320 x 200	5, 10, 15, 30, 60*	
Y8H8	1280 x 800	5, 10, 15, 30	IR picture
	640 x 400	5, 10, 15, 30, 60*	
	320 x 200	5, 10, 15, 30, 60*	
MJPEG	1280 x 800	5, 10, 15, 30	
	640 x 400	5, 10, 15, 30, 60*	
	320 x 200	5, 10, 15, 30, 60*	
YUYV	1920 x 1080	5, 10, 15, 30	color picture
	1280 x 720	5, 10, 15, 30	
	640 x 480	5, 10, 15, 30, 60*	
	640 x 360	5, 10, 15, 30, 60*	
MJPEG	1920 x 1080	5, 10, 15, 30	
	1280 x 720	5, 10, 15, 30	
	640 x 480	5, 10, 15, 30, 60*	
	640 x 360	5, 10, 15, 30, 60*	
Y8H8	1280 x 800	5, 10, 15, 30	IR left infrared image of the field calibration mode
Y8H8	1280 x 800	5, 10, 15, 30	Right IR infrared image

			of the field calibration mode
Y10H10	1280 x 800	5, 10, 15, 30	Factory calibration mode left IR image
Y10H10	1280 x 800	5, 10, 15, 30	Factory calibration mode right IR infrared image

Note: 60 * fps is used in Binned Sparse Default mode

3.6 Zero-blind zone depth data acquisition

Persee 2 In addition to generating depth map through binocular structure optical technology and output depth data, it can also be supplemented by camera LDP module for point ranging function, which can achieve zero blind spot depth data collection within 010m.

The following table gives the reference values for the LDP ranging accuracy of Persee 2.

Table 3-6-1 Persee 2 LDP ranging accuracy reference value

	distance	numeric value	unit
LDP ranging accuracy	$\geq 200\text{mm}$	± 5	%
	100mm – 200mm	± 10	mm
	20mm – 100mm	± 15	mm

3.7 Deep starting point reference

The depth start point or ground zero reference can be described as a starting point or plane of depth = 0. For Persee 2, the distance between the depth zero and the front surface of the module is 2.633 mm.

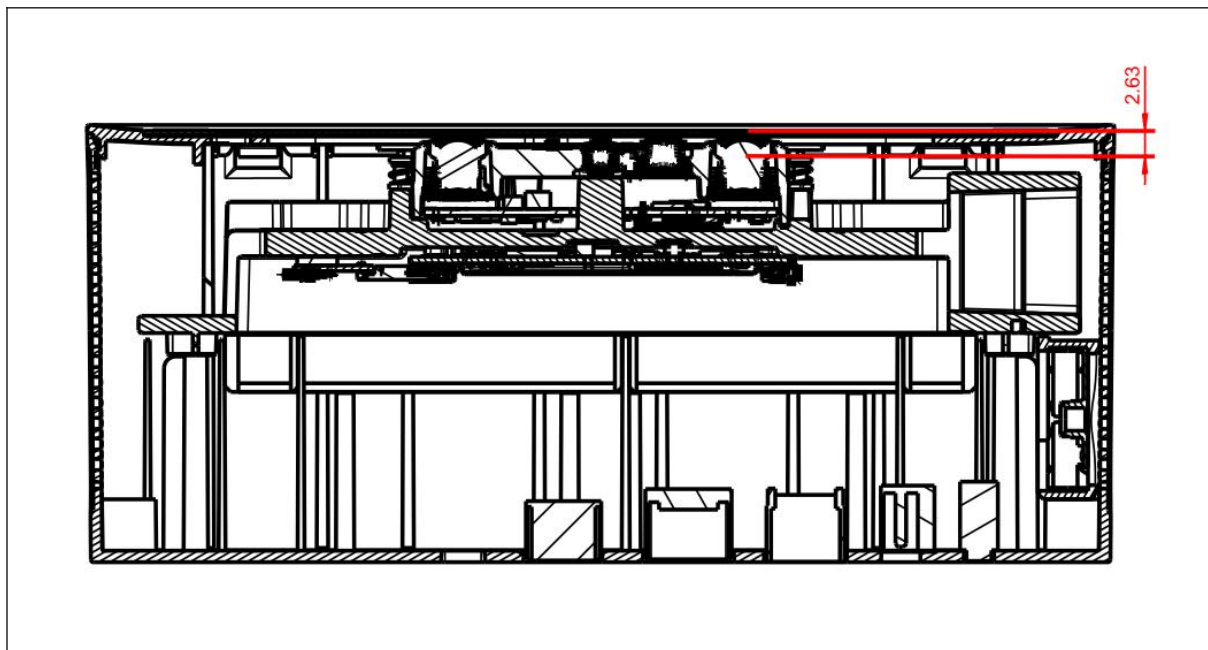


Figure 3-7-1 Schematic diagram of the Persee 2 depth starting point

3.8 Fan control

Persee 2 The product provides fan control switch; the cooling fan can be controlled by calling API;

3.9 HDMI function

This product uses the HDMI interface and complies with the HDMI specification;

3. 10 Camera power up and down the control

Persee 2 Support separate up and down power control of the camera part; under the power of the whole machine Power off, power on operation;

3. 11 WOL function

Android The WOL function is supported under the system;

4 function

4.1 behaviour of electricity

4.1.1 source

Persee 2 Supply power to the 12V 2A DC power adapter; please use the 12V 2A power adapter;

5 firmware

Persee 2 Product support system firmware update and camera firmware update;
system firmware update support tool burning and local OTA burning;

6 Orbbec SDK

6.1 Orbbec SDK Description

Orbbec SDK Is a software development package for cross-platforms (Windows, Android, Linux) and provides device parameter configuration, data flow reading and flow processing for 3D cameras with optical structured light, binocular and iToF, providing functions including:

1. Access to and control of the hardware devices;
2. Access, control, and data acquisition of the sensors contained in the device;
3. Control of frame synchronization and alignment;
4. Acquisition of point cloud data (later update SDK version);
5. Provide algorithmic capabilities such as filtering;
6. Different systems and Wrapper support;
7. Effect display tool Orbbec Viewer.
8. Select the corresponding SDK and display tool according to different system versions of Persee 2;
9. Orbbec SDK Download and update, please enter the 3D visual developer community: developer.orbbec.com.cn

7 direction for use

7.1 Installation / fixing scheme

1. Remove the Z-shaped holder and install with a quarter-inch nut holder through the bottom reserved screw hole
2. Hoisting with quarter inch nut holder
3. Place on the TV by opening the Z-shaped holder clip
4. Open or close the Z-shaped bracket and position it horizontally

7.2 Heat dissipation advice

1. Requirements: use away from other heat sources, Persee 2 to provide good heat dissipation conditions, it is strictly prohibited to heat it;
2. If you need to integrate Persee 2 into the product, consider the shell to increase the internal space, conducive to reduce the environmental temperature of hardware work;
3. If you need to integrate Persee 2 into the inside of the product, considering the appearance of the whole machine, can do similar sound; the local hole or similar to the shutter local or large hole, considering the whole machine waterproof and dustproof, the horn network can be added.

Note: Please contact the sales staff of ORBBEC INC.

7.3 The light requirements

Persee 2 The camera has been covered with glass material, if you need to integrate Persee 2 products to the whole product interior;

It shall guarantee that the front cover protection lens (including Persee 2 with glass cover) meets the following requirements:

1. Optical transmittance: 400nm-1050nm global transmittance per point of more than 95%;
2. Blue and purple zone, 50% transmittance, the corresponding wavelength is less

than 395nm;

3. Material plane requirement of the front cover lens: <0.005mm;
4. It is recommended to use the glass material material.

8 Laws and regulations and product implementation standards

Persee 2 The product has passed the following certification:

1. ROHS attestation
2. CE attestation
3. FCC attestation
4. TELEC Certification;
5. PSE attestation
6. SRRC attestation;
7. Meet the Class 1 laser product as follows: EU & Other: EN / IEC 60825-1:2014

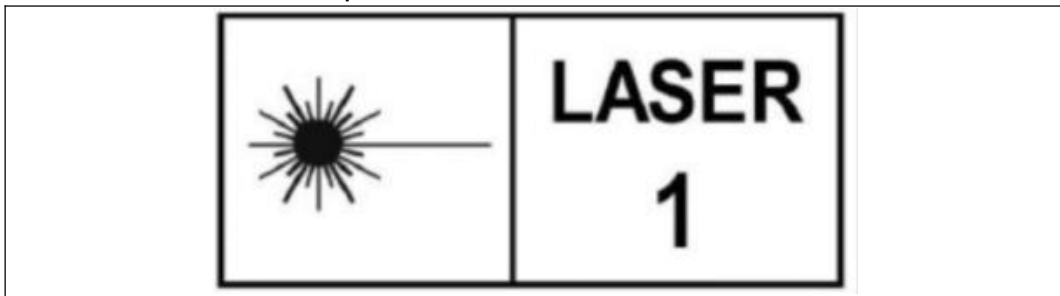


Figure 8-1-1 Class 1 Certification

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, ORBEC INC. declares that the radio equipment is in compliance with Directive 2014/53/EU.

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), Turkey (TR), Norway (NO), Switzerland (CH), Northern Ireland (UK(NI)), Iceland (IS), and Liechtenstein (LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5250 MHz frequency range.

The device complies with RF specifications when the device is used at 20 cm from your body.

FCC statement :

Federal Communications Commission Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that

to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

This Camera Unit complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The device is going to be operated in 5150~5250MHz frequency range. It is restricted indoor environment only.

9 System Integration Guide

Before selecting Persee 2 3D smart camera for development, users should contact the sales staff of ORBBEC INC., obtain the user manual and apply for SDK development package; and confirm whether the scheme meets the requirements of mass production through evaluation, debugging and verification.

Suggested process:

1. Read the Persee 2 3D smart camera product specifications;
2. Official mall to buy and obtain Persee 2 3D smart cameras;
3. Before development, we should contact the sales staff of ORBBEC INC. to obtain the user manual and apply for the SDK development package;
4. Develop products according to the function. If you encounter any technical problems, please contact the staff of Obi Zhongguang in time;
5. Confirm the mass production scheme of the terminal products;
6. Mass production of terminal products according to the mass production scheme.

10 matters need attention

1. Please follow the instructions to operate the machine correctly, if the illegal operation may cause damage to the internal components;
2. Do not fall or hit this product to prevent damage to internal components and accuracy decline;
3. Do not try to modify or dismantle this product in any way during the assembly and use process, so as to avoid the damage and precision degradation of the 3D camera;
4. The temperature of the product rises after a period of use, which is a normal phenomenon;
5. Do not touch the lens, so as not to leave foreign bodies and thus affect the drawing effect;
6. Do not place the product in places where children or animals are touch to avoid accidents;
7. If the camera cannot be identified, please check whether the wire meets the power supply requirements, and re-plug the USB for inspection;
8. Although this product uses a Class1 laser (harmless without control laser), we also do not recommend directly viewing the laser transmitter for more than 20 seconds to avoid discomfort.