X-Dynamics Product FAQ Summary

X-Dynamics 2023

catalogs

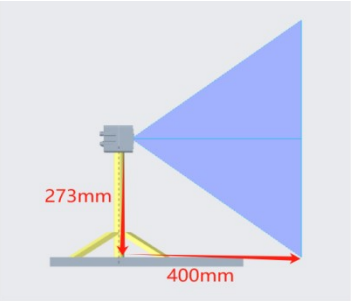
1. Summary of Frequently Asked Questions

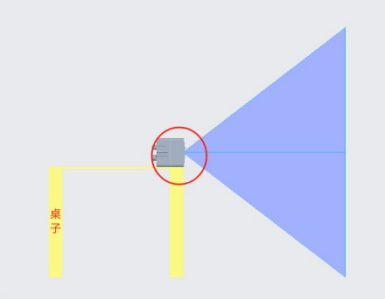
1.1. Do your devices support RGB?

Our company provides different versions of equipment with and without RGB for different customers to choose. The device with RGB integrates both "RGBD" and "RGB+Point Cloud" fusion effects.

1.2. How is the device mounted for relatively good imaging?

When installing the device, you need to make sure that there is no obstruction in front of the lens. Please do not place it directly in the middle of the desktop, the desktop in front of the camera will block the FOV. the installation height of the device is recommended to be ≥ 273mm. as shown in the following figure:





1.3. Does ambient light interfere with your equipment?

At present, the mainstream TOF adopts the 940/850nm band of invisible light work, if there is a light source in the outside world in this band, the measurement will interfere with the device. Extreme motion camera in the optical design and software algorithms to optimize the external strong light interference, outdoor support 100K Lux normal work.

1.4. How well does your device work in scenes where texture and color features are not obvious?

ITOF principle is to actively emit a light source, and then receive the working principle of reflected light, not affected by the external texture of the object, different colors of the object reflectivity is not consistent, in the case of returning enough energy, ITOF can still be normal imaging.

1.5. Can your equipment be interfered with by reflective strips?

Nearby reflective strips will cause greater interference, distant reflective strips within the range can be measured accurately.

1.6. What is the imaging effect on objects made of glass or transparent material?

Unable to recognize glass DUT. Glass is prone to specular reflection, which makes ranging unstable and interferes with imaging. If there is glass in the test scene, the algorithm can filter it out directly without affecting the imaging of the surrounding DUT.

The imaging effect of transparent material depends on the transparency of the transparent material. The lower the transparency, the more accurate the ranging and the better the recognition.

1.7. Do your devices get interference when they hit corners?

When the device encounters a corner, the imaging will be interfered. iTOF's calculation principle can be simply understood as the light emitted by the camera hits the object to be measured directly, and then is directly reflected back, and the distance value is calculated by calculating the round-trip flight time. When encountering a corner, the light emitted by the iTof camera will be refracted several times at the corner and then reflected back. The flight time becomes longer after multiple refractions, thus affecting the imaging effect.

1.8. When multiple units are working at the same time, can they be

controlled to work in synchronization and will they interfere?

When multiple devices work at the same time, you can control them to work in synchronization, which will cause interference.ITOF can not distinguish whether it is itself or other cameras emitting the same frequency of the light source, which is determined by the principle of ITOF, but the extreme movement has a unique anti-multi-camera interference algorithms, and the maximum support for 10 different devices to work at the same time.

2. Frequently asked questions about the use of the host computer

2.1. Why is the Operating Software not opening properly?

(1) Analyze: It may be elimated by the computer firewall or antivirus software.

Solution: It is recommended to turn off the firewall and antivirus software, uninstall the software and reinstall the software.

(2) Analyze: Maybe the computer system VC++ compilation environment.

Solution: Install the ".NetFramework4.7.1" installer and the "VC++2015" runtime library, and then restart the software.

2.2. Why do I keep getting the message "Failed to get product" when I run the host computer software?

(1) Analyze the cause: whether the current equipment is normally powered;

OPTION: Check to see if the device is properly powered up. The device indicator will light up after normal power up;

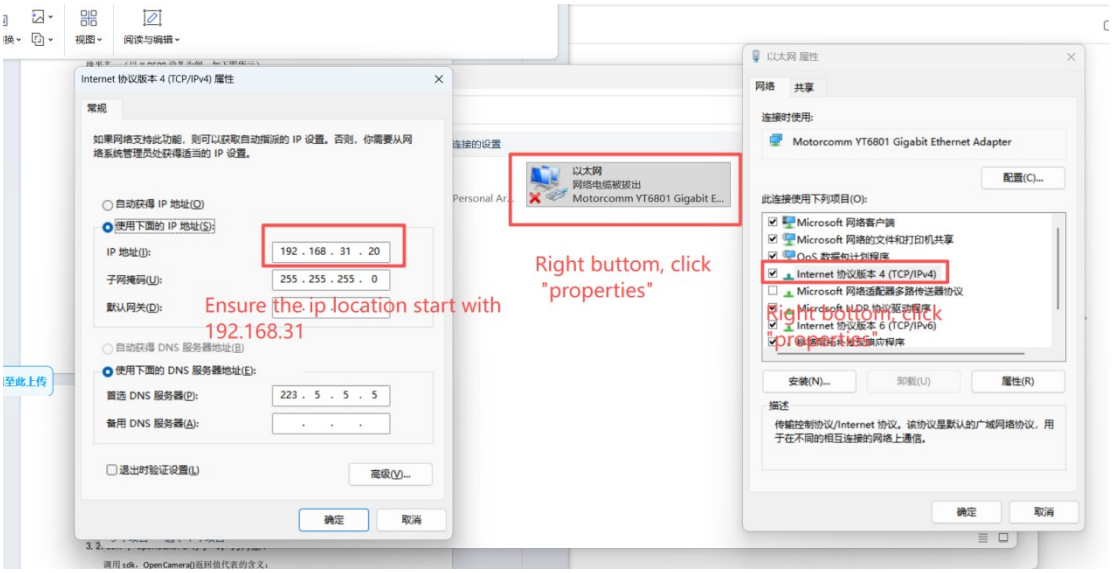
(2) Analyze the cause: whether the device and the computer side communication is normal;

Program: whether the device has normal network communication.

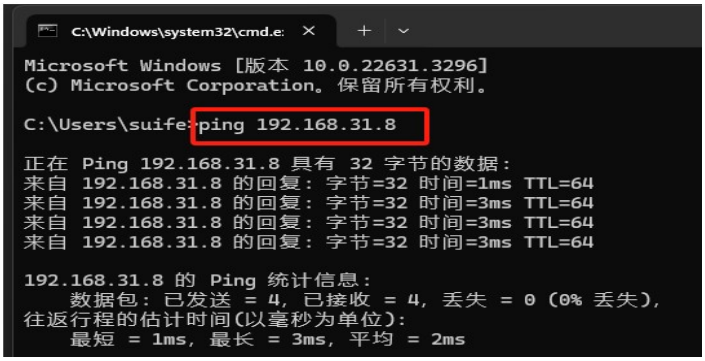
- The IP of different models of equipment is different, you can refer to the following table for details.

Equipment Model	X-D400		X-D500	X-D1000	X-D1100	passenger flow meter
	USB version	Ethernet port version				
Device IP	192.168.32.3	192.168.31.3	192.168.31.3	192.168.31.3	192.168.31.8	192.168.1.100
PC IP	192.168.32.x	192.168.31.x	192.168.31.x	192.168.31.x	192.168.31.x	192.168.1.x
x Range	[1,2]∪[4,255]	[1,2]∪[4,255]	[1,2]∪[4,255]	[1,2]∪[4,255]	[1,7]∪[9,255]	[1,99]∪[101,255]

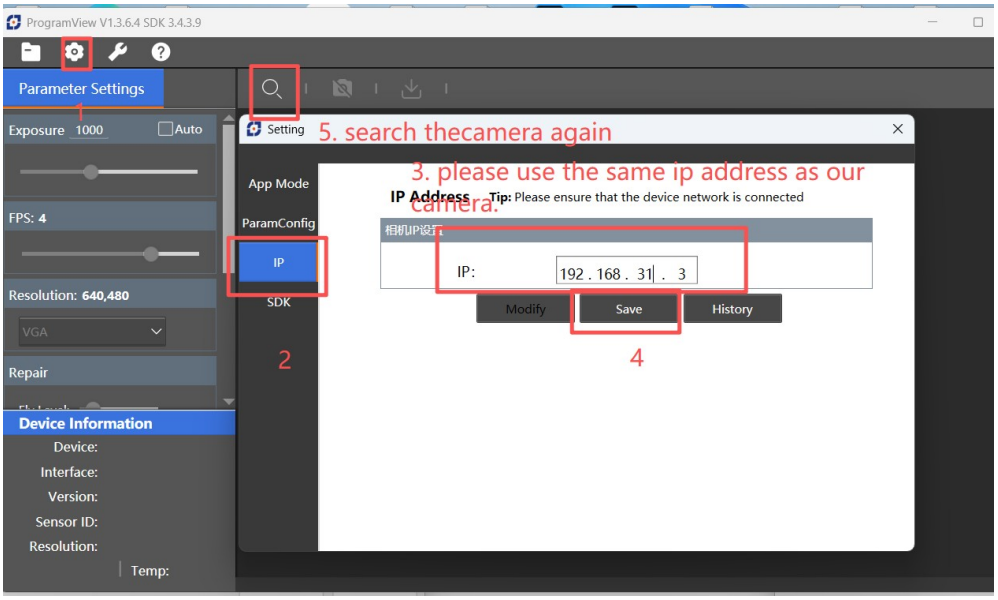
- Change the computer and the device to the same network segment. Take the device IP as "192.168.31.8" as an example, set the computer IP to "192.168.31.x", x ∈ [1,7] ∪ [9,255]. The modification process is shown below:



- Please change the IP of your computer to the same network segment as the device. Enter the command line by "WIN+R" shortcut key, input "ping 192.168.31.8", the reply data means the communication is normal, where "192.168.31.8" is the camera IP. Where "192.168.31.8" is the camera IP, the return value of normal connection is shown in the figure below:



- Please check whether the software IP is the same as the device IP. The software IP setting needs to be consistent with the device IP save. The default software IP setting is 192.168.31.3. When the device is IP 192.168.31.8, change the IP setting in the upper computer to 192.168.31.8. The operation is shown in the following figure:



2.3. Why does the upper computer show that the device is connected successfully but fails to open the map?

(1) Check the status of power supply and network cable connection, and whether the device is abnormally interrupted in use. Make sure that the power supply is normal and the network communication is normal, then restart the software.

(2) The current software only supports windows 10/11, operating systems below this version are not supported. It is recommended to run the software on a

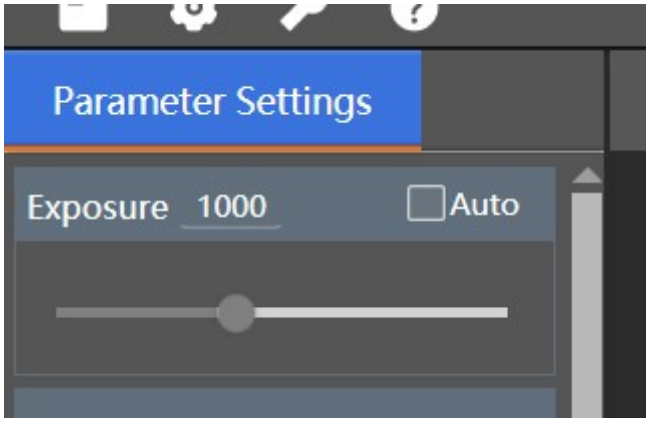
compatible system.

(3) In other cases, manually power down and restart the device and reconnect it.

2.4. Can't see the subject at a distance and appears black?

(1) Analyze the cause: the exposure time is set on the small or large side, the imaging is abnormal and filtered by the algorithm. Exposure time is on the small side, it will lead to the camera light source ability is weak, the ability to see the distance is not enough; exposure time is on the large side, the camera ability is too strong, resulting in overexposure of the image.

Program: Adjust the size of the exposure time in the "Parameter Settings" item of the host computer. The farther the camera looks at the range, the greater the reporting time should be set accordingly.



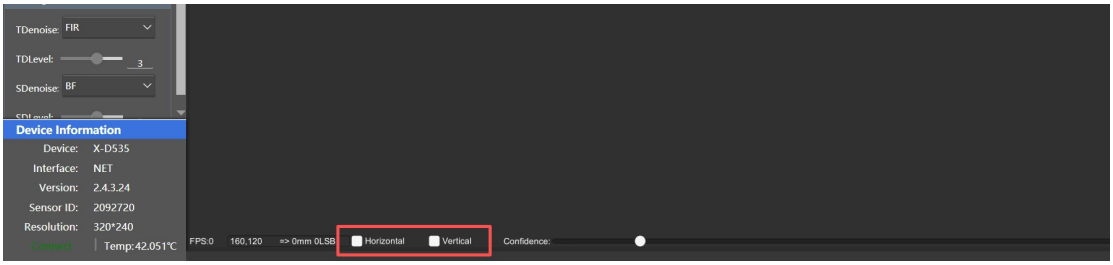
(2) Analyze the reason: Algorithm filtering and other algorithms set the level high, the filtering effect is stronger.

OPTION: Adjust the algorithm level. The larger the confidence level, the stronger the filtering effect.

2.5. How do I adjust the image display to mirror the actual distance measurement?

When the upper computer software displays that the image is upside down, it

can be adjusted directly on the upper computer software. Under the interface of the host computer, check the box of "Horizontal Mirror" and "Vertical Mirror" to realize the mirror image.

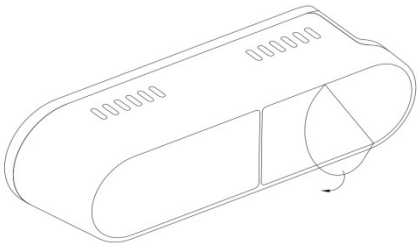


2.6. Why is the image imaging abnormal, showing large areas of red color?

Abnormalities in image imaging are generally caused by interference, and the possible causes are shown below:

（1）The protective film in front of the device interferes with the result.

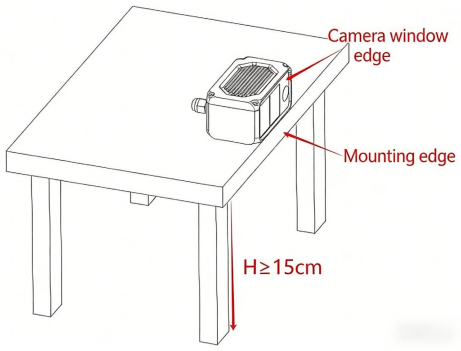
Please check whether there is a protective film on the upper layer of the glass cover of the product module, if there is, please tear off the protective film and use it. Take X-D400 as an example, the schematic is shown below:

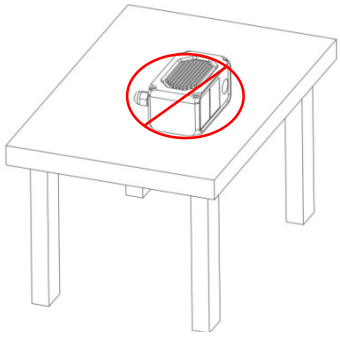


（2）The way the equipment is mounted leads to.

When using the device, for better imaging effect, it is recommended that the device is installed at a height greater than or equal to 15cm.(Take the X-D500 device as an example, as shown in the figure below)

Do not place the device directly on the inside of the desktop, with the edge of the device with the window flush with the edge of the mounting or placement surface. (Take the X-D500 device as an example, as shown in the figure below)





3. SDK Frequently Asked Questions

3.1. What types of data can be output and how is the output parsed?

Both the host computer software and SDK can obtain the data, and the types of data are depth data, point cloud data, gray scale data and confidence data, respectively, of which the products that support RGB-D provide RGB data at the same time.

Each frame captured is written to the file according to the chronological order and original format, i.e., the content of the file is the "first frame", "second frame" .... The content of the file is the "first frame", "second frame", "last frame", one frame by one frame continuous storage, no filler data in the middle, no compression, the first line after the column. The total data size is: width * height * pixel_size bytes.

The data types corresponding to the data types are shown in the table below, respectively:

Data Nickname	In-depth data	point cloud data	grayed-out data	confidence level data	RGB data
data type	Uint16_t	.ply data can be opened by Couldcompare software	Uint16_t	Uint8_t	UV12

3.2. What does it mean that Opencamera is equal to -3 in the SDK?

Call sdk, what the OpenCamera() return value represents:

- 0: Return success;
- -3: Camera connection timeout;

3.3. How does the SDK configure parameters and what do they mean?

The main base parameters to be configured for the SDK are shown below:

① Modify the configuration CreateStreamerNet(...) according to the current device model and IP parameters within the interface. When the device model is X-D1100 and the device IP is "192.168.31.8", the configuration is shown below:

```
XDYN_Streamer* stream = CreateStreamerNet(XDYN_PRODUCT_TYPE_XD_1100, EventCB, &userHdl, "192.168.31.8");
```

② Configured according to whether the device comes with RGB or not OpenCamera(...) interface.

The camera is configured as follows when it is TOF only, without RGB:

```
res = stream->OpenCamera(XDYN_DEV_TYPE_TOF);
```

The camera with TOF and RGB is configured as follows:

```
res = stream->OpenCamera(XDYN_DEV_TYPE_TOF_RGB);
```

③ Configuring the basic parameters of the camera

```
stream->SetFps(7);    //相机帧频设置
stream->SetCamFreq(99, 18);  //配置相机频率
stream->SetCamInt(phaseInt, specialInt);  //配置相机曝光时间
stream->SetCamBinning(XDYN_BINNING_MODE_2x2); // XDYN_BINNING_MODE_2x2，分辨率为320 * 240;  XDYN_BINNING_MODE_NONE，表示配置分辨率为640*480
stream->SetPhaseMode(XDYN_PHASE_MODE_16);   //配置相机Phase模式
res = stream->ConfigCamParams();   //下发配置参数
```

4. Hardware-related issues

4.1. What if the module dimensions and structure do not meet the overall structural design of our product?

We support customized product services, can be coordinated according to your product form and our module technical requirements for design.

4.2. Can I add custom hardware interfaces can I?

Our company supports customized product services, can be customized according to your company's needs interface, if it is a general-purpose physical interfaces or communication protocols only need to change the connecting cable or the corresponding adapter board can be, if it is a special demand for interfaces, you need to combine with the product design to evaluate.

4.3. What are the three-in-one cables for the X-D500 product?

The X-D500 3-in-1 cables are:

- DC5521 Male: 24V power input;
- 2Pin terminal: CAN communication
- RJ45: 100 Gigabit network

4.4. Why is the image display unstable?

The following are possibilities for common image instability:

① Insufficient power supply, our X-D500 is recommended to use a 24V/3A adapter at full power, large integration time and large frame rate to meet the effects of instantaneous high current;

② Loose connector ports, including loose power and network cables;

③ The product installation is unstable and there is jitter or resonance;