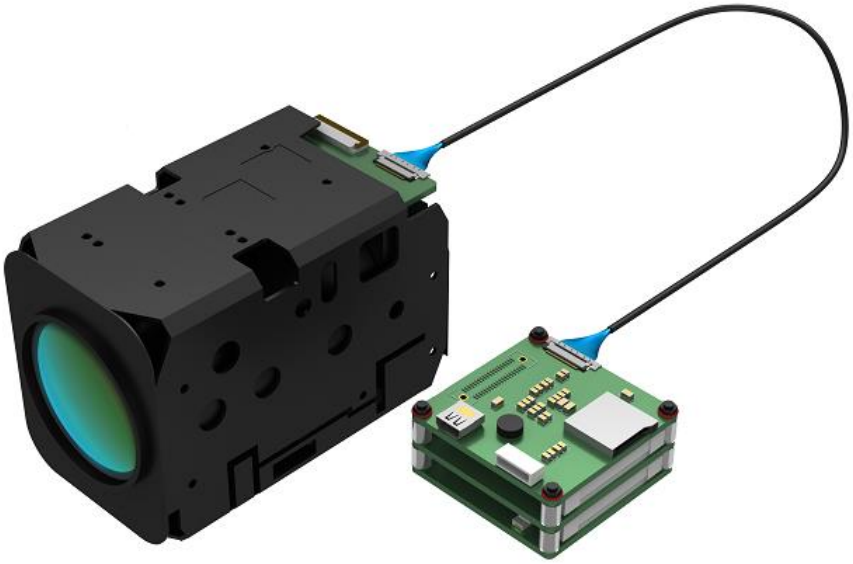

TU Series Video Tracker(Sony Version)

ZX-GZ-CV3

Product（Test）Instructions

V1.1

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CATALOGUE

Notice

- In order to ensure the instruments are in good technical condition, the daily maintenance of the operating personnel is only limited to the replacement and inspection of cables, cleaning and functional inspection.
- Please do not open the cabinet in any case even if the system runs into malfunction. Troubleshooting has to be taken on by professional technicians after thorough examinations.
- The video tracker should be kept in a cool, dry environment for storage.
- Please make sure that the connector assemblies were inserted after aligned with sockets. Please do not pull the cable directly for unplugging.
- Wearing anti-static gloves when using and connecting the product to prevent it from being penetrated.
- The power input voltage of the video tracker should be ranging between 8V～12V, otherwise the device would be damaged.

Product list

No.	Title	Quantity	configuration	Remarks
1	Video tracker(Sony version）	1	√	Standard configuration
2	Sony EV7520	1	√	Prepared by client
3	Sony camera- tracker connecting line	1	√	Standard configuration
4	Serial port connecting line	1	√	Standard configuration
5	Test software(Electronic edition)	1	√	Standard configuration

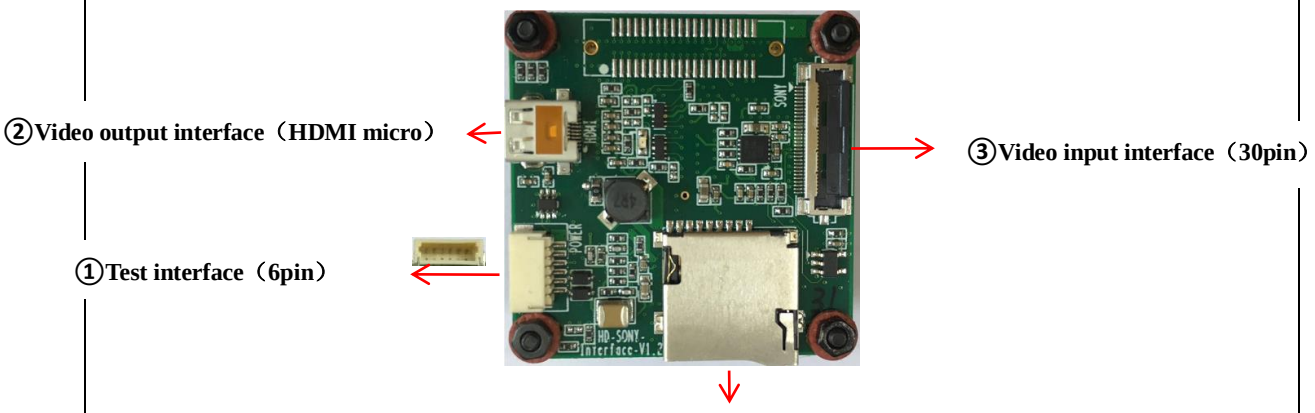
1 Technical index

Video format	Input video	LVDS（Sony HD series only）
	Output video	HD 1080I/HD 1080P
	Video storage	SD card storage BMP image/H.264 video（support 128G for maximum）
Tracking index	Data refresh rate	25Hz-60Hz
	Output lag	＜1000/（25-60）ms
	Minimum target contrast	5%
	Tracking velocity	±32 pixels/ frame
	Target effective memory	100 场
	Target size	16×16～128×128 pixels
Electrical interface	Video interface	30pin（input）/HDMI micro、internet access（output）
	Communication interface	RS232/TTL
	Power input	DC 8V～12V
Environmental adaptation	Working temperature	-40℃～60℃
	Storage temperature	-45℃～65℃
	Shock	Meet the GJB 150A vibration test conditions
	Strike	Meet the GJB 150A impact test conditions
Others	Volume	38mm×38mm×21mm
	Weight	＜32g
	Power consumption	≤4W

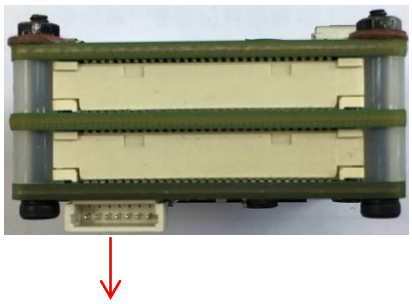
2 Test connection instruction

2. 1. Interface sketch

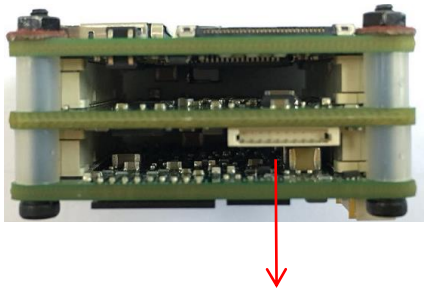
picture 1 Product front interface sketch：



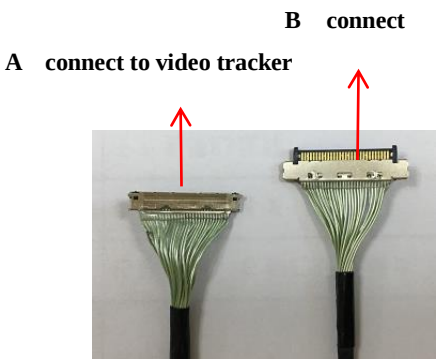
picture 2 Product lateral interface sketch:



picture 3 Product lateral interface sketch:

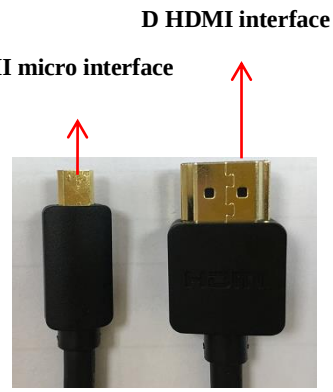


Picture 4 30pin connecting line（Sony camera-tracker connecting line）：

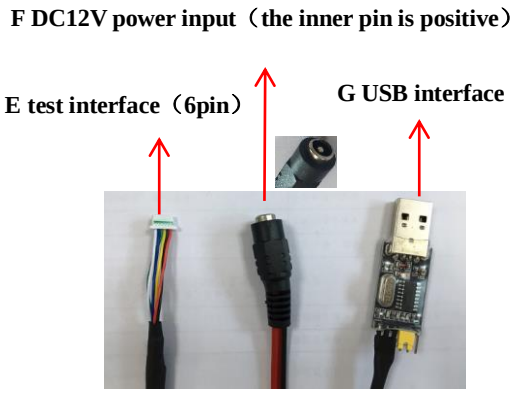


Note：the normal 30 pin connecting line interfaces of both ends are the same

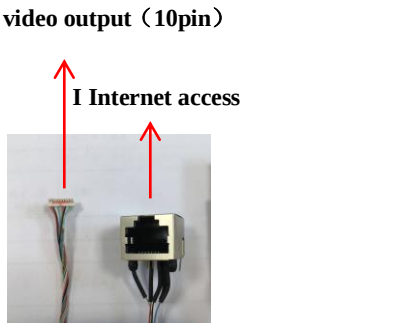
picture 5 HDMI high definition cable：



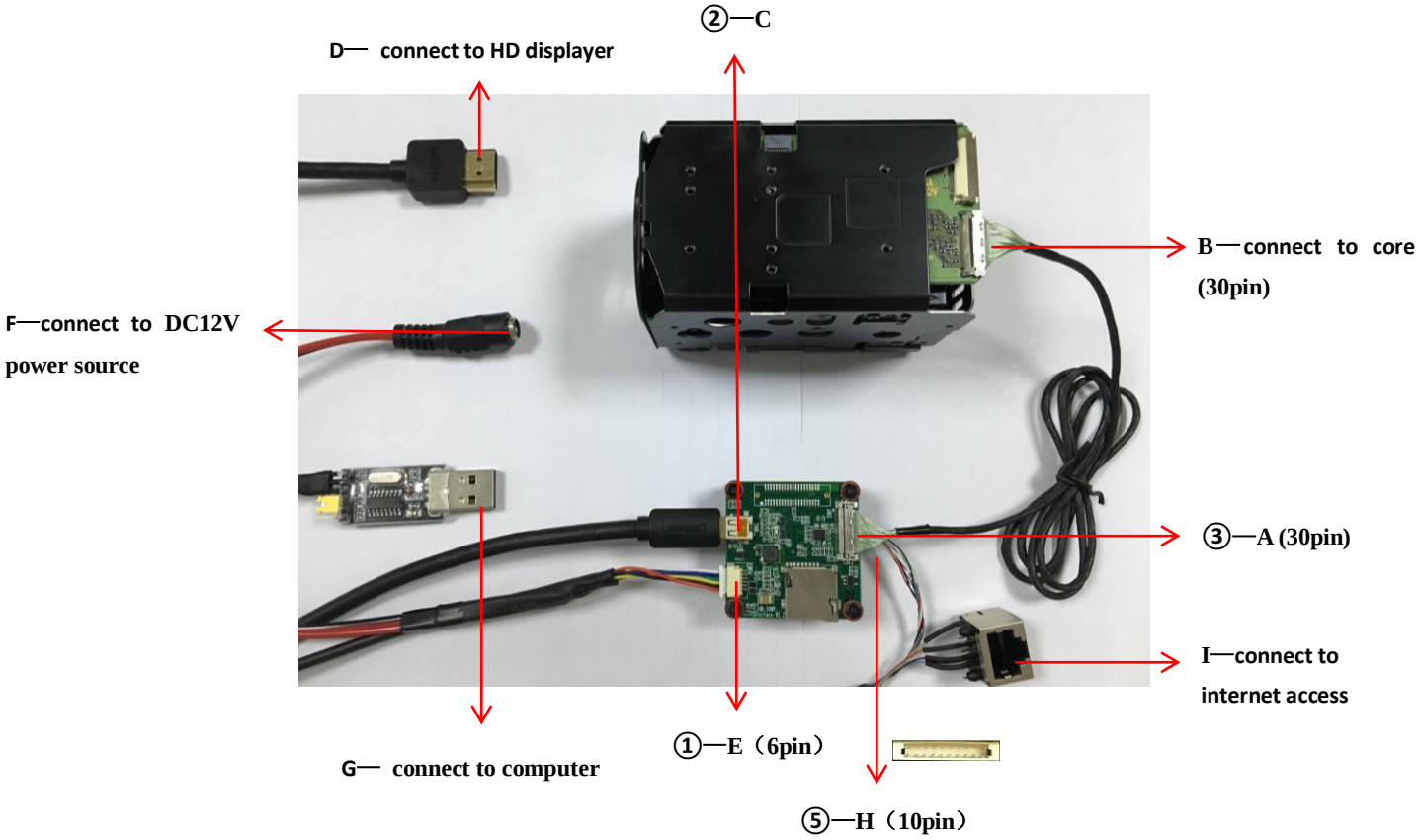
picture 6 Test connecting line：



picture 7 Internet access connecting line：



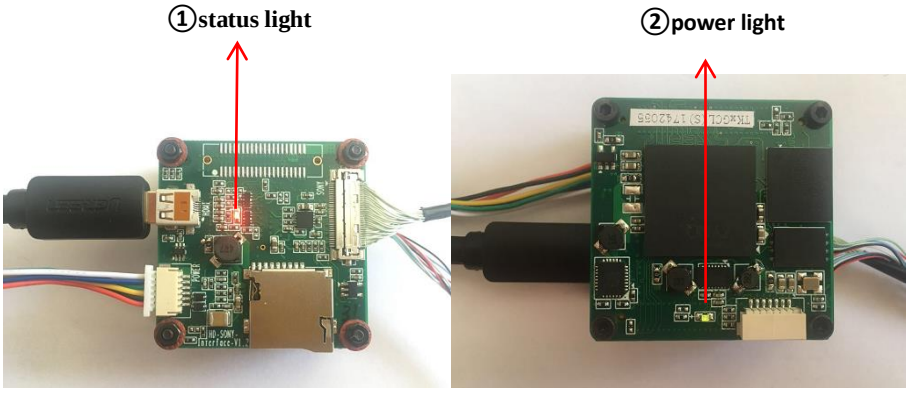
2. 2. Flow chart of installation



Note: To prevent the equipment from being damaged, please connect it to the power in the last step.

Attention，Attention: the position of the insertion pin.

2. 3. Fault phenomenon

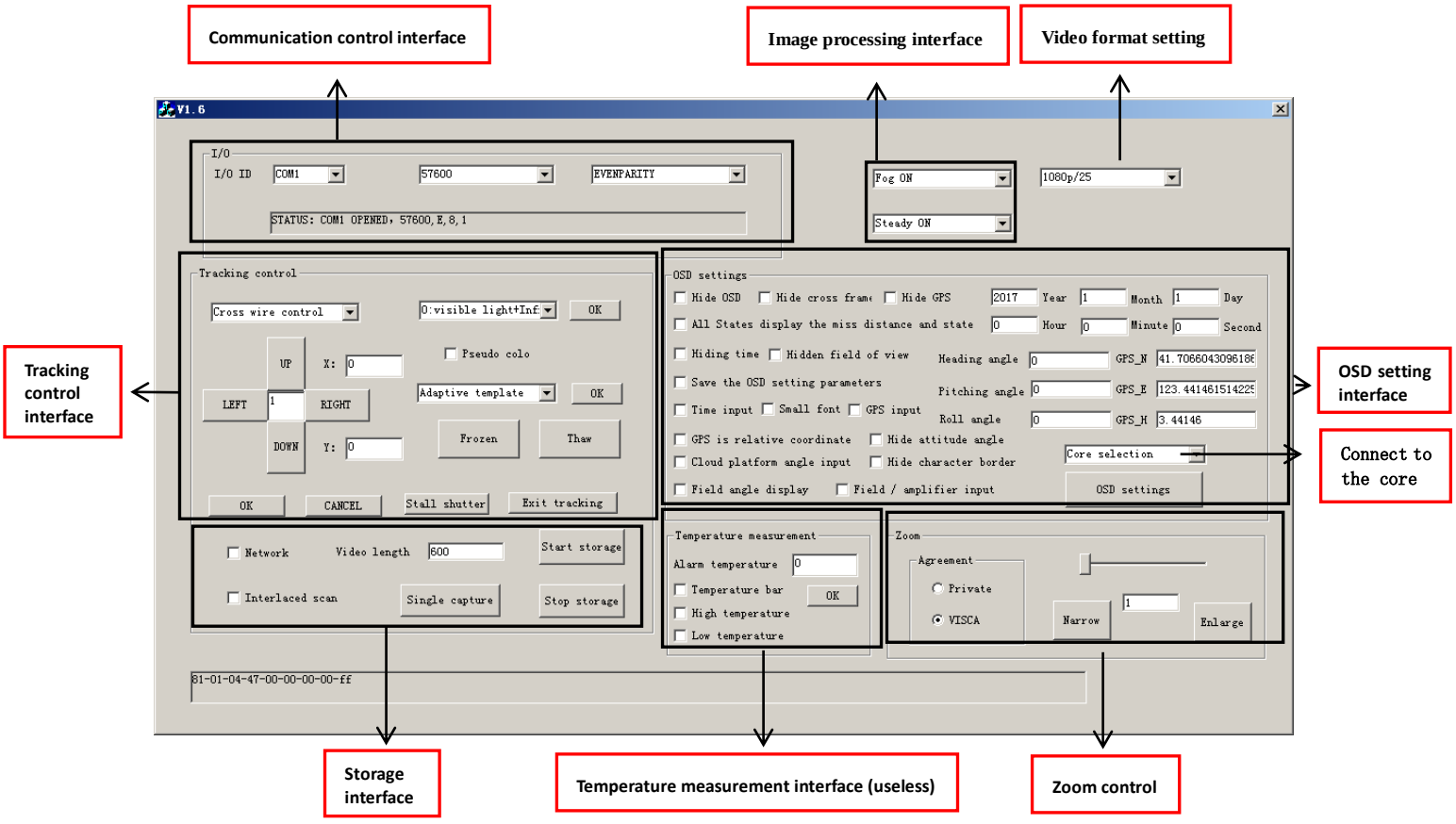


① It needs to be returned to the factory for maintenance if the status light is flashing or not on.

② It indicates the power supply is connected correctly if the power light is on, otherwise, please check the input power voltage and current.

3 Test software usage

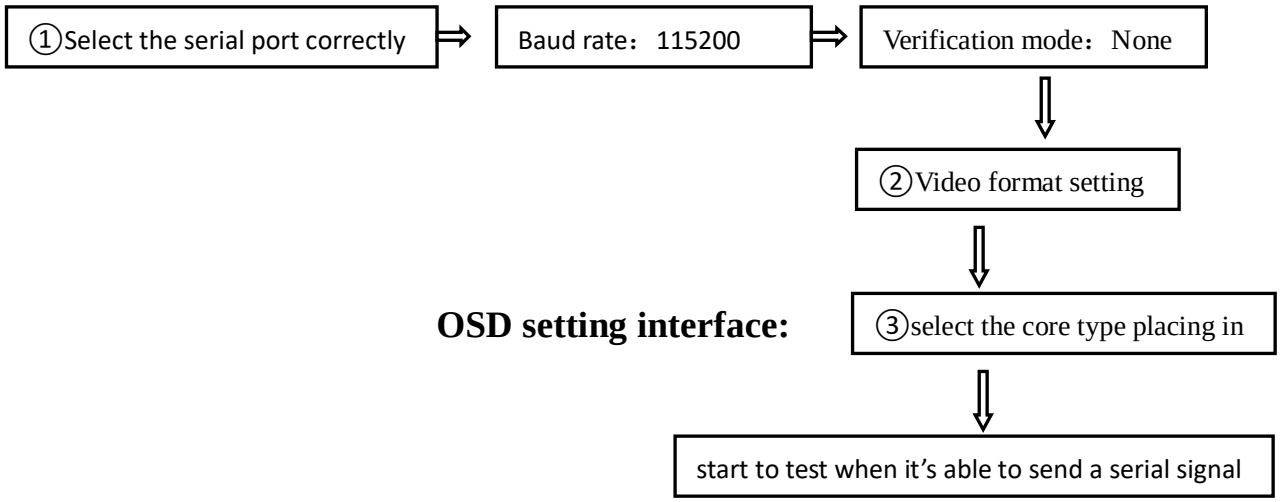
- **The software installation instructions refer to the software installation package**



3. 1. Flow chart of software operation

- **Please complete the test software communication connection according to the supplementary instruction below.**

Communication control interface:



OSD setting interface:

Supplementary instruction：

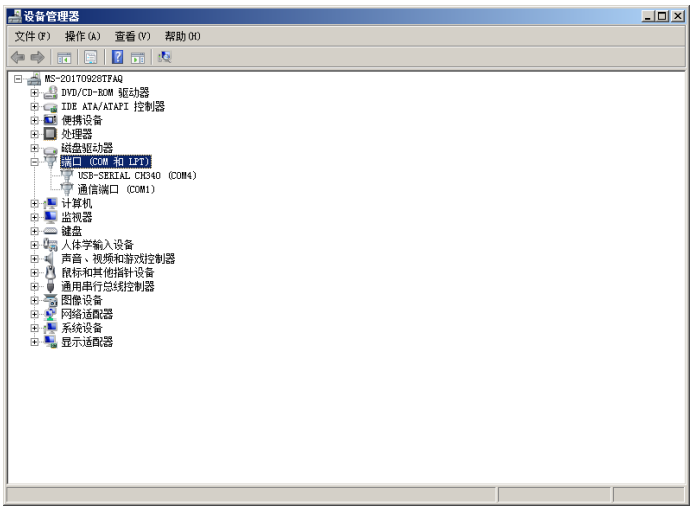
①Select the serial port , baud rate and verification mode correctly.

- **（Please install CH340 driver if there is no signal or showing exclamation mark when you refresh the page.）**

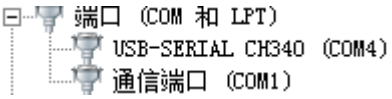
***** Normally，the selected serial number should be the refreshed number after connecting line inserted.

Step 1: Confirm the serial number

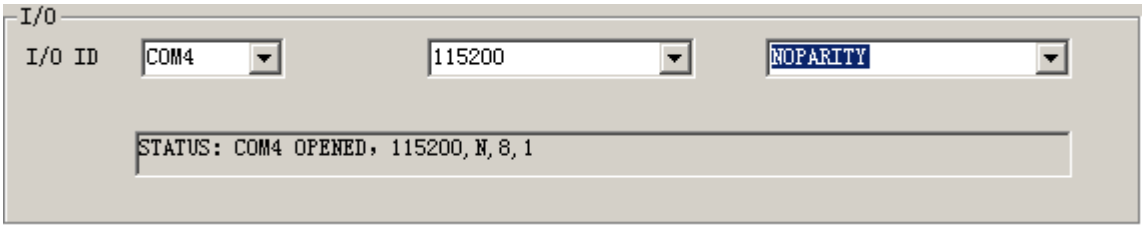
Right-click the Computer，and select Computer Properties, as is shown below:



Double-click the port（COM and LPT）, the refreshed USB port should be selected, as shown in the picture below:



Step 2: Click the spinner, select the serial number（State: opened，The serial line is connected correctly）



②Video format setting

➢ Only support 1080P/1080I（25Hz-60Hz）

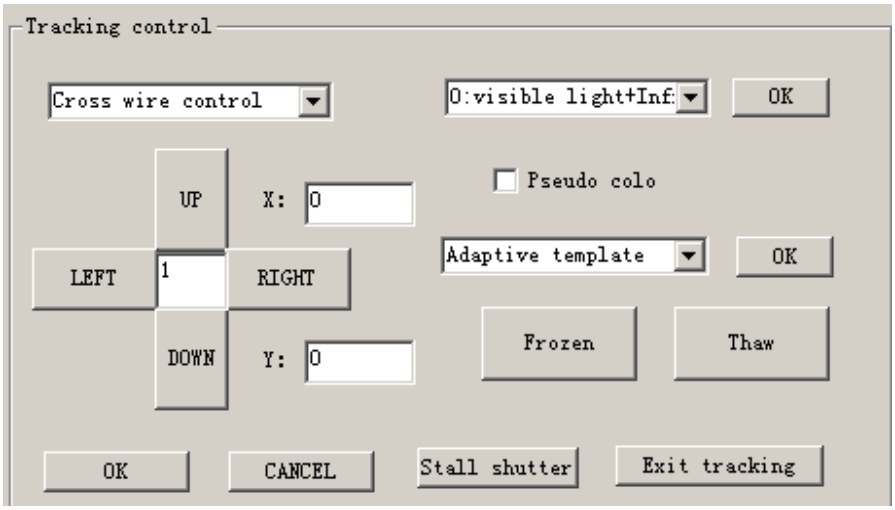
③Select the core type placing in

1. Sony7520：Video output frame rate depends on the rate selected in '②video format setting'

2. Sony7520(60Hz)：the output video frame rate is 60Hz

3. 2. Detailed annotation of software operation interface

3. 2. 1. Imaging, tracking control and storage interface



Click the UP, DOWN, LEFT and RIGHT button and the cross cursor will show up.

Display interface 1:

Step 1: Locate the tracking target

Click the Direction button in the tracking control interface and the cross cursor will show up, input the cursor in the input-box of the tracking control interface to adjust the steps. Adjust the position of the cross cursor through UP,

DOWN, LEFT and RIGHT button. Click ‘confirm’ button and complete the target locating after the tracking box appear.

Locating, tracking: display interface 1

Step 2: Second time target tracking

Click the ‘second time tracking’ button in the tracking control interface, the cross cursor will show up again in the location of current tracking box. And you can adjust the cursor position according to step 1 and then locking the tracking target.

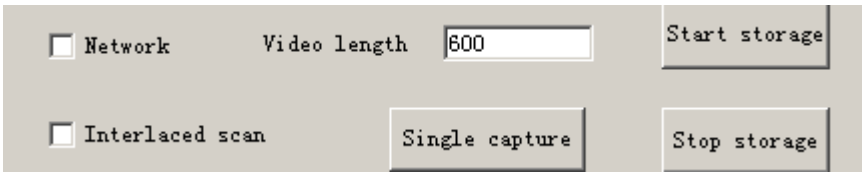
Second time target locating：display interface 1

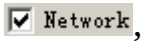
Second time tracking：display interface 2

Step 3: Cancel target tracking

Click ‘cancel’ button in tracking control interface and cross cursor will disappear, and target tracking is cancelled.

3. 2. 2. Internet access and storage interface

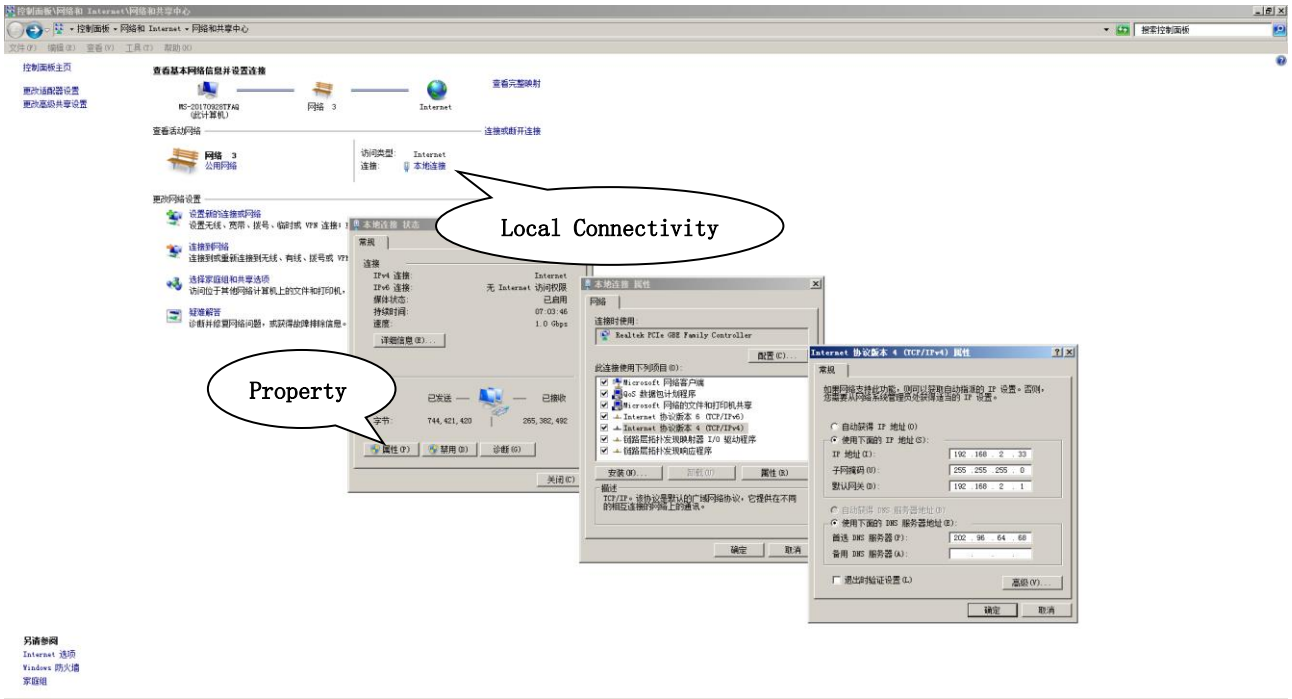


Network port output video setting: Click the Open button 

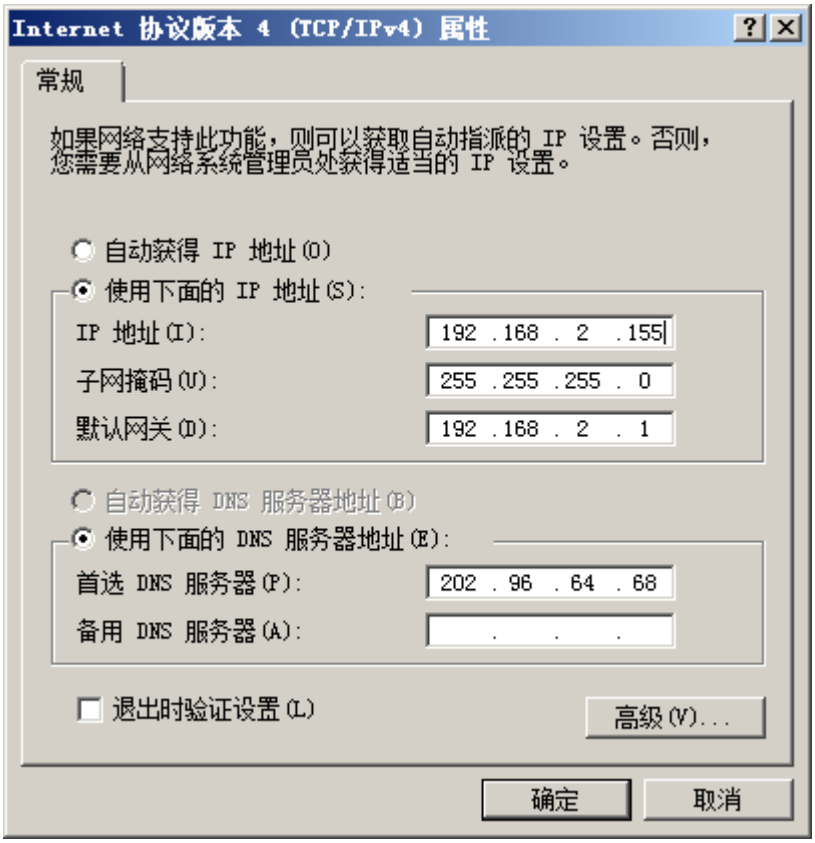
, set the IP address of the computer or other terminal device connected to the video tracker as the same network segment to the tracker. For instance: The IP address of the tracker is 192.168.2.119, then the terminal IP address must be set as 192.168.2.xxx, and set the gateway IP address as 192.168.2.1(Set the computer IP address as IP v4 is ok, Note：xxx≠119).

Note：Please close the firewall！！！

Step 2: Click “Local Connectivity” icon ⟹ “Property” ⟹ double click “Internet protocol version(TCP/ IPv4)” , as is shown:



Set the dialog box as shown below, click the Confirm button to complete the setting.



We recommend computer software “vlc media player” and “easy player” which can be searched and downloaded on Internet.

Easy player download address:

https://github.com/EasyDSS/EasyPlayer/tags

Vlc media player download address:

http://www.videolan.org/

Easy player: just fill in the IP address of the infrared camera/ video tracker +/554 (for example: 192.168.2.119/554), cancel “TCP” option and keep the “Hardware Decode” option. Click Play is ok.

Video storage: select interlace scan according to the video format you need to store.

☑ Interlaced scan，1080I

Interlaced scan ， 1080P

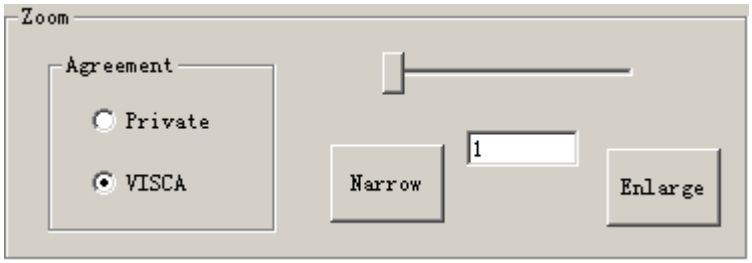
Enter video length in the input field(unit/ second)，click Start storage start to store and Stop storage stop to store to complete video storage。Click Single capture single crawl button to complete image storage.

3. 2. 3. Image processing interface

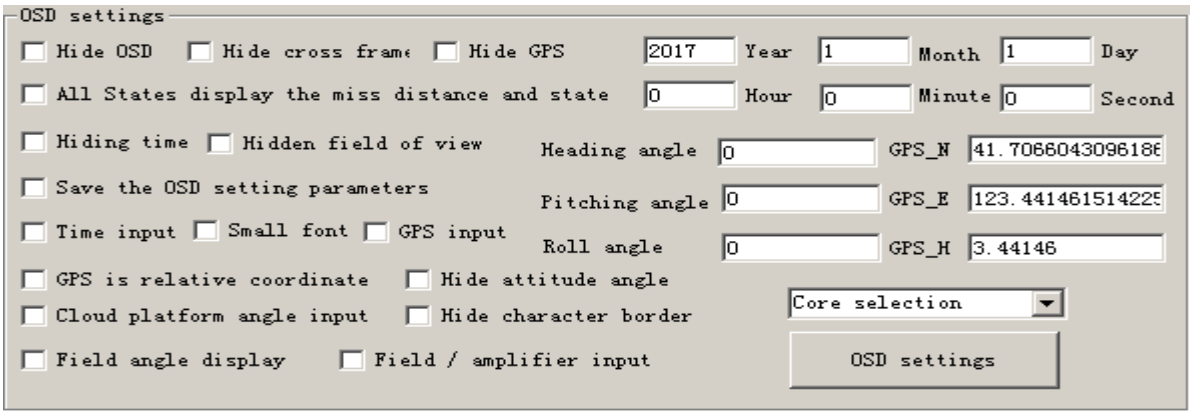
Select image processing mode according to environment demand.

3. 2. 4. Zoom control interface

Input zoom times according to the demand to complete image zoom.



3. 2. 5. OSD setting interface



Remarks： select OSD option and click OSD settings ‘OSD Setting’ to complete the setting.

3. 2. 6. Command frame

81-01-04-47-00-00-00-00-ff

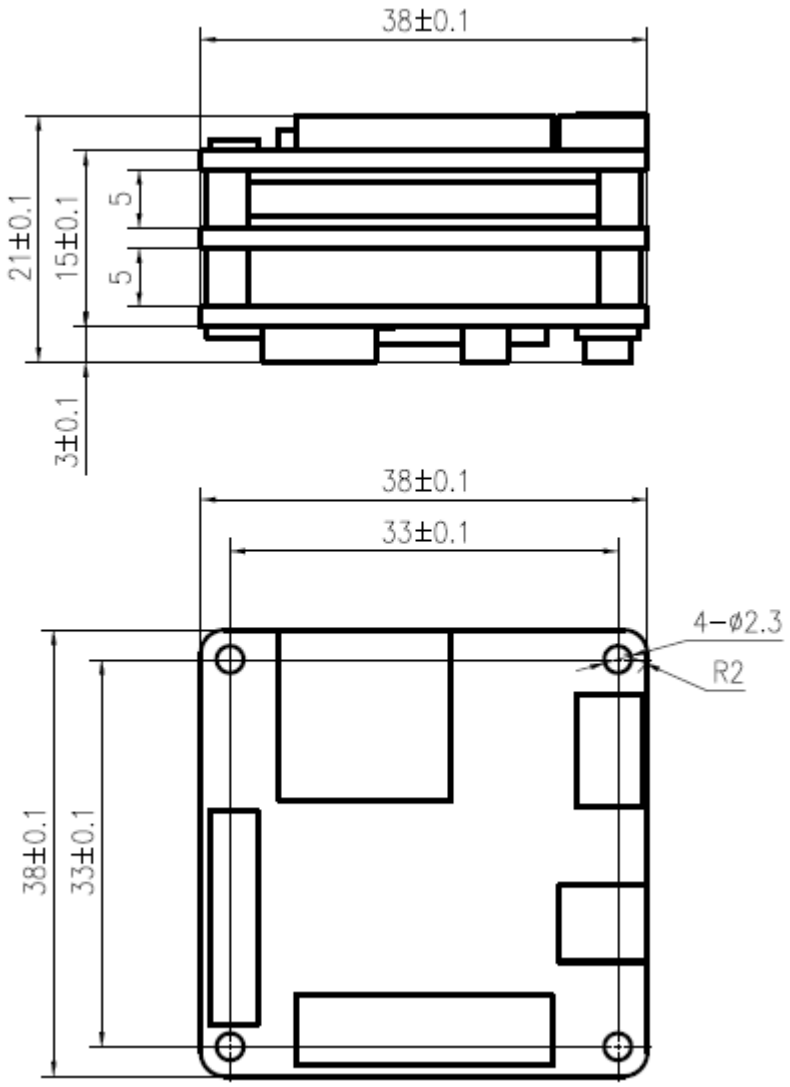
81-01-04-47-00-00-00-00-ff

4 Simple malfunction diagnosis and exclusion

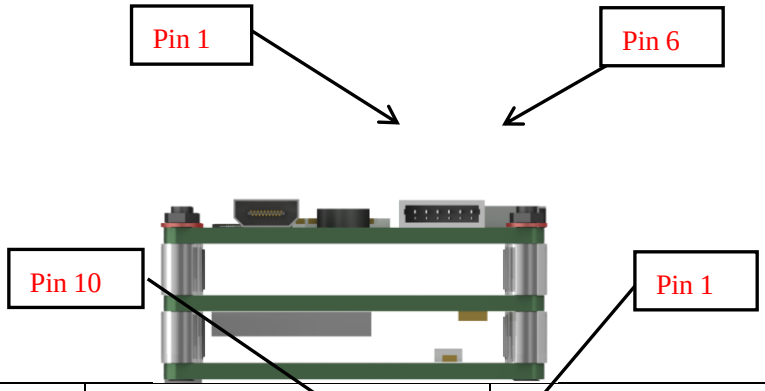
Please use the form below to check the infrared camera when it has any trouble. Disconnect the power and contract our technical support department if the problem cannot be fixed.

Malfunction	Reason and solution
Video tracker cannot start/Power light is not on	1. Check whether the power is connected. 2. Check whether the voltage is lower than required which should be 12V.
No image display	1. Check whether the serial port is open(not serial port 1) 2. Check whether the baud rate setting of the operation software is correct. 3. Check whether the video output format of the displayer is 1080I/1080P.
The serial command does not respond	1. Check whether the serial port is open(not serial port 1 open)Check whether the verification mode is correct.
No tracking box	1. The target is too close or not obvious, reselect target.

Attachment 1 Product structure chart

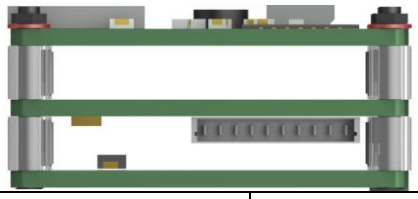


Attachment 2 Pin definitions



Pin No.	Pin Name	Function
1	POWER IN	+8V-12V power input
2	POWER IN	+8V-12V power input
3	GND	Ground
4	GND	Ground
5	RXD	Serial port receiving
6	TXD	Serial port sending

Attachment 3 Communication protocol



PIN No.	PIN Name	Function
1	DATA_1_N	Receiving input
2	DATA_1_P	Receiving input
3	DATA_0_N	Sending output
4	DATA_0_P	Sending output
5	GND	Ground
6	LED_Link	Connection success indicator light
7	LED_Active	Data indicator light
8	UART_RXD	Serial port receiving
9	UART_TXD	Serial port sending
10	GND	Ground

Baud rate：115200

Without the start bit, 8 bit data bits, 1 bit stop bit， no check

1	Frame header	0x7E	
2	Frame header	0x7E	
3	Address	0x44	
4	Reserved	0x00	
5	Reserved	0x00	
6	working states		0x00：Imaging mode 0x1d: Dimming mode 0x71：Tracking mode 0x78：Imaging setting mode 0x7C: SD card storage mode 0x81：Image freezing mode 0x83：OSD setting mode
7	Imaging setting mode/SD card storage switch		Imaging setting mode: 0: Grayscale 1：Pseudo color fusion 2：iron oxide red 3：rainbow 4：colorized SD card storage mode： 1：start to store 0：stop to store 2: single crawl Image freezing mode： 1：freeze 0：unfreeze
8	X-axis movement	low 8 bits	Tracking mode
9		high 8 bits	Tracking mode
10	Y-axis movement	low 8 bits	Tracking mode
11		high 8 bits	Tracking mode
12	Confirm tracking		Tracking mode 0x00：cancel tracking； 0x01：confirm tracking；
9	contrast adjustment		Dimming mode value range：1-100 default 50
13	brightness adjustment		Dimming mode value range：1-100 default 50
11	Warning temperature setting	low 8 bits	Imaging setting mode
12		high 8 bits	Imaging setting mode
13	Temperature bar		Imaging setting mode 0：Concealing1：Display
14	Tracking mode	0x00	The sixth bit is the template selection flag bit, if it is 1, then specify the module size. 0x24：small template 32

			0x28：middle template 64 0x30：big template 128 The information above can be superimposed, for example： 0x2c is small template + middle template 0x38 is small template + big template
15	Video source	0x00	Imaging setting mode: 0x00：Visible light and infrared light (picture in picture) 0x01：infrared light； 0x02：infrared light and visible light(picture in picture)； 0x03：Visible light
16	Black hot mode	0x00	Imaging setting mode: 0: White hot 1：Black hot
17	Digital zoom	0x00	Imaging setting mode 0x00:1X 0x01:2X 0x02:4X
18	Highest temperature display		Imaging setting mode 0：Concealing 1：Display
19	Lowest temperature display		Imaging setting mode 0：Concealing 1：Display
20	Pitch angle	Low eight bits	Resolution 0. 01 degree
21		High eight bits	
22	Course angle	Low eight bits	Resolution 0. 01 degree
23		High eight bits	
24	Roll angle	Low eight bits	Resolution 0. 01 degree
25		High eight bits	
26	Magnification times（or field angle）	Low eight bits	Default：0x000A，1time Resolution 0.1time Resolution
27		High eight bits	
28	OSD display		OSD setting mode 0：concealing 1：display
29	Reserved		
48	Checksum		

Note： A full frame of communication contains 48 bytes, and the 48th byte is

checksum.

1	Frame head	0x7E	
2	Frame head	0x7E	
3	Address	0x44	
4	Reserved	0x00	
5	Reserved	0x00	
6	Working state		0x83：OSD setting mode（HD）
7	OSD information		BIT0 0：concealing OSD 1：display OSD BIT1 0：without time input 1：with time input BIT2 0：without GPS input 1：with GPS input BIT3 0：GPS is geographic coordinates 1：GPS is relative coordinates
8-9	Year	U16	
10	Month	U8	
11	Day	U8	
12	Hour	U8	
13	Minute	U8	
14	Second	U8	
16-19	Course angle	Float	
20-23	Pitch angle	Float	
24-27	Roll angle	Float	
28-35	GPS X	Double	
36-43	GPS Y	Double	
44-47	GPS Z	Float	
48	Checksum		

Tracking module output protocol（tracking module-pod）

1	Frame head	0x7E	
2	Frame head	0x7E	
3	Address	0x44	

4	Reserved	0x00	Display OSD part BIT0 0：Display OSD 1：Concealing OSD BIT1 0：Display middle frame/ cross 1：Concealing middle frame/ cross BIT2 0：Display attitude angle 1：Concealing attitude angle BIT3 0：Display miss distance under tracking state only 1：Display miss distance under all states BIT4 0：Display GPS 1：Concealing GPS BIT5 0：Display time 1：Concealing time BIT6 0：Display field of view/ magnification 1：Concealing field of view/ magnification BIT7 0：Small font 1：Big font
5	Reserved	0x00	
6	Working state	0x83	0x83：OSD setting mode（HD）
7	OSD information		BIT0 0： 1：Save OSD setting parameter BIT1 0：without time input 1：with time input BIT2 0：without GPS input 1：with GPS input BIT3 0：GPS is geographical coordinates 1：GPS is relative coordinates BIT4 0：without platform angle input 1：with platform angle input BIT5 0：without field of view/ magnification input 1：with field of view/ magnification input BIT6 0：display according to

			magnification times 1：display according to field angle BIT7 0：domestic core video 1：sony7520（can Not be Set）
8-9	Year	U16	
10	Month	U8	
11	Day	U8	
12	Hour	U8	
13	Minute	U8	
14	Second	U8	
16-19	Course angle	Float	
20-23	Pitch angle	Float	
24-27	Magnification times/field angle	Float	
28-35	GPS X	Double	
36-43	GPS Y	Double	
44-47	GPS Z	Float	
48	Checksum		

Note：

1） When the tracker module receives video switch instruction under tracking state, it needs to relieve the tracking state, so that the tracking box can return to the center of the video and reselect the target.