

Shenzhen Touview Technology Co., Ltd

www.touview.com

Serial UART (RS232/RS485/TTL) JPEG Color Camera Brief



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About Touview

- The first designer and experienced professional Serial UART JPEG Color Camera in China for almost 9 years
- Supplying one store solution of Serial JPEG Camera Series, covering 0.3mp Series, 1.0mp WDR, 1.3mp, 2.0mp and 5.0mp unit. No matter what your application is, you can find a proper camera from us.
- We have about 6 engineers who supplies fast help for customer.
- We are ISO compliant company

About Touview Camera

- All the cameras have passed CE, FCC, ROHS certification
- Every camera has been tested under high and low temperature before it is shipped to customer

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Part 1. 0.3MP Serial JPEG Camera

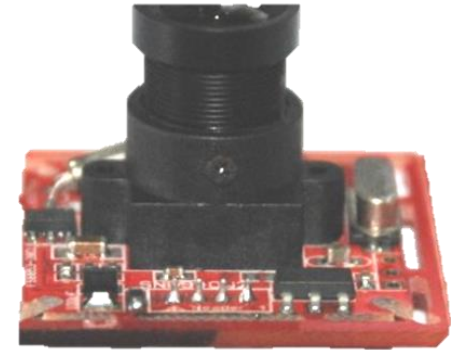
1. Model No.; TVQ030

----JPEG Picture Data Output Only

● 940 IR Lens Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 640*480 / 320*240 / 160*120;
- ✓ **Output:** JPEG, 4-Level Compression Ratio;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 3.3V / 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** 38mm*38mm / 32mm*32mm;

Part 1. 0.3MP Serial JPEG Camera

2. Model No.; TVBD030

----JPEG Picture & Analog Video Output

● 940 IR Lens Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 640*480 / 320*240 / 160*120;
- ✓ **Output:** JPEG Picture & PAL/NTSC Video;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 3.3V / 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 / 12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** DB9 Female & RCA;
- ✓ **Size:** 38mm*38mm / 32mm*32mm;

Part 1. 0.3MP Serial JPEG Camera

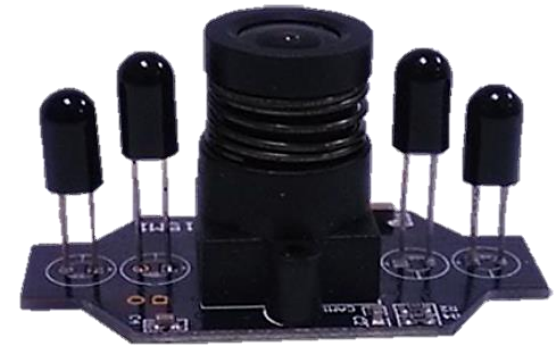
3. Model No.: TVS030

----JPEG Picture Data Output Only

● 940 IR Lens Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 640*480 / 320*240 / 160*120;
- ✓ **Output:** JPEG, 4-Level Compression Ratio;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 3.3V / 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 / 12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** Main (38*38mm) **Sensor** (46*23mm);

Part 1. 0.3MP Serial JPEG Camera

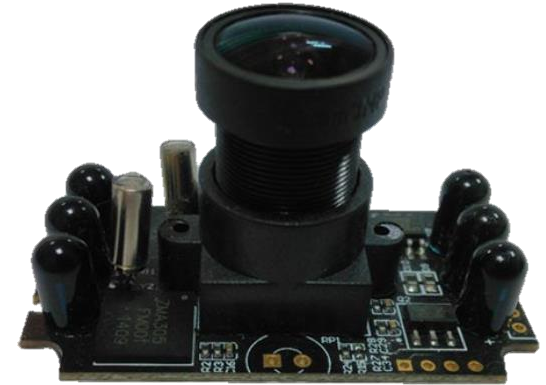
4. Model No.: TVM030

----JPEG Picture Data Output Only

● 940 IR Lens Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 640*480 / 320*240 / 160*120;
- ✓ **Output:** JPEG, 4-Level Compression Ratio;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 3.3V / 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** 45mm*25mm;

Part 1. 0.3MP Serial JPEG Camera

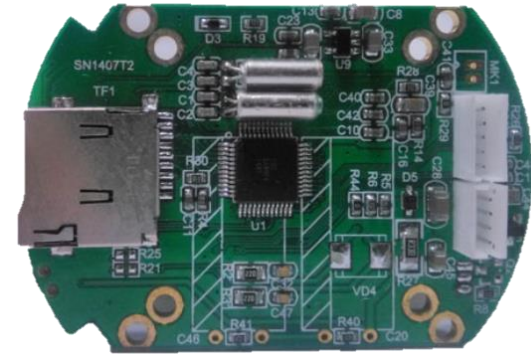
5. Model No.; TVC030

----JPEG Picture Data Output Only

- 940 IR Lens Picture Quality



- 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 640*480 / 320*240 / 160*120;
- ✓ **Output:** JPEG Picture & avi video to TF Card;
- ✓ **Protocol:** ZMID Protocol, OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **TF Card Storage: Max 32GB**
- ✓ **Power Supply:** 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** Main(56.5*38.5mm) Sensor(38*38mm);

Part 2. 1.0 Serial JPEG Camera

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5. Model No.: TVW100

----JPEG Picture Data Output Only

WDR?

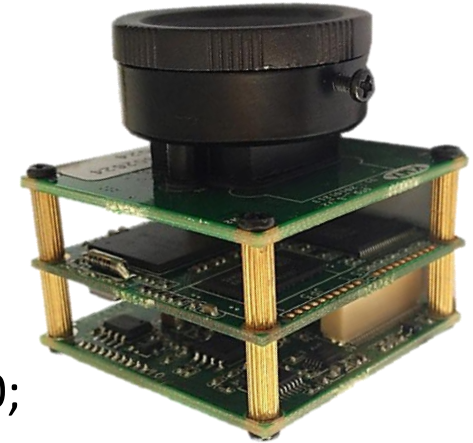
It is generally achieved by Capturing multiple standard exposure images, often using exposure bracketing and then later, merging them into a single WDR image.

- Picture Quality



Key Features

- ✓ **Resolution:** 1280*720;
- ✓ **Output:** JPEG Picture;
- ✓ **Picture Enhancement: WDR Function;**
- ✓ **Protocol:** TV Protocol;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 12V / 9V-36V;
- ✓ **Lens Focus:** CS4 / CS6 / CS12mm;
- ✓ **Lens Type:** 850 IR Lens with IR Cut Filter;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** 38mm*38mm;



Part 3. 1.3MP Serial JPEG Camera

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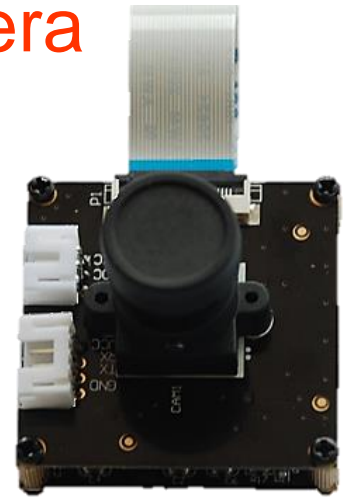
1. Model No.: TVQ130

----Single Lens

● 940 IR Lens Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 1280*1024/640*480/320*240 ;
- ✓ **Output:** JPEG Picture;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 3.3V / 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** DB9 Female;
- ✓ **Size:** 38mm*38mm / 32mm*32mm;

Part 3. 1.3MP Serial JPEG Camera

2. Model No.: TVB130

----Dual Lens (Color Lens & IR Lens)

- **Color Lens:** works in day time to capture **great color image**



- **IR Lens:** works in night time to snapshot **black & white picture**



Key Features

- ✓ **Resolution:** 1280*1024/640*480/320*240 ;
- ✓ **Output:** JPEG Pic. 1-100 compression Ratio;
- ✓ **Protocol:** TV Protocol; OV528 / VC0706;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 850 IR lens and Color Lens;
- ✓ **Connector:** DB9 Female;
- ✓ **Size:** $\Phi 76.5\text{mm}$

Part 4. 2.0MP Serial JPEG Camera

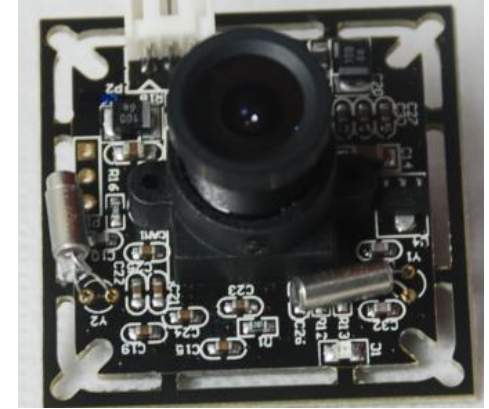
1. Model No.: TVQ200

----JJPEG Picture Output

● Day Time Picture Quality



● Night Time Picture Quality



Key Features

- ✓ **Resolution:** 1600*1200;
- ✓ **Starlight Night Vision:** 50 Meters
- ✓ **Output:** JPEG Picture;
- ✓ **Protocol:** TV Protocol;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 6V ;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 940 / 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** 38mm*38mm / 32mm*32mm;

Part 5. 5.0MP Serial JPEG Camera

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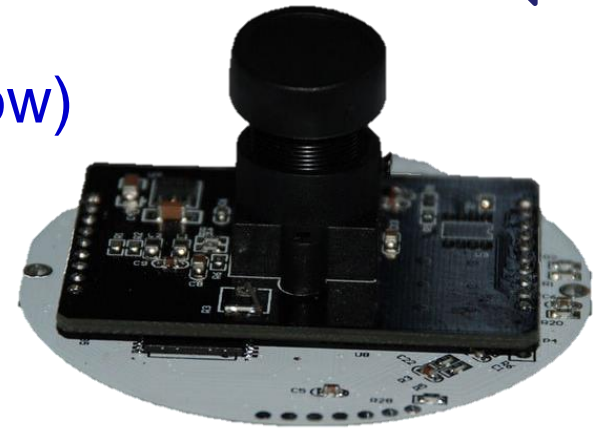
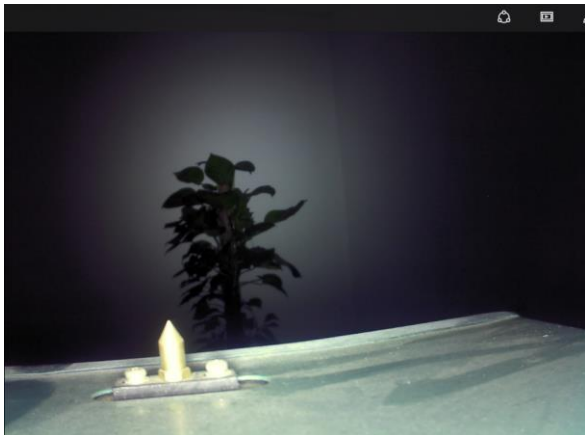
1. Model No.: TVR500 (Not Available Now)

----JPEG Picture Output

● Daytime Picture Quality



● 850 IR Lens Picture Quality



Key Features

- ✓ **Resolution:** 2952*1944;
- ✓ **Output:** JPEG Picture;
- ✓ **Protocol:** TV Protocol;
- ✓ **Serial Interface:** RS232 / RS485 / TTL;
- ✓ **Baud Rate:** 9600bps-115200bps;
- ✓ **Power Supply:** 5V / 9V-36V;
- ✓ **Lens Focus:** 2.8 / 3.6 / 6 / 8 /12mm;
- ✓ **Lens Type:** 850IR lens/ Color Lens;
- ✓ **Connector:** Standard DB9 Female / Wire lead;
- ✓ **Size:** Φ 76.5mm;

Touview 0.3mp Serial JPEG Camera Series

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TVSS030



TVBS030



TVSD030



TVBD030



TVPI030



TVBF030



TVCS030



TVMI030



TVMS030-1



TVMS030-2



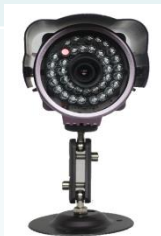
TVWV030



TVFT030



TVBL030



TVTF030



Touview 1.0mp, 1.3 Serial JPEG Camera Series



TVBL100-90-04

TVBL100-75

TVBS130



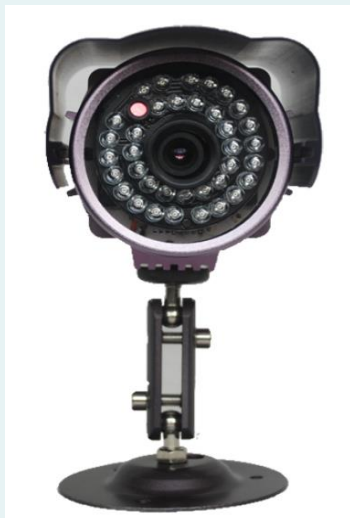
Touview 1.3 and 2.0MP Serial JPEG Camera Series

TVBL130-01

TVBL130-02

TVBL200-I54

TVBL200-A04



How to Select Serial Camera for your Application

The JPEG UART Serial Cameras are now widely used in GPS tracking system. remote monitoring system. home security system, construction project monitoring system, farm monitor system etc..

So a through understanding of your application is a must before getting a sample for your application. You may consider the following item:

- | | |
|--------------------------------|------------------------------------|
| 1. Software Parameters: | 2. Hardware Parameters: |
| ✓ Serial Interface; | ✓ Power Supply; |
| ✓ Baud Rate; | ✓ Day/Night Mode; |
| ✓ Communication Protocol. | ✓ Angle of view & Vision Distance; |
| | ✓ Cable Length; |
| | ✓ Connector & PIN Description |

1. Serial UART Interface

- ✓ **Interface Type:** Touview Camera supports RS232 / RS485 / TTL Serial port. It is depended by the host device.
- ✓ **Characters:** Host can communicate with only 1 camera through RS232/TTL port via only 1 cable. For RS485, several cameras can be connected in series. Then host can communicate with them with 1 cable via specific camera ID No. The default ID NO. is “0” .

2. Serial Communication Protocol

- ✓ TV Protocol is compatible for all Serial jpeg cameras. It is convenient to apply different cameras(Indoors/outdoors) into different occasions.
- ✓ OV528 protocol and VC0706 protocol are available
- ✓ If you have your own protocol, you can also send to us for customization.

3. Picture Quality

- ✓ **Picture Format:** The camera supports JPEG picture format with small size and high picture quality
- ✓ **Picture Quality Level:** Cameras supports different compression ratios adjustment. Please refer below:
 - 0.3MP Series:** It support 4 picture quality levels;
 - 1.3MP Series:** It ranges from 0-100 to adjust the picture quality and picture size.

4. Serial Camera Power Supply

- ✓ **0.3MP Camera** supports voltage ranges from 3.3V to 5V and 9V-36V.
- ✓ **1.0MP Camera** supports voltage ranges from 12v to 36V;
- ✓ **1.3mp Camera** supports 5V and 9V-36V;
- ✓ **2.0mp Camera** supports 6V and 12V;
- ✓ **5.0mp Camera** supports 5V and 9V-36V;

5. Day-Night Mode

The camera module supports 2 modes for your application: Day time only and day & night mode. Please see below:

Mode	Lens Type		IR Board	IR Cut	Introduction
Daytime	Color Lens		No IR Board	NA	1.Colorful picture in daytime; 2.No picture in night time;
D/N	IR lens	850 IR lens	850 IR Board	NA	1.Daytime: A little color cast 2.Nighttime: Good night vision;
				Yes	1.Good Night vision and no color cast in daytime; 2.Only For some of FSF Camera and 1.0mp WDR Camera
		940 IR lens	940 IR Board	NA	1.Almost no color cast in daytime 2.Night vision isn't as good as 850

6. Angle view & vision distance

You can select different lens focus according to your application base on the chart below:

Focus Length	Angle of View Reference Standard	Optimum Distance Reference Standard
2.8mm	89.9	1-2Meter
3.6mm	75.7	2-4Meter
4mm	69.9	3-6Meter
6mm	52.5	5-10Meter
8mm	38.5	7-15Meter
12mm	25.2	10-20Meter

7. Cable Length

- ✓ Application Requirement: The cable length bases on the application you required.
- ✓ For TTL, the length is better no longer than 1 meter.
- ✓ For RS232, it will no more than 15 meters.
- ✓ For RS485, it can be over 20 meters.

8. Connector and PIN Description

QQZM's standard camera connector is DB9 Female. The following are some common use connectors for your reference:



PIN	Symbol /Color	Desc.
1	VCC (Red Wire)	Power supply
2	TXD/ 485-B (Green Wire)	TTL/232 /RS485 Data-
3	RXD/ 485-A (Yellow Wire)	TTL/232 /RS485 Data+
5	GND (Black Wire)	Ground Lead

How to order a proper sample

- ✓ Because different customer has different application, the Serial JPEG Camera is not a standard unit for all customer but a half-customized product.
- ✓ In order to help you to order the proper camera, please have a details refer to the tips above and fill in the parameter confirmation table below. And we make sample according to your choice.
- ✓ We strongly recommend you tell us what system you will integrate the serial camera into, we could give you some useful suggestion as we have more than 9 years experience, our suggestion would be very helpful for you.

Confirmation of Serial Camera Parameters



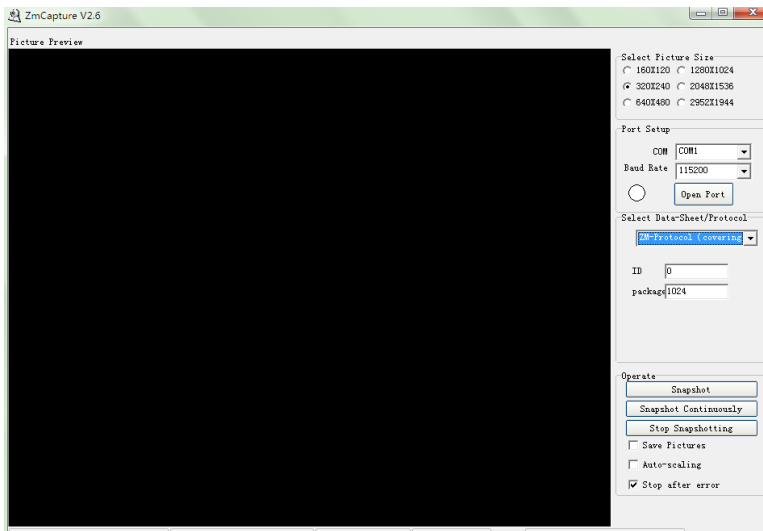
Model NO.:	Serial Camera	(Your Choice Here)
Communication Protocol	Standard Protocol: TV Protocol; Others: OV528 / VC0706 Protocol; Customization: Please send document to us;	
Serial Interface	TTL & RS232: only with 1 default ID NO.: 0; For RS485: Please provide every camera ID NO.;	
Baud Rate	From 9600-115200bps, Default: 115200bps;	
Power Supply	3.3V/5V/12V/9-36V;	
Lens Focus	2.8mm,3.6mm,4mm,6mm or 12mm for choice;	
IR Board	850 / 940 IR led, Array Light	
Cable Length	Standard: 3M, (For TTL, <=1M);	
Connector	Standard: DB9 Female or Wire lead only; User's Connector: Providing Connector & PIN decs.; Video output connector: For Dual output Module	
Power Converter	Length between power converter & Camera	

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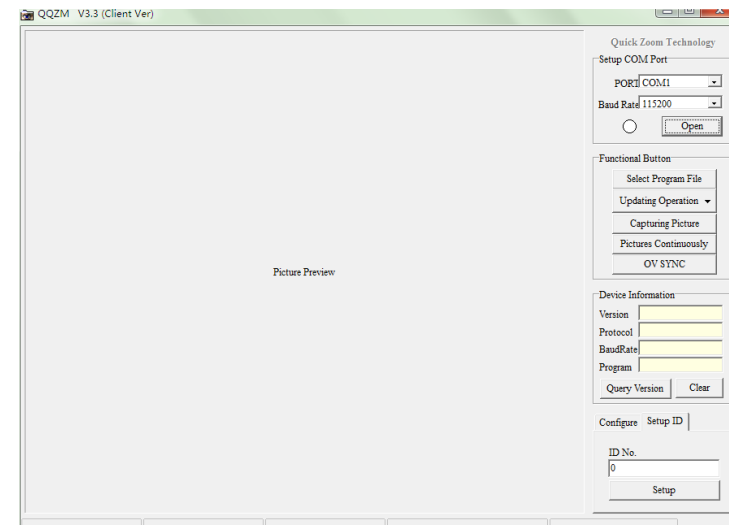
Camera Testing: PC Test Software

In order to help customer to test the camera fast and correctly, we specially designed two kinds of PC Test Software, they are very helpful for you to control the camera.

ZMCapturer



ZMtools



Step 1: Refer to Camera Parameter

1. Please find out the silver label on the camera housing and get the key technical parameters before you connect to PC.
2. The Label will show 4 key parameters (B, V, L and C) :

Symbol	Description	Remarks
B	Baud Rate of the camera	9600bps-115200bps
V	Voltage of camera	3.3V/5V/9-36V
C	Camera Serial Port (232/485/TTL)	For 485, please check if any special camera ID on label or default ID is "0". For 232/TTL, THE Default ID is "0"
L	Lens Focus	2.8/3.6/6/8/12mm

Step 2: Connect Camera to PC

1. Please make sure the camera's RXD wire and the TXD wire are connected to PC's TXD wire and RXD wire ;
2. For RS232 / TTL Serial Port, please make sure camera GND wire, Power GND and PC GND wire connected together; Not for RS485 Serial port.
3. Most of the common USB cable is with TTL interface, so please make sure you get the USB to RS232 Cable if your camera is RS232.

Step 3: Power Camera

1. Red Wire-----VCC;
2. Black Wire----GND;
3. Yellow Wire---RX;
4. Green Wire---TX ;

Step 4: Testing with ZMCapture

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The screenshot shows the ZmCapture V2.6 software interface. On the left is a 'Picture Preview' window, currently black. On the right is the main configuration panel. The panel includes sections for 'Select Picture Size' (with radio buttons for 160X120, 320X240, 640X480, 1280X1024, and 2952X1944), 'Port Setup' (with dropdowns for COM1 and Baud Rate 115200, and an 'Open Port' button), 'Select Data-Sheet/Protocol' (with a dropdown for 'ZM-Protocol (covering)'), 'ID' (text input with '8'), 'package' (text input with '1024'), and an 'Operate' section with buttons for 'Snapshot', 'Snapshot Continuously', and 'Stop Snapshotting', along with checkboxes for 'Save Pictures', 'Auto-scaling', and 'Stop after error' (checked).

Step1:
1. 0.3MP: 160x120, 320x240,
2. 1.3MP: 160x120, 320x240, 640x480, 1280x1024
3. 5.0mp: 2048x1536,

Step2: Select COM Port

Step3: Select Baud Rate

Step4: Open Serial Port

Step5: Select Protocol

Step6: Enter ID no. if camera has ID no. If not, just skip it

Step7: Click "Snapshot" to capture a single picture

Step8: Click "Snapshot Constantly" to capture constant pictures

Step9: Click to stop Snapshot

Picture will display in this window after click the button "Snapshot" and "Snapshot Continuously"

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Thank You for Reading

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