

TCD-2100

**1-channel H.264 Video Encoder
Hardware User's Manual**

(DC 12V)

Ver. 2010/10/29



ACTi
Connecting Vision

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0. Precautions

Read these instructions

You should read all the safety and operating instructions before using this product.

Heed all warnings

You must adhere to all the warnings on the product and in the instruction manual. Failure to follow the safety instruction given may directly endanger people, cause damage to the system or to other equipment.

Servicing

Do not attempt to service this video device yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Trademarks

All names used in this manual are probably registered trademarks of respective companies.

Liability

Every reasonable care has been taken during the writing of this manual. Please inform your local office if you find any inaccuracies or omissions. We cannot be held responsible for any typographical or technical errors and reserve the right to make changes to the product and manuals without prior notice.

FCC/CE Regulation

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the users will be required to correct the interference at their own expense.

1. Introduction

Package Contents

TCD-2100



Power Adaptor (Optional)



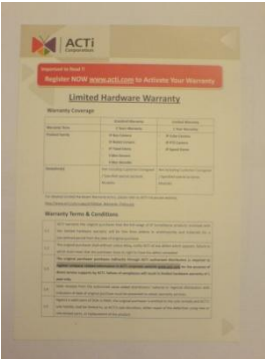
Product CD



Accessory



Warranty Card



Features and Benefits

This is a cutting-edge digital video surveillance device. It can compress and transmit real time images with outstanding image quality through a standard TCP/IP network. This device is your best choice to build an intelligent IP surveillance system.

H.264/MPEG-4/MJPEG Triple Codec Dual Streaming

This device supports 3 compression formats, H.264, MPEG-4 and MJPEG. It brings superior image quality at 30 frames per second in D1 (720 x 480) / CIF (352 x 240) and QCIF(160 x 112). With hardware H.264 compression, the composite video inputs can be efficiently compressed into H.264 stream without delay.

Built-in Hardware Motion Detection

No more external motion sensors are required. You may assign up to 3 video motion detection areas. By tuning the object size and sensitivity, it will reliably detect objects passing through in view. Hardware motion detection also offers better sensitivity and faster response time than software motion detection.

Powerful Bundled Surveillance Software

To extend the capabilities of the device, a powerful surveillance program is included in the package for free. Users can easily use an existing PC as a digital video recorder. Scheduled recording and manual recording keep every important video recorded in the local hard disk. Reliable and accurate motion detection with instant warning enables immediate response in every condition. Quick and simple search and playback function lets you easily find the images and video you want.

Software Development Kit Support

This device can be integrated or controlled by applications from third party software developers. Software developers can save considerable efforts by using our Streaming Library or ActiveX control. Please contact us for details on integration support.

Digital Time Code Embedded

The "Digital Time Code Embedded" function records video time in the video stream. Therefore, each image frame is marked with its original recording time. It is very useful when users want to find the video at an exact time or between a certain time intervals.

Safety Instructions

Don't use the power supply with other voltages

If you use a power supply with different voltage than the one included with this device, this device may be damaged or inflict damage upon other equipments / personnel. All warranty of this product will be voided in the situations above.

Don't open the housing of the product

Cleaning

Disconnect this video product from the power supply before cleaning.

Attachments

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

Water and Moisture

Do not use this video product near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

Don't use accessories not recommended by the manufacturer

Only install this device and the power supply in a dry place protected from weather

Servicing

Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring service

Disconnect this video product from the power supply immediately and refer servicing to qualified service personnel under the following conditions.

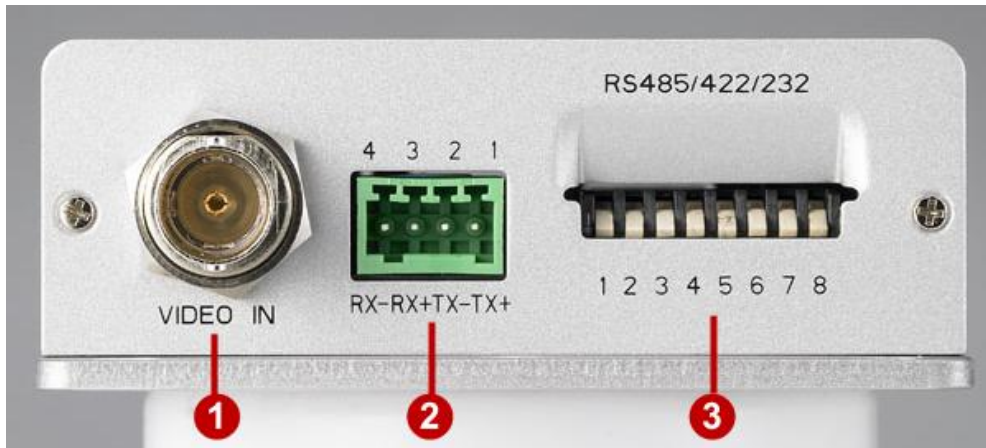
- 1) When the power-supply cord or plug is damaged
- 2) If liquid has been spilled, or objects have fallen into the video product.
- 3) If the video product has been directly exposed to rain or water.
- 4) If the video product does not operate normally by following the operating Instructions in

this manual. Adjust only those controls that are covered by the instruction manual, as an improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the video product to its normal operation.

Safety Check

Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine if the video product is in proper operating condition.

Physical description



1) Video Input / Output

The IP device allows one analog input of composite signals with BNC connectors.

2) Serial Port Connection via Terminal Block

Connect your serial port devices to the terminal block according to this table.

PIN	NAME	DESCRIPTION		
		RS-485	RS-422	RS-232
1	Tx+	D+	Tx+	Tx
2	Tx-	D-	Tx-	
3	Rx+		Rx+	Rx
4	Rx-		Rx-	

3) Dip Switch for Serial Port Configuration

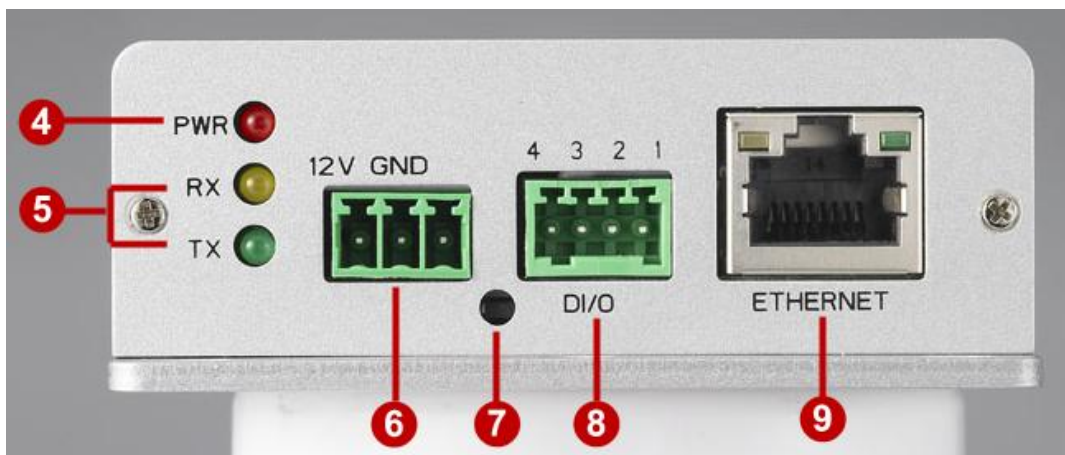
The same terminal connections can be used for different protocols. Select which protocol to use via this Dip Switch.

RS-485 or RS-422 (Default is RS-485)



RS-232 pin define





4) Power LED

The LED will light up after device has successfully completed the boot process

5) Serial Port LED

LED will light up when serial port is active

6) Power Input

Connect the power adaptor here if your power input is DC12V.



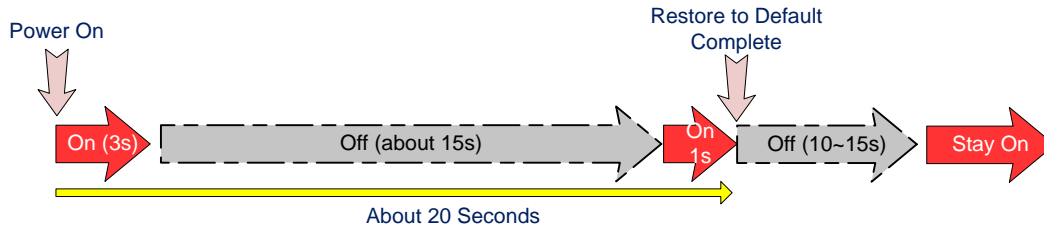
PIN	NAME	DESCRIPTION
1	12V	DC Power Input
2	GND	Ground Pin

7) Reset Button

Step 1: Switch off IP device by disconnecting the power cable

Step 2: Press and continue to hold the Reset Button (with a sharp tipped object, like a pen.)

Step 3: *Reconnect the power cable while continuing to hold the reset button.* The red Power LED light will flash on for 3 second first, turn off for about 15 seconds, flash on for another second and turn off again. By this time the reset to default operation is already completed. *This will take around 20 seconds from power up.* You may then release the reset button. This length of time fluctuates slightly with the environment. The Power LED light will come back on and stay on after a few more seconds. The unit will start up with factory default settings automatically.



8) Terminal Blocks for Digital Input / Output

The IP device supports one alarm input and one transistor output. Please connect DI with Pin 1 and 3 and connect DO with Pin 2 and 4.

PIN	NAME
1	GND
2	DC + 12V
3	Digital Input
4	Transistor Output

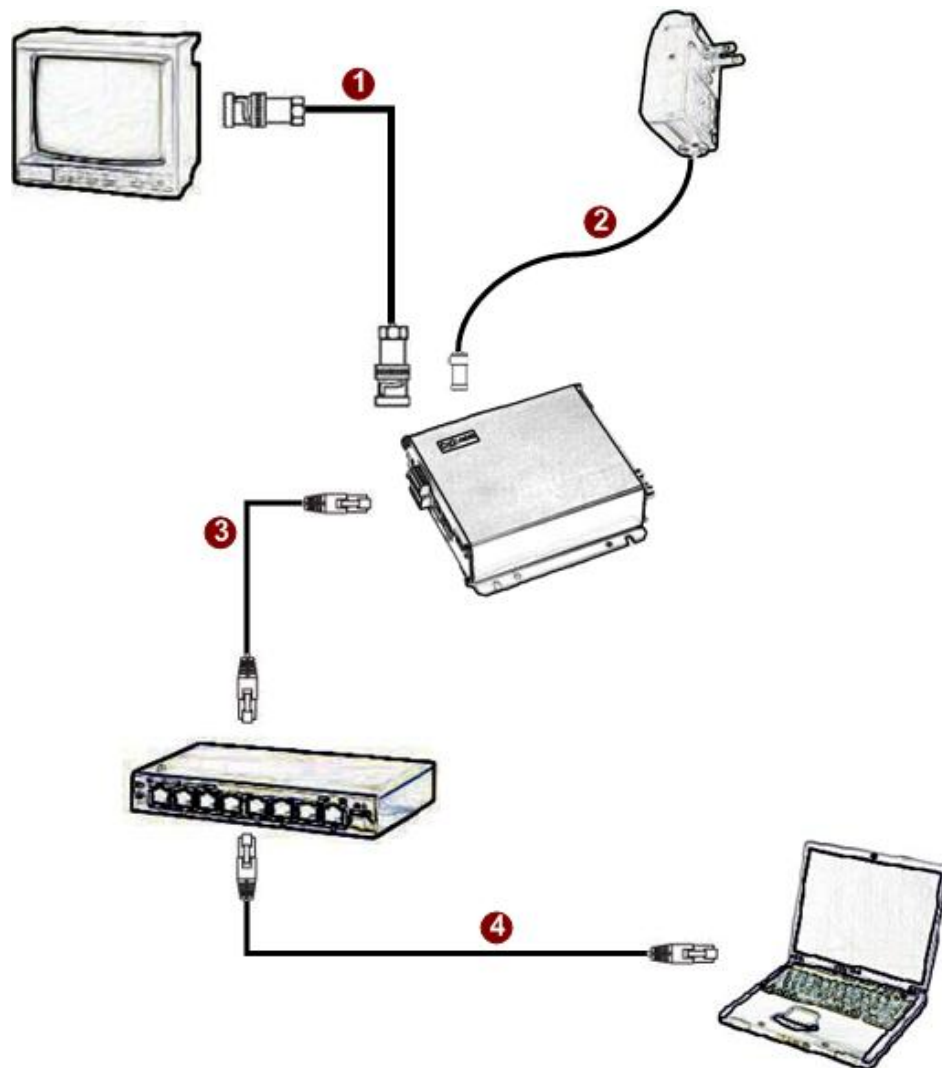
DI	Connection design		TTL-compatible logic levels
	Voltage	To trigger (low)	Logic level 0: 0V ~ 0.4V
		Normal (high)	Logic level 1: 3.1V ~ 30V
	Current		10mA ~ 100mA
DO	Connection design		Transistor (Open Drain)
	Voltage & Current		Internally powered at 12 V. Limit to no more than 24V DC if connected to external power, <100mA

9) Ethernet Port

The IP device connects to the Ethernet via a standard RJ45 connector. Supporting NWAY, this IP device can auto detect the speed of local network segment (10Base-T/100Base-TX Ethernet).

Basic Connections

Follow the procedures below to connect the IP device to the respective apparatuses.



- 1) Connect an analog monitor to IP device video out (BNC connector)
- 2) Connect the power adaptor to IP device
- 3) Connect IP device's Ethernet port to Network switch (via RJ45 connectors).
- 4) Connect a PC to the Ethernet switch (via RJ45 connectors)

Product Specification

		TCD-2100
Video Compression	Compression	H.264/ MPEG-4/ MJPEG simultaneous dual streams selectable
	Picture Resolution	Full D1 (720x480 in NTSC, 720x576 in PAL) CIF (352 x 240 in NTSC, 352 x 288 in PAL) QCIF(160 x 112 in NTSC, 176 x 144 in PAL)
	Bit Rate	28K ~ 6M bps
	Image Frame Rate	30fps at full D1 resolution (NTSC) 25fps at full D1 resolution (PAL)
Video Input	Composite Input	CVBS, 1.0Vp-p with 75Ω loading, BNC Connector
Video Output	Composite Output	N/A
Audio Input	Compression	N/A
	Audio Line Input	N/A
Audio Output	Compression	N/A
	Audio Line Output	N/A
Alarm	Input	1, TTL, Terminal Block
	Output	1, TTL, Terminal Block
Remote Control	Serial Port	RS-485: Half Duplex, Terminal Block RS-422: Full Duplex, Terminal Block RS-232: Full Duplex, Terminal Block
External I/O	Reset Button	Factory Default
	LED	System status
Network	Ethernet Port	Ethernet(10/100 Base-T), RJ45 Connector
	Protocol	TCP, UDP, IP, HTTP, DHCP, PPPoE, RTP, RTSP, IPv6, FTP, SMTP, DNS, DDNS, NTP, ICMP, IGMP, ARP
Software	Web Browser	Microsoft Internet Explorer 6.0 or above
	SDK	ACTi SDK-10000
	PTZ protocol*	Pelco-D, Pelco-P V1 and V2, Dynacolor, Sony VISCA, American Dynamics
	Security	Password Protection: Configured by the Administrator
Operating	Temperature	-10~50°C (14°F~122°F)
Power	Power Requirement	DC12V±10%
	Power Consumption	3.6 W
Physical	Dimensions (WxHxD)	103 mm x 28.5 mm x 76 mm (4.06" x 1.12" x 2.99")
	Weight	195 g(0.43 lb)
Approvals	Certificate	CE, FCC

2. Accessing Device

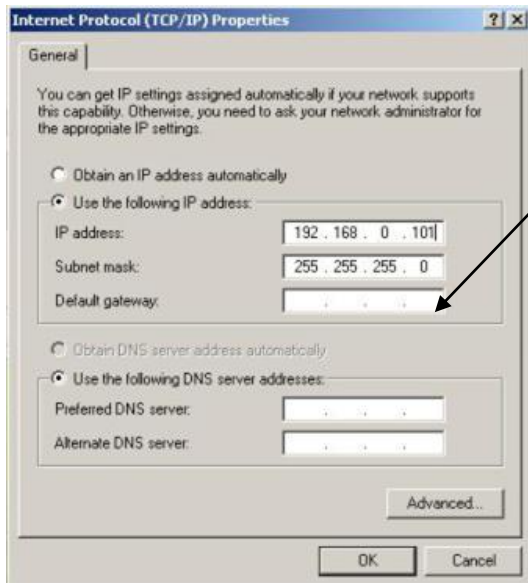
If you have DHCP server / router in your network:

Many network server / routers are able to automatically provide IP addresses through DHCP. If you are using such a network, just plug in your computer and IP device into the network and your IP device will acquire network address by itself. Find and access the device with our IP Utility program. You may download it at:

http://www.acti.com/product/detail/Software/ACTi_Utility_Suite

If you do **NOT** have DHCP server / router in your network:

1. Configure your PC to use the same subnet by changing your PC's IP address to the subnet with prefix 192.168.0.XXX. The last number should be anything from 1 to 254 except 100 and other occupied IP addresses. Subnet mask should be 255.255.255.0.
2. **The default IP used by this device is 192.168.0.100. Please make sure your PC is NOT using this address and that no two equipments use the same IP address in the network.**
3. Change your IP address by going to Control Panel ->Manage Network Connections -> Right click on the connection to change -> Option -> TCP/IP IPv4 Properties.

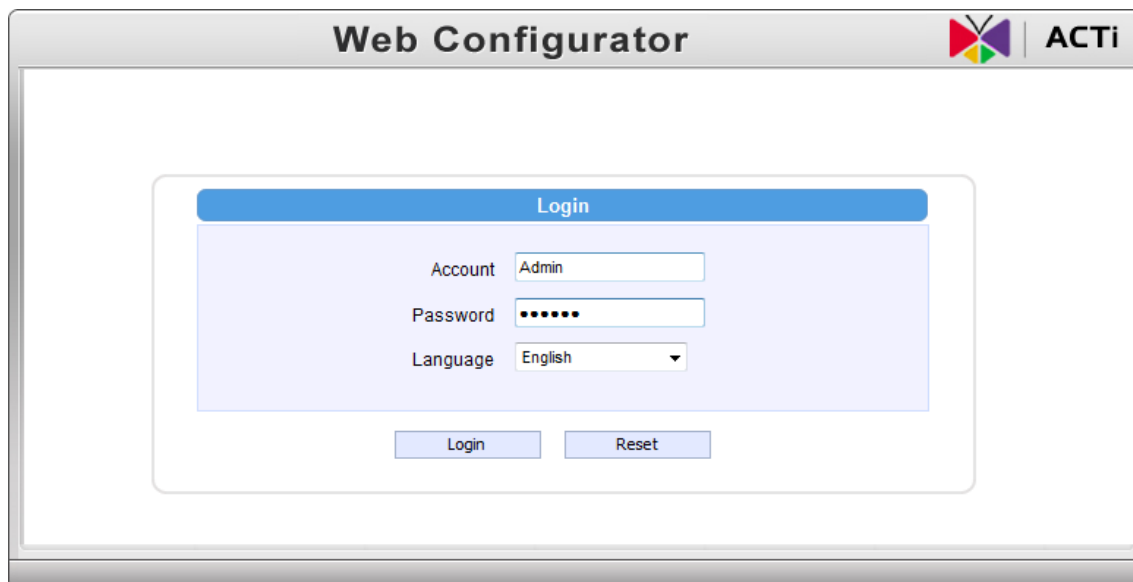


Please set the settings as below.

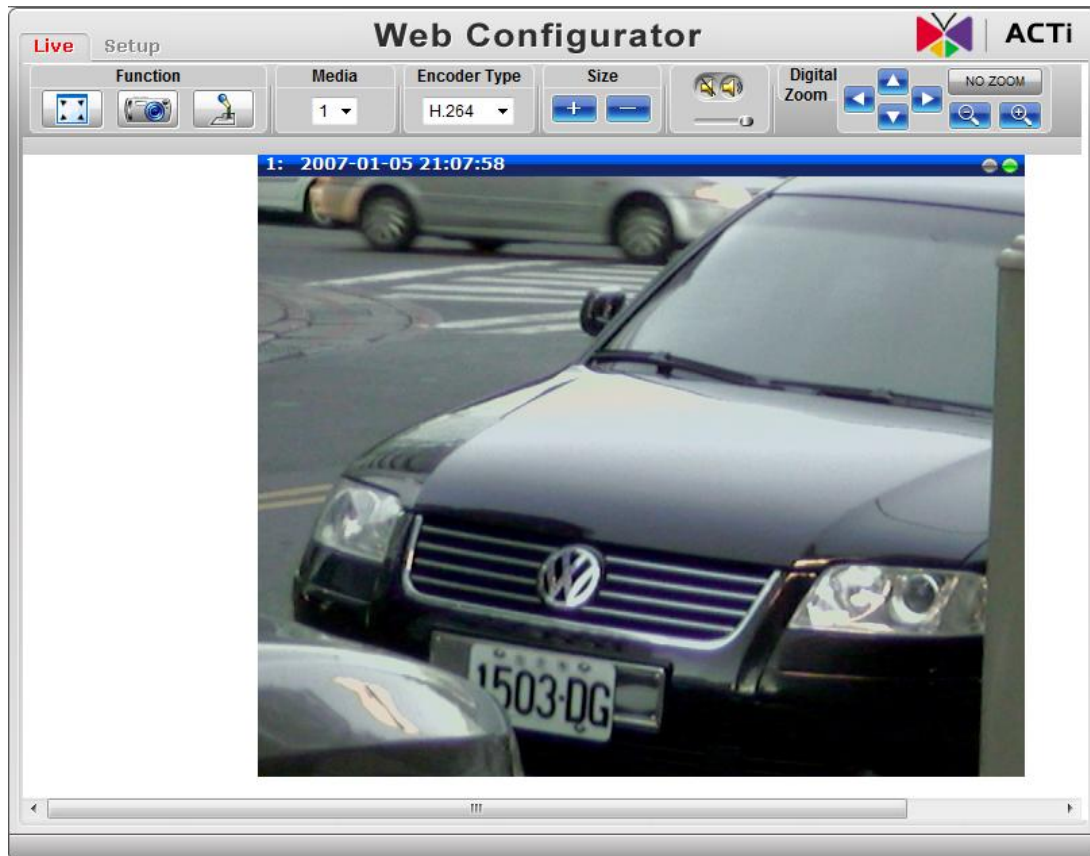
-
- IP address: 192.168.0.xxx
- Subnet mask: 255.255.255.0

(NOTE: xxx should be a number from 1 to 254 except 100, which is used by the IP device. Please also make sure that no two equipments use the same IP address in the

4. Open Internet Explorer (Version 6.0 or above) , and type in the Default IP:
192.168.0.100
5. When you see the login window, please input default user and password:
Default User: Admin Password: 123456



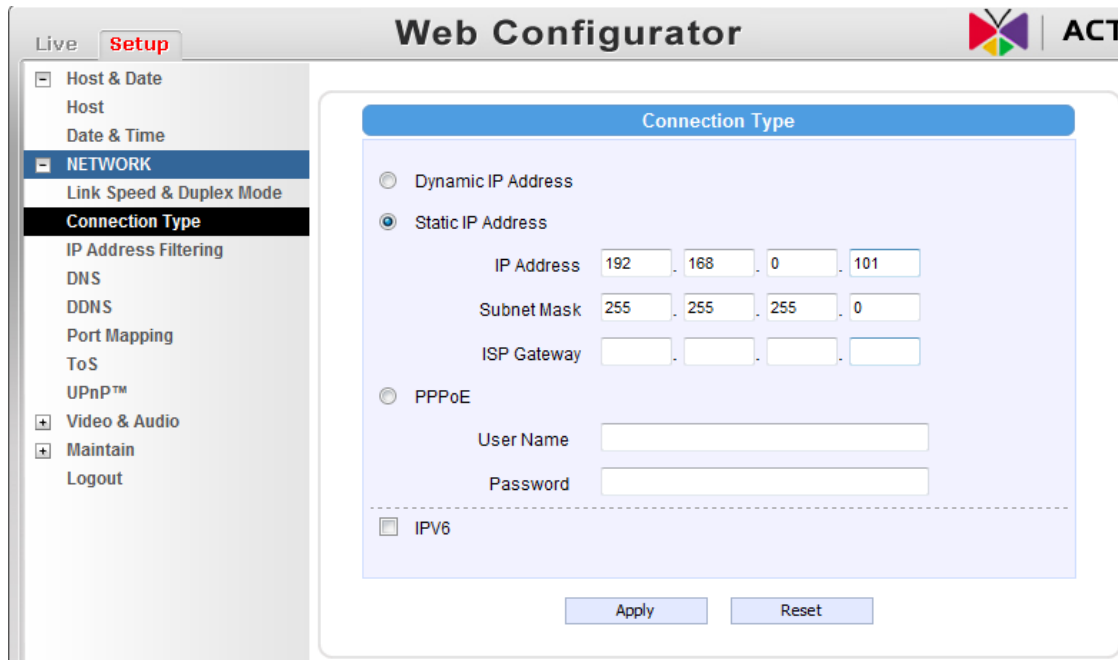
6. After logging in, you will see the video from camera. To go to the main menu, click the "Setup" button on the top left.



If you are using a single device, this is enough to access the device.

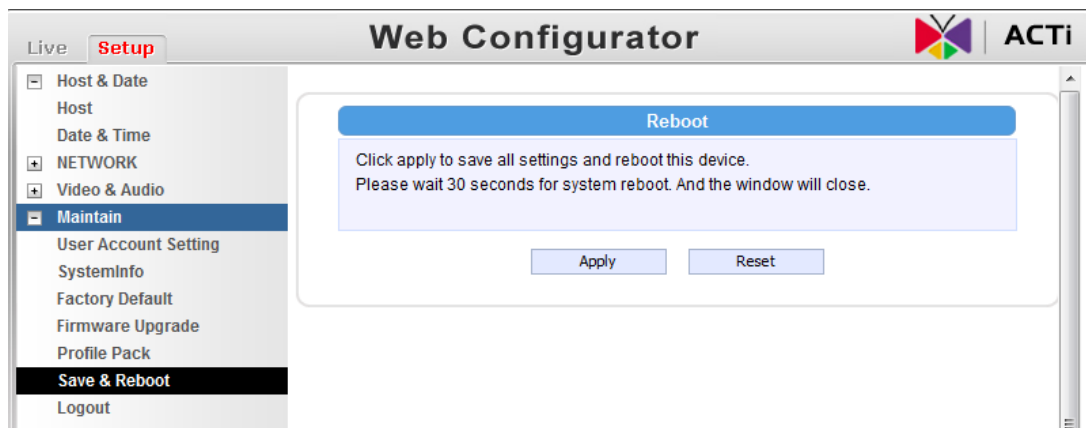
If you are using multiple devices, you need to change the current device to another unused IP address, so that when the next device is connected to the network, no two devices use the same IP. Please perform the following steps.

7. Go to Network -> Connection Type
8. Change the IP mode to Static.
9. Change the IP to 192.168.0.101 or any other unused IPs. Do NOT use the PC's IP address or 192.168.0.100.). If this is not the first device you add to the network, please also avoid other devices' IPs.



10. Click "Apply"

11. Please go to Maintain -> Save & Reboot, and click "Apply". Internet Explorer will close after a few seconds. This is normal.



12. Wait for 30 seconds, and open IE again to connect to the **new IP**. (In this example, 192.168.0.101). For the second device or more you add into the network, please type the correct IP.

13. Adjust the default Video setting by going to Video & Audio -> Media 1

