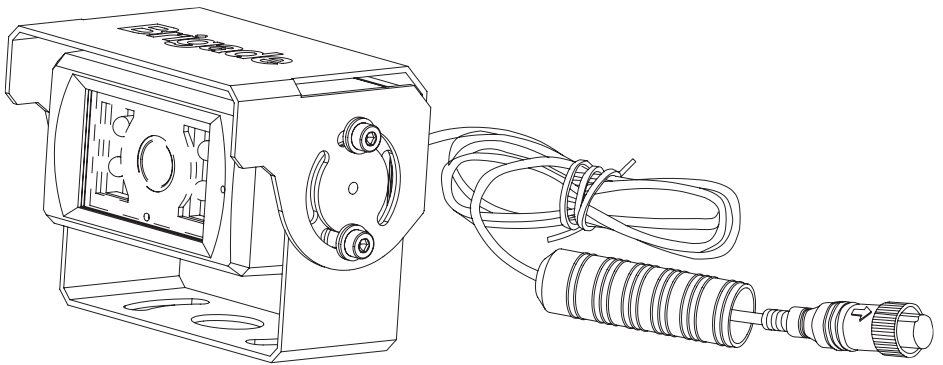




IP Camera Operation Guide

IP-7101C(X) (8309, 8313, 8314)



IMPORTANT

Before operating or servicing this equipment, please read this manual carefully, paying particular attention to the safety warnings and precautions.

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1 Precautions

Storage and Keeping

- 1) Do not expose the Camera to excessive heat or cold. The storage temperature of this device is $-30^{\circ}\text{C}\sim+80^{\circ}\text{C}$, and the operating temperature is $-20^{\circ}\text{C}\sim+70^{\circ}\text{C}$. The humidity is RH95%.
- 2) Do not use this device in a bathtub, wash basin, kitchen, wet basement, swimming pool or other similar places.
- 3) Do not use the device in humid, dusty or smoky environments.
- 4) Avoid dropping or striking this device.
- 5) Avoid installing products in closed, vibration or impact environment and keep products away from electromagnetic interference.
- 6) Never puncture, scratch or use abrasive cleaning materials on this device.
- 7) Do not place cables where they may be pinched or stepped on.
- 8) Leave at least a 2" space between the camera and walls, cabinets or other objects to allow adequate air circulation around the device.
- 9) The Camera is designed to be rainproof.

Operating Precautions

- 1) The device can be powered by DC12V or DC10~32V (widepower).
- 2) Make sure all cables are connected correctly. Please observe polarity when connecting.
Improper cable connections can damage the camera. When the device is not used, remove the power cable connection.



Warning!

Keep the camera clean and do not use sharp tools to scrap.



Special Notice

Please correctly install and use the IP camera.

Please read this instruction for specific installation and use.

1 Precautions Continued

Maintenance

- 1) Please disconnect the power supply before cleaning the device.
- 2) Use a mild household detergent and clean the unit with a slightly damp, soft cloth.

Never use strong solvents such as thinner or benzene, as they might damage the finish of the device.

	Caution	
	Risk of electric shock Do not open	
Caution: to reduce the risk of electric shock, Do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.		



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your warranty.

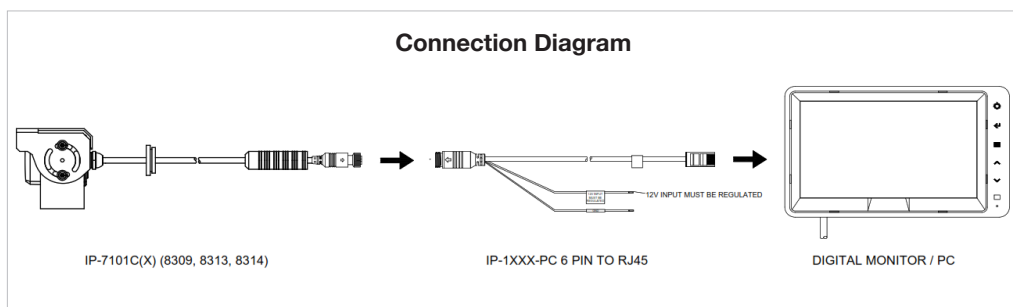
2 Product Introduction

2.1 Introduction

IP Camera device has a WEB UI interface for computer access. The IPC is connected to the computer via Ethernet and accessed by a computer browser (must be a browser supporting HTML5 such as Google Chrome or Mozilla Firefox).

2.2 Installation Process

Connect one end of the IP-1XXX-PC 6 Pin to RJ45 Cable to the 6 pin connector of the camera (as shown below), and connect the other end directly to the digital monitor / computer. At this time, the camera is in normal working state.

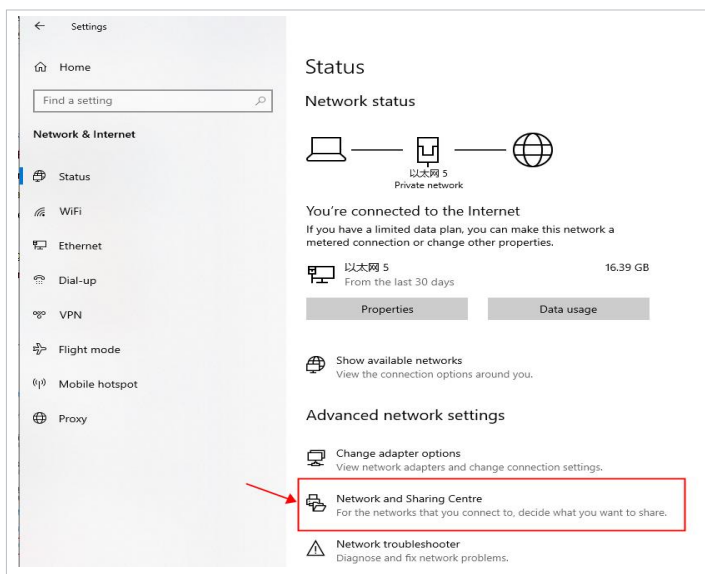


2 Product Introduction Continued

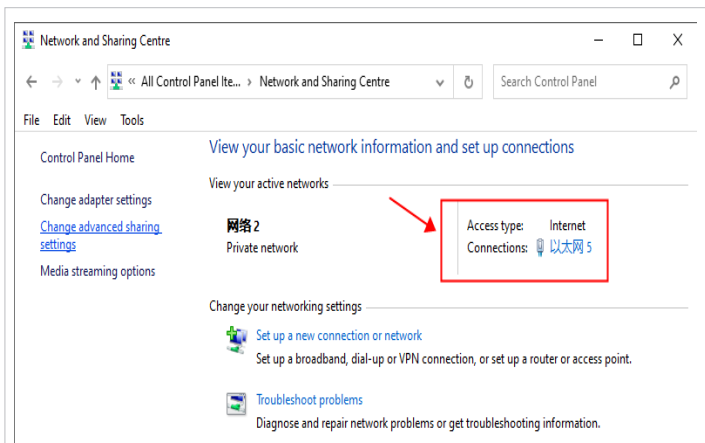
2.3 Login Web UI

Since the IP Cam's default IP address is 10.100.100.10, the computer must first add a 10.100.100.1 IP to access the IP Cam (Make sure that the computer and the camera are in the same network segment. Note that the IP address of the computer cannot be the same as that of the IPC). The way to add IP is as follows:

- 1) Click the “network & Internet settings” icon in the lower right corner of the computer taskbar and enter the network setting interface.
- 2) Click “Network and Sharing Center” in the setting interface (as shown by the red arrow).

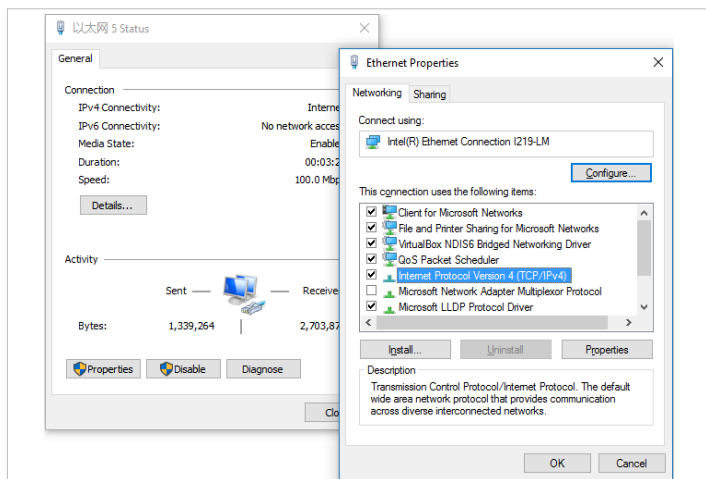


- 3) Select and click on the wireless network connection (as shown by the red arrow).

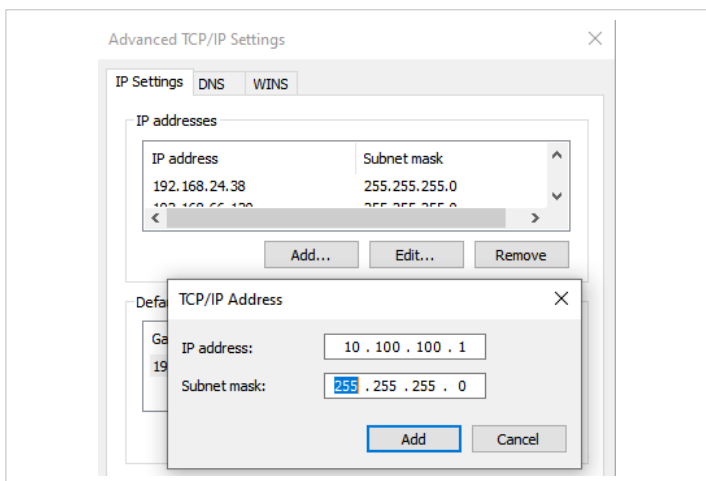


2 Product Introduction Continued

- 4) Select “Properties” to open the network connection properties dialog box, and then select TCP/IPv4.



- 5) Click “Properties” -- “Advanced” -- “Add”, Then add the network address of 10.100.100.1 and click OK. Follow these steps and the IP will be set up successfully.



After finishing IP configuration, you can use the ping command to test whether the computer is connected to the IP Cam or not. (e.g.: ping 10.100.100.10).

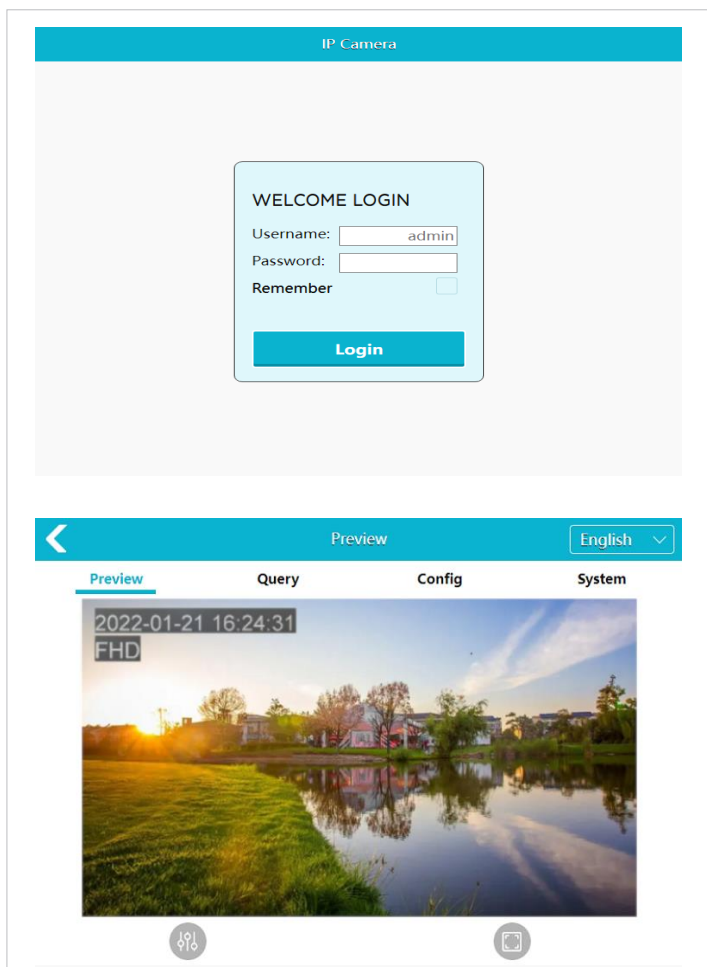
After passing the ping test, you can open the computer's browser and enter the IP address of IP Cam to access the login page. The password is blank by default. Click login to enter the screen preview interface.

3 Key Functions

3.1 Image Preview

3.1.1 Web Page Preview

The real-time image of the camera can be viewed after logging in the Web UI, as shown below:



Example of preview interface

- The top left white arrow icon is the logout button, click to back to the login interface.
- The upper right box of the page supports configuring the language displayed on the web page.
- The left icon at the bottom of the screen is the image parameter adjustment icon, which can adjust the brightness, contrast, saturation and sharpness of the picture.
- The right icon at the bottom of the page can show full screen display.

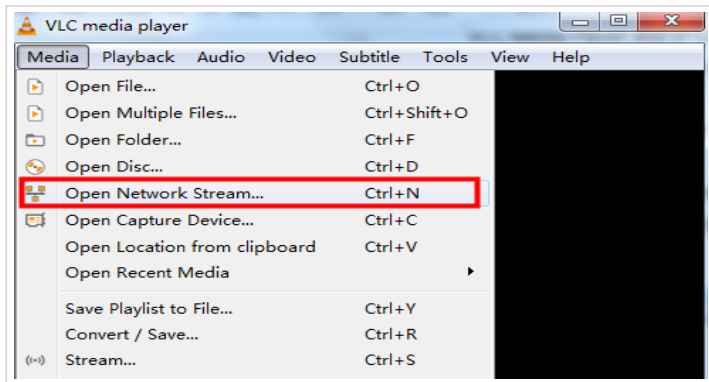
3 Key Functions Continued

3.1.2 Third-party Software Preview

In addition to the webpage preview, it also supports RTSP protocol or ONVIF protocol for live streaming on softwares including VLC Media Player and IP Camera Viewer 4 etc.

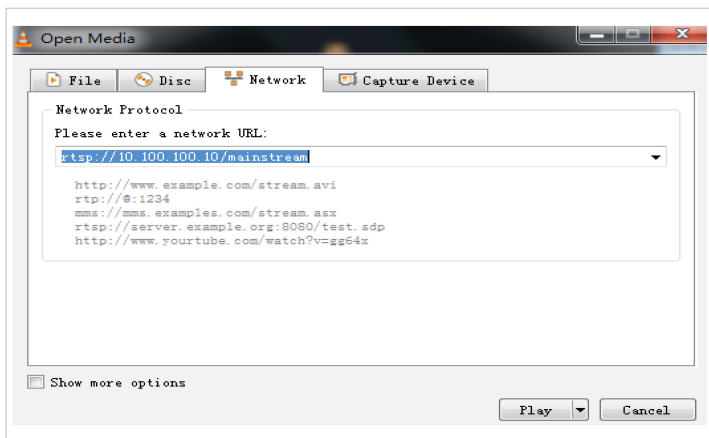
- Use RTSP pull for live streaming, the VLC player is needed. The steps are as follows:

1) Click “Media” - “Open Network Stream...”



2) Enter URL: rtsp://IP address/mainstream
 or rtsp://IP address/substream

3) Click “Play”



3 Key Functions Continued

3.2 Query Function

Select “Query Function” on the navigation bar to enter the query interface, which includes two parts: status query and log query.

3.2.1 Status Query

- Network status: IP, subnet mask and MAC address.
- Media status: night mode, bit rate, sensor type and filter.
- RTSP client status.
- Storage status (valid for IPC models with memory card).

Query

Status

Log

Ethernet

IP

10.100.100.10

Subnet Mask

255.255.255.0

MAC Address

aa:03:e1:b8:8e:70

Media

Night Mode

false

Main Bitrate(kbps)

4196

Sub Bitrate(kbps)

1054

Sensor Type

GC2053

Filter Type

normal

RTSP Client

Stream

Client Address

Storage

Pos

Stat

FS

Total

Remain

3.2.2 Log Query

- Event Log: log records of events such as login and parameter modification.
- Debug Log: logging of error events.
- ALL Log: logging of all events.

Status

Log

Select Log Type:

Event

Debug

ALL

Search

1. NO. Time Content

2. (2020-01-01 00:00:00) type="boot" uid="15a73565-b61e-4954-9eee-e303e1b88e70"

3. (2022-03-03 16:41:56) type="HTTP" client="192.168.70.135" event="login"

4. (2022-03-03 16:43:53) type="HTTP" client="192.168.70.135" event="POST /config ("mediaConfig":{"imageProcess":{"mirrorEnable":false,"flipEnable":false,"rotateAngle":0,"ircutEnable":true},"bitrateAdaptive":false,"mainStream":{"enEncode":"H264","rcMode":"CBR","bitrate":4096,"framerate":30,"firminterval":30,"resolution":"D1"},"subStream":{"enEncode":"H264","rcMode":"CBR","bitrate":1024,"framerate":12,"firminterval":50,"resolution":"D1"},"jpegStream":{"resolution":"1080P"},"voStream":{"framerate":null,"osdConf":{"showGuiMask":0,"showTime":true,"showChnName":true,"timeFormat":0,"channelName":"gkgkggk"},"audio":{"enable":true,"encType":"LPCM","sampleRate":8KHz,"volume":15},"algConfig":{"dmsInterval":{"fatigue":1,"distraction":1,"noDriver":1,"smoke":1,"phone":1,"yawn":1,"noMask":1,"sunGlass":1},"workSpeed":{"almNoGPS":false,"speed":0},"dmsSensitivity":1,"dmsMiddleSpeedThr":50,"dmsHighSpeedThr":50,"dmsAdvancedSettings":{"dmsEyelidClosure":50,"dmsFatigueTimeLimit":4,"dmsDistractionAngle":23,"dmsDistractionTimeLimit":5,"dmsNoD

3 Key Functions Continued

3.3 Configuration Settings

As shown below, Select “Config” on navigation bar and then enter the configuration page including “Media”, “Network”, “System” configuration.

3.3.1 Media Configuration

- Image processing such as mirroring, flipping, ir-cut(Auto/Color/Black-White) and video format (NTSC/PAL);
- Video encoding format, resolution, frame rate, bit rate and other parameters setting; Bit-rate control mode: CBR (Constant Bitrate), VBR (Variable Bitrate), ABR (Adaptive Bitrate) options to manage bitrate in audio and video encoding.
- Audio format, sample rate, volume setting;
- Time and channel name OSD setting.

Config

MediaNetworkSystem

Video

Image Process

☒ Image Mirror

☐ Image Flip

IRCUTh264Auto

Video FormatNTSC

MainStream	SubStream	PicStream
VideoEncode	H264	
Resolution	720P(16:9)	
Framerate(fps)	25fps	
Bitrate	2Mbps	
Bitrate Ctrl Mode	CBR	
Iframe Interval (25-150)	25	

Audio

Audio Switch

FormatG.711A

SampleRate8KHz

Volume30

OSD Display

Switch

☒ Time Stamp

☐ Channel Name

Time FormatYYYY-MM-DD

Channel NameCH4

ConfirmCancel

3 Key Functions Continued

3.3.2 Network Configuration

- DNS server setting.
- IP address (dynamic IP or Static IP) setting.
- RTSP and ONVIF protocol service port number setting.
- ONVIF Discoverable setting (If turned off, the device will not be found through ONVIF).

Config

MediaNetworkSystem

DNS Server

8.8.8.8

Ethernet

☐ DHCP

DHCP Timeout (s)

180

IP

10.100.100.10

Subnet Mask

255.255.255.0

Gateway

10.100.100.1

MAC Address

aa:ed:47:70:af:a2

Protocol

RTSP Server Port

554

ONVIF Server Port

80

ONVIF Discoverable

☒

3.3.3 System Configuration

- Time config including time zone, ntp server setting and dst switch;

Config

MediaNetworkSystem

Time Config

Time Zone (Hour)

0

Time Zone (Minute)

0

☐ NTP Time Sync

NTP Server

10.100.100.1

NTP Sync Interval

30min

▼

☐ Daylight Saving Time

12

3 Key Functions Continued

3.4 System Maintenance

Select “System” on navigation bar and then enter the System Maintenance page. It supports the following functions:

- Refer to the hardware and software version information and UUID of current IP Cam.
- Upgrade IP camera.
- Import/export configuration files.
- Export log information.
- Restore IP camera factory settings (“soft recovery”:restore all parameters except for network configurations; “hard recovery”:restore all parameters including IP and restart IP camera).
- Reboot the device.
- Modify login password.
- Calibrate device time.

System Maintenance

Serial Number

0

Software Version

v2.5.23 build 220114

Hardware Version

IPCR20S2

UUID

15a73565-b61e-4954-9eae-e303e1b88e70

Upgrade

Drag & Drop Packet Here

Click to open the file browser

Import Config

Import Config

Export Config

Export Config

Export Log

Export Log

Restore Factory

Select restore type:

hard-restore

▼

Action Restore

Reboot

Action Reboot

Change Password

Change Password

Device Time

Device Time

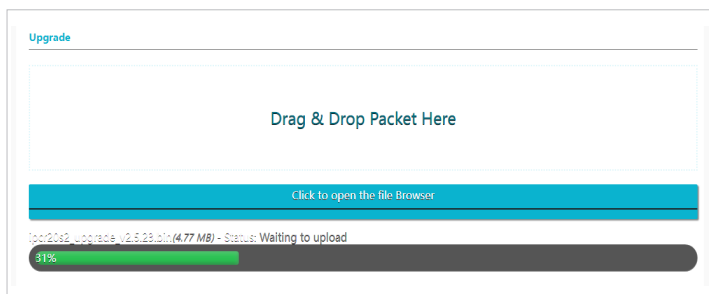
2020-01-01 08:08:34

Calibration system

3 Key Functions Continued

3.5 Upgrading Process

- 1) Input route IP in the browser to enter the login interface of the system. Click the “Login” button to enter the main interface of the system;
- 2) Click “System” option on navigation bar;
- 3) Find the upgrade area, directly drag and drop the upgrade package file to this area to upgrade or click the upgrade area to find the correct upgrade package file on the computer (Please choose the right file with file name shows like “ipcr20sx_upgrade_vx.x.xx.bin”), click “OK” then the system begins to upgrade automatically;
- 4) The upgrade process lasts about one minute, users need to wait for the web page countdown to end and then automatically refresh the web page to log in again;
- 5) After the upgrade is complete, enter the system page to view the device software version and check whether the upgrade is successful.



4 ISO 17215 Implementation

4.1 Connectivity and Compatibility

This camera is compatible with ISO 17215 Plug & Play discovery services.

ISO 17215 Compatibility including

- SOMEIP discovery
- RTP unicast and multicast video streaming
- 1x Region of Interest supported

Camera Port – 17215

Camera Listening Port – 17215

Camera tested to work on market leading compatible Digital Monitors but not limited to (Topcon Opus, CCI800, & Crosscontrol CCpilot V1000).

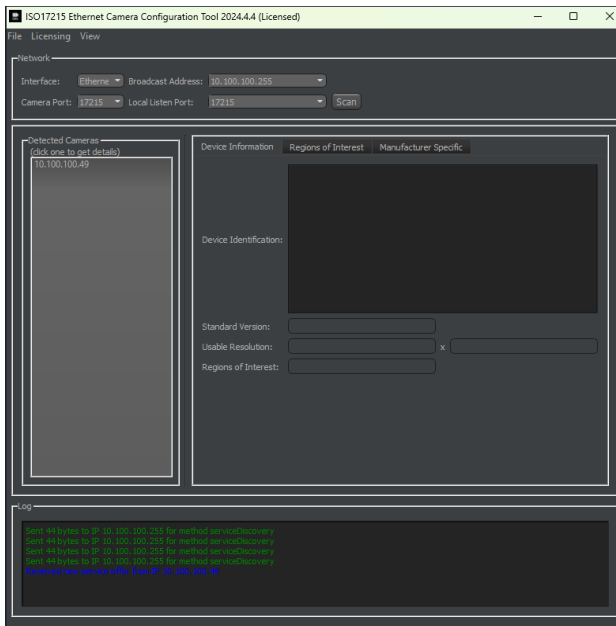
4.2 Setting and Configuration on TopCon Monitor and PC Tool

4.2.1 Configuration using TopCon Projektor PC Software Tool

Camera Detection and Listening Port

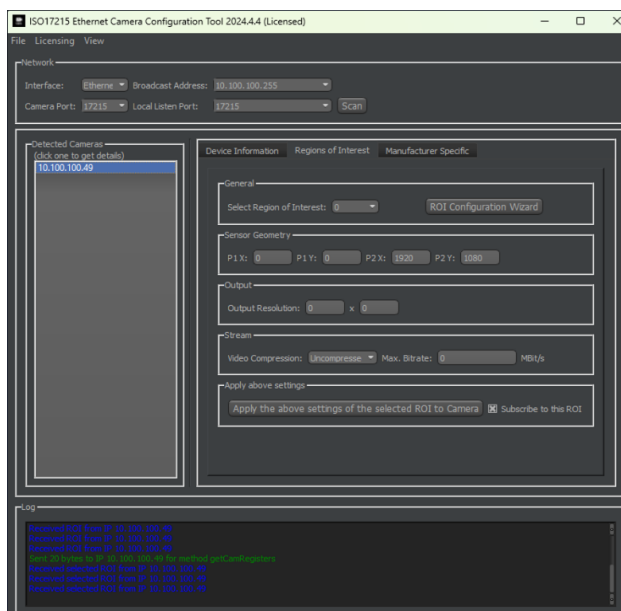
Camera port = 17215

Camera Listening Port is 17215

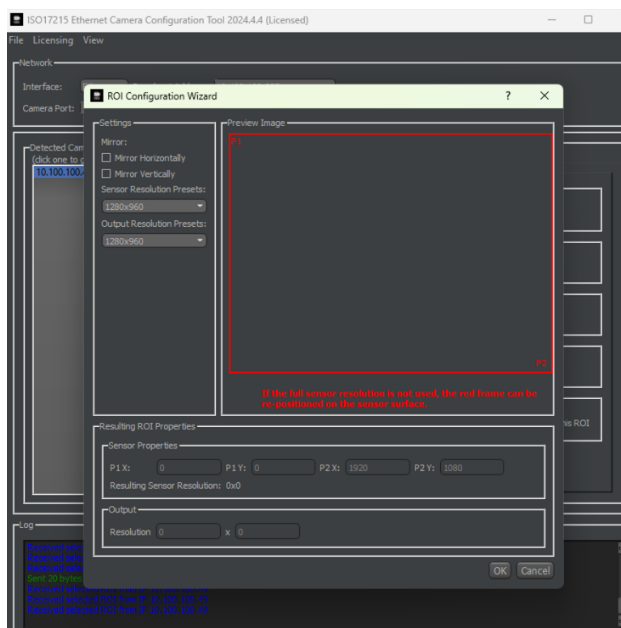


4 ISO 17215 Implementation Continued

Region of interest (ROI) Parameters



ROI Configuration Wizard



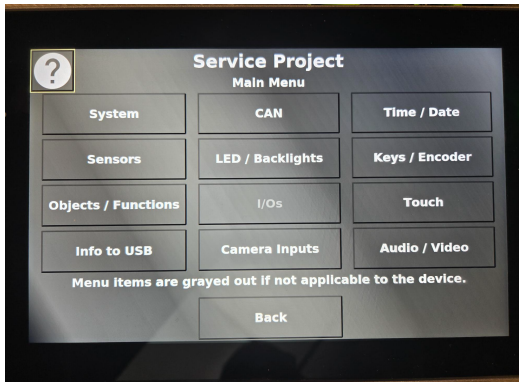
4 ISO 17215 Implementation **Continued**

4.2.2 Setting with digital monitor (TopCon Opus)

- 1) Connect the IP Camera with the Digital Monitor with the cable and powered.
- 2) In the monitor menu, select "Service Project".



- 3) Choose "Camera Inputs" in Service Project.

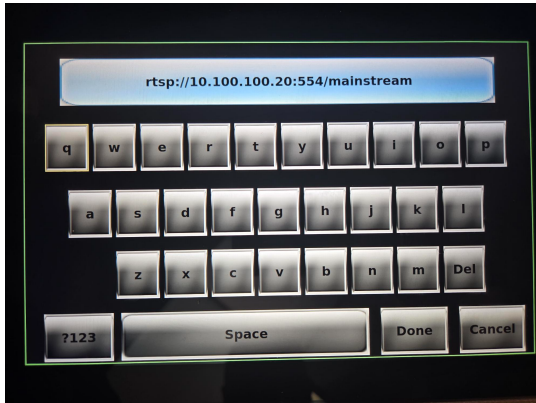


- 4) Choose "ETH" in Camera Input and "H.264 over RSTP" in Switch ETH Stream Type

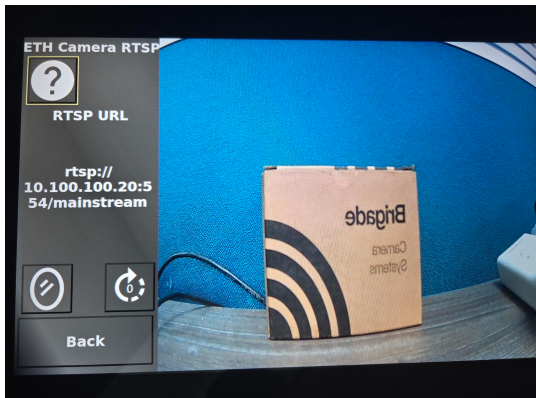


4 ISO 17215 Implementation **Continued**

- 5) Input the IP address of the camera like below and click Done
`rtsp://10.100.100.20:554/mainstream`



- 6) Then the camera image should shown like below



4 ISO 17215 Implementation **Continued**

4.3 Setting with digital monitor (CC-ISOBUS)

- 1) Check and configure the IP Camera's IP same as the Digital Monitor.
For example below monitor IP is 10.21.48.1
Then the camera IP should set within the same subnet (10.21.48.2 to 10.21.48.254)

Note: Monitor and camera must be in different IP but in same subnet.



- 2) Connect the IP Camera with the Digital Monitor with the cable and powered.
The camera image will shown on the monitor.



Connectivity and configurations may vary for different monitor type and monitor software versions. Refer to the manufacturer's user guide of the intended monitor for compatibility and setup instructions.

5 FAQ

Question1: Why the web page of the IP camera cannot be accessed?

- 1) Check if the camera's network cable and power supply are working properly.
- 2) Make sure the computer has added the IP address of the network segment where the camera is located (please refer to 4.3 Login web UI).
- 3) Check whether there is an IP conflict in the same LAN.

Question 2: Why does submitting configuration parameters fail?

Some parameters have restrictions on the input value, please check whether the input value meets the requirements.

Question 3: How to reset hardware?

External hardware reset is not supported.

Question 4: What to do when password is forgotten?

Provide the IPC QR code serial number to Technical Support to get the factory super password.

Question 5: What to do when IP address is forgotten?

Search the IPC of the specified network segment in the LAN through the ONVIF software.

Question 6: What to do when network segment where the IP camera is located in is forgotten?

Firstly directly connect IPC to the PC through the network cable, and then use wireshark packet capture tool:

- 1) Grab the broadcast packet of the wired physical network interface card device;
- 2) The device with an independent MAC may be the IP camera;
- 3) Add the corresponding network segment on the PC (refer to 4.3 Login Web UI) to re-access the IP camera.

No.	Time	Source	Destination	Protocol	Length	Info
532	106.629302	Vmware_b7:63:46	Broadcast	ARP	60	Who has 192.168.88.106? Tell 192.168.88.82
533	106.629313	Vmware_b7:63:46	Broadcast	ARP	60	Who has 192.168.88.106? Tell 192.168.88.82
534	107.000063	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111
535	107.000075	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111
536	107.263508	aa:02:c1:37:2b:0e	Broadcast	ARP	60	Who has 192.168.23.1? Tell 192.168.23.233
537	107.653387	Vmware_b7:63:46	Broadcast	ARP	60	Who has 192.168.88.106? Tell 192.168.88.82
538	107.653400	Vmware_b7:63:46	Broadcast	ARP	60	Who has 192.168.88.106? Tell 192.168.88.82
539	108.248966	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111
540	108.248975	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111
541	108.303479	aa:02:c1:37:2b:0e	Broadcast	ARP	60	Who has 192.168.23.1? Tell 192.168.23.233
542	108.999821	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111
543	108.999834	Giga-Byt_67:65:bd	Broadcast	ARP	42	Who has 192.168.24.1? Tell 192.168.24.111

Question 7: Does IP-7101C(X) have compatibility with MDR?

Currently IP-7101C(X) does not have compatibility with MDR.

Disclaimer

Our products are supplied to serve as situational awareness and/or warning systems and thus as aids to safety. They DO NOT replace the operator's and/or driver's obligation to ensure the safety of the vehicle or machine, the proper and safe operation of the vehicle or machine and nor do they replace your obligations to ensure the safety and suitability of the vehicle or machine.

Please visit the support section of our website to find more information regarding Brigade Warranties:
<https://brigade-electronics.com/warranties/>

Specifications subject to change.



www.brigade-electronics.com

