Ex-Sight.Com
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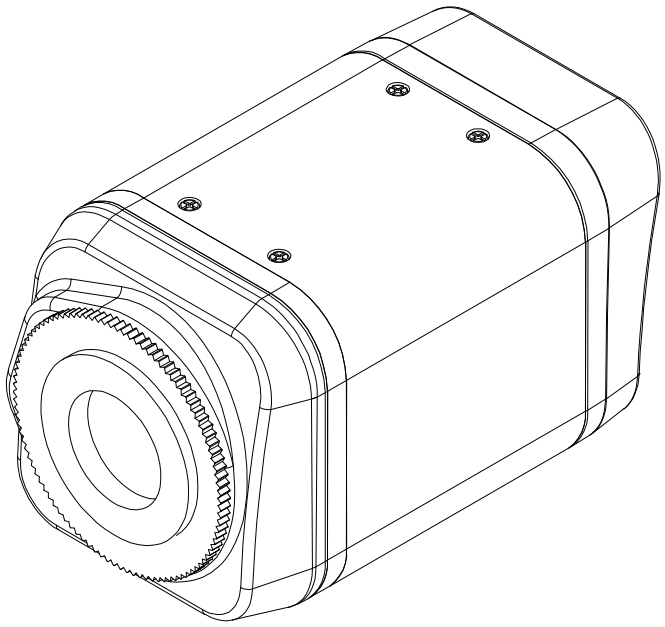
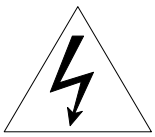


1100

Installation Guide

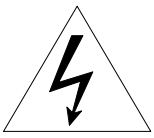
INFORMATION TO USER



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 SEERIVCE PERSONEL.



This symbol is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a 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.

Table of Contents

1. FEATURES

Camera

- Box type IP Camera
- Sony 1/3” Super HAD CCD & High Quality SS-HQ1 Full Kit Chip Set
  Sony 1/3" Vertical Double Density Color CCD (Optional)
- True Day / Night (ICR) and WDR (Optional)

Streaming

- Dual streaming mode (such as different codec/resolution/bit rate and so on.)
- De-interlacing on DSP
- Burnt-in text supported
- Unicast/Multicast supported

Video/Audio

- Video compression: H.264/MPEG/MJPEG, 25/30FPS@D1(PAL/NTSC)
- Audio compression: G.711(μLaw, aLaw)/PCM
- Analog video out for external monitors
- Video Motion Detection supported
- Two-way mono audio supported

Network

- RTSP/ HTTP protocol supported
- 10/100 Base-T Ethernet

Additional Features

- RS-485 supported
- USB 2.0 supported (Local storage, Wireless LAN)
- Micro SD card supported
- PoE supported
- Built-in Video Content Analysis
- OSD supported
- SDK (Software Development Kit) provided

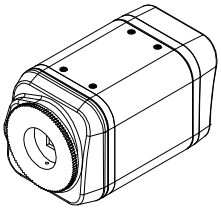
VCA (Video Content Analysis)

- VCA Presence (Included as basic)
- VCA Surveillance (Optional)

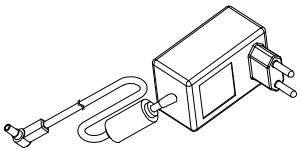
2. PACKAGE CONTENTS

Unpack carefully and handle the equipment with care. The packaging contains:

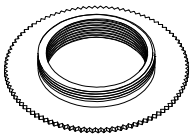
Camera



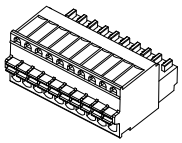
DC power adaptor



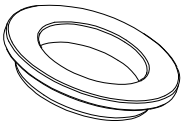
Mount ring



9 Pin terminal block

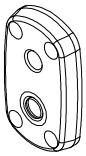


Rubber cap (for protecting CCD)



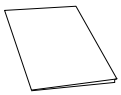
Hex wrench driver

Adaptor for mounting the camera



Screws

Quick Installation Guide



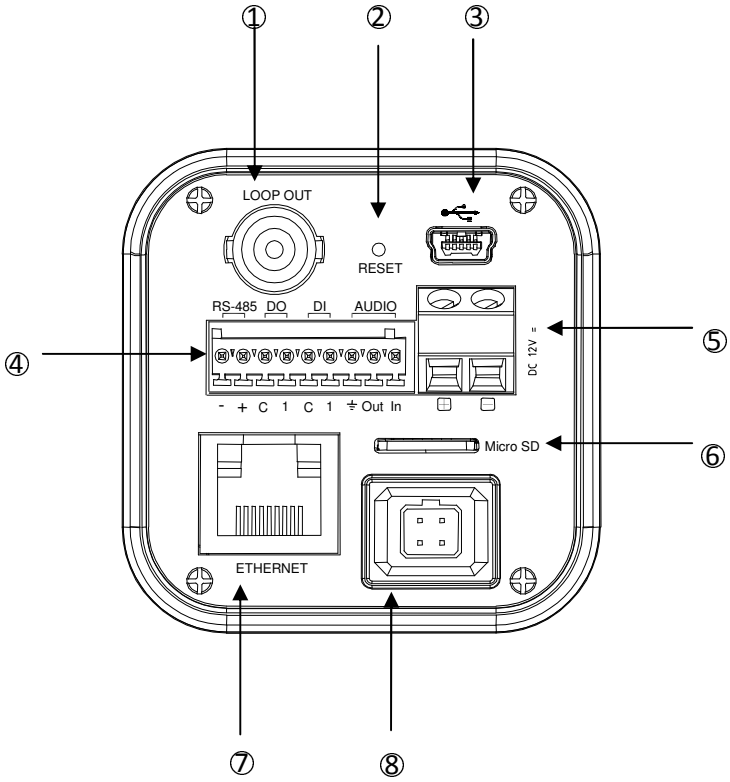
DC Jack Adaptor Cable

Note

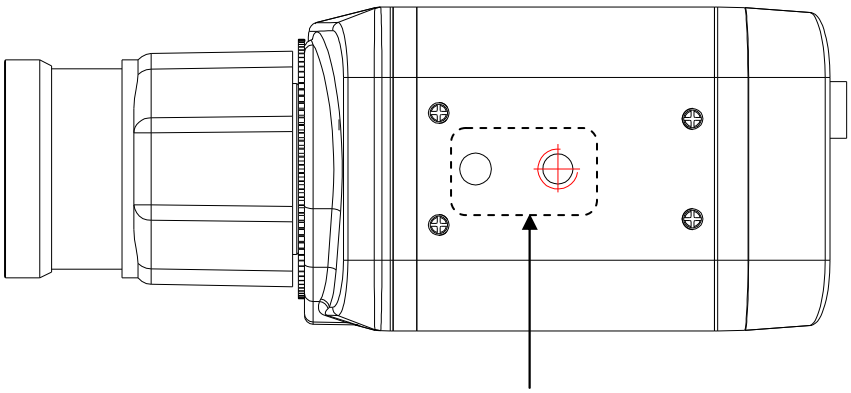
The above contents are subject to change without prior notice.

3. PART NAMES

3.1. Rear View



3.2. Bottom View



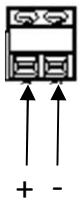
① Analog video out
It is an analog video output port.

② Reset
Reset switch is used for restarting or resetting the camera as Factory Default (FD). Refer to the section "**6.3. Reset"** for more specific information.

③ USB connector
Insert a USB storage device or Wi-Fi devices. (Ralink RT73 or RT3070 chipset based wireless device is available.)

④ 9 pin terminal block for D/I, D/O, audio, and serial communication
Refer to the section "**5.1.Connectors"** for more specific information.

⑤ Power Adaptor Connector (DC 12V)
The camera needs a DC12V for power supply. Refer to the section "**Power Adaptor Connector (DC 12V)"** for more specific information.

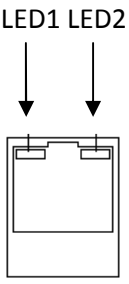


Caution

Make sure the polarity is correct. Incorrect connection may cause malfunction or damage to the IP device.

⑥ Micro SD Card socket
It is a memory card slot for local storage.

⑦ LAN Connector (Ethernet)
This is a RJ45 LAN connector for 10/100 Base-T Ethernet.



This LED lights up as orange and turns green when the encoder is powered on.

LED operation setting:
For the factory default setting, LED 2 blinks for the heartbeat and LED 1 turns on for video signal. To change its setting, refer to the section ***4.5.11. LED Setting*** of the ***NVC Web Page User's Manual.***

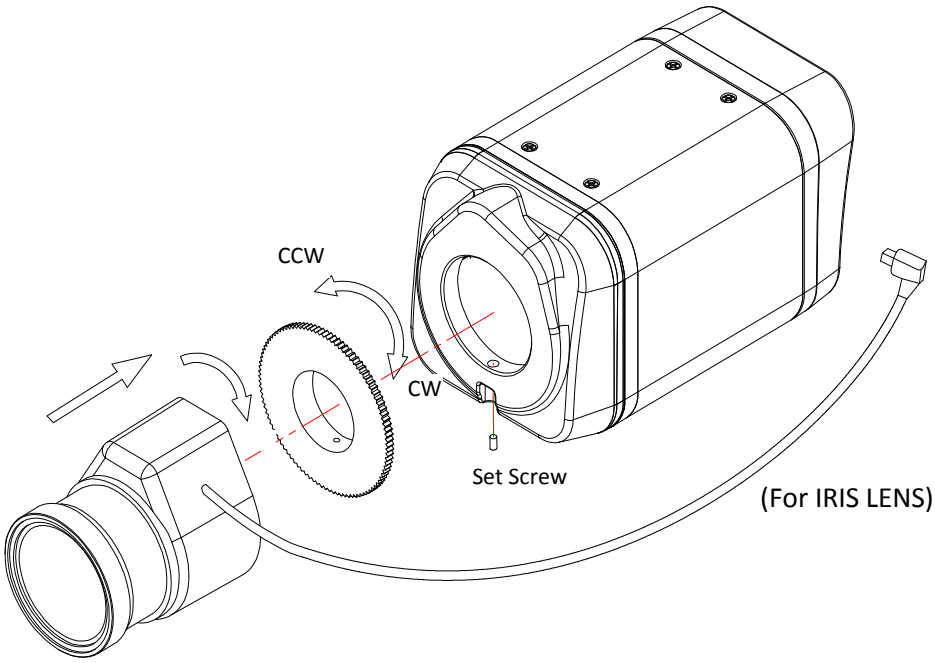
⑧ 4 Pin connector for Auto IRIS

Only DC-drive type is supported. Refer to the section "Error! Reference source not found.**"** for more specific information.

⑨ Adaptor for mounting the camera

Mounting points adaptor is provided on the bottom (or the top) of the camera for mounting the camera on a bracket or tripod.

4. INSTALLATION



4.1. Using a lens

If a camera with a high zoom lens is subjected to an environment with temperature variation (approximately 10 ° C, but dependable on the zoom level), there may be a focus shift causing a blurry image. Make sure to consider the installation environment when you use a high zoom lens.

To install a C/CS mounting lens,

1. Remove the protective rubber cap from the front of the camera.
2. Install the mount ring for lens and adjust the mount ring to fit C or CS lens.
3. Tighten the setscrews using the hex wrench in the package.

To install an auto iris lens,

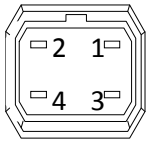
1. Remove the cover of the auto iris lens plug and connect it with the lens cable.
2. Connect the auto iris lens plug to the 4-pin lens terminal on the back of the camera.

Note

Use the connection recommended by the manufacturer. For best performance, read the lens manual carefully. You may need to set the flange back focus.

Note

A DC-drive type is supported only.



4 pin connector for IRIS

PIN	DC IRIS Lens
1	Damp-
2	Damp+
3	Drive+_
4	Drive-

4.2. Setting the Image Attribute

You can set the image attribute of camera through the webpage.
The menu of image attribute can be seen under **Setup > Video & Audio > Video-in > Attribute Setting**. Brightness, contrast, hue, saturation and sharpness can be adjusted.

4.3. Operating the OSD Menu

To operate the OSD of camera, refer to the '**OSD Menu Control Manual**' in the SDK.

4.4. Installing a Wireless USB Adapter (Optional)

Note

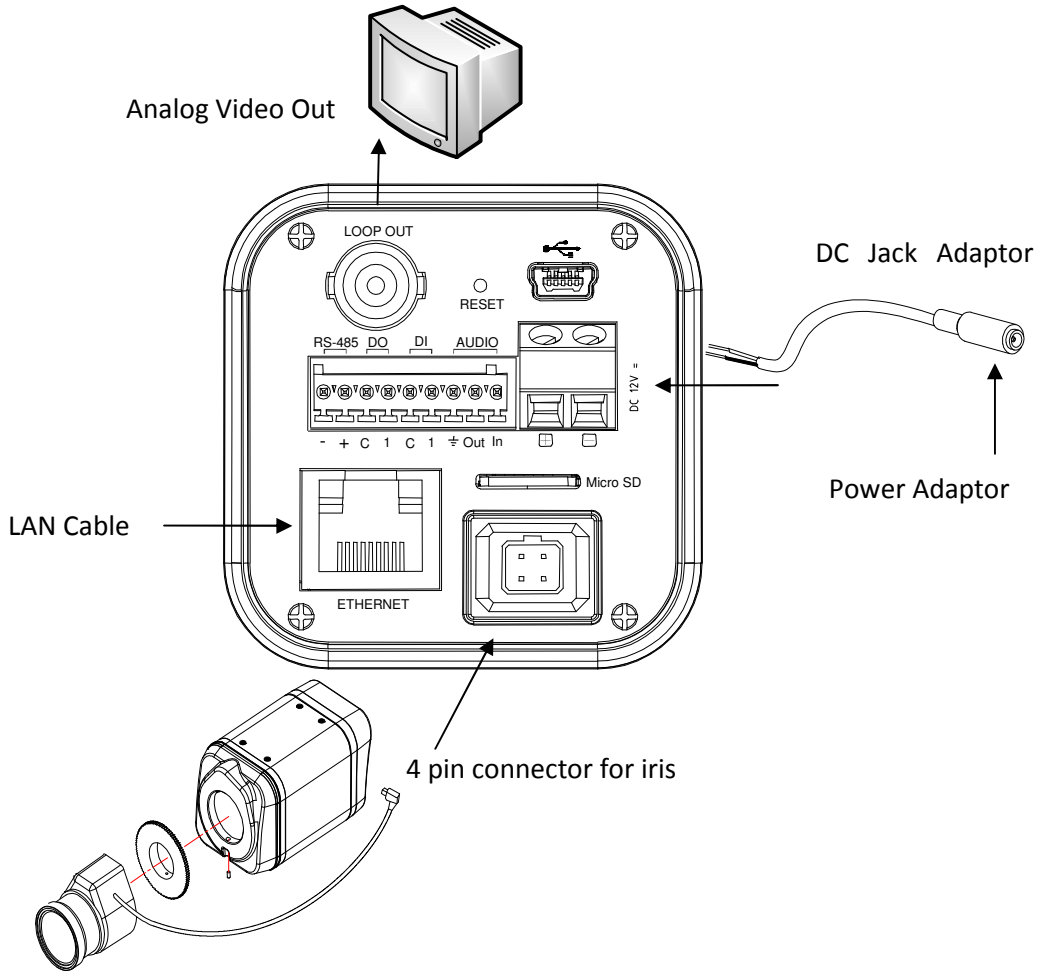
A wireless USB adapter is sold separately as an optional kit. Please contact system vendor to purchase a wireless USB adapter.

The kit includes:

- USB cable
- 3M Double-coated tape
- Wireless USB adapter

Perform the following steps to install a wireless USB adapter:
1. Connect one end of the USB cable to the camera.
2. Connect the other end of the USB cable to a wireless USB adapter.
3. Use the enclosed double-coated tape to attach the wireless USB adapter to the desired area. You can attach the adapter on the body (side, top, or bottom) of the camera, ceiling, or wall.

5. CONNECTIONS

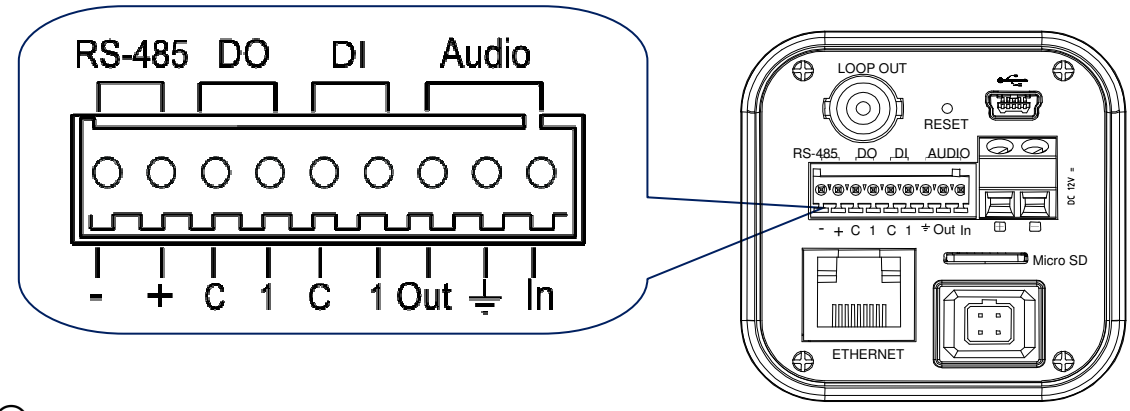


Caution

When connecting the DC power supply, make sure the polarity is correct. Incorrect connection may cause malfunction or damage to the camera.

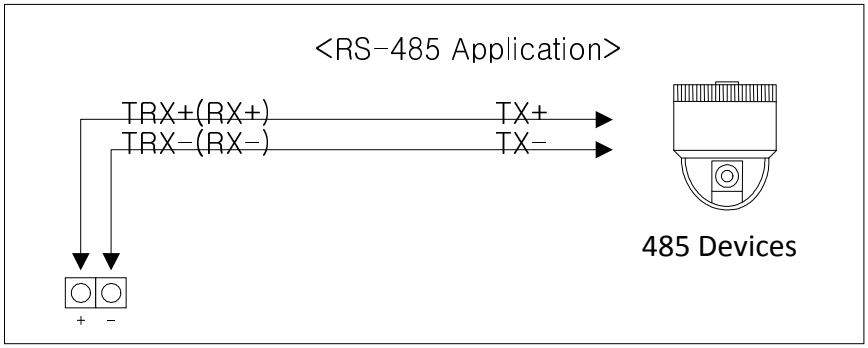
5.1.Connectors

① **9 pin terminal block**



② **RS-485**

The RS-485 serial port consists of TRX+(RX+) and TRX-(RX-) as following the following image.



RS-485 Connection

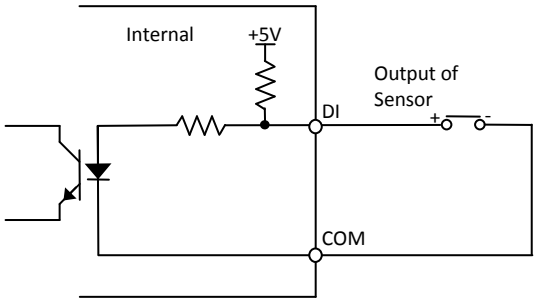
③ **Sensor (DI) connection**

The camera provides 1 channel D/I. It can be connected to either a voltage type sensor or a relay type sensor as the following figures. It can be selected by software.

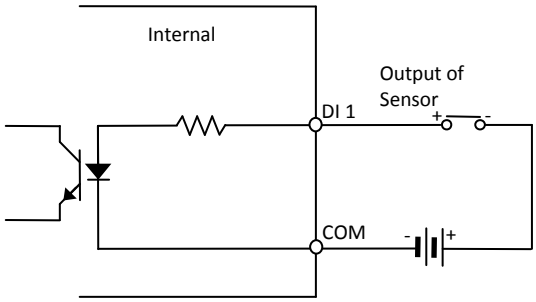
Input voltage range: 0 VDC minimum to 24 VDC maximum
Input voltage threshold: 1 V

Caution

Do not exceed the maximum input voltage or relay rate.



Relay Type



Voltage Type

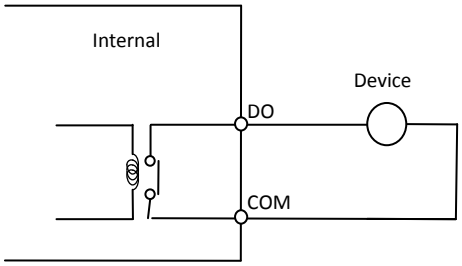
④ Alarm (DO) connection

Only the relay type is supported.

Relay Rating: Max 24VAC 500mA or 12VDC 1A

Caution

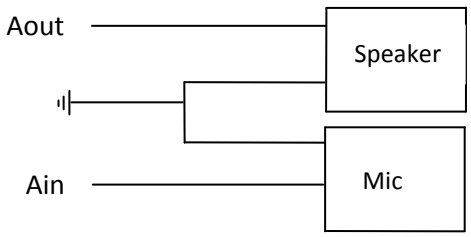
Do not exceed the maximum relay rating.



Relay Type

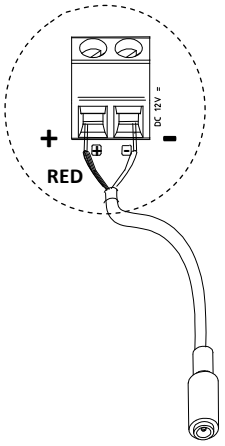
⑤ Audio connection

The camera has a mono audio input and a mono audio output. As the output power for the audio is low, amplifier speaker is needed. (Do not use a headphone or earphone directly to the camera.)



⑥ Power Adaptor Connector (DC 12V)

Power adaptor connector connects to DC Jack adapter cable.



Caution

Make sure the polarity is correct. Incorrect connection may cause malfunction or damage to the IP device

Caution

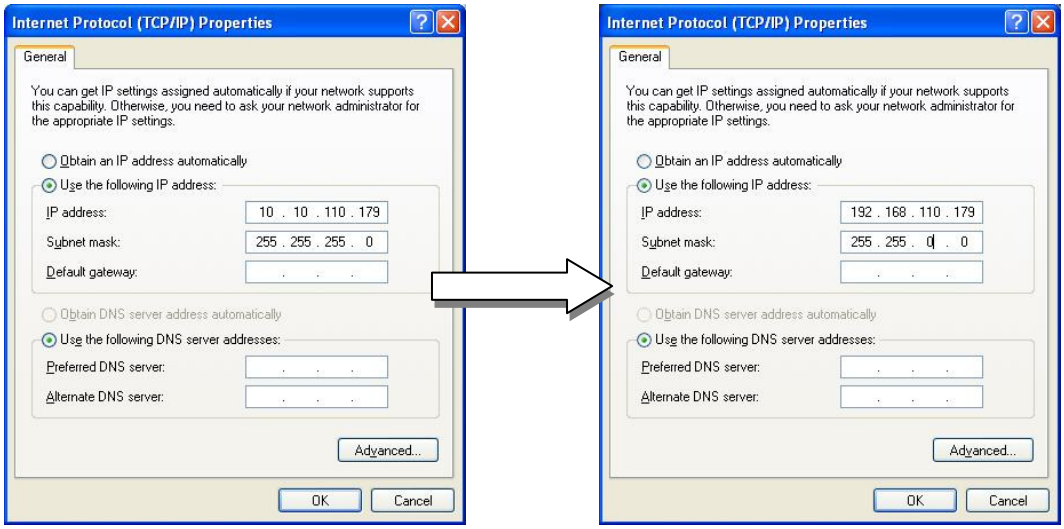
Power Adaptor Connector (DC 12V)

6. CONFIGURATION

6.1.Set up network environment

The default IP address of your IP device is 192.168.XXX.XXX. You can find the available IP address from the MAC address of your device. Please make sure the device and your PC are on the same network segment before running the installation. If the network segment between your PC and the device is different, change your PC's settings as below.

IP address : **192.168.xxx.xxx**
Subnet mask: **255.255.0.0**



6.2. View video on web page

View the live video on a web page using your IP device and its IP address. You can use the IPAdminTool or enter the IP address on the web page.

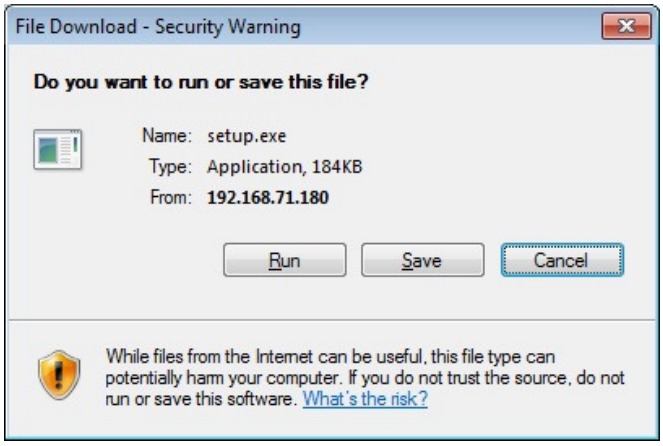
6.2.1. View video using IPAdmin Tool

IPAdminTool automatically searches all activated network encoders and IP cameras and shows the product name, IP address, MAC address and etc. IPAdminTool is provided with SDK at the following SDK path.

{SDK root}\BIN\TOOLS\AdminTool\

To use the IPAdminTool and view the live video on a web page:

1. Start IPAdminTool. Names and info of currently activated devices appear as a list.
2. Right-click on the desired device and select **Web view**.
3. Click **pop-up blocked** and install the ActiveX setup.exe by clicking the **Run** or **Save** button. You need to install the ActiveX for displaying the images.



4. Follow the instructions of the dialog boxes and complete the installation. Then the live video is displayed on the main page of the web browser.
5. If the live video is not displayed with the message said, "*This software requires the Microsoft XML Parser V6 or higher. Please download MSXML6 from the Microsoft website to continue. Error code: Can not create XMLDOMDocument.*", please download and install the relevant MSXML.

Note

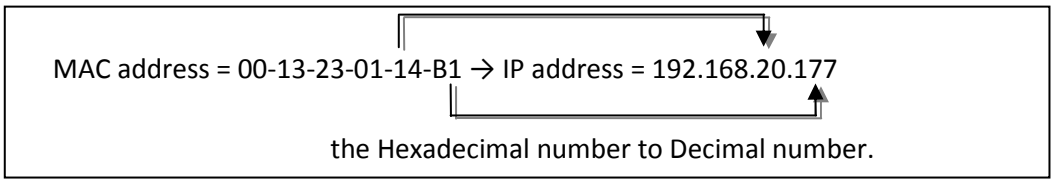
If the ActiveX ***setup.exe*** file fails to be installed successfully, close all of the Internet Explorer windows and go to **Program Files** > **AxInstall** folder on your computer. Then, run ***Uninstall.exe*** and try to perform the steps 1 to 4 above again.

6.2.2. View video using IP address

View the live video on a web page using your IP device and its IP address. To have the correct IP address ready and use it on a web page:

1. Convert a MAC address to an IP address or check the IP address on the IPAdminTool. Refer to *Appendix (D): Hexadecimal-Decimal Conversion Table*.

(The MAC address is attached on the side or bottom of the device.)



2. Open a web browser and enter the IP address of the device.
3. Click **pop-up blocked** and install the ActiveX setup.exe by clicking the **Run** or **Save** button. You need to install the ActiveX for displaying the images.
4. Follow the instructions of the dialog boxes and complete the installation. Then the live video is displayed on the main page of the web browser.

6.3. Reset

1. While the device is in use, press and hold the Reset .
2. Release the Reset button after 3 seconds.
3. Wait for the system to reboot.

6.4. Factory Default

1. Disconnect the power supply from the device.
2. Connect the power to the device with the Reset button pressed and held.
3. Release the Reset button after 5 seconds.
4. Wait for the system to reboot.

The factory default settings can be inferred as follows:

IP address:	192.168.xx.yy
Network mask:	255.255.0.0
Gateway:	192.168.0.1
User ID:	root
Password:	pass

APPENDIX (A): SPECIFICATIONS

Summary

Camera Module			
CCD	Image Sensor	Sony 1/3” Super HAD CCD, 410K Pixel	SONY 1/3" Vertical Double Density Color CCD
	Effective Pixels	NTSC: 768(H) x 494(V) PAL: 752(H) x 582(V)	
	Size	1/3 inch interline transfer CCD	
	Scanning system	2:1 Interlace	
Sync	Frequency	NTSC: 15.734 KHz (H) 59.94 Hz(V) PAL:15.625 KHz(H) 50.00 Hz (V)	
ELECTRICAL	Resolution	540 TV Lines	560 TV lines (Color), 600 TV lines (B/W)
	S/N (Y signal)	50dB (AGC Off)	52dB (AGC Off)
	Min. Illumination	0.3 Lux/F1.2 (50 IRE, AGC HIGH, DNR HIGH), 0.002Lux (Sens-up)	0.3Lux/F1.2(Color), 0.002Lux (Sens-up)
	Wide Dynamic Range	Not supported	52dB(x128)
	Color	ON/AUTO	
	AGC Control	OFF/LOW/MIDDLE/HIGH Selectable	
	White Balance	ATW/AWC/MANUAL (1,800° K~10,500° K)	
	Electronic Shutter Speed	AUTO/ MANUAL (NTSC: 1/60~1/120,000, PAL: 1/50~1/120,000)	AUTO/ MANUAL (NTSC: X256~1/60sec~ 1/120,000sec, PAL: X256~1/50sec~ 1/120,000sec) Sens-up and Sens-up Limit is selectable / Flickerless
	Sens-Up	OFF/AUTO	
	DNR	OFF/LOW/MIDDLE/HIGH (Noise Reduction)	ON (Level 0~32) / OFF Selectable
Lens		3~8 mm Day & Night Vari-focal Auto Iris (Optional)	
Day & Night		The feature may vary depending on the model. (S/W Day & Night or Removal IR Cut Filter)	Removal IR Cut Filter
Electrical Characteristics			

Analog Video Output	1Vp-p, 75Ω	
Audio Input	Linein, 1.43Vp-p(Min 1.35Vp-p, max 1.49 Vp-p), 39 KΩ	
Audio Output	Lineout, 46mW Power, 16 Ω	
Sensor(D/I)	TTL level 4.5V threshold, Max 50mA	
Alarm(D/O)	Max 500mA@24VAC or 1A@12VDC	
Power Source	DC 12V / PoE IEEE802.3af(class 0)	
Power Consumption (Approx.)	4.68W (DC 12V) / 5.28W (PoE)	7.08W (DC 12V) / 7.39W (PoE)
Video		
Compression Format	H.264, MPEG-4, MJPEG Selectable per Stream	
Number of Streams	Dual Stream, Configurable	
Resolution	D1, 4CIF, 2CIF, VGA, CIF, QCIF, QVGA	
Compression FPS	25/30 fps@D1 (PAL/NTSC)	
Deinterlacing	Supported (DSP)	
Motion Detection	Supported	
OSD	Supported (DSP)	
Burnt-in Text (Digital)	Supported (DSP)	
Output	1 Loop Out (BNC connector)	
Audio		
Input / Output	1/1 channel	
Compression Format	G.711	
Function		
Digital Input / Ouput	1/1 channel	
RS-485	Supported	
Network	10/100 Base-T	
Protocol	TCP/IP, UDP/IP, HTTP, RTSP, RTCP, RTP/UDP, RTP/TCP, SNTP, mDNS, UPnP, SMTP, SOCK, IGMP, DHCP, FTP, DDNS, SSL v2/v3, IEEE 802.1X, SSH, SNMP v2/v3	
USB 2.0	Supported	
SD Slot	Supported (Micro SD) ※ Micro SD Card is not included	

Environment Condition

Operating Temperature	-10 °C ~ 50 °C (14 °F ~ 122 °F)
Operating Humidity	Up to 85% RH

Mechanical Condition

Material	Aluminum Die Casting-2
Color	White Pearl
Dimension	Short Case Model: 55(W) x 55(H) x 94.2(D) mm Long Case Model: 55(W) x 55(H) x 122.5(D) mm
Weight (Approx)	260 g

APPENDIX (B): POWER OVER ETHERNET

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard. IEEE 802.3af allows for two power options for Category 5 cables.
The PoE module signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port.
The high efficiency DC/DC converter operates over a wide input voltage range and provides a regulated low ripple and low noise output. The DC/DC converter also has built-in overload and short-circuit output protection.

Note: For proper activation of 12V PoE, the Category 5 cable must be shorter than 140m and conform the PoE standard.

PoE compatibility

With non Power Sourcing Equipment (PSE)
When it is connected with non PSE, the power adaptor should be connected.

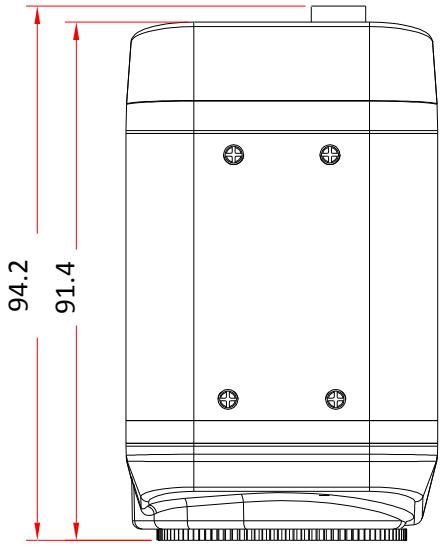
With power adaptor
Connecting both PSE and power adaptor does not do any harm to the products. Disconnecting power adaptor while it is operating does not stop operation. The product continues to work without rebooting.

Power classification

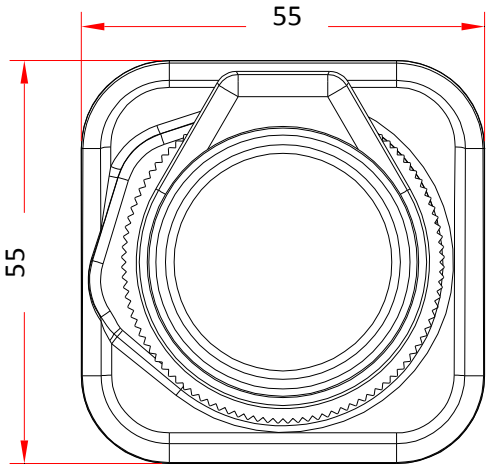
The PoE Power Class supported by the IP device is Class 0.

Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W

APPENDIX (C): DIMENSIONS

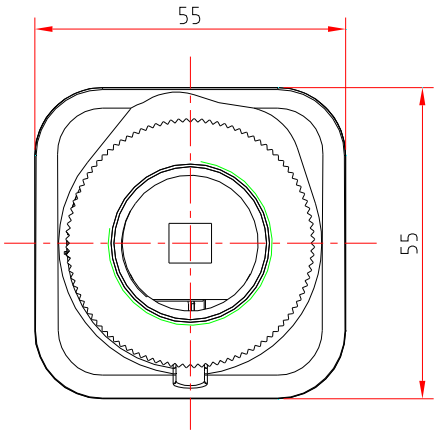


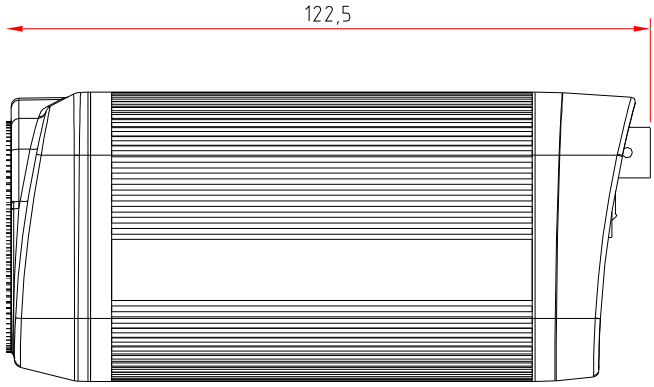
Top view



Front view

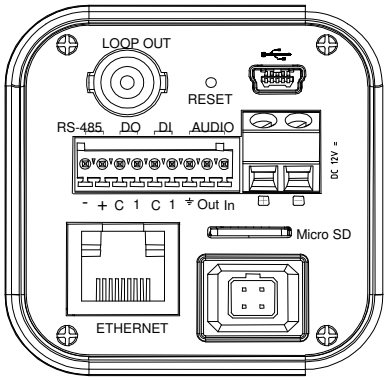
Short Case Model



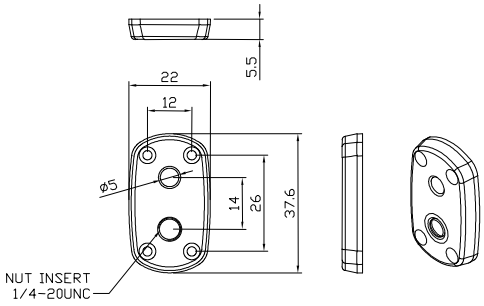


Long Case Model

UNIT: mm



Rear view



UNIT: mm

APPENDIX (D): HEXADECIMAL-DECIMAL CONVERSION TABLE

Refer to the following table when you convert the MAC address of your device to IP address.

Hex	Dec
00	0
01	1
02	2
03	3
04	4
05	5
06	6
07	7
08	8
09	9
0A	10
0B	11
0C	12
0D	13
0E	14
0F	15
10	16
11	17
12	18
13	19
14	20
15	21
16	22
17	23
18	24
19	25
1A	26
1B	27
1C	28
1D	29
1E	30
1F	31
20	32
21	33
22	34
23	35
24	36

Hex	Dec
25	37
26	38
27	39
28	40
29	41
2A	42
2B	43
2C	44
2D	45
2E	46
2F	47
30	48
31	49
32	50
33	51
34	52
35	53
36	54
37	55
38	56
39	57
3A	58
3B	59
3C	60
3D	61
3E	62
3F	63
40	64
41	65
42	66
43	67
44	68
45	69
46	70
47	71
48	72
49	73

Hex	Dec
4A	74
4B	75
4C	76
4D	77
4E	78
4F	79
50	80
51	81
52	82
53	83
54	84
55	85
56	86
57	87
58	88
59	89
5A	90
5B	91
5C	92
5D	93
5E	94
5F	95
60	96
61	97
62	98
63	99
64	100
65	101
66	102
67	103
68	104
69	105
6A	106
6B	107
6C	108
6D	109
6E	110

Hex	Dec
6F	111
70	112
71	113
72	114
73	115
74	116
75	117
76	118
77	119
78	120
79	121
7A	122
7B	123
7C	124
7D	125
7E	126
7F	127
80	128
81	129
82	130
83	131
84	132
85	133
86	134
87	135
88	136
89	137
8A	138
8B	139
8C	140
8D	141
8E	142
8F	143
90	144
91	145
92	146
93	147

Hex	Dec
94	148
95	149
96	150
97	151
98	152
99	153
9A	154
9B	155
9C	156
9D	157
9E	158
9F	159
A0	160
A1	161
A2	162
A3	163
A4	164
A5	165
A6	166
A7	167
A8	168
A9	169
AA	170
AB	171
AC	172
AD	173
AE	174
AF	175
B0	176
B1	177
B2	178
B3	179
B4	180
B5	181
B6	182
B7	183
B8	184

Hex	Dec
B9	185
BA	186
BB	187
BC	188
BD	189
BE	190
BF	191
C0	192
C1	193
C2	194
C3	195
C4	196
C5	197
C6	198
C7	199
C8	200
C9	201
CA	202
CB	203
CC	204
CD	205
CE	206
CF	207
D0	208
D1	209
D2	210
D3	211
D4	212
D5	213
D6	214
D7	215
D8	216
D9	217
DA	218
DB	219
DC	220
DD	221

Hex	Dec
DE	222
DF	223
E0	224
E1	225
E2	226
E3	227
E4	228
E5	229
E6	230
E7	231
E8	232
E9	233
EA	234
EB	235
EC	236
ED	237
EE	238
EF	239
F0	240
F1	241
F2	242
F3	243
F4	244
F5	245
F6	246
F7	247
F8	248
F9	249
FA	250
FB	251
FC	252
FD	253
FE	254
FF	255

REVISION HISTORY

MAN#	DATE(M/D/Y)	Comments
01A.01	03/12/2009	Created.
01A.02	06/23/2009	Modified
01A.03	06/25/2009	Added Trouble Shooting
01A.04	06/26/2009	Added Model specification
02A.00	07/24/2009	FW 1.00.07 official release version
02A.01	08/06/2009	PoE is supported by default. Added images to package contents
02A.02	08/24/2009	Added the requirement of VCA : MSXML4.0
02A.03	09/02/2009	Added PoE specification
02A.04	09/25/2009	Added Operation the OSD menu Added Setting the Image Attribute
02A.05	09/29/2009	Changed the VCA specification
03A.00	10/13/2009	FW 1.02.02 official release version
03A.01	10/15/2009	Added the Cross Reference
03A.02	12/09/2009	Corrected Errata about Network Protocol
03B.03	12/29/2009	Added Installing a Wireless USB Device (Optional) Changed Minimum Illumination specification
03C.00	02/04/2010	Added Dimension of camera mounting adaptor
03C.01	02/25/2010	Modified for end users
03C.02	04/02/2010	Added LAN cable specification for PoE
04A.00	04/20/2010	FW v1.02.04 updated
04A.03	07/16/2010	Added power consumption data for PoE
04A.04	08/18/2010	Corrected error in PoE power consumption
05A.00	09/07/2010	FW v1.06.02 updated Removed VCA contents from the Specification section Added hexadecimal-decimal conversion table
06A.00	10/01/2010	FW v1.06.03 updated Changed ActiveX installation method for viewing web page Changed the default value for web server protocol from https to http
06A.01	10/22/2010	Added dimension images for long case model (IPE1110)
06A.02	11/15/2010	Added a notice about the temperature change and focus shift
07A.00	03/08/2011	Added LED indicator information Changed the MSXML error message Changed the operating temperature specification
07A.01	05/27/2011	Corrected the supported resolution