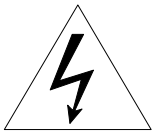
H.264 FULL HD NETWORK OUTDOOR IR DOME

ZN-DNT352XE-MIR

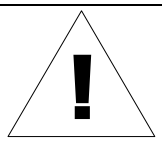
Installation Manual

INFORMATION TO USER

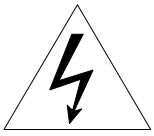


CAUTION

RISK OF ELECTRIC SHOCK,
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
CONTACT QUALIFIED SERVICE PERSONNEL FOR INTERNAL PARTS.



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

This symbol is intended to alert the user the presence of important operating and maintenance (servicing) instructions within the guide manual.

Table of Contents

1. FEATURES

Camera

- Full HD outdoor dome IP camera (Vandal proof)
- High quality compression in real time streaming
- 1/2.7” High Quality CMOS Image Sensor
- True Day / Night (ICR) and WDR
- Improvement of color rolling suppression
- Remote Zoom/Focus Control(One Click AF)
- 36 IR LEDs

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/MPEG4 (Planned for the future release.)/MJPEG, 25/30FPS@1080p(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

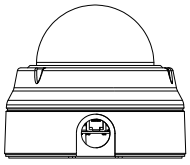
Additional Features

- Micro SD card support
- PoE support
- Built-in Video Content Analysis
- Internal fan and heater
- IP66 certified
- SDK (Software Development Kit) provided

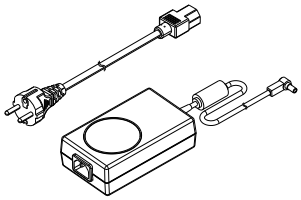
2. PACKAGE CONTENTS

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

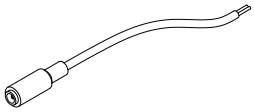
Camera



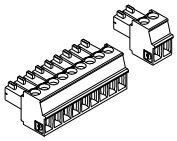
DC power adaptor



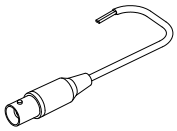
DC Jack Cable



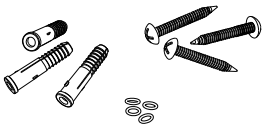
9-pin and 2-pin terminal block



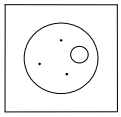
Video out cable



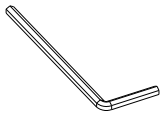
Screws and anchors



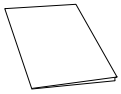
Installation template



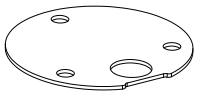
Hex wrench driver



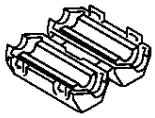
Quick installation guide

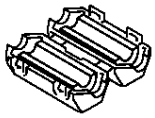


Silicon waterproof band



Clamping core
To prevent electromagnetic interference

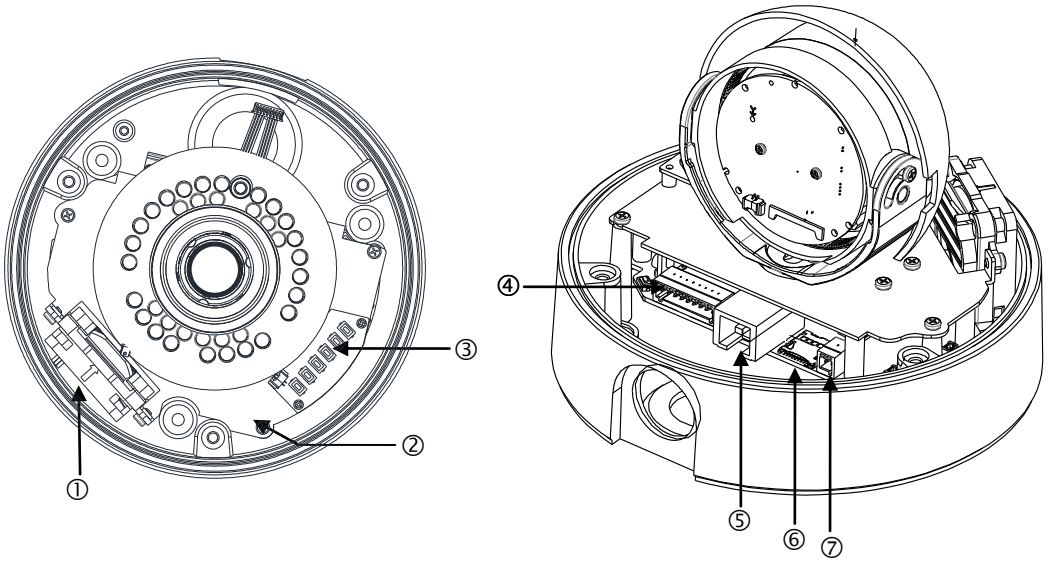




Note

The above contents are subject to change without prior notice.

3. PART NAMES



* Models herein and their appearance are subject to change without any prior notice.

① Fan
The fan and heater (underneath the black panel) are implemented for controlling temperature and mois ture of the internal device.

② Reset button
The reset button can be used for restarting the device or resetting it to Factory Default. Refer to **6.3. Re set** and **6.4. Factory Default** for more details. Reset button is located under PCB.

③ Output configuration switch
Refer to **4.2.Setting the Lens Positions** for more information on the switch

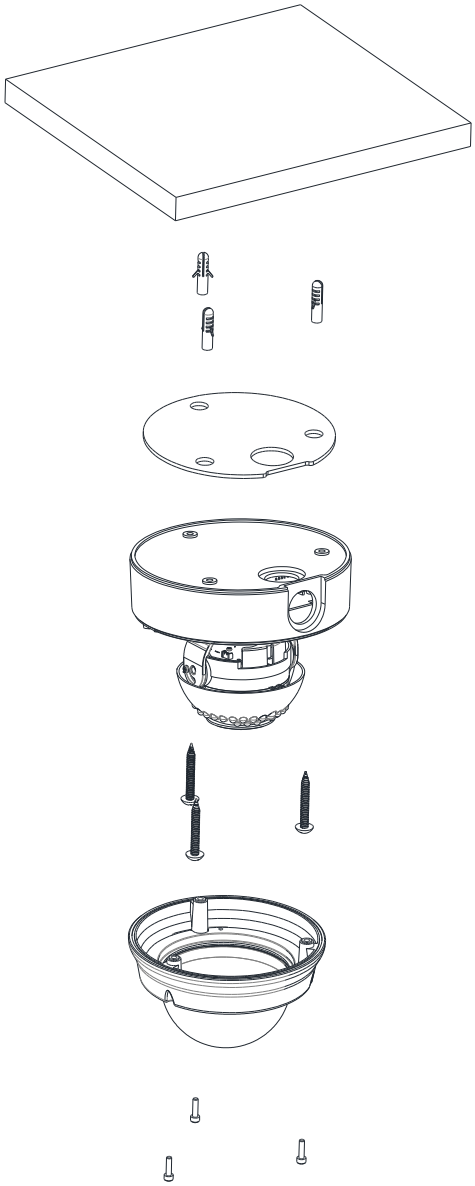
④ Video output, audio and IO terminal connector
A 9-pin terminal block is included in the device package. Connect this terminal block into this connector f or cable connection of video output, audio input/output and digital input/output

⑤ LAN connector
RJ45 LAN connector for 10/100 Base-T Ethernet.

⑥ Micro SD card slot
Memory card slot for external storage.

⑦ Power Adaptor Connector (DC 12V)
DC12V 3.5A adapter for power supply.

4. INSTALLATION



1) Place the installation template (paper) that is included in the package on the desired installation surface.

2) Drill three holes in correct positions based on the template paper, and insert anchor blocks into the holes.

3) Place the waterproof silicon band on the bottom plate of the device and make it align with screw holes.

4) Place the camera body to the installation surface and match three alignment holes with three anchor blocks. Then tighten the surface anchor studs.

5) Connect all the required cables to the camera.

6) Adjust the lens position. Detailed information can be found in **4.2. Setting the Lens Position**.

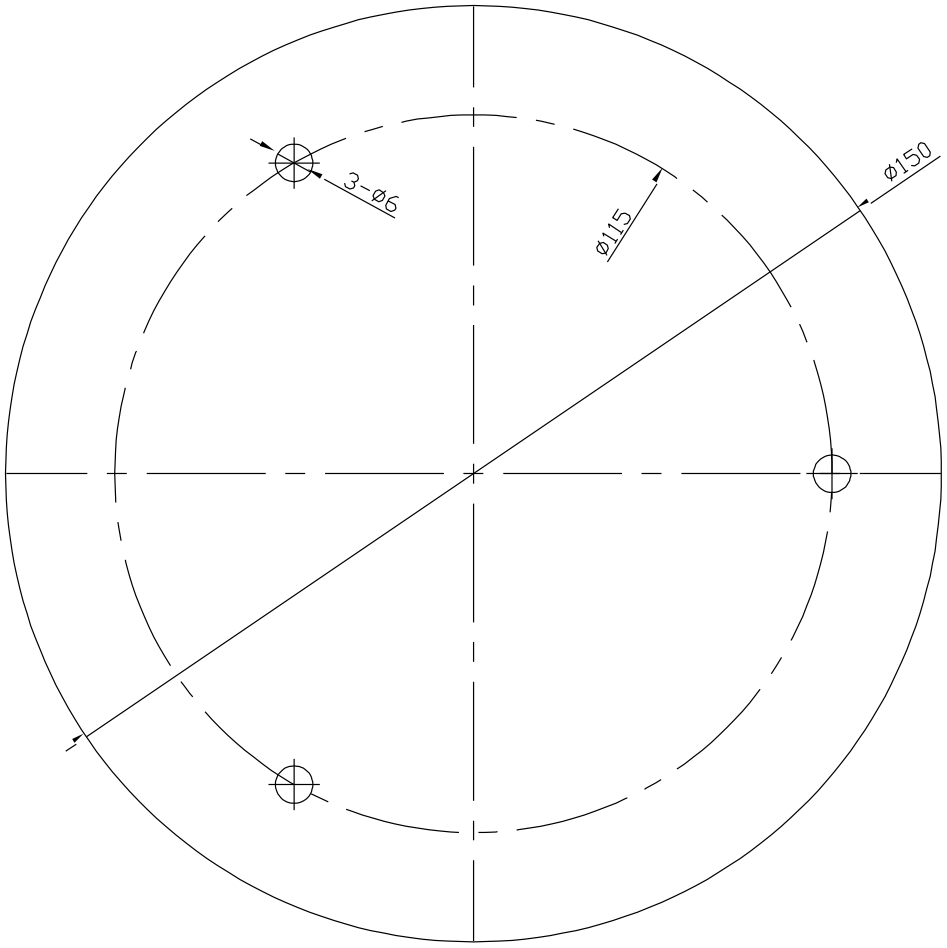
7) Place the dome cover on the main body of the camera. Dome cover has three alignment holes that match camera body's alignment holes.

8) Once properly placed, insert screws into the three holes of the body and tighten them up.

Caution

To prevent products from damaging, place the camera on stable and non-vibratin g surfaces. If the stability is in doubt, consult with safety personnel for reinforcem ents, and then proceed with the installation.

4.1. Installation Template



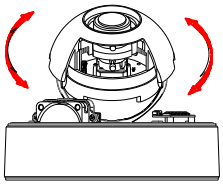
Caution	Installation template image's size scale in this installation guide is not 1:1. The correct-size template design paper can be found inside the package separ ately.

4.2. Setting the Lens Position

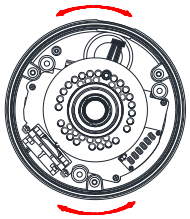
Instruction below describes how to set the lens positions and manually adjust zoom and focus.

1) Remove the dome cover.

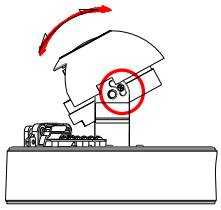
2) Set the lens position by rotating the camera gimbal; to pan, rotate the reinforced lower body of the gimbal; to tilt, vertically adjust the camera gimbal.



A. To adjust lens position, rotate the camera gimbal



B. To pan, rotate the lower body of the camera gimbal

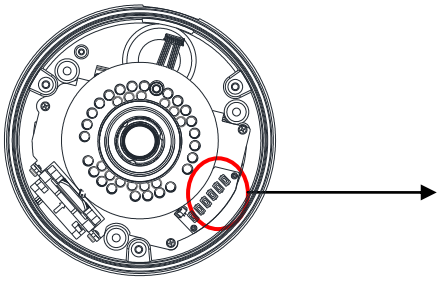


C. Tilt the lens by vertically adjusting the camera gimbal

Caution

Refrain from continuously rotating the camera gimbal with excessive force to a single direction as it is attached with the IR-LED cable inside the dome.

3) The figure and table below explains the lens switch settings.

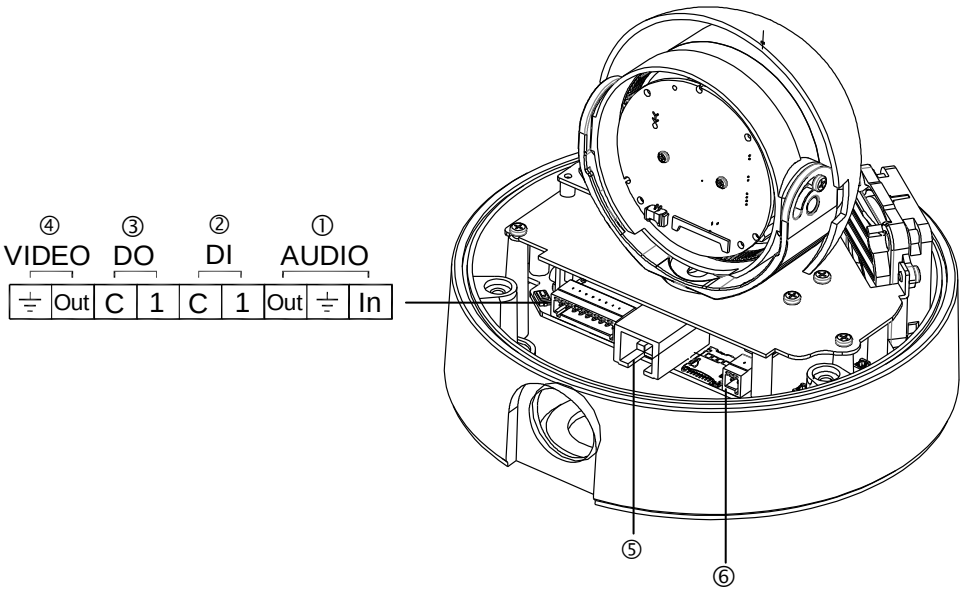


SW1	SW2	SW3
PAL/NTSC	TELE	WIDE
SW4	SW5	SW6
FAR	NEAR	Auto-Focus

4.3. Setting the Image Attribute

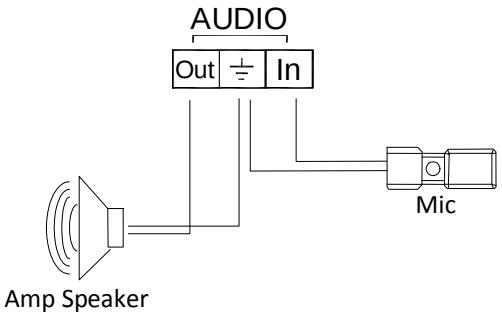
Through the camera's webpage, users can configure image settings.
The camera image's brightness, contrast, saturation and sharpness are adjustable through the image settings. (**Setup > Video & Audio > Camera)**.

5. CONNECTIONS



① Audio input/output

The camera has a mono audio input and a mono audio output. Due to low audio output power, an amplified speaker is recommended for enhanced sound (Do not connect a headphone or earphone directly to the camera)



② Analog video output connection

Connect a display device (such as a monitor) to the video output connector and check if the camera is installed properly streaming the images.

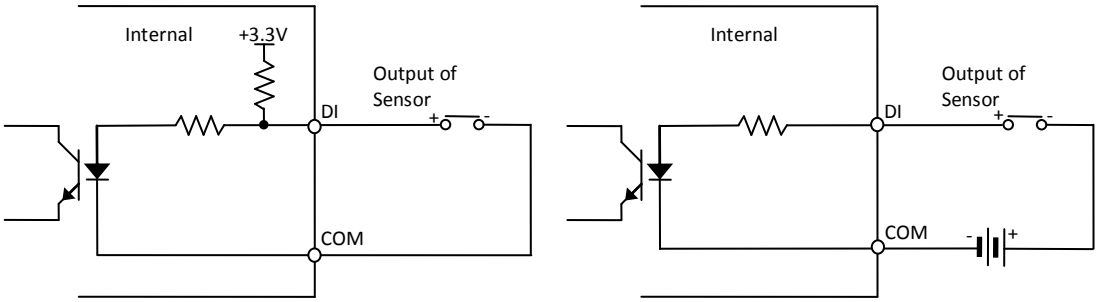
③ Sensor (DI) connection

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. Settings can be done through the camera's webpage.

Input voltage range: 0VDC minimum to 5VDC maximum, Max 50mA
Input voltage threshold: 1.5V

Caution

Do not exceed the maximum input voltage or relay rate.



Relay Type　　Voltage Type

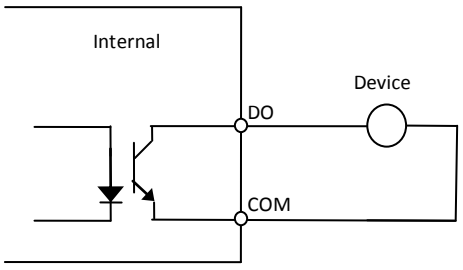
④ Alarm (DO) connection

Only the relay type is supported.

Relay Rating: Max 24VDC 50mA

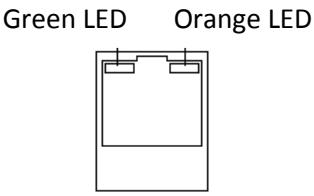
Caution

Do not exceed the maximum relay rating.



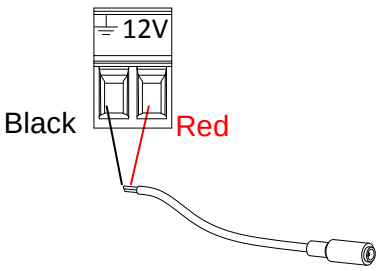
Relay Type

⑤ LAN connection
This is a RJ45 LAN connector for 10/100 Base-T Ethernet. Connect a LAN cable.



When the device is connected, the orange LED stays on while green LED continues to blink.

⑥ 12V DC Power
A 12 DC power connector is required for this device.



6. CONFIGURATION

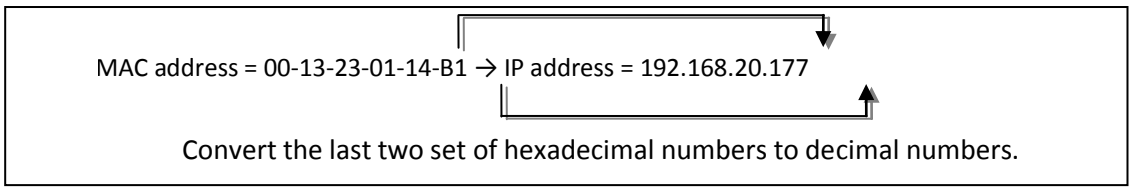
6.1.Set up network environment

The default IP address of the device is 192.168.XXX.XXX. Users can identify the IP address of the device from converting the MAC address's hexadecimal numbers, which is attached to the device. Be sure that the device and PC are on a same area network before running the installation.

6.1.1. Generic IP Environment

In case of generic private network environment where IP address 192.168.XXX.XXX are used, users may view the live streaming images on a web page using the device's default IP address:

1. Convert the device's MAC address to the IP address. Refer to the Hexadecimal-Decimal Conversion Chart at the end of the manual.
   (The MAC address of the device is attached on the side or bottom of the device.)



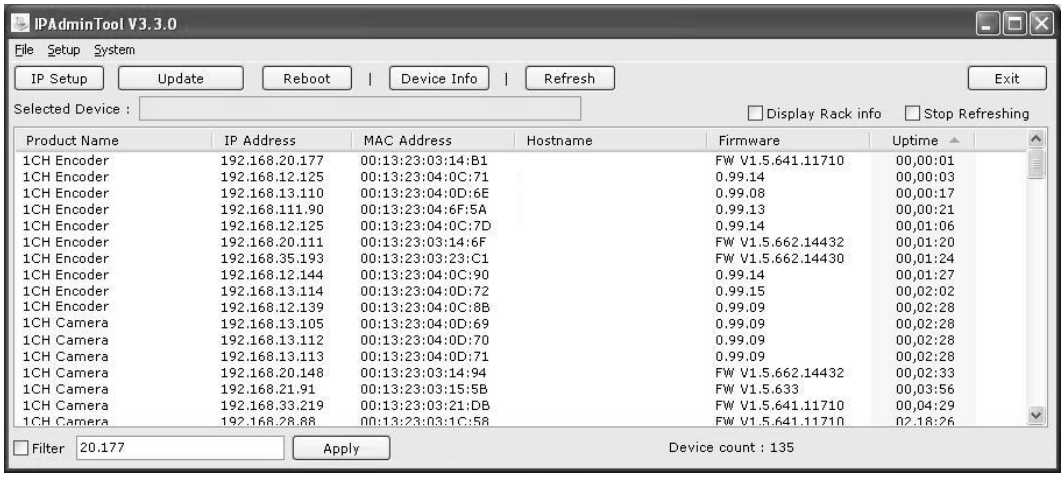
2. Start the Microsoft® Internet Explorer web browser and enter the address of the device.

3. Web streaming and device configurations are supported through ActiveX program. When the ActiveX installation window appears, authorize and install the ActiveX.

6.1.2. Custom IP Environment

IPAdminTool is provided with SDK at the following SDK path.
{SDK root}\BIN\TOOLS\AdminTool\

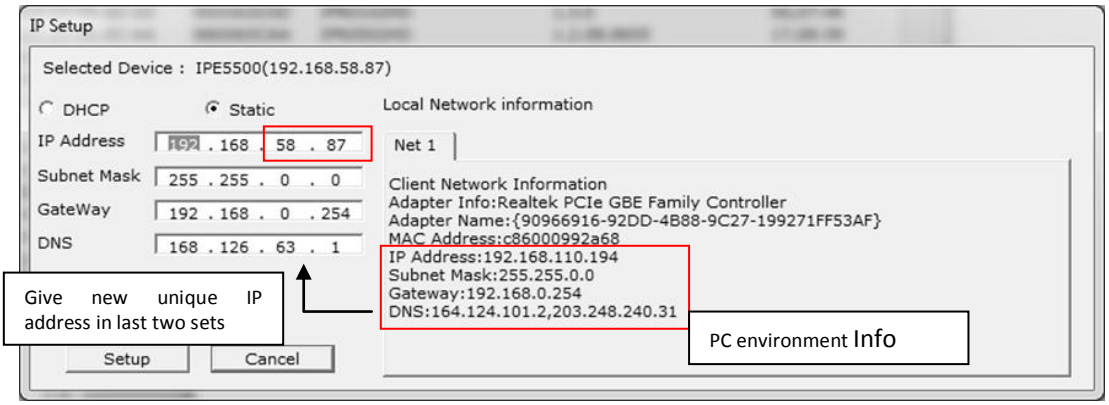
IPAdminTool is a management tool, which automatically scans all of the network products for users to perform administrative tasks, which includes network configurations, firmware update, device reboot, and device organizations.



To modify the device's default IP address for customized network area;

1. Find the device from the IPAdminTool's list and highlight the device's name.

2. Right-click the mouse and select "IP Address"; IP Setup window appears.



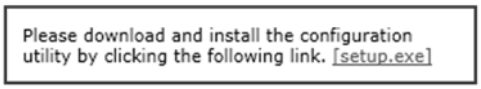
3. In the IP Setup's window, information under 'Local Network information' displays the user/PC's network area information. Those information need to be incorporated to the IP Address, Subnet Mask, Gateway, and DNS boxes, except the last 2 sets of IP Address, which are to be the unique numbers for the device. Refer to the image above for the setting

4. Click 'Setup' to complete the modification.

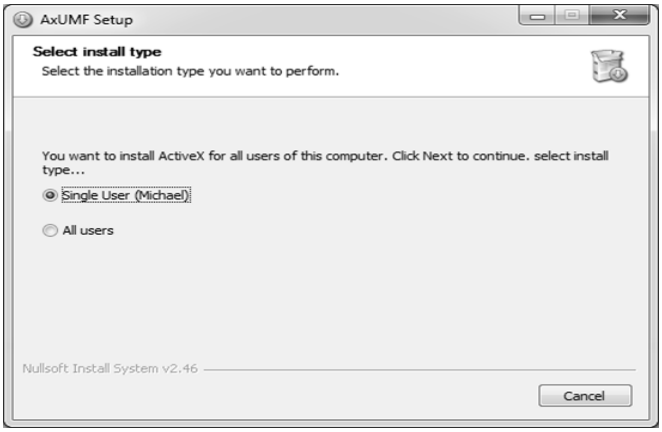
6.2. View video on web page

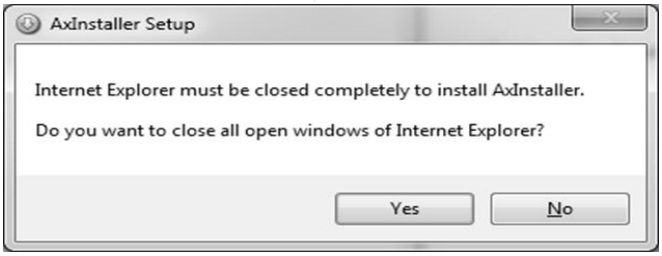
Type the proper IP address to view the live streaming images through a web browser.
The default username and password is *root / pass*.

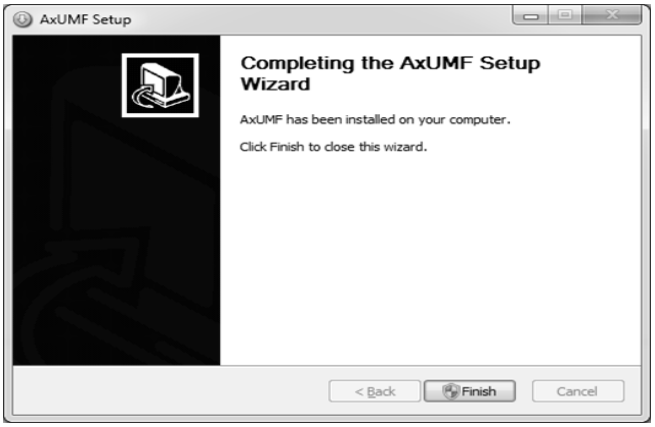
1. The browser asks to install the ActiveX. Click Allow.



2. Setup.exe installation link or pop-up window appears, depends on Microsoft® Internet Explorer version. Proceed with rest of setup installation.







3. Follow the instructions of the dialog boxes and complete the installation. Once the installation is complete, start the web browser again and check if video stream is displayed in the main view frame.

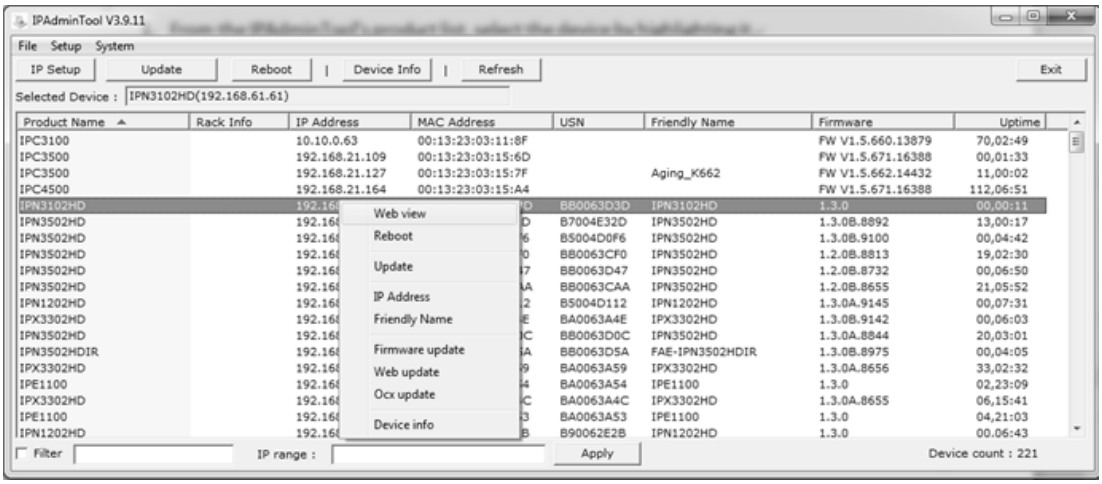
6.2.1. View video using IPAdmin Tool

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\

1. From the IPAdminTool's product list, select the device by highlighting it.

2. Right-click the mouse and select **web-view**



3. The system's default web browser opens the device's address.

Caution

Whether directly accessing the streaming video through typing IP address on a web page or taking steps through IPAdminTool, the ActiveX is needed to be installed for the Microsoft® Internet Explorer to have the complete configuration privileges.

6.3. Reset

1. Push the Reset button and hold for 1~2 seonds.
2. Wait for the system to reboot.

6.4. Factory Default

1. Push reset button and hold for 5 seconds..
2. Release the Reset button when power LED blinks.
3. 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		
CMOS	Image Sensor	1/2.7” 1080p CMOS
	Effective Pixels	1920x1080
	Scanning system	Progressive scanning
ELECTRICAL	Resolution	1920 x 1080
	Min. Illumination	Color: 1.0 lux, F1.2 BW: 0 lux (IR LED ON)
	AGC Control	Auto
Lens		Vari-Focal, Remote Zoom/Focus Control(One Click AF)F1.2
Day & Night		Removal IR Cut Filter
Video		
Compression Format		H.264, MPEG-4[1], MJPEG Selectable per Stream
Number of Streams		Dual Stream, Configurable
Resolution		1920x1080, 1280x720, 800x450, 480x270, 320x180
Compression FPS		Full-frame @1080p
Motion Detection		Built-in
Burnt-in Text (Digital)		Video stream overlay text
Output		Analog video output for installation only
Audio		
Input/output		1/1 channel
Compression Format		G.711
Function		
Digital Input/output		1/1 channel
RS-485		Not supported
Network		10/100 Base-T
Power over Ethernet		Supported
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
SD Slot		Supported (MicroSD) ※ Micro SD Card not included

[1] Planned for the next release.

Electrical Characteristics

Power Source	DC 12V / PoE IEEE802.3af (Class 0)
Power Consumption	1410mA (Heater On, IR-LED On)
Video Output	1 Vp-p, 75Ω, Composite
Audio Input	Linein, 1.43Vp-p(Min 1.35Vp-p, max 1.49 Vp-p), 39 KΩ
Audio Output	Lineout, 46mW Power, 16 Ω
D/I	Max 50mA@5VDC, TTL level 4.5V threshold
D/O	Max 500mA@24VAC or 1A@12VDC On-state resistance: 50 Ω (max continuous)

Environment Condition

Operating Temperature	**Operating Range** DC12V : -40˚C ~ 50˚C (-40˚F ~ 122˚F) PoE : 0 ˚C ~ 50 ˚C (32˚F ~ 122˚F) **Cold Start** DC12V : -20˚C (-4˚F) PoE: 0 ˚C (32˚F)
Operating Humidity	Up to 85% RH

Mechanical Condition

Material	Aluminum Die Casting
Color	White
Dimension	Housing : 115 (Ø) x 129(H) mm Dome : 100(Ø) mm
Weight (Approx.)	1.2kg

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 IEEE 802.3af-2003 standard allows up to 15.4 W power to device. However, 12.95W is the maximum available power, as some power gets lost in the cable.
PoE has advantages over conventional power in such places where AC powers cannot be reached or expensive to wire.

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 product, but power adaptor will be the only power source for the device as it has priority over PSE. In this case, disconnecting power adaptor while it is operating will cause the device to reboot. And PoE will be the power source for the device after the reboot.

Power classification

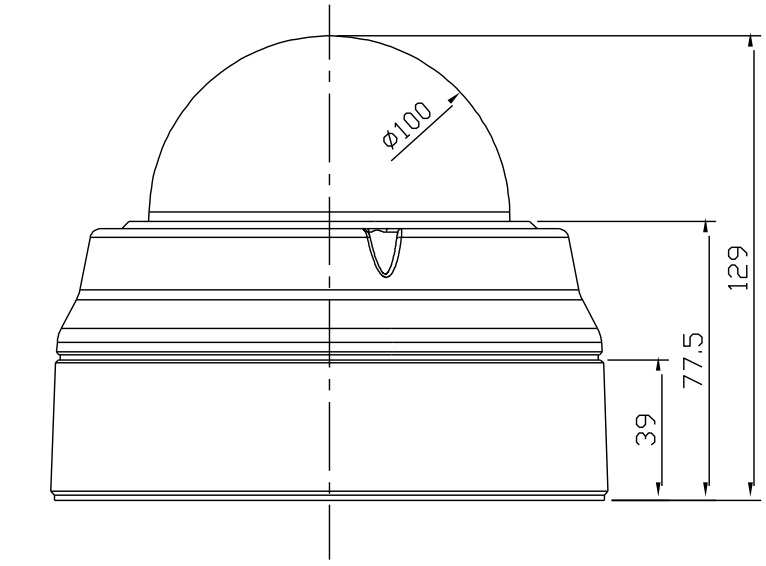
The PoE Power Class supported by the IP device is Class 0.

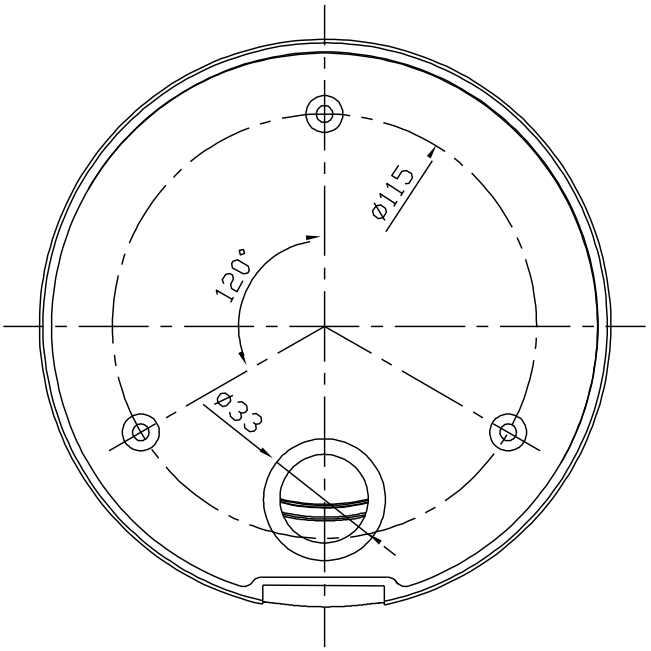
Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W

Note

Unlike the other way, disconnecting PSE or PoE doesn't reboot the device as long as a power adaptor is connected.

APPENDIX (C): DIMENSIONS





(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	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
0	0	25	37	4A	74	6F	111	94	148	B9	185	DE	222
1	1	26	38	4B	75	70	112	95	149	BA	186	DF	223
2	2	27	39	4C	76	71	113	96	150	BB	187	E0	224
3	3	28	40	4D	77	72	114	97	151	BC	188	E1	225
4	4	29	41	4E	78	73	115	98	152	BD	189	E2	226
5	5	2A	42	4F	79	74	116	99	153	BE	190	E3	227
6	6	2B	43	50	80	75	117	9A	154	BF	191	E4	228
7	7	2C	44	51	81	76	118	9B	155	C0	192	E5	229
8	8	2D	45	52	82	77	119	9C	156	C1	193	E6	230
9	9	2E	46	53	83	78	120	9D	157	C2	194	E7	231
0A	10	2F	47	54	84	79	121	9E	158	C3	195	E8	232
0B	11	30	48	55	85	7A	122	9F	159	C4	196	E9	233
0C	12	31	49	56	86	7B	123	A0	160	C5	197	EA	234
0D	13	32	50	57	87	7C	124	A1	161	C6	198	EB	235
0E	14	33	51	58	88	7D	125	A2	162	C7	199	EC	236
0F	15	34	52	59	89	7E	126	A3	163	C8	200	ED	237
10	16	35	53	5A	90	7F	127	A4	164	C9	201	EE	238
11	17	36	54	5B	91	80	128	A5	165	CA	202	EF	239
12	18	37	55	5C	92	81	129	A6	166	CB	203	F0	240
13	19	38	56	5D	93	82	130	A7	167	CC	204	F1	241
14	20	39	57	5E	94	83	131	A8	168	CD	205	F2	242
15	21	3A	58	5F	95	84	132	A9	169	CE	206	F3	243
16	22	3B	59	60	96	85	133	AA	170	CF	207	F4	244
17	23	3C	60	61	97	86	134	AB	171	D0	208	F5	245
18	24	3D	61	62	98	87	135	AC	172	D1	209	F6	246
19	25	3E	62	63	99	88	136	AD	173	D2	210	F7	247
1A	26	3F	63	64	100	89	137	AE	174	D3	211	F8	248
1B	27	40	64	65	101	8A	138	AF	175	D4	212	F9	249
1C	28	41	65	66	102	8B	139	B0	176	D5	213	FA	250
1D	29	42	66	67	103	8C	140	B1	177	D6	214	FB	251
1E	30	43	67	68	104	8D	141	B2	178	D7	215	FC	252
1F	31	44	68	69	105	8E	142	B3	179	D8	216	FD	253
20	32	45	69	6A	106	8F	143	B4	180	D9	217	FE	254
21	33	46	70	6B	107	90	144	B5	181	DA	218	FF	255
22	34	47	71	6C	108	91	145	B6	182	DB	219		
23	35	48	72	6D	109	92	146	B7	183	DC	220		
24	36	49	73	6E	110	93	147	B8	184	DD	221		

REVISION HISTORY

MAN#	DATE(M/D/Y)	Comments
01A.01	05/10/2012	First release version