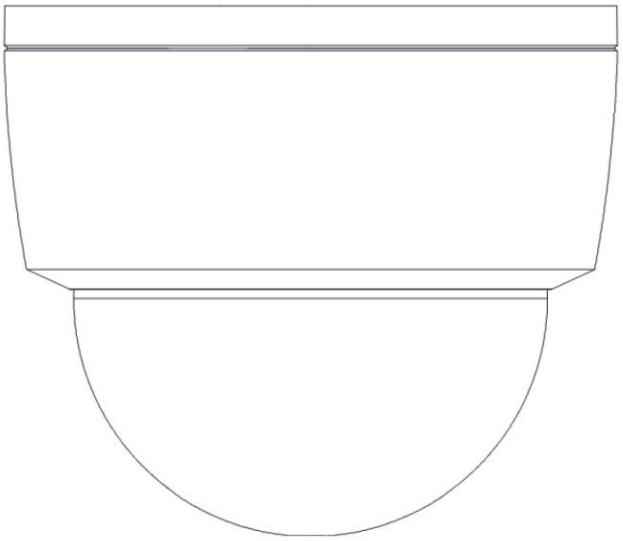
H.264 NETWORK CAMERA

GANZ PixelPro WITH GXi TECHNOLOGY SERIES

ZN1-D4FN5

Installation Guide

Before connecting, operating or adjusting this product,
read this instruction booklet carefully and completely



Precaution

- Please read this manual carefully before installing the unit.
- Never disassemble the camera. Unauthorized disassembly may cause equipment failure or damage to the unit.
- Please do not install the camera in a place exposed to direct sunlight.
- Do not operate the camera in environments beyond the specified temperature.
  Refer to "**Environment Condition**" on "***APPENDIX (A) : SPECIFICATIONS***" in this manual.
- Before applying power to the camera, check the power source to ensure that it is within the specifications. Refer to "**Electrical Characteristics**" on "***APPENDIX (A) : SPECIFICATIONS***"

Table of Contents

1. FEATURES

Camera

- SONY EXMOR 1/2.9” 1080p CMOS Image Sensor
- Digital Day / Night
- WDR

Video

- H.264 Baseline, Main, High Profile(MPEG-4 Part 10/AVC), MJPEG(Motion JPEG)
- Max 30fps in 1080p
- Text Overlay

Network

- 10 / 100 Base-T Ethernet

Integration

- Software Development Kit (SDK) available
- ONVIF Compliant (Profile S)

General

- microSD slot
- Power Over Ethernet (PoE)

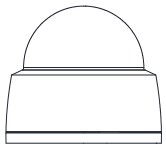
Video Contents Analytics (VCA)

- VCA Presence (Standard)
- VCA Surveillance(Optional)

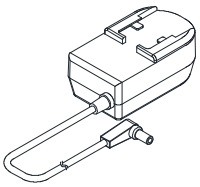
2. PACKAGE CONTENTS

Please unpack the package carefully and handle the equipment with care.
The package contains:

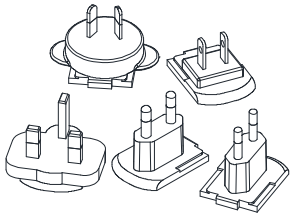
Camera



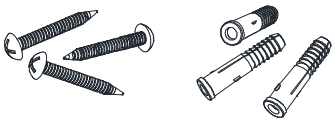
DC Power Adaptor



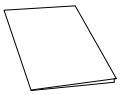
Universal Plugs



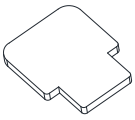
Screws and anchor blocks



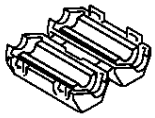
Quick Installation Guide



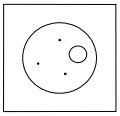
Camera Opener



Ferrite Core



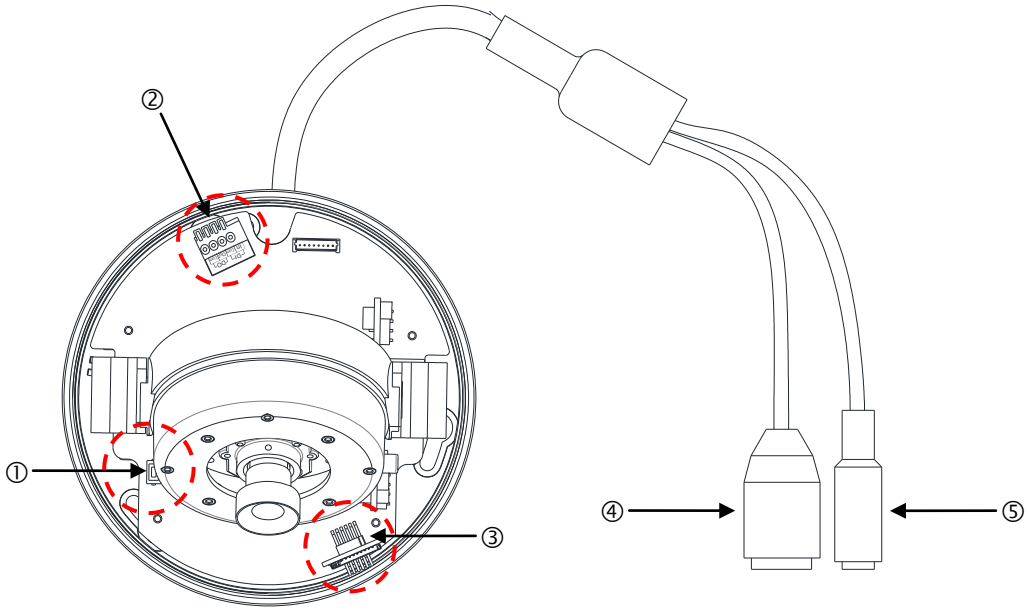
Installation Template



Note

The contents above are subject to change without prior notice.

3. PART NAMES



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

① Reset button
The reset button can be used for restarting the device or resetting it to Factory Default. Refer to ***6.3. Reset*** and ***6.4. Factory Default*** for more details.

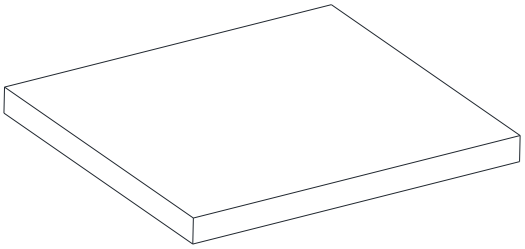
② IO terminal connector
Connect cables into this connector for digital input/output. Refer to ***5. Connections*** more details.

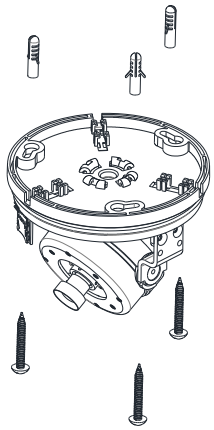
③ microSD card slot
Supports up to 64GB. Recommend Class 4 and higher for HD recordings.

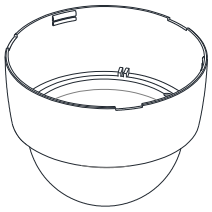
④ LAN connector
This is a RJ45 LAN connector for 10/100 Base-T Ethernet. (PoE supported)

⑤ Power Adaptor Connector (12VDC)
Use 12VDC adapter for power supply

4. INSTALLATION







1) Place the installation template (outline shown on the next page) included in the package on the desired installation surface.

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

3) Make sure the necessary cables including a LAN cable and a power cable are properly connected to the camera either thru the ceiling or thru the groove around the mounting plate.

4) Place the camera body and match the alignment holes with the corresponding anchor blocks and hold against the mounting surface.

5) Tighten the anchor blocks with screws.

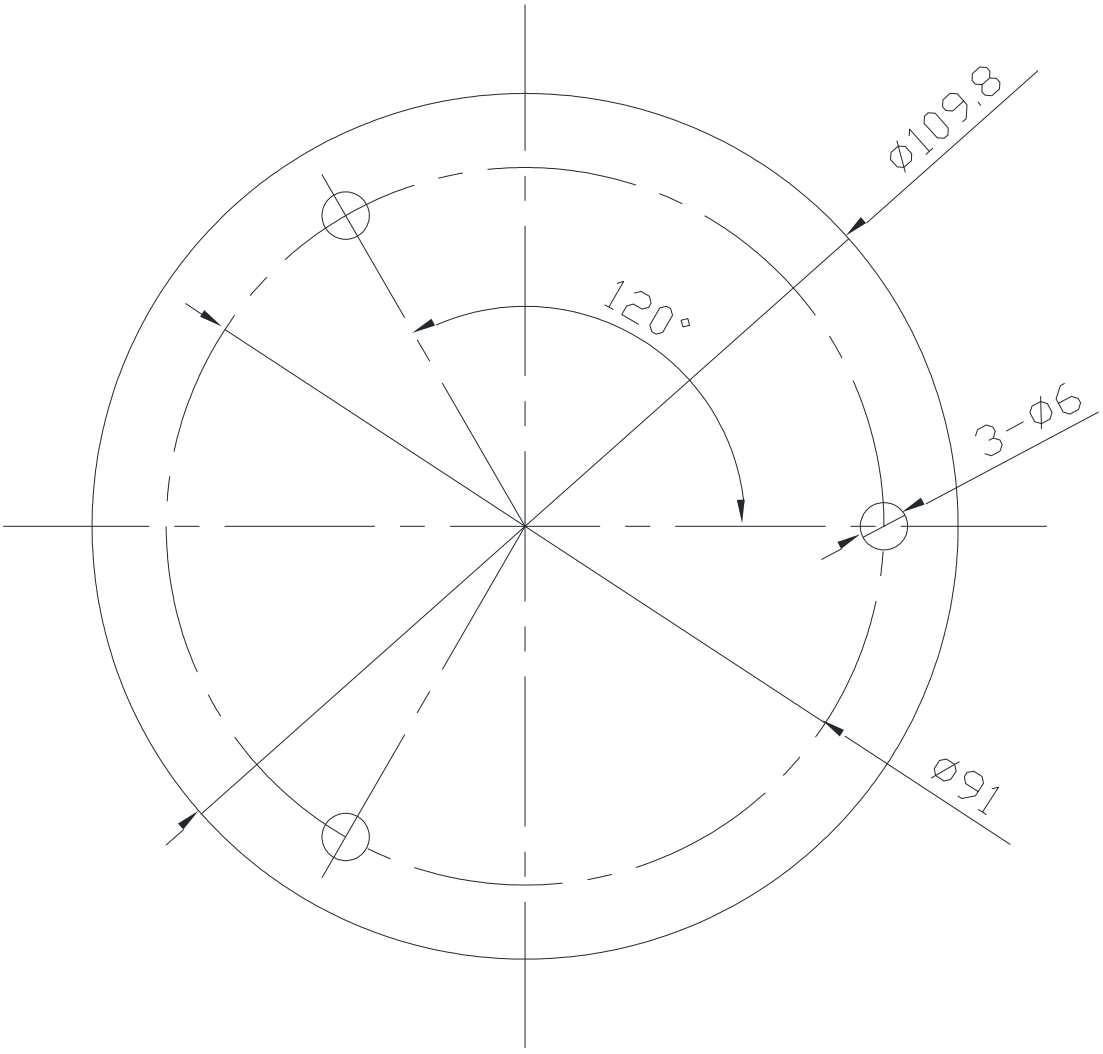
6) Adjust the angle and focus of the camera. Refer to "***4.2.Adjusting the angle of the camera***" and ***"4.3. Lens Focus Adjustment"*** for more details.

7) Attach the dome cover on main body and push it toward to the main body till a "tick" sound is heard.

Caution

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

4.1. Installation Template

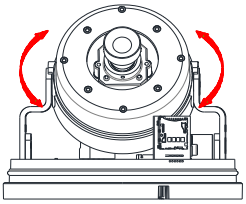


(Unit: mm)

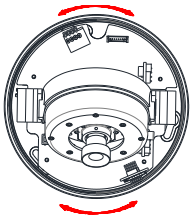
Caution

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 separately.

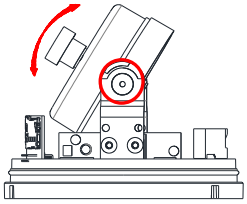
4.2. Manual adjustment for 3-axis movements



A. Rotate the lens with upper lens shell



B. Pan the lens with reinforced lower body



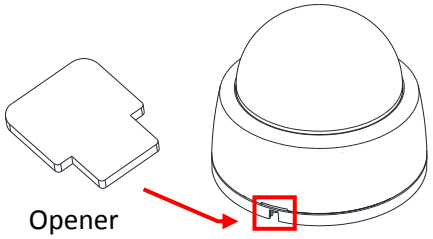
C. Tilt the lens with horizontal platform

Adjust the lens to the desired position by manually moving its upper lens shell, reinforced body or horizontal platform in the following directions.

Caution

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

4.3. Lens Focus Adjustment

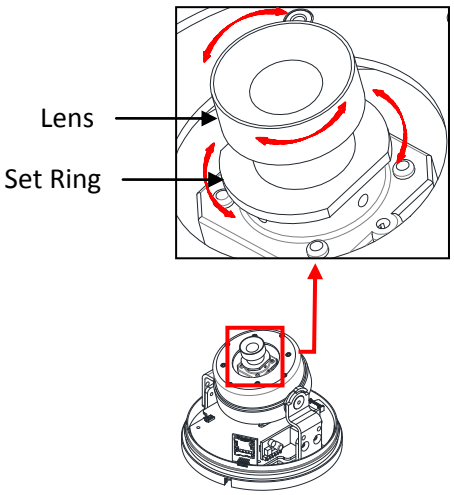


1) Remove the dome cover with the opener included in the package.

2) *Rotate the set ring in counterclockwise will allow users to adjust the focal length of the lens.

3) Adjust the focal length of the lens by rotating the lens. After the setting, tighten up the set ring by turning it clockwise.

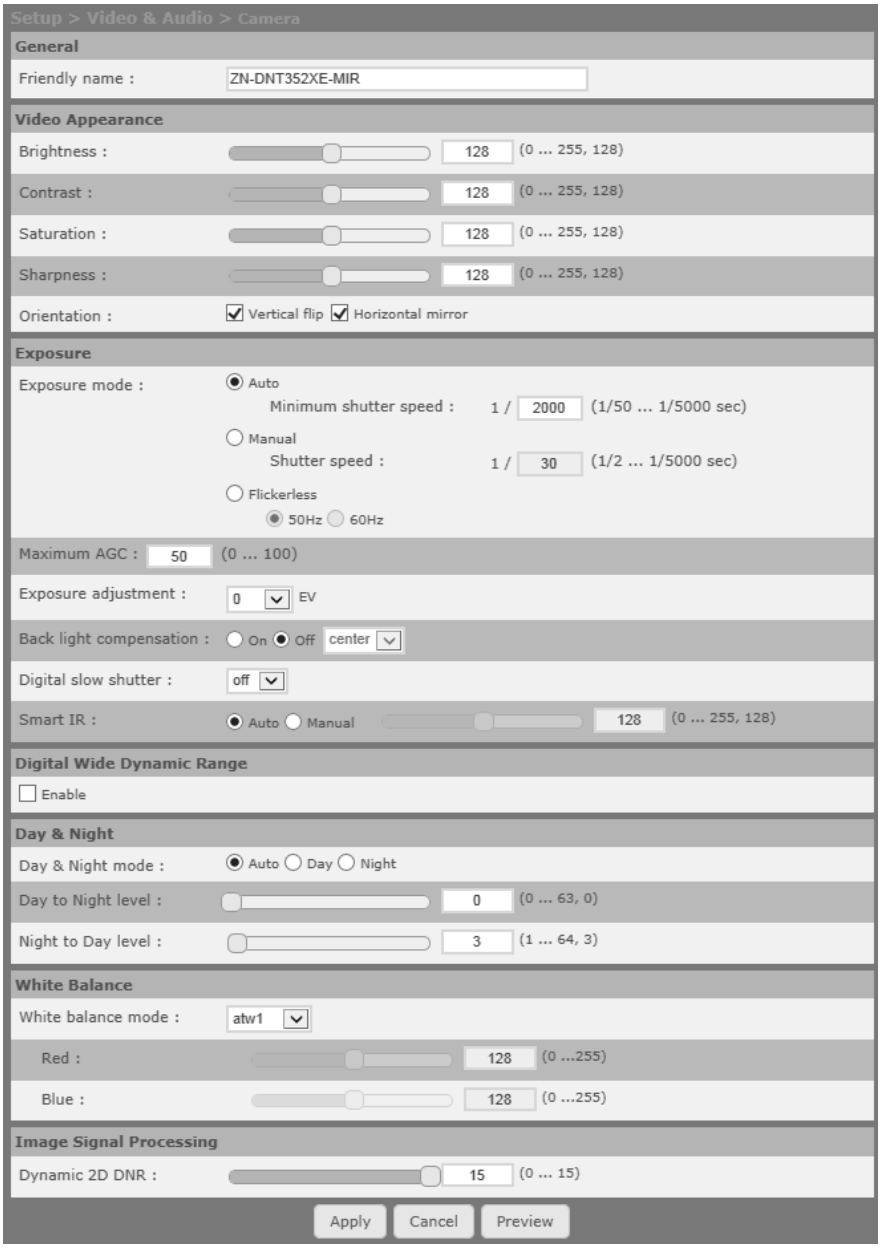
4) Once the lens position is well-adjusted, reverse all the steps in order to reassemble the device.



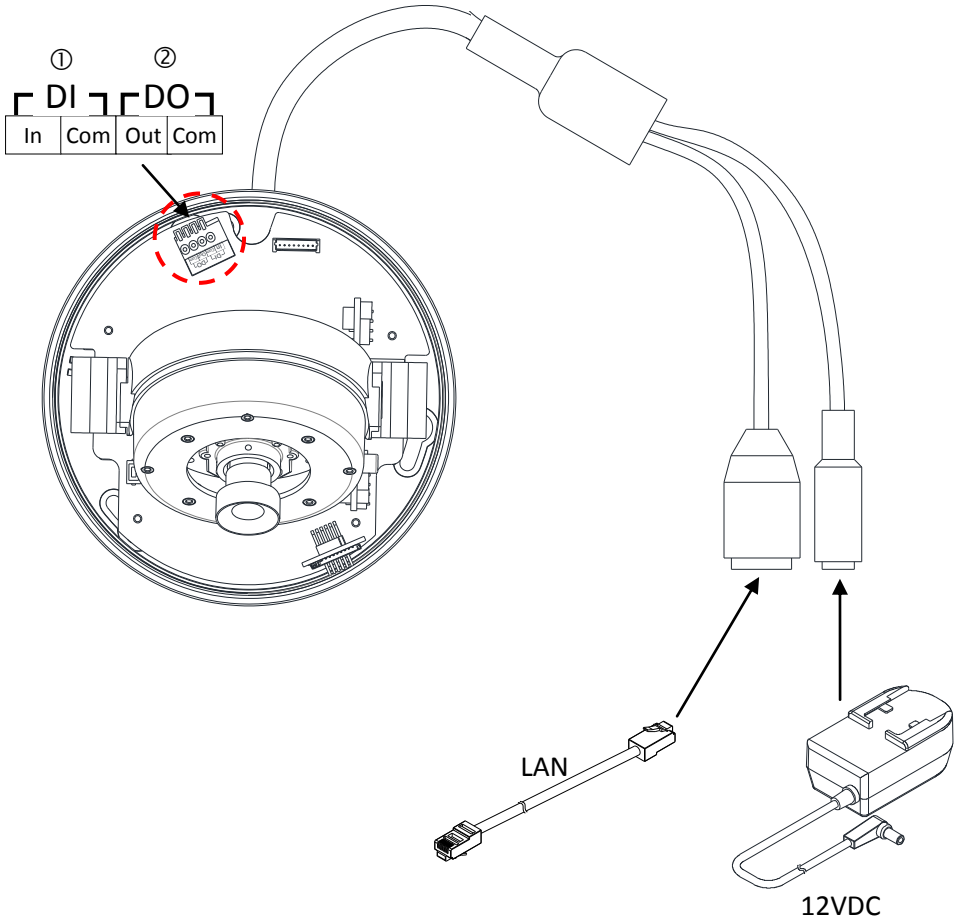
* The lens focus is pre-adjusted, best at 3m distance, when the camera is delivered out of factory. It is recommended not to adjust the lens focus unless it has to be.

4.4. Setting the Image Attribute

Through the camera's webpage, users can configure image settings. The menu of image attribute is available under Video Appearance menu in Setup > Video & Audio > Camera.
The following features can be adjusted: Brightness, Contrast, Saturation, Sharpness and Orientation
For more detailed information, refer to the provided "**PixelPro GXi series Web Page User's Manual".**



5. CONNECTIONS



① Sensor (DI) connection

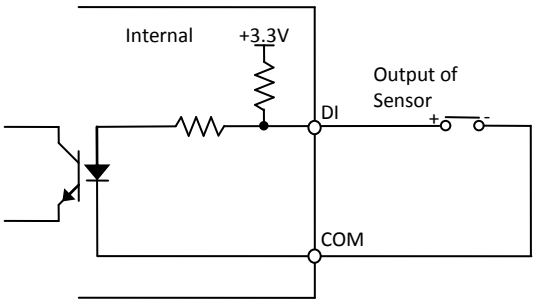
The camera provides 1 channel D/I. It can be connected to either a voltage type sensor or a relay type sensor as the following figures. The interface type can be controlled by web user interface.

Refer to the provided "**PixelPro GXi series Web Page User's Manual"** for more details.

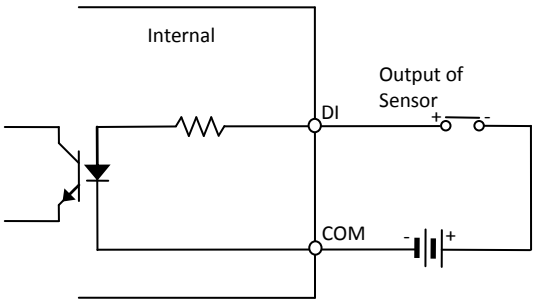
Input voltage range: 0VDC minimum to 5VDC maximum, Max 50mA

Caution

Before connecting sensors, check driving voltage and output signal type of the sensor. Since the connection is different according to sensor type, be careful to connect the sensor. Do not exceed the maximum input voltage or relay rate.



Relay Type



Voltage Type

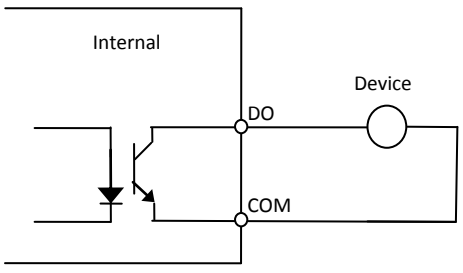
② Alarm (DO) connection

Only the relay type is supported.

Relay Rating: Max 24VDC 50mA

Caution

Do not exceed the maximum relay rating.



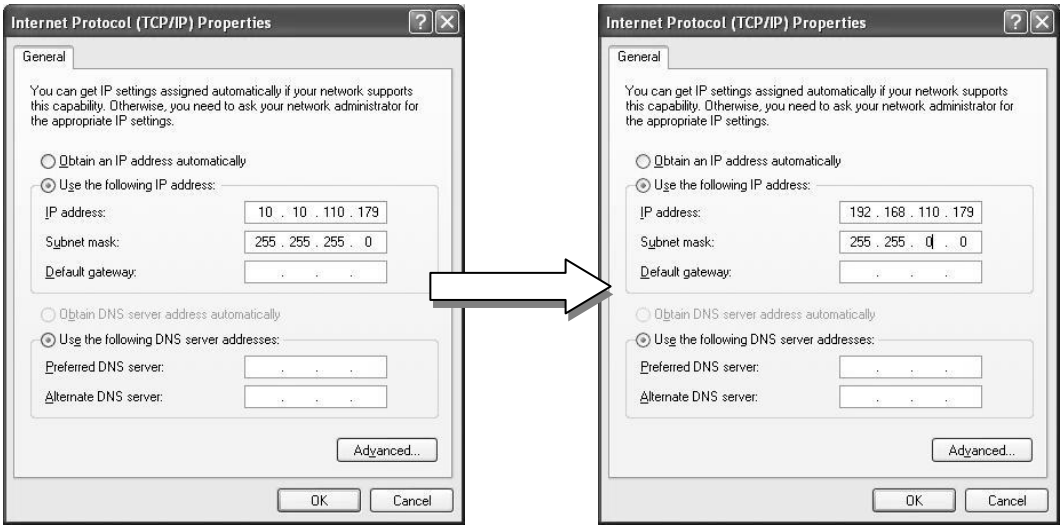
Relay Type

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.

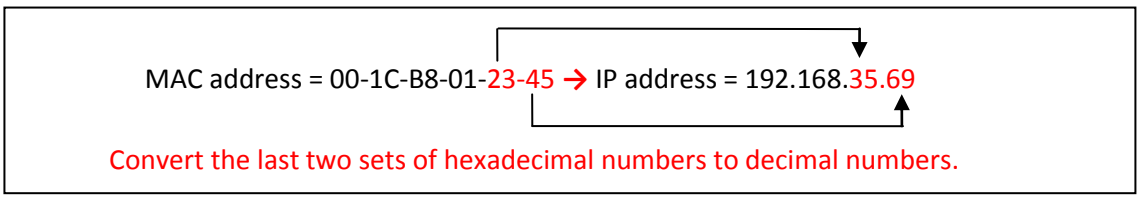
IP address : **192.168.xxx.xxx**
Subnet mask: **255.255.0.0**



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:

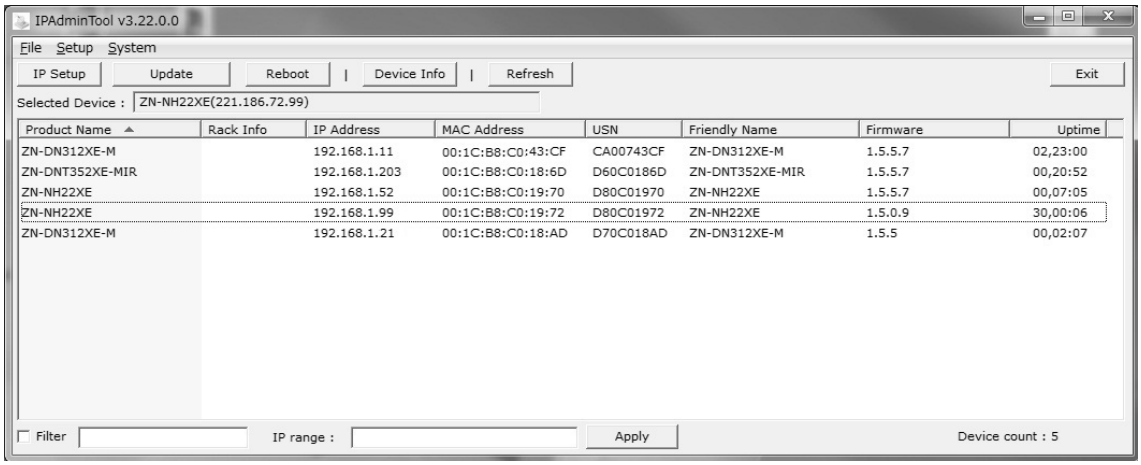
1. Convert the device's MAC address to the IP address. Refer to the Hexadecimal-Decimal Conversion Chart at the end of the manual.
   (The MAC address of the device is attached on the side or bottom of the device.)



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

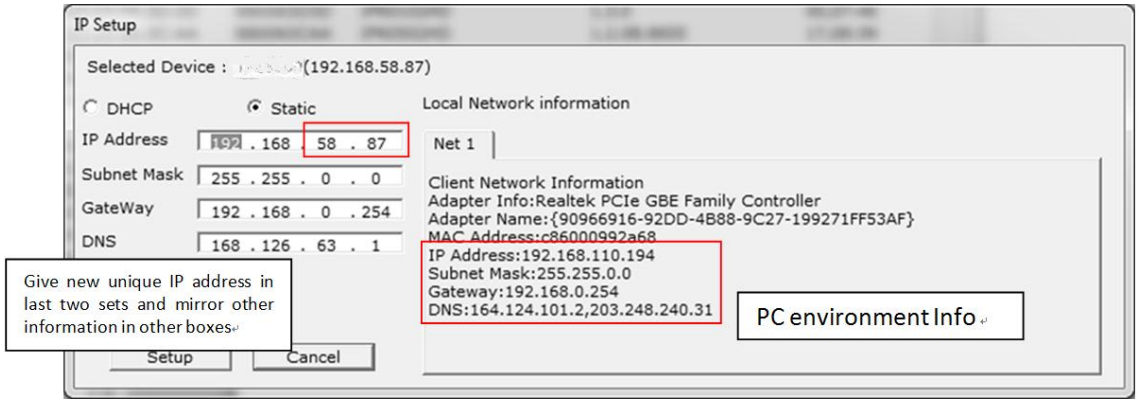
IPAdminTool is a management tool, which automatically scans all of the network products for users to perform administrative tasks, which includes network configurations, firmware update, device reboot, and device organizations.



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.



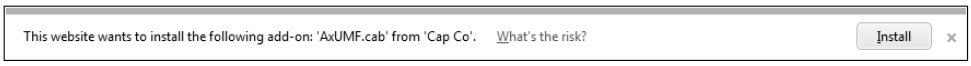
3. In the IP Setup's window, information under "**Local Network information**" displays the user/PC's network area information. Those information need to be incorporated to the IP Address, Subnet Mask, Gateway, and DNS boxes, except the last 2 sets of IP Address, which are to be the unique numbers for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

6.2.1. ActiveX Installation



1. When the browser asks to install the AxUMF software, click "**Install**" to proceed.

2. When Setup installation pop-up window appears, click "**Install**" to proceed with rest of installations.

Note

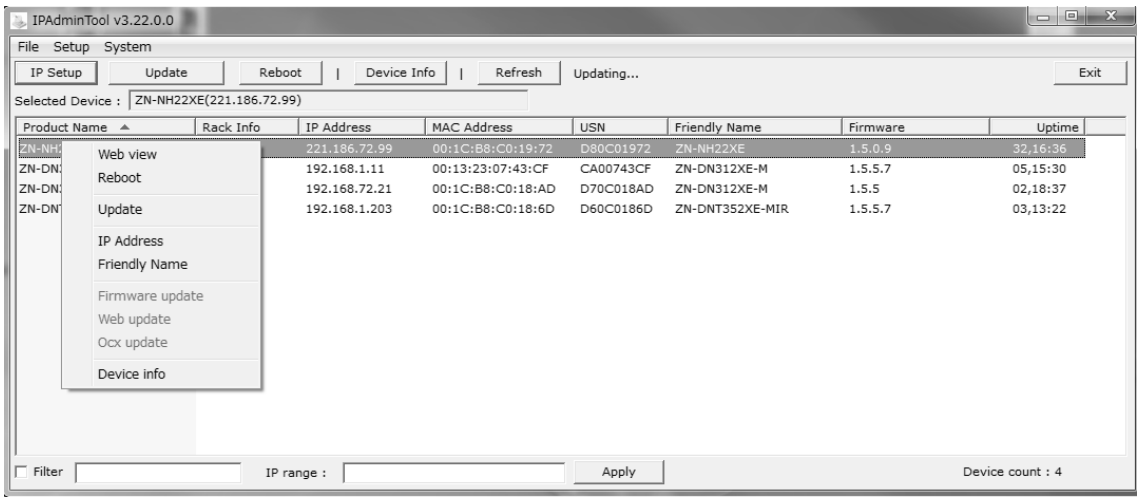
Depending on system OS and Internet Explorer version, installation experience may differ from one another. Figures described above are from Windows 7, Internet Explorer 9 environment.

6.2.2. 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.

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

Perform the following procedures to reset your device:

1. Press the reset button for 2 seconds while the device is in use.
2. Wait for the system to reboot.

Please do not hold for more than 2 seconds. Otherwise, the camera may be switched to its Factory Default settings.

6.4. Factory Default

Resetting the device back to the factory default will initialize all parameters including the IP address back to the factory defaults. To reset back to the factory default:

1. Press the reset button and hold.
2. Release the button after 10 seconds.
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

6.5. Safe Mode

What is Safe Mode?

Your IP camera or encoder could encounter an unexpected occasion such as broken firmware file or uncompleted loading of firmware file during system booting. To restore the device from the occasions, the device provides the emergency firmware as a factory default. Your device will get restarted with safe mode when there is any error on your booting system files.

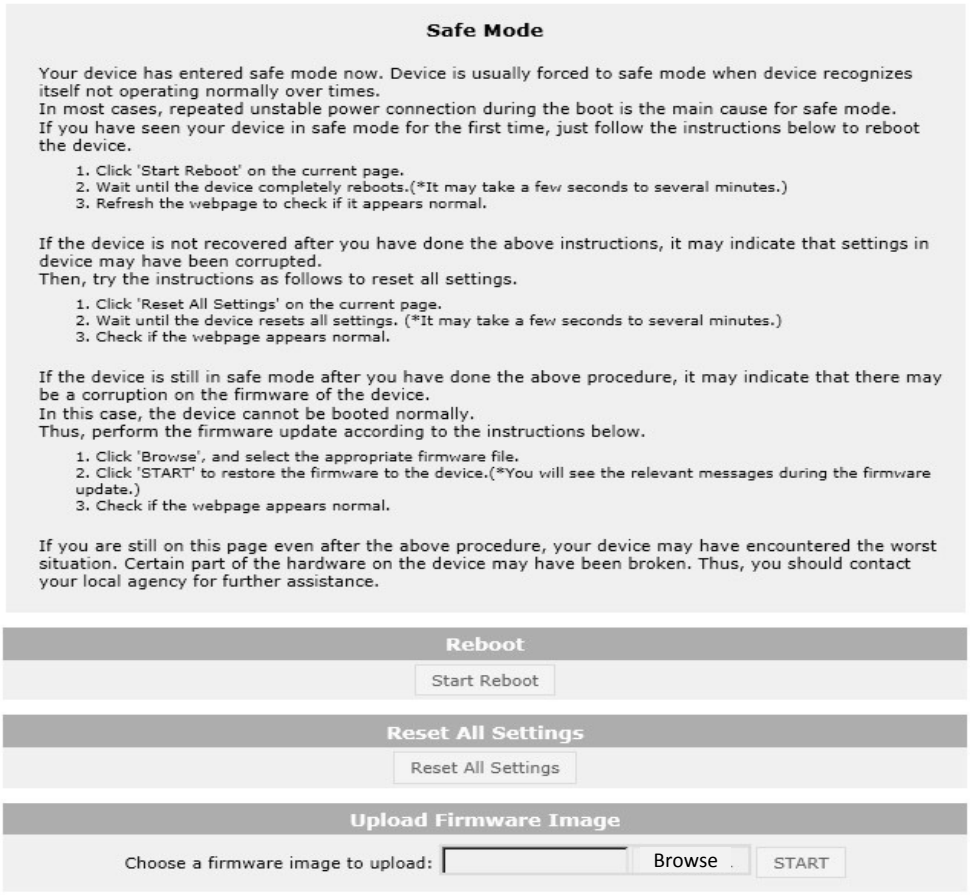
Why does your IP camera or encoder boot in Safe Mode?

Normally, the cause of 'safe mode' is classified into two types.

* When the power supply is unplugged in the middle of system booting.
* When the firmware files required for system booting are damaged.

IMPORTANT: Your device will turn into the safe mode when it fails to boot certain times.

How to recover your system from Safe Mode



The messages above will appear on the webpage when your device has been rebooted in **'safe mode'**. Then, you should follow the instructions on the webpage according to the steps in a row.

Note

There are two types of firmware files when you receive a firmware folder from your vendor. When you need to update the firmware as the final resolution in case your device is in safe mode like above, ensure that the firmware means the firmware file for the device with the file name as GXi-V.1.X.X.X-~~~.enc.

Note

There is another method to update firmware, which is using IPAdminTool.
Please refer to **'IPAdminTool User's Manual.pdf'** for the detailed procedure.

Note

If your device is still at safe mode after trying to update firmware, please contact your local agency to get further assistance.

* Firmware update for safe mode itself: If you want to update the firmware for safe mode, you should upload a firmware file with the following file name: GXi-SAFEMODE.~~~.enc.

APPENDIX (A): SPECIFICATIONS

Summary

Camera Module		
CMOS	Image Sensor	1/2.9” 1080p CMOS
	Effective Pixels	1920x1080
	Scanning system	Progressive scanning
ELECTRICAL	Resolution	1920 x 1080
	Min. Illumination	Color: 1.0 lux, BW: 0.001 lux (DSS ON)
	AGC Control	Auto
Lens		4.0mm F2.0
Day & Night		Digital Day & Night
Wide Dynamic Range		Digital WDR
Video		
Compression Format		H.264 and MJPEG Selectable per Stream
Number of Streams		Dual Stream, Configurable
Resolution		1920x1080, 1280x720, 1120x630, 960x540, 800x450, 640x360, 480x270, 320x180
Compression FPS		30fps@1080p
Motion Detection		Built-in
Burnt-in Text (Digital)		Video stream overlay text
Output		-
Audio		
Input/output		-
Compression Format		-
Function		
Digital Input/output		1/1 channel
RS-485		Not supported
Network		10/100 Base-T
Power over Ethernet (PoE)		Supported
Protocol		QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1
SD Slot		1 microSD slot (up to 64GB) ※ microSD Card is not included (Recommend Class 4 and higher for HD recordings)

Electrical Characteristics

Power Source	12VDC / PoE
Power Consumption	2.64W @ 12VDC
Video Output	-
Audio Input	-
Audio Output	-
D/I	Max 50mA@5VDC, TTL level, VIL=0.8V(max), VIH=2.0V(min)
D/O	Max 50mA@24VDC On-state resistance: 50 Ω (max continuous)

Environment Condition

Operating Temperature	Operating Range 0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity	Up to 85% RH

Mechanical Condition

Material	Plastic (ABS)
Color	Ivory
Dimension	109.8 (Ø) x 95(H) mm
Weight (Approx)	300g

* The specifications above are subject to change without any prior notice.

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 of power the device. However, 12.95W is the available power, as some power gets lost in the cable. The updated IEEE **802.3at-2009 (PoE+)** standard allows up to 25.5 W (Max 34.2 W) of power the device.
PoE has advantages over conventional power in such places where AC powers cannot be reached or expensive to wire.

Note

For proper activation of PoE, the cable must be shorter than 100m and conform the PoE standard.

PoE compatibility

With non-Power over Ethernet (non-PoE)
When it is connected with non-PoE, the power adaptor should be connected.

With power adaptor
Connecting both PoE 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 PoE. 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 Comparison

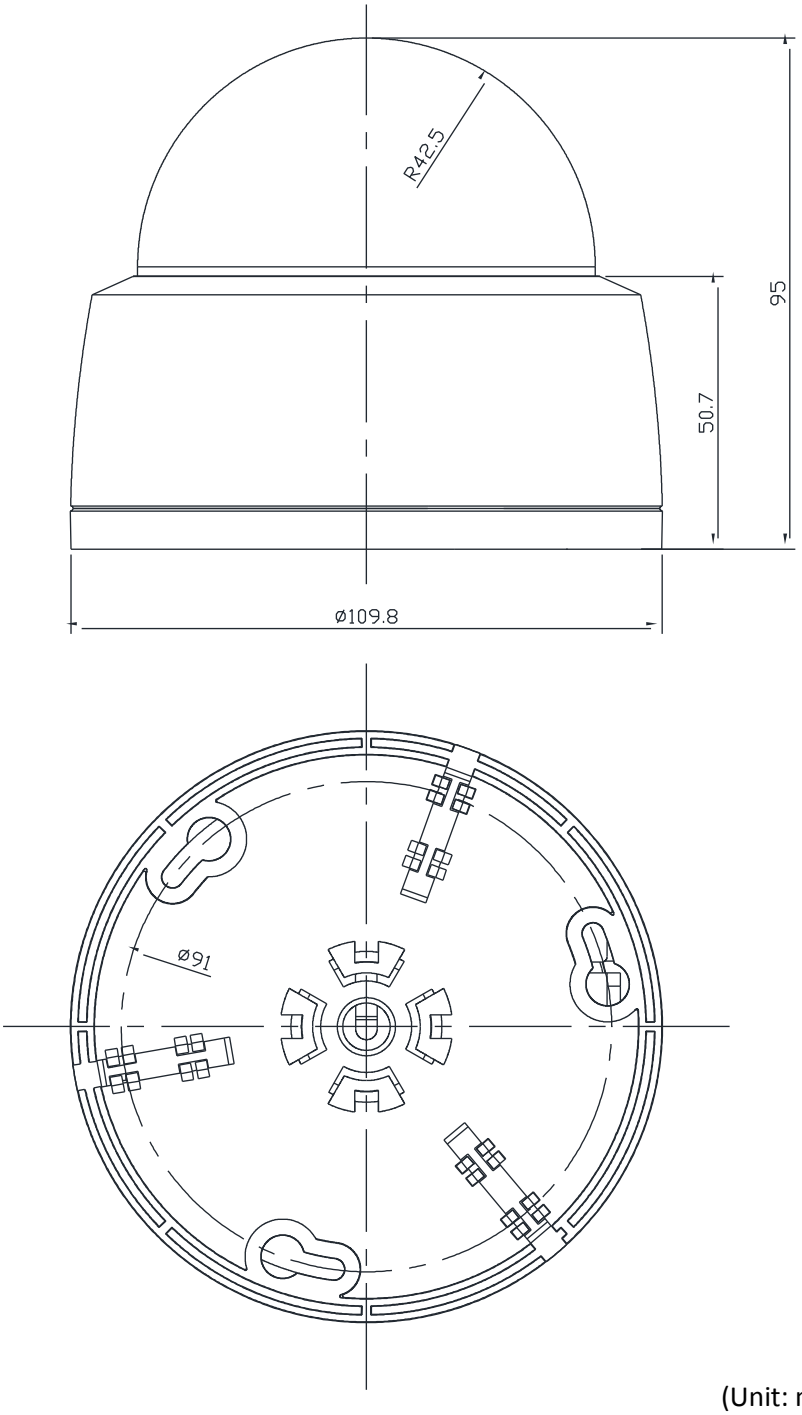
The PoE Property supported by the device is **802.3af**.

Property	802.3af	802.3at
Available Power	12.95 W	25.50 W
Max. Power by PSE	15.40 W	34.20 W
Max. Current	350 mA	600 mA
Recommended Cable	Category 5 and above	Category 5e and above

Note

Disconnecting PoE does not 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 converting the MAC address of the device to the IP address.

Hex	Dec
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	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.03	09/04/2013	First release version
03-2014-A	03/28/2014	Correct explanation for PoE