DIGITAL WATCHDOG
Everything's Digital

MEGAPIX DWC-MPA20M

IP 2.0MP Armored Vandal Dome Camera

Before installing and using the MEGAPIX Camera, please read this manual carefully.
Be sure to keep it handy for future reference.

12052011

PRECAUTIONS

- Do not open or modify.
- Do not open the case except during maintenence and installation, for it may be dangerous and can cause damages.
- Do not insert objects into the unit.
- Keep metal objects and flammable substances from entering the camera. It can cause fire, short-circuits, or other damages.
- Be careful when handling the unit.
- To prevent damages, do not drop the camera or subject it to shock or vibration.
- Do not install near electric or magnetic fields.
- Protect from humidity and dust.
- Protect from high temperature.
- Be careful when installing near the ceiling of kitchen or a boiler room, as the temperature may rise to high levels.
- Cleaning:
  To remove dirt from the case, moisten a soft cloth with a soft detergent solution and wipe.
- Mounting Surface:
  The material of the mounting surface must be strong enough to support the camera.

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to Provide reasonable protection against harmful interference. when the equipment is operated in a residential environment. This equipment generates, uses, and radiates radio frequency energy; and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications.

WARNING: Changes or modifications are not expressly approved by the manufacturer.

TABLE OF CONTENTS

FEATURES 4
INSIDE THE BOX 5
PARTS 6
DIMENSIONS 7
NETWORK CONNECTION 8
INSTALLATION 10
MEGAPIX CAMERA SETUP 14
MEGAPIX WEBVIEWER 18
SPECIFICATIONS 37
TROUBLE SHOOTING 38
MEMO 41
WARRANTY 42
LIMITS & EXCLUSIONS 43

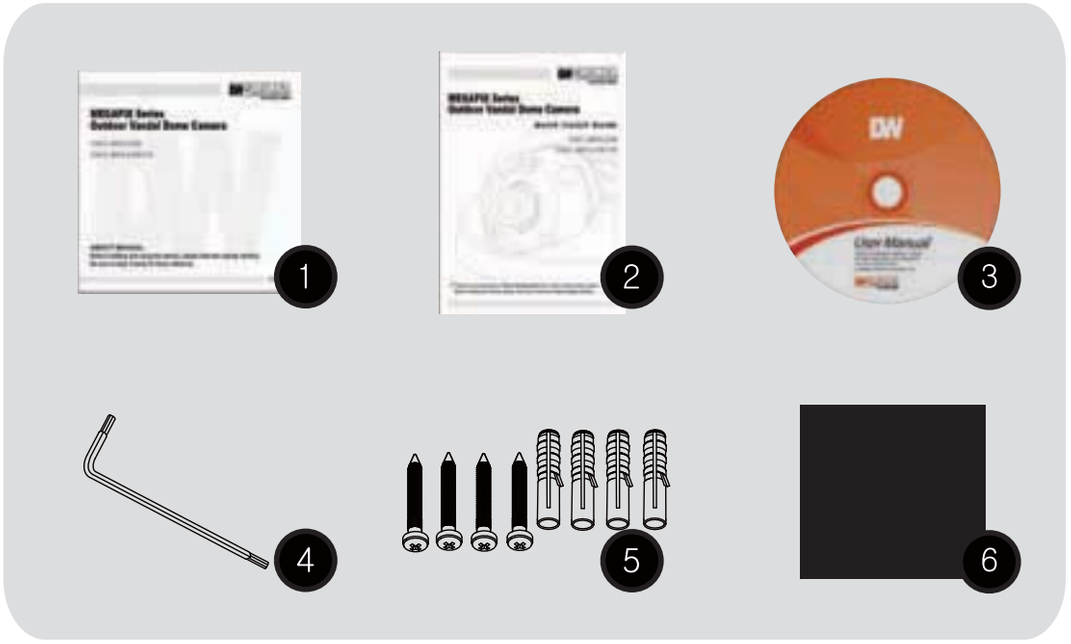
FEATURES*

DWC-MPA20M / DWC-MPA20MTIR

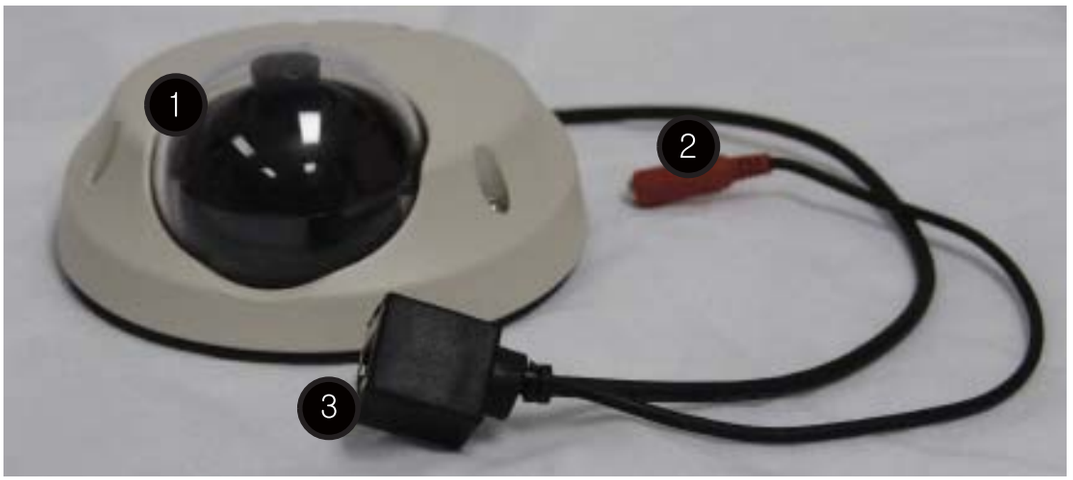
- Rugged and Compact Design
- 1/2.7” CMOS Sensor
- Highest Resolution 2 Megapixels
- True Day & Night (**DWC-MPA20MTIR Only**)
- 15 IR LEDs (**DWC-MPA20MTIR Only**)
- 4.0mm Fixed Lens
- Triple Codec H.264, MPEG4, MJPEG
- Dual Streaming
- 1080P (1920 X 1080) at 30fps
- Programmable Privacy Zones
- Remote Client Setup & Upgrade
- Digital Zoom
- UPnP Support
- ONVIF Support (V1.02)
- FTP Upgrade Support

INSIDE THE BOX*

The following items are included with the MEGAPIX camera.

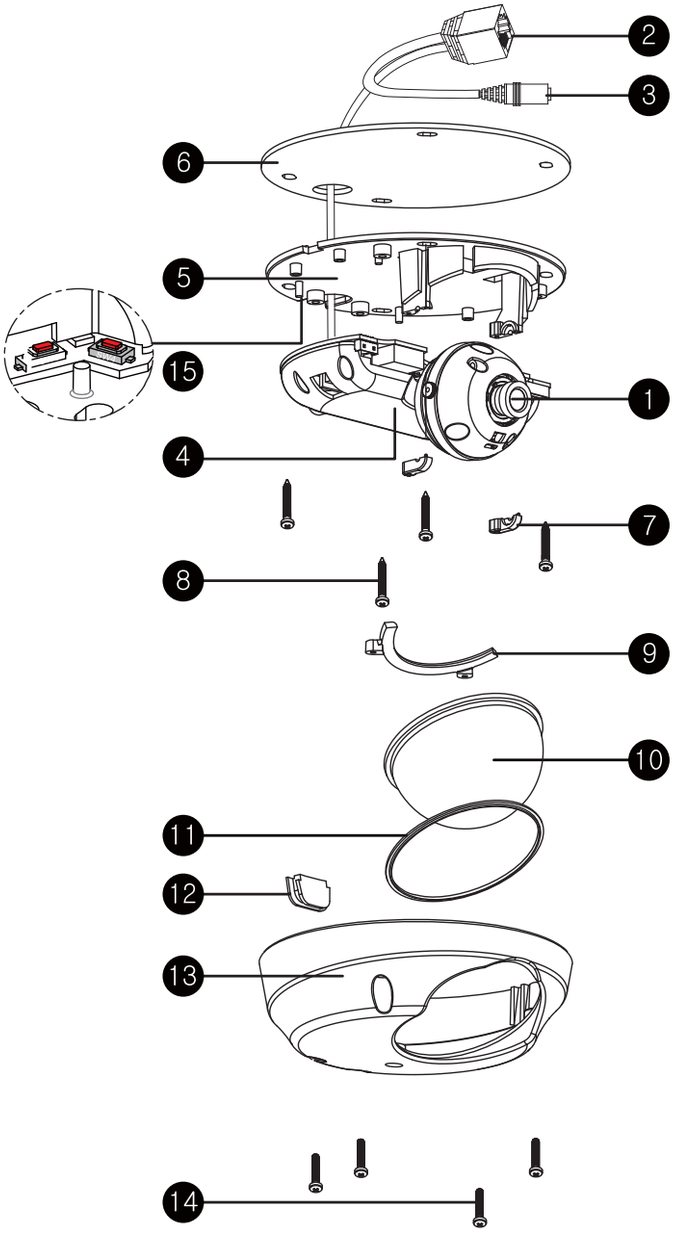


1. User Manual
2. Quick Start Guide
3. CD (Manual & Software)
4. L-Wrench (T10-M3X15.0)
5. 4 Screws & 4 Dry Wall Anchors
6. Mounting Template



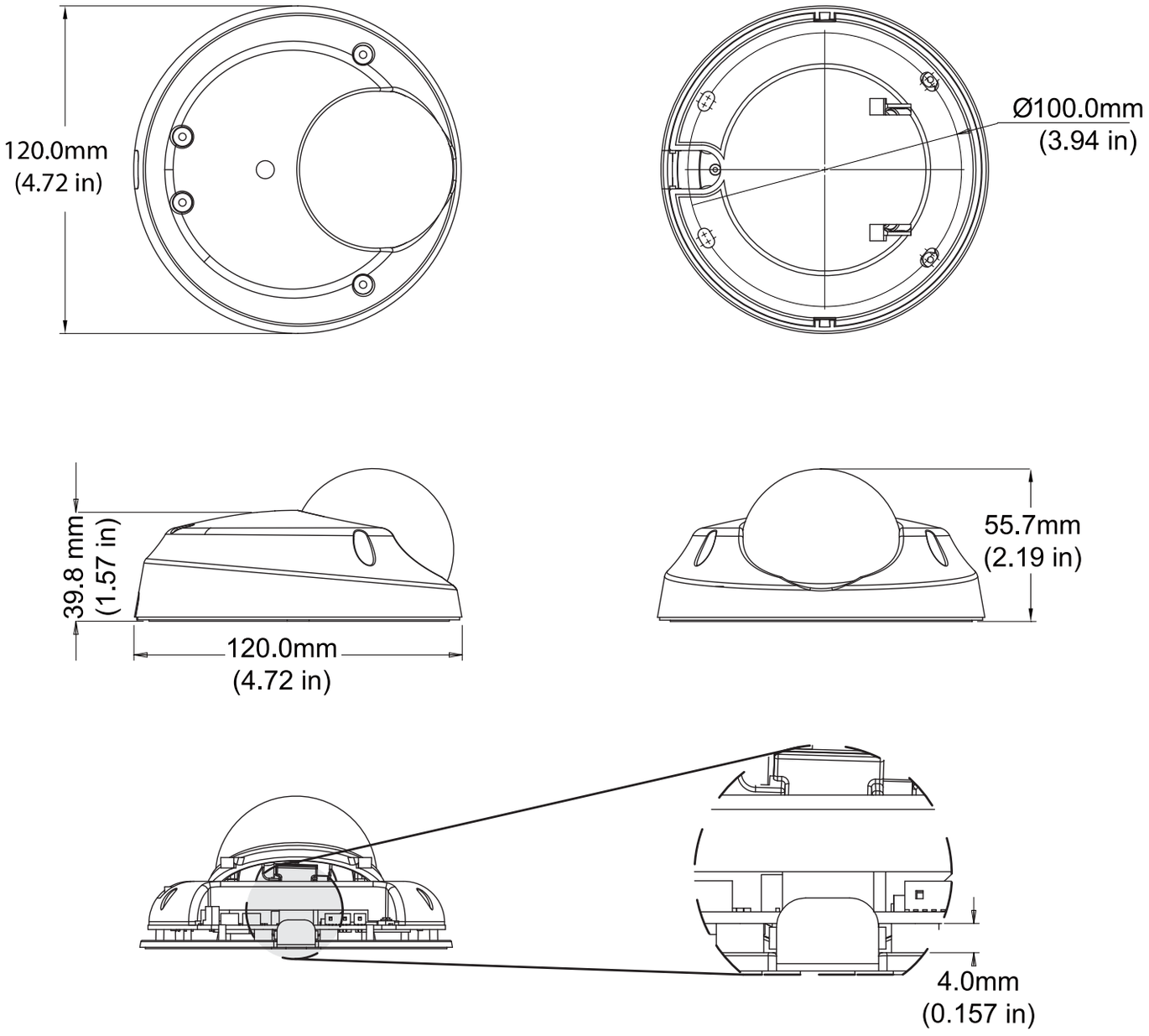
1. Camera Input Sensor
2. Power Supply DC12V
   MAX 4.8W, 400mA
   MAX 5.7W, 475mA [IR]
3. RJ45 Connector

PARTS*



1. Lens
2. RJ45 Cable
3. DC Cable
4. IP Module
5. Bottom
6. Bottom Pad
7. Gimbal Tilt Stopper
8. Mounting Screws
9. Dome Cover Support
10. Dome Cover
11. Gasket Rubber
12. Upper Case Rubber
13. Upper Case
14. Assembly Screws M3.0 X 15.0
15. FA Buttons

DIMENSIONS*


120.0mm
(4.72 in)
Ø100.0mm
(3.94 in)
39.8 mm
(1.57 in)
120.0mm
(4.72 in)
55.7mm
(2.19 in)
4.0mm
(0.157 in)

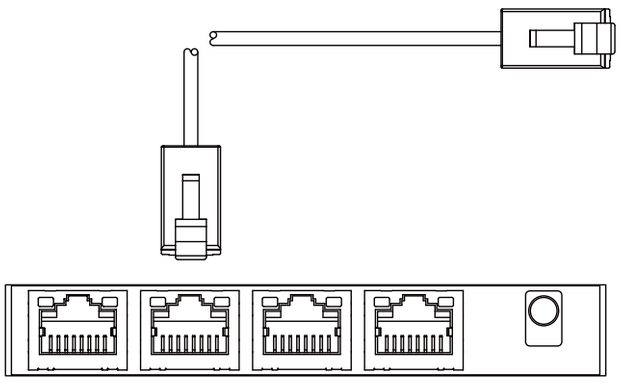
NETWORK CONNECTION*

Two Options

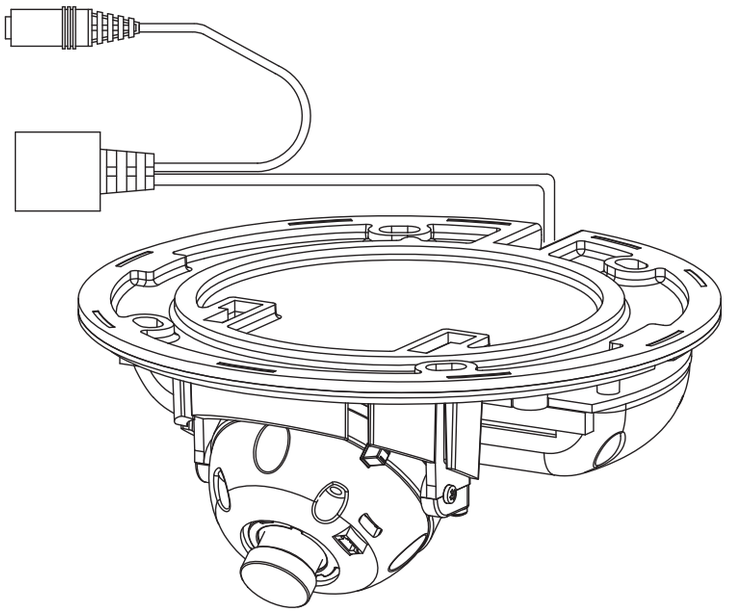
Use a PoE-enabled switch to connect data and power through a single cable and begin viewing and recording images instantly. A non-PoE switch will require an adaptor for power transmission.

1 *Using a PoE-Enabled Switch*

The MEGAPIX Camera is PoE-compliant, allowing transmission of power and data via a single ethernet cable. PoE eliminates the need for the different cables used to power, record, or control the camera. Follow the illustrations below to connect the camera to a PoE-enabled switch using an ethernet cable.

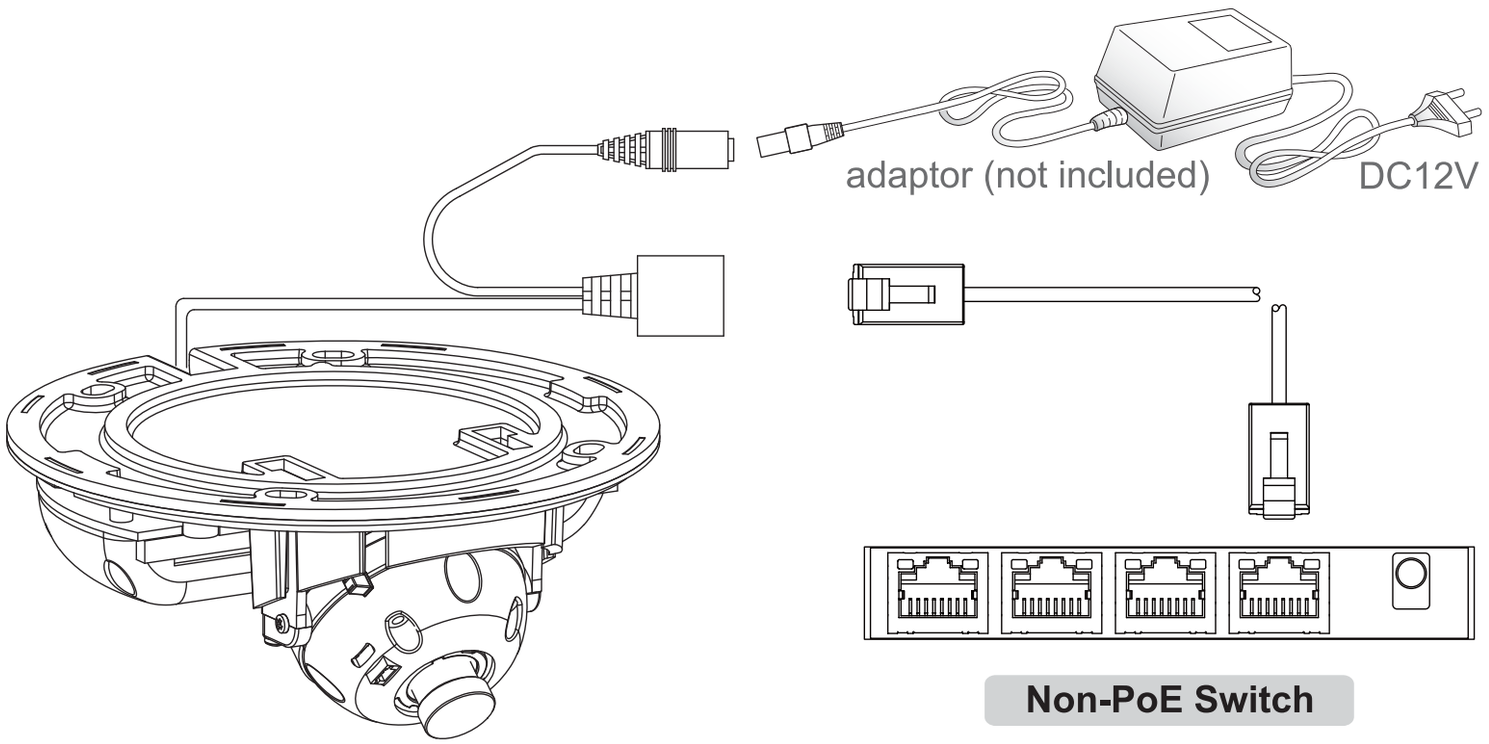


PoE Switch



2 *Using a Non-PoE Switch*

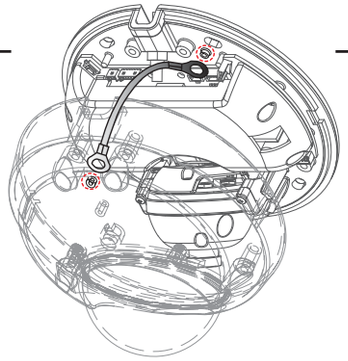
If a PoE-enabled switch is not used, use a power adaptor for power transmission and a non-PoE switch for data transmission. Follow the illustrations below to connect the camera without a PoE-Enabled Switch.



INSTALLATION*

1. Using the supplied L-Wrench (T10-M3X15.0), loosen the four security screws. Carefully remove the dome cover.

2. As shown in the diagram, the MEGAPIX camera comes with a safety wire attached. Please see the description below.



Safety Wire: The Safety wire will secure the dome cover to the camera module during the installation process. To remove the safety wire, remove the screws that are keeping the wire in place. We recommend that you use the safety wire.

INSTALLATION*

3. Use the camera mounting template or your camera to mark the holes as required.
4. Drill holes into the drywall and insert the drywall mounts into the holes.
5. Pull wires through and make connections. Connect the RJ45 to a CAT5 cable or a power adaptor. Refer to **“Network Connections”** for further explanation.

INSTALLATION*

6 Mount the camera to the wall or ceiling, using the screws provided with the camera.

7 Adjust the camera pan and tilt.

Check the LED light. Green light flickers for booting. Red light turns on when booting is complete.

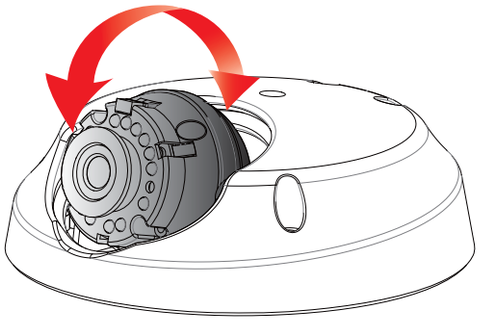
8 Tighten the four locking screws with the L-Wrench.

ADJUSTING THE 2-AXIS GIMBAL*

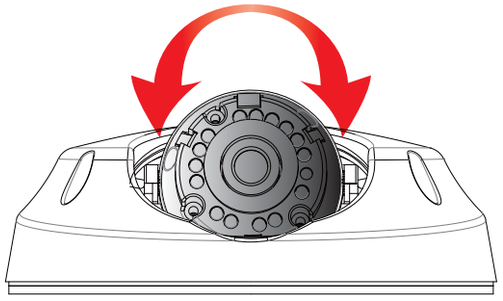
The Gimbal mechanism yields maximum rotation and placement as shown below.

1. Y-Axis: 90˚ Tilt for DWC-MPA20M
   75˚ Tilt for DWC-MPA20MTIR

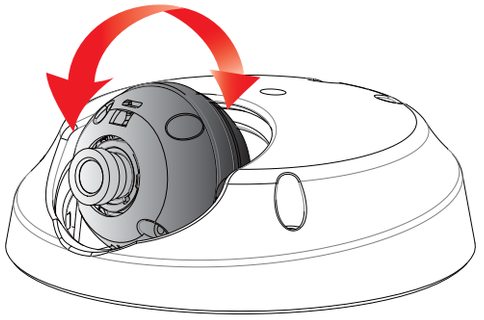
2. X-Axis: 360˚ Pan



75º Tilt for MPA20MTIR



360º Pan



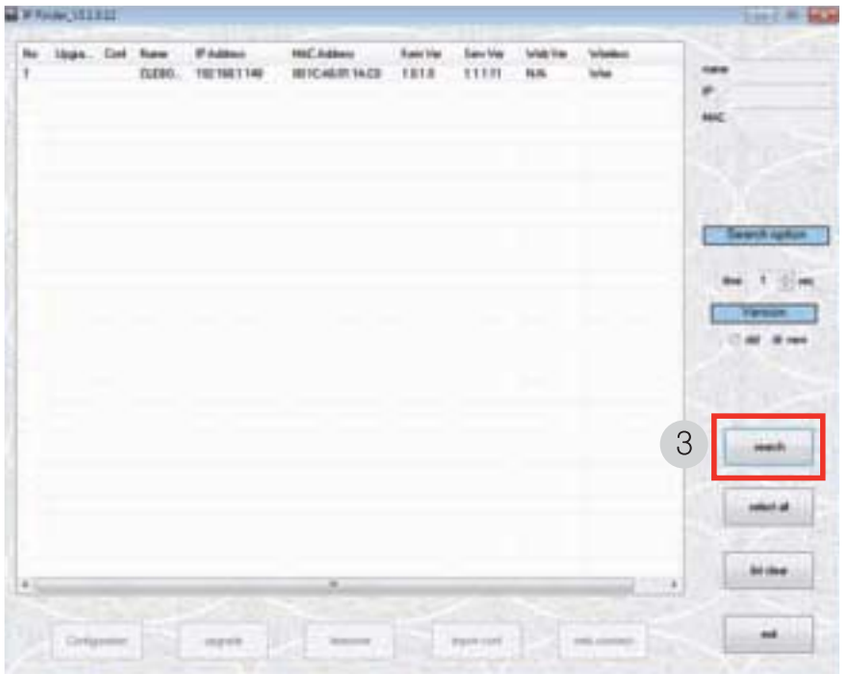
90º Tilt for MPA20M

Do not over rotate the lens. Doing so will damage the camera lens module.

MEGAPIX CAMERA SETUP*

Installing IP Finder Software

IP Finder searches for all the available Digital Watchdog devices currently connected to your network.

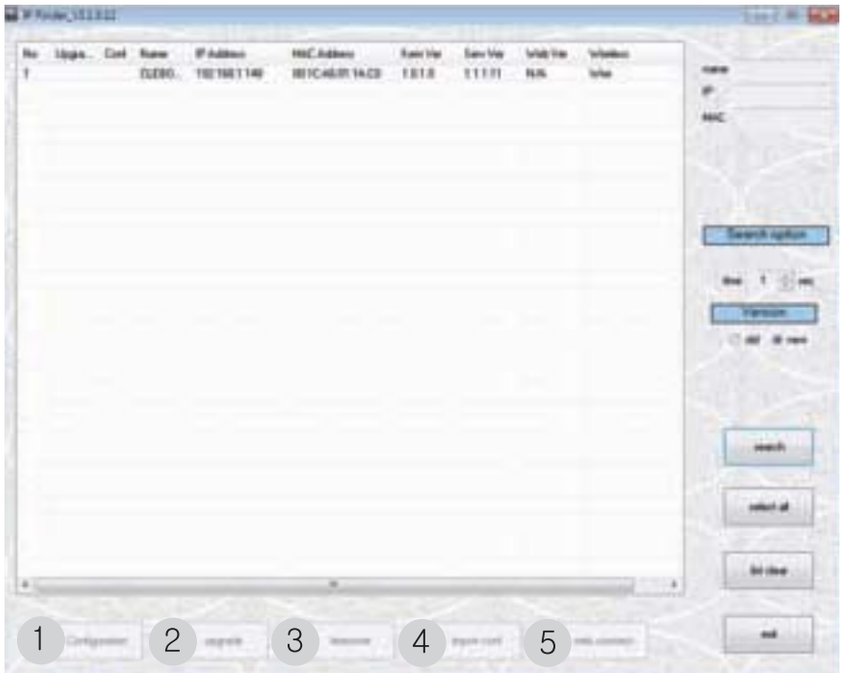


1. Install **IP Finder** to find the MEGAPIX Camera on the local network. The software can be found on the included User Manual CD. Run **IP Finder** and install onto your PC.
2. When setup is complete, launch **IP Finder**.
3. To find your MEGAPIX camera, click **Search** button. Your MEGAPIX camera will appear as "**MPA20M**."
4. Select the desired device and click **Web Connect** to access the camera directly via Internet Explorer.

For IP Finder to search and find your MEGAPIX camera, make sure to install it to a computer on the same network segment (subnet mask) as the camera.

Using IP Finder Software

Use IP Finder to change the basic settings of your MEGAPIX Camera or to connect to your MEGAPIX Camera.



1. **Configuration**: Change the device's connection type and/or IP address information. Please see the next page for further explanation.
2. **Upgrade**: Upgrade the device's firmware.
3. **Timezone**: Change the timezone.
4. **Import Config**: Import setup configuration for a specific device.
5. **Web Connect**: Connect to the camera through Internet Explorer.

Using IP Finder Software

Use IP Finder to set the connection type and the IP address information for your MEGAPIX Camera.

1. **DHCP**: Select DHCP to access the camera within the same internal network.
2. **Static IP**: Select Static to connect to the camera from an external network
3. **Use DDNS**: Check this option to use DDNS service.
4. **Port**: Displays the port numbers that are required for communication. User can use IP Finder change other basic settings for the MEGAPIX camera. (The menu will be different depending on the model.)

If you decide to change the camera's IP, make sure to write down the camera's MAC Address for identification in the future.

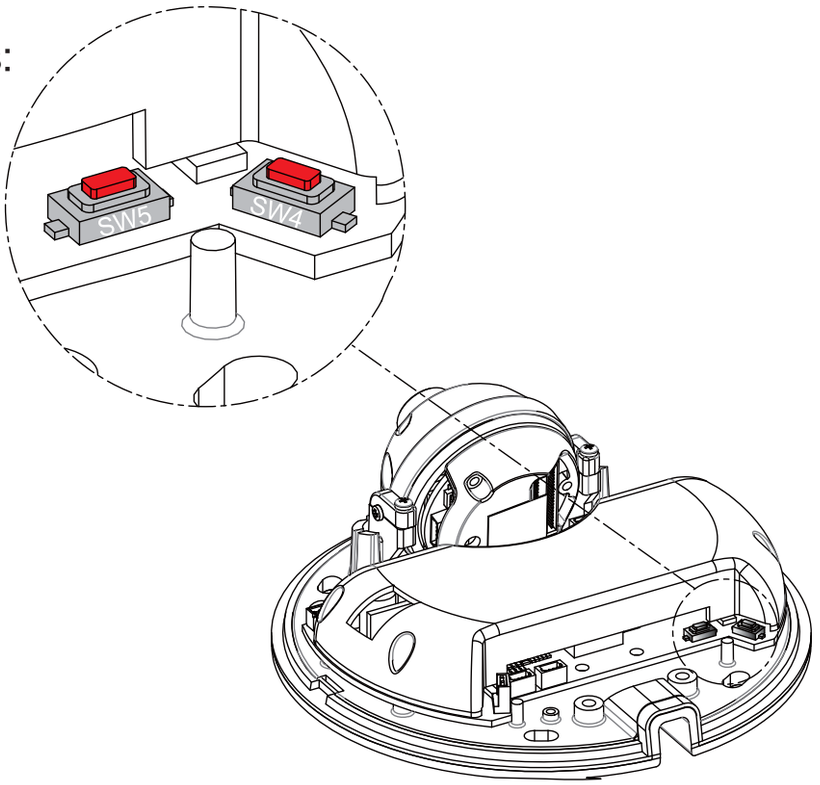
MEGAPIX CAMERA SETUP*

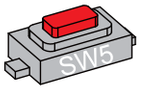
Resetting the Camera

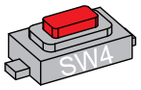
Pressing SW5 while holding down SW4 will initialize all environmental variables to factory default. Previous setup for IP default, time, etc will be deleted. If a system IP address is lost, reset the camera back to factory default.

The following are the default network settings:

IP Mode	DHCP
IP Address	192.168.1.123
Subnet Mask	255.255.255.0
Gateway	192.168.1.123
Command Port	7000
HTTP Port	80
Live Port	7001



SW5 [Camera Reboot] 

SW4 [Factory Default] 

Frequent use may cause system error.

MEGAPIX WEBVIEWER*

Remote Video Monitoring

Monitor and configure the MEGAPIX camera through a built-in webviewer.

1. Type the IP address of the camera on the Internet Explorer window.
   Example: http://192.168.1.123 (Factory Default)
2. Enter **Username** and **Password**.
   Username: admin / Password: admin
3. The web browser will ask to install **Active-X Control**. Once it has been installed, Internet Explorer will display video images from the camera.

First Stream & Second Stream

Configure two different stream settings for monitoring and recording.

1. Click **Setup** to adjust the two available stream settings: First Steam and Second Stream.
   The two streams can differ in Resolution, Compression Type, Data Transfer Speed, and Framerate.
   Second Stream is used to record on Motion Detection.
2. On the main monitoring page, user can view the camera with the First Stream settings or the Second Stream Settings. Below the display screen, click on the **First Stream** and **Second Stream** buttons to view the different camera settings.

MEGAPIX WEBVIEWER*

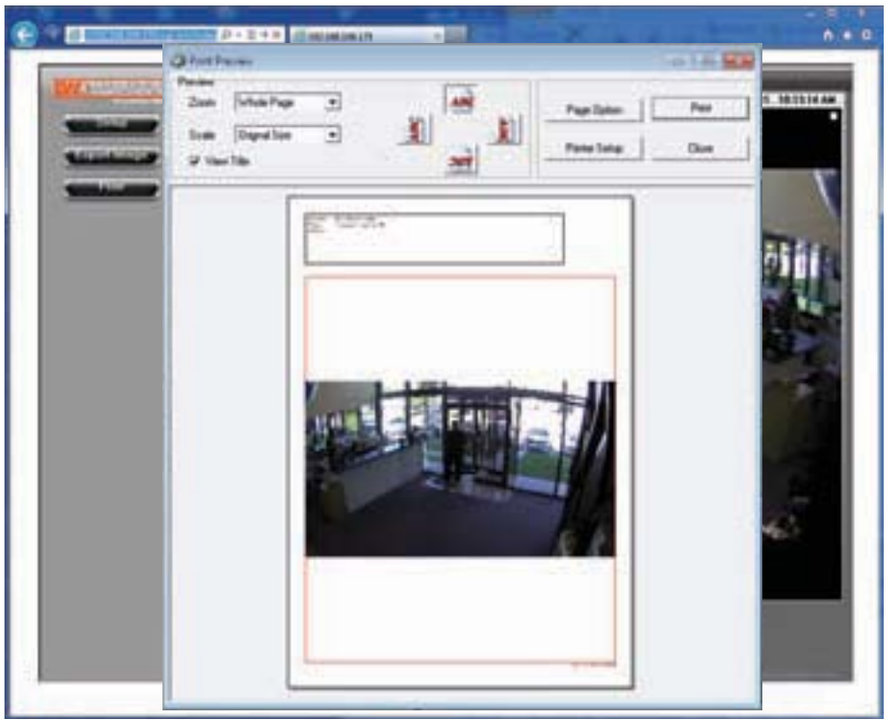
Export Image

Export a screenshot of the current live video to your computer.

1. Click Export Image button located on the left. Save As window will appear.
2. Select the folder you wish to Save In and type in a File Name.
3. Click Save button and the screenshot will be saved.

Print Image

Print a screenshot of the current live video.

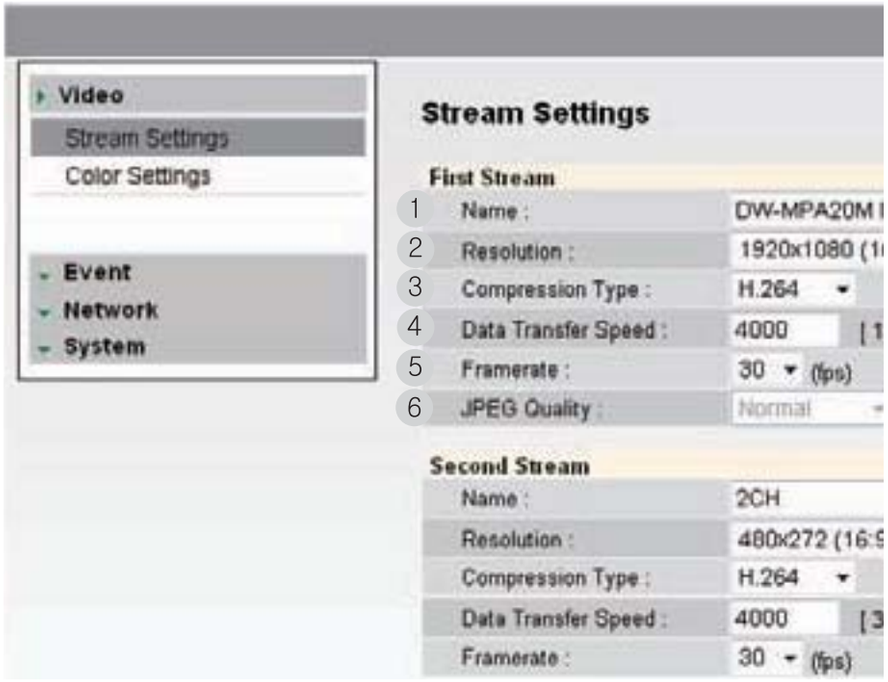


1. Click **Print** button, and the **Print Preview** window will appear.
2. Scale the size of the screenshot or adjust the orientation of the screenshot.
3. To print information about the screenshot, select **View Title**. To add a memo for the screenshot, click **Page Option**.
4. Go to **Printer Setup** to select the printer and manage the printer properties.
5. Select **Print** to print the page, or **Close** to cancel the print.

MEGAPIX WEBVIEWER*

Setup

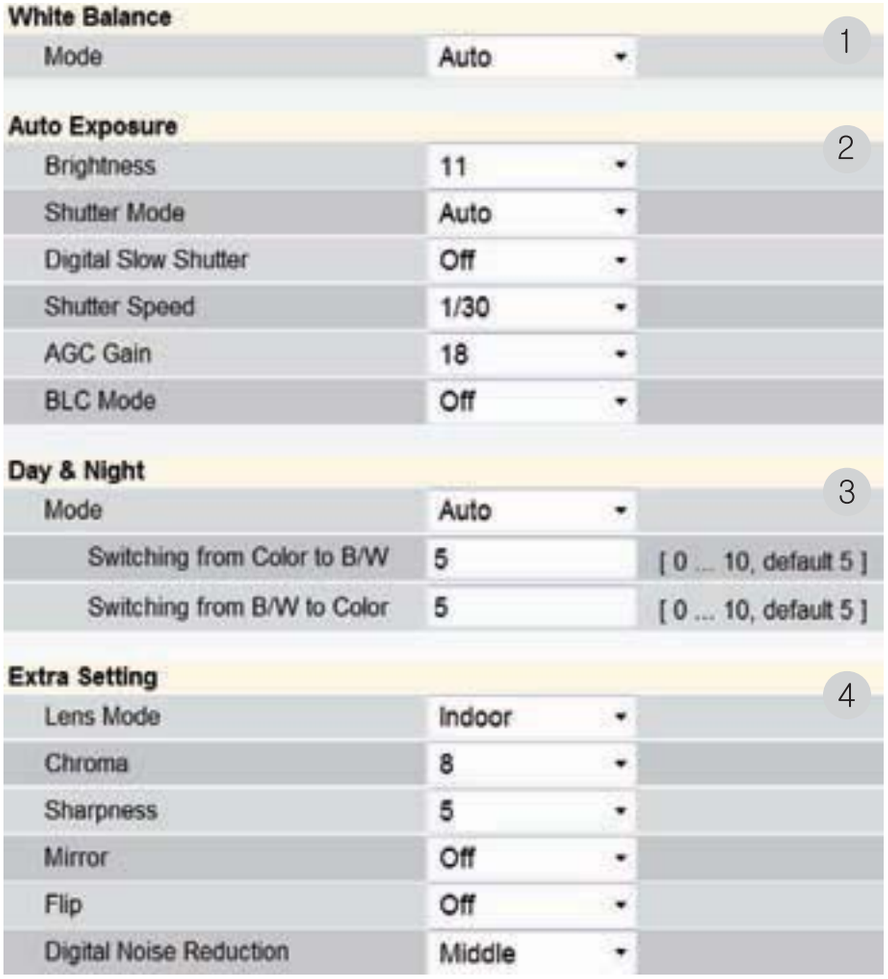
Video > Stream Settings



1. **Name**: Set a distinguish name to each stream to identify each one of them.
2. **Resolution**: Set Resolution for each stream. The better the resolution of the video, the more bandwidth it will require to stream images.
3. **Compression Type**: Select the type of compression to use when outputting the video.
4. **Data Transfer Speed**: Set encoding bitrate if H.264 or MPEG4 compression type is selected.
5. **Framerate**: Set from 0fps to 30fps.
6. **JPEG Quality**: Set MJPEG image quality. This is only available when the compression is set to MJPEG. The higher the quality, the more bandwidth will be required to stream the image.

Setup

Video > Color Settings



The RECOMMENDED COLOR SETTINGS are indicated on the image to the left. This is also the factory default settings.

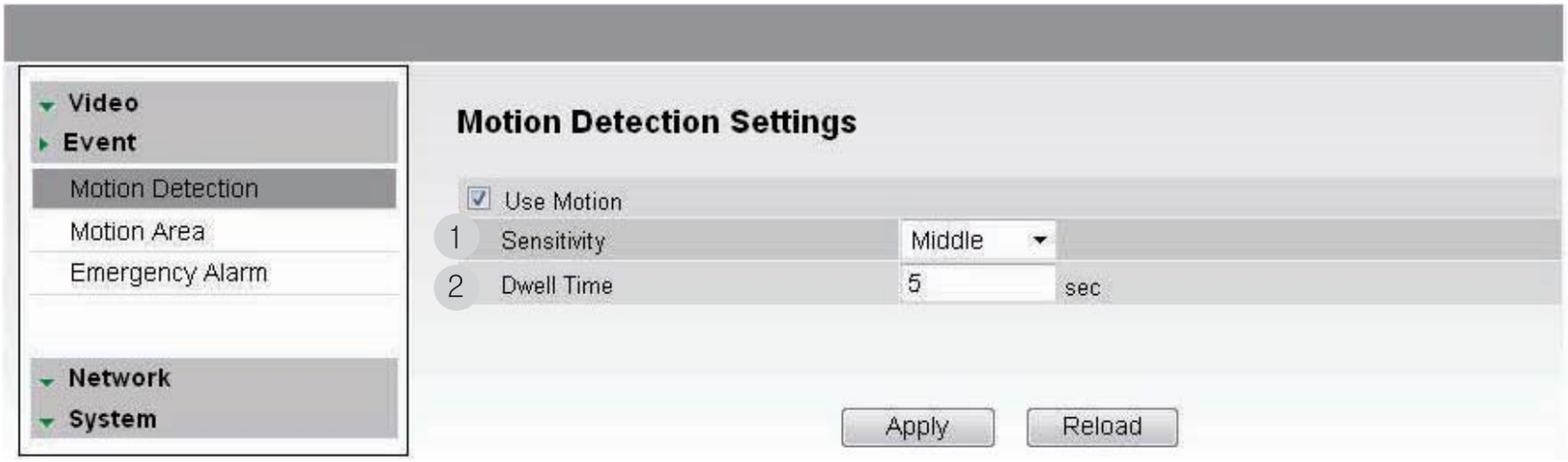
Adjust the Color Settings for your MEGAPIX Camera.

1. **White Balance**: Also known as Color Balance. This gives the camera a reference to “true white.” Select from Auto, Auto_H, Auto_L, or Preset.
2. **Auto Exposure**: Set brightness, Shutter Mode, Digital Slow Shutter, Shutter Speed, AGC Gain, and BLC Mode.
3. **Day & Night**: Set the mode to Night, Day, or Auto. If set as Auto, set a desired Color to B/W Level and B/W to Color Level.
4. **Extra Setting**: Set Lens Mode, Chroma, Sharpness Mirror, Flip, and Digital Noise Reduction.

MEGAPIX WEBVIEWER*

Setup

Event > Motion Detection



The motion detection feature allows the MEGAPIX camera to detect motion and trigger an alarm.

To set the camera to send e-mail notifications for every motion triggered alarms, see PAGE 34.

1 **Sensitivity**: Select from Low, Middle, or High.

2 **Dwell Time**: When a motion is triggered, the camera can be set to record for a certain period of time. Dwell Time can be set up to 60 seconds.

Setup

Event > Motion Area

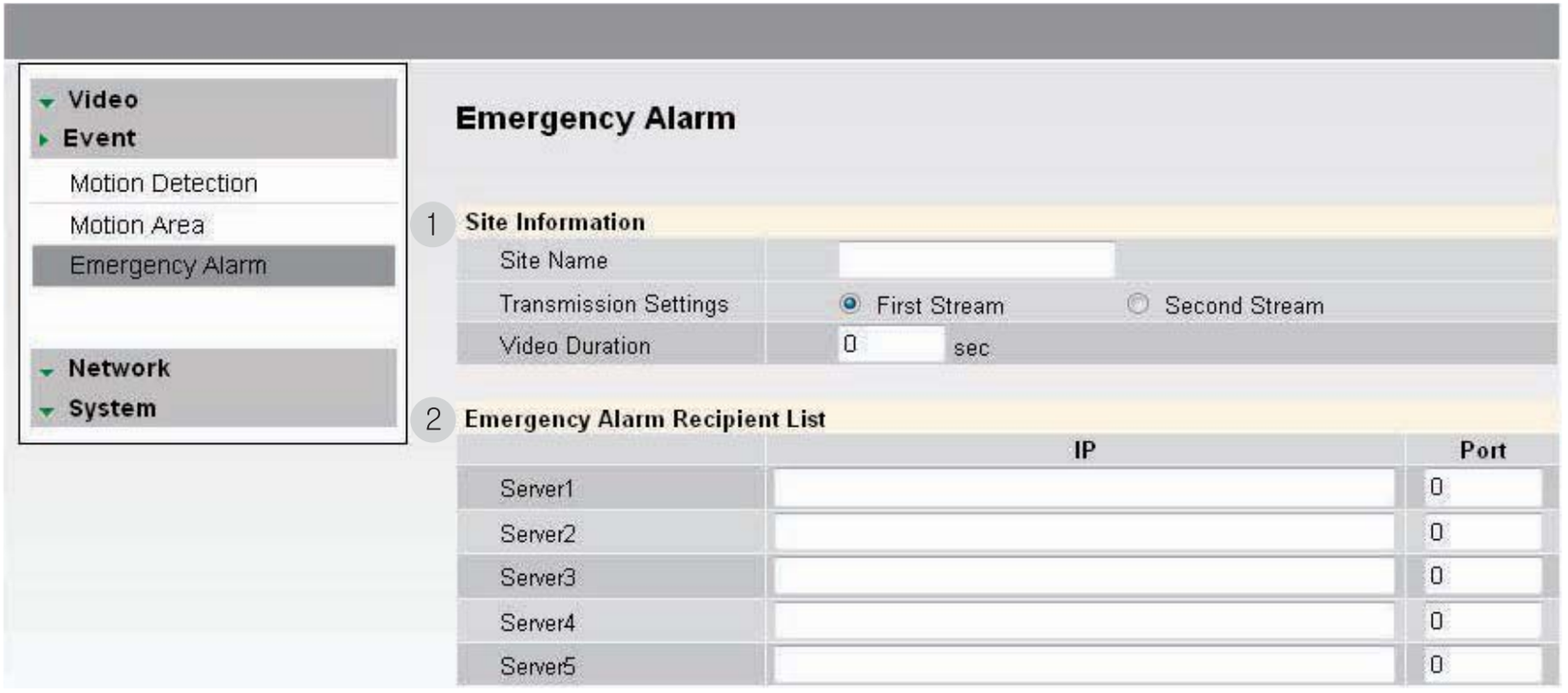
Hold left mouse button and drag the mouse pointer to select the motion area, or use **Set All** button to select the entire screen.

Select **Clear All** to deselect the selected motion areas.

MEGAPIX WEBVIEWER*

Setup

Event > Emergency Alarm

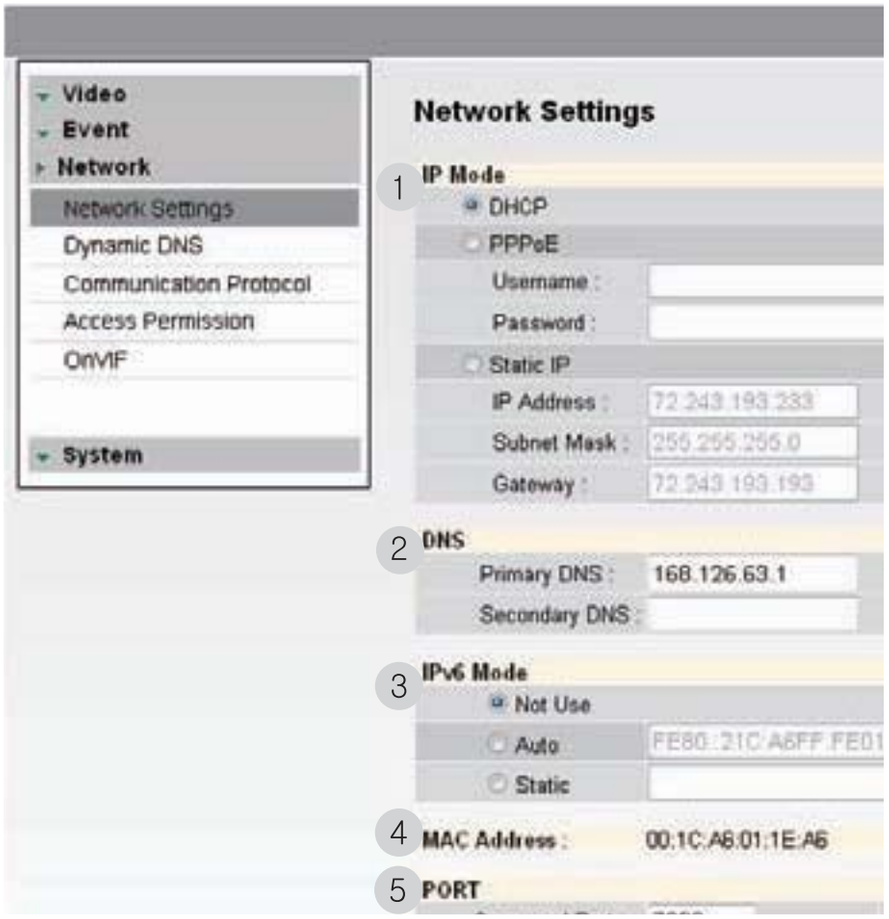


Send alarm triggered information to predefined destination (i.e. remote client software).

1. Enter the **Site Name**, **Transmission Settings**, and **Video Duration** for the video that will be sent when motion is detected.
2. Enter the **IP** address and the **Port** for the remote site to which you want to send the video. You can set up to five different servers.

Setup

Network > Network Settings



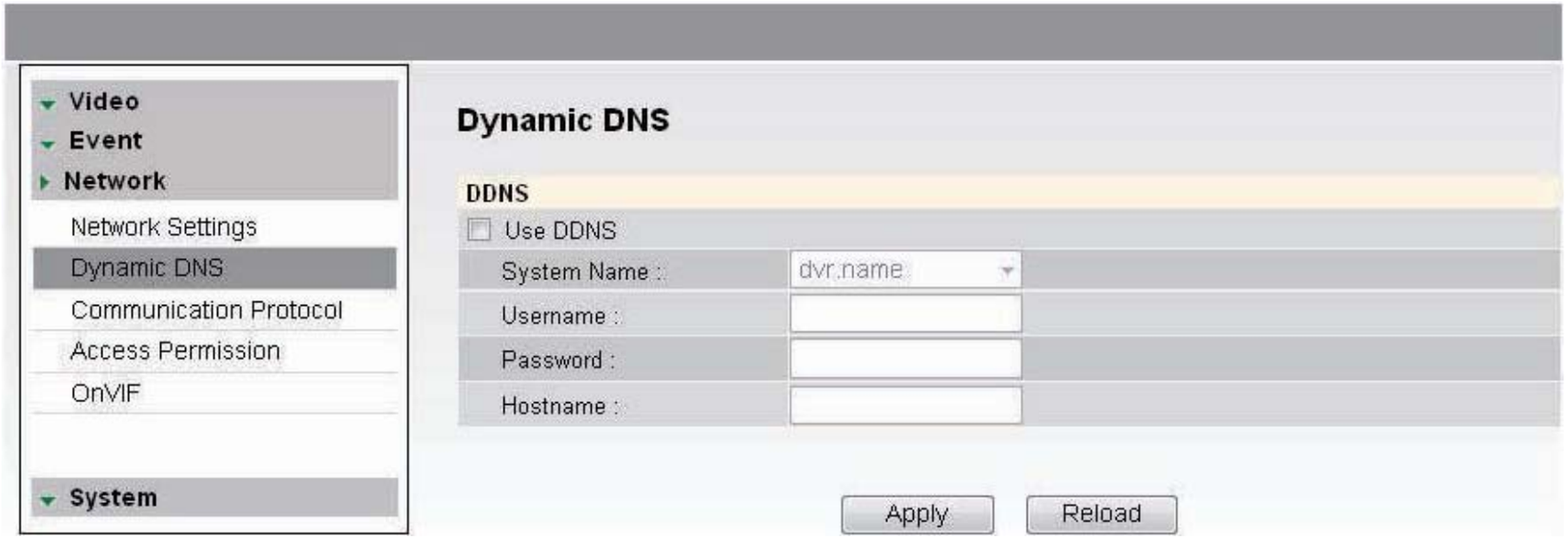
NOTE: YOU DO NOT NEED TO DO THIS SETUP IF YOU ALREADY DID IT THROUGH DW'S IP FINDER SOFTWARE . Refer to PAGE 16.

1. Select the type of IP address for the camera.
   DHCP: IP is assigned automatically.
   PPPoE: Select this option, when you use WAN service. To use WAN service, you will need Username & Password from your Internet Service Provider.
   Static IP: Enter IP Information on existing field, if you decided to give the camera a static (fixed) IP address.
2. Enter **Primary DNS** and **Secondary DNS**.
3. **IPv6** offers a new 128-bit address system. You can set it to use an Automatic address generated by the network, or you can manually enter a Static address.
4. **MAC Address** displays the camera's MAC (Mobile Access Control) Address.
5. **Port** displays all the ports necessary for network communication.
6. Reboot your system to apply the changes to your camera.

MEGAPIX WEBVIEWER*

Setup

Network > Dynamic DNS

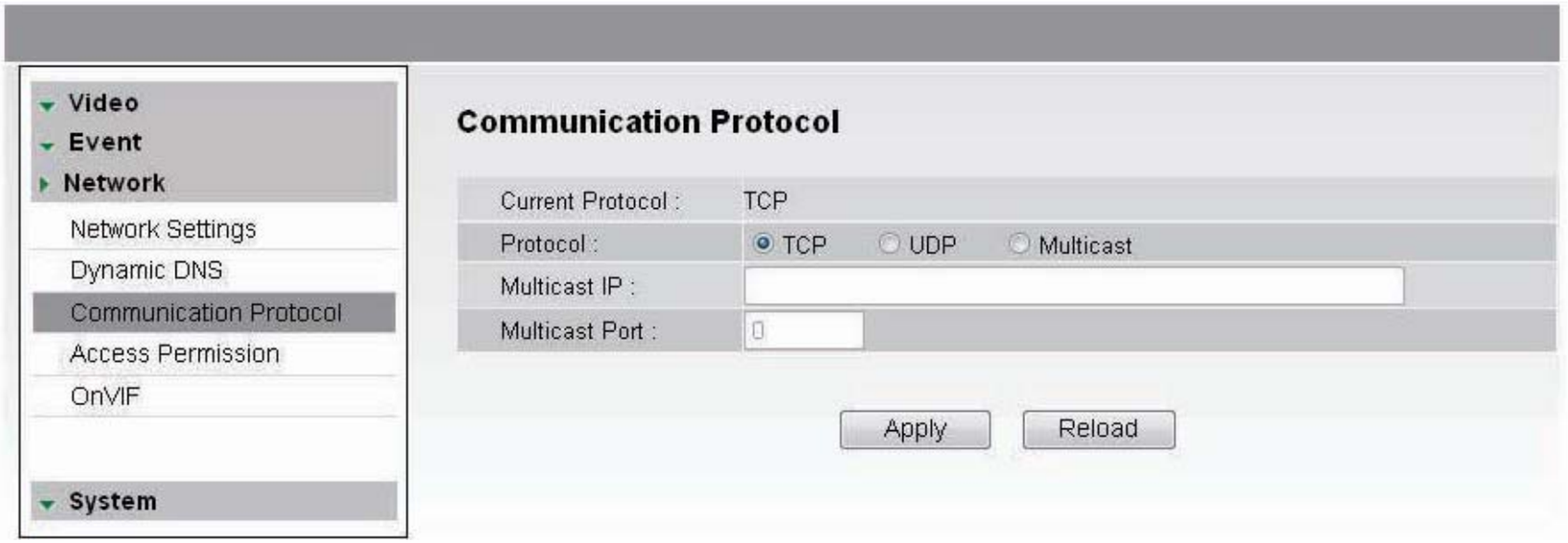


If you do not use a public IP address, DDNS provides you to connect on WAN. DDNS allows you to connect to the MEGAPIX Camera with a URL address instead of an IP address. DDNS redirects traffic to your IP address automatically everytime it changes.

1. To use DDNS, check **Use DDNS** checkbox.
2. Select one of the DDNS **System Name** from the drop down list.
3. Enter **Username** & **Password**. The Username & Password must be registered at the DDNS site.
4. Enter **Host Name**.
5. Reboot your system to apply the changes to your camera.

Setup

Network > Communication Protocol



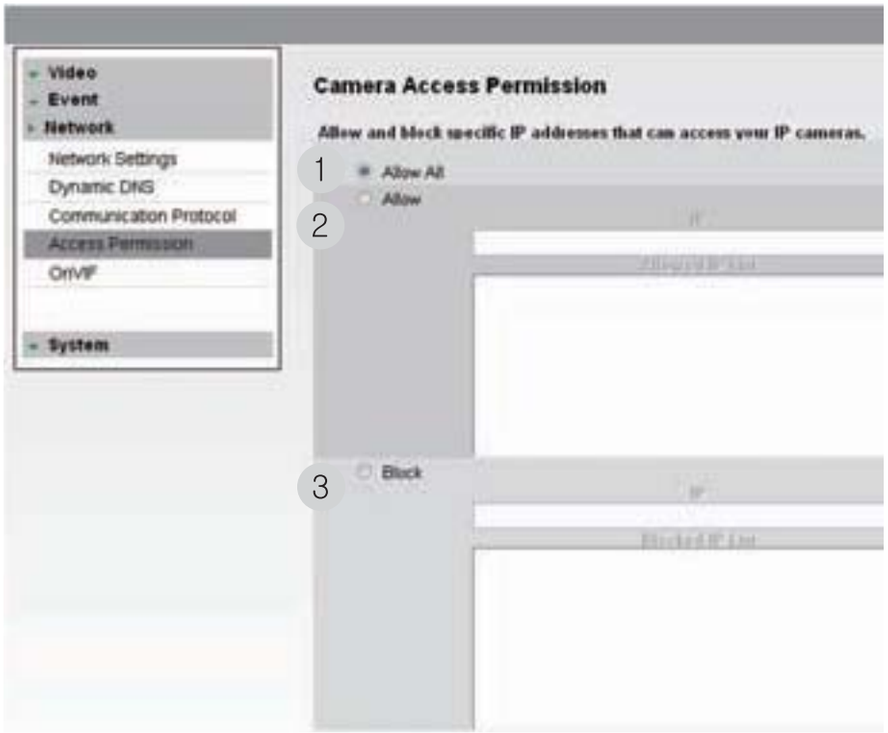
Current Protocol: Displays the current selected protocol.

1. To change the Protocol, select one of the three options--TCP, UDP, Multicast.
2. If you select Multicast, enter the Multicast IP and Multicast Port.
3. Reboot your system to apply the changes to your camera.

MEGAPIX WEBVIEWER*

Setup

Network > Access Permission

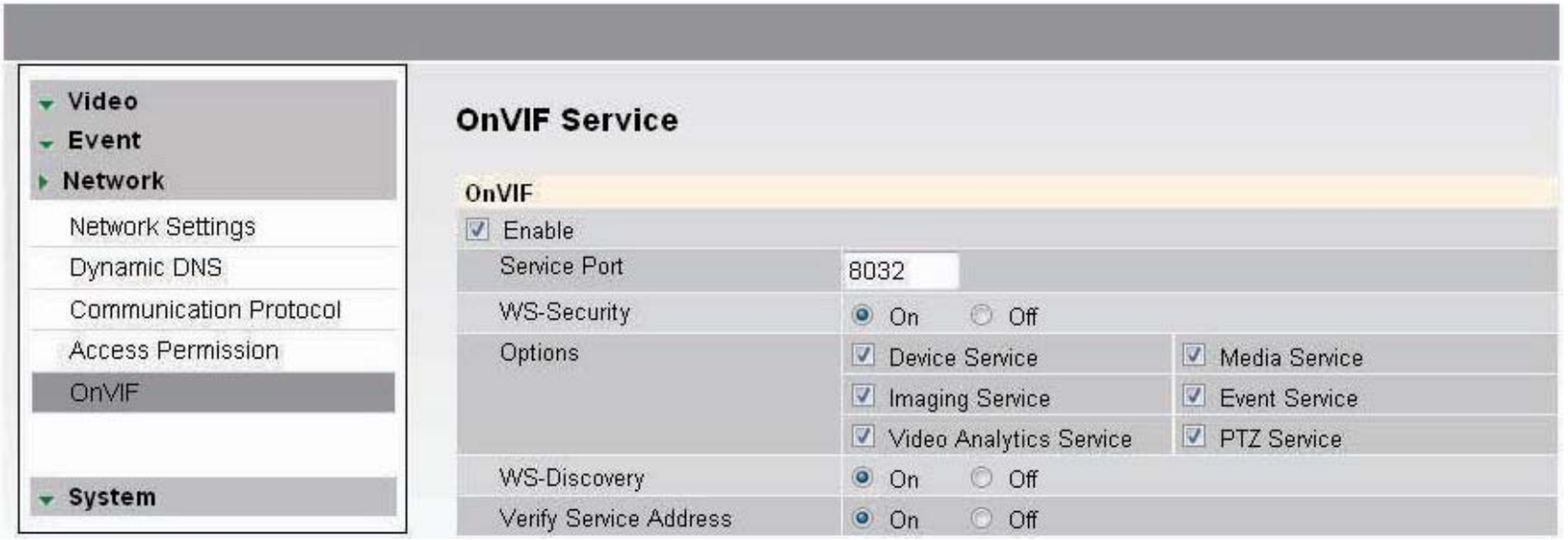


Use the Access Permission page to allow or block specific IP addresses to connect to the camera.

1. Select **All Allow** to allow anyone to connect to this camera. *If All Allow is selected, the Allowed IP List and Blocked IP List will be ignored.*
2. To allow only a specific list of IP addresses to connect to this camera, select **Allow.** Enter an **IP** Address and click **Add** button.
3. To block a specific list of IP addresses from connecting to this camera, select **Block.** Enter an **IP** Address and click **Add** button.

Setup

Network > ONVIF (Open Network Video Interface Forum)

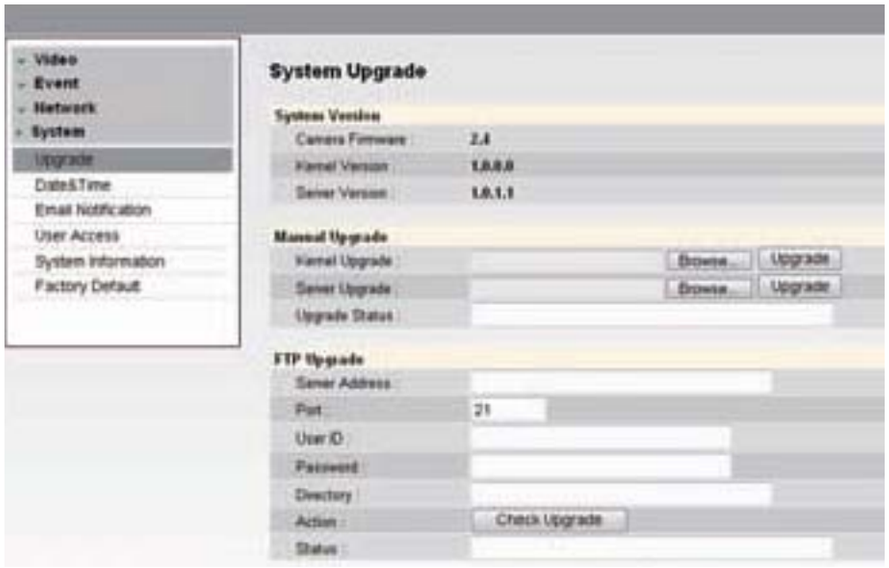


1. To use ONVIF, check **Enable**.
2. Set the **Service Port** to "**8032**."
3. Select On or Off for **WS-Security**.
4. Select desired Options from the list.
5. Select On or Off for **WS-Discovery** (Web Services Dynamic Discovery).
6. Select On or Off for **Verify Service Address**.

MEGAPIX WEBVIEWER*

Setup

System > Upgrade



Upgrade the MEGAPIX camera with an upgrade file.

System Version: Shows the current version of the camera.

Upgrade: To upgrade system firmware, you have to contact manufacturer and get the upgrade file first. Browse file and select the file. Then press **Upgrade** button.

Go to **www.Digital-Watchdog.com** and select **Support** tab.

Setup

System > Date & Time

Set date and time information.

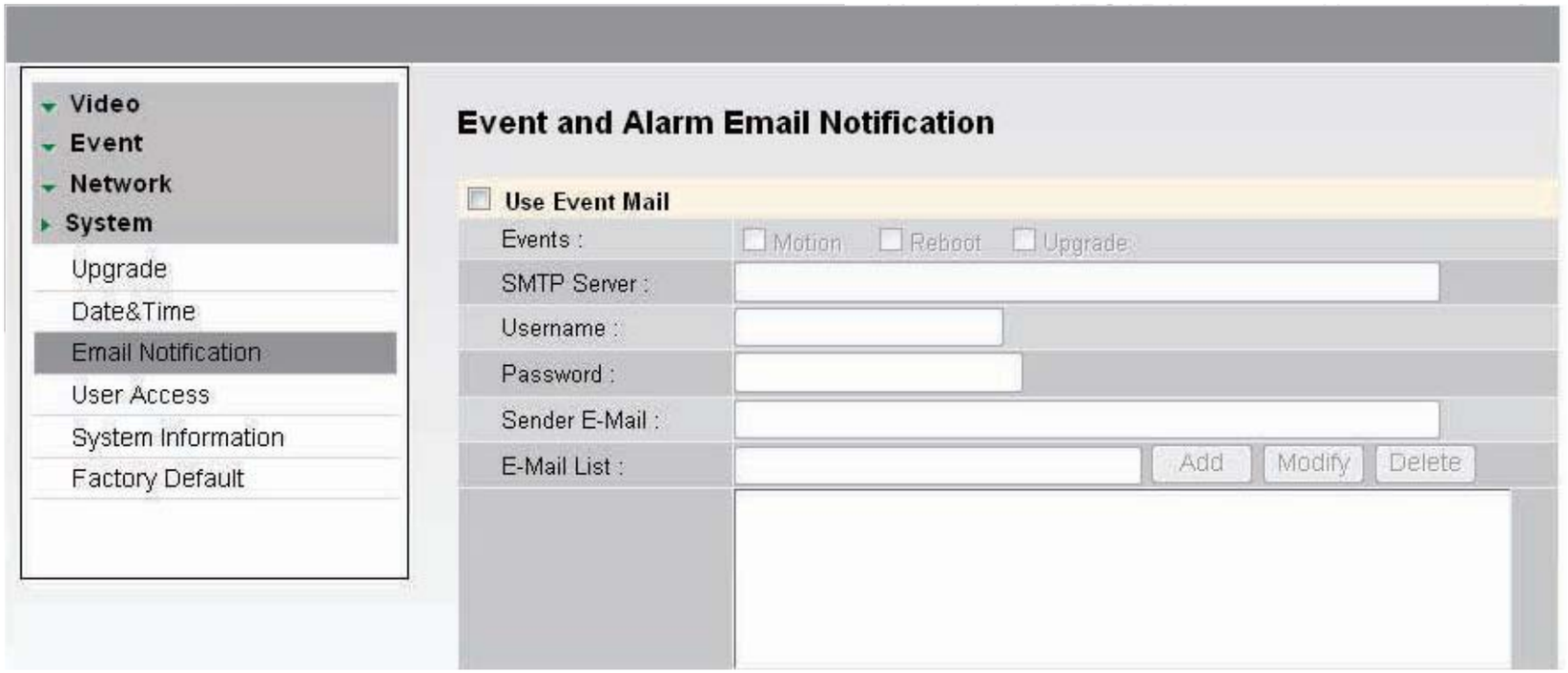
1. Insert the **Date** and **Time.** Select the type of **Format** for your time.
2. Select your **Timezone.**
3. If you are located in a daylight savings area, check **Automatically adjust clock for Daylight Saving Time** option.
4. To synchronize with the NTP Server, check the option and type the **NTP Server Address.**

   Example: pool.ntp.org

MEGAPIX WEBVIEWER*

Setup

System > Email Notification

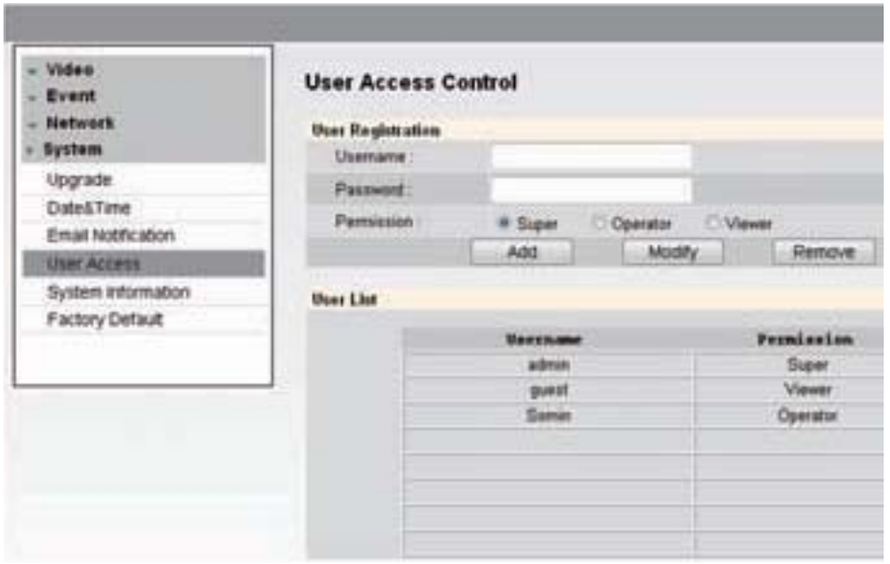


Send an e-mail notification when an event is triggered.

1. Select Use Event Mail option. Select Event Type.
2. Enter SMTP Server information. Example: smtp.gmail.com
3. Enter Username and Password.
4. Enter Sender E-mail.
5. Register E-mail List and select user when send e-mail.

Setup

System > User Access Control



To add a new user, enter **Username** and **Password** and select a **Permission** type. Then, click **Add.**

1. **Super**: Administrator
2. **Operator**: View and Edit Video and Event Settings Only
3. **Viewer**: View Only

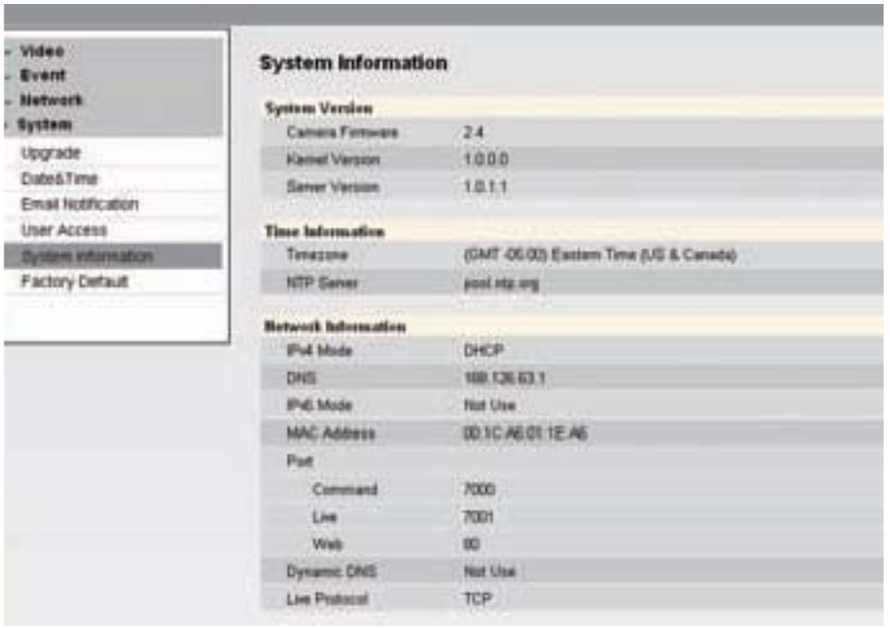
To modify a user, select the user from the **User List**, and click **Modify.**

To remove a user, select the user from the **User List**, and click **Remove.**

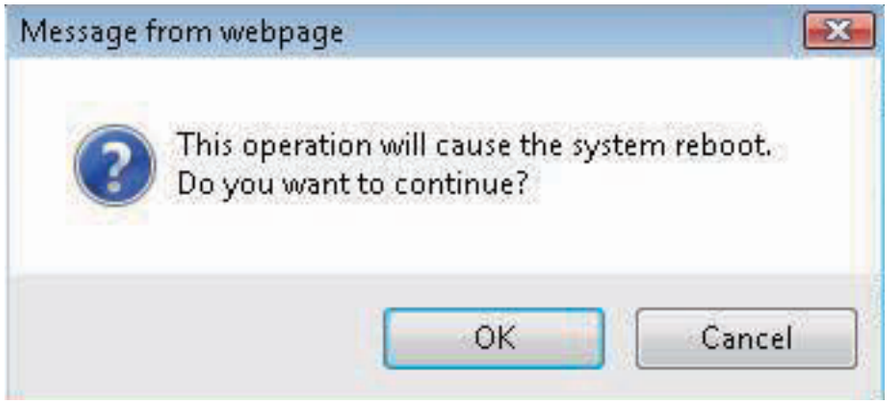
MEGAPIX WEBVIEWER*

Setup

System > System Information & Factory Default



System Information will display all the current camera settings-System Version, Time Information, Network Information, Codec Information, Color Information, and Motion Detection.



When you click **Factory Default**, the popup window to the left will appear. If you click OK, all your camera settings will erase and reformat to the factory default settings.

SPECIFICATIONS*

Model		MPA20M
Image	Device	1/2.7” CMOS Sensor
	Pixels - Total	2016(H) X 1108(V)
Min. Scene Illumination	Color	F1.6, 30IRE: 0.8 Lux
	B/W	F1.6, 30IRE: 0.01 Lux
Functions	3D-DNR	Available
	Privacy Zone	Available
	Day/Night	Auto, Color, B/W
Resolutions	Color	1920(H) X 1080(V)
	B/W	1920(H) X 1080(V)
Lens	Focal Length	4.0mm Fixed
Video	Main Monitor	LVDS Out (16 BIT Y, Cb, Cr Digital, BT-1120)
	Sub Monitor	CVBS Analog
	Compression Type	H.264, MPEG4, MJPEG
	Frame Rate	30fps at All Resolutions
Network	LAN	802.3 Compliance 10/100 LAN
	Protocol	TCP/IP, HTTP, DHCP, PPPoE, ICMP, ARP, RARP, RTSP, NTP, UDP
	PoE	802.3af Compliance
	Streaming	Dual-Stream at Different Rates and Resolutions
Port & I/O	RS232	Consol
	Configuration	Reset Switch, Configuration Clear Switch
Power	Requirement	DC12V, PoE
	Consumption	4.8W, 400mA
Environmental Conditions	Operating Temperature	-10°C ~ 55°C (14°F ~ 131°F)
	Storage Temperature	-20°C ~ 70°C (-4°F ~ 158°F)
	Operating Humidity	Under 90% (Non-Condensing)
Physical Specifications	Dimensions	120 X 55.7 mm, 4.72 X 2.19 in
	Weight	0.65 lb
	Certifications	CE, FCC, RoHS, IP66

TROUBLESHOOTING

Before sending your camera for repair, check the following or contact our technical specialist.

No VIDEO

Check the coaxial cable and make sure it is connected securely.
Check the lens' iris adjustment at the menu setup of the camera.
Check the power supply and make sure the camera has the proper voltage and current.

Out-of-Focus VIDEO

Check the clear dome cover and the lens for dirt or fingerprints. Use a soft cloth and gently clean.
Check the lens manual focal and zoom adjustment. Field test monitor is recommended.

TROUBLESHOOTING

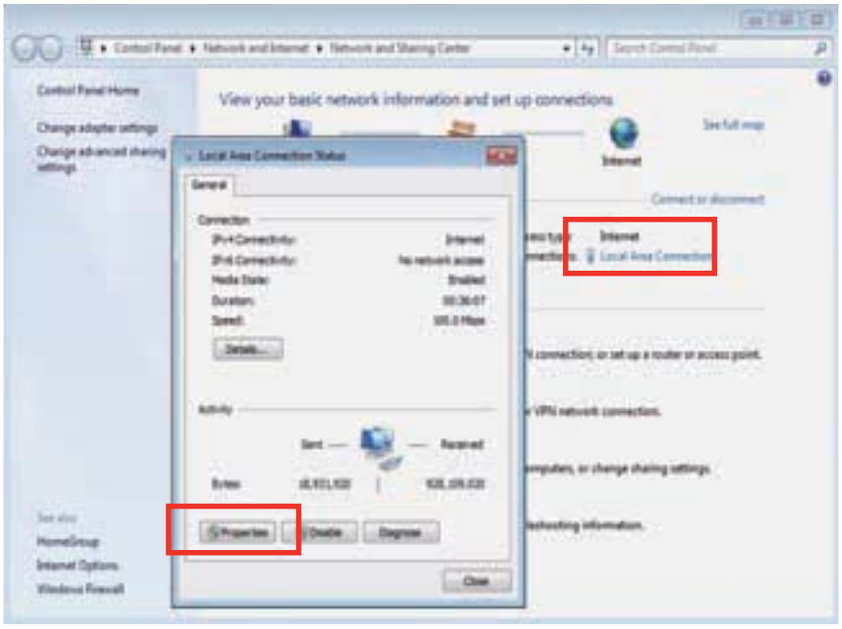
Setting the IP Address for your PC

Connect to the Internet Using DHCP or a Static IP Address

Dynamic Host Configuration Protocol (DHCP) is the default setting for the camera.

If the MEGAPIX camera is connected to a DHCP network and the camera's IP Configuration Mode is set to DHCP, the server will automatically assign an IP address to the camera. If the camera is using DHCP, the default IP address will be **192.168.1.123**, and the default subnet mask will be **255.255.255.0**.

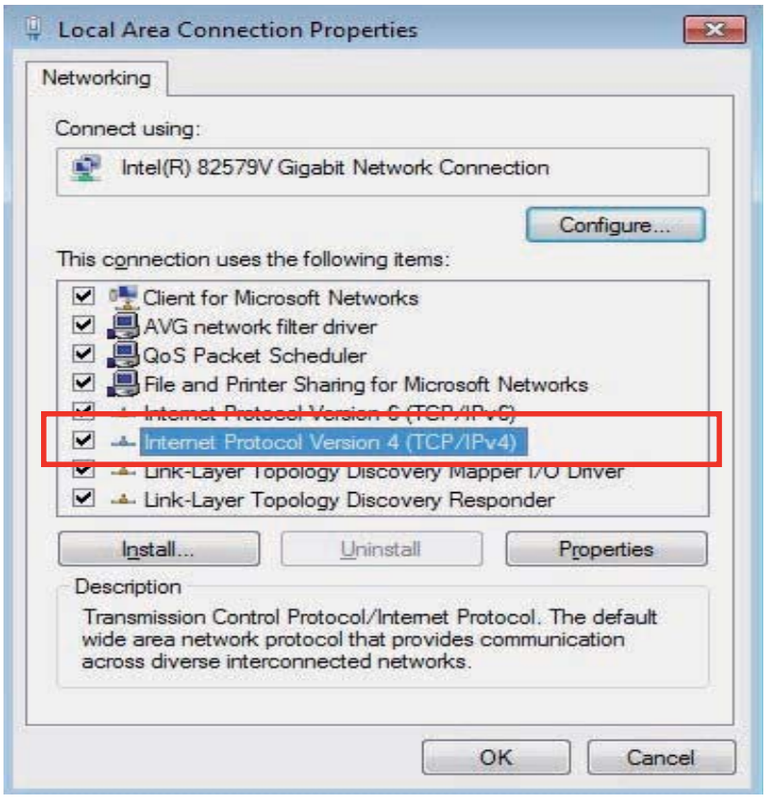
The MEGAPIX camera can also connect to the webviewer using a static IP address. This will allow you to set your own IP address manually.

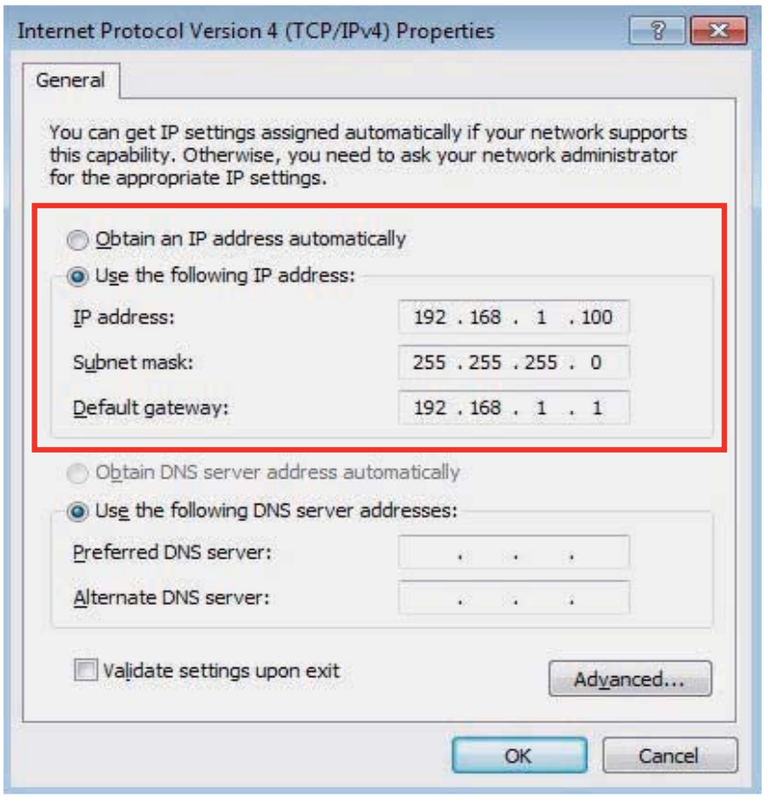


Setup the Network Protocol on your PC.

1. Go to the Network icon on your PC.
2. Right-click and select Proprties.
3. Double-click Local Area Connection.
4. Click Properties.

TROUBLESHOOTING





5 Double-click **Internet Protocol Version**.

6 Select **Obtain an IP address automatically** to set the computer to a dynamic IP address, or select **Use the following IP address** to set the computer to a static IP address.

7 If the option **Use the following IP address** has been selected, setup the IP address as 192.168.1.XXX. The last three digits should be a number between 1 and 254.

MEMO*

WARRANTY INFORMATION*

Digital Watchdog (referred to as “the Warrantor”)
warrants Camera Series against defects in
materials or workmanship as follows.

LABOR : For the initial two (2) years and one (1) year on IR LED
from the original purchase date,
if the camera is determined to be defective, the Warrantor will
repair or replace the unit with a new or refurbished product at its
option at no charge.

PARTS : In addition, the Warrantor will supply
replacement parts for the initial two (2) years and one (1) year on IR LED.

To obtain warranty or out of warranty service,
please contact a Technical Support Representative at
1-866-446-3595 Monday through Friday from 8:30AM to 8:00PM
Eastern Standard Time.

A purchase receipt or other proof of the original purchase date is required
before warranty service is rendered. This warranty only covers failures due to
defects in materials and workmanship which arise during normal use.
This warranty does not cover damage which occurs in shipment or failures
which are caused by products not supplied by the Warrantor or failures
which result from accident, misuse, abuse, neglect, mishandling,
misapplication, alteration, modification, faulty installation, set-up adjustments,
improper antenna, inadequate signal pickup, maladjustment of consumer controls,
improper operation, power line surge, improper voltage supply, lightning damage,
rental use of the product or service by anyone other than an authorized repair
facility or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS*

There are no express warranties except as listed above. The Warrantor will not be liable for incidental or consequential damages (including, without limitation, damage to recording media) resulting from the use of these products, or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

If the problem is not handled to your satisfaction, then write to the Address listed on the next page.

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Costs of such service calls are the responsibility of the purchaser.

5436 W Crenshaw St. Tampa, FL 33634
Tel : 866-446-3595 / 813-888-9555
Fax : 813-888-9262
www.Digital-Watchdog.com
technicalsupport@dwcc.tv
Technical Support Hours : Monday-Friday
8:30am to 8:00pm Eastern Time