speco technologies

User Manual

Intensifier® IP Camera (O2iB92/O2iD22/O2iD21M/O2iB91M)

Please read this manual carefully before operating the unit and keep it for further reference

Welcome

Thank you for purchasing this network camera!

Please read this manual carefully before operating the unit and retain it for future reference.

Should you require any technical assistance, please contact Speco Technologies Technical Support.

Important Safeguards and Warnings

1. **Electrical Safety**

All installation and operation here should conform to local electrical safety codes.

Use a certified/listed 12VDC Class 2 power supply only.

Please note: Do not connect two power supplying sources to the device at the same time; it may result in device damage! The product must be grounded to reduce the risk of electric shock.

Improper handling and/or installation could run the risk of fire or electrical shock.

Speco Technologies assumes no liability or responsibility for any fires or electrical shock caused by improper handling or installation.

2. **Transportation**

Heavy stress, violent vibration or exposure to water is not allowed during transportation, storage and installation.

3. **Installation**

Handle the device with care. Keep the device right side up.

Do not apply power to the camera before completing installation.

Do not place objects on top of the camera.

4. **Repair Professionals**

All examination and repair work should be done by qualified personnel only.

Speco Technologies is not liable for any problems caused by unauthorized modifications or user-attempted repair.

5. **Environment**

The camera should be kept in a cool, dry place away from direct sunlight, flammable materials, explosive substances, etc.

This product should be transported, stored, and used only in the specified environments as stated above.

Do not aim the camera at a strong light source, as it may cause overexposure of the picture, and may affect the longevity of the camera's sensors.

Ensure that the camera is in a well ventilated area to prevent overheating.

6. Operation and Maintenance

Do not touch the camera sensor or lens directly.

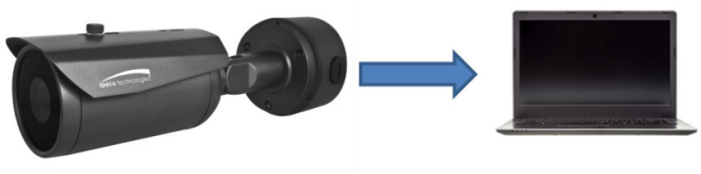
To clean dust or dirt off of the lens, use an air blower or a microfiber cloth.

Table of Contents

1 Connection Guide

1.1 Applications

Below are the main applications for use with the IP camera:



IP Camera Network Web Browser

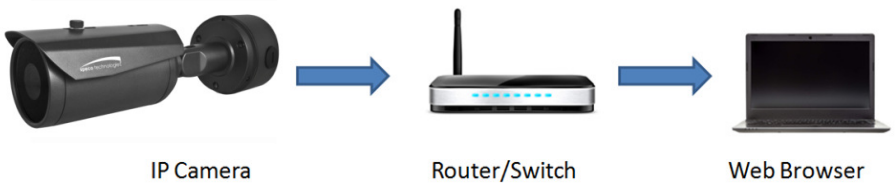
IP Camera Network or direct connection NVR

IP Camera Network SecureGuard® VMS

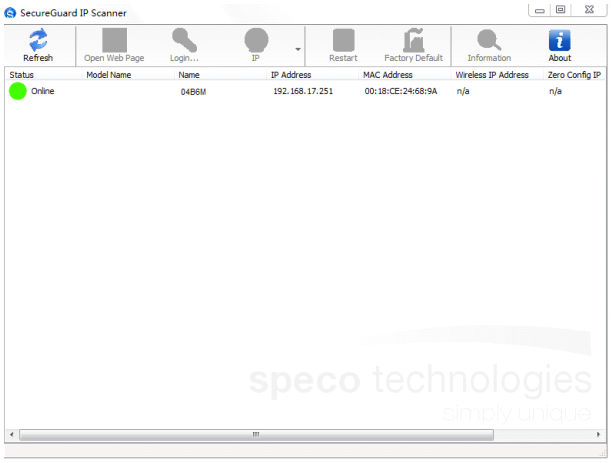
1.2 LAN Access to Web Setup Interface

The IP camera settings can be accessed via a web browser through the LAN using the IP Scanner tool.

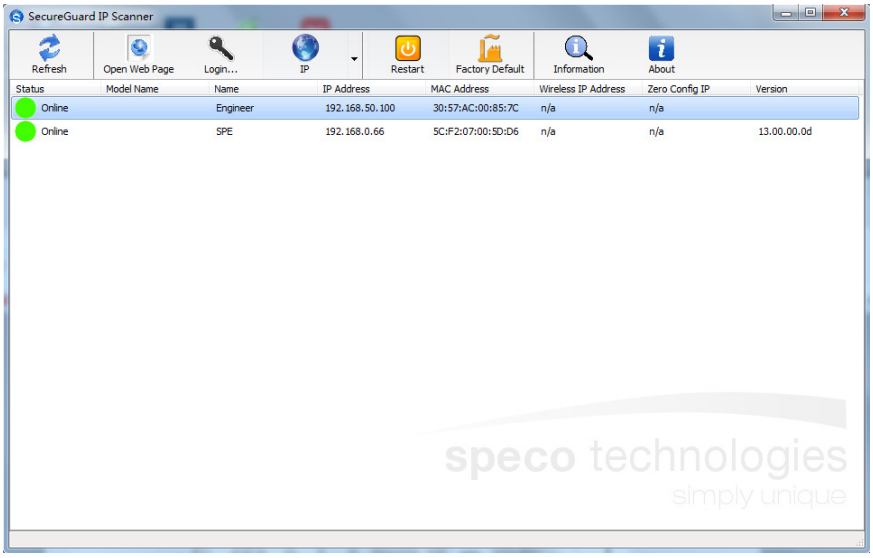
Network connection:



1. Make sure that the camera and the PC are connected on the same local network. The camera is set to DHCP by default and will be assigned an IP address by the DHCP server. Make sure that the local network has a DHCP server. Routers typically have a DHCP server built in.
2. Install IP Scanner from the CD and run it after installation. IP Scanner is the tool for discovering the IP cameras on the local network.



3. In the device list, the IP address, model number, and MAC address of each device will be listed. Select the applicable device and double click to open up the web viewer. You can also manually enter the IP address in the address bar of the web browser.



Note

The IP camera will have DHCP turned on by default. If there is no DHCP server available, the IP camera's IP address will default to 192.168.0.66.

The login interface is shown below. Default Username and Password: admin/1234. After logging in, follow directions to install applicable plug-ins for viewing video on the browser.

After logging in the web interface will be displayed as shown below:

Available functions on the Web Interface:

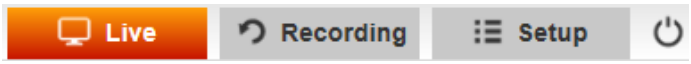
- Live view
- Save a recording onto the local computer.
- Playback local recordings.
- Modify IP camera parameters, change settings, change video quality and system time.

2 Live View

The live view page has two function bars:

Parameter	Description
1.	Menu Bar
2.	Status Bar

2.1 Menu Bar



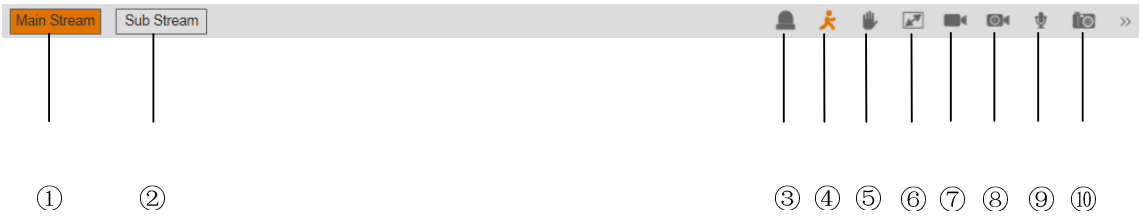
 Click here to log out

Live: Live view

Recording: Playback of local recordings

Setup: System Setup

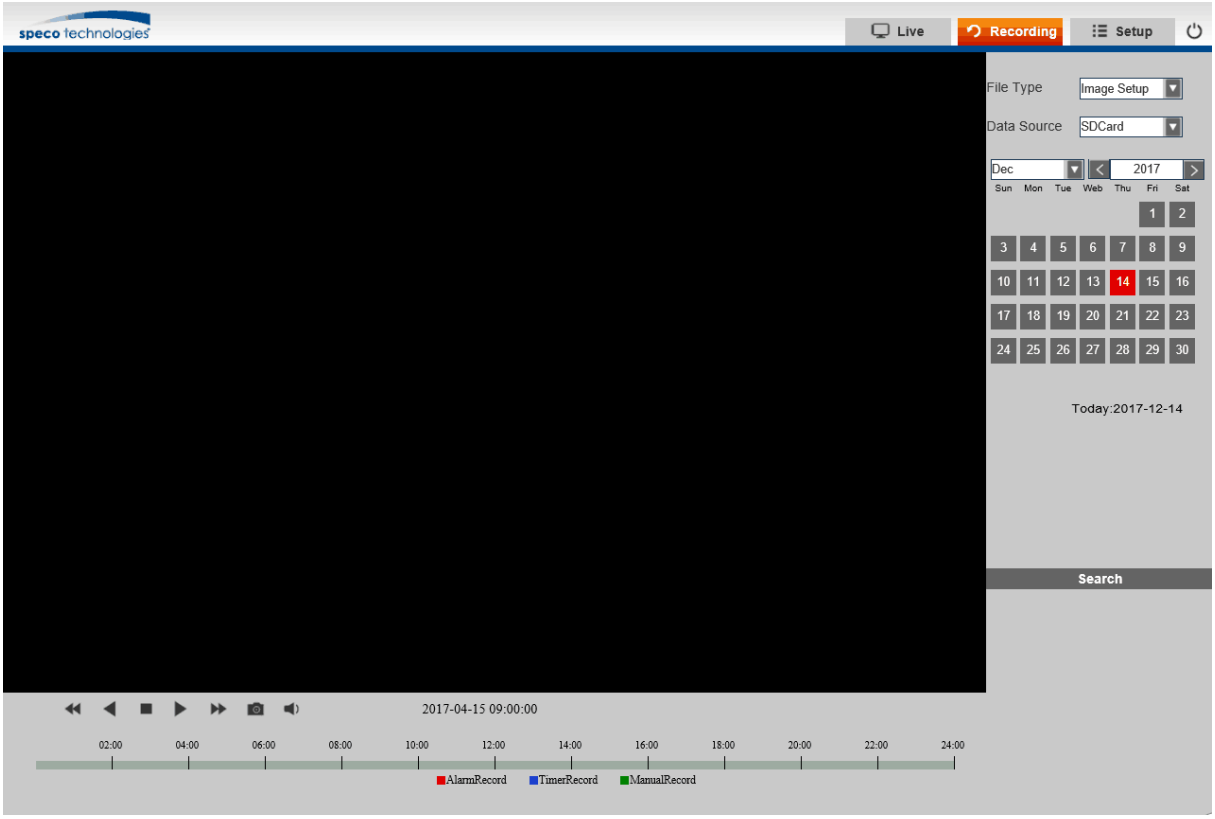
2.2 Status Bar



Parameter	icon	Description
① Main Stream	Main Stream	Switches to main stream view
② Sub Stream	Sub Stream	Switches to sub stream view
③Sensor alarm		**Displays the Sensor alarm status:** ◆ White: Sensor alarm has not been set up ◆ Blue: Sensor alarm has been set up and activated
④Motion Alarm		**Displays the Motion alarm status:** ◆ White: Motion alarm has not been set up ◆ Blue: Motion alarm has been set up and activated
⑤ Privacy Mask Alarm		**Display the Privacy mask alarm status:** ◆ White: Privacy mask alarm has not been set up ◆ Blue: Privacy mask alarm has been set up and activated
⑥ Full screen		Single click on this icon will bring the video to full screen. Double click on the video or hit “ESC” to exit full screen.
⑦ Manual Record		Single click will start the manual record mode on the PC
⑧ Schedule Recording		**Shows the status of Schedule recording:** ◆ White: Schedule recording has not been set up. ◆ Blue: Schedule recording has been set up and is currently recording
⑨ Audio		Toggle audio on/off
⑩ Screen Capture		Single click will capture a screenshot. The save directory can be configured in settings.

3 Recording

Recordings stored on SD cards and local PC can be played back via the Recording interface.



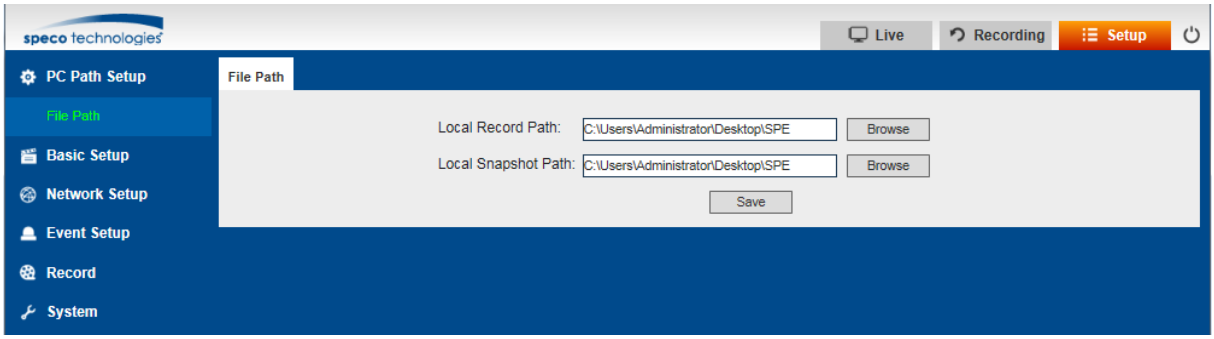
- Select the “File Type”. Options are “Video” and “Image”.
- Select the “Data Source”. Options are “SD Card” and “Local”.
- Select the date and time.
- Click Search.
- Click  to start playback.

Parameter	icon	Description
① Slow forward		Slow playback
② Last		Play the last video or picture
③ Stop		Stop playback
④ Next		Play the next video or picture
⑤ Fast Forward		Speed up playback
⑥ Capture		Capture a snapshot
⑦ Audio		Toggle audio on/off

4 Setup

4.1 PC Path Setup

1. Choose the local recording save directory. “Setup -> PC Path Setup -> File Path”.

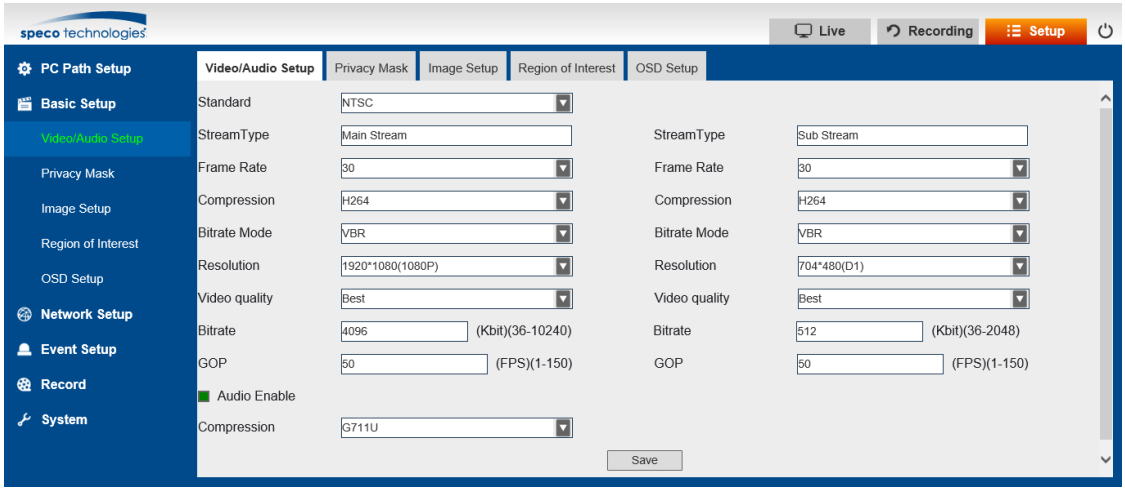


2. Click “Save” to save the setting.

4.2 Basic Setup

4.2.1 Video/Audio Setup

1. Go to “Setup -> Basic Setup -> Video/Audio Setup”. Audio and Video stream settings can be configured here.



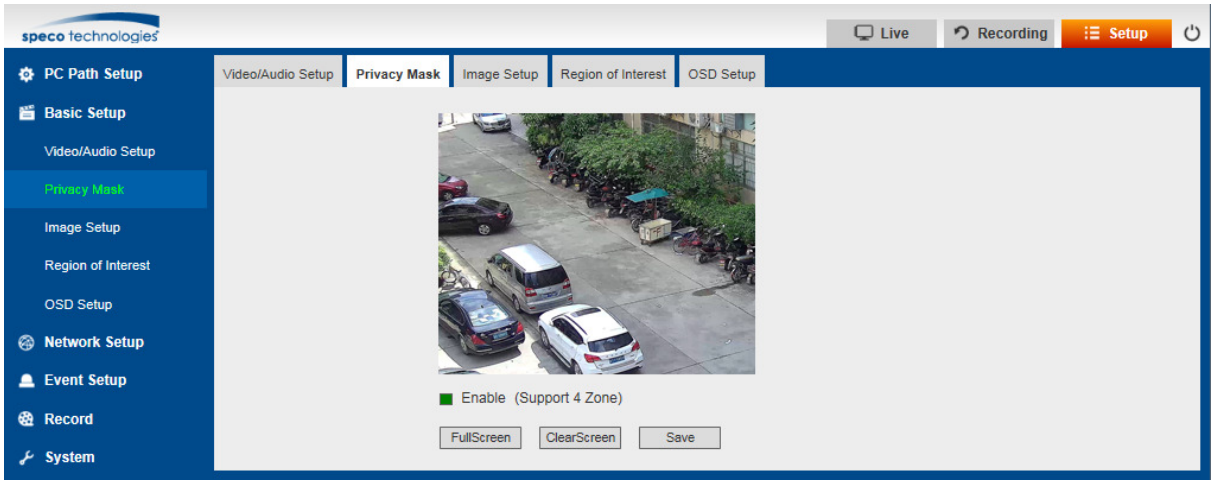
2. Video/Audio Parameters:

Parameter	Description
Standard	**Sets the video standard** ◆ Pal ◆ NTSC (standard for North America)
Stream type	**Sets the video parameter for each stream type:** ◆ Main Stream ◆ Sub Stream
Frame Rate	The higher the frame rate, the smoother the video. Frame rate is measured in fps (frames per second).
Compression	Choose the compression codec
Bitrate Mode	**Bitrate mode** ◆ CBR (constant): The bitrate will stay constant ◆ VBR (variable): Bitrate will be adjusted according to scene changes.
Resolution	Sets the resolution or size of the image.
Video Quality	Reference image quality when using VBR.
Bitrate	The actual amount of data the camera is using for streaming. The higher the bitrate, the better the image quality will be.
GOP	Group of pictures. Determines how many frames are allowed between a "group of pictures". When a new scene begins in a video, until that scene ends, the entire group of frames (or pictures) can be a considered a GOP. If there is not much movement in the scene, setting a GOP value higher than the frame rate is fine, potentially resulting in less bandwidth usage. However, if the value is set too high, and there is a high frequency of movement in the video, there is a risk of frame skipping.
Audio Enable	Toggle audio
Compression	Choose the audio codec

3. Click "Save" to save the settings.

4.2.2 Privacy Mask

1. Go to “Setup > Basic Setup > Privacy Mask”.



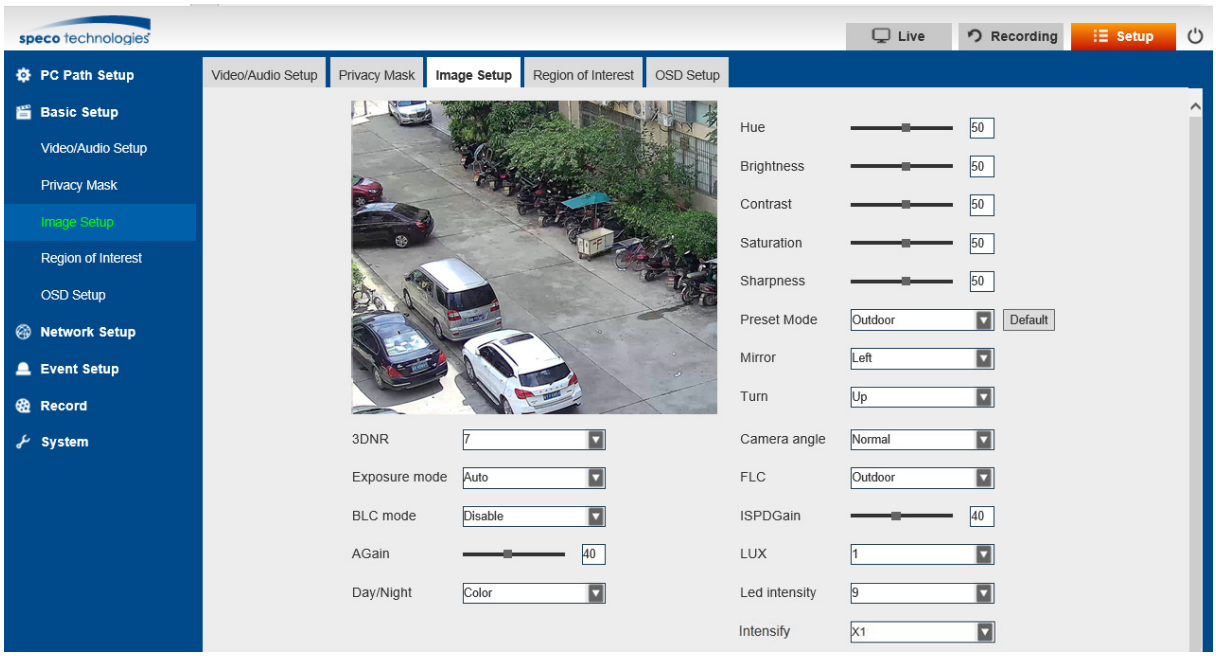
2. Check “Enable”.
3. Click “Full Screen” to select the entire area. Click “Clear Screen” to clear the zones.
4. Click and drag to define zones within the image.
5. Click “Save” to complete the privacy mask area configuration.

Note

Up to 4 zones can be defined within the image.

4.2.3 Image Setup

1. Go to “Setup > Basic Setup > Image Setup”.
2. See the table below for detail descriptions of the image settings.

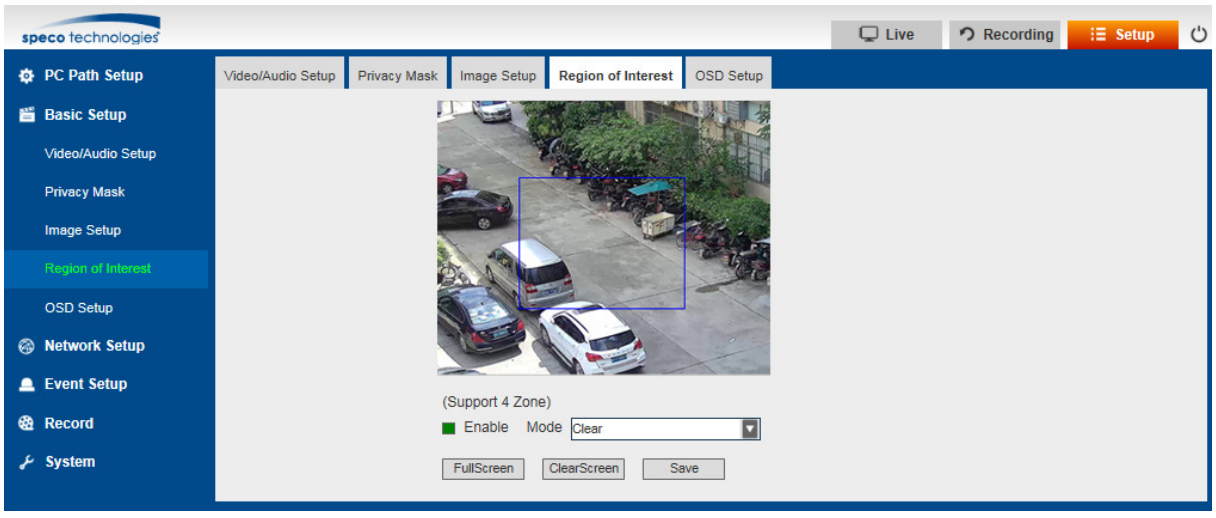


Parameter	Description
Hue	Changes the color mix of the image (this can have very dramatic results).
Brightness	Changes how bright the image appears to be. The bigger number the brighter.
Contrast	The separation between the darkest and brightest areas of the image.
Saturation	Alters how much color is displayed in the image. The higher the saturation, the brighter and vivid colors will appear to be. If set too high, the image will be over-saturated.
Sharpness	Sets the sharpness level of edges.
Preset Mode	Sets of pre-determined image settings based on installation environment.
Mirror	Change the orientation of the image to be horizontally reversed.
Turn	Change the orientation of the image to be vertically reversed.
Camera Angle	Change the orientation of the image to 90°、180°、270° or normal.
FLC (Anti-flicker)	◆ 50Hz: reduces flicker in 50Hz lighting conditions. ◆ 60Hz: reduces flicker in 60Hz lighting conditions. This is common in the United States. ◆ Outdoor: disables the anti-flicker function. This is used mostly in outdoor installations.
ISPDGain	Image adjustment parameters, digital automatic gain
Intensify	Increase value to capture more light in low light situations. If set too high, there will be more image blur.
3DNR	Digital noise reduction.

Exposure mode	◆ Auto: Sets the exposure level of the camera automatically. ◆ Manual: Adjust shutter speed and gain value of the camera manually.
BLC mode	◆ Turning on the Wide Dynamic Range (WDR) feature improves the overall exposure throughout your entire image. It enables the camera to pick up greater detail in dark shadows, while making sure that the highlights don't get blown-out. ◆ Digital wide dynamic range (D-WDR) is a software-based technique that optimizes image quality by adjusting the gamma (γ) value to enhance dark areas. ◆ Back-light Compensation (BLC) optimizes exposure in the foreground and background of security video. It splits the video scene into different regions and uses a different exposure for each of these regions. It corrects regions with extremely high or low levels of light to maintain a normal and usable level of light for the object in focus. ◆ High light Compensation (HLC) senses strong sources of light in video and compensates for exposure on these spots to enhance the overall quality.
AGain	Image adjustment parameters, analog automatic gain
Day/Night	◆ Color：Only display color image (default for Intensifier®) ◆ B/W：Only display black/white image ◆ Auto：Display color or B/W image according to CDS(lux value) ◆ Time：Display color or B/W image according to setting time

4.2.4 Region of Interest

1. Go to “Setup > Basic Setup > Region of Interest”.



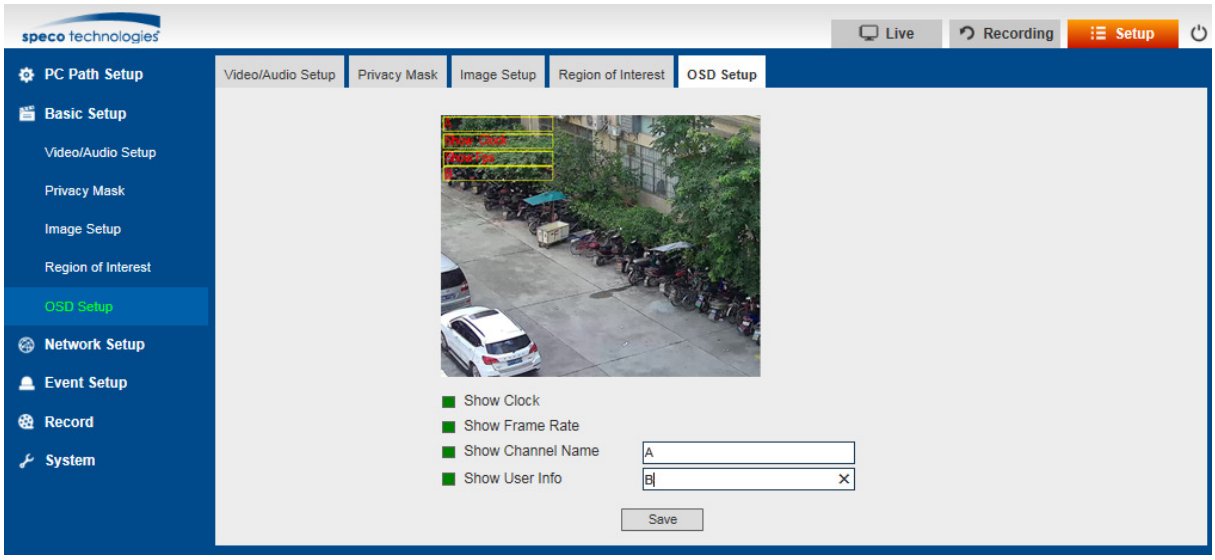
2. Check “Enable”.
3. Click “Full Screen” to select the entire area. Click and drag within the image to set up the zones. Up to 4 zones can be defined.
4. Click “Clear Screen” to clear previous settings if needed.
5. Click “Save” to complete the configuration.

Note

Region of Interest can either enhance or reduce the image quality (bit rate) depending on the mode that’s chosen.

4.2.5 OSD Setup

1. Go to “Setup > Basic Setup > OSD Setup”.



2. Enable and set the desired parameters to be displayed.

Parameter	Description
Show clock	Displays or hides the current time
Show Frame Rate	Displays or hides frame rate info
Show Channel Name	Displays or hides the channel nickname. (up to 16 characters)
Show User Info	Displays or hides user info. (up to 16 characters)

3. Click “Save” to complete OSD configuration.

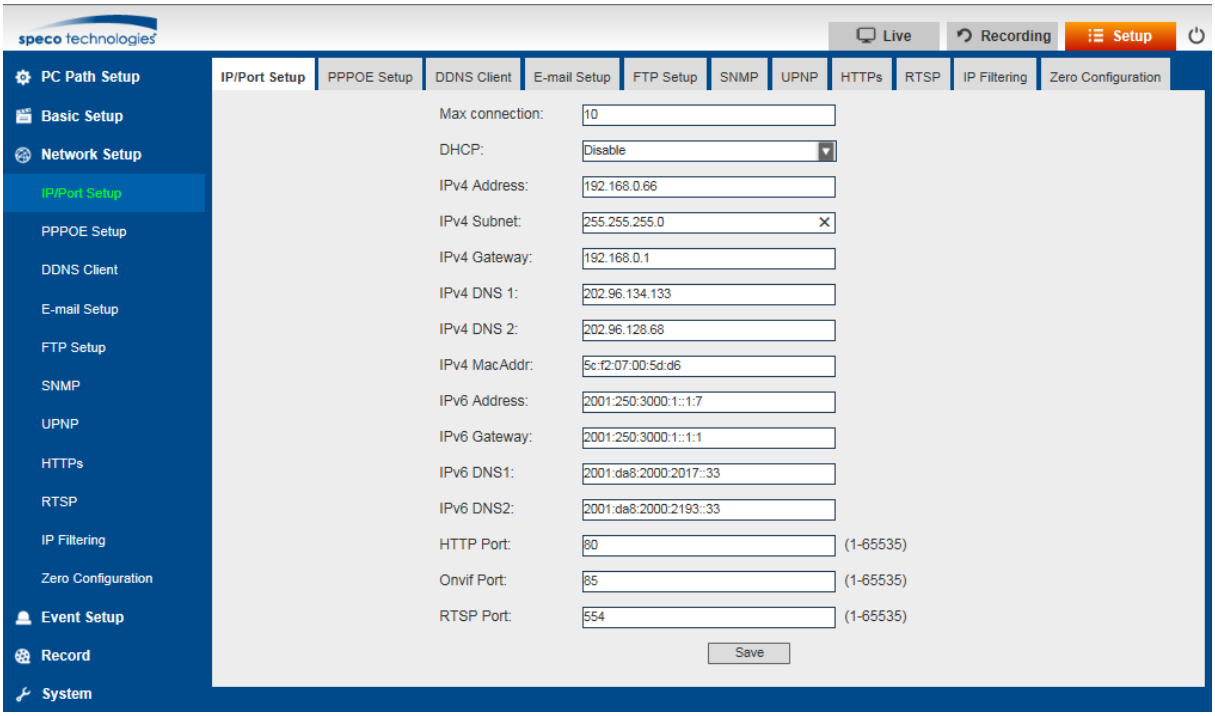
Note

Positions of the parameters can be moved around.

4.3 Network Setup

4.3.1 IP/Port Setup

1. Go to “Setup > Network Setup > IP/Port Setup”.



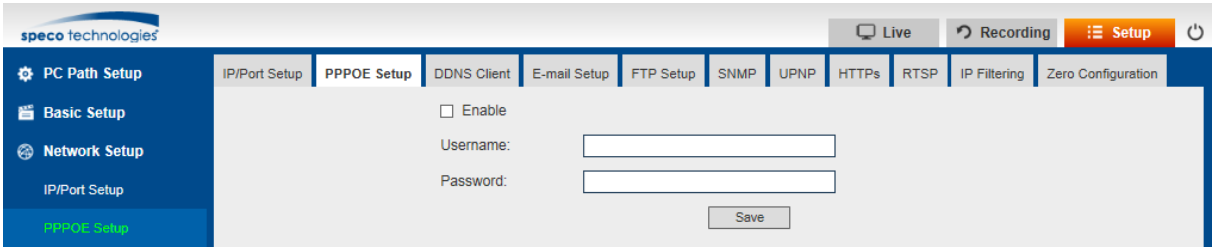
Parameter	Description
Max connection	Up to 10 concurrent device logins are allowed.
DHCP	Enable or Disable DHCP ◆ Enable DHCP: If the network has a DHCP server built in, it will assign an IP address to the camera. ◆ Disable DHCP (Static): Static networks require all devices to have their IP addresses manually defined, as there is no device dedicated to automatically assign IP addresses. Set the device to this mode if there is no DHCP server available.

IPv4/IPv6 Address	◆ IPv4 is the more common IP address type. A typical IP address might be “192.168.1.37”or similar. If DHCP mode is used, the IP address assigned by the network will be shown here. If static mode is used, the IP address can be set here. ◆ The length of the IPv6 address is 128 bits, which is four times the length of the IPv4 address, expressed in hexadecimal and separated by colons. For example, a typical IP address can be "2001:250:3000:1:1:7 "or similar.
IPv4 Subnet	◆ The IPv4 subnet is displayed or set here.
Gateway	◆ The IPv4 gateway is displayed or set here.
DNS	The IPv4 DNS server info is displayed or set here.
MAC Address	The unique Mac address of the device is displayed here.
HTTP Port	◆ This is the access port to log in to the device. It will need to be forwarded properly in order to ensure smooth, latency-free communication. ◆ The default value is “80”, if another device on your network is using this port, please change to other value. ◆ Example: to log in to the device with the HTTP port set to 82 through a web browser, type: http://<IPaddress>:82
Onvif Port	◆ ONVIF protocol communication port. ◆ The default value is “85”
RTSP Port	◆ Port used for streaming video to various clients ◆ The default RTSP port is 554

2. Set the desired parameters and click “Save” to complete IP/Port Setup.

4.3.2 PPPOE Setup

1. Go to ”Setup > Network Setup > PPPOE Setup”.



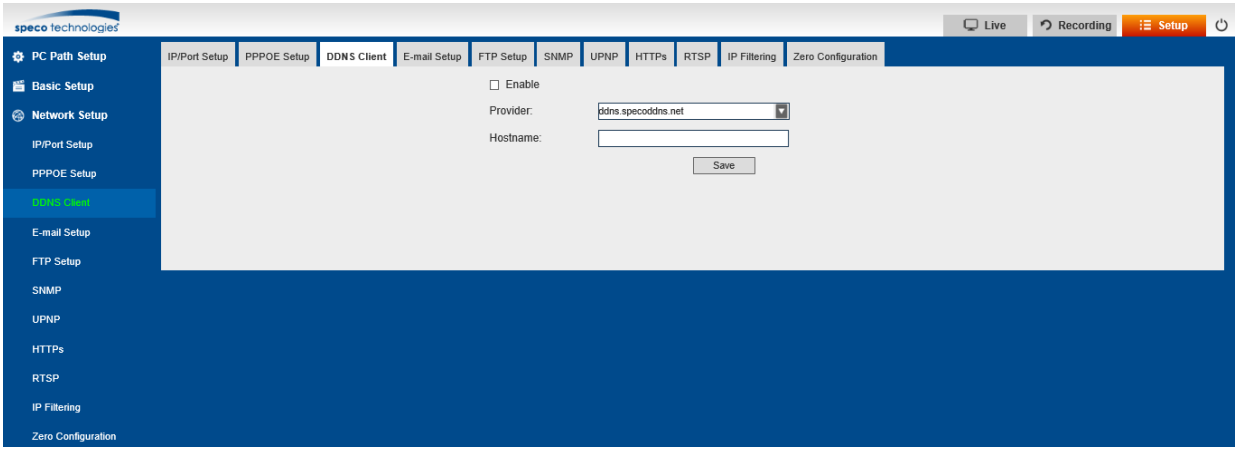
2. Check ”Enable”.
3. Enter the username & password provided by the ISP.
4. Click “Save”. The camera will reboot.

Note

PPPOE: An advanced protocol that allows the device to be more directly connected via a DSL modem. This is an option for advanced users only.

4.3.3 DDNS Client

1. Go to “Setup > Network Setup > DDNS Client”.

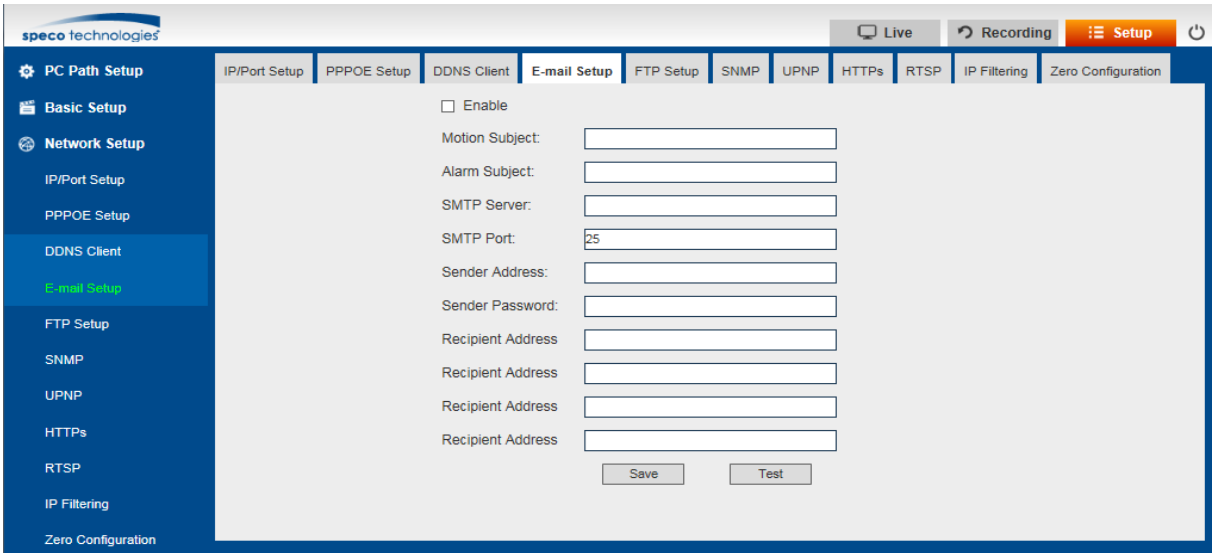


Parameter	Description
Enable	Check to enable DDNS connectivity of the device.
Provider	Speco DDNS is the provider.
Hostname	Enter the nickname to be used for DDNS. The name must be unique to be used for DDNS.

2. Click ”Save” to complete DDNS Client configuration.

4.3.4 Email Setup

1. Go to “Setup > Network Setup >Email Setup”.

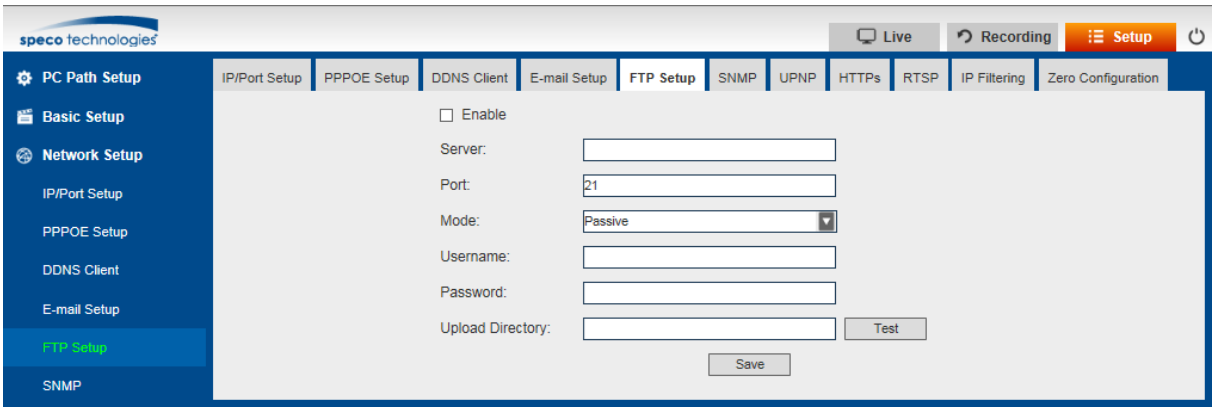


Parameter	Description
Enable Email	Check to enable the email function.
Motion Subject	Defines the subject line of the email that is sent for motion events.
Alarm Subject	Defines the subject line of the email that is sent for alarm events.
SMTP Server	Enter the SMTP server used by the email service to be used. For example: “smtp.gmail.com”
SMTP Port	Enter the SMTP port used by the email service.
Sender Address	Enter the email address of the sender of the outgoing email.
Sender Password	The password for the outgoing email account.
Recipient Address	The email address that the device will send emails to. Maximum of 4 recipients can be entered.
Test	Click Test to verify the email setup.

2. Click ”Save” to complete Email Setup.

4.3.5 FTP Setup

1. Go to “Setup > Network Setup >FTP Setup”.

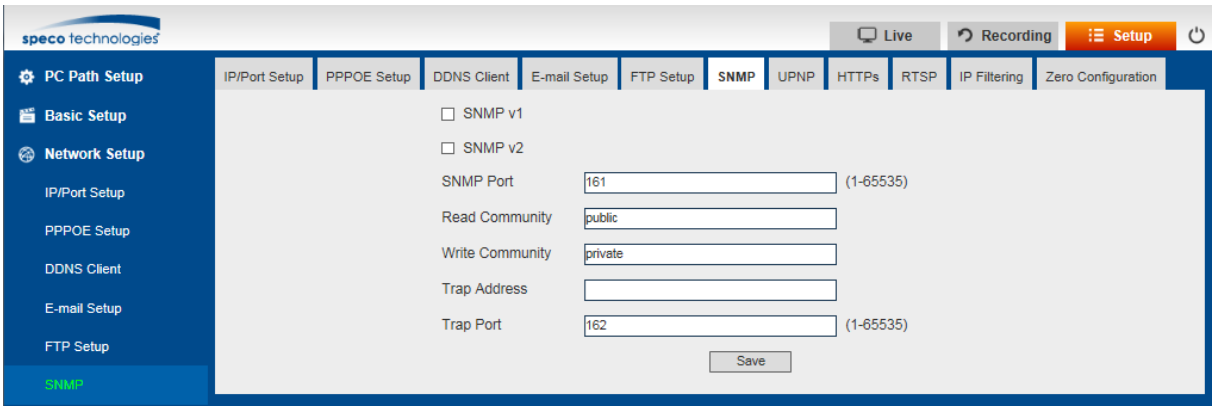


Parameter	Description
Enable	Check to enable the FTP function.
Server	Enter the FTP server address.
Port	Enter the FTP port number. The default value is “21”
Mode	Choose the applicable mode: active or passive.
Username	Enter the username used to log in to the FTP server.
Password	Enter the password used to log in to the FTP server.
Upload Path	Enter the upload folder name here to receive the recorded files.
Test	Click Test to verify the FTP setup.

2. Click “Save” to complete FTP Setup.

4.3.6 SNMP

1. Go to “Setup > Network Setup > SNMP”.
2. Check the corresponding version checkbox according to the version of the SNMP software that will be used.
3. Set the values for the fields accordingly, based on the values that are used in the SNMP software.

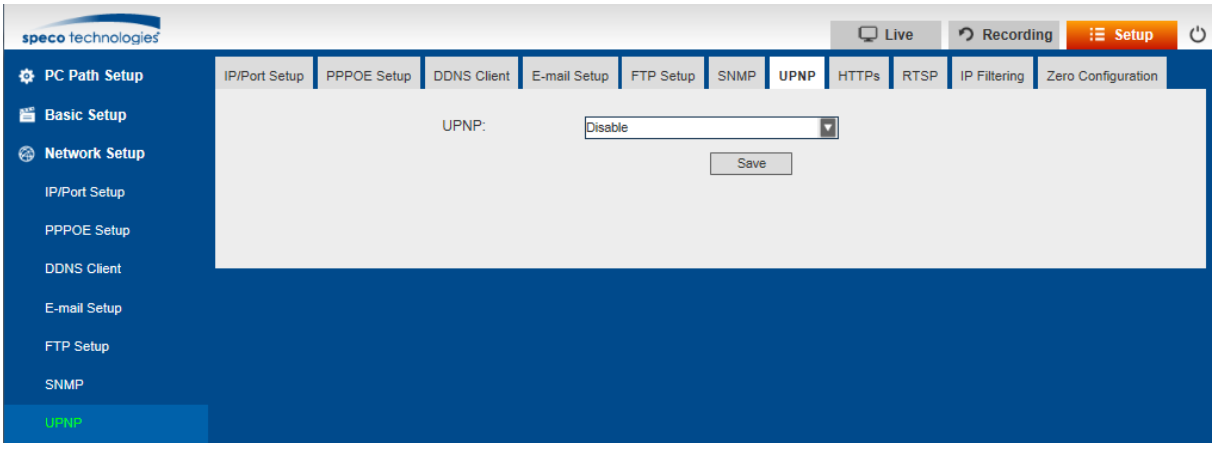


4. Click “Save” to complete SNMP Setup.

4.3.7 UPNP

If this function is enabled, the camera can be quickly accessed through the LAN.

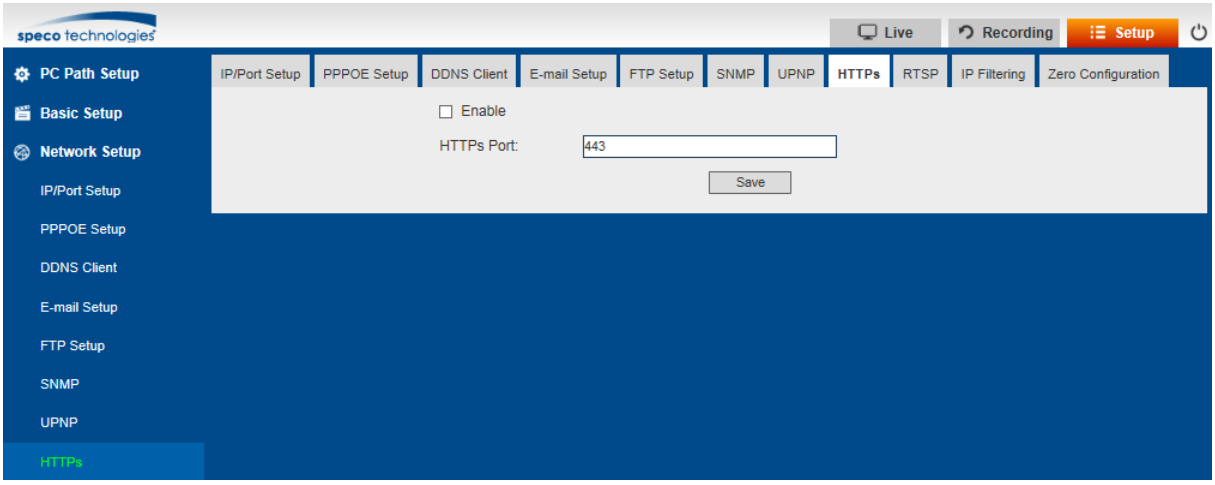
1. Go to “Setup > Network Setup > UPNP”.



2. Select “Enable”.
3. Click “Save” to complete UPNP Setup.

4.3.8 HTTPS

1. Go to “Setup > Network Setup > HTTPS”.



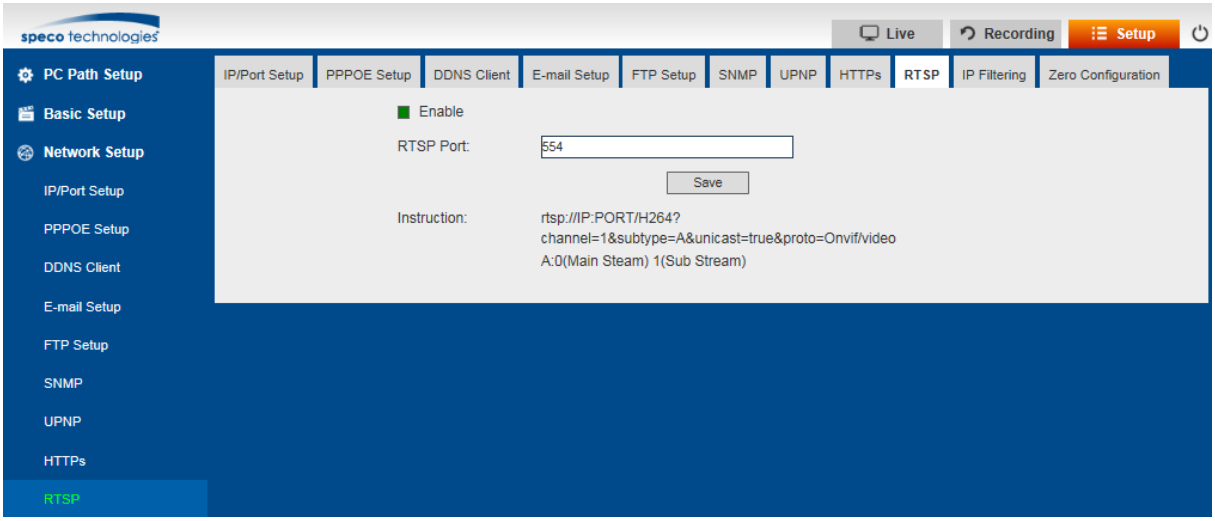
2. Check “Enable”.
3. Click ”Save” to complete HTTPS Setup.

Note

The check-box enables the use of the HTTPS protocol for accessing the camera. The text field designates the Hypertext Transfer Protocol Secure (HTTPS) port number. The default value is “443”.

4.3.9 RTSP

1. Go to “Setup > Network Setup >RTSP”.



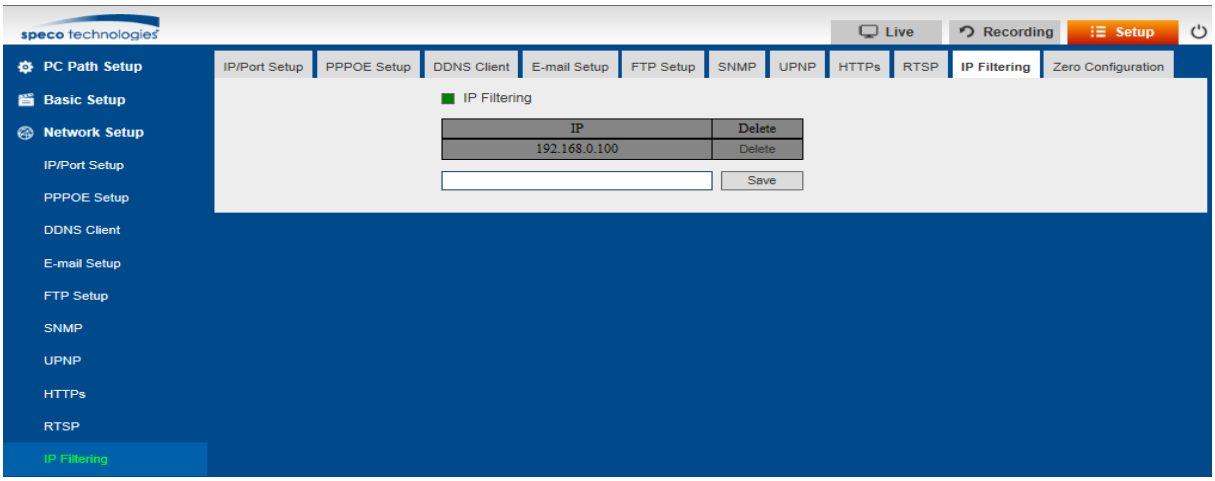
2. Check “Enable”.
3. Click ”Save” to complete RTSP Setup.

Note

The RTSP URL for accessing the stream directly from a 3rd party client is shown. An example of a client is VLC media player.

4.3.10 IP Filtering

1. Go to “Setup > Network Setup >IP Filtering”.

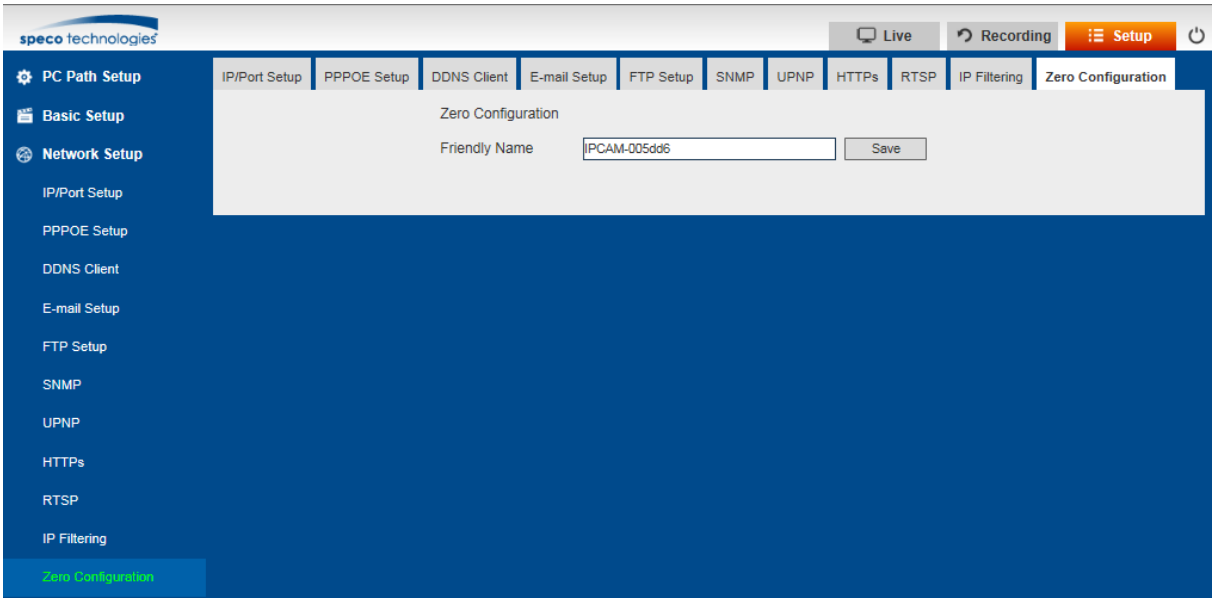


2. Check “Enable” IP Filtering.
3. Enter the IP address to filter. The IP address will be restricted access to the device.
4. Click ”Save” to complete IP Filtering Setup.

4.3.11 Zero Configuration

Zeroconfig can be used to discover the camera on the network when there is no DHCP server available.

1. Go to “Setup > Network Setup >Zero Configuration”.



2. Enter a Friendly Name for the device to be seen on the network.
3. Click ”Save” to complete Zero Configuration.

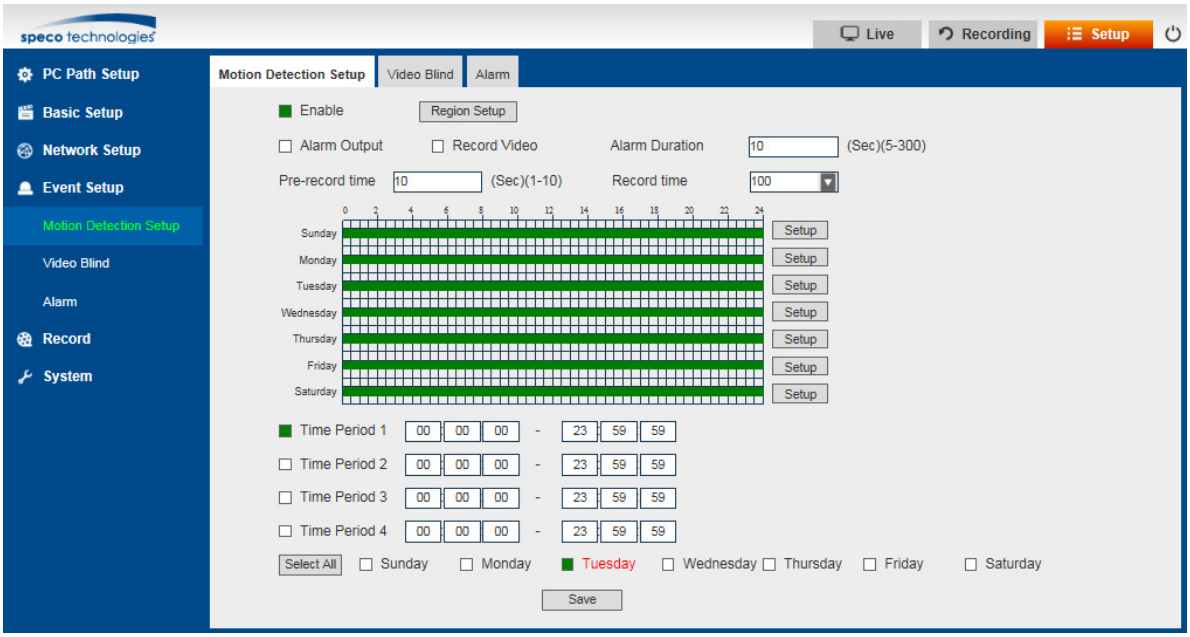
Note

Please use Bonjour to search for and access the device

4.4 Event Setup

4.4.1 Motion Detection Setup

1. Go to “Setup > Event Setup > Motion Detection Setup”.



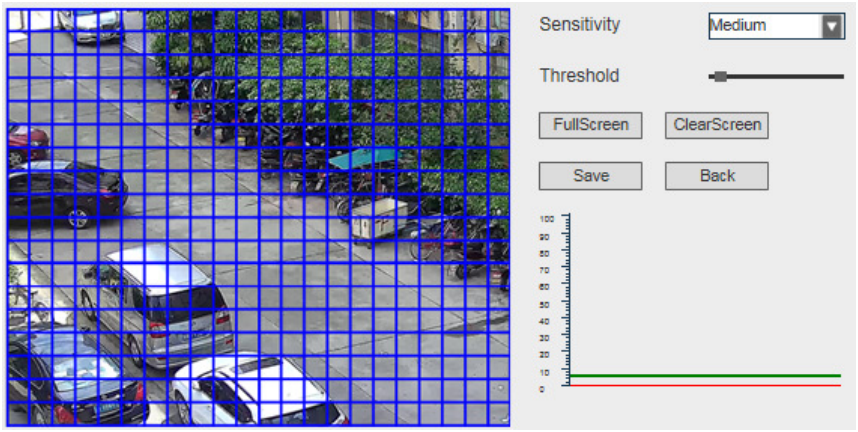
2. Check “Enable” to turn on the Motion Detection function, then check “Alarm Output” and/or “Record Video”, depending on the desired action.

- Alarm Output: check this function to generate an alarm output signal to trigger connected alarm output devices.
- Record Video: check this function to record video to the local PC when a motion alarm is triggered.

Note

To enable motion recording on Speco’s NVRs and SecureGuard® VMS, just the “Enable” box has to be checked.

3. Click “Regional Edit” to open the image window for modifying the motion detection region.



Use the mouse to select detection areas.

- Sensitivity: the higher the sensitivity, the less movement is required to trigger a motion event. The lower the sensitivity, the more movement is required to trigger a motion event.
- Threshold: the level that the motion detection needs to reach in order to trigger motion detection. The lower the threshold, the more likely that motion will trigger the event alarm.
- Full Screen: one-click to select all areas for motion detection.
- Clear Screen: one-click to remove all areas for motion detection.

4. Click “Save” to complete the configuration.
5. Set up values for "Alarm Duration", "Pre-record Time", and "Record Time".

- Alarm Duration: when the alarm is triggered, the alarm duration will last for time period specified here (range from 5 to 300 seconds). The alarm will not be triggered again until this period has ended.
- Pre-record Time: this field specifies in seconds how long the surveillance footage is recorded before motion detection is triggered. This applies to local recording only. For NVR and SecureGuard, the pre-record time is configured on those respective platforms.
- Record Time: this field specifies in seconds how long the surveillance footage will be recorded after motion detection is triggered.

⚠ Note

Setting the “Alarm Duration” time shorter than the “Record Time” is recommended. Otherwise not all the events might be recorded.

6. Set up the time periods for motion alarms to occur. Only the specified time periods will trigger motion alarms. Up to 4 periods can be set per day.
7. Click “Save” to complete motion detection configuration.

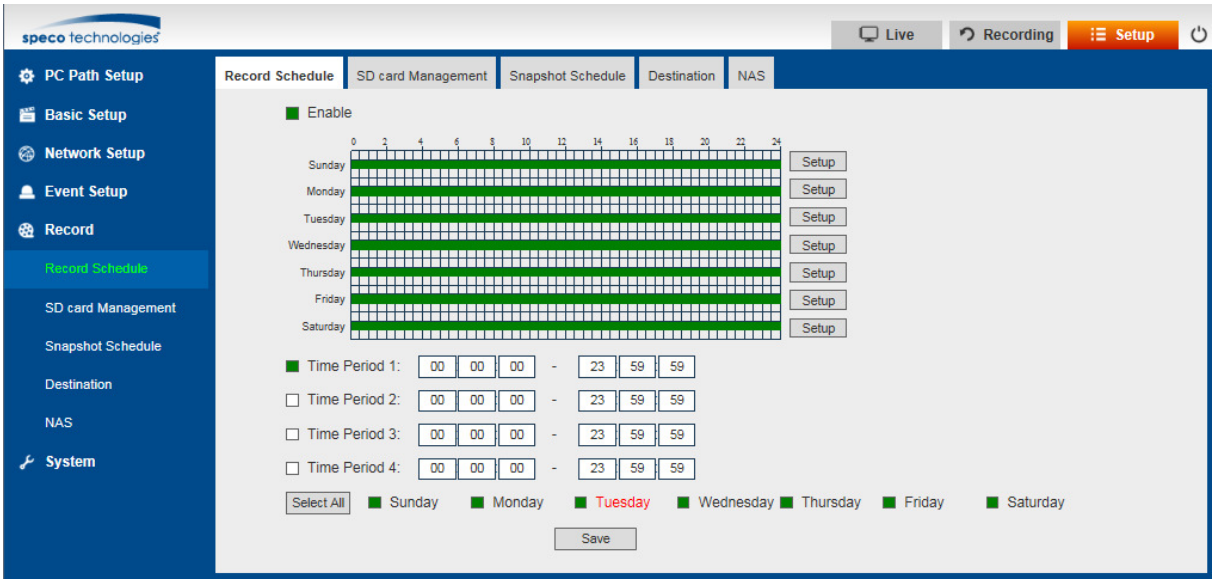
Note

Privacy Mask and Alarm output can be set up in the same manner as Motion Detection.

4.5 Record

4.5.1 Record Schedule

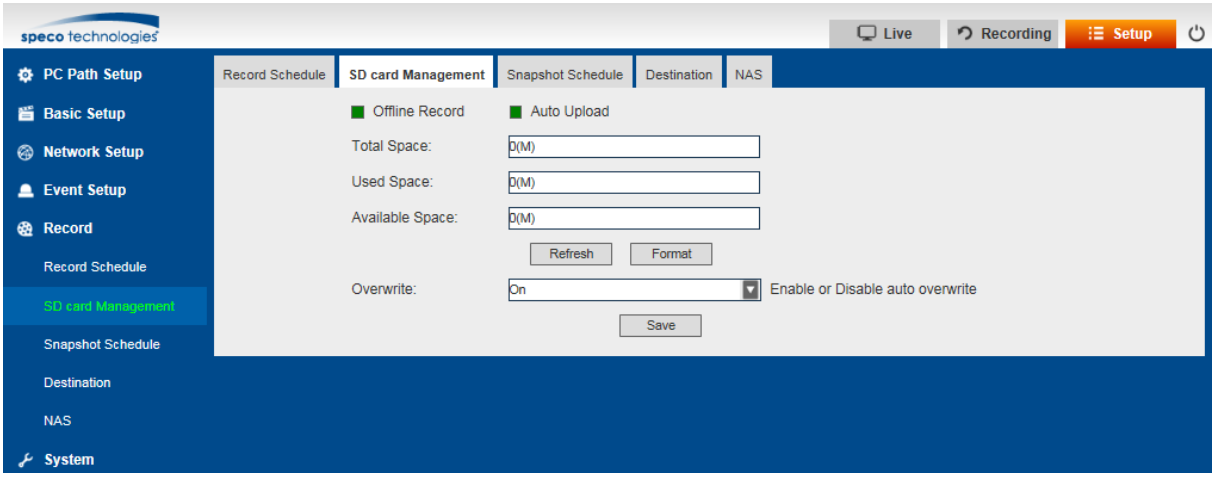
1. Go to “Setup > Record > Record Schedule”.



2. Check “Enable” to set up scheduled recording.
3. Set up the time periods for scheduled recording. Up to 4 periods can be set per day.
4. Click “Save” to complete scheduled recording configuration.

4.5.2 SD card Management

1. Go to “Setup > Record > SD card Management”.



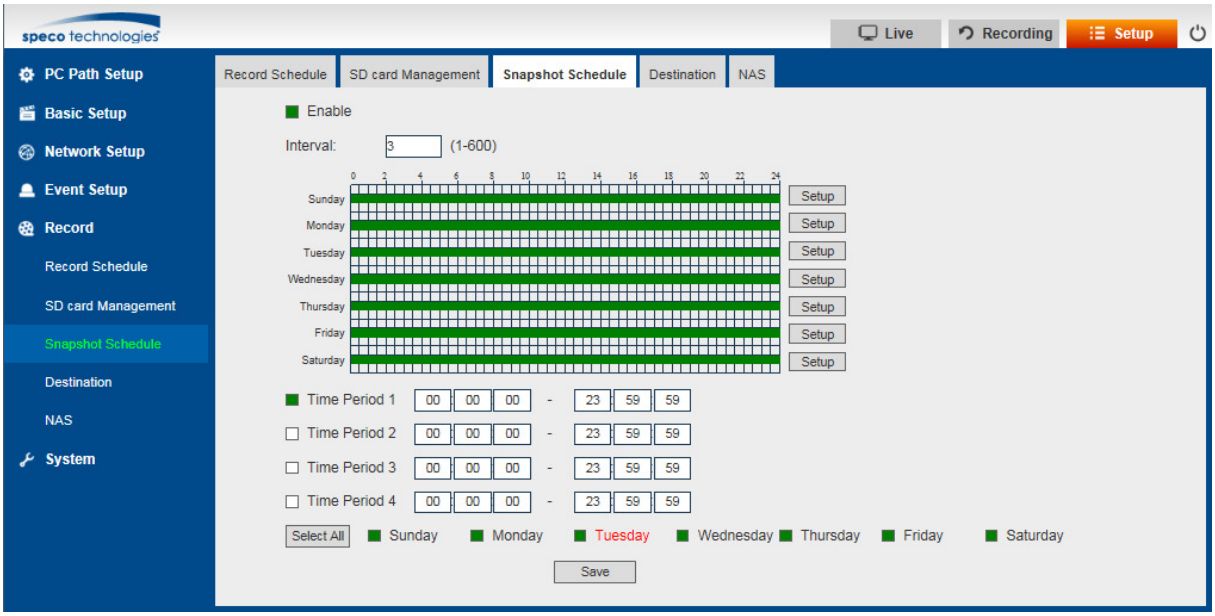
2. After inserting the SD card, click “Refresh” to check the “Total Space”, ”Used Space” and “Available

Space".

3. Click "Format" to format the SD card before use. All existing data on the SD card will be erased.
4. Either enable or disable Overwrite depending on the application.
5. Click "Save" to complete SD card Management configuration.

4.5.3 Snapshot Schedule

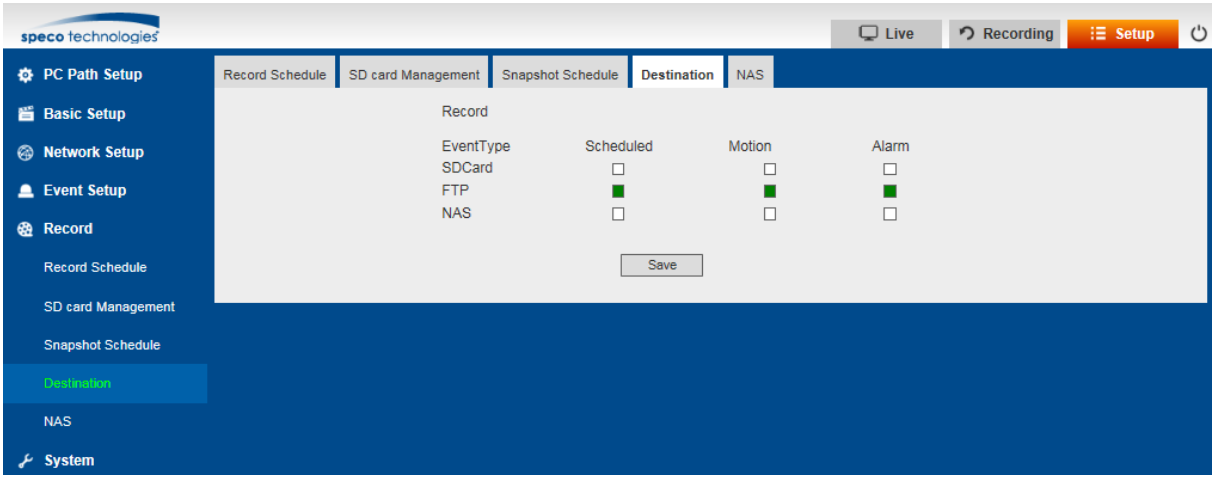
1. Go to "Setup > Record > Snapshot Schedule".



2. Check "Enable" to turn on the snapshot function.
3. Set up the capture time interval. This specifies how often a snapshot will be captured.
4. Set up the time periods for scheduled recording. Up to 4 periods can be set per day.
5. Click "Save" to complete Snapshot Schedule configuration.

4.5.4 Destination

1. Go to “Setup > Record > Destination”. Recording destinations can be set here for scheduled, motion, and alarm events.

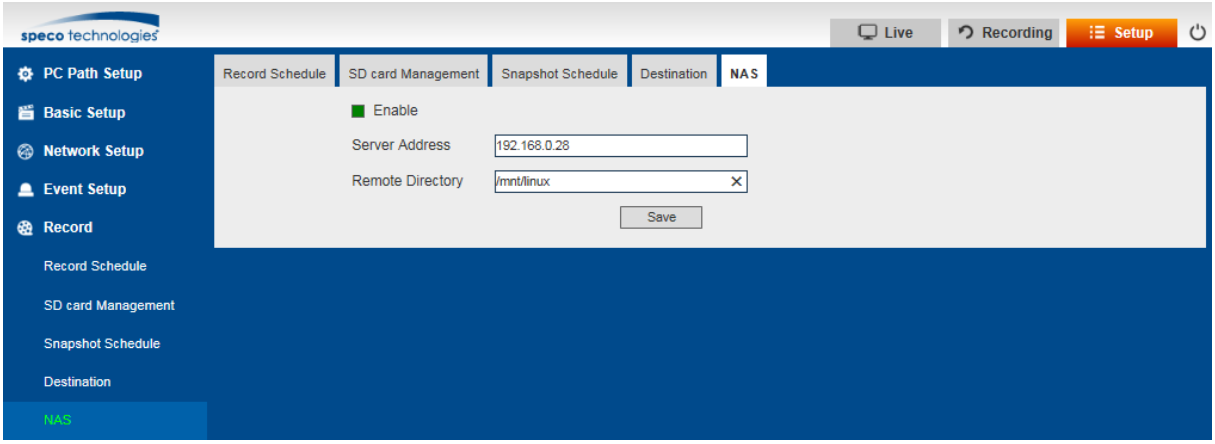


Parameter	Description
SD Card	Video, alarm and snapshot will save to an SD card
FTP	Video, alarm and snapshot will save to an FTP server
NAS	Video, alarm and snapshot will save to a NAS

2. Click “Save” to complete Destination configuration.

4.5.5 NAS

1. Go to “Setup > Record > NAS”.



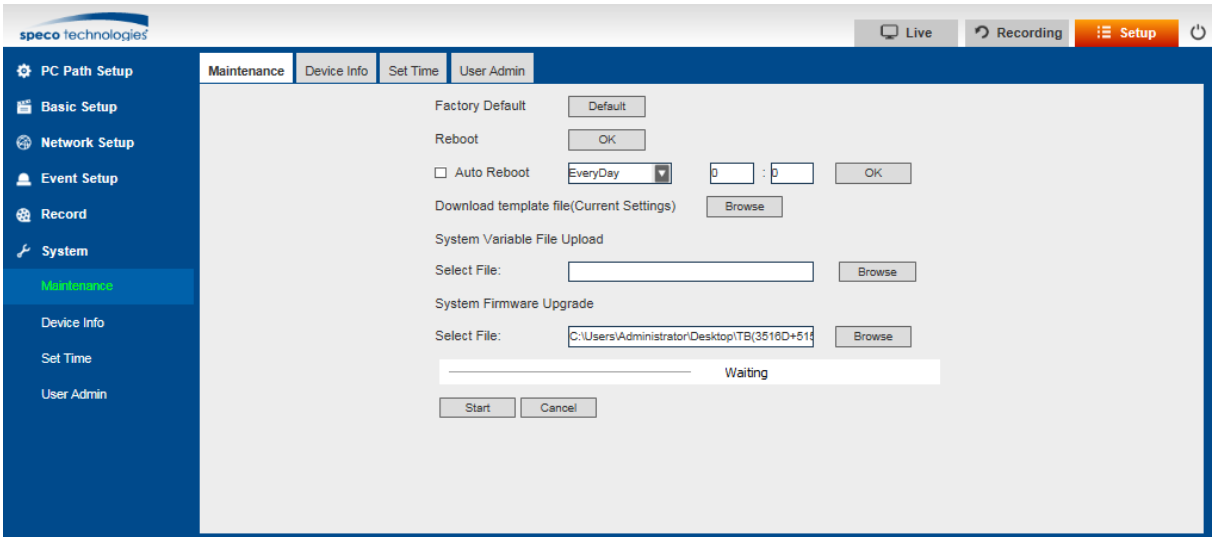
Parameter	Description
Server Address	Enter the NAS IP address
Remote Directory	Enter the target remote directory

2. Click “Save” to complete NAS configuration.

4.6 System

4.6.1 Maintenance

1. Go to Select “Setup > System > Maintenance”.



Parameter	Description
Factory Default	Reset the system to factory default settings.
Reboot	Reboots the device.
Auto Reboot	Schedule an auto reboot for the device.
Download template file	Current settings of the device can be downloaded as a configuration file. This is useful if other units of the same model are installed and the same configuration is desired.

2. Click “System Variable file Upload or System Firmware Upload>Browse”.
3. Select the applicable file and click "Start".

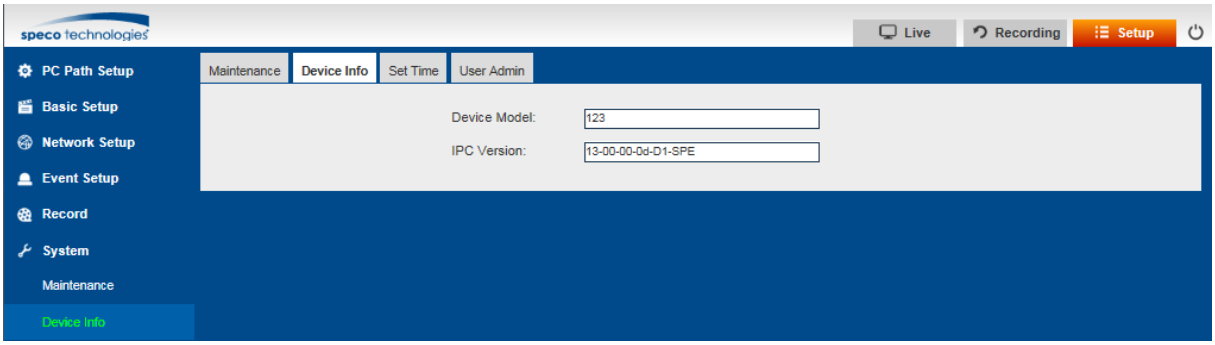
Note

System Variable is used to upload configuration files.

System Firmware is used to update the firmware of the device.

4.6.2 System

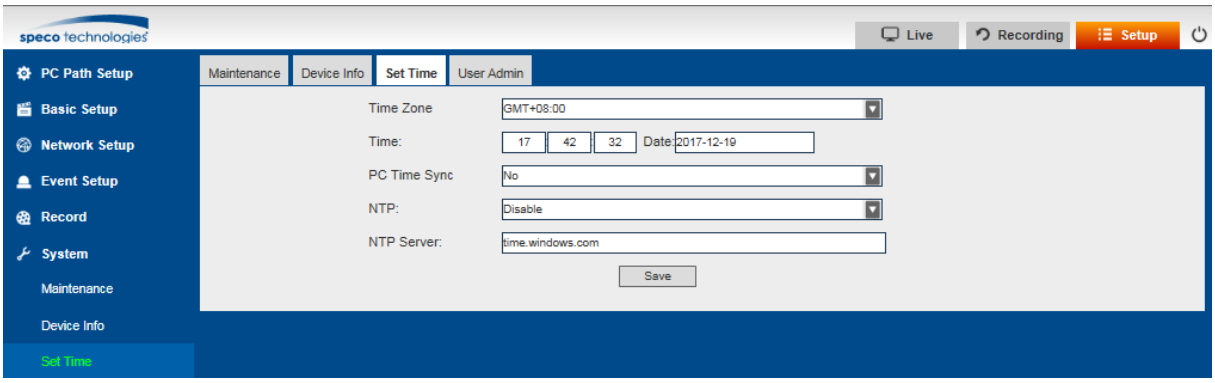
1. Go to “Setup > System > Device Info”.



Parameter	Description
Device Model	Model number for the IP Camera
IPC Version	IP Camera firmware version

4.6.3 Set Time

1. Go to “Setup > System > Set Time”.



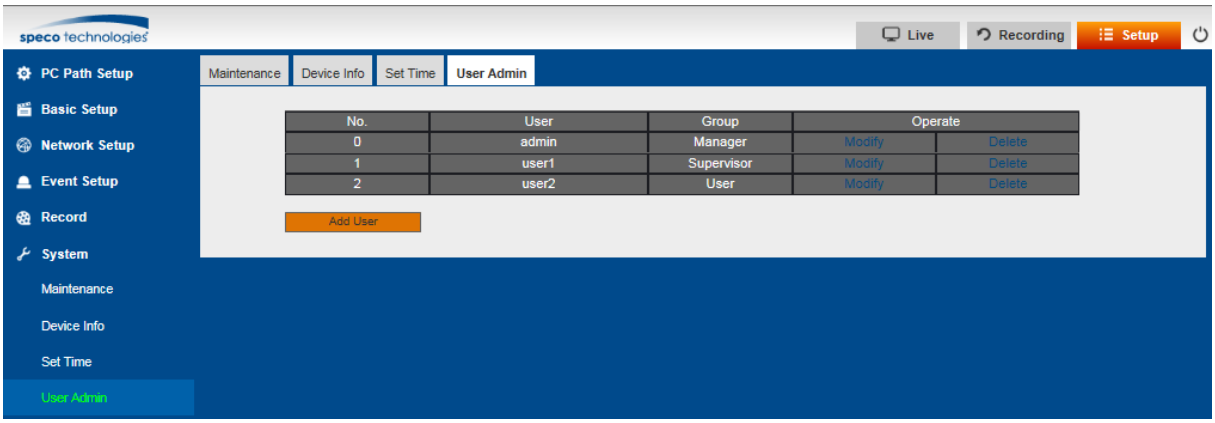
Parameter	Description
Time zone	Set the time zone of the device
Time	Manually set the time

PC Time Sync	Syncs the device time with the local PC time
NTP	Syncs the device time with a network time server if enabled
NTP Server	Enter an NTP server address. The default is “time.windows.com”.

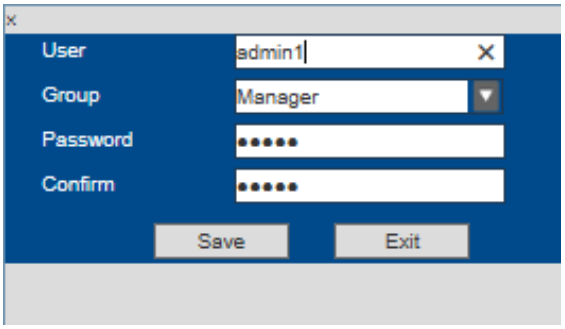
2. Click “Save” to complete Set Time configuration.

4.6.4 User Admin

1. Go to “Settings > System > User Admin” to add users.



2. Click “Add User” to add a user for the device.



- User: user name.
- Group: Select between Manager, Supervisor, and user.
- Password: Set/change user password.
- Confirm: Confirm password.

3. Click “Save” to complete User Admin configuration.

Note

Manager: Administrator level – can change all settings and manage users

Supervisor: Can change all settings, except manage users

User: View only