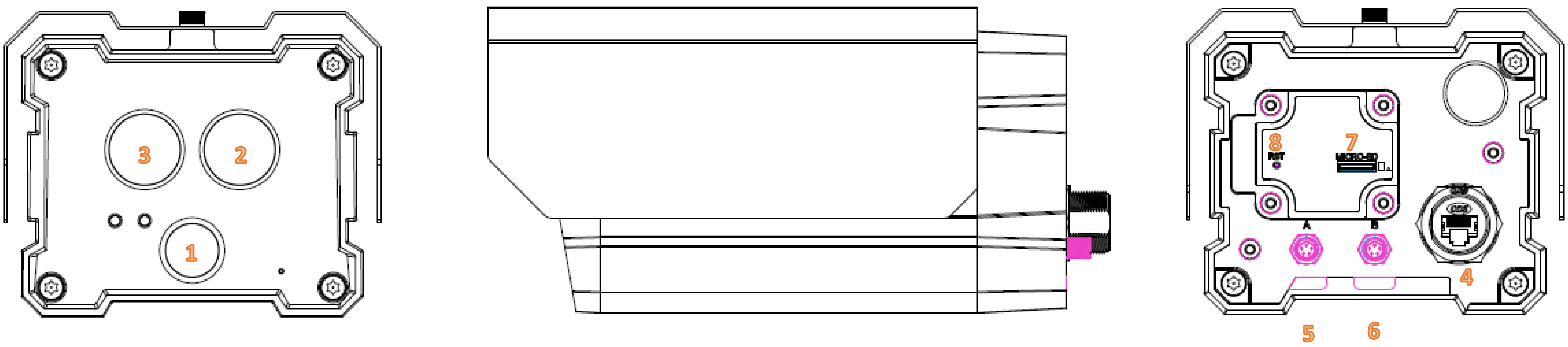
TC-2183-E13 & TC-2184-E40 Bispectral Thermal Network Camera Manual

English Version 1.00

*The demonstration is based on TC-2183-E13

Table of Contents

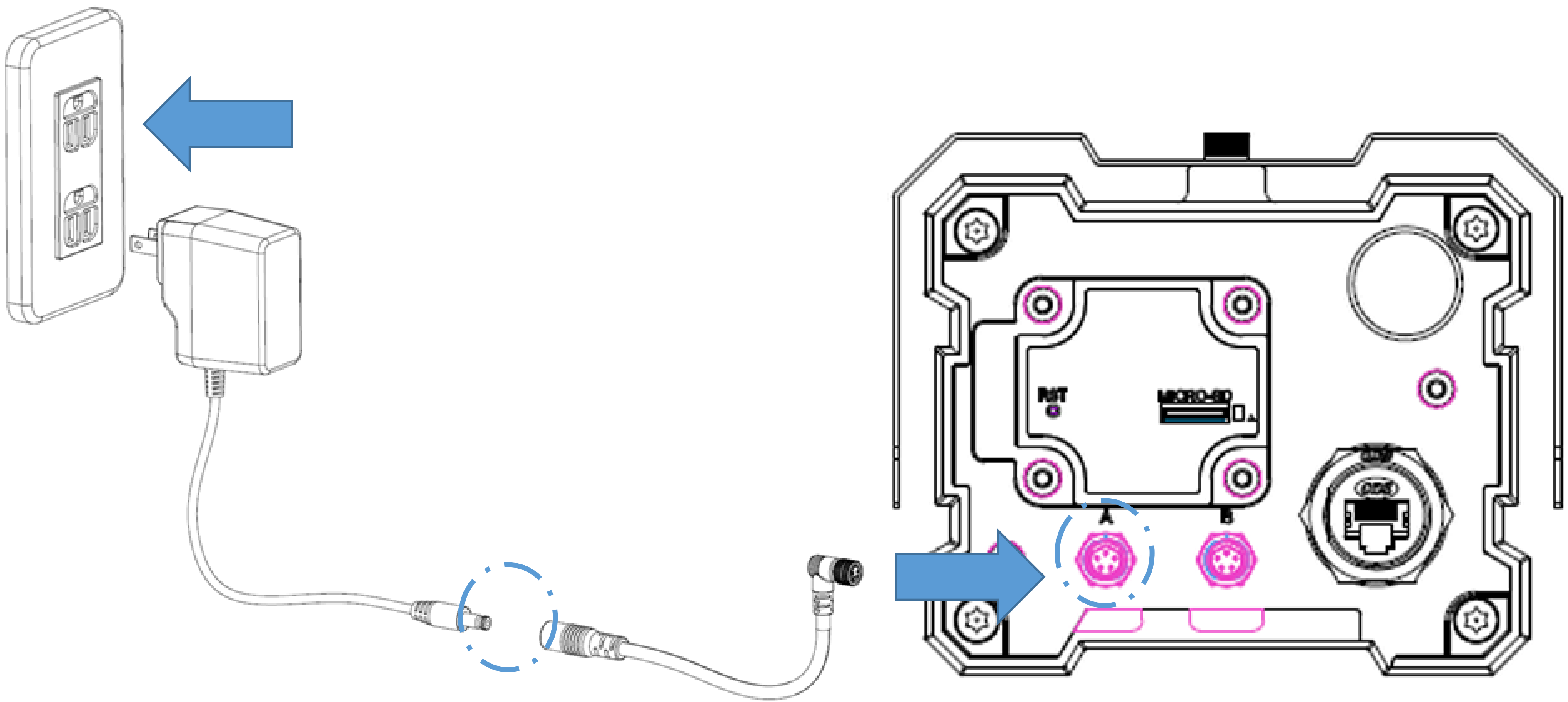
1. TC-2183-E13 Hardware Overview



1. IR LEDs provide illumination for low-light environments.
2. Visible Camera Lens.
3. Thermal Camera Lens.
4. Ethernet Port RJ-45 connector for Ethernet can also be used to power the camera with or without Power over Ethernet (PoE).
5. Power Port (A) connects to an 12 V power adapter. Please refer to the **Power cord connection** on page 4.
6. Function port(B) connects to DI/DO.
7. SD Card slot. After inserting the microSD card, please lock the waterproof cover.
8. Reset. After resetting, please make sure to close and lock the waterproof cover.

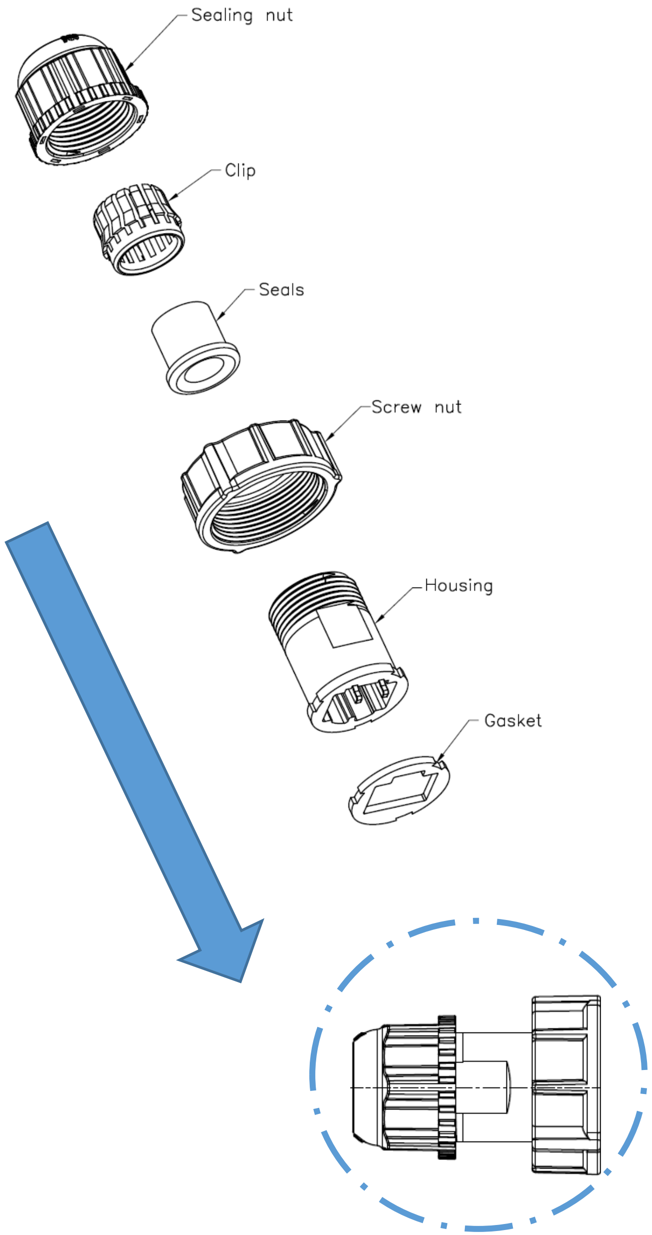
TC-2183-E13 Power cord connection

Use the power cord included in the package to connect the M8 connector to the camera power port (A). Connect the DC-Jack to the DC12V adapter, then plug it into the power socket.



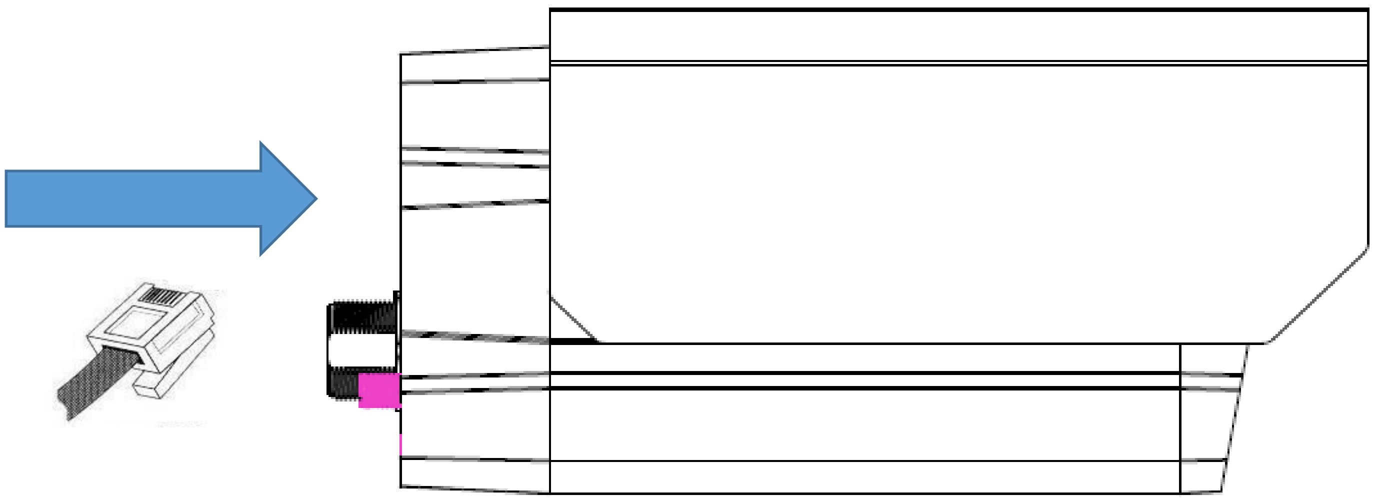
TC-2183-E13 assemblage of RJ45 waterproof accessories

Step 1



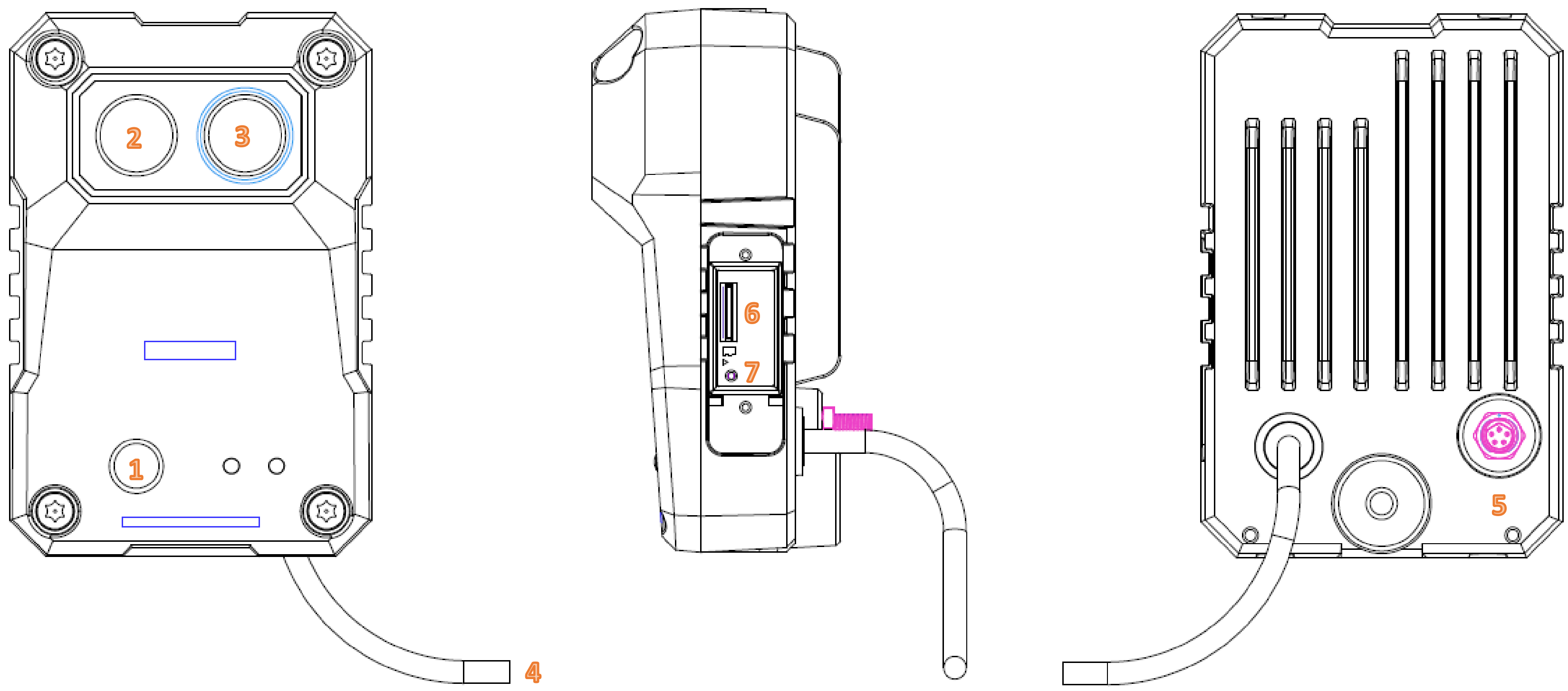
Step 1： Assemble 6 pieces of RJ45 waterproof accessories in the package and assemble them into RJ45 waterproof plugs in the order shown on the left.

Step 2： First the network cable pass through the RJ45 waterproof plug. Then make a network cable head. After connecting the network cable head to the Ethernet port, tighten the RJ45 waterproof plug.



Step 2

TC-2184-E40 Hardware Overview



1. LEDs provide illumination for low-light environments.
2. Visible Camera Lens.
3. Thermal Camera Lens.
4. Ethernet Port RJ-45 connector for Ethernet can also be used to power the camera with or without Power over Ethernet (PoE).
5. RS485 port connects to a sensor or Pan-Tile control.
6. SD Card slot. After inserting the microSD card, please lock the waterproof cover.
7. Reset. After resetting, please make sure to lock the waterproof cover.

2. Login web UI

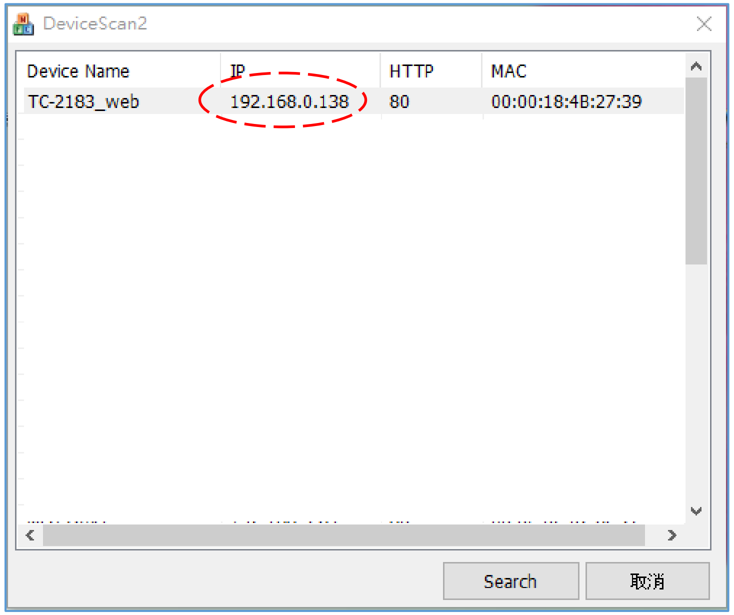
Step 1

Please download the camera scanning tool **DeviceScan2** from the following official website and install it on your computer.

https://approtech.com/DeviceScan2.zip

Step 2

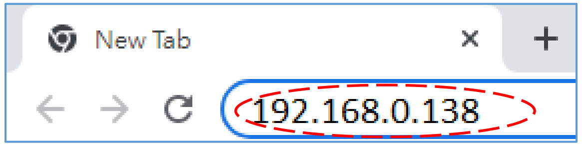
Execute **DeviceScan2**, then kick **Search** to find the camera on the network.



Step 3

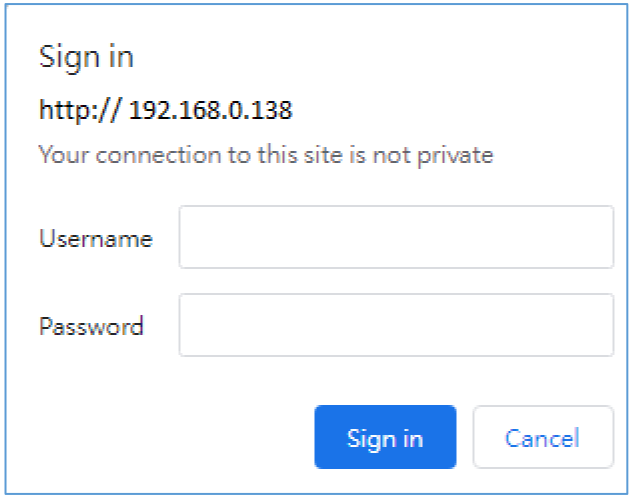
Open a browser and enter the IP address in the address bar.

*The camera IP address and your PC IP address must be in the same network segment.



Step 4

When the camera is successfully connected to your computer, the "**Sign in**" window will be displayed.

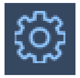


The factory default administrator username is admin, and the password is blank. Press Sign in to enter the live video page.

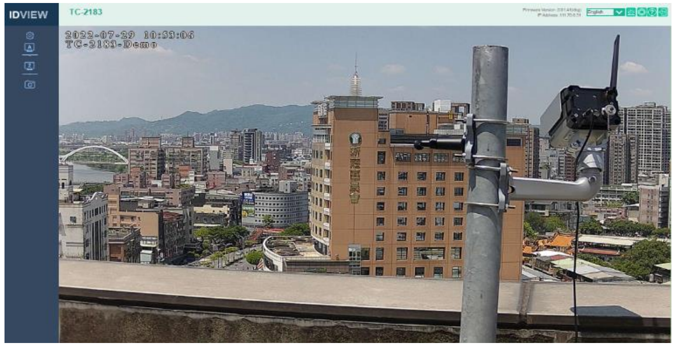
Note: For hacking security purposes, please modify the password. For how to change the camera's administrator password, please refer to Admin Password on page 53.

3. Live Video

This section shows your camera’s live video. You may select any of the icons listed below to operate the camera. You may also choose your language using the dropdown menu on the left side of the screen.

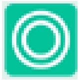
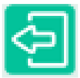
	Setup	Clicking this will take you to the camera configuration pages.
	Window Size	You can choose between various screen sizes for your camera's video: ● Auto Screen: Automatically resize the camera video to match your browser window. ● Full Screen: View your camera video using the entire screen. ● 100% Screen: View your camera's video at 100% size. ● 50% Screen: View your camera's video at 50% size. ● 25% Screen: View your camera's video at 25% size.
	Video Profile	Select a video profile to use. For more on setting up your video profiles, refer to "Video Stream" on page 26. Video 1：Thermal and visible. Video 2：Visible. Video 3：Thermal.
	Take a Snapshot	This will save a snapshot to your PC using the selected storage folder.
	Record a Video Clip	This will start recording a video clip to your PC using your selected storage folder. If you close the browser window, the recording will stop. Click it again to stop recording.
	Speaker	Click the button to enable or disable audio output.

Video 1：Thermal and visible



Video 2：Visible.

Video 3：Thermal.

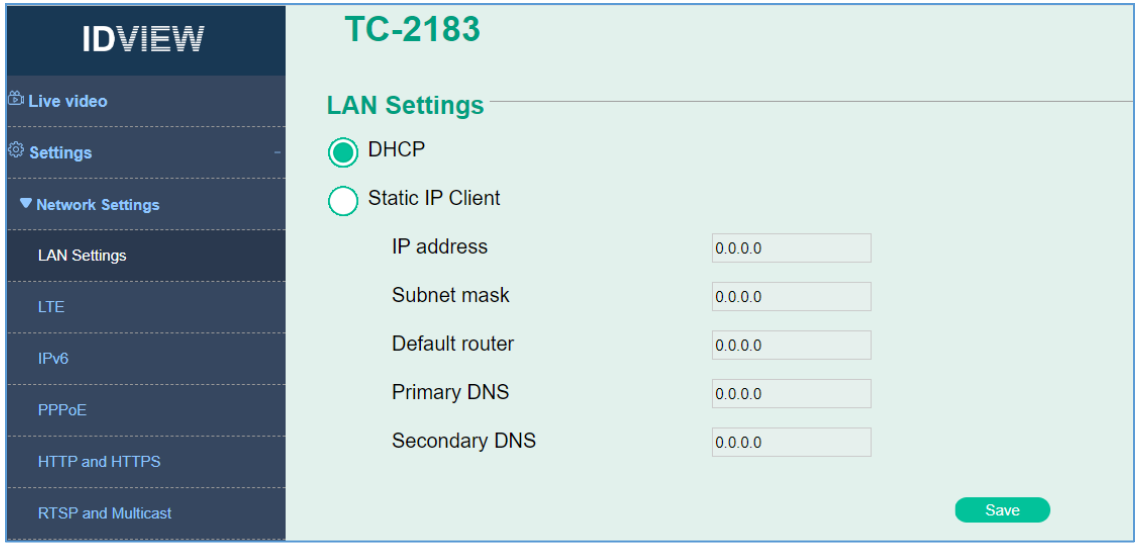
	Microphone	Click the button to enable or disable the talk function.
	Set a Storage Folder	Select a storage folder to save snapshots and video clips.
	Zoom In/Out	Click this and use the slider to zoom in and out of your camera's video
	Alarm	This will flash red when motion or digital in is detected.
	Record Status	This will turn red when the camera is recording.
	Help	Click this to open a window that describes the Live Video controls.
	Logout	Click this to log out of the web interface.

4. Network Settings

LAN Settings

Use this section to configure the network connections for your camera. All relevant information must be entered accurately. Please note that PPPoE must be disabled to make any changes on this page; refer to "PPPoE" on page 12 for more details. After making any changes, click the **Save** button to save your changes.

- **DHCP**：Select this connection if you have a DHCP server running on your network and would like your camera to obtain an IP address automatically.
  If you choose DHCP, you do not need to fill out the IP address settings.
- **Static IP Client**: You may obtain a static or fixed IP address and other network information from your network administrator for your camera. A static IP address may simplify access to your camera in the future.
  IP address: Enter the fixed IP address in this field.
  Subnet mask: This number determines if the destination is in the same subnet. The default value is 255.255.255.0.
  Default router: Enter the router/gateway to forward frames to destinations in a different subnet. Invalid router/gateway settings may cause the failure of transmissions to a different subnet.
  Primary DNS: Enter the primary domain name server for translating domain names to IP addresses.
  Secondary DNS: Enter the secondary domain name server for translating domain names to IP addresses.

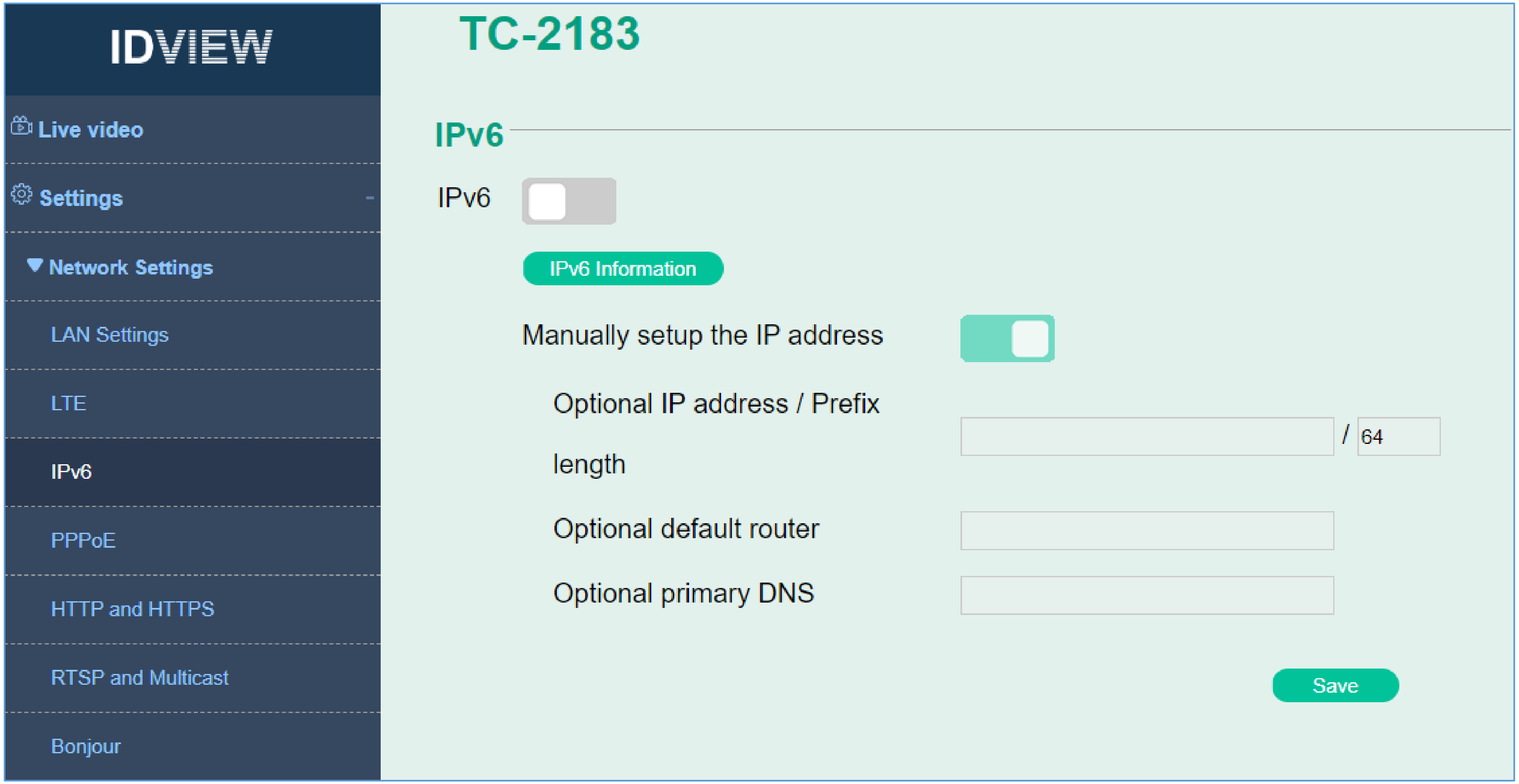


After making any changes, click the **Save** button to save your changes.

IPv6

Use this section to configure your camera's IPv6 settings. After making any changes, click the **Save** button to save your changes.

- **Enable IPv6**: Enable the IPv6 setting to use the IPv6 protocol.
- **Manually Setup the IP Address**: Enabling the option allows you to set up the address manually, and specify an optional IP address, an optional router address, and an optional primary DNS address. You can click the Information button to see the IPv6 address lists for the host, gateway, and DNS server.

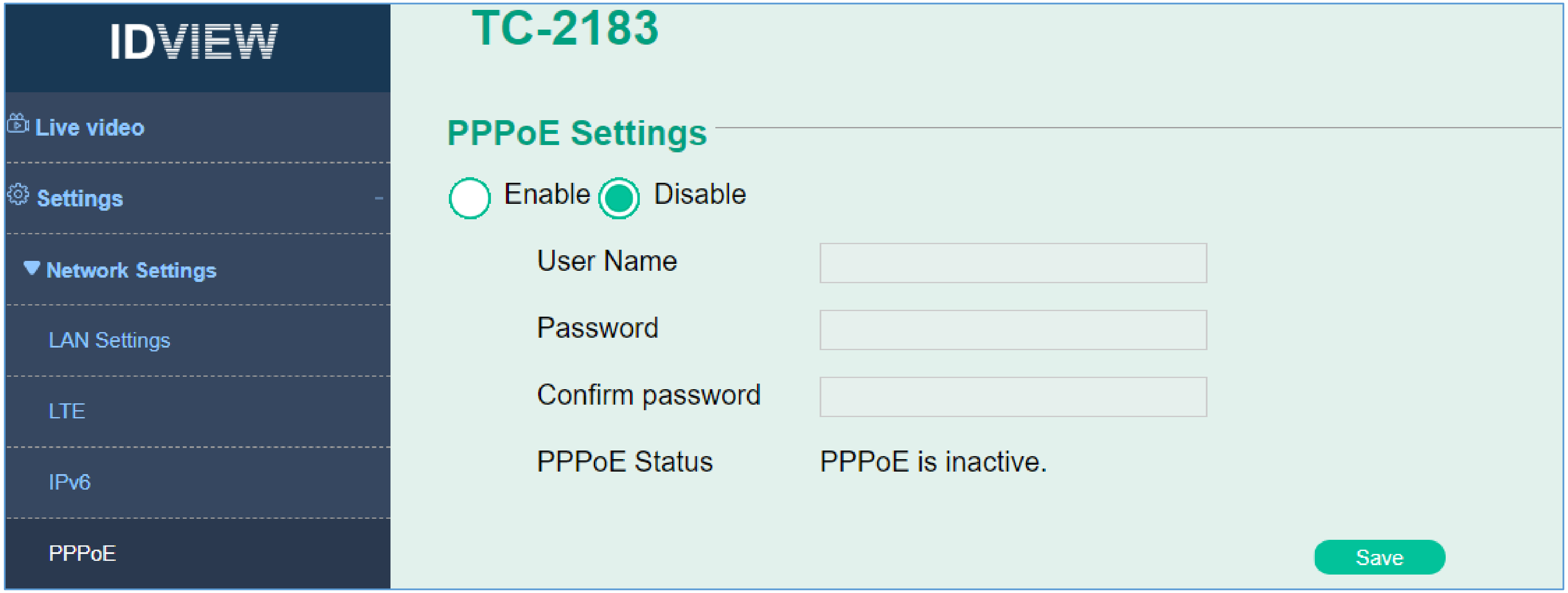


After making any changes, click the **Save** button to save your changes.

PPPoE

Use this section to configure your camera's PPPoE settings. After making any changes, click the **Save** button to save your changes.

- **Enable PPPoE**: Enable this setting if your network uses PPPoE.
- *User Name / Password*: Enter the username and password for your PPPoE account. You may obtain this information from your ISP. Re-enter your password in the Confirm Password field.
- **PPPoE Status**: This shows your current PPPoE connection status.



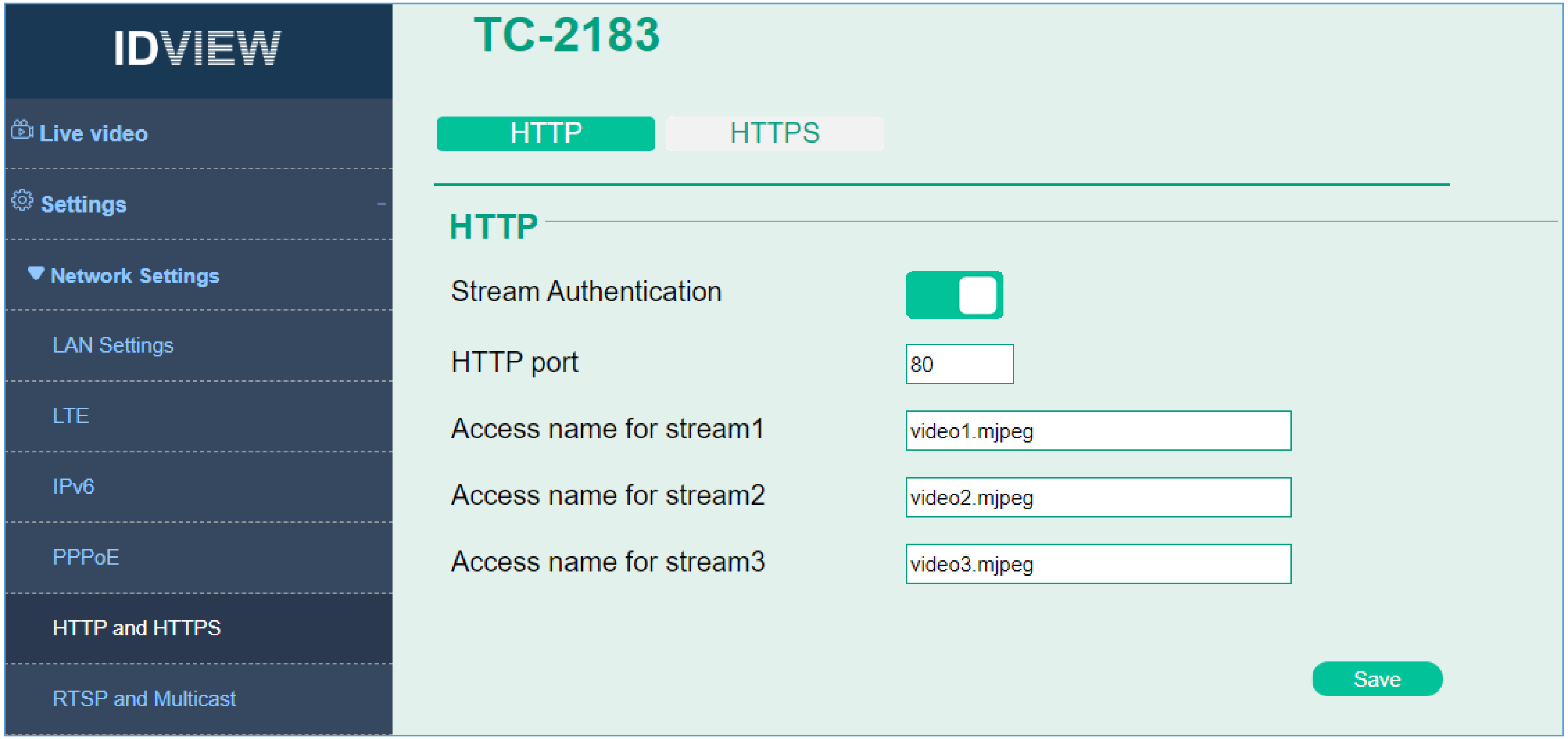
After making any changes, click the **Save** button to save your changes.

HTTP 和 HTTPS

Use this section to configure your camera's HTTP and HTTPS access settings. After making any changes, click the **Save** button to save your changes

HTTP

- **HTTP Port**: The default port number is 80. The second HTTP preset is 8080. Both can be any value from 1025 to 65535.
- **Access Name for Stream 1~3**: The default name is video#.mjepg, where # is the number of the stream.

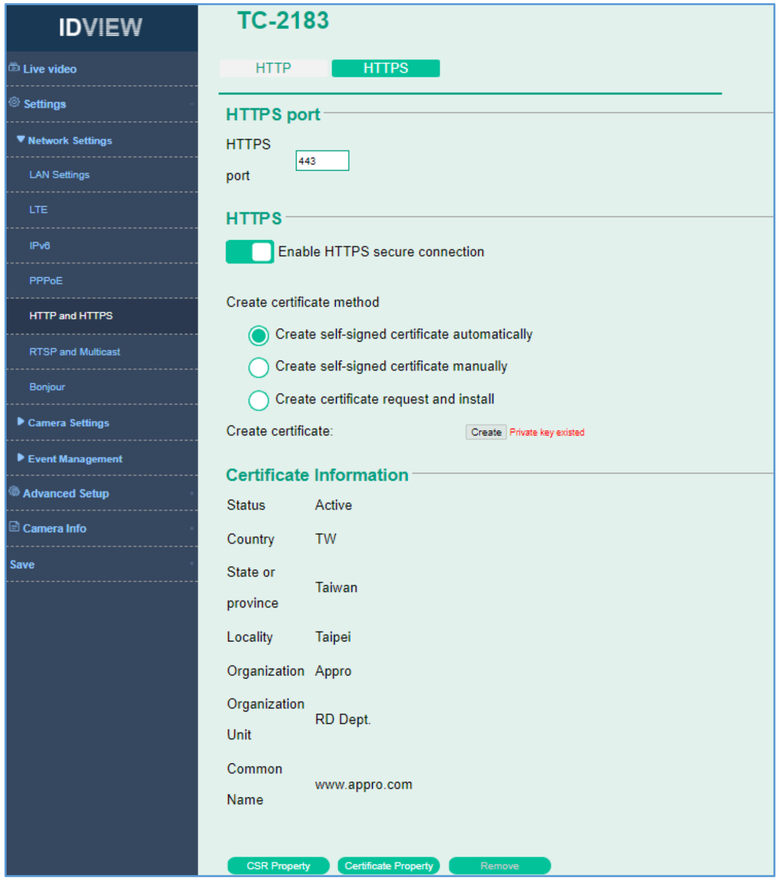


After making any changes, click the **Save** button to save your changes.

HTTPS

- **HTTPS Port**: You may use a PC with a secure browser to connect to the HTTPS port of the camera. The default port number is 443.
- **Enable HTTPS Secure Connection**: Enable the HTTPS service.
- **Create Certificate Method**: Choose the way the certificate should be created. Three options are available:
  - Create a self-signed certificate automatically.
  - Create a self-signed certificate manually.
  - Create a certificate request and install.
- **Certification Information**: Displays the status of the certificate.

Note: The certificate cannot be removed while the HTTPS is still enabled. To remove the certificate, you must first uncheck the HTTPS secure connection.



RTSP and Multicast

Use this section to configure your camera's RTSP and multicast stream settings. After making any changes, click the **Save** button to save your changes.

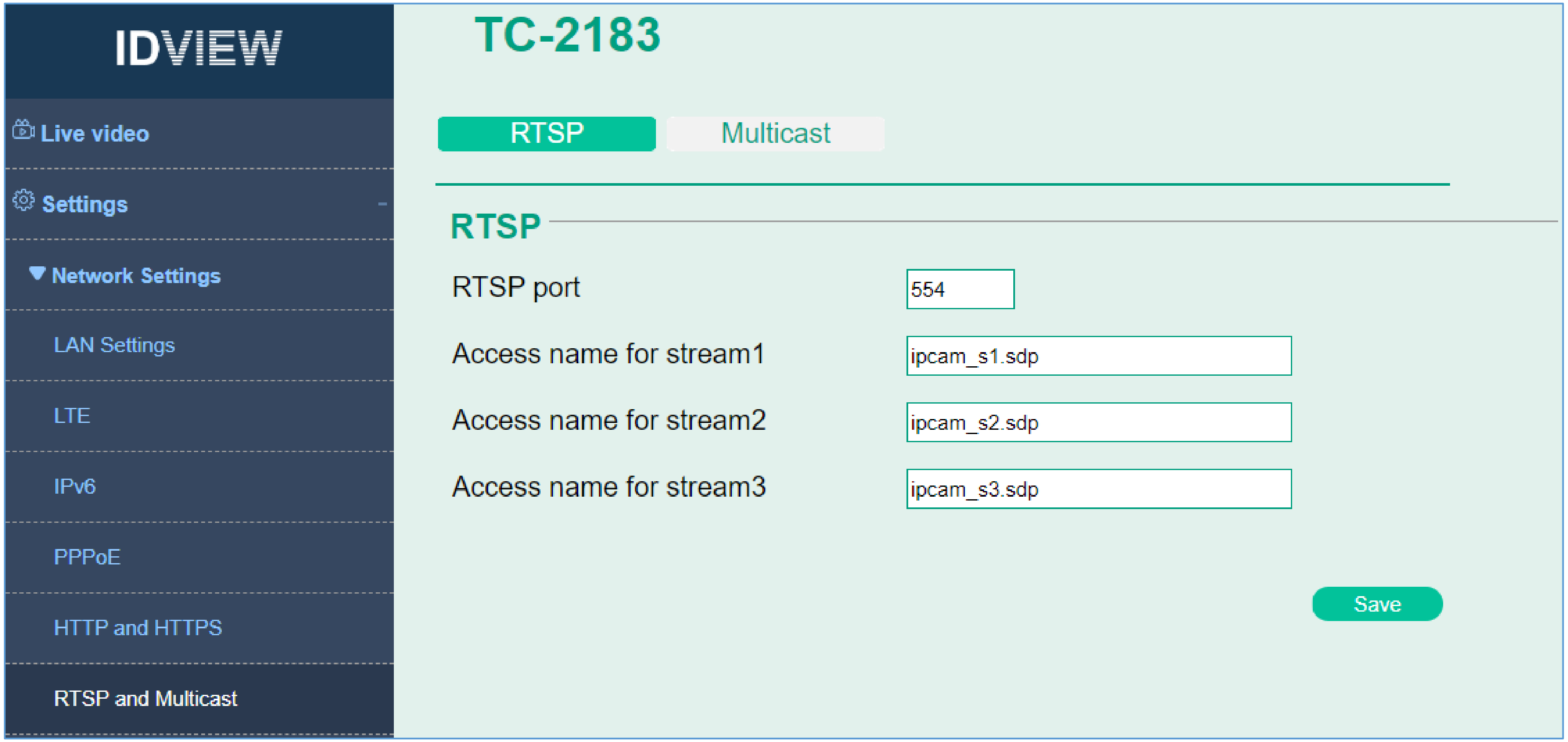
RTSP

Use this section to configure your camera's RTSP and multicast stream settings. After making any changes, click the **Save** button to save your changes

RTSP

RTSP Port: The port number that you use for RTSP streaming to mobile devices, such as mobile phones or tablets. The default port number is 554.

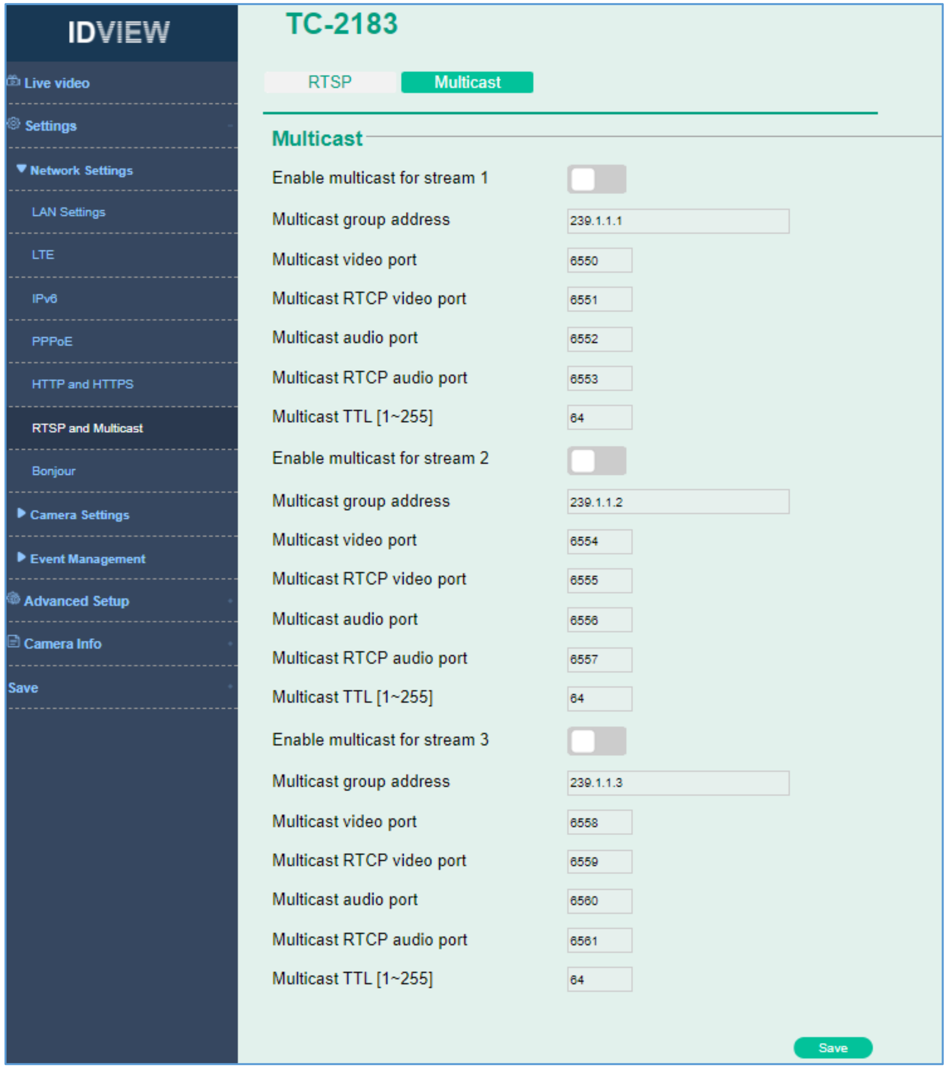
Access Name for Stream 1~3: You may specify the address of a particular stream. For instance, live1.sdp can be accessed at rtsp://x.x.x.x/ipcam_s1.sdp where the x.x.x.x represents the IP address of your camera.



After making any changes, click the **Save** button to save your changes.

Multicast

Multicast for Stream 1~3: The camera allows you to multicast each of the available streams via a group address and specifies the TTL value for each stream. Enter the port and TTL settings you wish to use if you do not want to use the defaults.



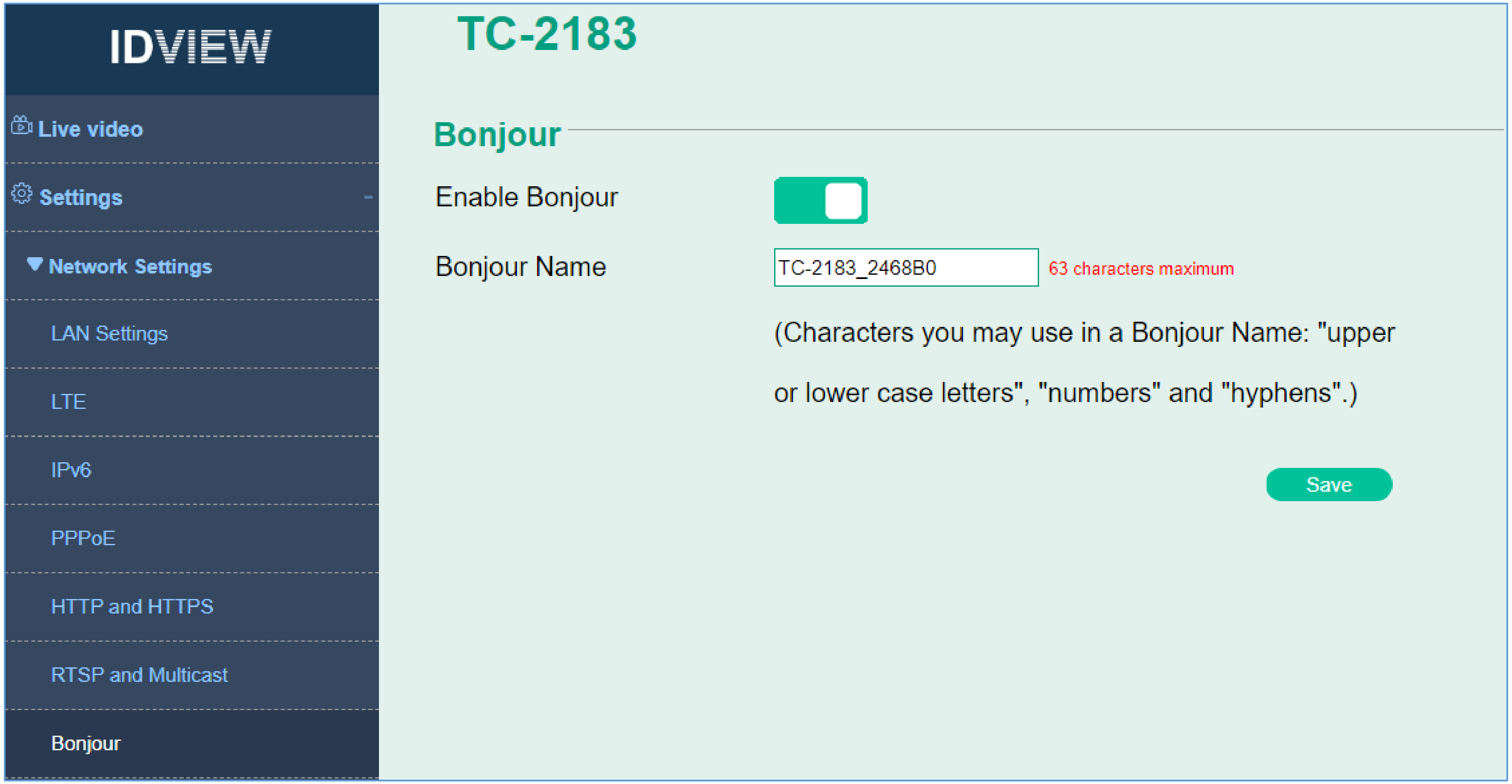
After making any changes, click the **Save** button to save your changes.

Bonjour

Use this section to enable Bonjour, which allows your camera to be accessed more quickly on your network. After making any changes, click the **Save** button to save your changes.

- **Bonjour**: Enable this to enable Bonjour support.
- **Bonjour Name**: Enter a name to identify this camera on Bonjour.

After making any changes, click the **Save** button to save your changes.



5. Camera Settings

Camera Settings

Use this section to configure your camera's device name and LED behavior. After making any changes, click the **Save** button to save your changes.

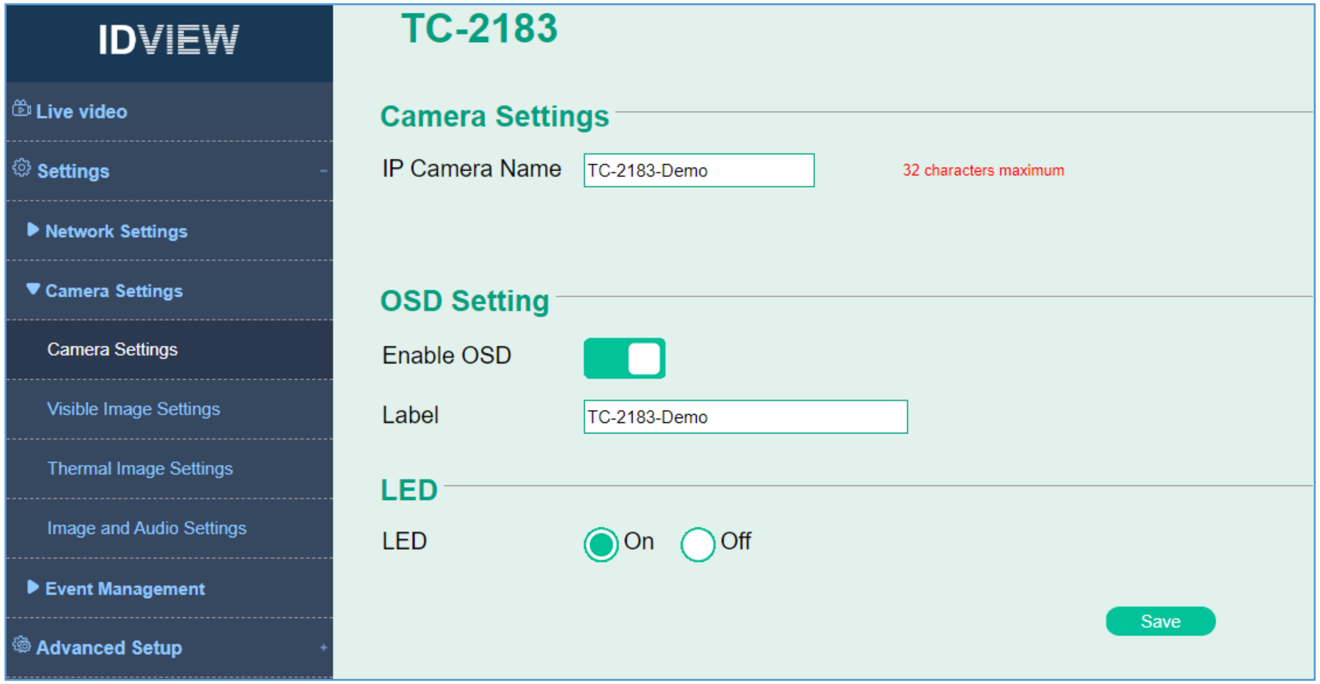
- **IP Camera Name**: Create a unique name for your camera that will be added to the file name prefix when creating a snapshot or a video clip.

OSD Settings

- **OSD**: Select this option to enable the On-Screen Display feature for your camera. This will allow some information to appear in the top-left corner of the camera's video.

- **LED**: You may specify whether or not to illuminate the status LED on the camera.

After making any changes, click the **Save** button to save your changes.



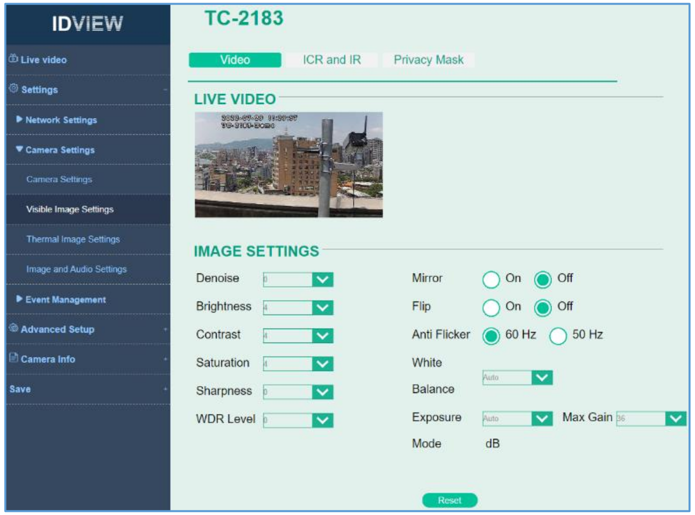
Visible Image Settings

In this section, you may configure the video image settings for your camera. All changes in the Image Settings section will be made immediately. For the other sections, after making any changes, click the **Save** button to save your changes.

Image Settings

- **Mirror**: This will mirror the image horizontally.
- **Flip**: This will flip the image vertically.
- **Anti-Flicker**: Select the frequency used by your power lines to avoid interference or distortion.
- **White Balance**: Use the dropdown box to change white balance settings to help balance colors for different environments. You can choose from Auto, Outdoor, Indoor, or Fluorescent.
- **Exposure Mode**: Changes the exposure mode. Use the dropdown box to set the camera for Auto, Indoor, or Moving to capture moving objects. You can also create three different custom exposure modes.
- **Max Gain:** will limit the brightness of the exposure.
- **Denoise**: This setting controls the amount of noise reduction that will be applied to the picture.
- **Brightness**: Adjust this setting to compensate for backlit subjects.
- **Contrast**: Adjust this setting to alter the color intensity/strength.
- **Saturation**: This setting controls the amount of coloration, from grayscale to fully saturated.
- **Sharpness**: Specify a value to determine how much sharpening to apply to the image.
- **WDR Level**: Wide Dynamic Range (WDR) helps improve exposure, making it easier to see objects in very bright or dark areas of the camera's image. Specify a value to determine how much WDR adjustment to apply to the image, or select None.
- **Reset**: Click this button to reset the image to factory default settings.

After making any changes, click the **Save** button to save your changes.



ICR & IR

Use this section to configure your camera's IR LED and IR-cut removable filter behavior.

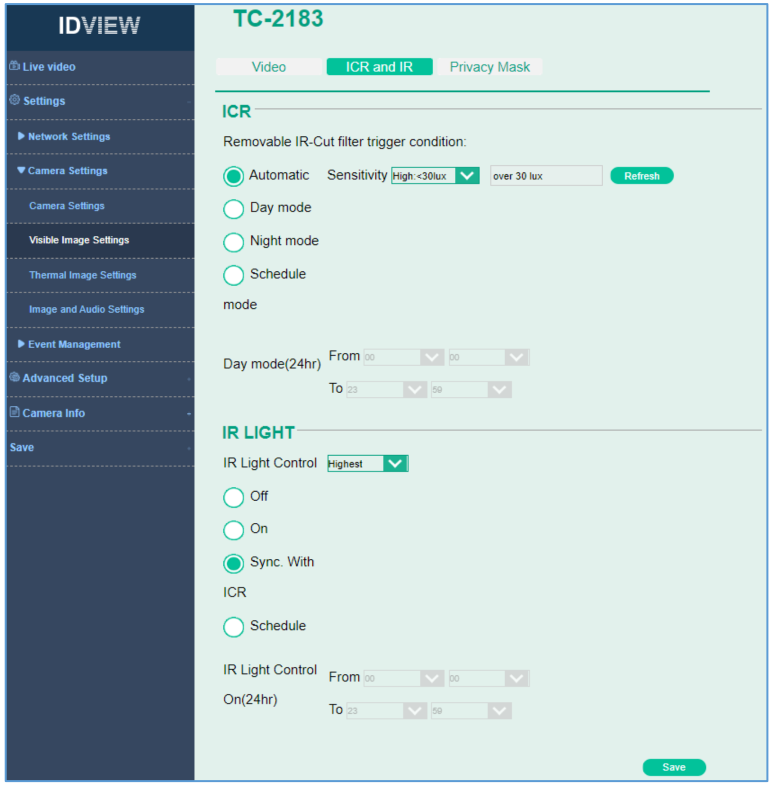
ICR

- **Automatic**: The Day/Night mode is set automatically. Generally, the camera uses Day mode and switches to Night mode when needed. Use the Sensitivity dropdown box to select when the camera should switch to Night mode. The text to the right of the dropdown box shows what the current lighting conditions are like, and you can refresh this information by clicking the **Refresh** button.
- **Day Mode**: Day mode enables the IR Cut Filter and turns off the IR LEDs.
- **Night Mode**: Night mode disables the IR Cut Filter and turns on the IR LEDs.
- **Schedule Mode:** Set Day/Night mode using the schedule in the dropdown boxes.

IR Light

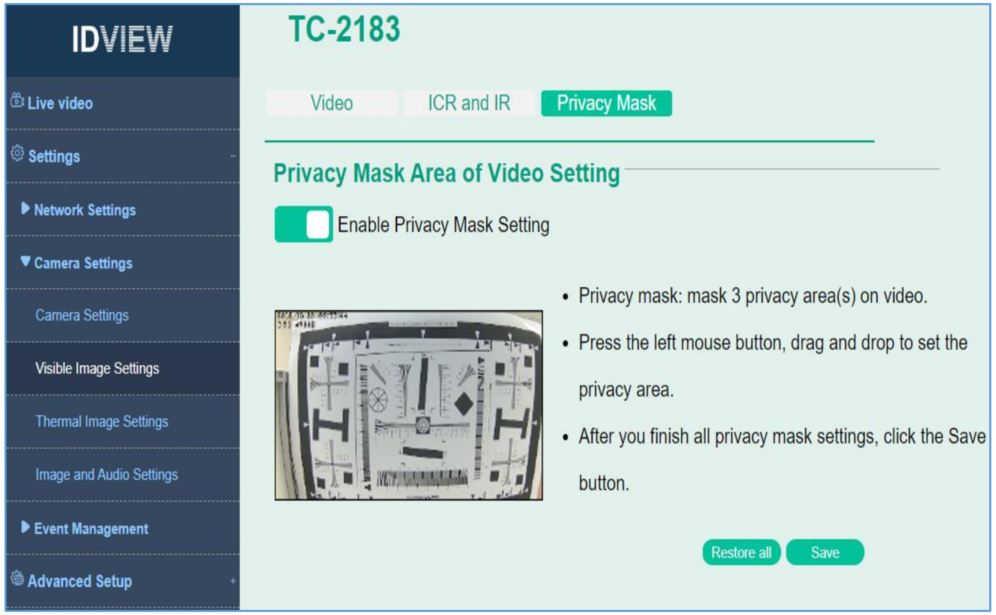
- **I IR Light Control:** The camera will enter Day mode at the starting time and return to Night mode at the ending time. The camera can enable or disable the IR (infrared) light according to your preferences. Activate the Disable IR LED to set Day mode for the set times. This setting provides additional controls depending on your specific application.
- **Off**: Disables the IR light.
- **On**: Enables the IR light.
- **Sync With ICR**: The IR light will turn on when the ICR filter is disabled (night mode).
- **Schedule**: The IR light will turn on or off according to the schedule that you specify below.

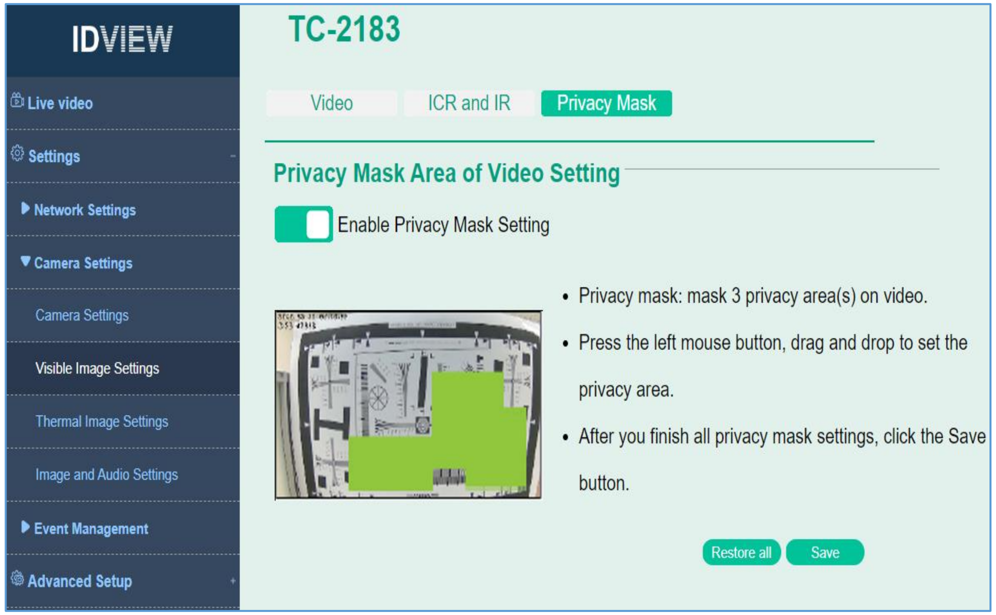
After making any changes, click the **Save** button to save your changes.



Privacy Mask

- **Enable Privacy Mask Setting**: The Privacy Mask setting allows you to click and drag the mouse cursor over the camera image to draw a maximum of 3 rectangular areas which will be blocked/excluded from recordings and snapshots. Click the **Save** button to save your changes.
- **Restore All**: Clear all privacy mask areas.





After making any changes, click the **Save** button to save your changes.

Thermal Image Settings

In this section, you may configure the thermal image settings for your camera.

Live Video

- All changes in the thermal and visible image settings section will be made immediately.

Image Settings

- **Mirror**: This will mirror the image horizontally.
- **Flip**: This will flip the image vertically.
- **Brightness**: Adjust this setting to compensate for backlit subjects.
- **Contrast**: Adjust this setting to alter the color intensity/strength.
- **Sharpness**: Specify a value to determine how much sharpening to apply to the image.
- **Merge**: Enable the visible image overlaid with the thermal image.
- **Palette**: Depending on the surveillance scenes, there are ten palettes available.
- Max **Gain**: Will limit the brightness of the exposure.
- **WDR Level**: Wide Dynamic Range (WDR) helps improve exposure, making it easier to see objects in very bright or dark areas of the camera's image. Specify a value to determine how much WDR adjustment to apply to the image, or select None.
- **Adaptive**: You can set the minimum and maximum adaptive speed. The maximum setting will be adaptive to environments faster.
- **Denoise**: Select the On/off check box to enable/disable to reduce the image noise.

Reset: Click this button to reset the image to factory default settings.

After making any changes, click the **Save** button to save your changes.

FCC

You can adjust the camera's shutter value. Click the **Save** button to save your changes.

Live

Live thermal image will be displayed in the video box.

Shutter

- **Enable**: Enable this option to correct the shutter.
- **Schedule**: Set **auto** to correct the shutter automatically.
- **Periodic**: This option allows the shutter to be corrected periodically for every minute.
- **Manual**: Correct the shutter by yourself.

After making any changes, click the **Save** button to save your changes.

Image and Audio Settings

You may configure up to 3 video profiles with different settings for your camera. This allows you to set different settings for recording and viewing your video remotely. After making any changes, click the **Save** button to save your changes.

- **Mode**: Set the video codec to be used to H.264, H.265, or JPEG.
- **Frame Size**: Select what frame size to use. Frame size determines the total capture resolution. Larger frame sizes provide more detail, but will require more bandwidth.
- **Maximum Frame Rate**: You can set the maximum frame rate. A higher frame rate provides smoother motion for videos and requires more bandwidth. Lower frame rates will result in stuttering motion and require less bandwidth.

Video Quality

- **Constant bit rage:** You can set the bit rate to use for this video profile.
- **Fixed quality:** Select the image quality level for the camera to try to maintain. Higher quality levels will result in increased bit rates and use more bandwidth.

AUDIO SETTINGS

- **Audio in off:** Selecting this checkbox will mute incoming audio.
- **Audio in gain level:** This setting controls the amount of gain applied to incoming audio to increase its volume.
- **Audio out off:** Selecting this checkbox will mute outgoing audio.
- **Audio out volume level:** This setting controls the amount of gain applied to outgoing audio to increase its volume.

After making any changes, click the **Save** button to save your changes.

6. Event Management

The camera has a comprehensive event management system that lets you configure the camera to perform specific actions when an event occurs. For example, when motion is detected, you can have snapshots sent to an email address. You can also configure the camera to take regular video recordings according to your schedule. Detailed information for the following steps can be found on the following pages.

Step 1: Select your destination Server and Media type.

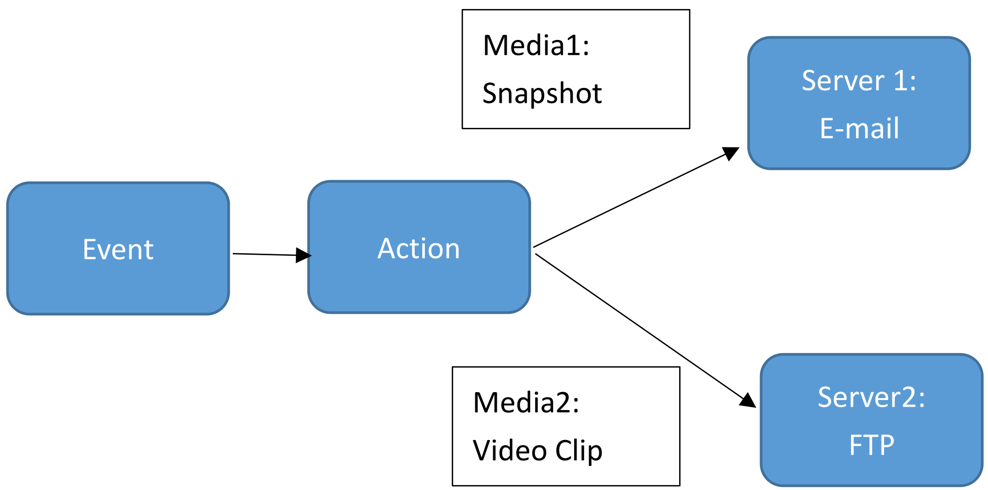
- Server type: Email, FTP, Network Storage, and SD Card.
- Media type: Snapshot, Video Clip, and System Log.

Step 2: Select your Trigger event and Action.

Event: Motion Detection, Periodic, System boot, Digital In and Temperature Detection, and Event schedule.

Action: Snapshot, video clip, or system Log.

When an event is triggered:



The Event Setup page includes four different sections:

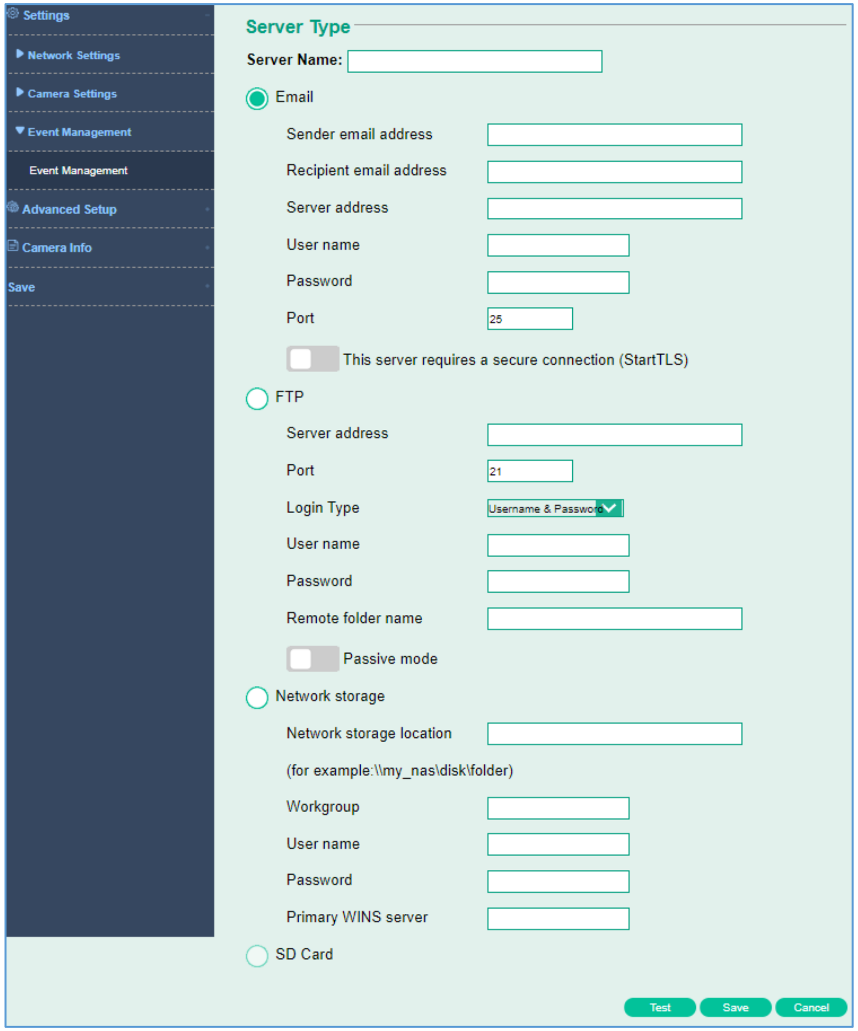
• Server
• Media
• Event Settings
• Recording

1. To add a new server, media, event, or recording item, click **Add**. A screen will appear and allow you to update the fields accordingly.
2. To delete the selected item from the server, media, event, or recording dropdown menus, click the **Delete** button next to it.
3. Click on the name of an item to edit it

Server

You can configure a server for each server type. After making any changes, click the **Save** button to save your changes.

- **Server Name**: Enter the name for the server.
- **Email**: If you want to use an email address for your server, select this and enter the settings for your target email account.
- **FTP**: If you want to use an FTP server for your server, select this and enter the settings for your target FTP server.
- **Network Storage**: If you want to use a network storage device for your server, select this and enter its settings here.
- **SD Card**: Select this to use a inserted microSD card as your server.

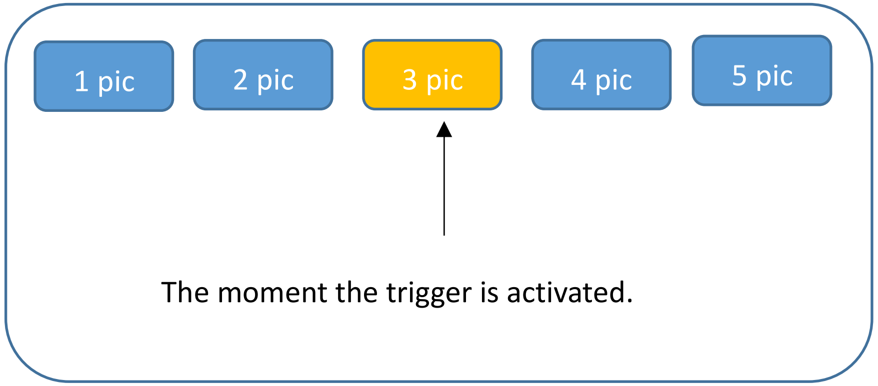


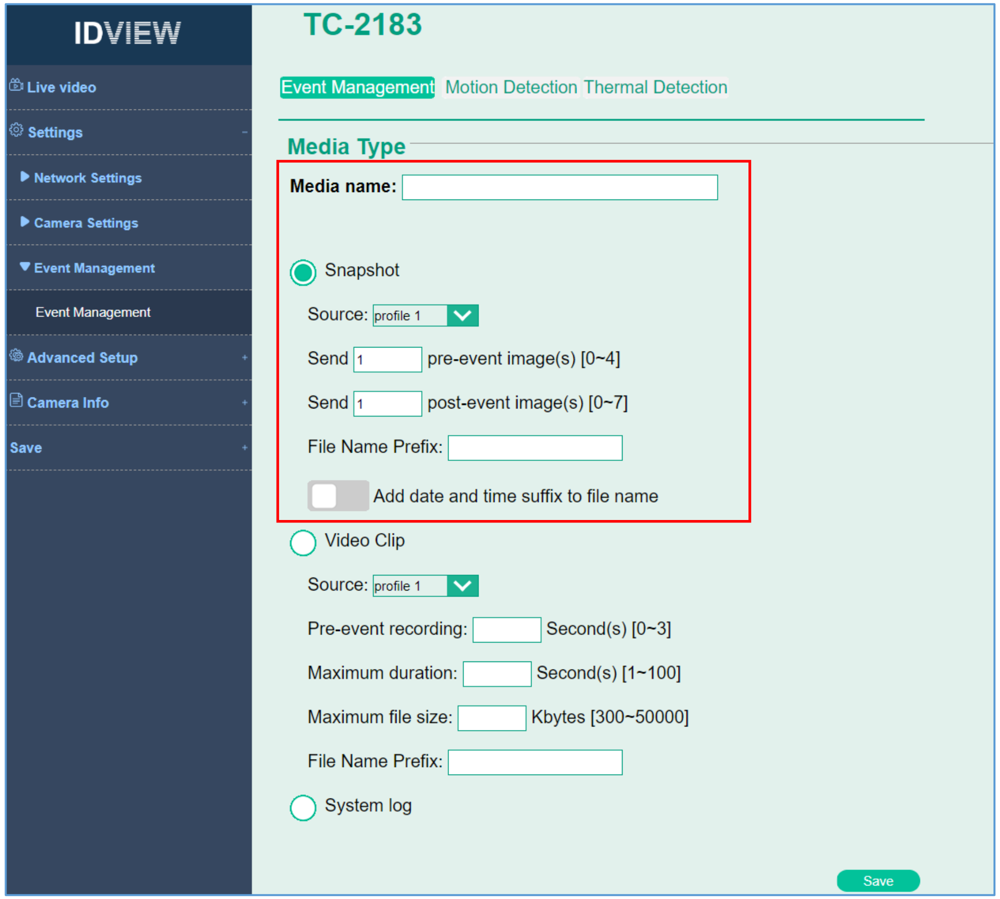
Media

There are three types of media: Snapshot, Video Clip, and System Log. You can make a media entry for each type. After making any changes, click the **Save** button to save your changes.

- **Media Name**: Enter a unique name for media type you want to create.
- **Snapshot**: Select this option to set the media type to snapshots.
    - **Source**: Set the video profile to use as the media source. Refer to "Video Stream" on page 25 for more information on video profiles.
    - **Send pre-event image(s)**: Set the number of pre-event images to take. Pre-event images are images taken before the main event snapshot is taken.
    - **Send postevent image(s)**: Set the number of post-event images to take. Post-event images are images taken after the main event snapshot is taken.

For example: If both the Send pre-event images and Send post-event images are set to 2, a total of 5 images are generated after a trigger is activated.





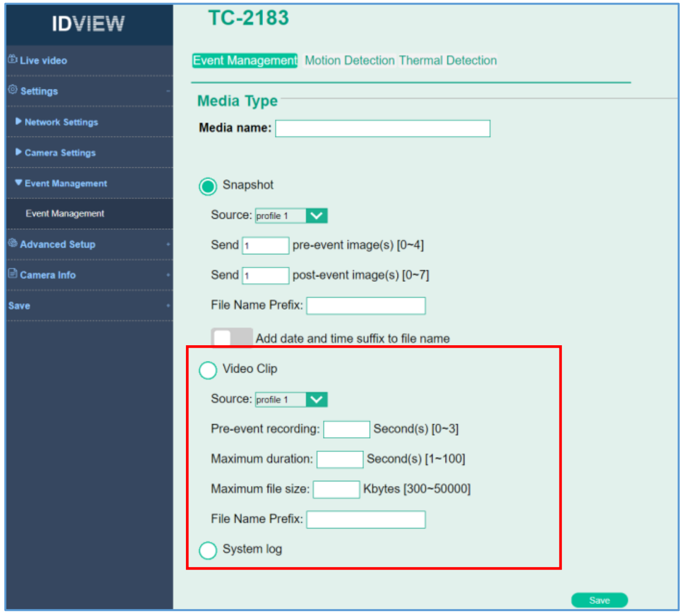
- File name prefix: The prefix name will be added to the file name.
- Add date and time suffix to file name: Enable this to add the date and time the snapshot was recorded as a file name suffix.

SNAPSHOTS20220101_101030

File name prefix Date and time suffix the format is YYYYMMDD_HHMMSS

Video clip: Select this option to set the media type to video clips.

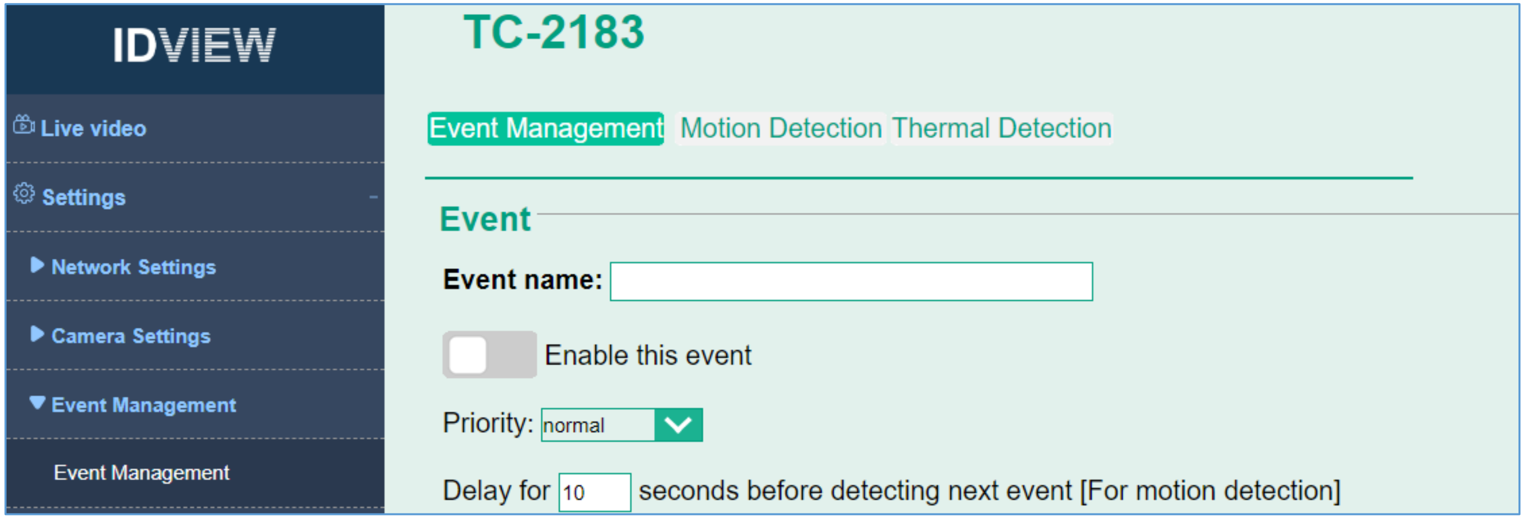
- Source: Set the video profile to use as the media source. Refer to "Video Stream" on page for more information on video profiles.
- Pre-event recording: This sets how many seconds to record before the main event video clip starts.
- Maximum duration: Set the maximum length of video to record for your video clips.
- Maximum file size: Set the maximum file size to record for your video clips.
- File Name Prefix This is the prefix that will be added to the filename of saved video clips.
- System log: Select this option to set the media type to system logs. This will save the event to the camera system log, but will not record any s napshots or video.



Event

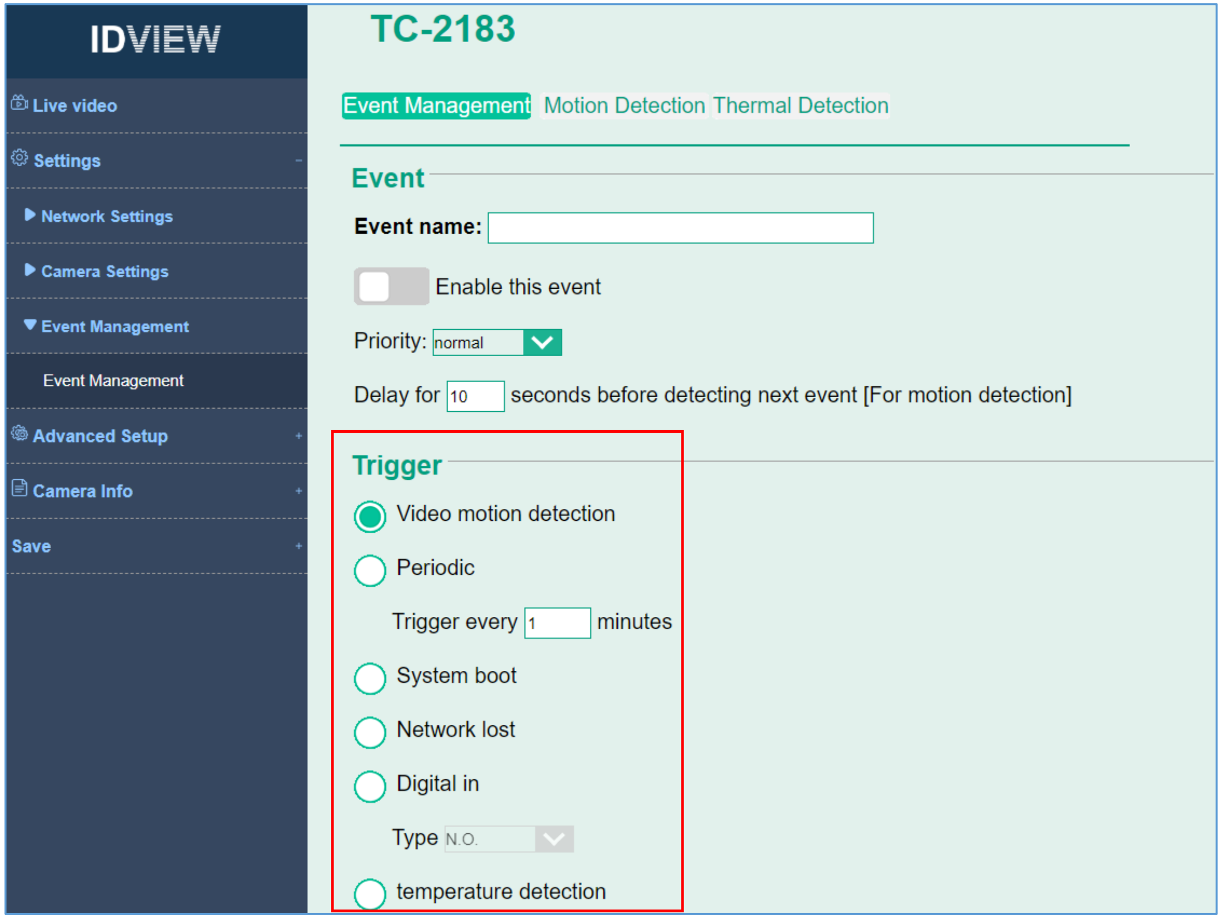
Create and schedule up to three events with their own settings here. After making any changes, click the **Save** button to save your changes.

- **Event name:** Enter a name for the event.
- **Enable this event:** Toggle this to activate this event.
- **Priority:** Set the priority for this event. Events with higher priority will be executed first.
- **Delay for:** Specify the delay time before allowing this event to be triggered again. This is used for both motion detection events and event triggers.



Trigger

- **Video Motion Detection**: Selecting this will trigger the event when motion is detected during live video monitoring. Make sure you have enabled motion detection and specified what part of the image to monitor for motion. For more details, refer to "Motion Detection" on page 36.
- **Periodic**: Selecting this will trigger the event in specified intervals. The trigger interval unit is in minutes.
- **System Boot**: Selecting this will trigger an event when the system boots up.
- **Network Lost**: Selecting this will trigger an event when the camera's connection to the network is lost.
- **Digital In**: The external trigger input to the camera.
- **Temperature Detection:** Selecting this will trigger the event when Temperature is detected during live video monitoring. Make sure you have enabled Temperature detection and specified what part of the image to monitor for Temperature. For more details, refer to "Temperature Detection" on page 37.

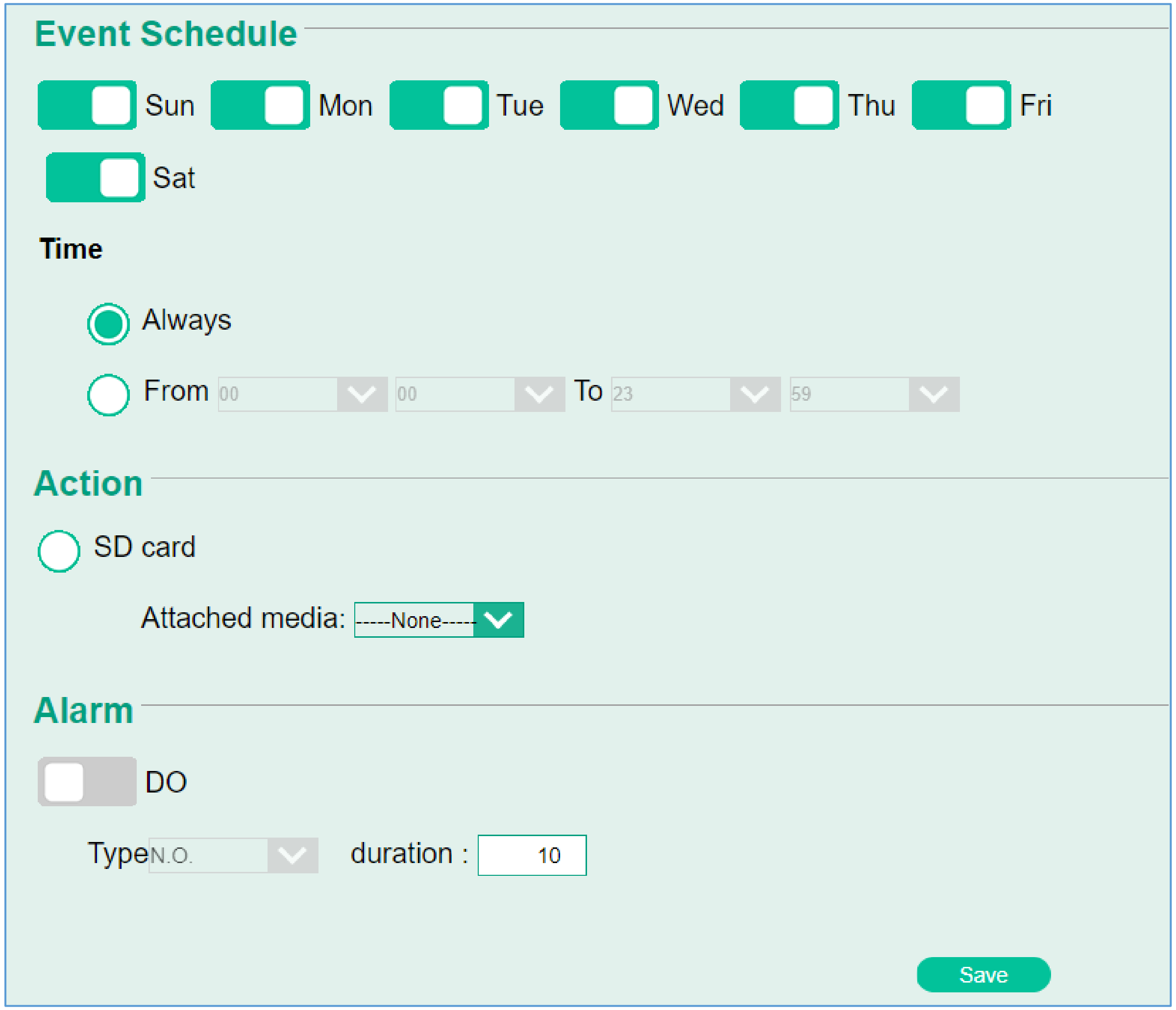


Event Schedule

Specify when you want to monitor for this event. Select which days to monitor for this event, then select **Always** or enter the time interval to monitor for the specified event.

Action: Select the actions you want the camera to take when the event happens. Select the Server to use, then choose the Media you want to save to it. Please note that you need to set up your Server and Media entries first.

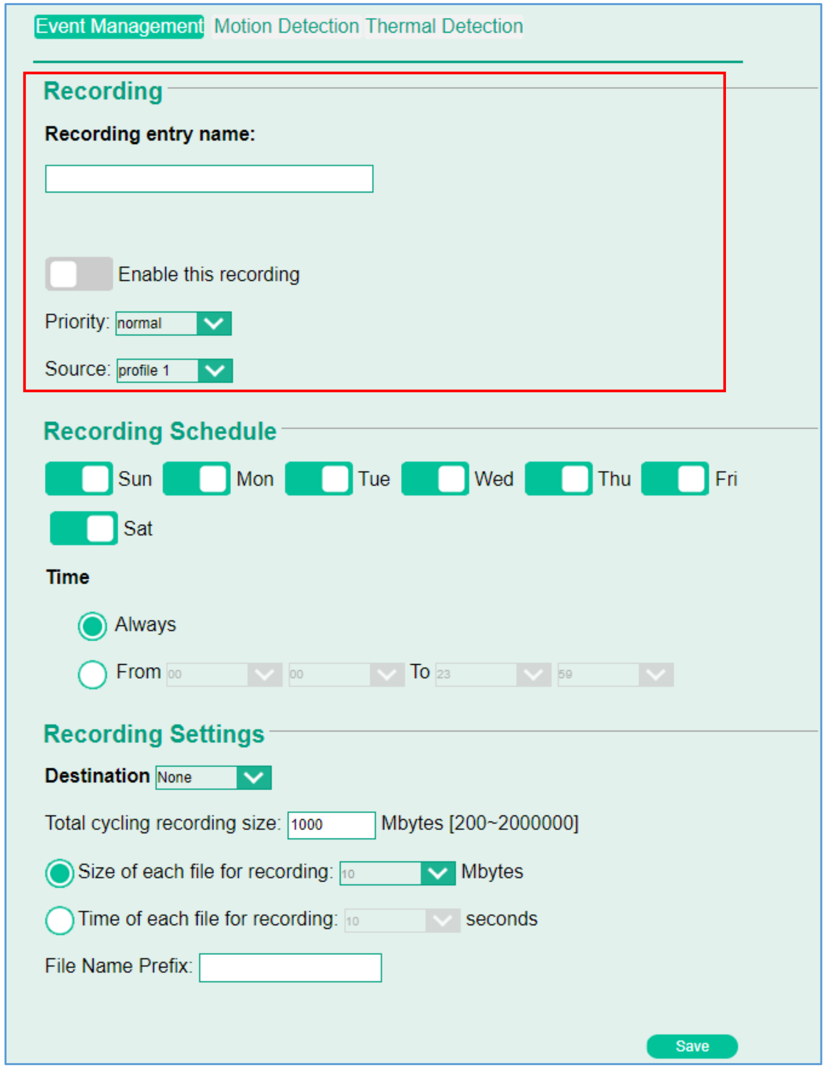
Alarm：Enable this to control the behavior of digital output devices, depending upon N.C or N.O type. Duration: Specify the length of the trigger interval in the text box.



Recording

Here you can configure and schedule the recording settings. After making any changes, click the **Save** button to save your changes.

- **Recording Entry Name**: Enter a name for the recording.
- **Enable This Recording**: Select this to enable the recording function.
- **Priority**: Set the priority for this entry. An entry with a higher priority value will be executed first.
- **Source**: Select the video profile to use as the recording source.

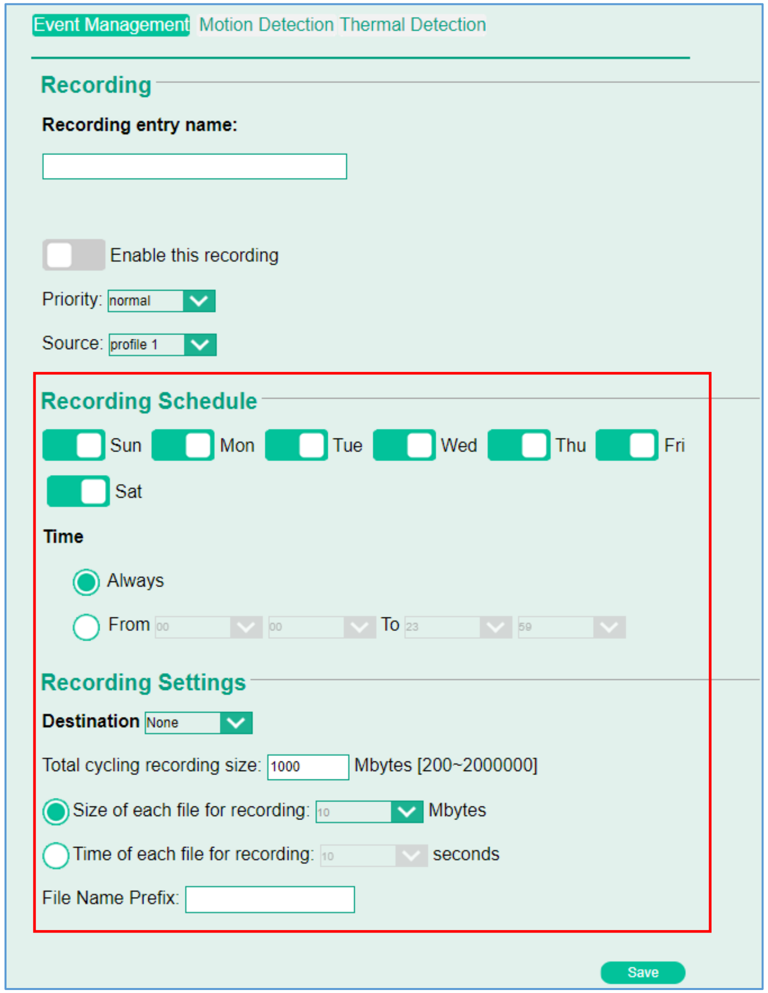


Recording Schedule

Use the checkboxes to set which days to record video on. Select **Always** to record for the entire day, or select From and select what period of time you want to record using the dropdown boxes.

Recording Settings

- **Destination**: Select a storage destination that was configured in Server to send recordings there.
- **Size of Each File for Recording**: If this is selected, files will be split based on the file size you specify.
- **Time of Each File for Recording**: If this is selected, files will be based on the maximum length you specify.
- **File Name Prefix**: The prefix name will be added to the beginning of the file name of the recording file(s).



Motion Detection

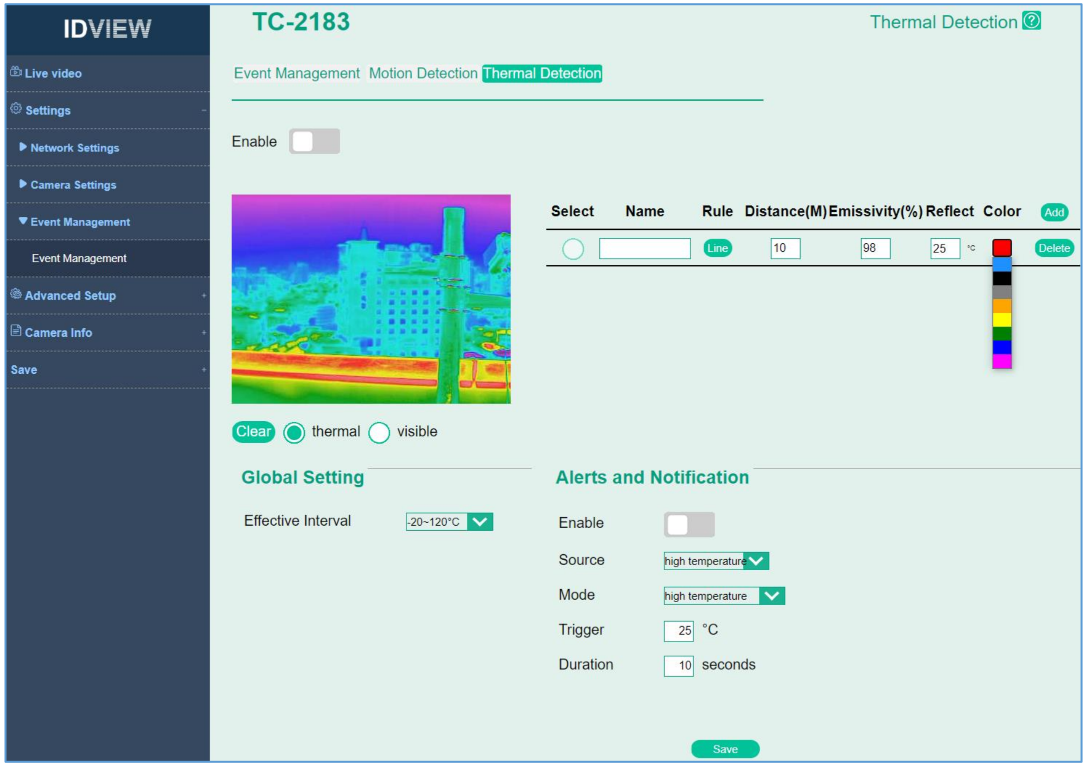
Motion detection enables the camera to monitor the video feed for movement. Here, you can adjust the sensitivity settings that determine whether motion is detected by the camera or not. After making any changes, click the **Save** button to save your changes.

- **Enable Video Motion**: Enable this to enable the motion detection feature of your camera. Please note that you must create at least one motion detection box for the camera to detect motion.
  Name: Enter a name for the event.
  Rule: You can select Line or Polygon to select the image area to be detected.
  Select: Click the checkbox to modify the detected motion event.
  Delete: Click the checkbox to delete the existing motion detection event.
- **Sensitivity:** Set how sensitive motion detection will be from 0% to 100%. A low sensitivity means that there must be large changes between two images in order to detect motion, and a high sensitivity means that even small changes will cause motion to be detected.
- **Percentage:** Set how much of the area being monitored for motion must change for motion to be detected. A low percentage means that only part of the area being monitored has to change to detect motion, and a high percentage means that most of the area needs to change to detect motion.

Thermal Detection

Thermal detection enables the camera to monitor the temperature in the environment. Live video can be switched between thermal and visible images. After making any changes, click the **Save** button to save your changes.

- **Enable:** Enable this to enable the thermal detection feature of your camera.
  Name: Enter a name for the event.
  Rule: Select a line or polygon to draw **the** rules you need on the surveillance image.
  Distance: Enter the distance value from the camera to targets in meters.
  Emissivity: It is to set the target emissivity.
  Reflection Temperature： Enter the temperature value of targets shot by this camera.
  Color: There are eight colors available for thermal detection events.
  Select: Click the checkbox to modify the thermal detection event.
  Delete: Click the checkbox to delete the existing thermal detection event.



- **Global Setting**

  Effective Interval: Toggle this to enable high-temperature mode. It is 100 to 500°C ±3%. If you disable this option, the temperature range is -20 to 120°C ±3.0 C.

- **Alerts and Notification**

  Enable: Toggle this to enable alerts and notification function.

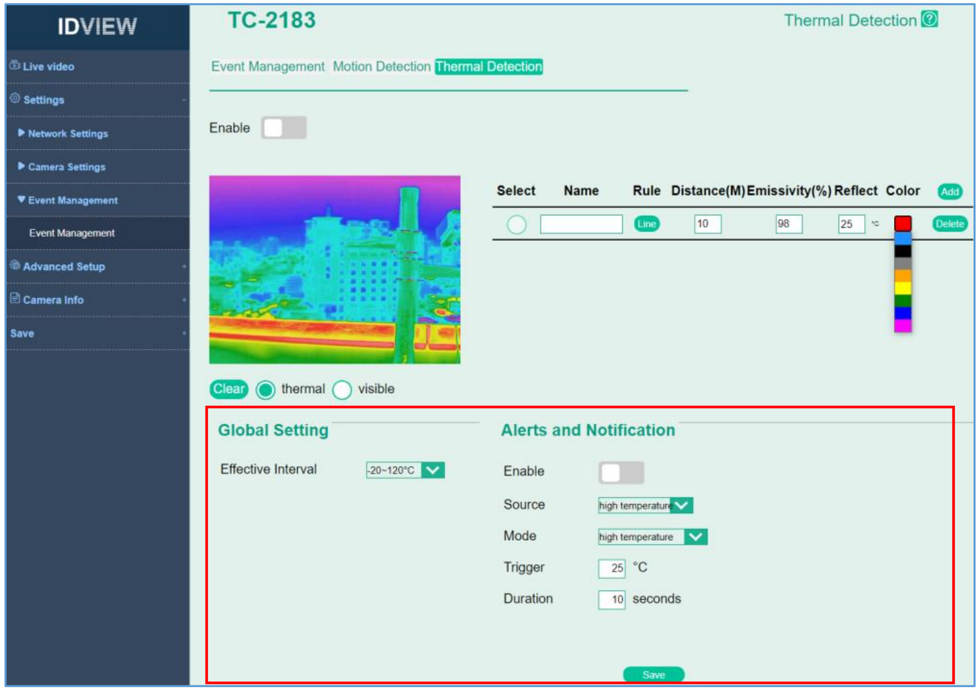
  Source: Select high temperature, low temperature, avg temperature, or delta temperature to determine a standard for triggering an alert.

  Mode: Select high temperature, low temperature, or temperature gradient to trigger an alert.

  Tigger: Set a temperature value to trigger an alert. In °C.

  Duration: Specify the duration in seconds when a temperature event occurs.

  * After setting the temperature detection, the temperature detection info will be displayed on the live video page.



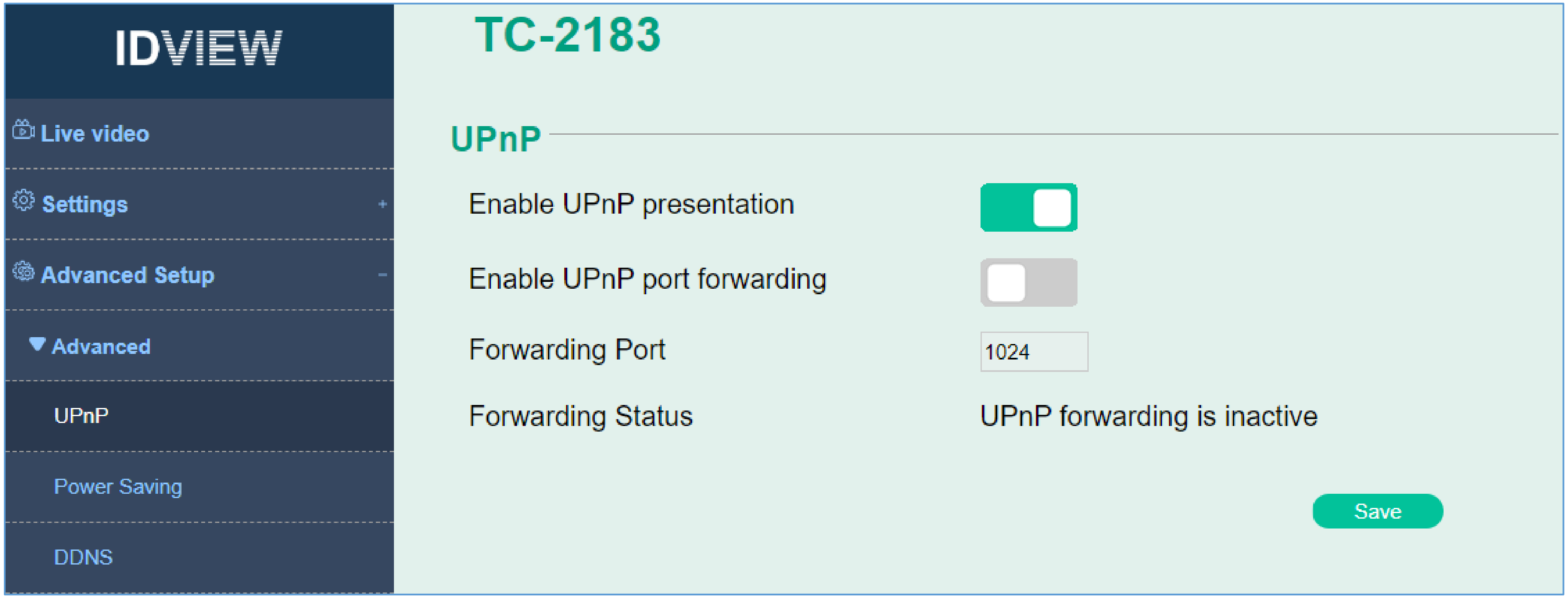
7. Advanced Setup

Advanced

UPnP

Enabling Video Motion will allow your camera to automatically use UPnP to set up port forwarding on your router. After making any changes, click the **Save** button to save your changes.

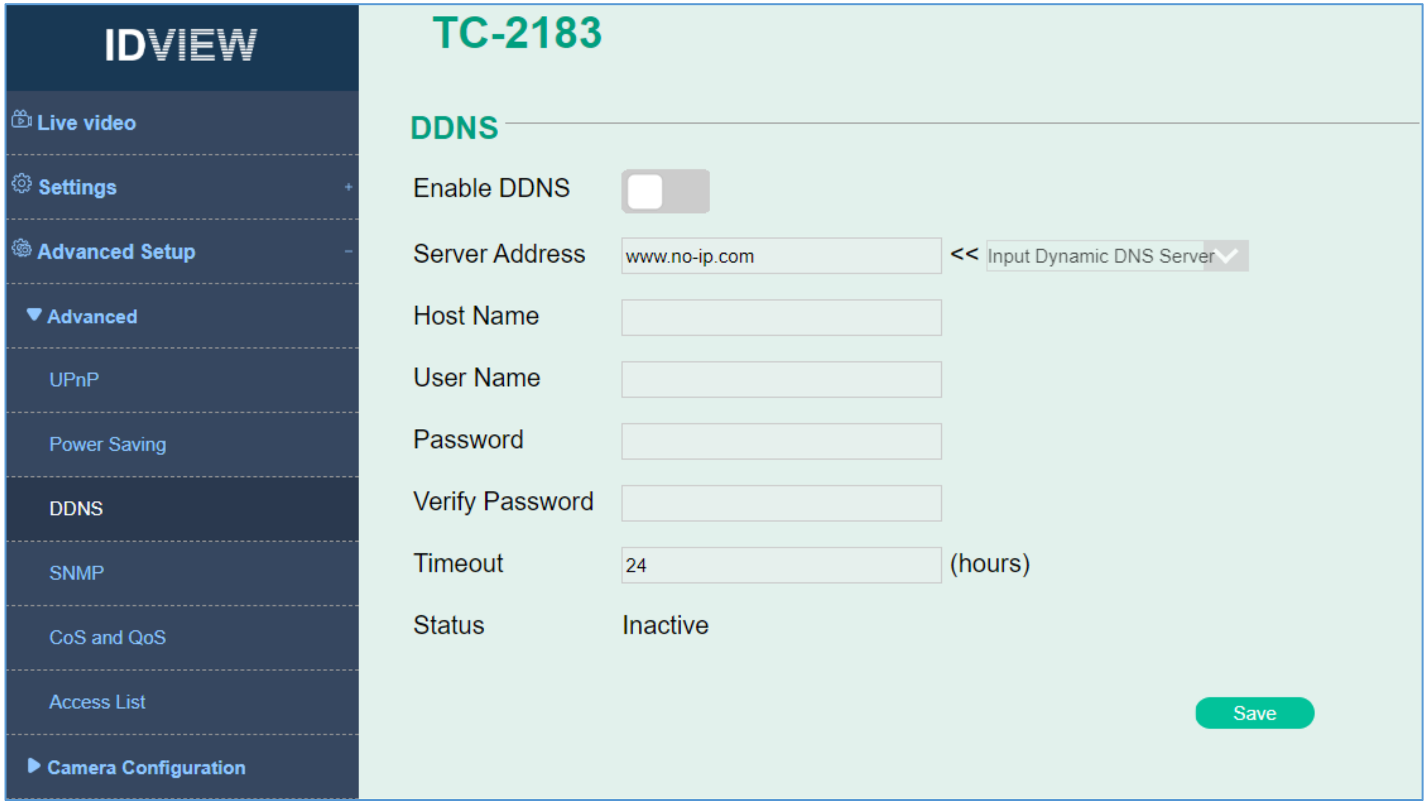
- **Enable UPnP Presentation**: Enabling this setting allows your camera to be configured as a UPnP device on your network.
- **Enable UPnP Port Forwarding**: Enabling this setting allows the camera to automatically add port forwarding entries into the router on a UPnP-capable network.
- **Forwarding Port**: If UPnP Port Forwarding is enabled, you can set which port to use for forwarding.
- **Forwarding Status**: If UPnP Port Forwarding is enabled, this will show the UPnP Port Forwarding status.



DDNS

DDNS allows you to compensate for changing IP addresses by having a URL that automatically points to the current IP address of your camera. To do this, you will need to have an account with one of the DDNS services listed in the dropdown box on this page. After making any changes, click the **Save** button to save your changes.

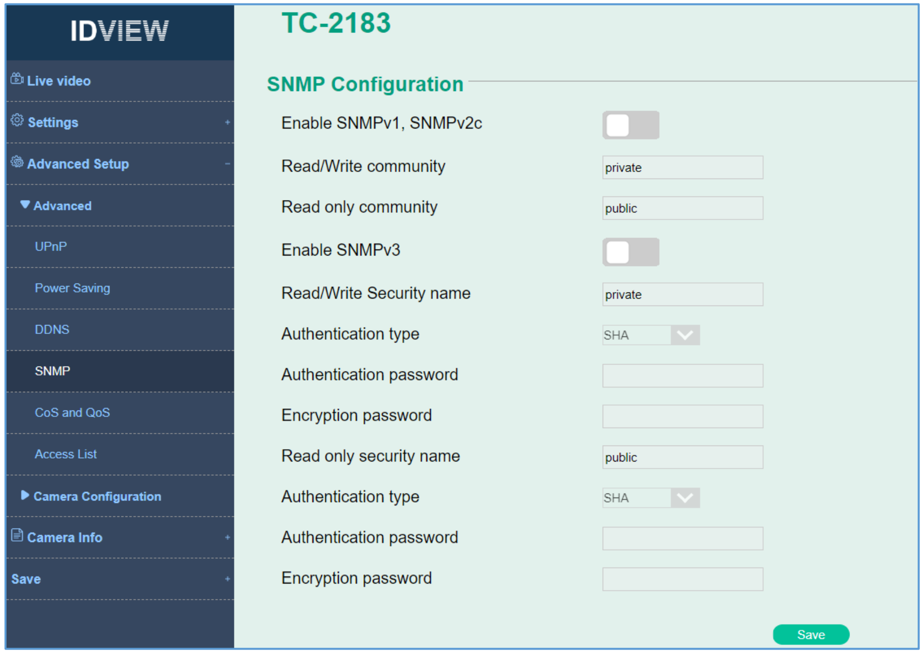
- **Enable DDNS**: Check this box to enable the DDNS function.
- **Server Address**: Enter your DDNS server address, or select a service from the dropdown menu.
- **Host Name**: Enter the host name of the DDNS service.
- **User Name**: Enter the username or email address used to connect to the DDNS service.
- **Password**: Enter the password used to connect to the DDNS service.
- **Verify Password**: Enter your DDNS service password again.
- **Timeout**: You can set up how often the camera notifies the DDNS service of its current global IP address by entering a whole number in hours.
- **Status**: This shows the current status of your DDNS updates.



SNMP

Here you can set the Simple Network Management Protocol (SNMP) settings for the camera, which allow for SNMP management of the camera. After making any changes, click the **Save** button to save your changes

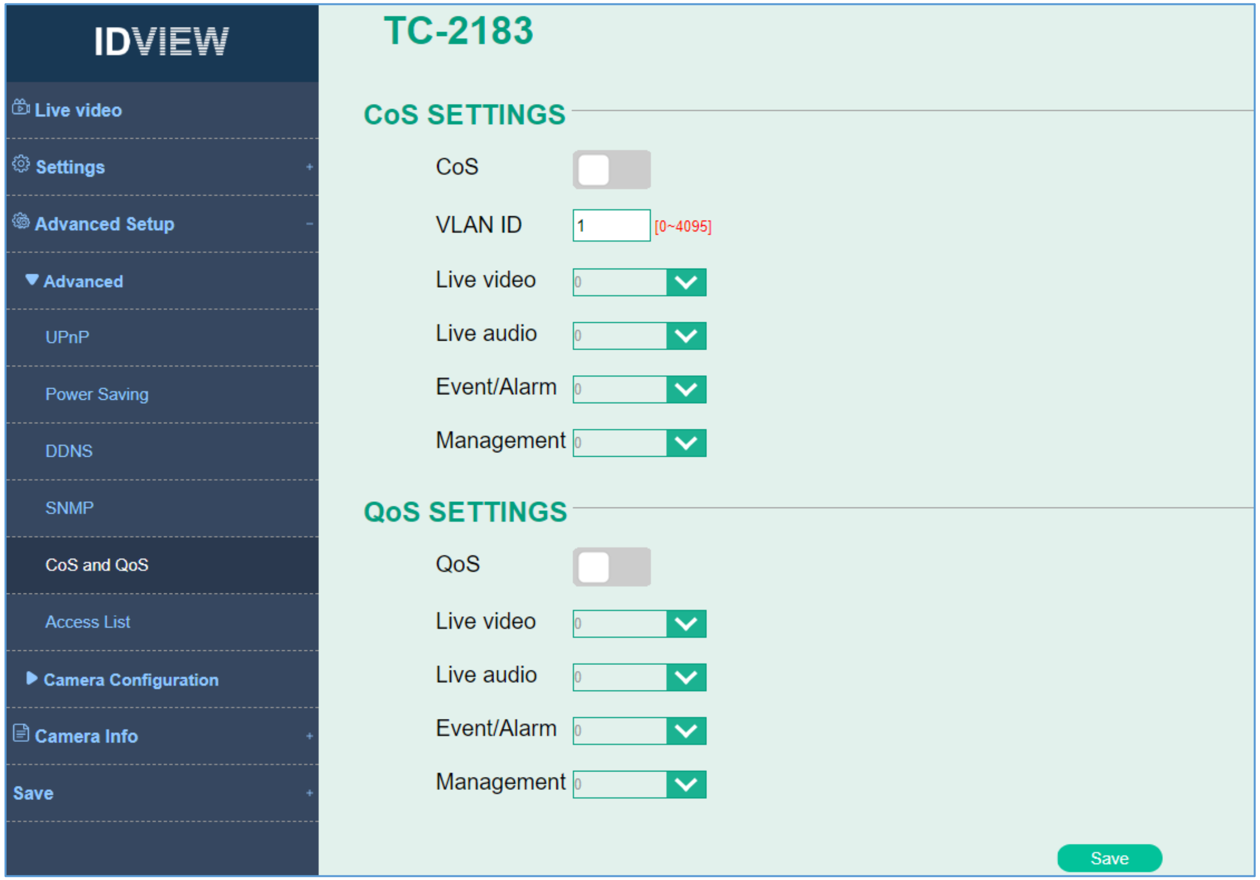
- **Enable SMNPv1, SNMPv2c:** Enable this option to allow for SNMPv1 and SNMPv2c management of the camera.
- **Read/Write Community**: Enter a name for the read/write community of your SNMP server.
- **Read Only Community**: Enter a name for the read-only community of your SNMP server.
- **Enable SNMPv3**: Enable this option to allow SNMPv3 management of the camera.
- **Read/Write Security Name**: Enter a name for the read/write community of your read/write SNMP server.
- **Authentication Type**: Enter the type of authentication used by your read/write SNMP server.
- **Authentication Password**: Enter the authentication password used for your read/write SNMP server.
- **Encryption Password**: Enter the encryption password used for your read/write SNMP server.
- **Read Only Security Name**: Enter a name for the read-only community of your read-only SNMP server.
- **Authentication Type**: Enter the type of authentication used by your read-only SNMP server.
- **Authentication Password**: Enter the authentication password used for your read-only SNMP server.
- **Encryption Password**: Enter the encryption password used for your read-only SNMP server



CoS and QoS

Class of Service (CoS) and Quality of Service (QoS) allow you to prioritize surveillance traffic on your network to ensure that your cameras can stream video smoothly and remain accessible even when there is heavy traffic on your network. Your network must support CoS or QoS in order to use them. After making any changes, click the **Save** button to save your changes.

- **Enable CoS:** Enabling the Class of Service setting implements a best-effort policy to prioritize traffic without making any bandwidth reservations.
  To use CoS, enable it, enter the VLAN ID to use for the camera, and set the priority for your **Live Video, Live Audio, Event/Alarm,** and **Management** camera traffic.
- **Enable QoS:** Enabling QoS allows you to specify a traffic priority policy to ensure a consistent Quality of Service during busy periods. If the network camera is connected to a router that itself implements QoS, the router's settings will override the QoS settings of the camera.
  To use QoS, enable it and set the priority for your **Live Video, Live Audio, Event/Alarm,** and **Management** camera traffic.



Access List

Here you can define which IP addresses are allowed to view your camera. You can set up to 7 IP address ranges for both the allow and deny lists.

Allow List: The section lets you define what IP addresses have access rights to the camera.

Note: When adding entries to the Allow list, make sure the first entry includes the IP address of the computer or device you are using to access the camera. Otherwise, you may be blocked from accessing the camera after adding the entry to the Allow list.

- **Start IP Address**: The starting IP address of the IP address range for the devices (such as a computer) that have permission to access the video of the camera.
- **End IP Address**: The ending IP address of the IP address range for the devices (such as a computer) that have permission to access the video of the camera. Click **Add** to save your changes.
- **Delete Allow List**: Select an entry to remove from the Allow List, then click **Delete**.

Deny List: The list of IP addresses that have no access rights to the camera.

- **Start IP Address**: The starting IP address of the IP address range for the devices (such as a computer) that will be denied access to the camera.
- **End IP Address:** The ending IP address of the IP address range for the devices (such as a computer) that will be denied access to the camera. Click **Add** to save your changes.
- **Delete Deny List:** Select an entry to remove from the Deny List, then click **Delete**.

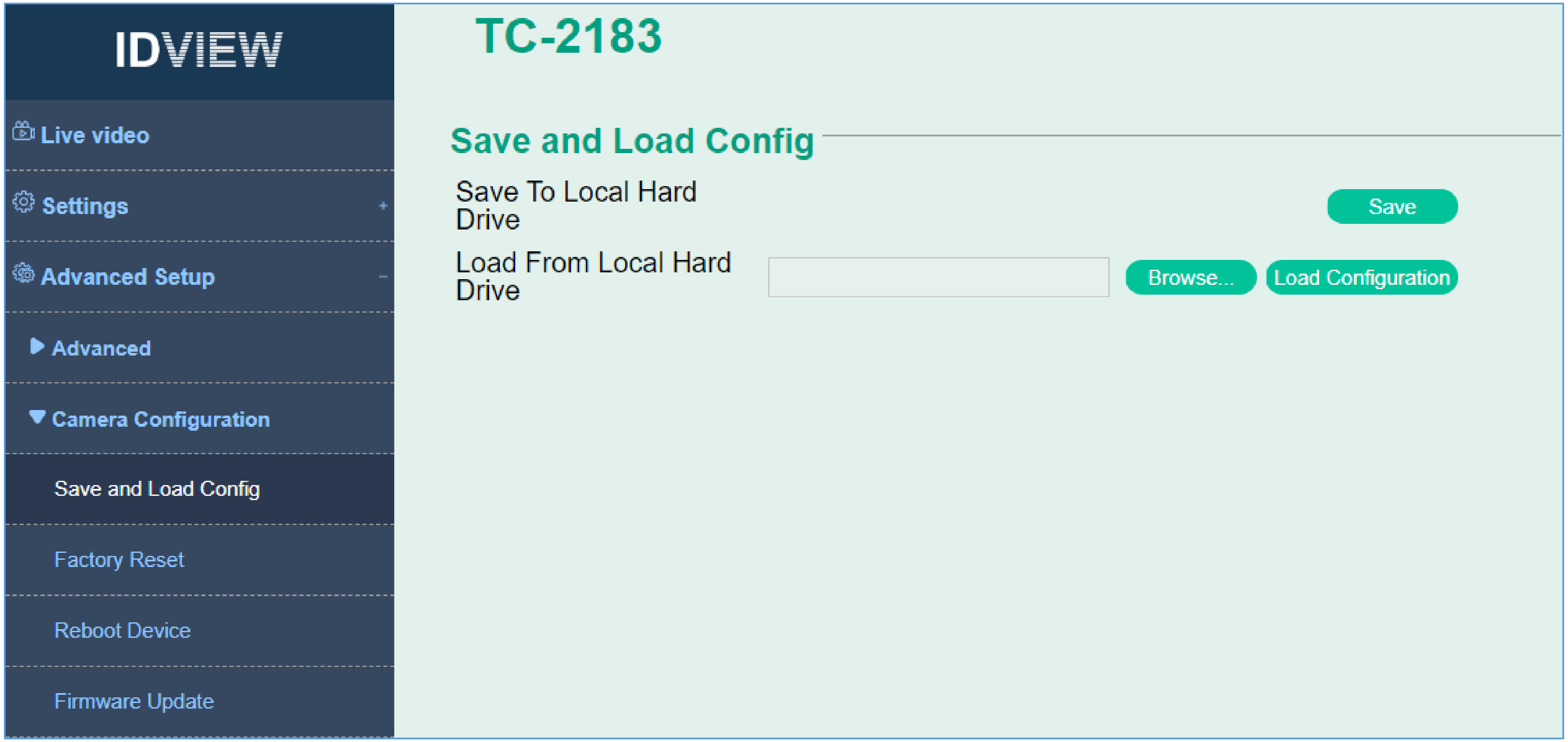
Note: All addresses in the Deny List will be denied access, even if they are also in the Allow List.

8. Camera Configuration

Save and Load Configuration

In this section, you may back up or restore the camera configuration.

- **Save To Local Hard Drive:** You may save your current camera configuration as a file on your computer.
- **Load From Local Hard Drive:** Locate a pre-saved configuration by clicking **Browse** and then restore the pre-defined settings to your camera by clicking **Load Configuration.**



Factory Reset

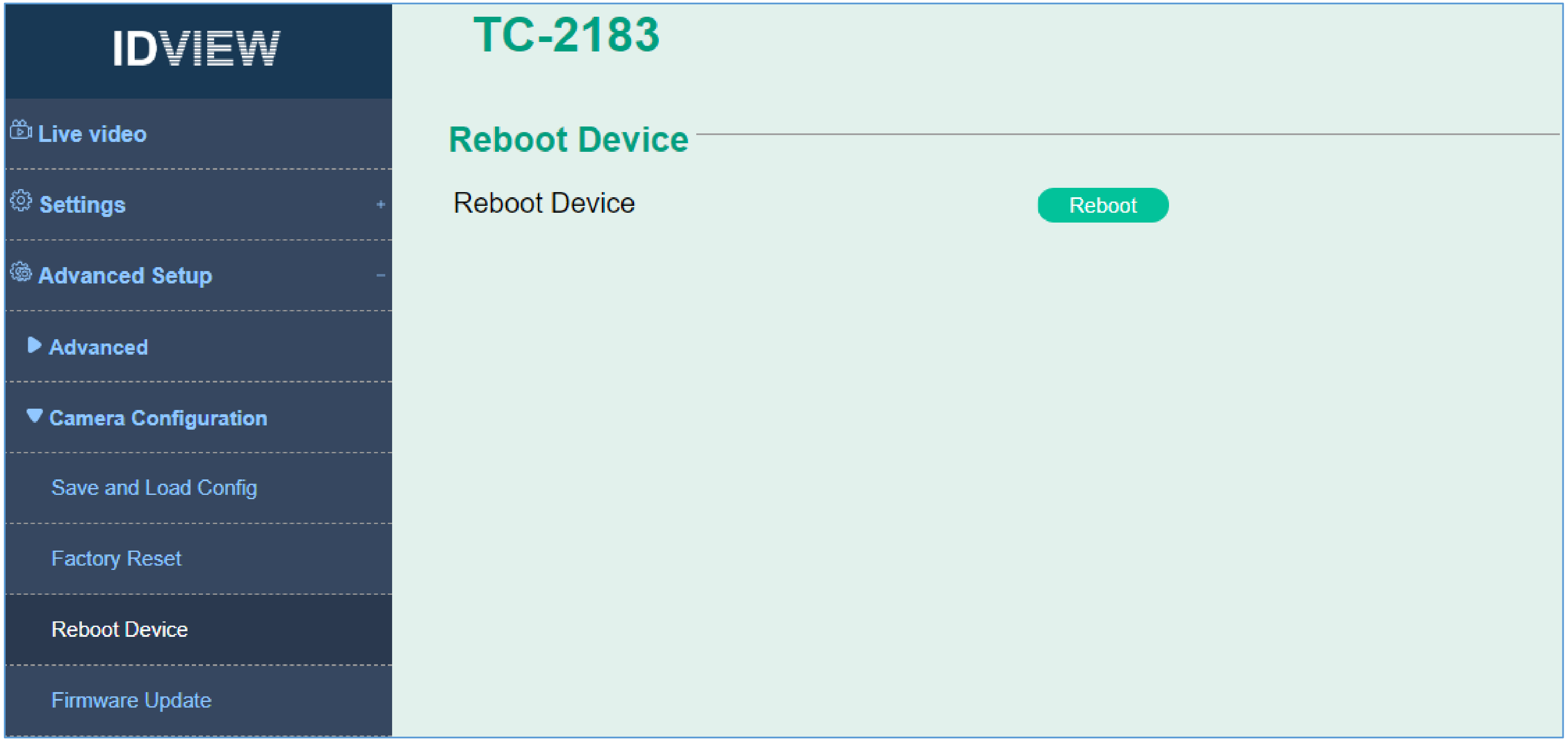
Here you can reset the camera configuration back to the factory defaults.

Restore to Factory Default: You may reset your camera and restore the factory settings by clicking **Restore**.

Reboot Device

Here you can reboot the camera.

Reboot Device: This will restart your camera.

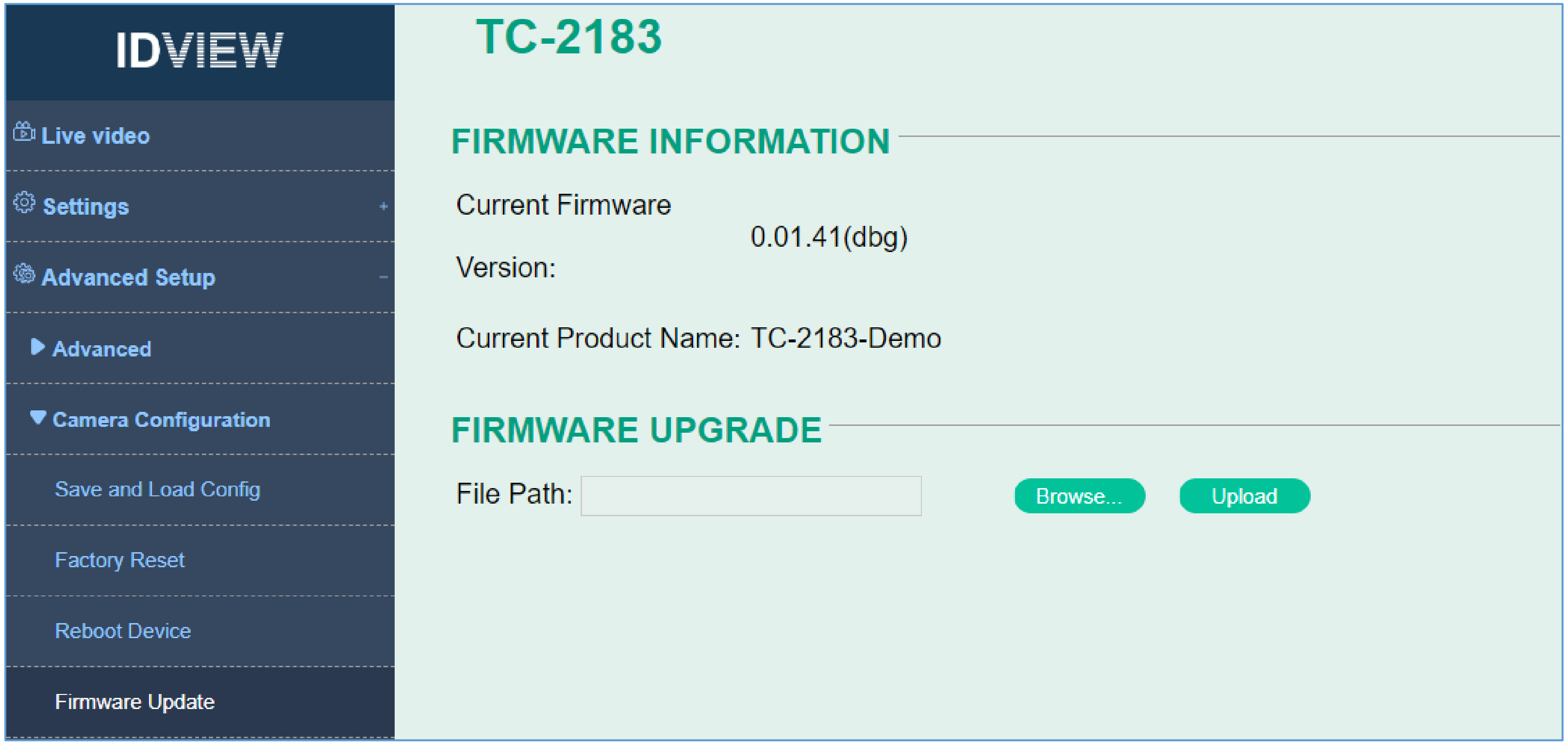


Firmware Update

Here you can update the camera's firmware. The current version of the firmware is shown at the top of the page.

File Path: To update the firmware, select a firmware file to use from your hard drive by clicking **Browse**..., then click the **Upload** button.

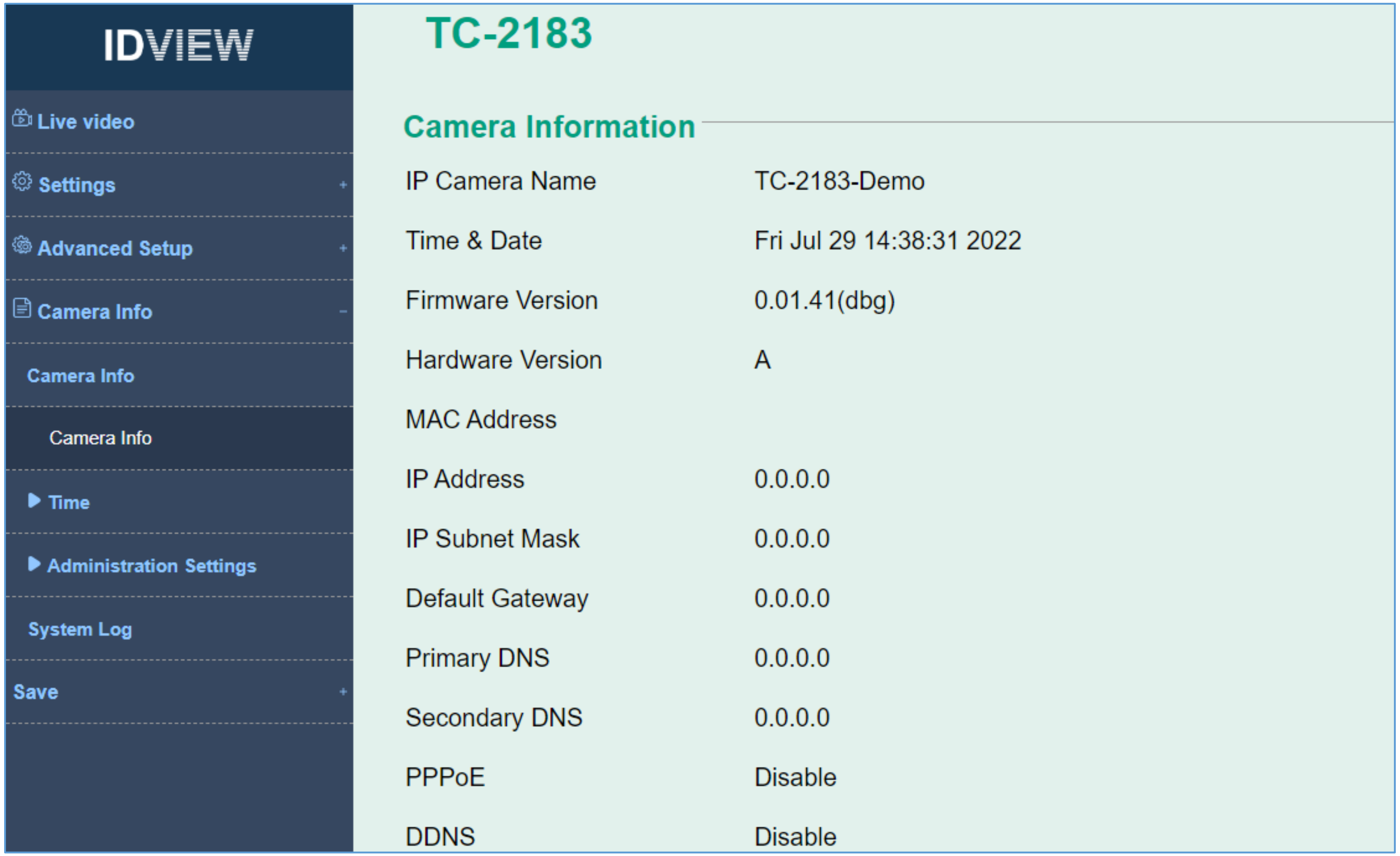
Note: While the firmware is being updated, do not close the web browser or disconnect your camera's power or network connection until the update is complete



9. Camera Info

Camera Info

This page displays detailed information about your camera, the services running on your camera, and active video streams.

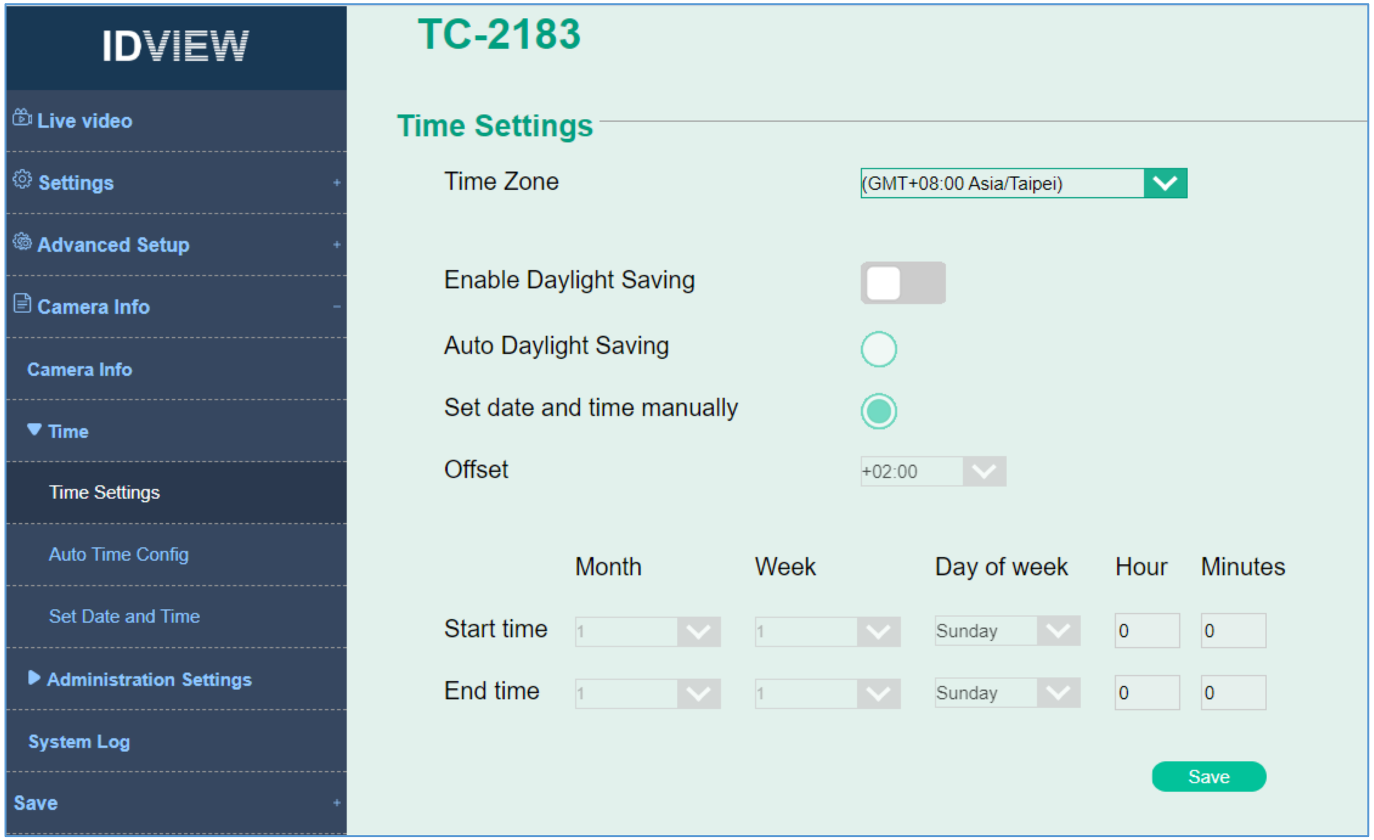


Time

Time Settings

This section allows you to set your camera's time zone and Daylight Saving settings.

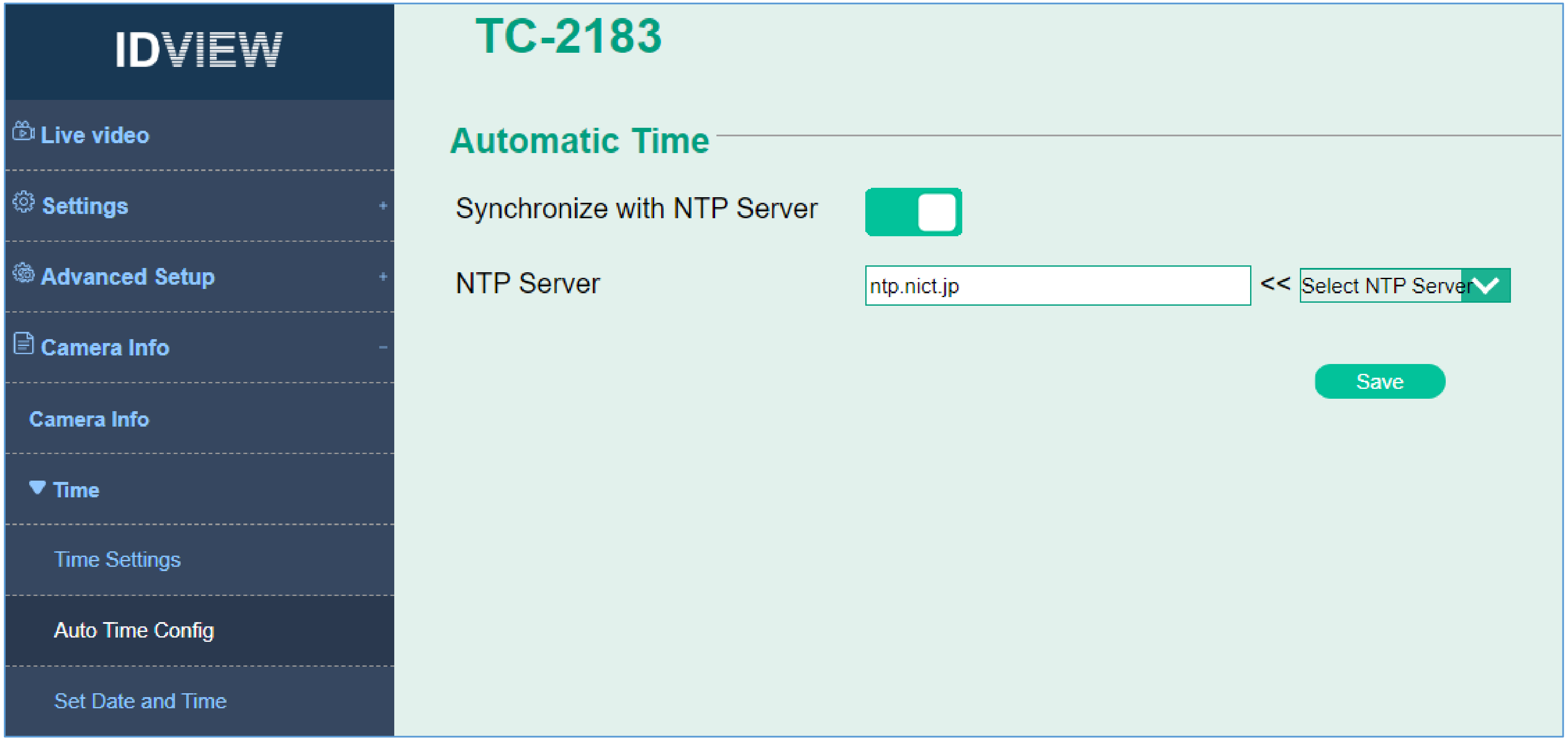
- **Time Zone**: Select your time zone from the dropdown menu.
- **Enable Daylight Saving**: If your region uses Daylight Saving time, you can enable it here. Select Set date and time manually if you want to manually set the offset and the period of time that the Daylight Saving correction should be used.
- **Offset**: Enter the offset that should be used when Daylight Saving is being used.
- **Start Time**: Set the date and time that Daylight Saving should start.
- **End Time**: Set the date and time that Daylight Saving should end.



Auto Time Config

This section lets you set your camera's date and time automatically by using an NTP server.

NTP Server: Enable this option to set your camera's time using an NTP server, then select an NTP server from the dropdown box.

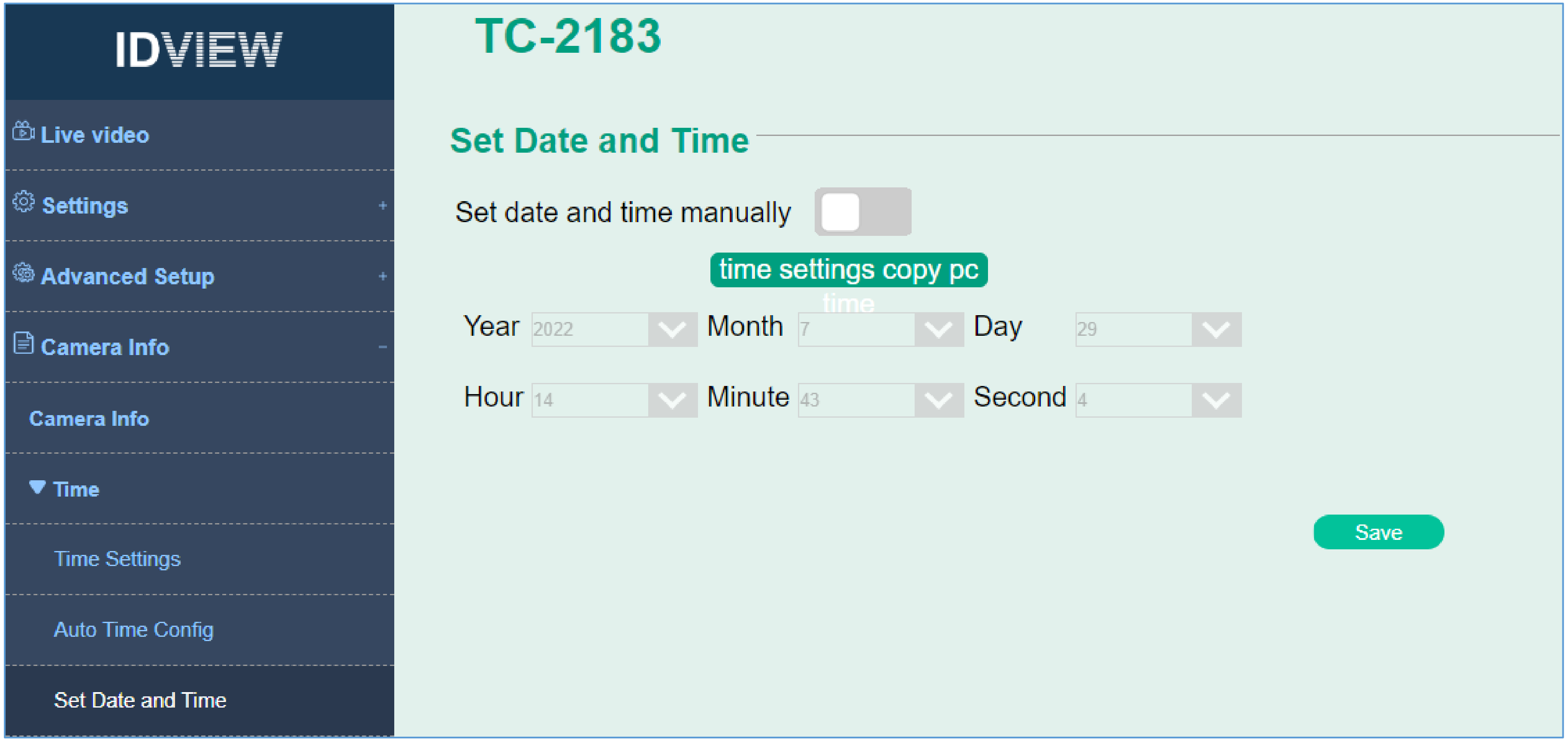


Set Date and Time

This section lets you manually set your camera's date and time. If you have NTP Server enabled in Auto Time Config, you need to disable it before manually setting the date and time.

Set Date and Time Manually: Enable this option to manually set the time and date.

Copy Your PC's Time: This will synchronize the time information with your PC.

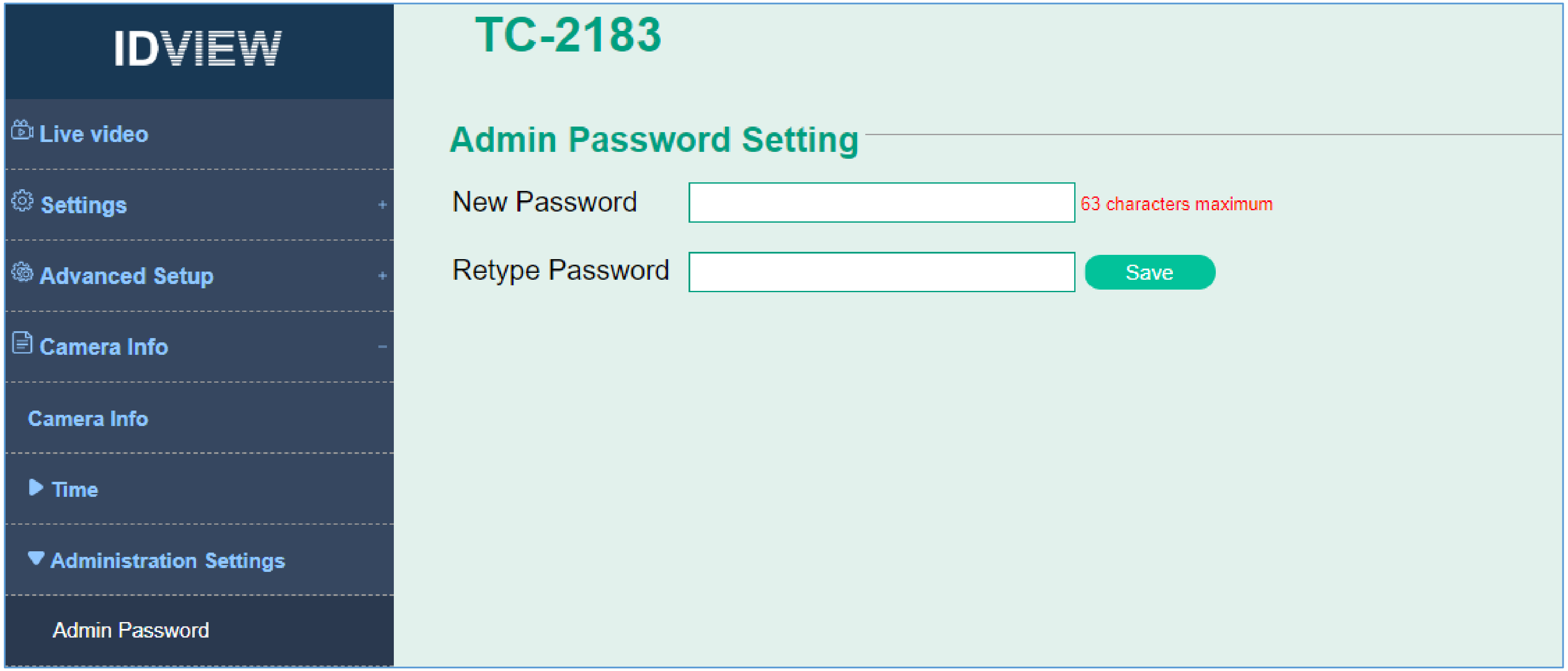


Administration Settings

Admin Password

Here, you may modify the administrator's password for your camera.

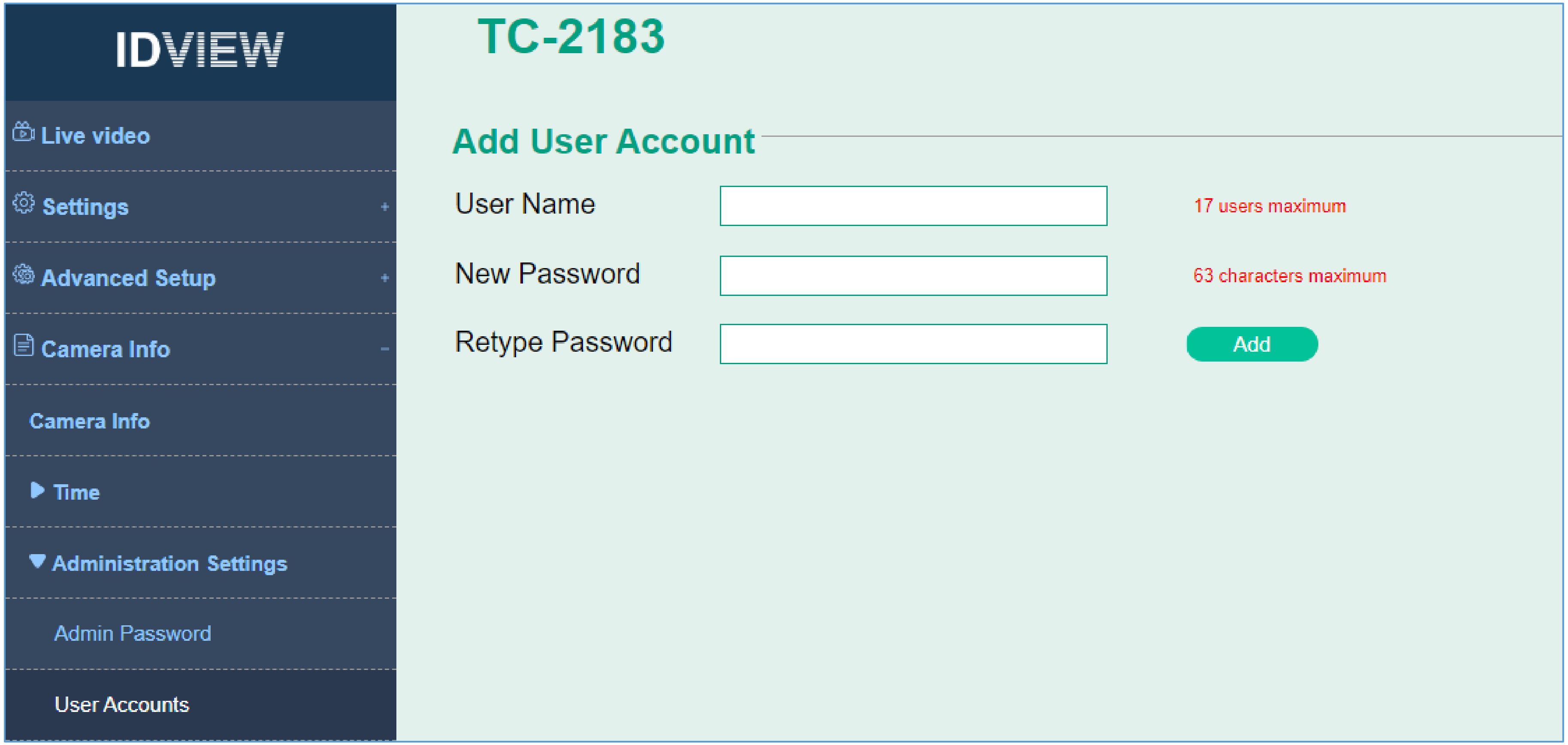
New Password / Retype Password: Set a new password for the administrator's account.



User Accounts

Here, you may add user accounts for accessing the camera. User accounts are allowed to access the Live Video page, but cannot access any of the camera's configuration pages

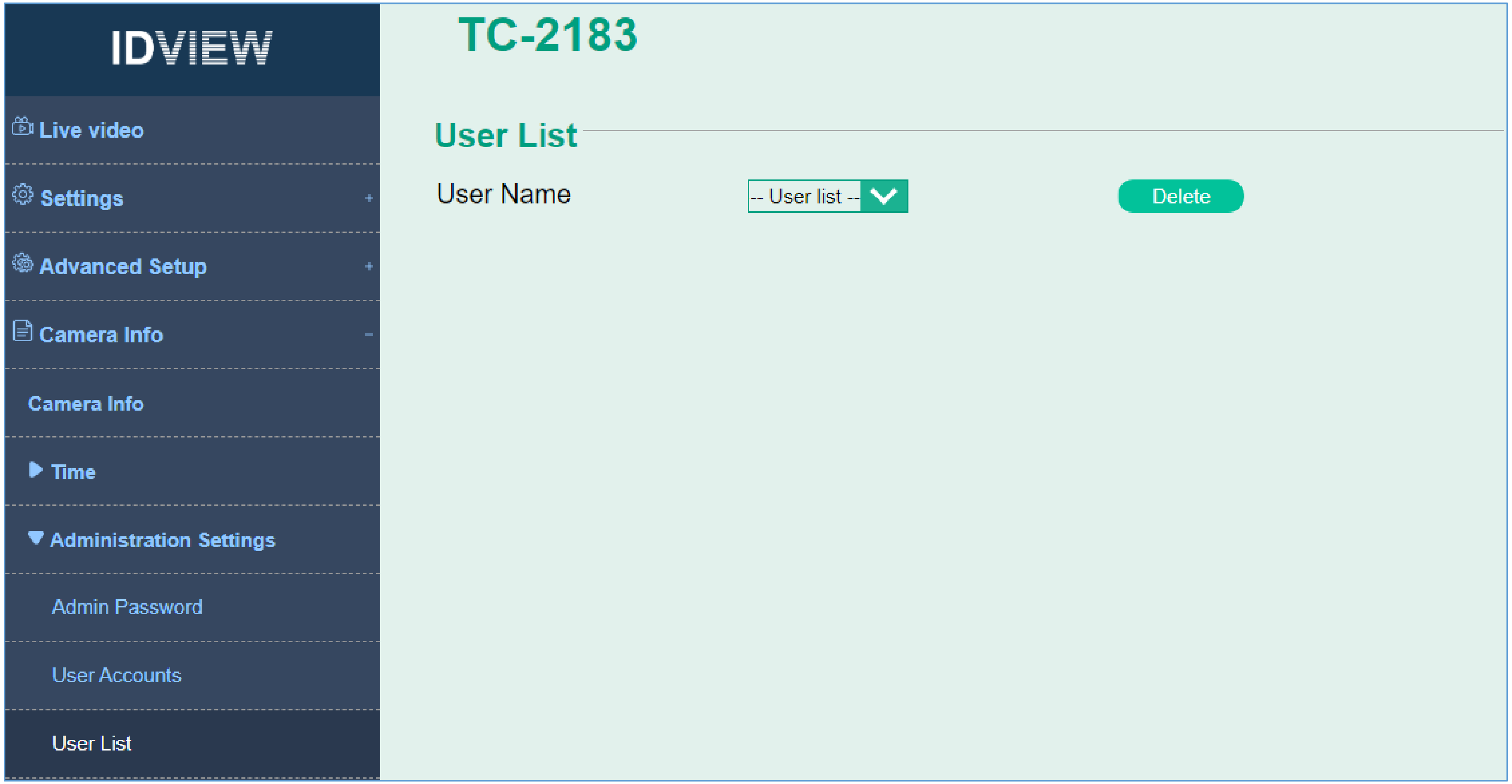
- **User Name:** Enter a user name for the user you wish to create.
- **New Password / Retype Password:** Enter a password for the user you wish to create.



User List

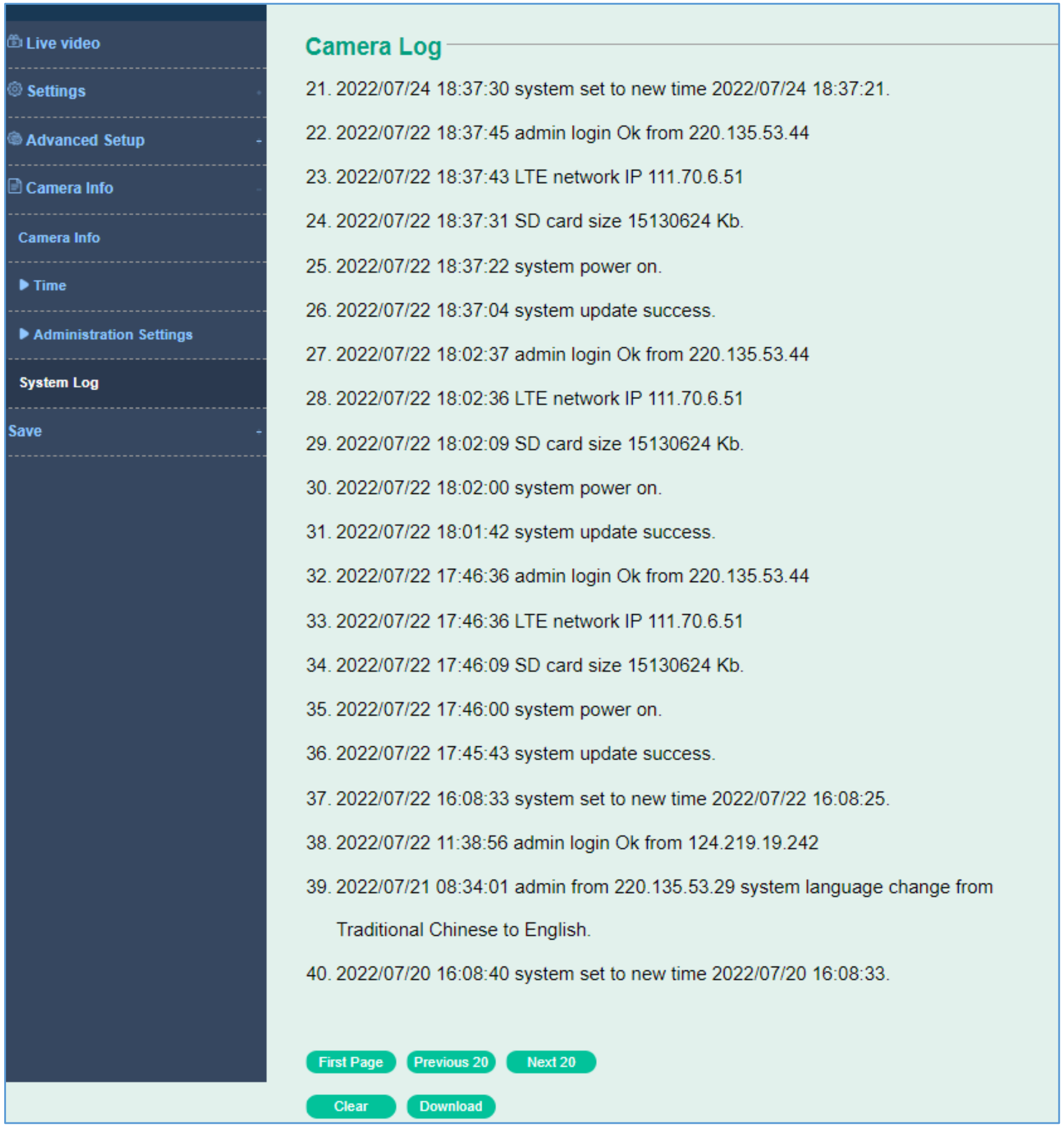
Here, you may manage the user accounts for accessing the camera.

User Name: If you want to remove a user from the user list, select a user from the dropdown box, then click the **Delete** button.



Camera Log

This page displays the log information of your camera. You may download the report by clicking **Download**. You may also click **Clear** to delete the saved log information.

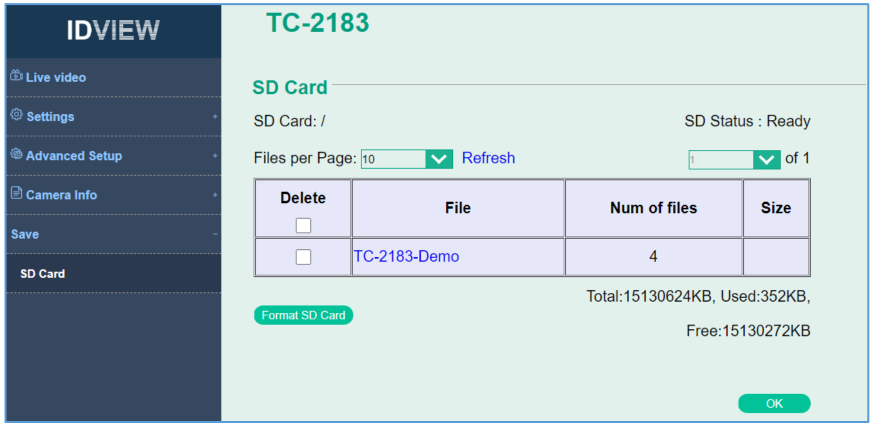


10. Storage

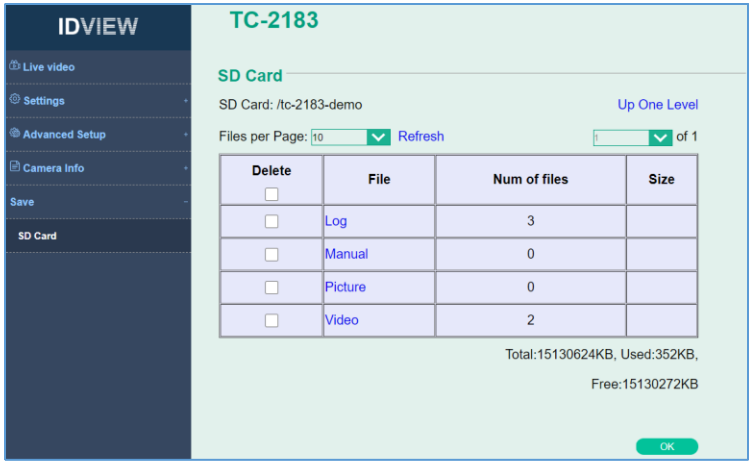
SD Card

Here you may browse and manage the recorded video and snapshot files stored on the microSD card.

- **Files Per page**: use the dropdown menu to specify how many files to show per page. To change pages, use the dropdown menu on the right.
- **Refresh**: Click this to reload the file and folder information from the microSD card.
- **Delete**: To delete files and folders, click on the checkbox next to the files or folder you want to delete, the click the **OK** button.
- **Format SD Card**: Click this icon to format the micro SD card automatically and create the Video and Picture folders.



You can play back videos and view snapshots by clicking on the appropriate folder. Video is stored in the Video folder, and snapshots are stored in the Picture folder.



11. Specification

Key features	TC-2183-L13	TC-2183-E13	TC-2184-L40	TC-2184-E40
Interface	4G LTE/RJ-45	PoE (IEEE 802.3af)	4G LTE/RJ-45	PoE (IEEE 802.3af)
Combines thermal and visual (Full HD) video streams	V			
Visible Camera Max. Resolution	1920x1080			
Thermal Camera Max. Resolution	384x288		256x192	
Thermal sensitivity: ≤60 mK @ f#1.0	V			
Field of View	28.4° (H) 21.4° (V)		42° (H) 32.1° (V)	
Illumination Range	IR 10 M		White light 5M	
One IP, two bi-spectral video streams	V			
Video Compression	H.265 / H.264			
Over temperature/ Motion detection / Alarm zone / Push notification	V			
SD card storage	V			
Built-in Microphone	V		X	
Two-way audio	V		X	
App and Cloud storage	V			
IP66 outdoor protection	V			
RS-485 (Modbus)/PT motors	V			
Dimension	225.8mm × 211.3mm× 115mm w/o sun-shield	209mm × 95mm× 115mm w/o sun-shield	80mm × 245.3mm× 62mm w/o sun-shield and cable	80mm × 120mm× 62mm w/o sun-shield and cable

12. Terminal Definition

- TC-2183

1. DIN A Function Cable: The 8 Pin female terminal connects the power port DIN A, and 8 Pin cable wire is for your additional device.
2. DIN B Function Cable: The 8 Pin female terminal connects the function port DIN B, and 8 Pin cable wire is for your additional device.

Terminal Definition table:

DIN A			DIN B	
Red	DC IN +		Red	ALM IN +
Gray	DC IN -		Gray	ALM IN -
Yellow	RS-485 A		Yellow	AUD OUT +
Blue	RS-485 B		Blue	AUD OUT -
Green	RESET		Green	ALM OUT +
Brown	GND		Brown	ALM OUT -
Pink	LED CTR		Pink	DC OUT (12V)
White	N/A		White	GND

- TC-2184

M8 Function Cable: The 8 Pin female terminal connects the function port DIN B, and 8 Pin cable wire is for your additional device.

Terminal Definition table:

Red	ALM OUT +
Gray	ALM OUT -
Yellow	ALM IN +
Blue	ALM IN -
White	RS-485 A
Pink	RS-485 B
Brown	DC OUT (12V)
Green	GND