



spark
UltraHD technology

TOP-SIGHT SERIES-NITIDA 20000 USER MANUAL



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1. DOCUMENT DETAILS

1.1 Introduction

This user manual is designed for SPARK NITIDA 20000 Network Camera. It is written with the intention to introduce the camera's web interface and help users with the installations. Please read and follow the instructions on the guide carefully before installing NITIDA 20000.

1.2 Legal Considerations

Both Audio and Video surveillance can be prohibited by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

1.3 Liability

SPARK company limited cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. SPARK company makes no warranty of any kind with regard to the material contained within this document. Including, but not limited to, the implied warranties of merchantability and fitness for any particular purpose. SPARK company shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material. This product is only to be used for its intended purpose.



2. ELECTROMAGNETIC COMPATIBILITY (EMC)

2.1 FCC Statement

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. The limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2.2 CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



3. REQUIREMENTS

3.1 System Requirements

Using one of the browsers as below to access the web interface:

Item	Requirement
Microsoft Internet Explorer	Version 7.0 or later
Google Chrome	Version 8.0 or later
Mozilla Firefox	Version 3.6 or later
Apple Safari	Version 5.0 or later
Android TM	2.2 (Froyo) or later browsers
Apple iOS	Version 5.0 or later browsers

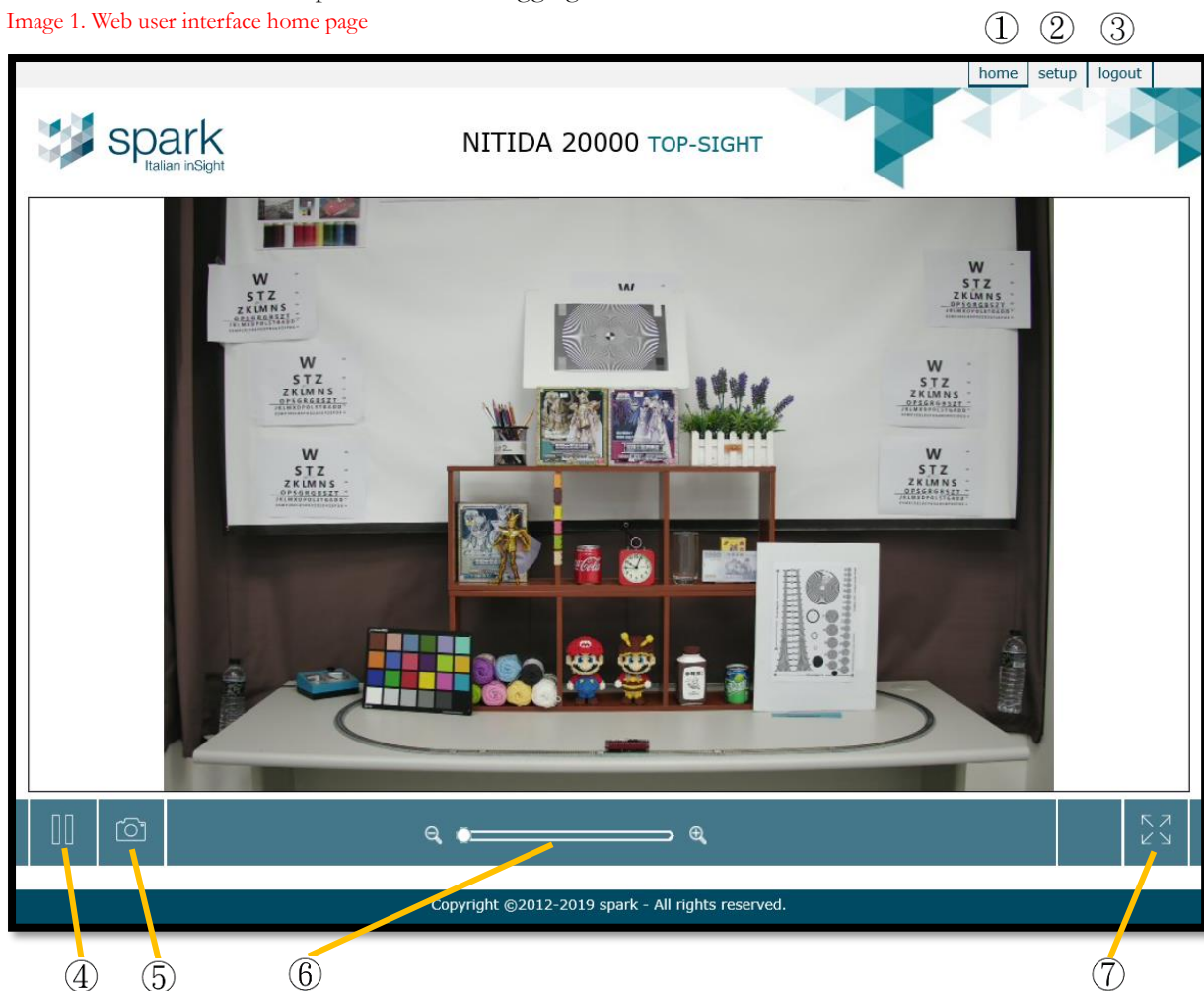


4. WEB USER INTERFACE

4.1 Accessing the web interface







- Open a web browser.
- Fill-in camera IP address.
- Use the default account and password when logging in for the first time.

Image 1. Web user interface home page



1		Live View	Open live view.
2		Configuration	Open configuration page.
3		Logout	Logout the user account.



4		Pause/Play	Pause/Play live view video stream.
5		Snapshot	Captures a snapshot of the current live view image, allowing users to save or discard the snapshot.
6		Digital zoom	Enable users to zoom in the live view screen. Clicking the zoom in icon  to digital zoom in the live view. Left click and drag on the live view to view different area. Click on  to digital zoom out the live view.
7		Full Screen	Enables full screen view of the live view screen. Press ESC to exit the full screen video.

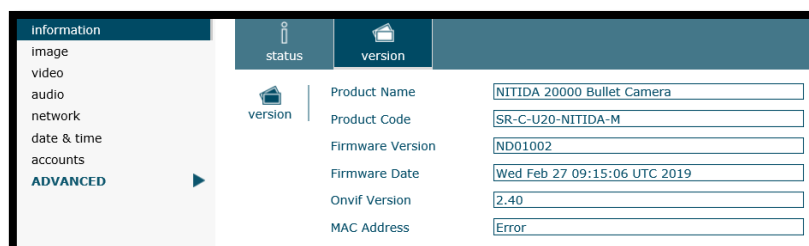
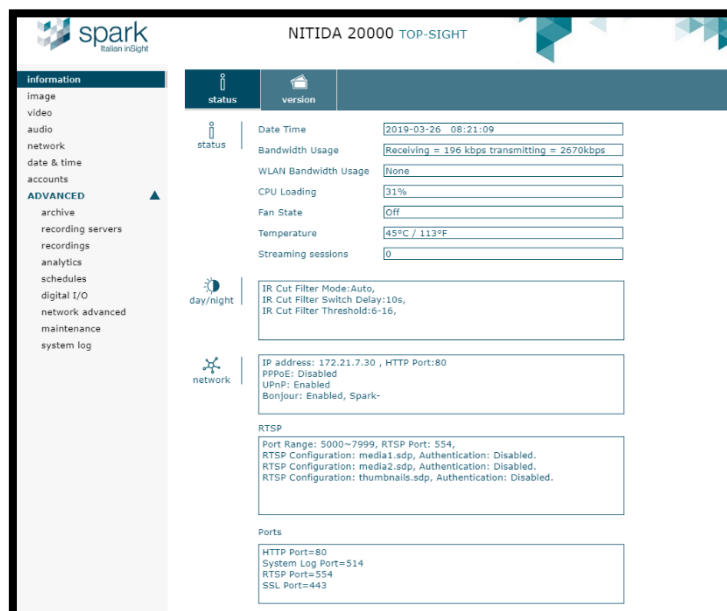
Remark *only available for Internet Explorer.



4.2 Setup Page

- There are 8 parts in the setup page:
 1. Information
 2. Image
 3. Video
 4. Audio
 5. Network
 6. Date& Time
 7. Accounts
 8. Advanced
- The information page displays the IP camera's status and version information, including:
 1. Status
 - Status information
 - Day/Night mode settings information
 - Network settings information
 2. Version
 - Version information

Image 2. Camera information page



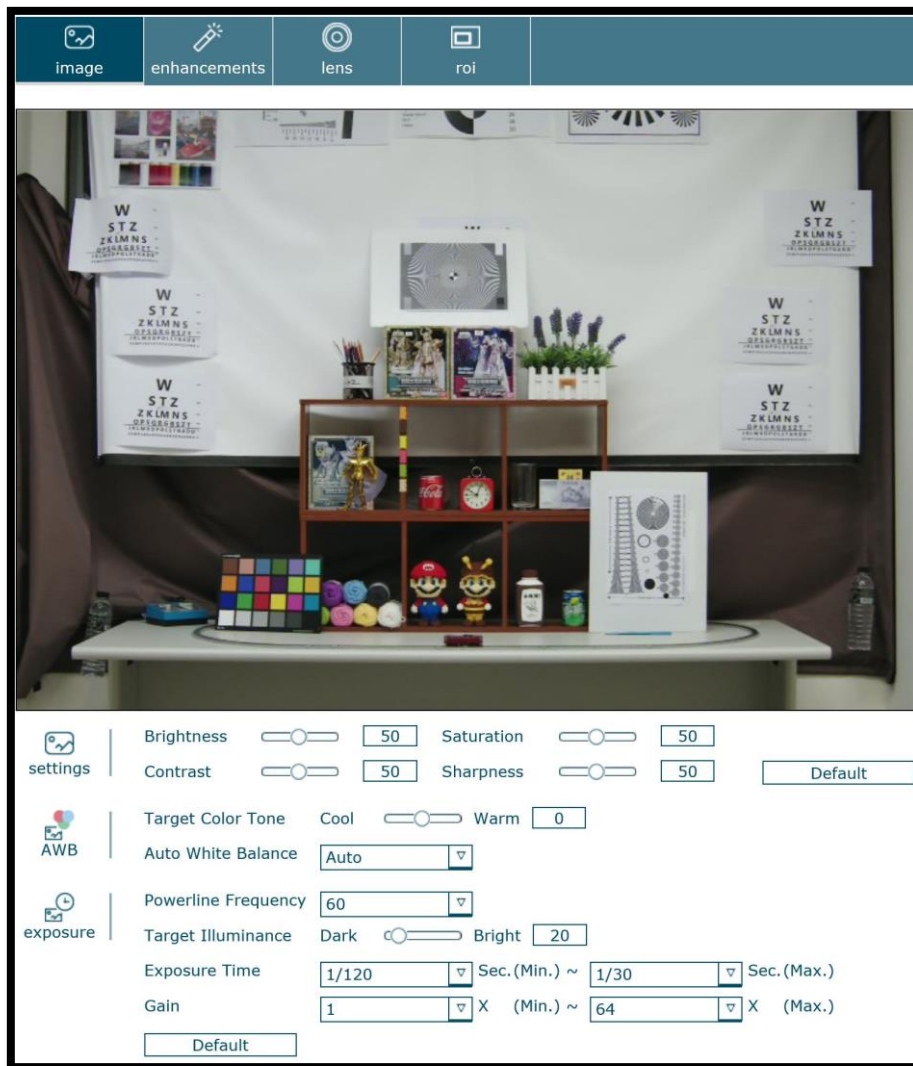


4.3 Image

Note: Remember to click the save button to successfully apply changes.

- Image page includes image, enhancements, lens and ROI.
 - Image configuration:** image settings, AWB, exposure.

Image 3. Image configuration page



a. Settings:

1	Brightness	value from 0~100	Brightness refers to the overall lightness or darkness of the image, the higher the value the brighter the image.
2	Contrast	value from 0~100	The relative difference between dark and light, the higher the value the bigger the difference.
3	Saturation	value from 0~100	Controls the intensity of color in an image.
4	Sharpness	value from 0~100	Controls the level of detail that is achieved in an image.



b. AWB (auto white balance):

1	Target color tone	value from -127~127	Move the bar to the value that can best reflect natural colors, higher value produce warmer colors, lower value produce colder colors.
2	Auto White Balance	Auto	AWB allows colors in an image to appear the same regardless of the color temperature of the light source. The auto option can automatically identify the light source and compensate for its color. Users can also select other type of light source available on the drop-down list.
		Hold current	
		Fluorescent	
		Incandescent	
		Sunny	
		Cloudy	
		Sun Shade	
Manual			

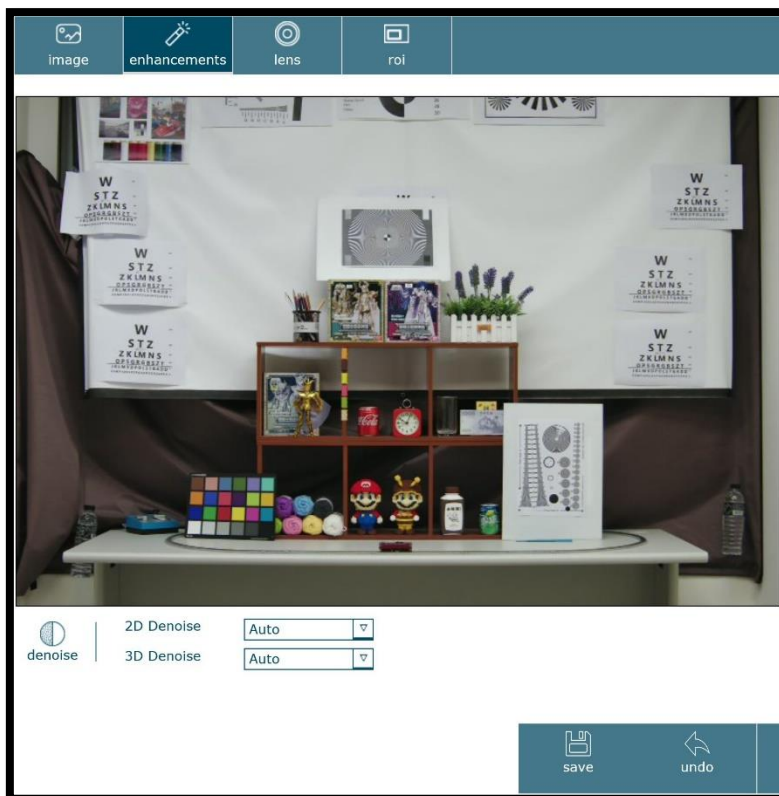
c. Exposure

1	Powerline frequency	Auto	Select auto if the camera is installed outdoor. On the contrary, please choose the indoor light frequency (e.g. 60Hz for USA, 50Hz for Germany).
		50 Hz	
		60 Hz	
		Hold current	
2	Target illuminance	value from 0~100	Target illuminance allow users to adjust the brightness and darkness. This feature is only available under auto exposure time and auto gain.
3	Exposure time	value from 1/2~1/30000	Define the minimum and maximum exposure time of the camera's shutter. It is recommend using the smallest exposure time for the min value to ensure crisp images during day time condition. As for the max value, the bigger the value, the longer the camera keeps the shutter open in low light conditions allowing more light to fall onto the image sensor. As a result, the camera can capture images even in very dark environments. However, moving objects will appear blurred as they move while the camera's shutter is open.
4	Gain	value from 1~128	The higher the value, the brighter the image, but consequently it will contain more noise.



2. **Enhancements:** includes denoise function.

Image 4. Enhancements page



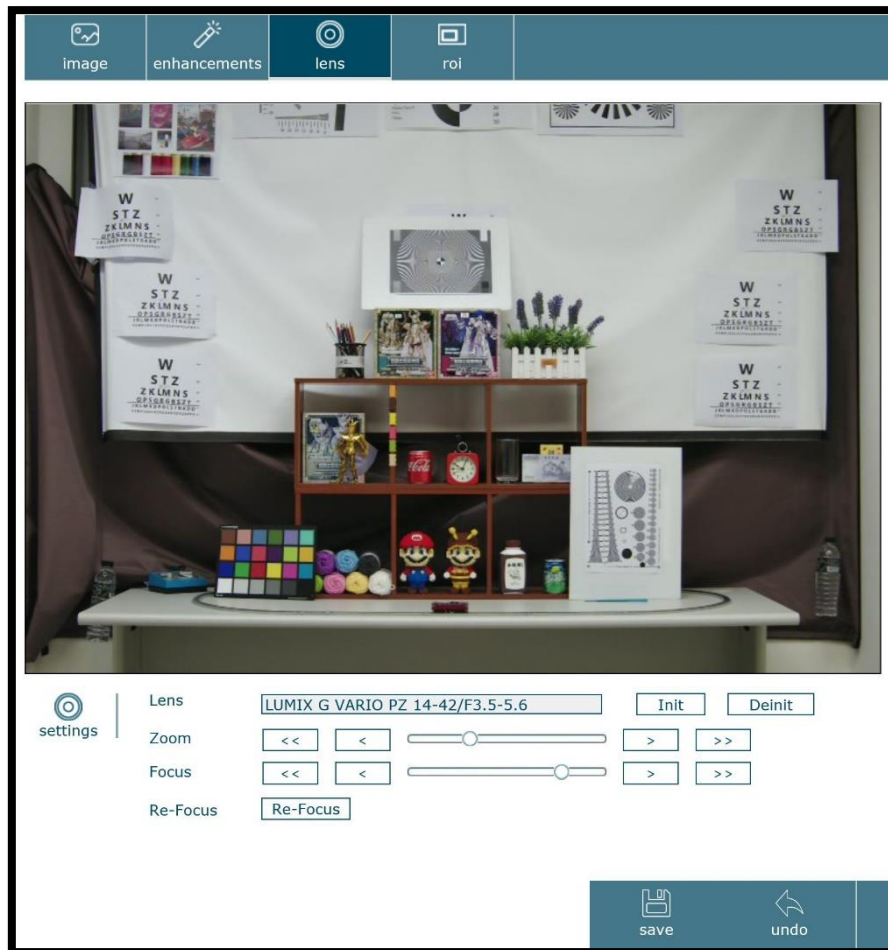
a. Denoise:

1	2D Denoise	Auto	Noise reduction algorithm helps reduce the graining in the video, which occurs under low light conditions. Select the mode that best fit your needs.
		Manual (Value 0~50)	
		Off	
		Schedule (Value 0~50)	
2	3D Denoise	Night mode (Value 0~50)	Further improves noise reduction to deliver sharper image.
		Auto	
		Off	



3. **Lens control:** users can adjust the lens according to the installation needs.

Image 5. Lens control page



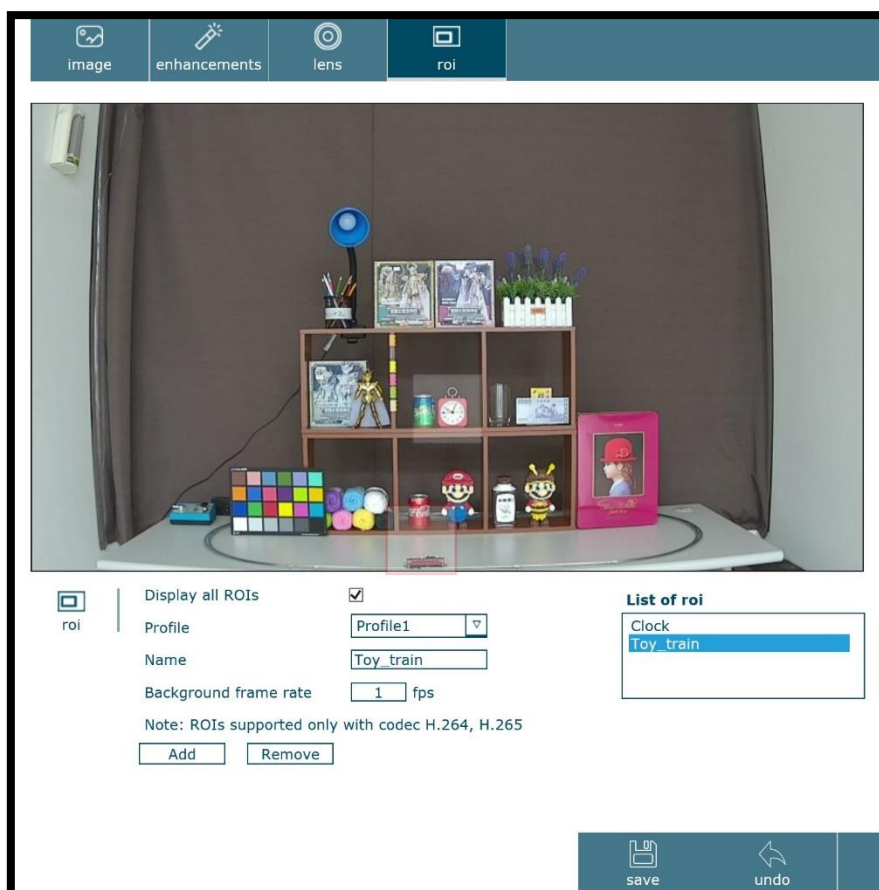
a. Settings:

1	Lens	<input type="button" value="Init"/> <input type="button" value="Deinit"/>	Click “Init” for system to automatically detect mounted lens information. Click “Deinit” to unmount the lens.
1	Zoom	<input type="button" value="←←"/> <input type="button" value="←"/> <input type="text"/> <input type="button" value="→"/> <input type="button" value="→→"/>	Use the arrows to zoom in or out. Users can also click on the bar to zoom to specific position.
2	Focus	<input type="button" value="←←"/> <input type="button" value="←"/> <input type="text"/> <input type="button" value="→"/> <input type="button" value="→→"/>	Use the arrows to adjust the focus, or use the mouse to move and resize the focus window
3	Re-Focus	<input type="button" value="Re-Focus"/>	Users can automatically refocus.



4. **ROI (Region of Interest):** users can create up to 3 ROI regions according to the installation needs.

Image 6. ROI setting page



a. Roi:

1	Display all ROIs	Display/no display	Display all ROIs to see all the regions previously set.
2	Profile	Profile 1	Select profile.
		Profile 2	For profile settings please refer to section 4.4.1
		Profile 3	
3	Name	<input type="text" value="Spark"/>	Insert ROI name, only allow characters 0-9, a-z, A-Z, “.”, “ ”
4	Background frame rate	Value 1~30	Users may lower the background frame rate in order to relocate the bitrate resources and increase the video quality on the regions of interest.

How to setup ROI:

- a. Step 1: Choose the profile for ROI
- b. Step 2: Key in the ROI name
- c. Step 3: Key in the background frame rate (1~30)
- d. Step 4: Click add button
- e. Step 5: Click the save button



4.4 Video

Note: Remember to click the save button to successfully apply changes.

- Video page includes video configuration, profile, day/night and privacy.

Image 7. Video settings page

video	profile	day & night	privacy
rotation	Mirror/Flip	None	
	Image Rotation	0	
streams	Video Clip Format	Profile1	
	Snapshot Format	Profile1	
overlay	Overlay	Title & Time Stamp	
	Title	NITIDA20000	
	Text Color	White	
	Background Color	Black	
	Display Position	<input checked="" type="radio"/> Top <input type="radio"/> Bottom	
	Profile Name	Profile1	
	Font Size	Small	

save undo



a. Rotation:

1	Mirror/Flip	None	Allows users to mirror and/or flip the image. Mirror for rotated left and right, flip for rotated up and down.
		Mirror	
		Flip	
		Mirror + Flip	
2	Image Rotation	0 °	Allows users to rotate the image by 0°, 90° or 270° .
		90 °	
		270 °	

b. Streams:

1	Video Clip Format	Profile1	Select profile for video clip format.
		Profile2	For profile settings please refer to section 4.4.1
2	Snapshot Format	Profile1	Select profile for snapshot format.
		Profile2	For profile settings please refer to section 4.4.1

c. Overlay:

1	Overlay	None	Overlays are superimposed over the video stream. They are used to provide extra information during recordings, such as a timestamp, or during product installation and configuration.
		Time Stamp	
		Title	
		Title & Time Stamp	
2	Title	<input type="text" value="INITIDA20000"/>	Insert Title name, only allow characters 0-9, a-z, A-Z, “.”, “_”
3	Text Color	White	Users can select the text color that best fit their needs.
		Black	
4	Background Color	White	Users can select the background color that best fit their needs.
		Black	
		Transparent	
5	Display Position	Top	Users can select the display position of overlay that best fit their needs.
		Bottom	
6	Profile Name	Profile1	Users can select the Profile for displaying the OSD.
		Profile2	
7	Font Size	Small	Users can select the font size of overlay that best fit their needs.
		Medium	
		Large	



1. **Profile page:** Up to 3 configurable profiles, 1 main stream and 2 sub-streams.
Add/Edit page includes profile name and description and other video and audio configurations such as encoding, profile, resolution, fps and quality.

Image 8. Profile page

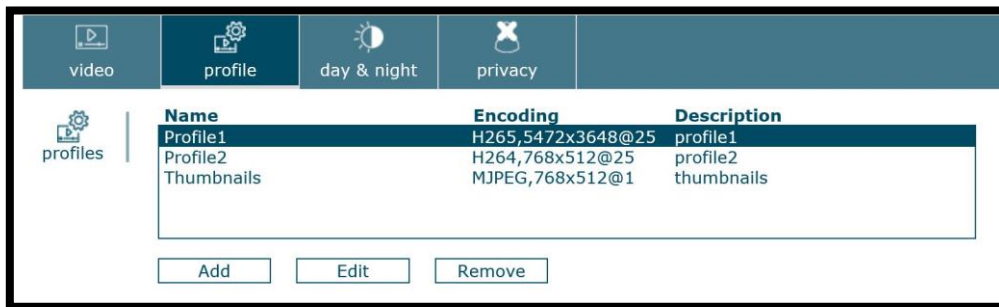
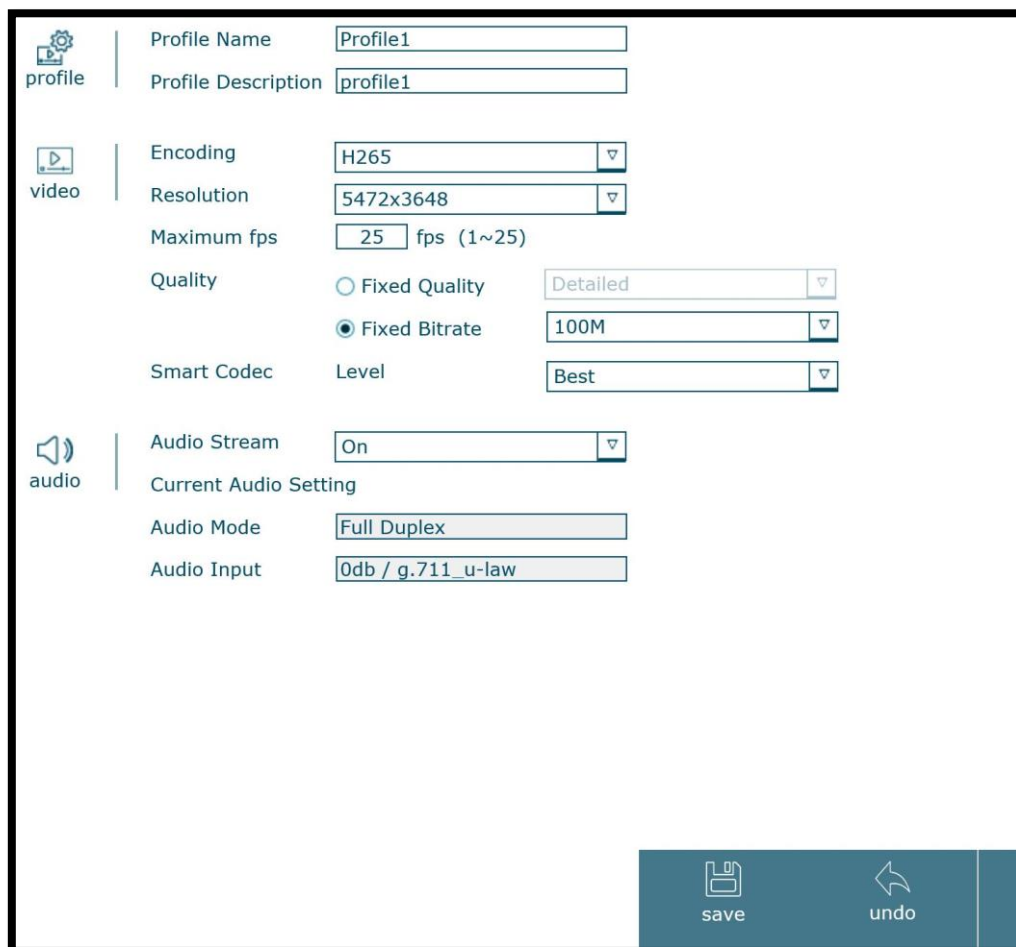


Image 9. Add/Edit profile page





a. Profile:

1	Profile Name	<input type="text" value="Profile1"/>	Insert profile name, only allow characters 0-9, a-z, A-Z, “.”, “_”
2	Profile Description	<input type="text" value="Profile1"/>	Insert profile description, only allow characters 0-9, a-z, A-Z, “.”, “_”

b. Video:

1	Encoding	H.264	The camera can encode video in different formats. Make sure that your video recorder supports the selected format.
		H.265	
		MJPEG	
2	Profile	Baseline	Under H.264 there are three types of compression, users can choose as needed.
		Main	
		High	
3	Resolution	Value from 5472x3648~512x288	Resolution will affect the image quality. Available resolution will depend on the profile.
4	Maximum fps	Value 1~25	Define the maximum number of frames per second for the profile. Maximum limit will depend on the encoding format.
5	Quality	Fixed Quality:	Choose between Fixed Quality (VBR) and Fixed Bitrate (CBR). Fixed quality options includes: medium, standard, good, detailed and excellent. Fixed bitrate will ensure that the video bitrate does not surpass the specified maximum.
		Fixed Bitrate: Value from 32k~100M	
6	Smart Codec	Off	Smart codec further reduces bandwidth and storage requirement without compromising quality.
		Better	
		Best	

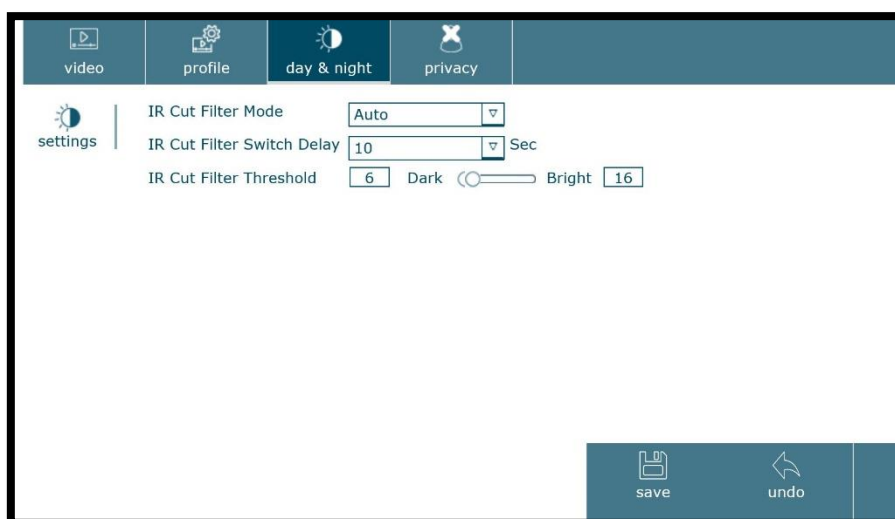
c. Audio:

1	Audio Stream	On	Choose to enable or disable the audio.
		Off	
2	Current Audio Setting	Current Audio Setting	Display current audio setting, includes audio mode, audio input and audio output.



2. **Day/Night mode settings:** IR cut filter provides 4 different type of modes: auto, night mode, day mode and schedule.

Image 10. Day/night settings page



a. Settings

1	IR Cut Filter Mode	Auto	By selecting Auto the camera will automatically remove the IR cut filter based on the predefined threshold. On Night mode, the live view image will be black and white as the camera will always remove the IR cut filter regardless of the actual light levels. Opposite to night mode, the Day mode will never remove the IR cut filter from the image sensor allowing visible light to pass through the image, providing colored videos. Schedule mode allows users to program the time for the camera to engage in night mode.
		Night Mode	
		Day Mode	
		Schedule	
2	IR Cut Filter Switch Delay	Value 1~10 Sec	Define the duration to enable the IR cut filter to switch mode.
3	IR Cut Filter Threshold	Value 0~100	Define the threshold to enable the IR cut filter to switch mode.

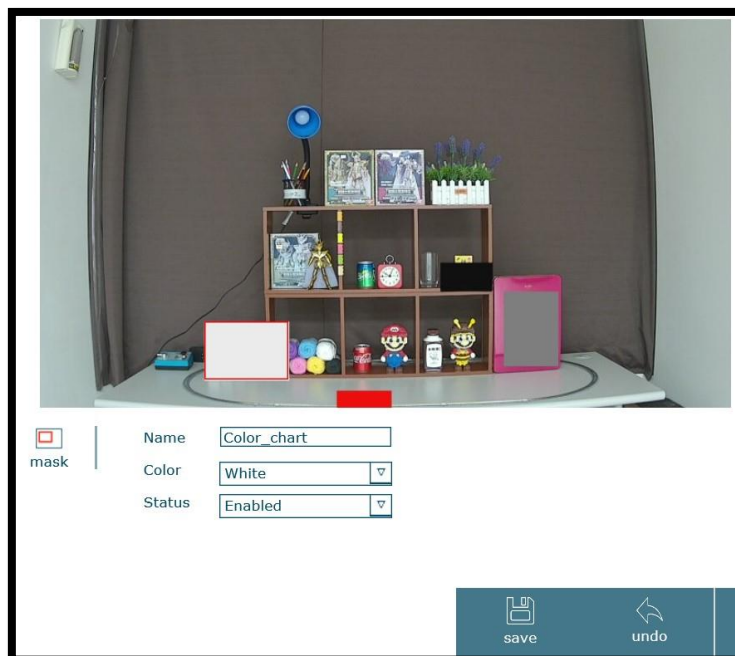


3. **Privacy mask page:** allows users to set-up up to 5 privacy masks.

Image 11. Privacy mask page



Image 12. Add/Edit privacy mask page



a. Mask:

1	Name	<input type="text" value="Color_chart"/>	Insert mask name, only allow characters 0-9, a-z, A-Z, “”, “_”
2	Color	Black	Users can select the mask color that best fit their needs.
		Gray	
		White	
		Red	
3	Status	Disabled	Enable/ disable privacy mask.
		Enabled	

How to setup privacy mask:

- a. Step 1: Click add button
- b. Step 2: Set up privacy mask area and key in the mask name
- c. Step 3: Choose mask color: black, white, gray and red
- d. Step 4: Select the status of the mask
- e. Step 5: Click the save button

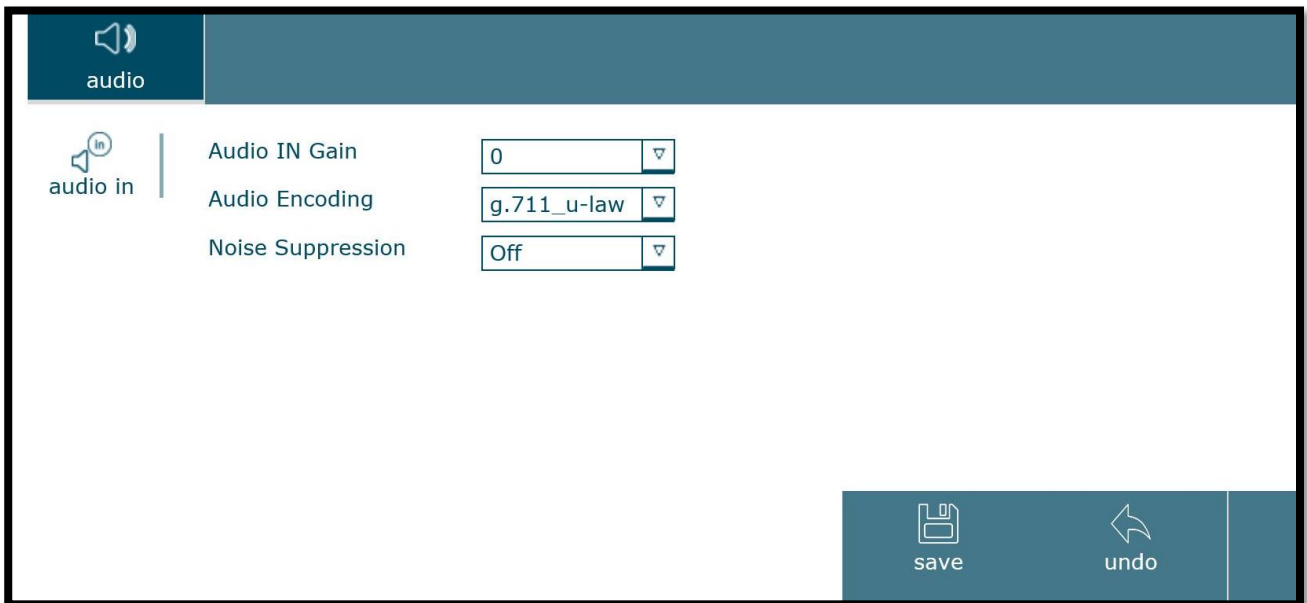


4.5 Audio

Note: Remember to click the save button to successfully apply changes.

- Audio page includes input gain, audio encoding and noise suppression settings.

Image 13. Audio page



a. Audio in:

1	Audio In Gain	From -12~12 and mute	Select the microphone input gain value from the drop-down menu.
2	Audio Encoding	g.711_u-law	Select the encoding from the drop-down menu.
		g.711_a-law	
		AAC	
		g.726	
3	Noise Suppression	High	Enable this feature to reduce background noise receive from audio in.
		Low	
		Off	



4.6 Network

Note: Remember to click the save button to successfully apply changes.

- Network page includes TCP/IP, PPPoE and WiFi:

1. TCP/IP settings:

Image 14. Network page

a. MAC:

1	MAC Address	00:E4:07:00:0D:BC	Display the MAC address information.
---	--------------------	-------------------	--------------------------------------

b. IPv4:

1	Obtain an IP address automatically(DHCP)	<input type="radio"/>	Select this option to obtain an available dynamic IP address assigned by the DHCP server each time the camera is connected to the LAN.
2	Use the following IP address	<input checked="" type="radio"/>	Select this option to manually assign a static IP address to the Network Camera.
3	Obtain DNS server address automatically	<input type="radio"/>	Automatically use the DNS server settings provided by the DHCP server.
4	Use the following DNS server address	<input checked="" type="radio"/>	Select this option to assign a DNS server address. When DHCP is disabled, you also need to provide the camera with valid DNS settings.

c. IPv6:

1	IP Address	fe80:0000:0000:0000:22e4:07ff:fe00:0dbc/64	The IPv6 IP address of camera is automatically assigned by converting the MAC address of the IP camera. Users are unable to modify it.
---	-------------------	--	--

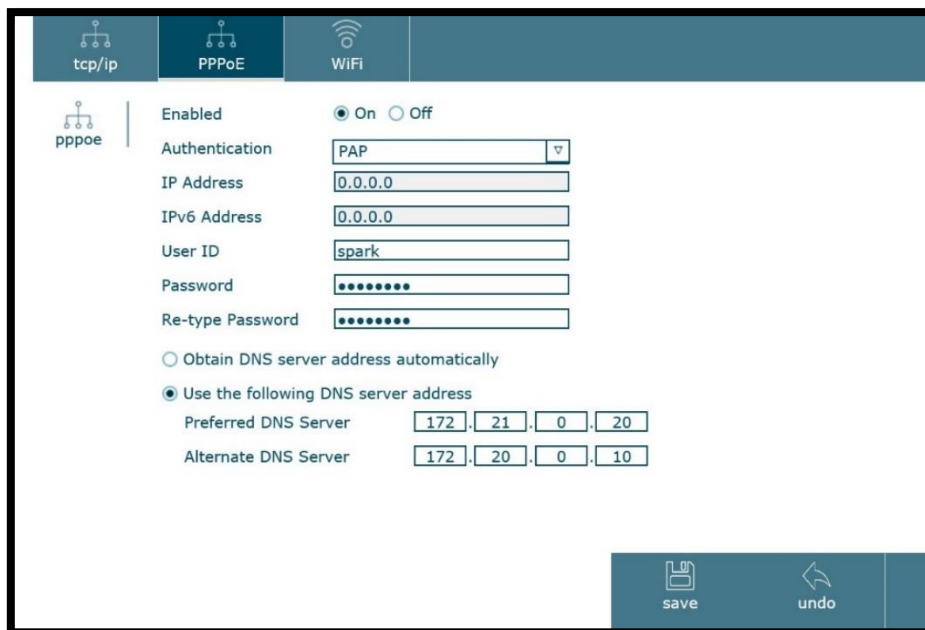
d. HTTP:

1	HTTP Port	Default:80 Value 1124~65534	The default value is 80. If you changed the HTTP port to a different value (e.g. 1024), please make sure to restart the camera (Settings > Advanced> Maintenance) and then connect to the camera using the following URL http://camera_ip:portnumber .
---	------------------	--------------------------------	--



2. PPPoE page: allows users to configure PPPoE.

Image 15. PPPoE page



a. PPPoE:

1	Enabled	On	Users can enabled/ disabled this function.
		Off	
	Authentication	PAP	Select the authentication type.
		CHAP	
	IP Address	0.0.0.0	Displays the current IP address obtained from the Internet Service Provider (ISP). It will display 0.0.0.0 if the camera is not connected to the Internet via PPPoE.
	IPv6 Address	0.0.0.0	
	User ID	Spark	Enter the user ID for your DSL service. The user ID is provided by your ISP. Enter the password for the DSL account. Re-type the password in the field below.
	Password	
	Re-type Password	
Obtain DNS server address automatically		Typically your ISP will send DNS Server information to the camera when it connects. However, please select "Use the following DNS server address" if your ISP requires entering specific DNS servers manually.	
Use the following DNS server address			

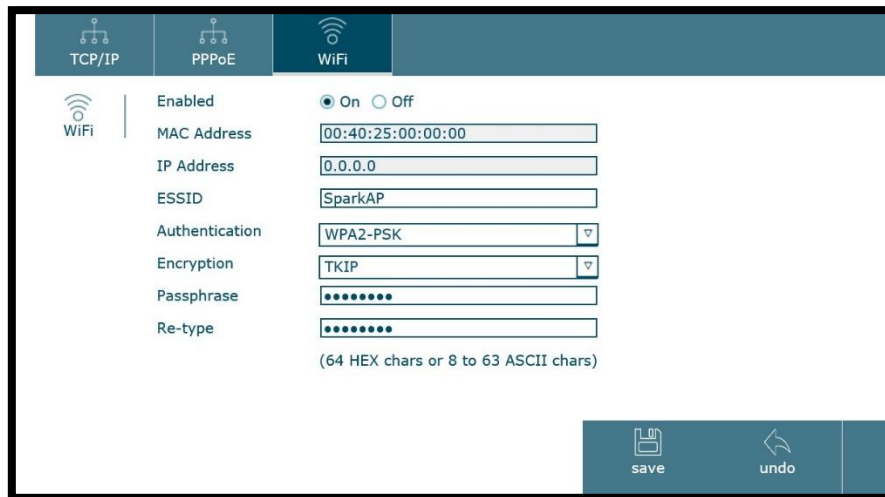
How to setup PPPoE:

- a. Step 1: Enable the PPPoE function
- b. Step 2: Choose authentication format
- c. Step 3: Type in User ID and password
- d. Step 4: Choose DNS server address
- e. Step 5: Click the save button



3. WiFi page: allows users to configure WiFi.

Image 16. WiFi page



a. WiFi:

1	Enabled	On	Users can enabled/ disabled this function.
		Off	
2	MAC Address	00:40:25:00:00:00	Display MAC address.
3	IP Address	0.0.0.0	Display IP address
4	ESSID	SparkAP	The Extended Service Set Identification (ESSID) is one of two types of Service Set Identification (SSID).
5	Authentication	Open	WPA and WPA2 are the primary security algorithms for setting up a wireless network. They are two security protocols and security certification programs developed by the Wi-Fi Alliance to secure wireless computer network. TKIP and AES are encryption methods for the security protocols to further prevent attacks and intrusions. By choosing “open,” no authentication will be required.
		WPA-PSK	
		WPA2-PSK	
6	Encryption	TKIP	
		AES	
7	Passphrase	Insert the password.
8	Re-type	

How to setup WiFi:

- a. Step 1: Enable the WiFi function
- b. Step 2: Key in ESSID
- c. Step 3: Choose authentication format
- d. Step 4: Choose the Encryption
- e. Step 5: Type in password
- f. Step 6: Click the save button



4.7 Date & Time

Note: Remember to click the save button to successfully apply changes.

- Date & Time allows users to see and configure current date and time.

Image 17. Date & time page

a. Current:

1	Current Date & Time	<input type="text" value="2018-06-07 18:27:59"/>	Display IP camera current date & time
2	PC Clock	<input type="text" value="2018-06-07 18:27:59"/>	Display PC current date & time
3	Date & Time Format	<input type="text" value="yyyy-mm-dd hh:mm:ss"/>	Select the date & time format. The format in which the date and time is displayed on the live video.
		<input type="text" value="mm-dd-yyyy hh:mm:ss"/>	
		<input type="text" value="dd-mm-yyyy hh:mm:ss"/>	

b. Sync:

1	Synchronize with client PC	<input type="radio"/> Synchronize with client PC	Select if you want to adjust the camera time to your PC. Note that this option synchronizes the time only once. An occasional re-synchronization will be necessary.
---	-----------------------------------	--	---



2	Manual Settings	Manual Settings	Select to manually enter the date and time.
3	Synchronize with NTP	Server1	Select to allow the camera to obtain the time from an NTP server. You can use the default value or you can enter a different NTP server manually. Make sure that your camera is connected to the Internet and that no firewall is blocking the outgoing NTP request.
		Server2	
		Server3	
		Server4	

c. **Timezone:**

1	Timezone		Select the correct time zone for your location.
2	Daylight Saving Time	On	Define the Daylight Saving Time range by activating this option. The camera will adjust the time depending on the predefined start and end time.
		Off	



4.8 Accounts

Note: Remember to click the save button to successfully apply changes.

- Admin can create up to 10 accounts with different privilege, to create an account, click the add button. To edit or remove an account, select the username on the account list and then click Edit or Remove as needed. Administrators account cannot be deleted.

1. Add accounts:

Image 18. Accounts page

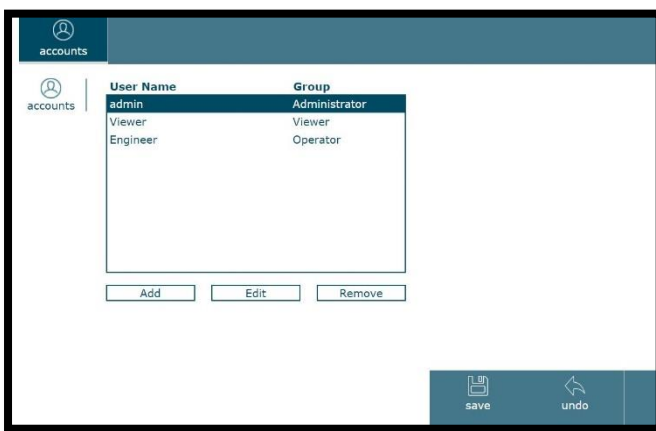
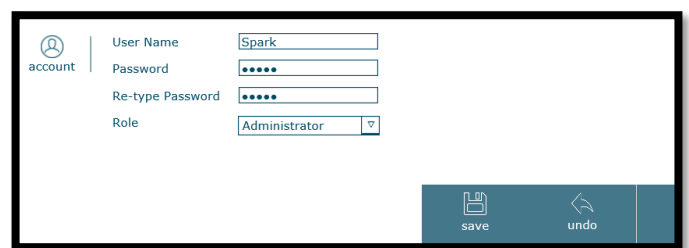


Image 19. Add/edit accounts page



a. Accounts:

1	User Name	<input type="text" value="Spark"/>	Insert user name, only allow characters 0-9, a-z, A-Z, “ ” “ _ ”
2	Password	<input type="password" value="....."/>	Password less than 4 characters in length
3	Re-type password	<input type="password" value="....."/>	
4	Role	Viewer	There are three user levels: viewer, operator and administrator. The viewers only have access to the live view page of the camera. The operators have access to the live view page, as well as basic image settings (e.g.: brightness, contrast). Only the administrator has full access to the all camera settings.
		Operator	
		Administrator	

How to add account:

- Step 1: Click add button
- Step 2: Key in user name, password and choose the user role
- Step 3: Choose to enable/disable anonymous viewer
- Step 4: Click the save button



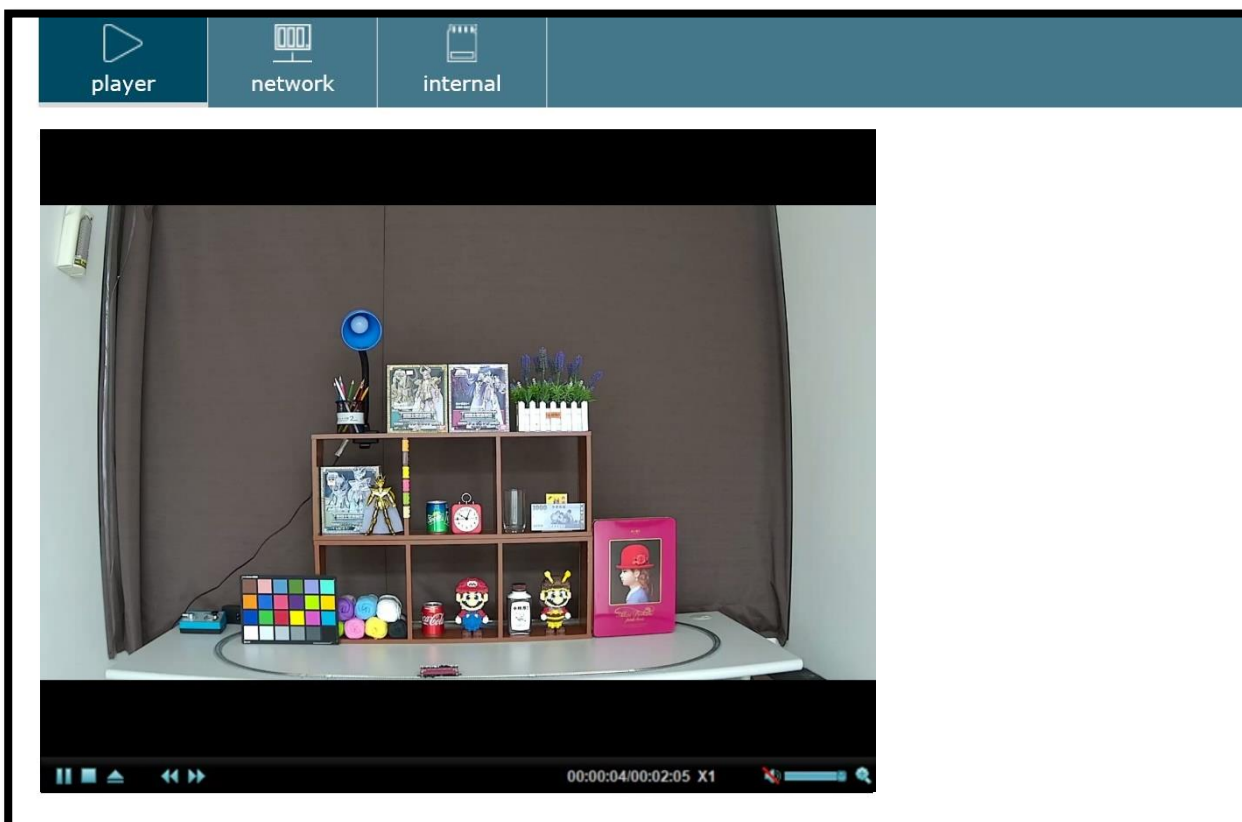
5. WEB USER INTERFACE-ADVANCED

5.1 Archive

- Archive functions include embedded player, network storage and internal storage.

1. Player:

Image 20. Player page



1		Upload	Upload the video file from local PC (Format *.mkv).
2		Pause/Play	Pause/Play video file.
3		Stop	Stop playing video file.
4		Fast-forward/ Rewind playback	Fast-forward or rewind playback. Fast-forward speed includes x2 and x4, rewind speed x1/2 and x1/4.
5		Time stamp and speed	Display current playing time and playing speed.
6		Sound Mute/ Volume level	Enable/disable the sound from the video and configure volume*.
7		Zoom in	Enable users to zoom in on any area of the video. Clicking the zoom in icon will open a small window facilitating users to configure the zoom in rate and area. Click on the “T” (tele) and “W” (wide) to adjust the zoom. Click on to close the window.



2. Network playback:

Please check that the network storage is connected.

- Videos successfully saved in the network storage are shown in order of old to new.

Image 21. Network page_1



Image 22. Network page_2

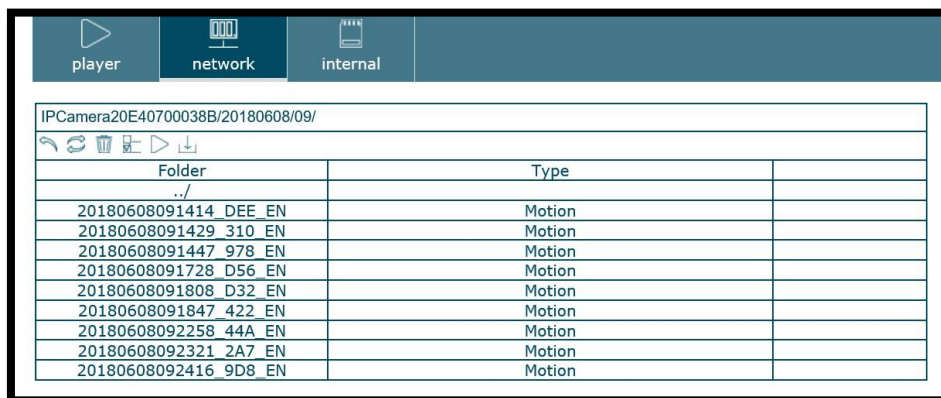
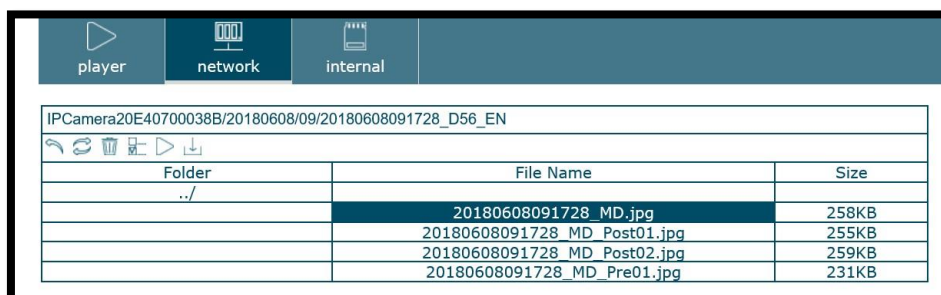


Image 23. Network page_3



1		Return	Go back to the upper level folder.
2		Refresh	Refresh the view.
3		Delete	Delete the selected file.
4		Select all	Select all items in the folder.
5		Play	Playback the selected video
6		Download	Download selected item to your computer.

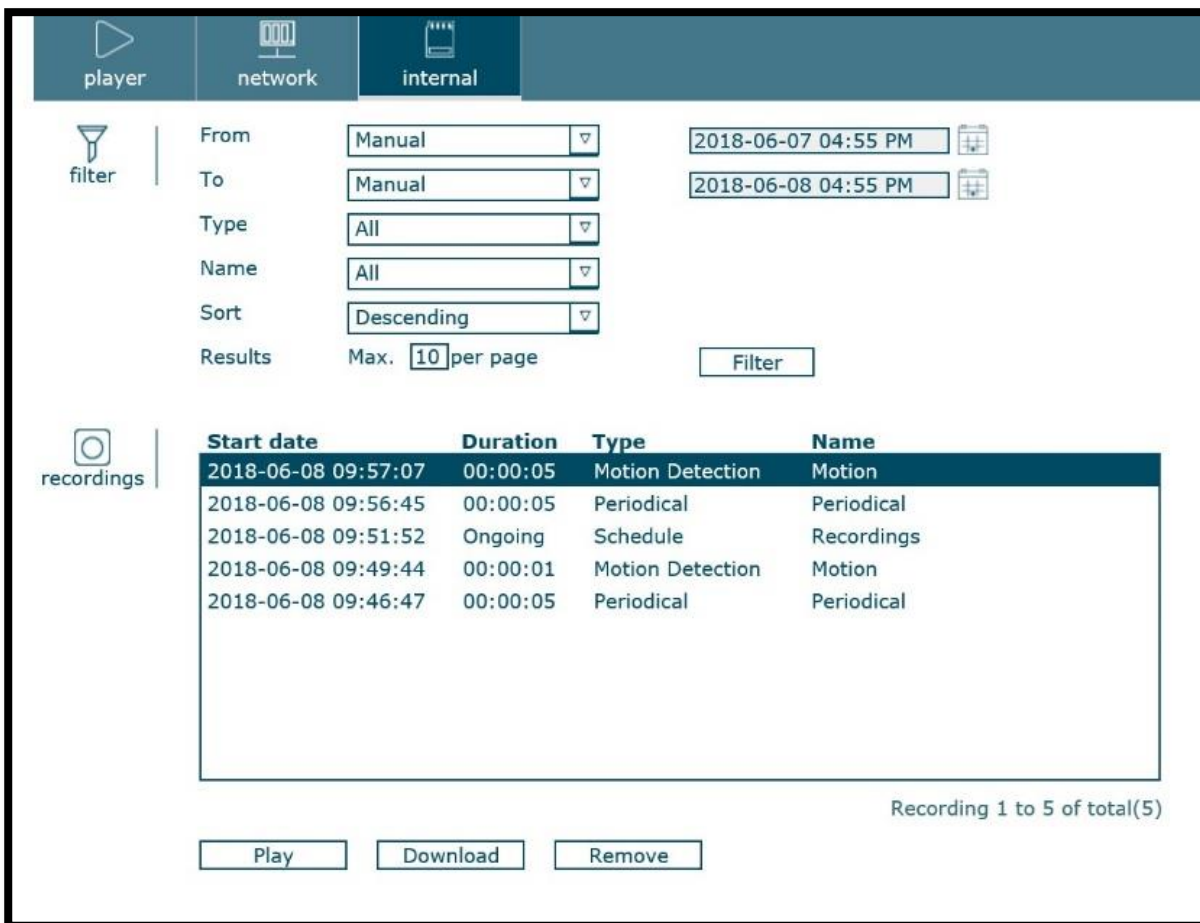


3. Internal playback:

Please check that the SD card is inserted.

Users may select search filter according to the search requirements, and may also choose to play, download or remove file.

Image 24. Internal page



a. Filter:

1	From	First Recording	Users can manually set the start time search criteria or select first recording.
		Manual	
2	To	Now	Users can manually set the end time search criteria or select now.
		Manual	
3	Type	All	Users can select the event type search criteria.
		Motion Detection	
		Digital Input	
		Periodical	
		Network Link Down	
		Schedule	



4	Name	All	Users can search by file name.
5	Sort	Descending	Users can arrange the search by alphabetical order.
		Ascending	
6	Results	Value 1~20	Users can choose the numbers of results on the page.

b. Recordings:

1	Start Date	2018-06-08 09:46:47	Display the recording file date and time.
2	Duration	00:00:05	Display the length of the video.
3	Type	Periodical	Display the event type of the video.
4	Name	Periodical	Display the name of the video.



5.2 Recording servers

Note: Remember to click the save button to successfully apply changes.

- Recording server page includes network storage and internal storage settings.
- Click the add button to create a new server. A window will prompt requesting the server's information. First fill in the name of the server and then select the server type.

1. **Network server:** users can add, edit and remove network servers.

Image 25. Network server page

Name	Protocol	Network Address
NAS	NS	\\Spark-fae\nas

Buttons: Add, Edit, Remove

1.1. Network Storage:

Image 26. Network storage server page

server

Name:

Server type:

Type:

Network Storage Location:
(for example: \\my_nas\folder)

Cyclic Size: (5120~1024000 MB)

login

Domain:

User Name:

Password:

Re-type Password:

Test Connection

save undo



a. Server:

1	Name	<input type="text" value="NAS"/>	Insert Network Storage server name, only allow characters 0-9, a-z, A-Z, “:”, “_”
2	Server type	<input type="button" value="Network Storage"/>	Select Network Storage server.
3	Type	Windows Network(SMB/CIFS) Network File System(NFS)	Select the network storage type (Windows SMB/ CIFS or Linux NFS).
4	Network Storage Location	<input type="text" value="\\Spark-fae\nas"/>	Insert the address of your local storage server.
5	Cyclic Size	5120~1024000MB	Insert limit for the file size.

b. Login:

1	Domain	<input type="text"/>	Insert network storage domain.
2	User Name	<input type="text"/>	Provide valid login credentials for the network storage server.
3	Password		
4	Re-type password		
5	Test connection	<input type="button" value="Test Connection"/>	Click test connection button to check if the Network Storage server is connected, If the connection is successful, a window will pop-out.

How to create Network storage:

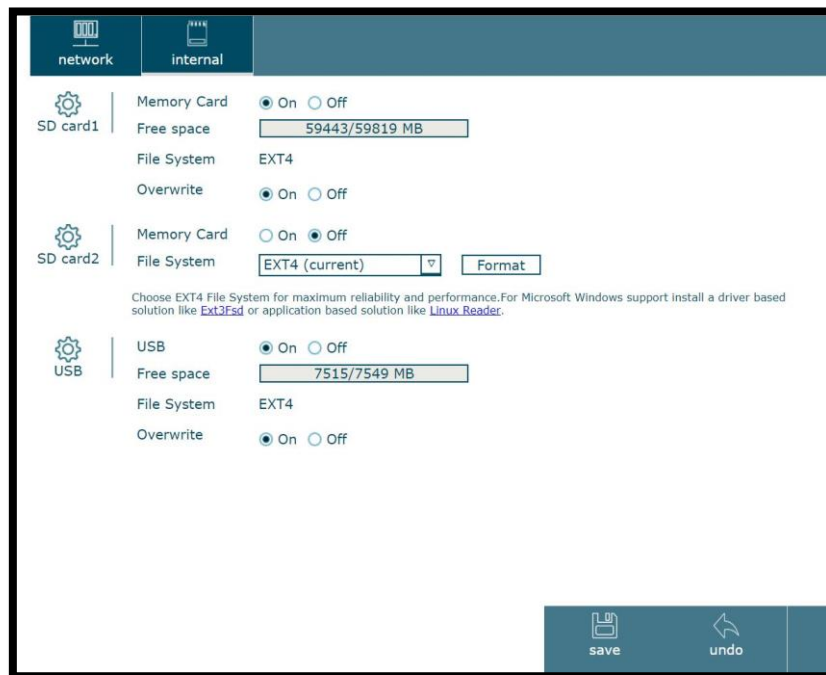
- a. Step 1: Key in Network Storage server information
- b. Step 2: Key in login details
- c. Step 3: Click “Test Connection” to make sure the server is detected
- d. Step 4: Click the save button



2. Internal settings:

Please check that the SD card or USB is inserted.

Image 27. Internal page



a. SD card1:

1	Memory Card	On	This feature is only available if the memort card is inserted.
		Off	
2	Free space	59443/59819 MB	Display the total amount of space on the micro SD card and the available memory.
3	File System	EXT4 (current) [Format]	Click "Format" to start using the SD card.
4	Overwrite	On	Enabling this feature will allow the camera to overwrite the old recordings with new one.
		Off	

b. SD card2:

1	Memory Card	On	This feature is only available if the memort card is inserted.
		Off	
2	Free space	29005/29065 MB	Display the total amount of space on the micro SD card and the available memory.
3	File System	EXT4 (current) [Format]	Click "Format" to start using the SD card.
4	Overwrite	On	Enabling this feature will allow the camera to overwrite the old recordings with new one.
		Off	



c. USB:

1	Memory Card	On	This feature is only available if the memort card is inserted.
		Off	
2	Free space	<input type="text" value="7515/7549 MB"/>	Display the total amount of space on the micro SD card and the available memory.
3	File System	<input type="text" value="EXT4 (current)"/> <input type="button" value="Format"/>	Click “Format” to start using the USB.
4	Overwrite	On	Enabling this feature will allow the camera to overwrite the old recordings with new one.
		Off	



5.3 Recordings

Note: Remember to click the save button to successfully apply changes.

- Recording page includes on event recording and continuous recording settings.
 - On event** recording allows users to set-up 4 different types of event recording: motion detection, digital input, periodical and network link down.

Image 28. Recordings page

The screenshot shows a web interface for recording settings. At the top, there are two tabs: 'on event' (selected) and 'continuous'. Below the tabs is a table with the following columns: Name, Enabled Trigger, Action *, and Schedule. The table contains one entry: 'Motion' with 'On' as the trigger, 'USB' as the action, and 'Always' as the schedule. Below the table are buttons for 'Add', 'Edit', and 'Remove'. A legend at the bottom explains the abbreviations: D1/2=Digital Output 1/2, I=IR, F=FTP Upload, S=SMTP notification, H=HTTP notification, N=Network Storage, SD=SD Card, USB=USB Storage.

Name	Enabled Trigger	Action *	Schedule
Motion	On	Motion Detec...	USB

D1/2=Digital Output 1/2, I=IR, F=FTP Upload,
 S=SMTP notification, H=HTTP notification,
 N=Network Storage, SD=SD Card, USB=USB Storage

1.1. Motion Recording:

Image 29. Motion recording page

The screenshot shows the configuration page for motion recording. It is divided into four sections: 'event', 'settings', 'action', and 'schedules'. The 'event' section includes fields for Name (Motion), Enabled (On), and Triggered by (Motion Detection). The 'settings' section includes Min time between triggers (10 Sec), Detection Area (Door), and Detection Type (Start). The 'action' section includes a checked 'Send Media' checkbox and an 'Event Server' configuration box with fields for Name - Type (USB), Attached Type (Video), Pre-event Recording (2 seconds), and Post-event Recording (3 seconds). The 'schedules' section includes a radio button for 'Always' and a 'Schedule' option set to 'WorkingDay'. At the bottom right, there are 'save' and 'undo' buttons.



a. Event:

1	Name	<input type="text"/>	Insert Motion detection event name, only allow characters 0-9, a-z, A-Z, “:”, “_”
2	Enabled	On Off	Users can enabled/ disabled this function.
3	Triggered by	Motion Detection	Select the motion detection as the trigger event type.

b. Settings:

1	Min time between triggers	Value 1~999 sec	Minimum interval for an event to trigger the next action.
2	Detection Area	<input type="text" value="Door"/>	Select the motion detection area for the trigger action. If no motion detection area was added on the analytics page, detection area will appear as none.
3	Detection Type	Start Stop	Select when to initiate the trigger event.
4	Please Configure Motion Detection	Please Configure Motion Detection	Click on Motion Detection to go to motion detection configuration page.

c. Action:

1	Send Media	Server Type Attached Type	Instructs the camera to send out media. You will need to specify whether you want to use USB, network storage or SD card. Make sure that the servers are set up before using it.
2	Activate Digital Output	Digital Output1	Allows you to perform an action with the camera’s digital output. You may also specify the duration you want the camera to trigger the event.

d. Schedules:

1	Always	Always	Select the schedule for the above Event settings to be active. You may choose one of the available or schedule, or configure another schedule on the schedule menu.
2	Schedule	Schedule	
3	Please Configure Schedule	Please Configure Schedule	Click on Schedule to go to schedule configuration page.

How to create Motion recording:

- a. Step 1: Key in event name and enable motion detection
- b. Step 2: Configure motion detection settings. Remember to first add motion detection area on the analytics page or click the link provided “motion detection.”
- c. Step 3: Select the action type after event triggered. Action options includes send media to event server and activation of digital output.
- d. Step 4: Select motion detection recording schedule
- e. Step 5: Click the save button



1.2. Digital input Recording:

Note: Please check digital input is connected.

Image 30. Digital recording page

a. Event:

1	Name	<input type="text"/>	Insert Digital input recording event name, only allow characters 0-9, a-z, A-Z, “:”, “_”
2	Enabled	On	Users can enabled/ disabled this function.
		Off	
3	Triggered by	Digital Input	Select the digital input as the trigger event type.



b. Settings:

1	Min time between triggers	Value 1~999 sec	Minimum interval for an event to trigger the next action.
2	Digital Input 1	Active	Define the status of the digital input for the camera to trigger recording. Select active to trigger recording when digital input status has changed from its normal state. Select inactive to trigger recording when digital input status is in its normal state. Select change to trigger recording every time the state of the digital input changes.
		Inactive	
		Change	
3	Digital Input 2	Active	
		Inactive	
		Change	

c. Action:

1	Send Media	Server Type	Instructs the camera to send out media. You will need to specify whether you want to use USB, network storage or SD card. Make sure that the servers are set up before using it.
		Attached Type	
2	Activate Digital Output	Digital Output1	Allows you to perform an action with the camera's digital output. You may also specify the duration you want the camera to trigger the event.

d. Schedules:

1	Always	Always	Select the schedule for the above Event settings to be active. You may choose one of the available or schedule, or configure another schedule on the schedule menu.
2	Schedule	Schedule	
3	Please Configure Schedule	Please Configure <u>Schedule</u>	Click on Schedule to go to schedule configuration page.

How to create Digital input recording:

- Step 1: Key in event name and enable digital input
- Step 2: Configure digital input settings.
- Step 3: Select the action type after triggered. Action options includes send media to event server and activation of digital output.
- Step 4: Select digital input recording schedule
- Step 5: Click the save button



1.3. Periodical recording:

Image 31. Periodical recording page

a. Event:

1	Name	<input type="text"/>	Insert Periodical recording event name, only allow characters 0-9, a-z, A-Z, “:”, “_”
2	Enabled	On	Users can enabled/ disabled this function.
		Off	
3	Triggered by	Periodical	Select the periodical as the trigger event type.



b. Settings:

1	Trigger every hours/ min	<input type="text" value="0"/> hours <input type="text" value="10"/> min	Users can customize the the time gap between trigger.
---	---------------------------------	--	---

c. Action:

1	Send Media	Server Type	Instructs the camera to send out media. You will need to specify whether you want to use USB, network storage or SD card. Make sure that the servers are set up before using it.
		Attached Type	
2	Activate Digital Output	Digital Output1	Allows you to perform an action with the camera's digital output. You may also specify the duration you want the camera to trigger the event.

d. Schedules:

1	Always	Always	Select the schedule for the above Event settings to be active. You may choose one of the available or schedule, or configure another schedule on the schedule menu.
2	Schedule	Schedule	
3	Please Configure Schedule	Please Configure Schedule	Click on Schedule to go to schedule configuration page.

How to create Periodical recording:

- a. Step 1: Key in event name and enable periodical recording
- b. Step 2: Configure periodical recording settings.
- c. Step 3: Select the action type. Action options includes send media to event server and activation of digital output.
- d. Step 4: Select periodical recording schedule.
- e. Step 5: Click the save button.



1.4. Network link down recording:

Note: This feature is not available if camera is using PoE as power supply.

Image 32. Network link down recording page

a. Event:

1	Name	<input type="text"/>	Insert Network link down recording event name, only allow characters 0-9, a-z, A-Z, “.”, “_”
2	Enabled	On	Users can enabled/ disabled this function.
		Off	
3	Triggered by	Network Link Down	Select the network link down as the trigger event type.

b. Action:

1	Send Media	Server Type	Instructs the camera to send out media. You will need to specify whether you want to use USB, network storage or SD card. Make sure that the servers are set up before using it.
		Attached Type	
2	Activate Digital Output	Digital Output1	Allows you to perform an action with the camera’s digital output. You may also specify the duration you want the camera to trigger the event.



c. Schedules:

1	Always	Always	Select the schedule for the above Event settings to be active. You may choose one of the available or schedule, or configure another schedule on the schedule menu.
2	Schedule	Schedule	
3	Please Configure Schedule	Please Configure Schedule	Click on Schedule to go to schedule configuration page.

How to create Network link down recording:

- Step 1: Key in event name and enable network link down detection
- Step 2: Configure network link down detection settings.
- Step 3: Select the action type after event triggered. Action options includes send media to event server activation of digital output.
- Step 4: Select network link down detection recording schedule
- Step 5: Click the save button



2. Continuous:

Image 33. Continuous recording page

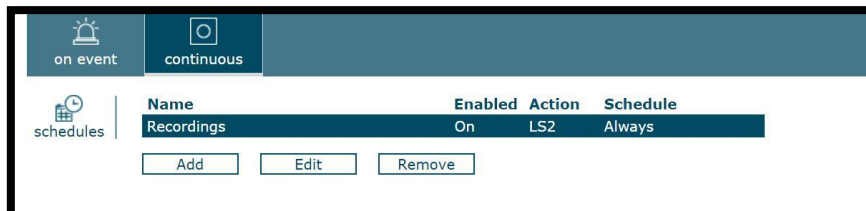
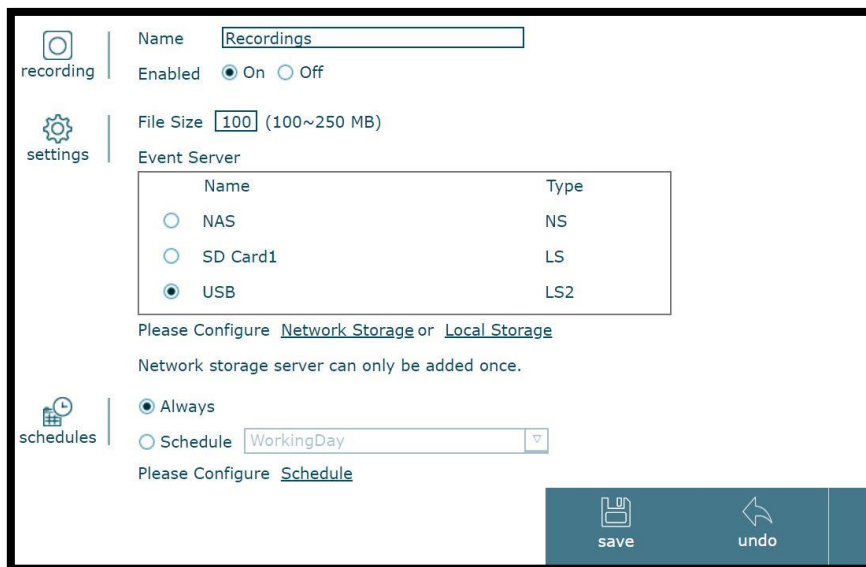


Image 34. Add/ edit Continuous recording page



a. Recording

1	Name	<input type="text" value="Recordings"/>	Insert Continuous recording name, only allow characters 0-9, a-z, A-Z, “:”, “_”
2	Enabled	On	Users can enabled/ disabled this function.
		Off	

b. Settings

1	File Size	Value 100~250 MB	Insert limit for the file size.
2	Event Server	Network Storage	Select the server for the recording.
		Local Storage	
3	Please Configure Network Storage/ Local Storage	Please Configure Network Storage or Local Storage	Click on Network Storage/ Local Storage to go to its configuration page.

c. Schedule

1	Always	Always	Select the schedule for the above Event settings to be active. You may choose one of the available or schedule, or configure another schedule on the schedule menu.
2	Schedule	Schedule	



3	Please Configure Schedule	Please Configure Schedule	Click on Schedule to go to schedule configuration page.
---	----------------------------------	---	---

How to create Continuous recording:

- a. Step 1: Key in event name and enable continuous recording
- b. Step 2: Configure the maximum file size per recording
- c. Step 3: Select location to save the recording files
- d. Step 4: Select continuous recording schedule
- e. Step 5: Click the save button



5.4 Analytics

Note: Remember to click the save button to successfully apply changes.

- Analytics includes motion detection.

1. **Motion detect:** allows users to create up to 3 motion detection areas.

*Colors line inside detection area:




-  Threshold
-  Motion below threshold detected (no event triggered)
-  Motion above threshold detected (event triggered)

Image 35. Analytics page (no event triggered)

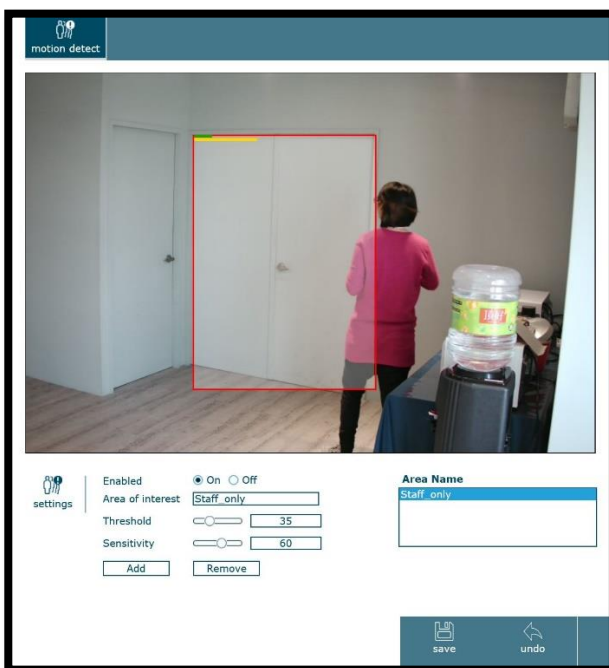
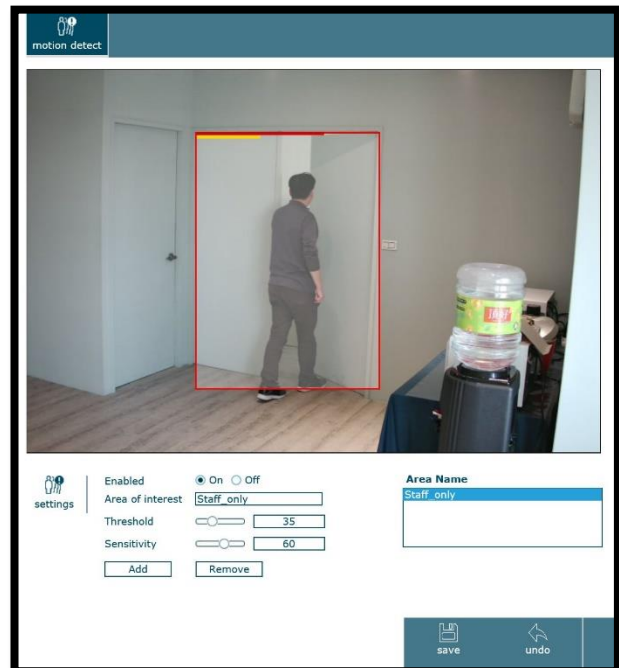


Image 36. Analytics page (event triggered)





a. Settings:

1	Enabled	On	Users can enabled/ disabled this function.
		Off	
2	Area of interest	<input type="text" value="Staff_only"/>	Insert Area Name, only allow characters 0-9, a-z, A-Z, “.”, “_”
3	Threshold	Value 0~100	Make sure to define sensitivity and threshold according to the environment in order to avoid false alarms. There are no standard values as every site’s conditions are different. Generally speaking, increasing sensitivity and lowering threshold will allow the camera to detect most of the motion detection, hence the increase of false alarms. Doing the opposite can reduce false alarms but might increase the risk of missing a key event.
4	Sensitivity	Value 0~100	

How to create Motion detection:

- a. Step 1: Enable motion detection.
- b. Step 2: Key in detection area name.
- c. Step 3: Configure threshold and sensitivity.
- d. Step 4: Click the add button.
- e. Step 5: Configure the size of the detection area as needed.
- f. Step 6: Click the save button.



5.5 Schedules

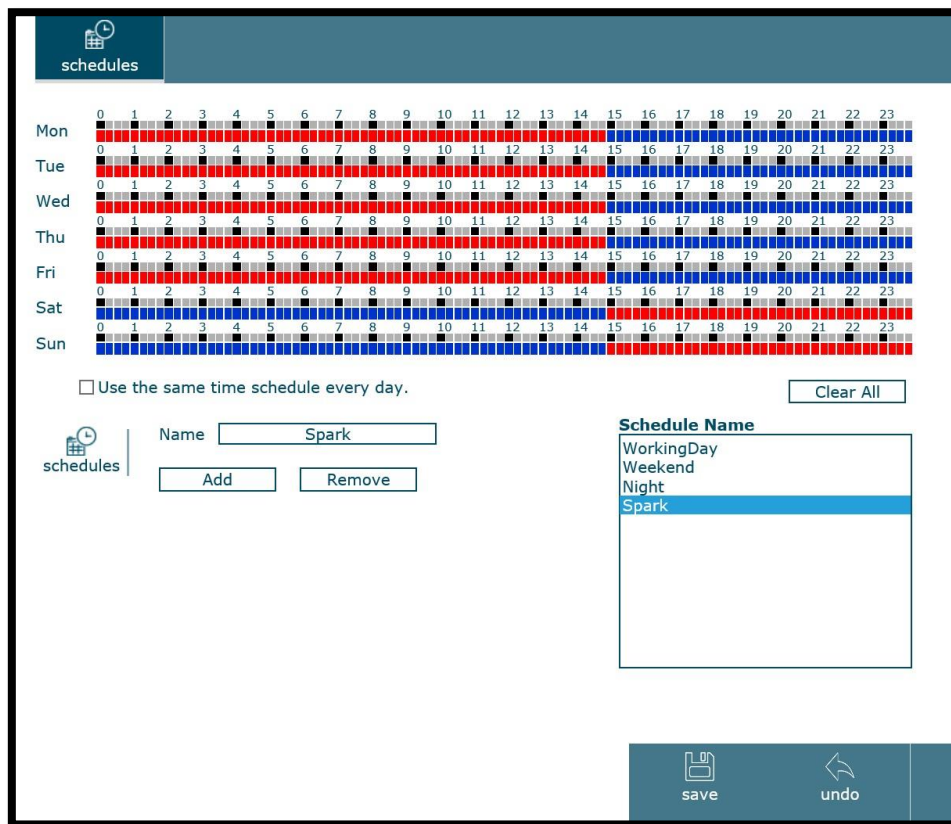
Note: Remember to click the save button to successfully apply changes.

• Schedules allows users to create up to 10 different schedules. Each small square is equivalent to 15 minutes. Each day has a total of 96 square (24hours).

■ Red square: not scheduled time

■ Blue square: scheduled time

Image 37. Schedules page



a. Schedule:

1	Name	Weekend	Insert Schedule name, only allow characters 0-9, a-z, A-Z, “ ”, “ _ ”
---	------	---------	---

How to create Schedule:

- a. Step 1: Click and drag on the red square to select the recording schedule time. Users may also select the schedule on a certain day and copy to other days by checking the box of use the same time schedule every day.
- b. Step 2: Key in schedule name and click the add button.
- c. Step 3: To remove the schedule, select the schedule and then click the remove button.
- d. Step 4: Click the save button.

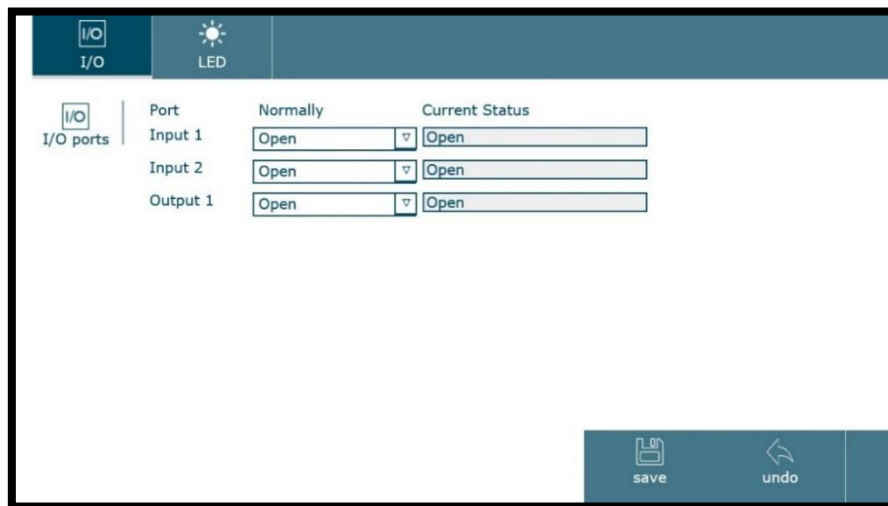


5.6 Digital I/O

Note: (1) Please check if digital input/output is connected. (2) Remember to click the save button to successfully apply changes.

- I/O:** Shows digital input/output current status and allows users to configure input and output normal status.

Image 38. Digital I/O page



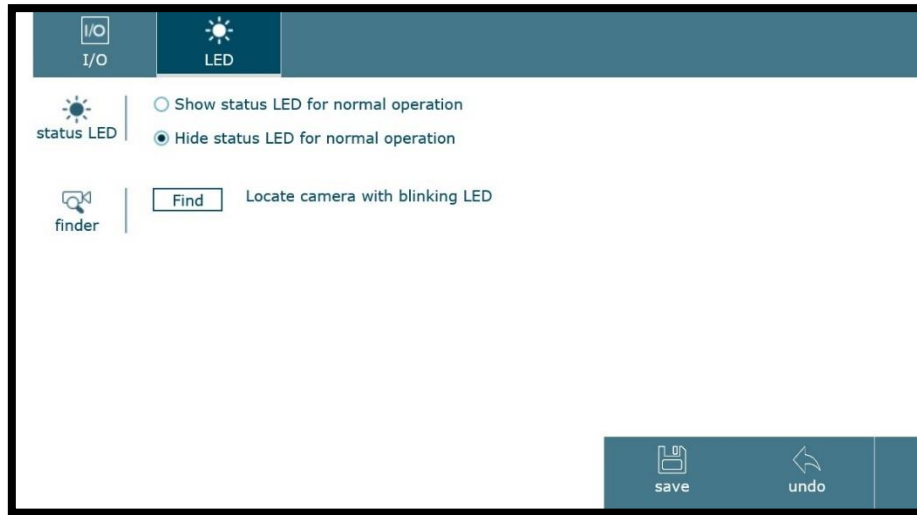
- I/O ports:

1	Input 1	Open	Configure your camera's digital I/O on this page. This section shows the digital I/O current status and allows you to define its normal state (non-alert state).
		Close	
2	Input 2	Open	
		Close	
3	Output 1	Open	
		Close	



2. LED:

Image 39. LED page



a. Status LED:

1	Show status LED for normal operation	Show status LED for normal operation	Allow users to select the status of the LED on the IR board during normal operation.
2	Hide status LED for normal operation	Hide status LED for normal operation	

b. Finder:

1	Locate camera with blinking LED	Find	This feature enables users to easily locate the camera. When users click the Find button, the LED on the IR board will blink for 30 seconds.
---	--	------	--



5.7 Network advanced

Note: Remember to click the save button to successfully apply changes.

1. RTSP:

Image 40. RTSP page

a. Settings:

1	RTP Port Range	Value 1124~65534	Default value is 5000 ~ 7999 and can be changed from 1124 to 65534.
2	RTSP Port	554 1124~65534	Default value is 554 and can be changed from 1124 to 65534.



b. Streams:

1	Profile Name	Profile 1	Select the profile for the RTSP streams.
		Profile 2	
		Profile 3	
2	Profile	<input type="text" value="mmedia1.sdp"/>	<p>This option allows you to set up the URL for each profile and define whether or not you want to enable authentication. The default video URL will be related to the profile number, e.g., profile1 = media1.sdp. Based on the default URLs, access to the RTSP streams would be:</p> <p>rtsp://camera_address/media1.sdp</p> <p>If authentication is enabled, the URLs will change as follows:</p> <p>rtsp://username:password@camera_address/media1.sdp</p>

c. Multicast:

1	Status	Disabled	Multicasting provides efficient usage of bandwidth when there is large numbers of clients viewing simultaneously.
		Enabled	
2	Access Name	<input type="text" value="mmedia1.sdp"/>	Default access name: rtsp://camera_address/mmedia1.sdp
3	Multicast Address	<input type="text" value="228.0.0.1"/>	Default address is 228.0.0.1
4	Video Port	Auto	Users can select the video port or select the auto mode for multicast.
		1124~65534	
5	Audio Port	Auto	Users can select the audio port or select the auto mode for multicast.
		1124~65534	
6	Time-To-Live	Value 1~255	Time-to-live (TTL) value is the hop limit that tells a network router whether or not the packet has been in the network too long and should be discarded.

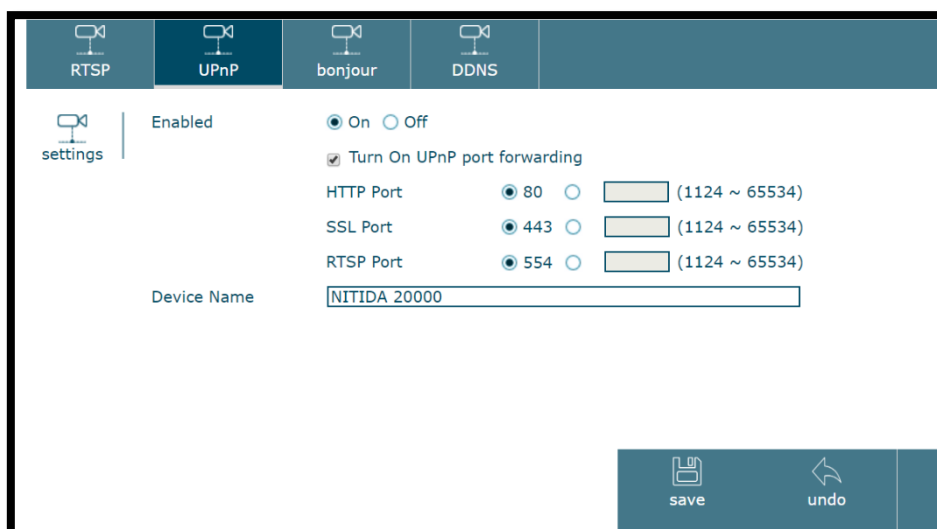
How to create RTSP:

- a. Step 1: Configure RTP port range.
- b. Step 2: Configure RTSP port (default value is 554).
- c. Step 3: Select profile name.
- d. Step 4: Configure RTSP profile name and authentication.
- e. Step 5: Configure RTSP multicast settings.
- f. Step 6: Click the save button.



2. UPnP:

Image 41. UPnP page



a. Settings:

1	Enabled	On	UPnP allows the camera to announce their presence to other devices that support UPnP in the local network. Users can enabled/ disabled this function.
		Off	
2	Turn on UpnP port forwarding	HTTP Port Value 1124~65534	By default, the UPnP will be enabled and the port-forwarding will be disabled. When enabling the port-forwarding, you will need to define the port numbers for the three protocols. Normally there is no need to change the port numbers, unless one of them is already used by another device or application. Please make sure that your router supports the protocol.
		SSL Port Value 1124~65534	
		RTSP Port Value 1124~65534	
3	Device Name	NITIDA 20000	Default device name is product name, but users can customize the device name.

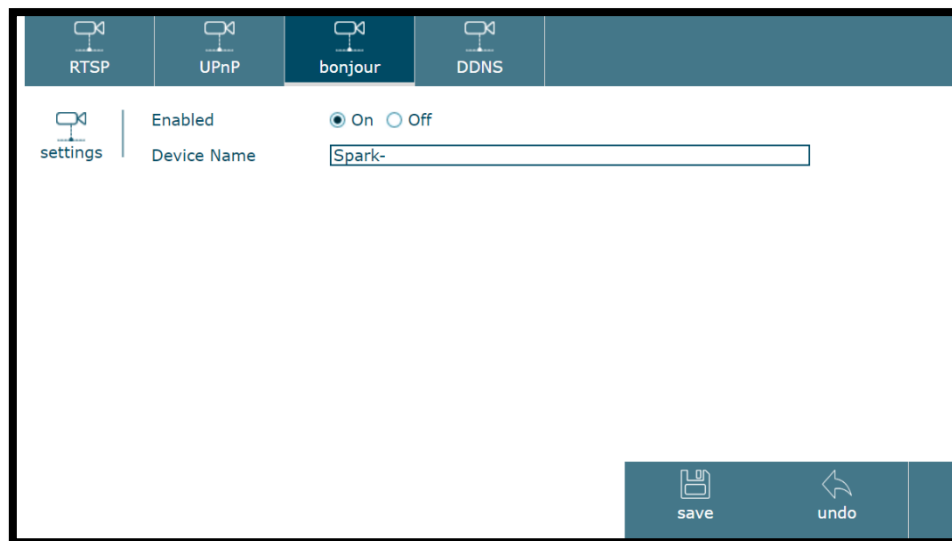
How to create UPnP:

- a. Step 1: Enable UPnP
- b. Step 2: Choose whether to turn on or off UPnP port forwarding
- c. Step 3: Key in UPnP device name
- d. Step 4: Click the save button



3. Bonjour:

Image 42. Bonjour page



a. Settings:

1	Enabled	On	Bonjour is a service that helps to find the camera on the network. This feature will be enabled by default. Users can enabled/ disabled this function.
		Off	
2	Device Name	Spark-20:E4:07:00:03:8B	Default device name is spark plus MAC address, but users can customize the device name.

How to create Bonjour:

- a. Step 1: Enable bonjour
- b. Step 2: Key in bonjour device name
- c. Step 3: Click the save button



4. DDNS:

Image 43. DDNS page

a. Settings:

1	Enabled	On	Dynamic DNS allows you to create a domain name for your network, facilitating the access to the camera from a remote site. Users can enabled/ disabled this function.
		Off	
2	Server Name	http://www.dyndns.org	Select the DDNS provider of your choice.
		http://www.dhs.org	
		http://www.tzo.com	
		http://www.no-ip.com	
3	User ID	<input type="text"/>	Insert the user ID and password to log into your account settings. Do not enter your DSL user account information.
4	Password	<input type="text"/>	
5	Re-type Password	<input type="text"/>	
6	Host Name	<input type="text"/>	Insert the full host name that you have created in your server account.
7	Periodical Update	Auto	Specify the time for the camera to update its IP information with the DDNS provider or select auto and the camera will automatically update the changes.
		Periodical	

How to create DDNS:

- a. Step 1: Enable DDNS
- b. Step 2: Select DDNS server name
- c. Step 3: Key in user ID, password and host name
- d. Step 4: Choose periodical update mode
- e. Step 6: Click the save button

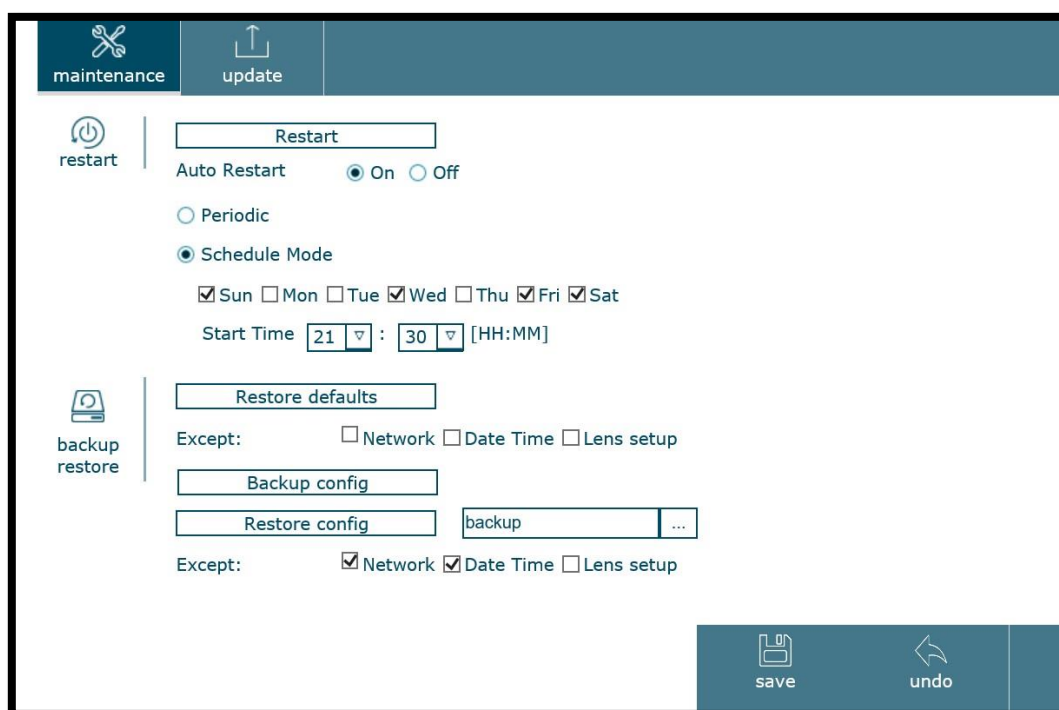


5.8 Maintenance

Note: Remember to click the save button to successfully apply changes.

- Maintenance page includes maintenance and update functions.
 - Maintenance:** Users can configure restart and backup/restore time.

Image 44. Maintenance page



a. Restart:

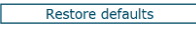


1	Restart	<input type="button" value="Restart"/>	This feature allows you remotely restart the camera, even set a schedule for the camera to automatically restart.
2	Auto Restart	On Off	

a.1. Auto Restart:

1	Periodic	Value 1~7 days	Set specific interval days for automatic restart.
2	Schedule Mode	Schedule Mode	Set specific dates and time for automatic restart.



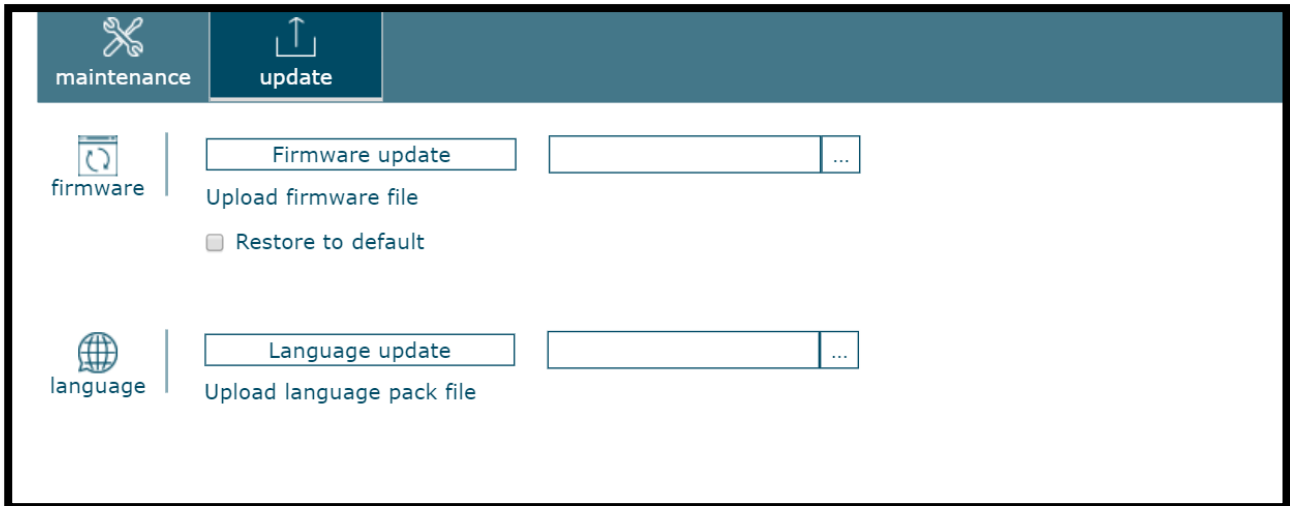
b. Backup/ Restore

1	Restore defaults		When restoring default values, users may choose to hold current values for network, date, time and lens set up.
2	Backup config		Click to save the camera's current configuration on your computer. This feature can significantly save configuration time by allowing users to load the current configuration on another camera of the same model and firmware version. Make sure to change the IP address configuration to avoid IP conflict.
3	Restore config		Click to load the backup configuration file. The camera will reboot to finalize the process and the new settings will become effective. Users may also choose to hold current values for network, date, time and lens set up.



2. Update: includes firmware and language update

Image 45. Update page



a. Firmware:

1	Firmware update		Having the camera's firmware updated will allow you to enjoy the camera at its best, as new firmware often enhance the functionality of the camera and solves known-issues. Before updating the firmware version, please follow below instructions: (1) Check that the firmware corresponds to your camera model. (2) Check that the firmware is not on a compressed file. The firmware should be .bin format. (3) Avoid wireless connections as they tend to be unstable.
2	Reset to defaults	<input checked="" type="checkbox"/> Restore to default	Users may also choose to hold current values for network, date, time and lens set up.

b. Language:

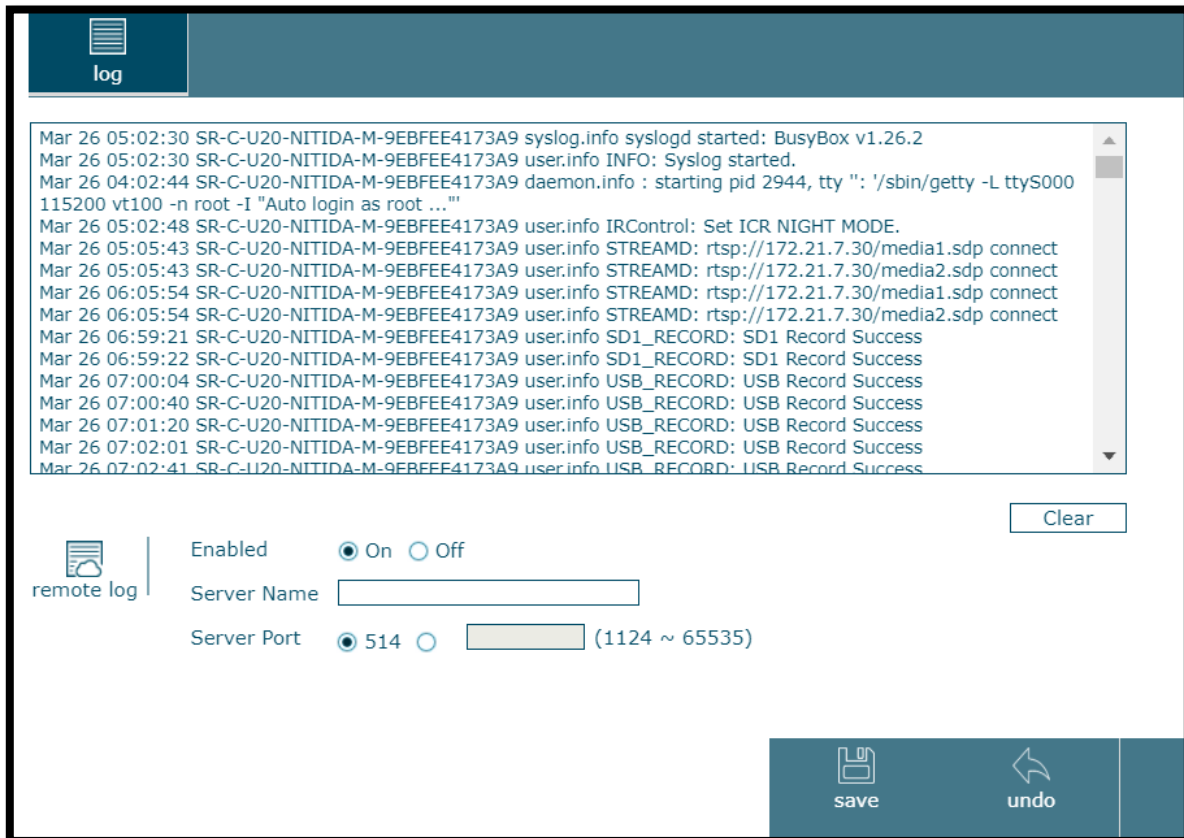
1	Language update		Language update allows users to change the language of the camera's web interface.
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5.9 System log

- System log displays the system information, allowing users to clear log and/or enabled remote log:
 - Log:**

Image 46. System log page



- Remote log:

1	Enabled	On	The system records all the actions in its internal memory and displays it on the Current Log, but due to limited memory the logs will be overwritten. Enable remote log if you wish to keep all the logs.
		Off	
2	Server Name	<input type="text"/>	Insert the network address of the system log server. Enter the address without any leading characters, such as http://
3	Server Port	Value 1124~65535	Default is 514. Change the value if your system log server is set up differently.