



LUM-510 Series
Surveillance Recorders

**Technical
Reference**
(v.200901)

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LUM-510 Series
Surveillance Recorders

**Additional
Installation**

Additional Installation

While the quick-start guide got you up and running, this section helps you do some of the finesse work that is not required in all installations.

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Installing Hard Drives

Whether or not you purchased your Luma recorder with a pre-installed hard drive, you can add additional hard drives (and/or install the first one) to expand your recording capability.

Since these drives run 24/7, we recommend using hard drives that are rated for surveillance, like Western Digital's Purple drives, which we sell on our website as a convenience to our valued installers.

Warning! Do not use a powered screwdriver when installing or removing a hard drive. Doing so may result in damage to the equipment, which is not covered by your warranty.

Warning! Use a grounded anti-static mat and wrist band to ground yourself before servicing the recorder. Failure to ground yourself may result in damage to the equipment, which is not covered by your warranty.

Recorder Capacity


Model	HDD (if Included)	Additional Bays	Allowed HDD Size	Maximum Storage
DVR-4CH	1TB	0 Additional	6TB / bay	6TB
DVR-8CH	1TB	3 Additional	6TB / bay	24TB
DVR-16CH	2TB	3 Additional	6TB / bay	24TB
NVR-4CH	1TB	1 Additional	6TB / bay	12TB
NVR-8CH	1TB	3 Additional	6TB / bay	24TB
NVR-16CH	2TB	3 Additional	6TB / bay	24TB

8-channel and 16-channel recorders also have an eSATA port on the back that can attach an additional hard drive.

Important Note

We recommend installing the drives before powering the recorder up for the first time. If a hard drive has been initialized in the recorder, you should not change its SATA port. Once a hard drive has been initialized in a given port (this includes the hard drive that comes with the unit), the recorder remembers that hard drive's location. If the hard drive cabling is swapped this will cause errors, even if you re-initialize the hard drive in its new location.

Prepare the Recorder

In the local interface, click on the Settings icon , then choose Shutdown > Shutdown. The unit powers down.

Turn the power switch (located on the back of the unit) to the off position. Unplug the power cord from the rear of the unit.

If necessary, disconnect all cabling and remove the recorder from the rack.

Warning! Moving the recorder while it is powered can damage the hard drive.

Remove the Cover

Remove the two small black screws located along the top of the rear panel of the recorder. (Do not remove the larger silver screws around the fan.)





Using the thumb notch on the top of the unit, gently slide the cover about an inch to the rear of the unit, then lift it up. Once it is off, set the lid aside in a safe place where it won't get scratched.

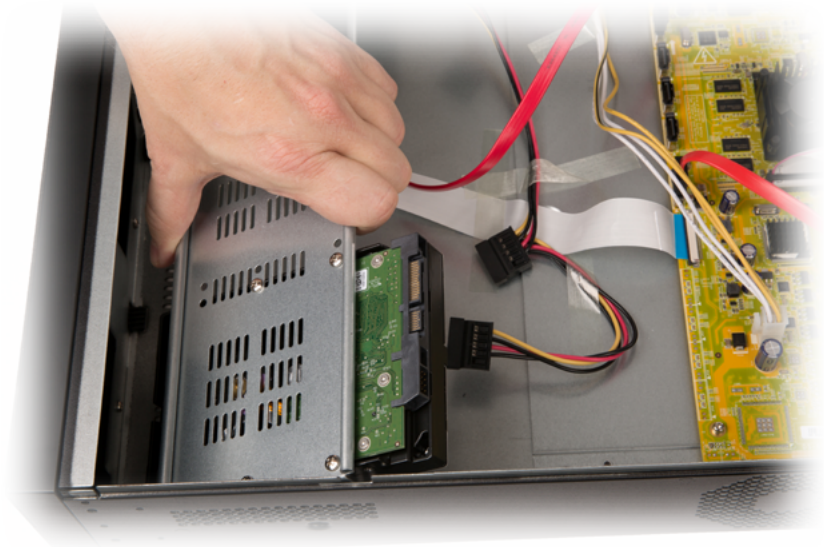


Toward the front of recorder is the mounting bar, a ventilated strip of metal. One hard drive is already installed. Disconnect the SATA and power cables from that hard drive.

Remove the Mounting Bar



Remove the two black screws that hold the mounting bar in place. They are on the exterior of the unit, one at each side of the recorder.



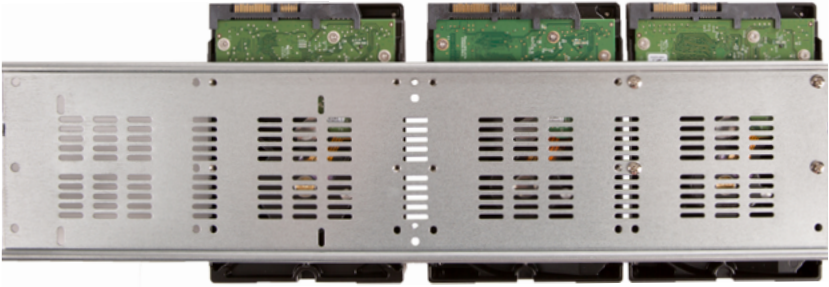
Remove the mounting bar by lifting the rear side, then pulling the entire bar away from the front of the recorder.

Detach the power cable from the mounting bar by removing the strap that keeps them in place.

Optional: Remove the Hard Drive

If you are replacing the drive that came with the unit, remove the four silver screws that attach it to the mounting bar.

Install the New Hard Drives



Lay the new hard drives to be installed side by side on a flat surface with the power and SATA ports facing the same direction and the circuit board on top.

Place the mounting bar on top of the drives, orienting it so the new drives face the same direction as the pre-installed drive.



If you removed the old hard drive, look at the side of the mounting bar. The groove that points down should be at the end with the power and data ports, toward the rear of the recorder.



Line up the holes in the mounting bar over the drives, then use four of the screws supplied with the recorder to secure each drive in place.

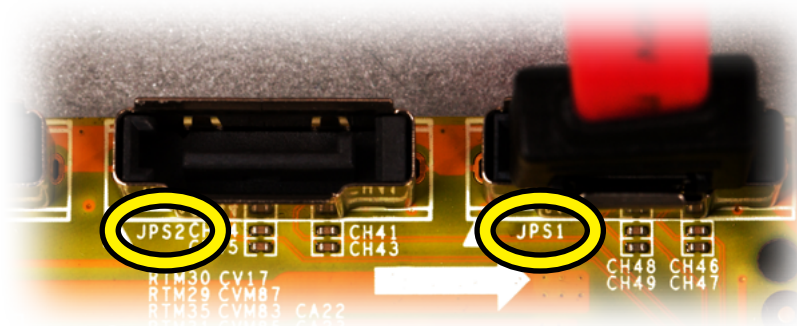
You may wish to use a permanent marker to number each of the drive bays in case you replace a hard drive at a later date.

Reinsert the Mounting Bar

Replace the mounting bar with the drives in the recorder. First insert the front of the mounting bar by angling it downward and sliding over the notches in the support pegs, then set the rear end of the bar down.

Re-install the screws on the outside left and right of the case to lock the mounting bar in place.

Connect the Drives



Using the extra SATA cables provided with the recorder, connect each hard drive to the motherboard.

Be sure to connect them in the correct order. Looking at the recorder from the front of the unit, the SATA ports are numbered 1–4 from

left to right. Looking closely at the board, you can actually read the numbers beside each port after the letters *JPS*.

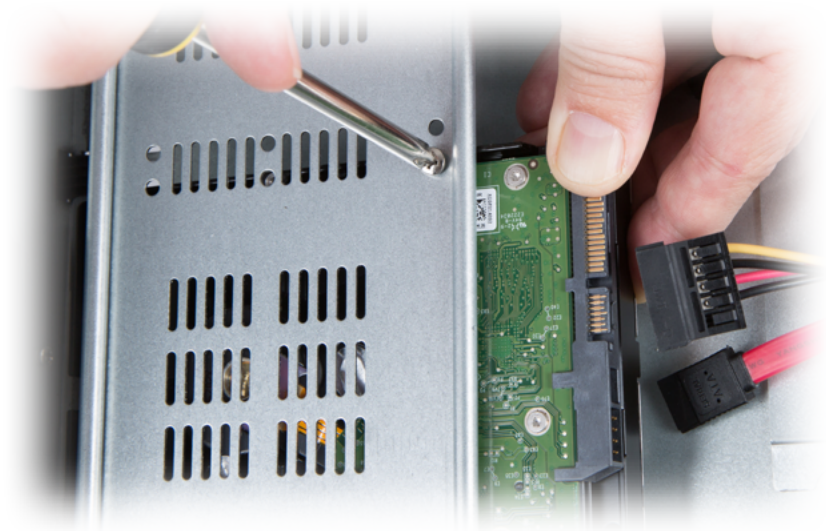
Once the SATA cables are connected, attach the power cable to each hard drive. Unlike the SATA cables, the power cable jumpers have no fixed order.

Format the Drives

Remember to format your new hard drive once the recorder has been powered up.

You're good to go!

Optional Fast-Install Approach



If you are only inserting one additional drive and are working with a larger recorder case, you might be able to install the new hard drive(s) without removing the mounting bar.

Carefully slide the drive into the bay. Hold it steady while inserting the screws that secure it in place.

Motion Detection Made Easy

How does it work?

Cameras cannot actually see movement; all surveillance video is just a series of still images.

Instead, your camera and/or recorder compares each image it takes with the last one. Even if your camera is set to record snaps once every minute, it's still doing this comparison all the time.

When the camera detects that a set of pixels shifts color by a significant amount, it considers this a motion event. This is why the camera considers it a motion event when a light gets switched on, for example, or a tree's shadow sways against the wall.


What's the best approach?

For best results, use as small a motion area as is feasible. If you want to detect whether someone comes through a door, just set the motion area for that door, not for the whole room.

With a smaller area to check, you can get more reliable results within that area, and not be bothered by results from areas that do not matter.

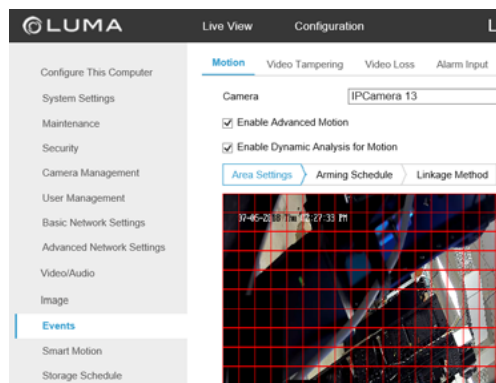
Also, as far as it is possible, ensure that the area you want to detect has uniform lighting.

How do I set up motion-activated recording?

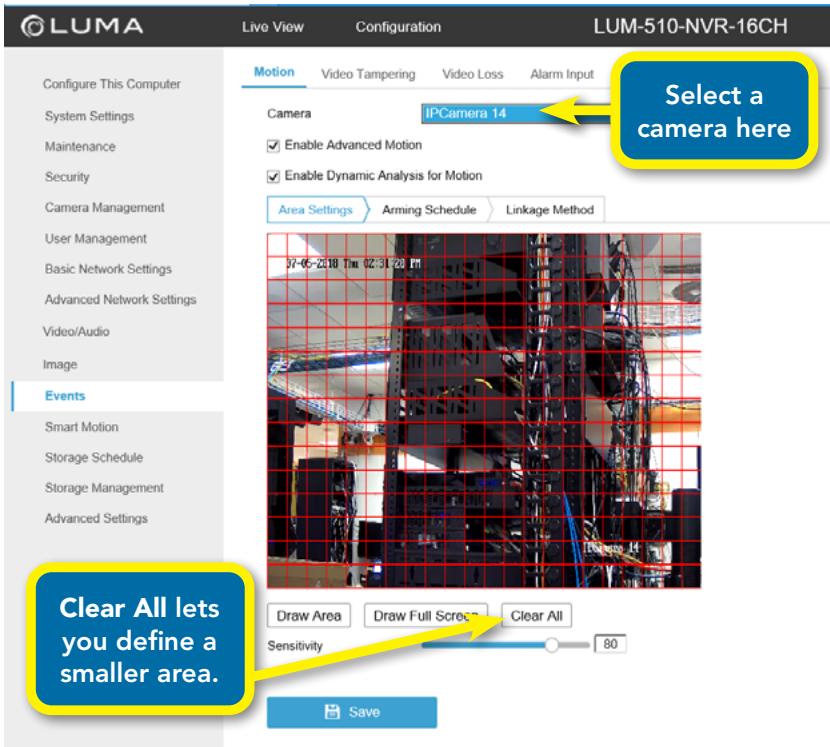
Fire up the web interface, and click on the Settings  icon to get into the menu system.

Click on **Events**, then click on the **Motion** tab as shown here.

- **Important:** When you make changes, click **Save** before switching to another camera, tab, or menu item!



Set the area



The screenshot shows the LUMA NVR configuration interface for LUM-510-NVR-16CH. The 'Motion' tab is selected, and 'IPCamera 14' is chosen in the camera dropdown. Two checkboxes are checked: 'Enable Advanced Motion' and 'Enable Dynamic Analysis for Motion'. Below these are three tabs: 'Area Settings' (selected), 'Arming Schedule', and 'Linkage Method'. A video feed shows a server room with a red grid overlay. At the bottom, there are buttons for 'Draw Area', 'Draw Full Screen', and 'Clear All', along with a 'Sensitivity' slider set to 80 and a 'Save' button. Two yellow callout boxes are present: one pointing to the 'IPCamera 14' dropdown with the text 'Select a camera here', and another pointing to the 'Clear All' button with the text 'Clear All lets you define a smaller area.'

Select a camera in the dropdown at the top, and ensure motion detection is enabled with the checkbox.

By default, the system detects motion over the entire camera screen. This is not ideal.

Click **Clear All**, then **Draw Area**. Click and drag to define up to three areas to use; these areas can overlap. You can also click and drag an existing area to move it around the screen.

When you are done drawing, click **Stop Drawing**.

To the right is a sample setup (it's from our QA lab). We put motion detection areas at each doorway, so we can see whenever someone enters or leaves.



We deliberately left the center of the screen without motion detection, because (a) the TV screen is always “moving,” and (b) if someone is sitting in the chair, we don't want them endlessly triggering motion events.

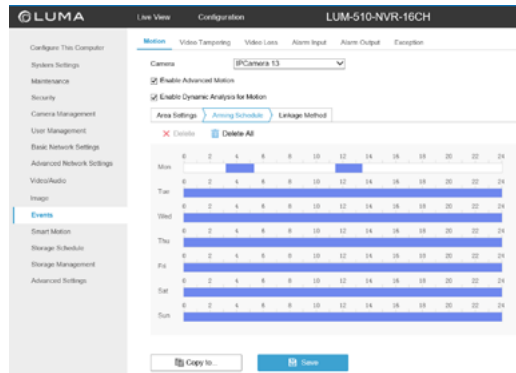
Adjust additional settings

Next, click on the Arming Schedule tab. This tab tells the system when the camera is and is not allowed to detect motion.

You set the master schedule under **Events**, in the **Motion** tab.

With the master schedule in place, you want motion detection for the individual cameras enabled 24/7. By default, it should be, and you should leave it this way.

If you want to send an email alert, you can also see our bulletin on configuring emails.



Trigger an Alarm

If you want to set off a local alarm or send an email notification when motion is detected, use the Linkage Method tab.

Pre- and Post-Record

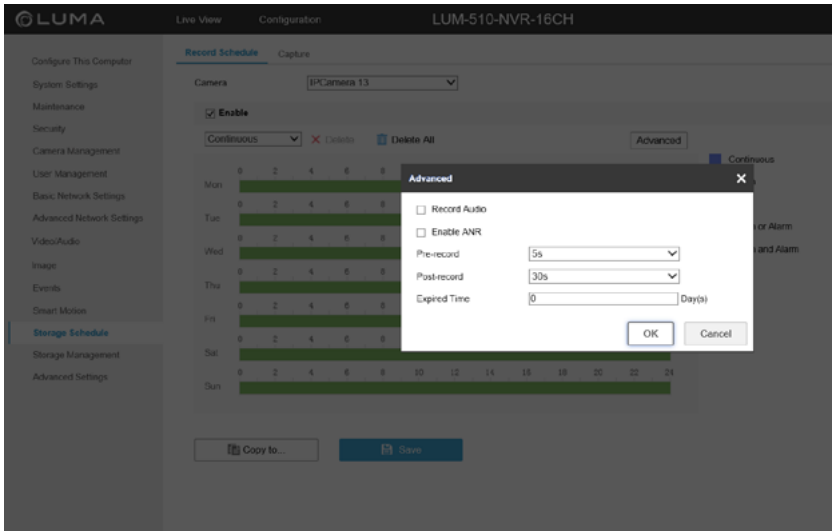
If you want to add extra footage to the start and end of each motion event, navigate to **Storage Schedule**. Then click the **Advanced** button.

Check the **Record Audio** box to enable or disable audio recording.

Check **Enable ANR** to enable the automatic network replenishment function via the web browser (**Configuration > Storage Schedule > Advanced**) to save the video files on the IP camera when the network is disconnected, and synchronize the files to the NVR when the network connection is re-established.

The pop-up lets you decide how much extra time to add before the start and after the end of each motion event. The expired time is the period for a recorded file to be kept in the hard drive. When the deadline is reached, the file is deleted. If you set the expired time to 0, the file will not be deleted.

After you press **OK** to exit the pop-up, be sure to click **Save** to keep your changes.



The screenshot shows the LUMA NVR configuration interface for LUM-S10-NVR-16CH. The 'Storage Schedule' section is active, showing a table with columns for days (Mon-Sun) and hours (0-24). An 'Advanced' pop-up window is open, displaying the following settings:

- Record Audio
- Enable ANR
- Pre-record: 5s
- Post-record: 30s
- Expired Time: 0 (Days)

The pop-up also includes 'OK' and 'Cancel' buttons. The background interface shows a sidebar with various configuration options like System Settings, Maintenance, Security, Camera Management, User Management, Basic Network Settings, Advanced Network Settings, Video/Audio, Image, Events, Smart Motion, Storage Schedule (highlighted), Storage Management, and Advanced Settings.

Setting Up Email Alerts

To set up email alerts for your Luma recorder, you need to connect to the client's email provider to allow your equipment to send messages out. This document helps you do that.

Disclaimer

This list is provided as a public service. The information herein is provided “as is” without warranty of any kind in terms of correctness, accuracy, reliability, obsolescence, or otherwise. We do not warrant, guarantee, or make any representations regarding the use, or the results of use, of this information; and we are not responsible for any damages incurred by use of this information.

Connecting to Email Servers

Each email service has different settings. Settings for major service providers are given here:

Service	SMTP Server (outgoing)	Auth.	Port
AT&T	smtp.att.yahoo.com	SSL	465
BT Internet ***	mail.btinternet.com	—none—	25
Comcast	smtp.comcast.net	SSL	465
Gmail (TLS) *	smtp.gmail.com	TLS	587
Hotmail	smtp.live.com	SSL	465
Office 365 **	smtp.office365.com	StartTLS	587
Outlook	smtp.live.com	TLS	587
Verizon (basic)	outgoing.verizon.net	SSL	465
Verizon (hosted by Yahoo!) ***	outgoing.yahoo.verizon.net	—none—	587
Yahoo! Mail	smtp.mail.yahoo.com	SSL	465
Yahoo! Mail Plus	plus.smtp.mail.yahoo.com	SSL	465

See next page for asterisk notes.

* Gmail Notes

Please ensure that POP3 access is enabled in the account settings.

You also need to enable “less secure apps” (third party apps) in the Gmail settings; see the next below for a step-by-step guide.

Finally, NVRs require additional steps detailed below.

** Office 365 Note

If the above settings do not work, log in to the Outlook web app, navigate to **Settings > Options > Account > My Account > Settings for POP and IMAP Access**, and make adjustments from there.

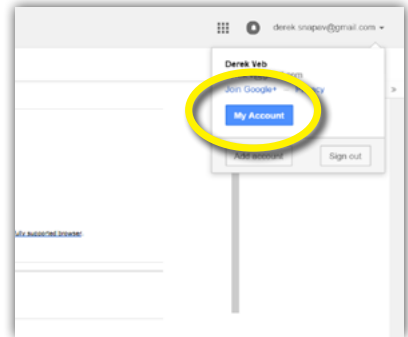
*** Authentication Note

For security reasons, we do not recommend using a server that does not use authentication.

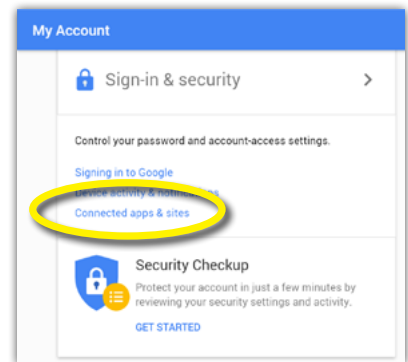
Enabling “Less Secure Apps” on Google

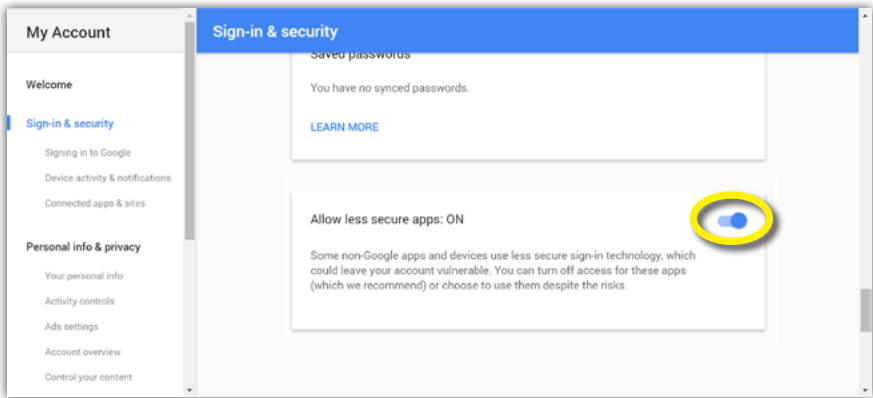
Go to gmail.com.

In the upper right-hand corner, click on the down arrow next to your email account, then press **My Account**.



Under **Sign-in & security**, click on the link labeled **Connected apps & sites**.






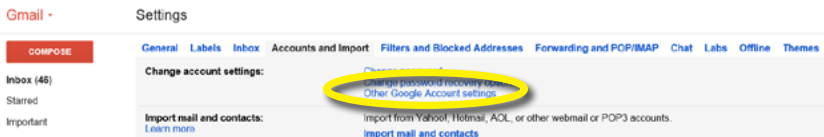
The web browser opens at a section Connected apps & sites. If you scroll down a little bit, you'll see a box labeled **Allow less secure apps**. Move the slider in that box to the right to switch this on.

Additional Setup for Two-Step Verification

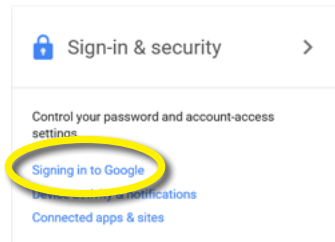
Certain setups may require you to set up two-step verification, while others may wish to do so for the added security. To use two-step verification when connecting to Google, perform the following steps.

Log into Gmail. Click the gear icon  at the top right, and choose **Settings** from the dropdown menu.

Next, click on the **Accounts and Import** tab, then on **Other Google Account Settings**.



This takes you to your account page. Within the Sign-in & Security menu box (at the top left), click on the text **Signing in to Google**.



Enabling 2-Step Verification

Under the Password & sign-in method section, click on **2-Step Verification**.

Password & sign-in method

Your password protects your account. You can also add a second layer of protection with 2-Step Verification, which sends a single-use code to your phone for you to enter when you sign in. So even if somebody manages to steal your password, it is not enough to get into your account.

Note: To change these settings, you will need to confirm your password.

Password	Last changed: March 10, 2014	>
2-Step Verification	Off	>

This opens a new page. Click on the **Get Started** button and log in with your password.

Google asks for your phone number to secure the verification process. Once you confirm the code that Google sends you, Google asks whether you want to turn on 2-step verification. Do so.

Next, click the left arrow near the top of the page to return to the Sign-in & Security page.



Setting Up the NVR's Password

At the Sign-in & Security page, either scroll down or click on the menu item **Signing in to Google** at left. Within the Password & sign-in method window, a new option is visible: **App passwords**.

Click on this.

Password & sign-in method

Your password protects your account. You can also add a second layer of protection with 2-Step Verification, which sends a single-use code to your phone for you to enter when you sign in. So even if somebody manages to steal your password, it is not enough to get into your account.

Note: To change these settings, you will need to confirm your password.

Password	Last changed: March 10, 2014	>
2-Step Verification	On since: Just now	>
App passwords	None	>

After you sign in, you are taken to the App passwords window:

You have no app passwords.

on my

In the Select app dropdown, choose **Other (Custom name)**.

The dropdown menu turns into a text box. Enter a descriptive name (“Luma Email Notifications,” e.g.), as you may end up using several devices.

You have no app passwords.

GENERATE

When you click the **Generate** button, Google creates a random password for your Luma NVR’s email configuration.

Generated app password

Your app password for your device

xqag vhyb wfsc cpwv

Open a new browser tab and log in to your Luma NVR. Within the NVR, go to **Advanced Network Settings > Email**.

Enter the gmail address you used for 2-step verification and your newly generated password from the above steps. Use smtp.gmail.com for your SMTP server. The SMTP port is 587.

Configure This Computer

- System Settings
- Maintenance
- Security
- Camera Management
- User Management
- Basic Network Settings
- Advanced Network Settings
- Video/Audio
- Image
- Events
- Smart Motion
- Storage Schedule
- Storage Management
- Advanced Settings

SNMP **Email** HTTPS Other

Sender ✔

Sender's Address ✔

SMTP Server ✔

SMTP Port ✔

Enable Encryption

Attached Image

Interval s

Authentication

User Name ✔

Password ✔

Confirm ✔

Recipient	
#	Recipient
1	John.Doe
2	
3	

Enable Mail Interval

Enable Mobile App

Enable Schedule

The sender name is whatever you would like (“LumaNVR,” e.g.). The recipient fields use your client’s name and email address.

Do not check the bottom three checkboxes at this time. Your completed settings should look like the sample shown.

Press the **Test** button, and if it all works, press **Save**.

■■■■■■■■■■ Installing an Analog PTZ Camera ■■■■■■■■■■

These instructions show how to attach an analog PTZ camera to your Luma recorder with RS-485.

Connecting to a DVR

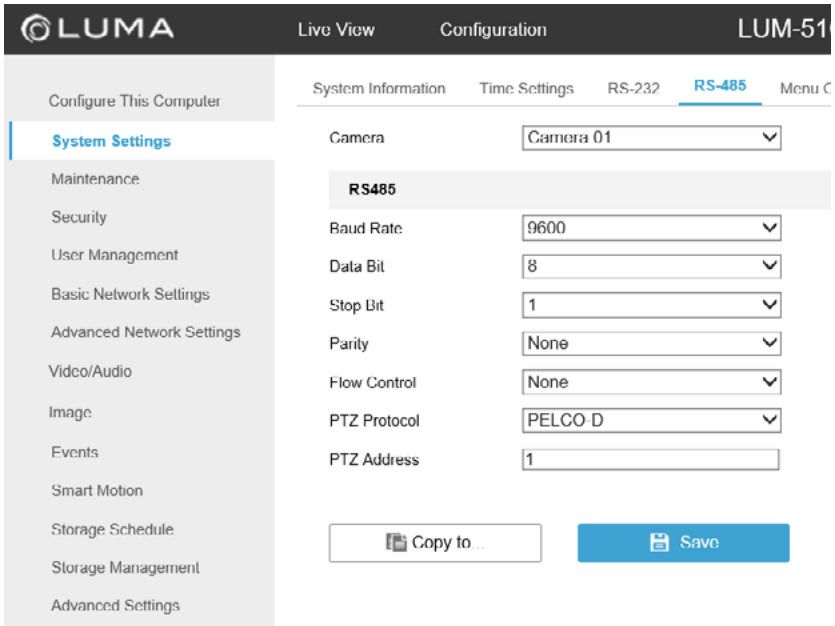
Connect the BNC cable from the PTZ camera to the DVR.

Connect the RS-485 cable from the PTZ camera to the RS-485 connection on the DVR (T+ and T-).

Power on the PTZ camera. You should see video in channel assigned to the camera.

Go to **System Settings** and set RS-485 parameters accordingly.

To use the PTZ controls, select the DVR channel that the PTZ camera is on and click on the PTZ icon above the timeline bar. If everything has been set up correctly, you will have control over the PTZ camera (see the PTZ camera manual for how to set the DIP switches to change your baud rate or protocol).



The screenshot shows the LUMA web interface for a LUM-51 recorder. The top navigation bar includes 'Live View', 'Configuration', and 'LUM-51'. The 'Configuration' section is active, with 'RS-485' selected under 'System Information'. The left sidebar shows 'System Settings' as the active menu item. The main content area displays the following configuration options:

RS485	
Camera	Camera 01
Baud Rate	9600
Data Bit	8
Stop Bit	1
Parity	None
Flow Control	None
PTZ Protocol	PELCO D
PTZ Address	1

At the bottom of the configuration area, there are two buttons: 'Copy to ...' and 'Save'.

Connecting to an NVR with an Encoder

Use these instructions for 1- and 4-channel encoders.

Connect the encoder to same network that the NVR is on. Do **not** connect it to the POE switch on the NVR.

Discover the encoder with your utility and give it a static IP address.

Go to **Camera Management > IP Camera**. Highlight the row with the channel number where the encoder is to be added then click the Modify button.

Ensure that the protocol is set to Luma (if you are using the Luma DVR as an encoder), the transfer protocol for the encoder channel you are adding is set to auto, and the adding method is set to manual. Check your port settings, camera name (you can create any name for the encoder you are adding), user name, and password.

Channel No. should be the channel on your encoder. A single channel encoder has this number set to 1; a four-channel encoder uses the same IP address but the channel number varies from 1–4.

Ensure that the baud setting matches the camera and the NVR (the baud on the camera can be changed using the camera's DIP switches; see the camera's manual for complete details).

If you have multiple cameras using a single 4-channel encoder, please see the additional instructions below at this time.

Go to the live view for the encoder's channel. You should see a blue screen; this shows that the encoder is properly connected.

Connect the BNC cable from the analog camera to the encoder.

If the analog camera is a PTZ, connect the RS-485 cable from the PTZ camera to the RS-485 connection on the encoder (**not** the NVR).

Power on the PTZ camera. You should see video in channel assigned to the encoder.

Go to **System Settings** of the Luma NVR and set the RS-485 parameters accordingly.

To use the PTZ controls, select the NVR channel that the PTZ camera is on and click on the PTZ icon above the timeline bar. If everything has been set up correctly, you will have control over the PTZ camera.

Multiple Cameras on a 4-Channel Encoder

If you want to attach several cameras through a 4-channel encoder, ensure that you populate the encoder's IP address to each NVR channel, and in the modify options, select each camera number to match the encoder's camera output number.

Example:

Encoder camera 1 = camera 1 in the IP camera device list

Encoder camera 2 = camera 2 in the IP camera device list

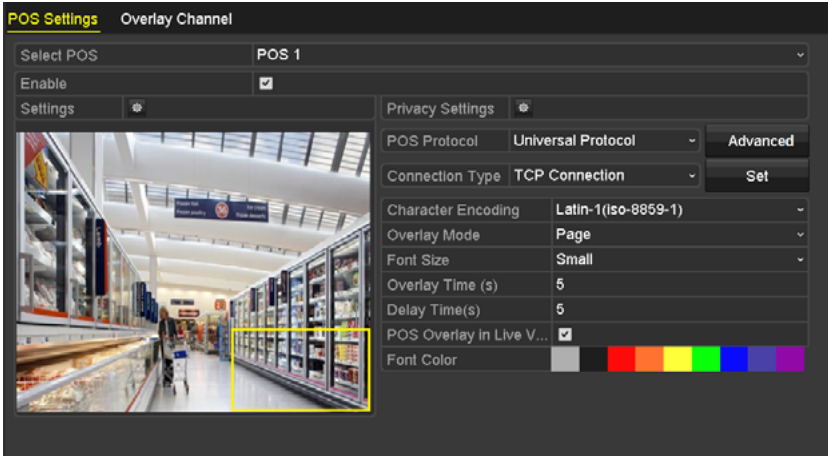
Encoder camera 3 = camera 3 in the IP camera device list

Encoder camera 4 = camera 4 in the IP camera device list

Setting Up POS Surveillance

This feature is not supported on 4-channel recorders. Also, Point of Sale is not supported on Mac computers.

While POS can be enabled/disabled using the web interface, POS can only be set up using the local interface as detailed here.



Enable the POS to be Set Up

Select a POS station from the dropdown. You can connect up to eight different POS stations. Enable the selected unit with the checkbox right below the POS number.

Set Privacy

If needed, click the starburst next to Privacy Settings to enter the POS Privacy Information Filtering interface.



- Edit the Privacy Information in each text field to hide the input information overlay. Up to three pieces of privacy information can be edited with up to 32 characters for each.
- Click **OK** to save the settings.

Select Protocol

Select the POS protocol to Universal Protocol, EPSON, AVE or NUCLEUS.

Universal Protocol

Once you select the universal protocol, click the Advanced button to display more settings. You can set the start line tag, line break tag and end line tag for the POS overlay characters, and the case-sensitive property of the characters.

POS Protocol	Universal Protocol	General
Connection Type	TCP Connection	Set
Start Line Tag	a1	Hex <input type="checkbox"/>
Line Break Tag	0D0A	Hex <input checked="" type="checkbox"/>
End Line Tag	c1	Hex <input type="checkbox"/>
Case-sensitive	<input checked="" type="checkbox"/>	No Tag <input type="checkbox"/>

EPSON

The fixed start and end line tag are used for EPSON protocol. All other settings are the same as those of the Universal Protocol.

AVE

AVE protocol uses fixed start and end line tags. The AVE protocol also supports the serial port and virtual serial port connection types.

Click the **Set** button to enter the AVE Settings interface.

AVE Settings	
Rule	VSI-ADD
Address	30

Set the rule to VSI-ADD or VNET

Set the address bit for the POS message to be sent through

Click **OK** to save the settings

NUCLEUS

If you select NUCLEUS protocol, you must reboot the device once setup is completed.

POS Protocol	NUCLEUS	Set
Connection Type	RS-232	Set

Click the **Set** button to enter the NUCLEUS Settings interface.

NUCLEUS Settings	
e<employee#>	
s<shift#>	
t<terminal#>	

Edit the Employee, Shift and Terminal information. Each line can hold up to 32 characters.

Click **OK** to save the settings.

The connection type defaults to be RS-232, and all the other POS protocol default to NUCLEUS.

Navigate to **Menu > Configuration > RS-232** and in the RS-232 settings, set Usage to Transparent Channel.

Set Connection Type

Select the Connection Type, and click Set to configure the parameters for each connection type.

TCP Connection

With TCP connections, each POS needs a unique port setting, ranging from 0–65535. Enter the Allowed Remote IP Address for connecting the recorder and the POS machine via TCP.

TCP Connection Settings	
Port	10010
Allowed Remote IP Address	192 . 0 . 0 . 64

UDP Connection

With UDP connections, each POS needs a unique port setting, ranging from 0–65535. Input the Allowed Remote IP Address for connecting the recorder and the POS machine via UDP.

UDP Connection Settings	
Port	10100
Allowed Remote IP Address	192 .0 .0 .64

USB->RS-232 Connection

Configure the port parameters of USB-to-RS-232 convertor, including the serial number of port, baud rate, data bit, stop bit, parity and flow control.

USB->RS-232 Settings	
Serial Number	1
Baud Rate	2400
Data Bit	5
Stop Bit	1
Parity	None
Flow Ctrl	None

When using USB->RS-232 convertor mode, the port used on the USB-to-RS-232 convertor must match the POS number. For example, POS1 must connect to port 1 of the convertor.

RS-232 Connection

Connect the recorder and the POS machine via RS-232. Configure the RS-232 settings in **Menu>Configuration>RS-232** and set the Usage to Transparent Channel.

RS-232 Settings	
Baud Rate	115200
Data Bit	8
Stop Bit	1
Parity	None

Multicast Connection

When connecting the recorder and the POS machine via Multicast protocol, set the multicast address and port.

Multicast Settings	
Address	224 .0 .0 .1
Port	10400

Sniff Connection

Connect the recorder and the POS machine via Sniff. Configure the source address and destination address settings.


Sniff Settings	
Enable Source Port...	<input checked="" type="checkbox"/>
Source Address	192 .168 .1 .1
Source Port	10200
Enable Destination ...	<input checked="" type="checkbox"/>
Enable Destination ...	<input checked="" type="checkbox"/>
Destination Address	192 .168 .0 .1
Destination Port	10300

Format Characters

Select the character encoding format from the drop-down list. Select the overlay mode to display in scrolling or page mode, and choose your font size and color.

Set the overlay and delay times (values range from 5–3600 seconds).

Decide whether to enable the POS Overlay in Live View.

Character Encoding	Latin-1(iso-8859-1) ▼
Overlay Mode	Page ▼
Font Size	Small ▼
Overlay Time (s)	5
Delay Time(s)	5
POS Overlay in Live V...	<input checked="" type="checkbox"/>
Font Color	

You can click and drag a text frame in the live view panel to adjust its size and position.

Click Apply to activate the settings.

If desired, click the **Copy** button to copy the current settings to other POS terminals.



LUM-510 Series
Surveillance Recorders

FAQ

FAQ

No one really wants to read a manual. We know that. So, to make your life easier, we've gathered together some of the most common questions we receive at tech support and present them here. If you don't find what you need, then check the technical reference section or give us a call.

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Specialized Setup

How do I enable UPnP?

We recommend that you do not use UPnP. It has not been implemented well by many router manufacturers who claim to support it.

How much power does the recorder need?

The exact amount of power that your recorder consumes depends on a number of factors:

- Which model it is
- How many hard drives it has installed
- How heavily it is used
- For an NVR, how many PoE cameras it has attached.

Estimated power consumption is as follows:

Device	4-ch	8-ch	16-ch	Notes
DVR	10W	30W	45W	Does not include extra HDDs
NVR	180W	200W	200W	Includes PoE, but not HDDs

Am I required to set a time server?

You don't need to, no. You can use your network time or your recorder's internal clock. However, these can drift over time, so we recommend using the NTP server for best accuracy. This is the default system setting.

Can I change the recorder to 24-hour time format?

No, but you can adjust the on-screen displays of analog cameras.

On the DVR web interface, set the OSD under **Image > OSD Settings**,

On the DVR local interface you set a camera's OSD under **Settings > Camera > OSD**.

How do I set up a surveillance schedule?

From the web interface, click on **Storage Schedule**.

Click the **Enable** button.

Using the drop down menu, select the type of recording you want. On the weekdays you want drag the mouse across the times you want the recordings to cover.

The local interface works like the web interface, above. Go to **Settings > Record > Schedule**. For more, see “Arming Schedule Tool” on page E-5.

How do I set up a holiday schedule?

If you have no holidays saved yet, you'll need to create some first.

- From the web interface, click on **Advanced Settings > Holiday**.
- From the local interface, go to **Settings > Record > Holiday**.

For each holiday, highlight the row and check the enable box. Click on the edit icon to the right, then choose the appropriate dates or schedules. For fixed dates, choose By Month and then enter the month and day (e.g., Christmas on December 25). For holidays that move by a schedule, choose By Week and enter the appropriate data (e.g., Thanksgiving in the US is the fourth Thursday of November), Check the checkbox to enable that holiday, and press **OK**.

Now that you have holidays active in the system, each of the schedulers has a new tab for holiday schedules.

How do I set up motion-activated recording?

First, set up your basic schedule settings (two questions above) to allow for motion-activated recordings during the times you want.

Web interface

Click on **Events**.

By default, the system detects motion over the entire camera screen. You can set the system to apply motion detection to only a part of the screen, if desired. If you want to use only a portion, click **Clear All**, then **Draw Area**. You can several areas to use; these areas can overlap.

Next, click on the Arming Schedule tab and ensure that motion detection is enabled 24/7.

If you want to add alarm notifications, use the Linkage Method tab.

For more information, see “Motion Tab” on page E-26.

Local Interface

Click on **Settings > Camera > Motion**.

By default, the system detects motion over the entire camera screen. If you want to use only a portion, click **Clear**, then you can draw an area by clicking and dragging within the camera view. If you click in an empty area, you add the area to motion detection (shown by a grid of boxes). If you click in a detection area, you remove the area from motion detection.

For more information, see “Motion” on page F-23.

Alarms and Alerts

Your Luma Surveillance recorder and cameras can be extensively customized for alarm and alert actions.

How do I set up alarm inputs and outputs?

For full details,

- for the web interface, see “Alarm Input Tab” on page E-30, and “” on page E-30.
- for the local interface, see “Alarm” on page F-8.

System Monitoring and Response

In the web interface, see **Events > Alarm Input**.

In the local interface, go to **Settings > Configuration > Alarm**.

There, for each alarm input, you can name it, choose whether it is normally open (NO) or normally closed (NC), and choose which action(s) the recorder takes when the alarm is triggered.

Likewise, for each alarm output, you can set its delay, name it, etc.

Input Wiring

On the 4-channel NVR, the back of the unit has a set of alarm input connections (labeled with numbers) and ground connections (labeled G). Each alarm needs to be wired to a numbered connection and a ground. To insert a wire, press the orange lock above the connection, insert the wire as far as you can, and release the orange lock to secure the wire.

For the 8- and 16-channel recorders, there are no separate ground connections; there is a single large grounding post to the right of the alarm connections. Wrap all grounding wires around this post.

The KB (keyboard) slots are no longer supported by Luma; use the mouse for the local interface.

Output Wiring

To insert a wire, press the orange lock above the connection, insert the wire as far as you can, and release the orange lock to secure the wire.

How do I set up email alerts?

For full details on how to set up email alerts:

- On the web interface, see “Email Tab” on page E-10.
- On the local interface, see “Email Tab” on page F-34.

Web Interface

Click on **Advanced Network Settings > Email**.

Depending on your email service provider, you may need to adjust your security and permission settings to allow for email alerts.

Enter the data for the email(s) to which you want alerts sent. You can have up to three recipients.

Once you have tested the email, you need to choose which events trigger an email alert.

These can include:

- Alarms (from other security devices): Click on **Events > Alarm Input**.
- Exceptions (non-surveillance issues): Click on **Events > Exception**.
- Motion Detection: Click on **Events > Motion Detection**.
- Video Loss: Click on **Events > Video Loss**.
- Video Tampering: Click on **Events > Video Tampering**.

Local Interface

Click on **Settings > Configuration > Network > Email**.

Depending on your email service provider, you may need to adjust your security and permission settings to allow for email alerts.

Enter the data for the email(s) to which you want alerts sent. You can have up to three distinct recipients.

Once you have tested the email, you need to choose which events trigger an email alert.

These can include:

- Alarms (from other security devices): Click on **Settings > Configuration > Alarm > Alarm Input tab > Settings Starburst > Linkage Action tab**.

- Exceptions (non-surveillance issues): Click on **Settings > Configuration > Exceptions**.
- Motion Detection: **Settings > Camera > Motion > Settings Starburst > Linkage Action tab**.
- Video Loss: Click **Settings > Camera > Video Loss > Settings Starburst > Linkage Action tab**.
- Video Tampering: Click on **Settings > Camera > Video Tampering > Settings Starburst > Linkage Action tab**.

Audio

How do I enable audio on a Luma NVR?

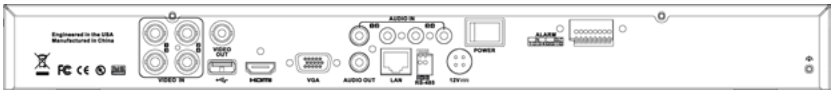
With IP cameras that have a microphone built in or directly attached, the audio and video signals are sent together. Using the NVR's local UI, web UI or mobile application UI, simply click on the speaker icon to listen to the audio signal coming from the camera. You must enable audio on the camera for both the main stream and substream.

If you cannot hear it, check your volume control as well as the microphone connection. If you still can't hear it, either your microphone or your speakers may be malfunctioning; call technical support.

How do I enable audio on a Luma DVR?

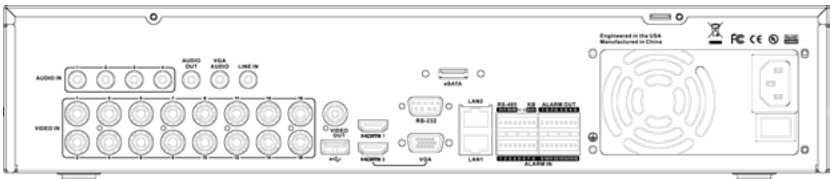
The procedure depends on which model you have.

4-channel DVR



If you have a 4-channel DVR, and none of the installed cameras have a microphone built in or directly connected, you can attach an external microphone to the DVR's appropriate AUDIO IN port. With 4 AUDIO IN ports, all channels of the DVR can have audio.

8- and 16-channel DVR



If you have an 8- or 16-channel DVR, and none of the installed cameras have a microphone built in or directly connected, you can attach an external microphone to each of the DVR's four AUDIO IN ports. These four ports correspond **directly and specifically** to channels 1 through 4 of the DVR. Thus, the microphone attached to the second AUDIO IN port can be heard on channel 2. Be sure each

microphone's associated camera is on the same channel.

How do I use two-way audio on the NVR?

Two-way audio is supported on the Luma mobile app and the web UI. You can listen to a camera's audio if it has a microphone installed and configured correctly. Likewise, you can broadcast audio from your mobile device back to the camera if it has a speaker installed and configured. See your camera's manual for details on attaching and configuring a microphone and speaker.

Click on the speaker phone icon on the app to listen to audio captured by the microphone. Click on the microphone icon to talk using the camera's speaker.

For example, you could install an IP camera with microphone at your entryway so you can see and hear people coming in. If you install a loudspeaker there and connect it to the VGA AUDIO port on the rear panel of the recorder, you could ask the visitor whom they need to see, and hear their answer through the microphone.

Note that the VGA AUDIO port is not tied to any channel. If you wish to have two-way audio, the loudspeaker connected to the VGA AUDIO port must be at the location where you want to talk. You can listen from any microphone, but can only talk through the connected loudspeaker.

How do I use two-way audio on the DVR?

Two-way audio is supported on the Luma mobile app and the web UI. You can listen to audio from a camera, if it has a microphone installed and configured correctly. Likewise, you can broadcast audio from your mobile device back to the camera if it has a speaker installed and configured. See your camera's manual for details on attaching and configuring a microphone and speaker.

Click on the speaker phone icon on the app to listen to audio captured by the microphone. Click on the microphone icon to talk using the camera's speaker.

For example, you could install an analog camera with microphone at your entryway so you can see and hear people coming in. If the camera is on channel 1, the microphone will need to be connected to AUDIO IN port 1, etc.; only the first four channels can have microphones.

If you install a loudspeaker there and connect it to the AUDIO

OUT of the 4-channel DVR or the VGA AUDIO port on the 8- or 16-channel DVR, you could ask the visitor whom they need to see, and hear their answer through the microphone.

Note that the AUDIO OUT and VGA AUDIO ports are not tied to any channel. If you wish to have a 2-way conversation, the speaker needs to be at the proper location. You can listen from any microphone, but can only speak through the connected loudspeaker.

Web Interface Notes

Two-way audio may show a three-channel limitation when selected.


Channel	Without CVBS Option	With CVBS Option
Channel1	HDMI	HDMI/VGA
Channel2	VGA	CVBS
Channel3	—none—	HDMI/VGA

What is the LINE IN port used for?

This port is only useful on the Luma mobile app.

If you connect a speaker to the LINE IN port, your voice can be broadcast from your mobile device to the speaker. This allows two-way communication between your mobile app and the person sitting at the recorder.

I can't hear DVR audio through the web interface.

First, check that Audio On  is enabled (it shows bright blue). The icon is above the left side of the timeline.

Make sure the camera is audio capable. Most analog cameras do not have attached microphones.

On the 8- and 16-channel DVRs, attach microphones to the Audio IN ports on the rear panel. These four audio ports correspond directly with channels 1–4. Ensure that the camera and its microphone are assigned to the same channel.

On the 4-channel DVR, there are four audio inputs. Input 1 corresponds to channel 1.

Why can't I hear audio or move my mouse?

If you selected CVBS video as your display output on your DVR

the local interface is displayed using VIDEO OUT. Your mouse will only be seen on the VIDEO OUT display. Audio can be heard from AUDIO OUT.

Even if you connect to a display using an HDMI or VGA cable, these only show the cameras, and give you no way to change grid view or control the video with your mouse.

You can use this feature when you want a single person to control the recorder using the CVBS video while others can only see the images projected via VGA or HDMI.

Cameras

See also “Wiring, Connections, & Loop-Outs” on page B-47, and “Cameras (PTZ)” on page B-16.

Why can't my Luma DVR find my Luma/WPS camera?

Check to see if you have the proper protocol set. For the new Luma HD cameras, use the *HIK-C (Coaxitron)* protocol. For some cameras, instead of using the HIK-C protocol you may use the UTC protocol. For traditional analog cameras like our Wiprepath Surveillance™ line, use the *Pelco-D* protocol.

To set the protocol from the DVR's local interface, go to **Settings > Camera > PTZ**, then click the **PTZ Parameter Settings** button. From the web interface, go to **System Settings > RS-485**.

Can motion detection check just one specific area?

With the web interface, go to **Events > Motion**. Click **Clear All**. You can draw up to three square areas to create a custom shape for motion detection on each camera. If you need further details, see “Motion Tab” on page E-26.

With the local interface, click on **Settings > Camera > Motion**. Click **Clear**, then you can draw an area by clicking and dragging within the camera view. If you click in an empty area, you add the area to motion detection (shown by a grid of boxes). If you click in a detection area, you remove the area from motion detection. For more information, see “Motion” on page F-23.

How do I improve image quality on my computer?

In the web interface, go to **Video/Audio > Video** and set the stream type to main stream.

My camera has the error, “IP stream not supported.”

Be sure to do each of the following:

- Match the bitrate on the camera to a valid bitrate on the NVR (**Video/Audio > Video**)
- Check that the camera is using the correct format (NTSC or PAL). You can check (or change) your recorder's format setting in the local interface, under **Settings > Configuration >**

General.

- Check that the camera is using ONVIF profile S. This can be found in your camera's documentation.

Can I make an analog camera work with an NVR?

Yes, you can. You'll need to buy an encoder like the [WPS-300-ENC-1IP](#). This converts the analog signal to a digital one that your NVR can recognize.

Can I make a digital camera work with a DVR?

Sorry, but no.

Can I get rid of the "No Video" message?

Yes, you can, using the local interface. Click on the **Settings** icon and go to **Configuration > Live View > View**.

To the right is a diagram that represents the grid mode from the live page. You can change the grid mode that you are customizing by using the buttons below the display to the left.

Within each square of the grid, on the left, is the camera number. To the right of the channel number is a yellow-and-white deletion box. To remove an absentee camera from a given grid box, click the deletion box. The camera number assigned to that box changes to an X. Since the recorder no longer expects a signal for that channel, it will no longer display a warning.

See "View Tab" on page F-39 for additional details.

Can I rearrange the cameras in grid view?

You can rearrange your cameras using the local interface (only).

Go to **Settings > Configuration > Live View > View**. There you can assign and unassign cameras and channels to get the views the way you want. For example, if you have six cameras, you can have cameras 1, 3, and 6 show up on the first 2x2 grid view, and cameras 2, 4, and 5 show up on the second page.

For full details, see "View Tab" on page F-39.

Why can't I add a preconfigured IP camera?

To add a pre-configured camera to your NVR:

1. Set the camera to an appropriate IP address (use DHCP).
2. Make sure your user name and password are correct.
3. Make sure the HTTP port is properly forwarded.
4. Manually add the camera to the NVR.

I don't remember my camera's password.


In this case, you must give the camera a hard reset. To reset your Wirepath camera (and those from most other manufacturers), open the camera, cycle the power, and hold the reset button for 30 seconds. Test camera by logging into it with your PC.

My Wirepath IP camera sub stream is not recording and not viewable on the NVR's web UI.

Set the IP camera sub stream to H.264. If you have a control system that requires MJPEG, set the third stream on the Wirepath IPC to MPJEG.

Cameras (PTZ)

How do I get PTZ control to work on my camera?

On all recorders, you have full PTZ control on all compatible camera connections. From the live page, click the PTZ icon . This opens up the PTZ control panel, from which you can control your camera. See “Camera Controls” on page C-11.

On all NVRs and the 8- and 16-channel DVRs, your RS-485 connections allow you to gather data or send commands from the recorder for additional PTZ or OSD options.

On the 4-channel recorders, the reduced RS-485 slots do not allow for two-way communication. They have only the Data (D+ and D-) capability used to control PTZ cameras.

Does your Control4 driver allow PTZ functionality?

Yes, it does. We also support PTZ control through our web interface, our mobile apps, and the local control interface.

How can an analog PTZ camera work on my NVR?

First, you must use an encoder. True PTZ cameras can be controlled through the encoder, as long as they use the Pelco D protocol. Set the camera to a unique PTZ ID, set the same ID in the NVR for that channel, and set the baud to the same frequency in all devices using the RS-485 connection, including the NVR.

Why does the patrol maximum speed seem slow?

If using the Pelco-D protocol, on the local user interface (VGA/HDMI out) the maximum speed for PTZ patrol ranges from 0–7. On the web browser interface however you can set the speed up to 40.

Other protocols have different maximum speeds.

Compatibility

Is this recorder compatible with Wirepath cameras?

Yes, they are fully compatible.

Is this recorder compatible with third-party cameras?

Yes it is, so long as those cameras use ONVIF profile S.

Do you have drivers for control systems?

We have drivers for both Control4 and Crestron. We will be adding others as time and demand permits.

Does the DVR support HD over analog?

Yes, we support HD-TVI. We recommend using the new Luma Surveillance analog cameras for best results.

Why is Safari giving a Website Not Secure warning?

Starting with iOS 11.3 and MacOS 10.13.4, Safari shows a “Website Not Secure” warning if a website that you’re visiting isn’t secure. This is a new feature in the Safari browser to help people become more aware and cautious about entering information such as usernames, passwords, and credit card information. When you log in to the web interface of a recorder, this message comes up as well, because it is asking for a login and the recorder does not have a valid HTTPS certificate.

There is no need to be alarmed about this, as your device requires a password.

Firmware

For seamless firmware maintenance, log all devices with OvrC. For more information, see “OvrC” on page B-33.

How do I know if I have the latest firmware?

If you have registered the recorder with OvrC, you will receive notifications whenever a new firmware version is released. You can then schedule the upgrade at your convenience, without having to go to the device.

If not, go to your product’s page at SnapAV.com. Under the support tab, scroll down to the heading *Software Updates*. Check the update version number and compare it to the version shown under

- (web interface) **System Settings > System Information**, or
- (local interface) **Settings > Maintenance > System Info**.

Can I automate firmware updates?

We don’t push upgrades on our users, but with OvrC you can update firmware without having to go to the site. For more information, see “OvrC” on page B-33.

Can I update firmware when I’m not at the recorder?

Yes, you can, by either of two methods.

OvrC alerts you to updates as they become available, and allows you to upgrade firmware remotely. See the FAQ on OvrC for more information.

You can also do it by using remote access as described in the section Web Upgrade, below.

How do I update the firmware?

Using OvrC

The system will inform you when upgrades are available, and you can decide when to do the upgrade. [We suggest you do the upgrade after backing up your current configuration file, just in case.](#) See your OvrC documentation.

Using the Web Interface

Download the new firmware from the product page at SnapAV.com. Make a note of where you save it.

Click on **Maintenance**.

At the bottom, under the Remote Upgrade header, click **Browse** and navigate to the new firmware file. Select that file by clicking **Open**, then click **Upgrade**. The process takes several minutes; the recorder reboots when finished. Ensure you are running your browser as administrator.

Using the Local Interface

Download the new firmware from the product page at SnapAV.com.

Once you've downloaded the new firmware file, copy it to a USB drive. Insert that drive into a USB port on your recorder, and you're ready to update your firmware.

From the live page, click on **Settings > Maintenance > Update > Local Update**.

If the flash drive does not show up, click **Refresh**, or unplug and reinsert the flash drive.

Select the new firmware and press **Update**. The process takes several minutes; the recorder reboots when finished.

My recorder says, "Upgrade failed."

When you download the upgrade file manually, it comes as a zipped file. Extract the file before using it to upgrade.

Hard Drives

What is the total recording time of my hard drive?

How much recording time a hard drive can hold is determined by its size, the number of cameras, the resolution and frame rate being used, etc. We offer an estimator tool on our website to help you calculate the maximum recording time of your recorder. You can also download this estimator as a worksheet for Microsoft Excel.

Visit [this link](#) and click on the **DVR/NVR Storage** tab to calculate your recording time, as well as view our other surveillance tools. Your recorder comes with the following hard drive size:

- 4- and 8-channel 1 TB
- 16-channel: 2 TB

Can I expand the capacity of my recorder?

You can always replace your recorder's hard drive with a model with greater capacity.

In addition, most Luma Surveillance recorders have space for additional hard drives, as shown below.

- LUM-500-DVR-4CH no extra bays (1 total)
- LUM-500-NVR-4CH 1 extra bay (2 total)
- LUM-500/501 (all others) 3 extra bays (4 total)

8-channel and 16-channel recorders also have an eSATA port on the back that can attach an additional hard drive.

Do you provide hardware for extra hard drives?

Your recorder comes with enough screws to install one extra hard drive, plus a cable that connects to all extra hard drives you install internally. You should receive screws with any additional drives you install; if not, get #6/32.

What sort of expansion hard drive do you recommend?

We recommend Western Digital Purple drives. Otherwise, use a drive that is surveillance rated.

How do I install an extra hard drive?

We recommend that you install all extra hard drives before powering the unit for the first time.

Do not use a powered screwdriver when installing a hard drive.

Power off your recorder, remove it from the rack, and remove the outer casing.

If you are replacing a hard drive, disconnect its power cable and SATA cable, unscrew it and remove it.

Place all new hard drives into their slots and screw them in securely. Connect the power cable and SATA cable.

Important Note

If a hard drive has been initialized in the recorder, you should not move it to another bay. Once a hard drive has been initialized in a given bay (this includes the hard drive that comes with the unit), the recorder remembers that hard drive's location. If the hard drive is moved to another bay, this will cause errors, even if you re-initialize the hard drive in its new bay.

What does the hard drive percentage show?

The hard drive percentage shows how much of the drive has been filled with data since the last time it started overwriting old footage. Once a recorder begins overwriting, it does not erase all of the old data; data remains until it has been overwritten. You may view your device on OvrC to see that date and time of the oldest recording available on the hard drive.

How do I clear space on my hard drive?

If you want to ensure you always have space on your hard drive, you can enable overwriting. When overwriting is enabled, the recorder erases the oldest files whenever it needs additional space. The advantage is the hard disk never rejects a recording due to space restrictions; the disadvantage is that old files eventually get erased, and you must archive them manually.

Can I format a hard drive through the web interface?

Yes, you can. Go to **Storage Management > HDD Management**.

Click the checkboxes at the left side of the table to select the hard drives you wish to format, then press the **Format** button. **Be warned: you cannot undo this action!**

How do I set up redundant recordings (RAID)?

On the web interface, go to **Storage Management > HDD Management**.

From there, use the dropdown menu to select a hard drive, then change the property of that hard drive to Redundancy.

On the local interface, go to **Settings > HDD > Advanced**, set the drive to group mode, and go from there.

Do Luma recorders work with NAS?

Yes, they do. Using the web interface, go to **Storage Management > Network Drives**.

Check that NAS is selected, enter the server address for your NAS, then click **Search**. If the recorder finds that type of drive at that address, it presents its IP and file path. You can then copy and paste the IP and file path into the list above, then click **Save** to connect the drive.

How can I test the stability of my hard drive?

Web Interface

Go to **Storage Management** and click on the HDD Detection tab.

Go to Bad Sector Detection.

Choose the hard drive you want to test, and the level of testing you want performed. Click **Detect** to begin the test. **Be warned: a full detection test can take several hours to perform.**

To test the predicted stability of your hard drive, go to S.M.A.R.T. Settings. Choose a type of test under Self-test:

- A short test takes a few minutes.
- An expanded test takes multiple hours and is much more in depth.
- A conveyance test checks for physical damage incurred during transport, and takes only a few minutes.

Local Interface

Go to **Settings > Maintenance > HDD Detect > Bad Sector Detection**. Choose the hard drive you want to test, and the level of testing you want performed. Click **Detect** to begin the test. Note that a full detection test can take several hours to perform.

To test the predicted stability of your hard drive, go to **Settings > Maintenance > HDD Detect > S.M.A.R.T. Settings**. Choose a type of test under Self-test Type, then click the starburst just below it.

- A short test takes a few minutes.
- An expanded test takes multiple hours and is much more in-depth.
- A conveyance test checks for physical damage incurred during transport, and takes only a few minutes.

Installation

Can I set up a camera without being at the recorder?

Yes, with the [WPS-CCTV-TESTER](#) you can connect to a camera at the actual installation location for setup and calibration. The tester plugs into a port in the camera housing and displays the camera's field of vision on a small screen for your convenience.

Can I set up a recorder without a monitor or PC?

Yes, with the [WPS-CCTV-TESTER](#) you can connect directly to a recorder for initial setup using the local interface. However, we recommend that you use the web interface for easier installation.

Can I shut my recorder down by cutting the power?

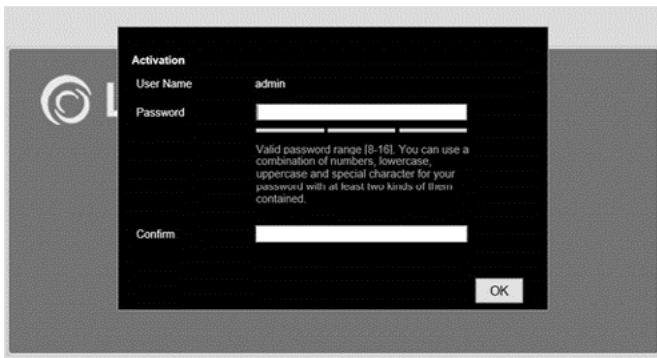
You can do so, but you should not do this regularly. Follow the proper shutdown procedure to ensure product life.

For security reasons, you can only shut down the recorder through the local interface. From the live page, go to **Settings > Shutdown**, then click **Shutdown**.

If you are working remotely, you can reboot the recorder by going to **Maintenance**, and clicking **Reboot** at the top of the page.

How do I activate my recorder from the web UI?

When you attempt to connect to the recorder, the dialog below pops up. Enter and confirm your password to activate the camera.



Activation

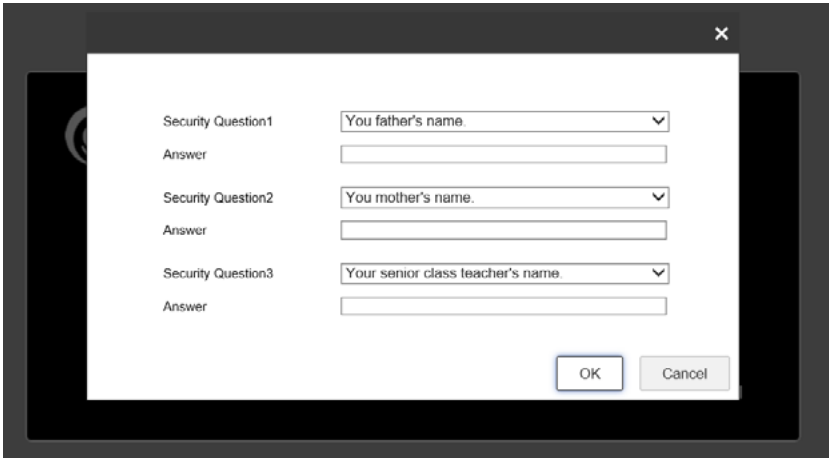
User Name admin

Password

Valid password range [8-16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.

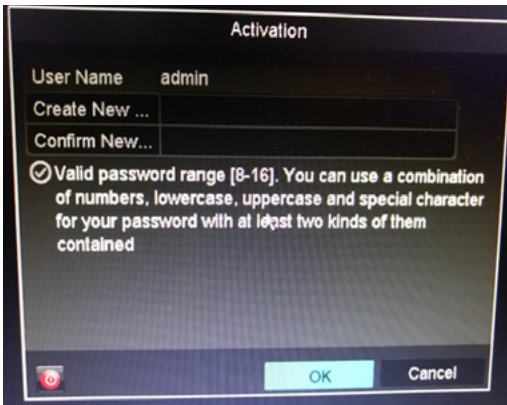
Confirm

OK



How do I activate my recorder from the local UI?

When you attempt to connect to the recorder, the dialog below pops up. Enter and confirm your password to activate the recorder.



How do I activate my recorder with a Mac?

Since the Luma Utility does not run on a Mac, locate the recorder's address using an IP sniffer, then use the web or local interface (both discussed above) to activate it. The NVR should then be able to activate all attached and defaulted Luma IP cameras.

Can the Luma NVR activate Luma IP cameras?

Yes. Luma NVR with firmware V3.1.2 build 170612 or later can

activate Luma IP camera with firmware V5.4.1 build 170522 or later.
If the Luma IP camera is on a switch, the camera must be activated separately because the NVR has no direct connection to the camera.

Can the Luma NVR activate non-Luma IP cameras?

No.

LumaLink

LumaLink is our free remote access service that makes it easier than ever to set up your customer's Luma app for remote viewing.

Using point-to-point (P2P) technology to replace traditional DDNS/port forwarding, LumaLink provides you with a robust setup solution that's efficient and convenient, while offering increased security to clients.

What does LumaLink do?

LumaLink simplifies configuration and eliminates remote threats.

Skip the lengthy network setup. LumaLink helps you establish access immediately; all you need to do is add the recorder to your OvrC account, log in to LumaLink on your Luma mobile app, and refresh your device list.

It also prevents future truck rolls by eliminating the complicated troubleshooting that can happen when customers get a new phone or a new router.

Because LumaLink technology enables you to set up the network without having permanently-open ports, you're able to cut out potential threats from remote hackers and other malicious parties.

Can I access the full system using LumaLink?

For now, LumaLink is limited to Luma app access only, and does not work with the Web UI. We are working on a Luma VMS app which will also support LumaLink. Luma VMS will provide full access to the system for configuration, live/recorded video, and exporting video streams.

Does this work on all networks?

Yes, this should work on all networks, with no special requirements on the setup end. Some networks may be more difficult for LumaLink to penetrate, and could cause lower performance or prevent some features from working correctly. If so, you may need to use port forwarding in those cases.

Does this work with all ISPs?

LumaLink works with all ISPs that we have tested so far. In fact,

LumaLink works in some cases where port forwarding does not work without a static WAN IP address, saving the cost of a monthly fee from the ISP.

How do I sign up?

There is no need to sign up. Simply add the recorder to your OvrC account, log in to LumaLink, and refresh your device list.

Networking & Port Forwarding

Which ports do I need to forward?

For each port type (HTTP, RTSP, and server), you need a different port number for each recorder on your network.

To remotely access your recorder from a browser other than Internet Explorer, forward port 7681 on your router. This port allows you to use browsers that no longer allow plugins (Chrome, Firefox, etc.).

As you cannot perform port translation, both your internal and external port must be 7681. You do not need to append this port at the end of your URL as it does NOT replace your HTTP port. It is simply a special port that needs to be forwarded on your router and that is the sole place the port is used. Thus, if your HTTP port is (for example) 8042, your web address stays the same: e.g., MyHome.WirepathDNS.com:8042

Enable	Protocol	External Port	External Address	Internal Port	Internal Address	Description
<input checked="" type="checkbox"/>	TCP	80	[Redacted]	80	10.0.0.178	http NVR
<input checked="" type="checkbox"/>	Both	554	[Redacted]	554	10.0.0.178	RTSP
<input checked="" type="checkbox"/>	Both	8000	[Redacted]	8000	10.0.0.178	Server
<input checked="" type="checkbox"/>	TCP	5900	[Redacted]	80	10.0.0.14	AP
<input checked="" type="checkbox"/>	TCP	5901	[Redacted]	23	10.0.0.14	AP Telnet
<input checked="" type="checkbox"/>	Both	7681	[Redacted]	7681	10.0.0.178	Port Forwarding

+ Add Forwarding Rule

Port Translation with Visualint Cameras and the Luma 510 NVR

From firmware V3.4.95 build 191127 and later, you can access a Visualint camera plugged into the back of a Luma NVR. Reference **XX** as the 2 digit channel number (channel where the camera resides in the NVR).

To access a Visualint camera:

- Using the IE browser, place the 650**XX** after the IP address of the NVR in the browser's address field. For example, Channel 1 is 65001, Channel 2 is 65002, and so on. This looks like

192.168.1.50:65001.

2. Type the **Username** and **Password** of the camera, then enter 7**XX**0 into the **Port** field. For example, Channel 1 is 7010, Channel 2 is 7020.
3. To access Visualint cameras remotely, when plugged into the Luma NVR, port forward the following ports:
 - 650**XX** – HTTP Channel #, example: 65001 for Channel 1
 - 7**XX**0 – UDP Port 1, example: 7010 for Channel 1
 - 7**XX**1 – UDP Port 2, example: 7011 for Channel 1

What is the difference between the port types?

HTTP (default 80): This handles your Internet access, both incoming and outgoing. Once forwarded, add a colon and the new port number to your URL to access the system.

HTTPS (default 443): This is a more secure system for Internet access. You'll need to generate a security certificate to use this protocol. Once forwarded, add a colon and the new port number to your URL to access the system.

RTSP (default 554): This is needed to view live feeds from the DVR. It is also used if you wish to pull RTSP streams from IP cameras directly plugged into the NVR.

Plugin-free feature port (7681): You must forward this port to access your recorder remotely while using a browser other than Internet Explorer. As there is no port translation for this special port, both the internal and external port must be set to 7681 on your router.

Server (default 8000): The server port enables the use of the Luma mobile app. If you wish to access your recorder remotely through your mobile device, you must forward this port on your router.

If I change the default port, how do I find my recorder?

When entering the URL of your recorder, add a colon and the port number (e.g., MyHome.WirepathDNS.com:8212).

If you cannot remember the port, use the Luma Utility to find the recorder again.

The forwarded ports on my router show as closed.

Verify that your ISP has not installed a modem/router combo between your router and the ISP connection. If so, the combo may need to have its ports forwarded as well. Some modems issued by providers have built-in router features that can be disabled (called bridging), which is the easiest solution.

This document cannot lead you through bridging. Check with the ISP or modem manufacturer for more information.

Why can't I access the recorder remotely?

Typically, you must forward two or three ports (HTTP, Server, and RTSP are required for the DVR) on your router to allow remote access to the recorder via Internet Explorer or a cellular phone app.

Why does my recorder's IP address keep changing?

Your recorder is most likely set to DHCP. After obtaining the initial IP address of the recorder, the IP address should be changed to static, or the DHCP address should be reserved in the router, if the feature is available.

How do I set up multiple recorders on a network?

First, you need to forward different ports on the router for each recorder being installed, otherwise you will only be able to access one recorder. Make sure the ports are changed in the recorders and forwarded correctly in the router.

If you have DDNS set up, you only need it on one device. Other devices use the same DDNS address with different port numbers.

The DNS address doesn't populate after upload.

Verify the DNS is the same as the gateway, or try "8.8.8.8" or "8.8.4.4".

What are SNMP settings?

These stand for Simple Network Management Protocol, and are used to handle your network devices like printers, hubs, etc. In most cases, you do not need these to set your surveillance system. See your network administrator.

Should I use HTTP or HTTPS?

HTTP, or HyperText Transfer Protocol, is the set of rules computers follow to send and receive data over the Internet. HTTP is not secure, meaning that other people or computers can see messages sent using this protocol. Usually this is fine, since most information is very routine, like requesting to load a website. If you are sending private information like credit card numbers or passwords, HTTP is not a safe way to send or receive it. To make HTTP more secure for your recorders, a user name and password are required for access.

HTTPS, known as Secure HyperText Transfer Protocol, is used for passing confidential data over the Internet. It is similar to standard HTTP. However, HTTPS connections use an extra validation process and then open a private “tunnel” using encryption so that only the sending and receiving computer can read the data. HTTPS is typically a little slower than HTTP, but the payoff is security.

For most people, using HTTP with a strong password is security enough. If you decide to use HTTPS, note that most Internet browsers do not like using HTTPS with a self-signed security certificate; you will get many obnoxious warnings.

How do I create a certificate for HTTPS?

See “HTTPS Tab” on page E-11.

Why does the NVR list unused IP camera ports as 192.168.254.###?

All camera ports have a preassigned IP address. The DHCP server changes this port when a camera is connected; unused ports remain at their default address.

OvrC

OvrC (pronounced “oversee”) is SnapAV’s new program to make your life easier. It allows you remote access and control of OvrC-enabled hardware.

What does OvrC do?

OvrC connects to your customers’ devices through our secure data center. This allows you to investigate and troubleshoot problems without rolling a truck—even from ten feet up a ladder!

You can reboot devices or cycle networks with the touch of a button, receive instant notifications as soon as a device needs service, and manage your customers’ accounts. With OvrC, you can measure your service calls in minutes, not miles.

Does OvrC run on my device?

Almost certainly. With platforms for all major computers and tablets, OvrC provides the flexibility you need to get the job done right—from anywhere. Visit www.OvrC.com for compatibility details.

Does OvrC help installation?

Configuring devices is a snap. Simply plug the device in, claim it on your account, and get started. OvrC automatically updates the firmware, check device visibility, shows you the IP address, MAC address, etc.

What about firmware updates?

If you have claimed the device on your OvrC account, the system alerts you of firmware updates to your account. You can then schedule when each client updates, and launch those updates at the push of a button. There’s no need to roll a truck!

How do I sign up?

Visit www.OvrC.com and sign up online.

My device cannot talk to OvrC.

Confirm that you have your DNS server set up correctly. You need a DNS to be able to communicate with units outside your network.

Playback

How do I play a recording?

This is done at the live view screen.

By default, the timeline shows today's events. If you want to play an event from another day, click **Yesterday** or **Calendar** at the lower right-hand corner. If you clicked **Calendar**, you can use the arrow buttons by the month and year to navigate to the date you wish to see.

Once you're on the proper date, inspect the timeline. Green bars indicate events that were captured using motion sensors, and blue bars indicate times when the camera was recording by schedule. Click on the timeline at the time you want to start viewing the recording, and the file automatically plays, starting either at that time or (if there is nothing recorded at that time) at the first recording after the time you clicked. The recorder continues to play video files for that camera, skipping over empty times until it runs out of recorded material (or you return to the live view).

For more details on controls and playback, see "Playback Controls" on page C-16.

How do I archive video?

The easiest way is to access your hard drive over your local network and archive the footage that way.

You can also export individual recordings as shown below.

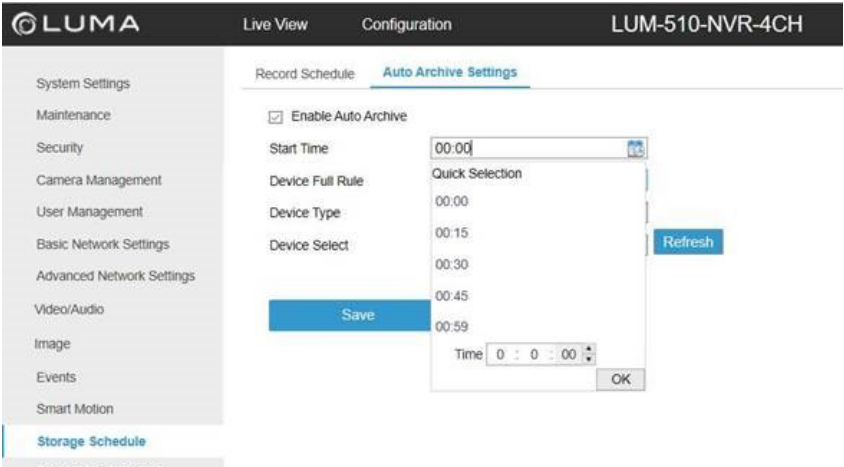
How do I auto archive video?

You can enable auto archive for any time of the day. The auto archive feature can be scheduled daily; however there is no option for selecting a specific day of the week or month. Auto archive copies whatever is on the hard drive during the time of the archive.

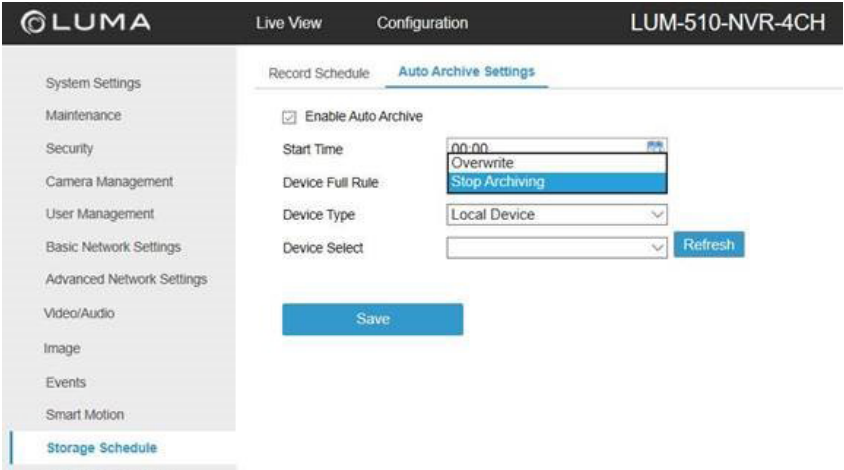
To set up auto archive:

1. Click the **Enable Auto Archive** box.

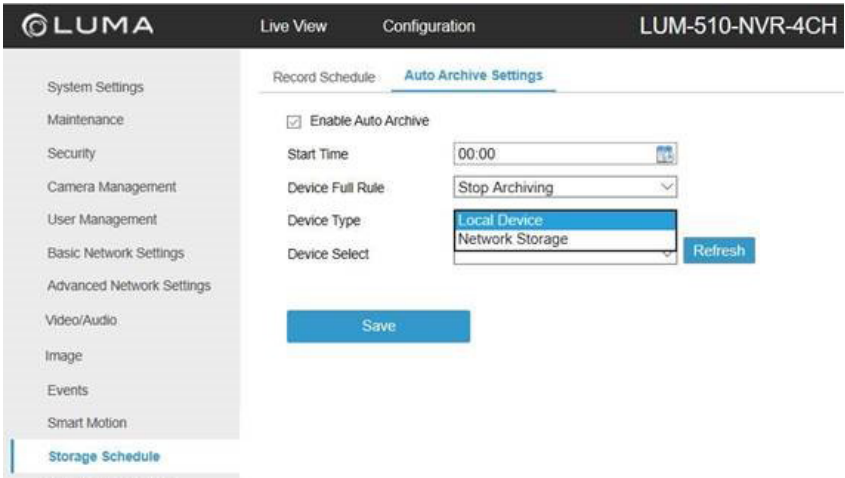
2. Select the desired **Start Time**.



3. **Device Full Rule** is action taken when the archive location is full; select **Overwrite** or **Stop Archiving**.

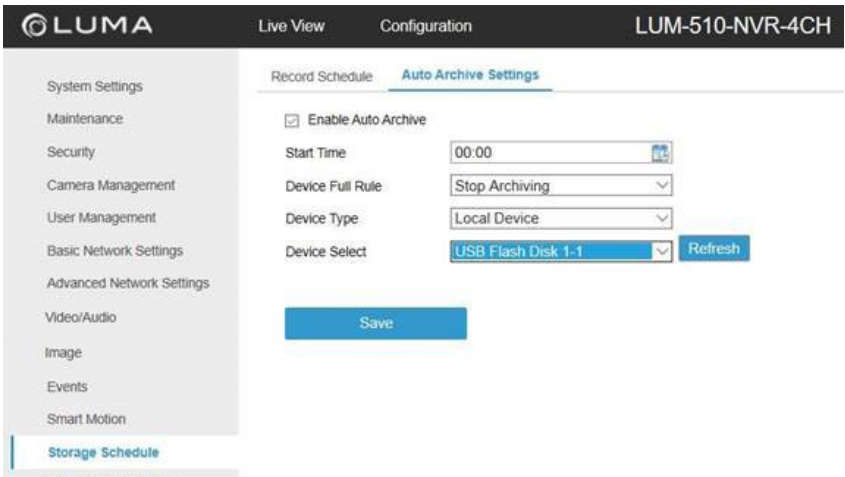


4. Select your archive **Device Type**; **Local Device** such as a USB hard drive, or **Network Storage**, like a NAS drive.



The screenshot shows the LUMA configuration interface for a LUM-510-NVR-4CH. The 'Auto Archive Settings' section is active. The 'Enable Auto Archive' checkbox is checked. The 'Start Time' is set to 00:00. The 'Device Full Rule' is set to 'Stop Archiving'. The 'Device Type' dropdown menu is open, showing 'Local Device' and 'Network Storage' as options. The 'Device Select' dropdown is currently empty. A 'Refresh' button is located to the right of the 'Device Select' dropdown. A 'Save' button is located below the settings.



5. Click the **Device Select** drop-down for the list of available devices.



The screenshot shows the LUMA configuration interface for a LUM-510-NVR-4CH. The 'Auto Archive Settings' section is active. The 'Enable Auto Archive' checkbox is checked. The 'Start Time' is set to 00:00. The 'Device Full Rule' is set to 'Stop Archiving'. The 'Device Type' is set to 'Local Device'. The 'Device Select' dropdown menu is open, showing 'USB Flash Disk 1-1' as an option. A 'Refresh' button is located to the right of the 'Device Select' dropdown. A 'Save' button is located below the settings.

6. Click **Save**.

How do I export a recording?

Use either the clip tool (see “Clip ” on page C-17) or the export tool (see “Export ” on page C-7).

Be sure to run your browser as administrator so that the files you export are saved.

Where are videos and snapshots saved to?

For videos and snapshots from a remote PC, you specify and view the save locations with the web interface under the **Configure This Computer** page.

When saving from the local interface, the files are saved to the USB drive that you insert into the recorder.

How do I search recorded footage?

You may search recorded footage from the Live view page. Move your cursor to the time you are interested in and press the Play button. Using the smart search icons on the bottom right corner you can specifically search for motion, line crossing, or intrusion events.

Luma 510 DVRs can only perform smart search on two cameras at the same time. To enable smart search on all the DVR channels go to **General >More Settings** and enable Enhanced VCA.

To conserve resources for best performance, enabling VCA disables 2K/4K local output and 4MP/5MP analog camera support.

Video and VCA Support for Luma 310 and 510 DVRs

Model	Camera Resolution and Framerate Limitations		HDMI/VGA Output	VCA
310-DVR-4CH	HDTVI: The 3 MP resolution is only available for channel 1.	One channel can support 3MP.	One channel can support up to 1920×1080/60Hz.	Line crossing detection and intrusion detection limited to any two channels.
		Two channels can support 1080p30, 1080p25, 720p60, 720p50.		
AHD and HDCVI: 1080p25, 1080p30, 720p25, 720p30		Four channels can support 720p30 and 720p25.		
310-DVR-8CH	HDTVI: The 3 MP resolution is only available for channels 1 and 2.	Two channels can support 3MP.	One channel can support up to 1920×1080/60Hz.	
		Four channels can support 1080p30, 1080p25, 720p60, 720p50.		
		Eight channels can support 720p30 and 720p25.		
AHD and HDCVI: 1080p25, 1080p30, 720p25, 720p30				
310-DVR-16CH	HDTVI: The 3MP resolution is only available for channels 1 through 4.	Four channels can support 3MP.	VGA: One channel can support up to 1920×1080/60Hz. HDMI: One channel can support up to 4K (3840×2160/30Hz.)	
		Eight channels can support 1080p30, 1080p25, 720p60, 720p50.		
		Sixteen channels can support 720p30 and 720p25.		
AHD and HDCVI: 1080p25, 1080p30, 720p25, 720p30				

Model	Camera Resolution and Framerate Limitations	HDMI/VGA Output	VCA
510 Series DVRs	HDTVI: The 5MP or 4MP or 3MP resolution is available for all channels, and supports 1080p30, 1080p25, 720p60, 720p50, 720p30, and 720p25.	VGA: One channel can support up to 1920×1080/60Hz. HDMI: One channel can support up to 4K (3840×2160/30Hz.)	Supports line crossing detection and intrusion detection of all channels.
	AHD and HDCVI: 1080p25, 1080p30, 720p25, 720p30		

Can I export my log files?

On the web interface, go to the Log page (from the Live View, click on **Settings**, then click on the **Log** tab). Set your search parameters, then click Search.

The search results appear in the main window. Press **Save Log** to save the results as a text file using a standard file-save dialog.

My log only shows 2000 entries; how do I see more?

Note the time stamp for the 2000th entry, then perform a new search using that time stamp as the new start time.

Why do multiple motion events look like a single block?

If there is only a short time between the end of one recording and the start of another, the timeline graphic may not have enough resolution to show the gap, even in playback mode. If you are watching an event on the timeline and click the 'next event' button, you will see that the events are indeed separated.

Why does the timeline have multiple rows of events?

The Luma 510 recorders now have visual markers for the smart motion events. The top row of events is for continuous and motion events. The bottom row indicates when you had smart events like line crossing and intrusion detection.

How do I rewind video in grid view?

Note that rewinding recorded video is only supported in Asynchronous mode (not all cameras are showing video with the same time stamp). If you now wish to play all channels synchronously (all cameras showing video with the same time stamp) you should select a channel, pick a time in the time line to start playback and then select synchronous. That will start the synchronous playback of the channels in the grid.

PoE

What is PoE?

PoE stands for Power over Ethernet. It is a system that uses Ethernet cables to pass electrical power alongside data. This allows a single cable to provide both connectivity and power to your IP cameras. Unlike USB, PoE can operate over long cable lengths.

Which cameras use PoE?

All Luma Surveillance and Wirepath Surveillance IP cameras can use PoE.

Which recorders have PoE?

Luma Surveillance NVRs provide PoE over all ports, using IEEE standard 802.3af.

Luma Surveillance DVRs do not provide PoE.

How much power can PoE provide?

Typically, PoE can go a maximum of 328' (100m). It provides a maximum of 15.4W, but realistically this output bleeds out over distance.

The Luma 510 NVR series has a PoE overdrive feature that allows the PoE to go up to 820' (250m) providing a maximum of 8W and recording a maximum bitrate of 6Mbps.

Can I attach a switch to a PoE port?

No, you can only have one IP camera attached per port.

Can I power off individual IP cameras from the NVR?

Yes, the Luma 510 NVR allows you to turn off any IP camera connected to the NVR's PoE port. This is a great troubleshooting feature.

Remote Viewing

Why can't I see my camera with IE 11?

Changes in Internet Explorer 11 have caused a minor compatibility issue for streaming media from Luma recorders. For IE11 streaming to work with DVRs on older firmware versions, add the address of the device to the IE11 Compatibility View List. Open Internet Explorer, and click the "Tools" icon. Then click Compatibility View Settings. Add the IP address or DDNS address to this list. Now the page can be refreshed and camera views will load normally.

I get an "Access Denied / Not Found" error with IE.

Right-click on Internet Explorer and select "Run as administrator". Add the address of the recorder to the "Trusted Sites" list.

Why can't I access a DVR from within the network?

Connect a monitor directly to the DVR to set a valid IP address for local access. If you still have trouble, use the Luma Utility to determine the IP address of your Luma device.

Can I view multiple recorders using my mobile app?

The iPhone, iPad and Android apps allow you to view cameras connected to multiple DVRs simultaneously. You can set up multiple DVRs and NVRs in the device list and mix and match up to 16 camera views.

Which browsers are compatible with this recorder?

With the update to firmware v3.4.95 build 191127, Chrome, Safari, and Microsoft Edge can view your system remotely.

Can I access my Luma surveillance device using a phone running Windows Phone OS?

We do not currently support Windows Phone OS.

I am having problems accessing cameras via my app.

If your device is not on the same network as your recorder, verify that the DDNS address (e.g., WirepathDNS.com) is entered into the

address bar.

If your device is on the same network as your recorder, verify that the local IP address is entered in the address bar.

If those don't work, check that ports are forwarded correctly on your router using a port checking website. You can find your port numbers with the web interface at **Basic Network Settings** under the Port tab.

Alternatively, you can use LumaLink and not have to worry about ports. All you need to do is add the recorder to your OvrC account, log in to LumaLink on your Luma mobile app, and refresh your device list.

What Internet speed should I use for video streaming?

We recommend a minimum of 3 Mbps upload speed for streaming to remote devices.

Will there be lag if someone is watching locally and remotely at the same time?

There may be a lag if your network cannot handle the traffic of multiple simultaneous connections. This depends on the bandwidth available, the number of simultaneous connections, and the bandwidth consumed by each of those connections.

User Accounts

What’s the default user name and password?

There is no default password. Every IP-enabled Luma device must be activated with a new secure password before it can be used.

What are the limits for user names and passwords?

Account names can be up to 32 characters long, and can contain numbers and letters. It cannot contain spaces, dashes, or underscores.

Enter the user’s password. It can be up to 16 characters long. Passwords can only contain numbers, letters, spaces, and the following special characters: . - _ : / @ , ? ! ‘ ; () \$ & “ [] { } # % ^ * + = \ | ~ < > `

I forgot the admin password.

During initial setup you have the option to establish some security questions and responses that will help you reset your password.

The screenshot shows a three-step progress bar at the top, with step 1 (Verify Identification) highlighted in red, step 2 (Set New Password) in grey, and step 3 (Complete) in grey. Below the progress bar, the 'Set New Password' section is active. It contains three security questions, each with a dropdown menu for the question and a text input field for the answer. At the bottom, there are 'Next' and 'Clear' buttons.

Step	Step Name
1	Verify Identification
2	Set New Password
3	Complete

Verification Mode	Security Question Verification
Security Question1	You father's name.
Answer	
Security Question2	You mother's name
Answer	
Security Question3	Your favorite game
Answer	

Next Clear

If you forget your admin password, don’t worry. We’ve got you

covered. Use the security questions to reset your password. If you did not set up any security questions and responses, feel guilty, get it out of your system, then use the forgot password feature in the Luma Utility to generate an XML file.

Email that file to TechSupport@SnapAV.com. Please do not close the Luma Utility after generating the XML file. You will need to keep the utility open until you get the new XML file from Tech Support which you then enter into the Luma Utility to reset your device.

Give us the data, along with your company information for verification, and we'll generate a new admin password for your system. Once you're logged back in, you can change your admin password to whatever you want... hopefully to one that's easier to remember.

A user forgot the account password.

If a user forgot his or her password, the admin can edit the user's password field to create a new one.

Web Interface

Go to **User Management**.

Click on the account, then press **Modify**.

Enter and confirm the desired new password.

Press **OK** to save the change.

Local Interface

Enter the settings menu. Click on **Configuration > User**.

Click on the user's entry, then click the **Edit** icon near the right side.

Click the box next to Change Password, then enter and confirm the desired new password.

Press **OK** to save the change.

OvrC?

OvrC has a convenient "I forgot my password" button.

How Do I Log In and Out?

We suggest that you log out whenever you will be away from the

keyboard, so that no one can use the machine while you are absent.

Web Interface

Directing your browser to the URL brings you to the login screen.

From the log and configuration pages, you can log out of the web interface by clicking **Logout**, which is displayed in the upper right-hand corner next to your account name. Logging out in this manner takes you back to the access page.

From the live page, the only way to log out is to close the tab. Instead, we recommend that you go to the configuration page and log out from there, as certain browser settings might keep the session open even though the tab has been closed.

Local Interface

You must log in to the local interface when trying to access either the setup wizard or the settings menu.

Note: You remain logged in until you log out manually, even if the recorder is rebooted.

To log out, go to **Settings > Shutdown > Logout**. The system returns to the live page, but you must log in under an account to be able to access the menus again.

..... Wiring, Connections, & Loop-Outs

Can you use screw-on BNC connectors with crimp-on RG6/59 ends for video on the Luma DVR?

Yes, you can use these type of connections, however for optimal performance and less chance of a service issues, we recommend compression-type BNC ends for each type of wire.

Can I use a switch to add extra cameras to my NVR?

No, you cannot. The NVR is hardware-limited to view its maximum number of channels.

You can have extra cameras on the network. The NVR will be unable to view them, but you will be able to access them directly through the Internet or a mobile application.

What are loop outs?

A loop out is when you take a camera feed, attach it to a DVR, and then continue the connection to a second DVR. The camera view can be watched from either device. The Luma DVR does not come with connections for loop outs

How are loop outs used?

Since a loop out provides an extra connection, you can use it to duplicate signals.

For example, consider an office building with a security system. A building owner could allow each of two tenants to be able to view the building's security cameras via their own DVRs, seeing their own suite and the common areas. They would not have access to the owner's DVR, and thus could not view the other tenant's suite.

Or consider a home. Parents might want their kids to be able to use the family computer to view external cameras, while only the parents could access the interior cameras.

Can I create loop outs on my DVR?

The Luma DVR does not have loop out connections, however certain cameras can help you work around this.

Cameras that have two video outputs can send the HD-TVI to the DVR and the regular analog feed to another DVR.

For the cameras that do not have 2 outputs, there may be a single cable that provides both HD-TVI and 960H signals. To do loop outs from such a camera, set the camera to use 960H and use a splitter to split it into two signals.

Can I create loop outs on my NVR?

Sorry, no.



LUM-510 Series
Surveillance Recorders

**Live View
Screen**

Live View Screen

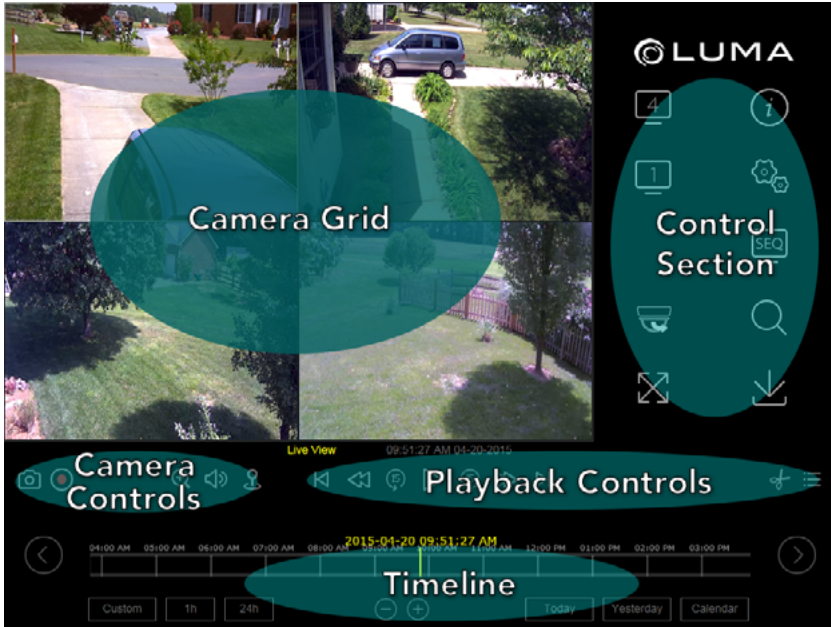
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Overview of the Live View Screen

The live view screen is used both by the web interface and by the local interface (using the mouse attached to the recorder).

There are several major areas in the live view screen.



- The camera grid shows the views of one or more of your surveillance cameras. See “Camera Grid” on page C-4.
- The control section governs your general operations. See “Control Section” on page C-5.
- The timeline is a visual representation of activity as well as a playback control. See “Timeline” on page C-9.
- The camera controls grant control of individual cameras in your system. See “Camera Controls” on page C-11.
- The playback controls allow you to review recorded files. See “Playback Controls” on page C-16.

Each of these areas is discussed in the following pages.

Camera Grid

This area shows the view of one or more of your cameras. One of your cameras is always selected as the active camera; this camera's view has a white border all around it. Most of the actions you take in this screen affect the active camera.

While in grid view (looking at multiple cameras at once), you can double-click on a given channel to switch to a single-channel view of that camera. If you double-click on the single-channel view, the system switches back to the previously selected grid view.

Aside from that, you cannot control the cameras by interacting with these channel views. Instead, use the controls at the bottom of the screen. See “Camera Controls” on page C-11.

Control Section

This section handles the general operation of your system. The icons are presented top to bottom, first the left column, then the right.

Many of these are operated differently in the local interface (using the mouse that is attached to the recorder) as compared to the web interface. Differences are noted in the text.

Grid Modes

Depending on the capabilities of your recorder, it has two to four of these icons. The number inside the icon shows how many cameras (channels) are visible on the screen simultaneously. These range from a single-camera view to a 4x4 grid of sixteen camera views.

If you have chosen a grid mode that does not display all the cameras on your system at once, the display shows the view that features the active camera by default (e.g., if camera 3 is active, then switching to a 2x2 grid view shows channels 1–4).

You can double-click on a given camera view to switch to single-channel mode with that camera. You can also click **Next Screen** (described below) to change the view.

Next Screen

When your screen is not showing all of your cameras, click this icon to switch the view to the next camera or grid view, based on the numbering of the cameras (e.g., switch from a grid view that shows channels 1–4 to one that shows channels 5–8).


When all channels are visible, this button is disabled.

Full Screen Mode

When clicked, this hides the various live view controls, and fills the screen with the current view mode (grid or single-camera), allowing you to see more detail in each channel.

To exit full-screen mode,

- in the web interface, left-click the mouse or press **Esc**.
- in the local interface, right-click the mouse.

If your screen views look distorted, try changing the aspect ratio of your screen under **Settings**  > **Configure This Computer**.

Help

On the web interface this opens up the recorder's technical reference manual. On the local interface, this opens a pop-up window that shows an overlay of the live page, with labels identifying the major control groups. To close the pop-up window,

- in the web interface, click the X at the top right corner.
- in the local interface, right-click the mouse.

Settings




This takes you to the main tools page, from which you can adjust your system's settings or perform a variety of specialized commands. For an explanation of the items within this selection,

- see "Web Interface" on page E-2, or
- see "Local Interface" on page F-2.

Sequence Mode

This mode rotates between grid views when in live view. It is disabled when you are in playback mode.

When sequence mode is on in a single-channel view, it rotates from that camera to the next, in order. If your recorder is in grid mode, it rotates to the next grid, starting with the first channel not shown (e.g., if a grid of channels 1–4 is showing, the next page will be a grid of channels 5–8). Leftover space on the last grid page is filled in with blank panels as necessary.

- In the web interface, when you click **Sequence** , a pop-up dialog opens in front of the playback controls. In this dialog, choose the view mode you prefer and set the dwell time, which is the number of seconds the system waits before switching to the next view. Your display remains in sequence mode until you stop it by double-clicking the channel, clicking **Sequence** again and choosing a dwell time of no switch, or clicking the **Settings**  icon.
- With the local interface, you must set a default dwell time before you can use sequence mode. To do so, click the **Settings**  icon. Go to **Configuration**, then choose **Live View**. Choose your dwell time to the right, or choose not to switch (which disables sequence mode). Click **Apply**, then click **Live**

View in the lower left to return to the live page. Switching into sequence mode also switches the view to full-screen mode. Your display remains in sequence/full-screen mode until you stop it by right-clicking your mouse.


Search

This is a fast, rough-cut search protocol.

Clicking this opens a dialog. In this dialog you define filters for the recording type, the start and end times, and which cameras you want included.

Note that this tool searches only for recordings that were created as files of the type that you specify. It will not, for example, find a motion event that was detected within a continuous recording, since the file was created as a continuous recording file.

After searching, you can double-click on any result to start playing that recording at the beginning, in full-screen playback mode.

- For detailed searches in the web interface, use the log page to locate the time stamps you may be interested in; click the **Settings**  icon and go to the log page. For details, see “Log Tab” on page E-36.
- For detailed searches in the local interface, use the Export menu. For details, see “Export” on page F-4.

Export

This is a fast, rough-cut download protocol. When you click it, a new window pops up.

- In the web interface, the file path to which the recordings are saved is shown at the top of the window. You can set this default location in **Settings > Configure This Computer**.
- In the local interface, the files can only be saved to an external storage device like a USB drive. The file path to which the recordings will be saved is shown when you export the files.

Choose a start time and an end time, and then choose which camera(s) you want to download.

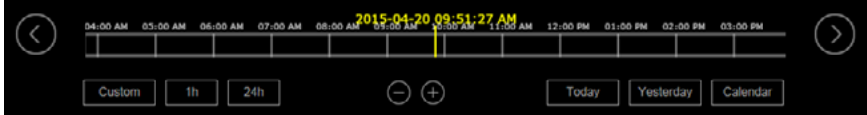
The protocol takes all the recordings taken during that time period. It clips longer recordings at the designated start and end time.

Then the system concatenates the recordings into one continuous file, starting with recordings of like type (e.g., all alarm events are knit together, etc.). Then the groups of recordings are grouped together and downloaded to your computer.

If the aggregate file is larger than 1 GB, the system splits it into 1 GB chunks for ease of downloading.

Timeline

The timeline is a graphical representation of the active camera's activity over the last 24–48 hours. While the unit holds recorded videos beyond the 48-hour limit, the timeline graph only shows recordings from the last two days.



When opened within the web interface, the timeline shows 12 hours centered on the time of the last refresh of the live view (this defaults to the time when you logged in). Note that the live view refreshes whenever you change camera views or return to the live page from the configuration or log page.

When first opened in the local interface, the default display runs from 12:00 a.m. on the left side to 11:59 p.m. on the right, covering a 24-hour period of the current day, according to the system time setting.

The timeline shows the activity of the active camera (the camera with the white frame around its channel view). Within the timeline, a blue bar shows when the active camera was recording normally, either because it was scheduled for continuous recording or because an operator recorded manually. The green lines indicate when an otherwise inactive camera was recording an event, either due to motion detection or an alarm being triggered.

The yellow bar with the time and date stamp shows what position in the camera's timeline of activity is being shown. This displays the current system time if you are watching a live view, or the time stamp of the recording if you are watching a playback of a previously recorded event.



If the bar moves off the right end of the timeline, the timeline automatically refreshes with the yellow bar at the center (web) or at the left edge of the screen (local).




Click anywhere on the timeline to begin playback at that position.



Changing the Span

The web interface timeline has six zoom levels, ranging from a half hour (measured end to end) to 24 hours.

The local interface timeline has three zoom levels, ranging from one hour (measured end to end) to 24 hours.



You have several options to control how much time the timeline shows. In the center of the window, you can press the   keys to zoom in and out of the timeline, shifting up and down one level per click.

To the left, you have three buttons. The Custom  button lets you select the zoom level of your choice, while the other two jump directly to the 1-hour () and 24-hour () view.

In the web interface, you also have  and  buttons at opposite ends of the timeline. These buttons shift the timeline forward or backward half of the current span. For example, if you are in the one-hour span centered on 10:00 a.m., then clicking the right arrow centers the timeline at 10:30 a.m. (it maintains the one-hour span).

The timeline does not extend back more than 48 hours; if you scroll 48 hours into the past on the timeline, no further events show. To see events and review video over 48 hours old, use the calendar button at the bottom right.

Viewing Other Days

Click on the Today  or Yesterday  buttons to shift to playback mode for that day. Playback starts at the first recording of the day. If the camera was recording continuously, the playback starts at midnight; if the camera was using motion detection, then the playback starts at the first detected incident.

Clicking the Calendar  button lets you go further back into the past.

Within the calendar window, days may be flagged either red (indicating that an event like motion detection occurred) or blue (indicating that data was recorded by schedule, but no event was detected).

Camera Controls

This set of five controls lets you manipulate your cameras.

Capture

The leftmost button (NVR models only) takes a screen grab of the current camera.

- If a snapshot is taken via the web interface, the system saves it to your computer in the folder specified under **Settings > Configure This Computer**.
- If taken locally (using the mouse attached to the unit), the snapshot is saved onto the recorder's hard drive.

Record

This button sets the active camera to record continuously. This command takes priority over any scheduled activity, but does not actually change the camera's schedule.

Zoom

The zoom icon provides digital zoom on your active channel.

- In the web interface, when you click the zoom icon, it turns blue, indicating that it is ready. You then click and drag a rectangle in the view screen for the active camera. The zoomed-in view remains active until you click the zoom icon off, or click on the camera's screen. If the zoomed-in view is distorted, consider changing your computer's aspect ratio by defining the image size. This can be done under **Settings > Configure This Computer**.
- With the local interface, the zoom button opens up a zoomed-in view of the active camera. At the top left corner is a sliding bar to zoom the image. Click the image to move it around and see the desired areas zoomed in.

Audio On (or unavailable)

This button lets you toggle whether or not you want to hear the audio stream from that camera or recording, if the camera is audio-capable and you have speakers hooked up to the system you are

using to monitor the camera. The audio button turns blue when it is activated.

- On the web interface, when the audio button is first clicked, a volume slider appears. While audio is active, hovering your mouse over the audio icon makes the volume slider reappear.
- On the local interface, this icon shows a slash through it when audio is not available through that camera, or is not turned on. It does not have a volume slider; use your speakers' volume control instead.


PTZ Controls (Web Interface)


The PTZ button opens an interface with which you can control the orientation and zoom of the selected camera. Close the PTZ control panel by clicking the PTZ button again.


Camera Controls

At the top of the PTZ control panel, a grid of buttons allows you to move your camera to adjust its view. Note that if you move the camera while motion detection is active, the camera will consider this a motion-detection event.

The aim controls are a grid of eight buttons that let you pan your camera left and right, tilt it up and down, etc. (The button in the center has no intrinsic function.)

At the top right, the zoom  controls let you zoom the camera in or out, using the + and – buttons to either side.

In the center right, the Focus  controls let you adjust the visual feed, using the + and – buttons to either side. The + button focuses the lens on objects close to the camera, and the – button makes it focus on objects that are farther away.



To the bottom right, the Iris  controls let you determine how much light reaches the camera, using the + and – buttons to either side. This affects both the brightness of the screen and (if your camera has a physical iris) the depth of field.

Below the button grid, the speed slider determines how rapidly your camera pans when manually commanded to change its orientation using the aim controls on this tab. When moving to a preset, the camera uses its top speed.

Below the slider, the Light and Wiper buttons activate those

capabilities if your camera is so equipped.

Preset Panel

The bottom of the PTZ panel has two tabs: Preset  and Patrol .

Presets are fixed combinations of direction and zoom for your camera. Each camera can have a number of presets defined for it, and these are stored on the camera itself, not on the recorder.

When you click on a preset button, two options appear on it: Call (arrow icon) and Set (pencil and paper icon).

Clicking **Set** saves the active camera's exact orientation and zoom level as a preset for that camera, overwriting any previous entry. Pressing the Call icon moves the camera to the coordinates saved under that preset.

Patrol Panel

Patrols are a set sequence of presets that the camera uses to continually scan its surroundings. Each camera can have several patrols defined for it. These patrols are stored locally on the camera, not the recorder, and the quantity it can have is based on the camera's capabilities.

To create a patrol, first choose the patrol you wish to edit in the selection box.

Press the **+** button to add a preset to the patrol. Patrol duration is the number of seconds that the camera lingers at that position (maximum 30 seconds), and patrol speed is the comparative speed at which the camera moves to the selected preset (maximum 40).

Once you click **OK**, the preset is added to the patrol. You can then press **+** again to add another preset.

You can delete or edit a preset in a patrol. Pressing **X** deletes that preset; pressing the edit icon lets you adjust its parameters.

Once you have set all of a patrol's preset waypoints, you must press the blue **Save** icon before continuing.

The **Start** and **Stop** icons cause the camera to begin or end the selected patrol.

The PTZ Controls (Local Interface)

Clicking the PTZ button opens the PTZ control panel. Note that if

you move the camera while motion detection is active, the camera considers this a motion event.

At the top, the PTZ panel reminds you which camera you are controlling. Below that is the Configuration bar. From left to right, the buttons on this bar are:

- **Menu:** This opens the camera's internal menu, if it has one.
- **3D Positioning:** This has no effect, but is included for forward compatibility.
- **Center:** This minimizes the PTZ interface window.
- **Light:** This activates the camera's spotlight, if it has one.
- **Wiper:** This activates the camera's wiper blade, if it has one.

There are three tabs in the PTZ control panel: PTZ Control, One-touch, and General. The tab you are on is shown in yellow. You can click on a tab name to switch to that tab. If the tab name is not visible, click on the left or right arrow to shift tabs as necessary.

PTZ Control Tab

The aim controls are a grid of eight buttons that let you pan your camera left and right, tilt it up and down, etc.

At the top right, the Zoom controls let you zoom the camera in or out, using the + and – buttons to either side.

In the center right, the Focus controls let you adjust the visual feed, using the + and – buttons to either side. The + button focuses the lens on objects close to the camera, and the – button makes it focus on objects that are farther away.

To the bottom right, the Iris controls let you determine how much light reaches the camera, using the + and – buttons to either side. This affects both the brightness of the screen and (if your camera has a physical iris) the depth of field.

Below the button grid, the speed slider determines how rapidly your camera pans when manually commanded to change its orientation using the aim controls on this tab. When moving to a preset, the camera uses top speed.

One-Touch Tab

If you have configured patrols or preset, you may call them from this window.

General Tab

Call Preset moves the camera to one of the preset orientations stored in its memory. Click in the text box to the right of this command and use the virtual keyboard to enter a number. Press **Call Preset**, and the camera moves to the designated preset.

Call Patrol sets the camera to use one of the patrols stored on the camera's system. The camera's specifications determine the number of stored patrols it can have. Click in the text box to the right of this command and use the virtual keyboard to enter a number. Press **Call Patrol**, and the camera begins moving according to the designated patrol's specs. You can terminate the patrol by clicking **Stop Patrol**. [Note: Wirepath cameras do not support patrols, but do support patterns; patrol controls are included for compatibility with certain third-party cameras.](#)

Call Pattern has the camera follow one of the patterns stored on the camera's system. The camera's specifications determine the number of stored patterns it can have. Click in the text box to the right of this command and use the virtual keyboard to enter a number. Press **Call Pattern**, and the camera begins moving according to the designated pattern's specs. You can terminate the pattern by clicking **Stop Pattern**.

Playback Controls

Just below the channel grid are playback controls that help you maneuver through your recordings. You can control the playback of events, going either forward or backward.

Click anywhere on the timeline to begin playback at that position.

Key Data

Playback (x1)

07:13:11 AM 04-23-2015

4:IPCamera 04

Above the controls are several pieces of data.

In yellow, the text shows whether you are in live view, or watching a recording. If you are watching a recording, this shows the speed at which playback is being displayed.

To the right is the time stamp of what you are viewing (system time in live mode, time stamp on playback). The time stamp of what you are watching is also given above the yellow hash mark on the timeline.

During playback, the channel appears to the right of the time stamp.

Play/Pause

This button starts the playback playing (or pauses it) in whichever direction is currently set, forward or backward.

Jump 15 Seconds

These buttons jump the recording forward or backward roughly 15 seconds when in playback mode.

Play Forward/Backward

When a recording is playing, you can use the play forward button to toggle playback speed. This varies from 1x–4x when using the web interface, and 1x–8x when using the local interface. The speed is shown in yellow above and to the left of the playback controls. You can also use the play backward button to play at 1x speed in reverse. There are no other speeds available in reverse-play mode.

When the recording has been paused, you can use the use the play forward button to toggle from 1/2x speed down to playback by frame. The speed is displayed in the yellow text. While in playback

by frame mode, click on the single frame button to advance the video by one captured frame. Note that if any frames were dropped during recording, the time stamp may jump farther than expected.

The play backward button has no effect when the playback is paused.

Next Event / Previous Event

Clicking these buttons jumps you ahead to the start of the next event in the timeline, or back to the start of the event prior to the one you are watching.

Go to Live

This button only appears in playback mode. Clicking it ends playback and returns you to real-time viewing.

Clip

This button allows you to extract recordings from a desired span of time.

Click on the Clip button (it turns blue). Move your mouse over the timeline to wherever you want the extracted video to start. Note that as you move your mouse, a yellow time stamp appears above it, allowing you precision control over your start time. Click once to set your start time, then move your mouse to the right and click again to define the stop time.

Once the start and stop times are defined, the system opens up a download window between those times. Select the cameras you want, and it saves that clip for those selected cameras.

- In the web interface, the files are saved to the download directory designated under **Settings > Configure This Computer**.
- In the local interface, the files are saved to an external drive (USB drive or eSATA disk) that you designate.

Search Results

This is a shortcut button to grab files from the active camera's timeline. When you click this, a pop-up window appears that lists recordings captured by the active camera, showing 20 results per page.



LUM-510 Series
Surveillance Recorders

**Remote
Control**

Remote Control

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About the Remote Control

Your Luma recorder can also be controlled with the IR remote control. This uses the live page (see “Live View Screen” on page C-2) and the local interface (see “Local Interface” on page F-2).

The remote control requires two AAA batteries (not included) for operation.

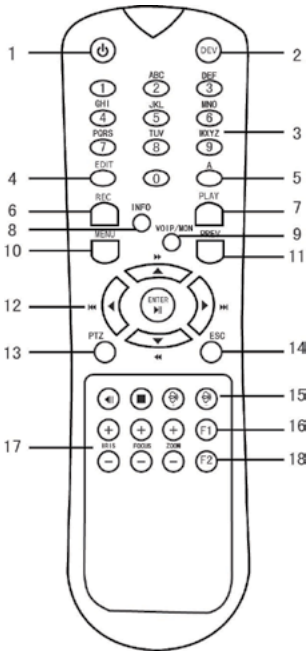
Your remote control's buttons have effects tailored to recorder's current activity. These are outlined in the following sections. Buttons that have no effect in a given section are not listed.

Rebooting the Recorder with the Remote Control

Press and hold the power button for seven seconds to reboot the recorder.

While in Live View Mode

In live view, you can use the following controls:



1) Power

This reboots your recorder. Use the arrow keys and Enter key to confirm your choice.

It will not cut power to the device; you'll have to flip the power switch. This also does not power your recorder up.

2) Dev

This enables or disables the remote control. See “Troubleshooting” on page D-12 for more details.

3) Keypad Group

Pressing a number switches the recorder to single-channel view of that camera. If you are switching to a multi-digit channel, don't be too slow entering the number.

7) Play

This puts the recorder into playback mode starting at the first recording of the day. Press **Prev** to go back to live mode.

10) Menu

Press this button to open the Settings menu. For using the remote control with the settings menu, see “While in Menu Mode” on page D-10. For the Settings menu, see “Web Interface” on page E-2 or “Local Interface” on page F-2.

12) Direction/Enter Group

The direction buttons are used to navigate between the different control icons on the live page. The currently selected icon is displayed in blue. The up and left buttons move the selection upward to the previous icon in the cycle, while the down and right arrows move the selection down to the next icon. The selection

cycles through the control section, to the camera controls, then the playback, then to the timeline controls.

The Enter button activates the currently selected control icon.

13) PTZ

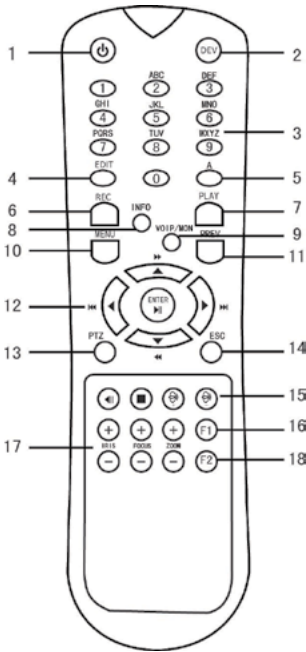
This opens up the PTZ control panel; see below. You cannot open the PTZ menu when in full-screen mode. Press **Esc** to leave full-screen mode, as well as to exit the PTZ control window.

14) Esc

This toggles the display between full-screen mode and normal mode.

While in PTZ Control Mode

If the PTZ control panel is open, you can use the following controls:



1) Power

When pressed, this exits PTZ mode, then reboots your recorder. Use the arrow keys and the Enter key to confirm your choice.

It will not cut power to the device; you'll have to flip the power switch. This also does not power your recorder up.

2) Dev

This enables or disables the remote control. See “Troubleshooting” on page D-12.

3) Keypad Group

Pressing a key causes the PTZ control dialog to switch to that channel. If you are switching to a multi-digit channel, don't be too slow entering the number.

6) Rec

In PTZ control settings, press the button and then you can call a PTZ preset by pressing a numeric button. If you are switching to a multi-digit preset, don't be too slow entering the number.

9) VOIP/Mon

This sets the zoom level to the “home” setting (typically the widest).

10) Menu

This starts the camera's wiper, if the camera is so equipped.

12) Direction/Enter Group

These control the PTZ camera's movement. The Enter key activates whichever button is currently highlighted in the PTZ control panel.

14) Esc

Press this to close the PTZ control panel and return to live view.

16) F1

This turns the camera's light (if any) on or off.

17) PTZ Control Group

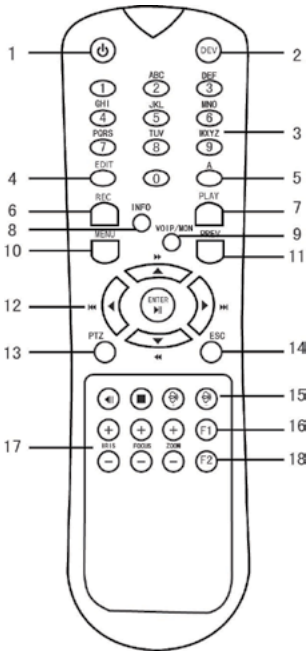
These buttons adjust the camera's iris, focus, and zoom, as labeled.

18) F2

This button switches between the three tabs in the PTZ control panel.

While in Playback Mode

In playback mode, you can use the following controls:



1) Power

This reboots your recorder. Use the arrow keys and Enter key to confirm your choice.

It will not cut power to the device; you'll have to flip the power switch. This also does not power your recorder up.

2) Dev

This enables or disables the remote control. See “Troubleshooting” on page D-12 for more details.

3) Keypad Group

Pressing a number switches the recorder to single-channel view of that camera. When switching to a multi-digit channel, don't be too slow entering the second number.

4) Edit

This button opens up the Clip dialog. See “Clip ” on page C-17 for details on the Clip dialog.

10) Menu

Pressing this opens the Settings menu. For using the remote control with the settings menu, see “While in Menu Mode” on page D-10. For more about the Settings menu, see “Local Interface” on page F-2.

11) Prev

This sends you to live mode.

12) Direction/Enter Group

The direction buttons are used to navigate between the different control icons on the live page. The up and left buttons move the

selection upward to the next control, which will be shown in blue, while the down and right arrows move the selection down to the next icon. The selection cycles through the control section, to the camera controls, then the playback, then to the timeline controls.

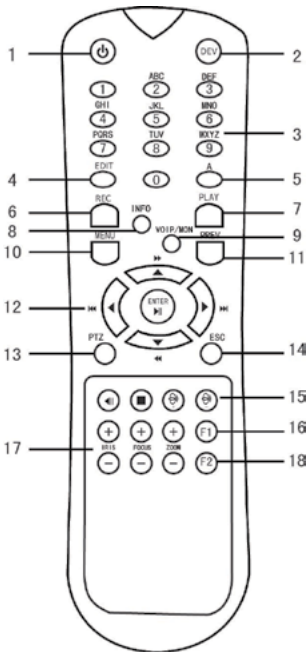
The Enter button activates the currently selected control icon.

14) Esc

This takes you to a full-screen live view of the active channel.

While in Menu Mode

When you are in any window or menu other than the PTZ control panel, you can use the following controls to move within the menu system, or to edit the contents of a selected text box:



1) Power

This reboots your recorder. Use the arrow keys and Enter key to confirm your choice.

It will not cut power to the device; you'll have to flip the power switch. This also does not power your recorder up.

2) Dev

This enables or disables the remote control. See the Troubleshooting section for more details.

3) Keypad Group

When you are actively editing a text field, use these keys to enter either numbers or letters. By default, they enter lowercase letters, unless you are editing a field that accepts only digits. Press a given key once

for the first associated letter, twice for the second, etc., just like texting on your phone.

To get uppercase letters, press the A key. To get numbers, press the A key again. Pressing the A key a third time gets you back to lowercase letters.

4) Edit

When an editable field has been selected, shown by a bright yellow bar around it, pressing **Edit** activates that field so you can enter text into it.

While editing a field, this button acts as a backspace button, deleting the last character entered.

When a checkbox has been selected, pressing **Edit** toggles that checkbox from selected to deselected and back.

When a USB or eSATA hard drive has been selected, pressing **Edit** opens that drive. It also opens a selected folder within that drive.

5) A

This button cycles the virtual keyboard between lowercase letters (the default), uppercase letters, and numbers.

To get symbols, you must use the directional arrows to move the selection to the [.,] key on the virtual keyboard, then press Enter.

12) Direction/Enter Group

The **Enter** key activates the control that is currently selected, either activating the button or menu choice, selecting or deselecting a checkbox, or opening a text field for editing.

If clicked within the main window (to the right of the menus and below the tabs), it also shifts the focus to that group of controls so that the arrow buttons navigate within them. Press **Esc** if you want the arrow buttons to navigate the menus and tabs again.

The direction buttons are used to navigate between different fields and items in the menu windows, to select the item you wish to activate.

The left and right arrows move you between the main window on the right and the menu options on the left side of the window.

The up and down arrows cycle you through the various options within those areas.

Some menus have tab options at the top of the window; these cannot be reached with the up and down arrows. Press the left and right arrow buttons to cycle between the menu, the tabs, the main portion of the window, and the master control buttons at the bottom. While in the tabs row, you can use either **F2** or the right and left arrows to select the tab you want. Use up or down arrows to exit the tab row.

14) Esc

Pressing this button moves you up to the next highest menu.

18) F2

This cycles through the various tab options, if there are tabs in the main window (and the focus is not on the menus at left).

Troubleshooting

If your remote control is not working, first ensure that there are batteries in the remote control, that they are installed properly (the polarities are not reversed), and that they still have a charge.

Check that the IR receiver is not obstructed, and the front panel is not dirty.

You must aim the remote control directly at the IR receiver in the front panel of the recorder. If you are aiming the remote at the recorder from an angle, the recorder may not receive the signal.

If you are still getting no response after pressing any button on the remote, try the following.

1. Right-click the mouse to leave full-screen mode (if necessary).
2. Click on the Settings icon.
3. Click on Configuration.
4. Choose the More Settings tab.
5. Just below the device name is the device number for the recorder. The default is 255.
6. On the remote control, press the Dev button.
7. On the remote control, press the numeric key(s) for the recorder's device number.
8. On the remote control, press the Enter button.

If there is still no response from the remote, contact technical support.



LUM-510 Series
Surveillance Recorders

**Web
Interface**

Web Interface

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Overview of the Web UI

If your system is connected to the Internet, you can access and control your system through a web-based interface, no matter where you are.

The web interface has four screens: access, live, log, and configuration.

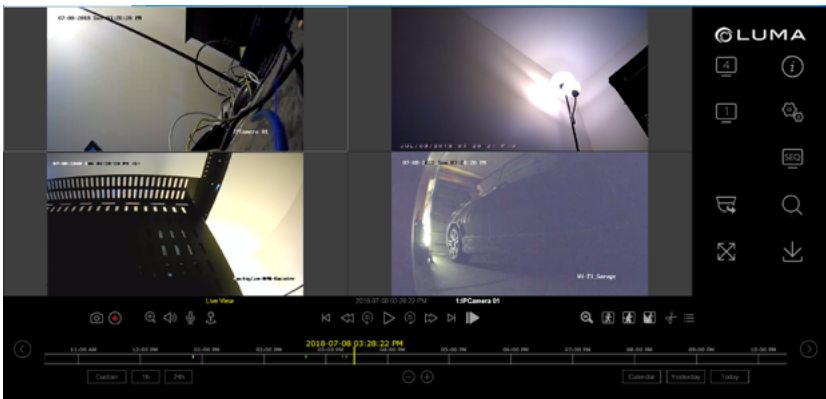
Getting to Your Access Page

Your system should have been set up to allow you to access it with an Internet browser, either by its direct IP address or by an easy-to-remember DDNS address such as MyHome.WirepathDNS.com. If it was not, see the quick start guide.

From the access page, log in with your account name and password. You are automatically taken to the live page.

Live Page

This page is the main interface of the system, which shows you the screens of all your cameras in matrix view, along with the timeline and other controls across the bottom, and the main menu items along the right side. These controls are all discussed in “Live View Screen” on page C-2.





Click on the Settings icon  at right to get to the configuration page.

Configuration Page

This page has a number of menus on it, which give you complete control over camera. **Where possible, use the NVR's menus to control your camera to keep all configurations readily accessible.**

Informational Elements

The upper right-hand corner of each of these pages shows your login account name and a logout button.

Just below them is a connection status notice. If you are connected to OvrC, you'll see this icon:  **Cloud Service : Connected.** If not, this icon says  **Cloud Service : Not Connected.** If your cloud service is not connected, then the camera has a bad DNS setting. You can address this under **Basic Network Settings > TCP/IP** under the DNS Server settings (see "TCP/IP Tab" on page E-17).

Logging Out

When you are done, click **Logout** in the upper right-hand corner next to your account name, especially if you are on a shared computer.

Pro Tip: Do not "log out" just by closing the tab; certain browser settings might keep the session open even though the tab has been closed, which is a security and privacy risk.

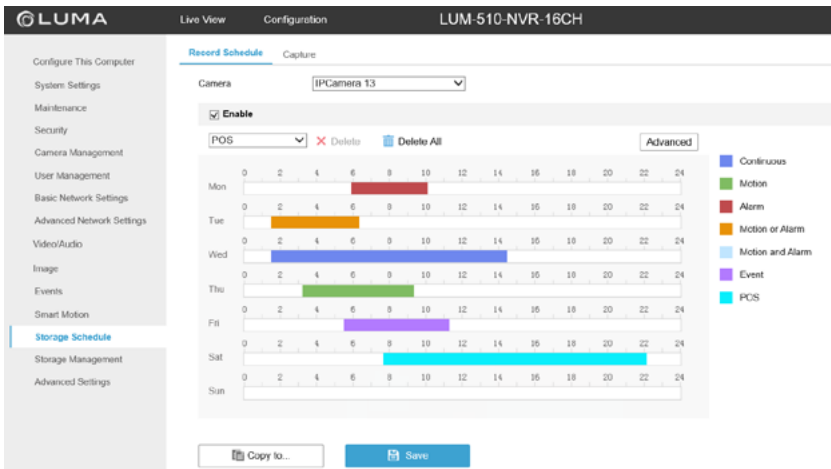
Common Tools

Two key tools are used in several places throughout the web interface: the arming schedule tool and the linkage control. For your convenience, these are described here.

Arming Schedule Tool

The scheduling tool is used by many recorder features, including camera and alarm behavior, motion events, video content analysis, and alerts. It works consistently through all of these capabilities, though certain applications do not use unneeded features.

The main portion of the window shows the schedule for that activity. Each line covers one day, with hash marks on the hours, and is color-coded to show the camera's scheduled activity. For schedules without a color key, blue means the action is activated, while white means that recording is not enabled during that time.



The screenshot shows the 'Record Schedule' interface for 'IPCamera 13'. The interface includes a sidebar with navigation options like 'Configure This Computer', 'System Settings', 'Maintenance', 'Security', 'Camera Management', 'User Management', 'Basic Network Settings', 'Advanced Network Settings', 'Video/Audio', 'Image', 'Events', 'Smart Motion', 'Storage Schedule', 'Storage Management', and 'Advanced Settings'. The main area displays a weekly schedule grid for days Mon through Sun. Each day has a timeline from 0 to 24 hours. A legend on the right identifies activity types: Continuous (blue), Motion (green), Alarm (red), Motion or Alarm (orange), Motion or Alarm (light blue), Event (purple), and POS (cyan). The schedule shows various activity segments: Mon (Alarm 8-10), Tue (Motion or Alarm 2-6), Wed (Continuous 2-14), Thu (Motion 4-10), Fri (Event 6-10), Sat (POS 8-22), and Sun (no activity).

Creating an Activity

To create a new schedule segment, select the camera action using the dropdown menu at the top left (Record Schedule only).

Click and drag in the timeline corresponding with the day and time. As you click and drag, small tags appear at each end showing the start and stop times you are scheduling. You can use the methods following to adjust your schedule.

When your mouse hovers over a given day, a green icon appears to the right. Click on that icon to copy the day's entire schedule to other days. When copying in this manner, the new schedule completely replaces the old one.

Click **Save** before exiting this screen or switching tabs.

Editing an Activity: Click and Drag

When you click on an activity, small boxes appear at the left and right ends of the time span. You can click and drag these handles to adjust the start or end time of that segment.

You can also click-and-drag a scheduled activity and slide the entire segment to the left and right.

If you click on a segment, a pop-up dialog appears. In this dialog, you can manually set the start and stop times (and, within the Record Schedule, use the dropdown to change the activity the camera uses).

Deleting an Activity

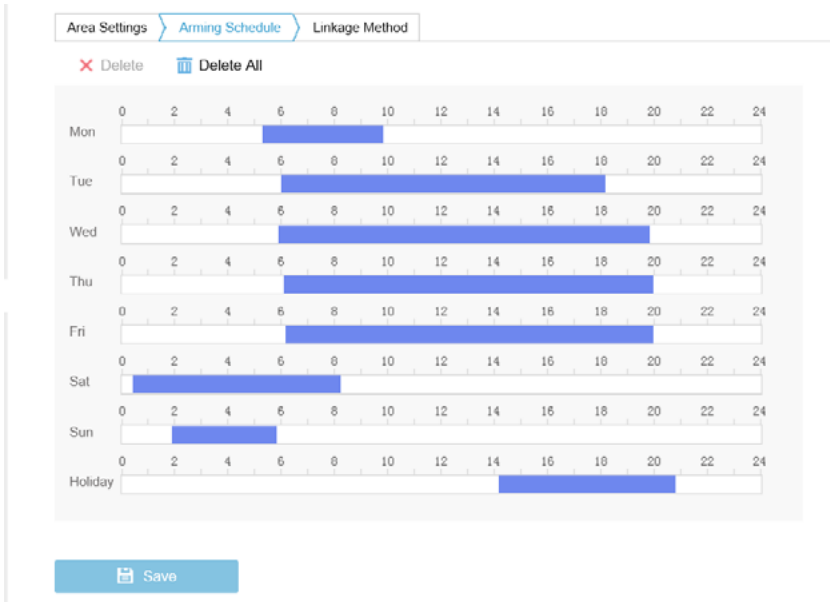
Click on a segment, then click the **X Delete** icon at the top to remove the segment from the schedule. To clear the entire schedule, click the **Delete All** button.

To adjust a schedule, first use the selector (if necessary) at the top to choose the camera (Channel No.) or alarm (Alarm Input No. or Alarm Output) that you want to adjust, then press the **Edit** button at the top right of the schedule display. If Edit is disabled, you need to click the checkbox to the left to enable the service that you are adjusting. When you click **Edit**, a new window opens, as shown on the following page.

You can copy a given camera's schedule to other cameras. Press **Copy to...** at the bottom, select the cameras that you wish to use the same schedule, and press **OK**. This overwrites their schedules with the new one.

Be sure to click **Save** before leaving this page.

The days of the week are shown as rows. There is also a row labeled Holiday if one or more holidays have been enabled (see “Holiday Tab” on page E-15). Select the row for the day you want to edit.




The screenshot displays the 'Arming Schedule' configuration window. At the top, there are three tabs: 'Area Settings', 'Arming Schedule' (which is active), and 'Linkage Method'. Below the tabs are two buttons: a red 'X' labeled 'Delete' and a blue trash icon labeled 'Delete All'. The main area contains a grid of 24-hour timelines for each day of the week and a 'Holiday' row. Each timeline has a horizontal axis from 0 to 24 with major ticks every 2 hours. Blue bars represent the active schedule periods. For example, Monday has a bar from 6:00 to 10:00, Tuesday from 6:00 to 18:00, Wednesday from 6:00 to 20:00, Thursday from 6:00 to 20:00, Friday from 6:00 to 20:00, Saturday from 0:00 to 8:00, and Sunday from 2:00 to 6:00. The 'Holiday' row has a bar from 14:00 to 22:00. At the bottom of the window is a blue 'Save' button with a floppy disk icon.

Be sure to fill the entire 24-hour period so that there are no lapses; schedules are inactive unless assigned. Schedule gaps smaller than ten minutes may be hard to see, especially if they occur at the top of the hour.

You can copy the schedule that you have defined for that device (only) to other days. Use the checkboxes select the weekdays to which you want the schedule to apply. You may select days individually, or click **Select All** to have it apply to all days. When you click the **Copy** button, the system applies the schedule to the selected days, erasing any previous schedule settings that may have been there.

Click **OK** to accept all your edits and leave the window, or **Cancel** to discard all edits and exit.

For camera schedules, once you have set up one camera the way you like it, you can copy its schedule to other cameras. On the main screen, press **Copy to...** at the bottom, select the cameras that you wish to use the same schedule, and press **OK**. This will overwrite their schedules with the new one.

When you are satisfied with the schedule, click **Save**, and check that you get the  **Save succeeded.** message before going to another menu.

Linkage Control

Linkages have your surveillance system take action when an event occurs. Examples include locking a door when a motion is detected, activating a light when a door is opened, or alerting key personnel when a camera loses contact.

Linkage is used with a variety of alerts, motion events, and smart video content analysis. It operates the same way across all of these menu items. Click **Save** before leaving this screen.

Normal Linkage

This makes the system take an action when triggered.

Full Screen Monitoring, when checked, the system brings the selected camera to full-screen view mode (for example, when motion is detected).

Normal Linkage
<input type="checkbox"/> Full Screen Monitoring
<input type="checkbox"/> Audible Warning
<input type="checkbox"/> Notify Surveillance Center
<input type="checkbox"/> Send Email

Audible Warning makes the unit beep, which is only valuable if a person is likely to be nearby to hear it.

Notify Surveillance Center allows communication with a video management server or another recorder. (This is how you are able to use the Luma DVR as an encoder. It is also how to send alerts from an IP camera to an NVR.)

Send Email sends an alert if your email protocol has been configured. See “Email Tab” on page E-10.

Trigger Alarm Output

This column has your recorder and/or cameras activate external alarms. The A alarms are activated by your recorder. The arrows point to which connection you wish to activate (e.g., A->2 means your recorder triggers alarm #2).

Trigger Alarm Output
<input type="checkbox"/> A->1
<input type="checkbox"/> A->2
<input type="checkbox"/> D1->1
<input type="checkbox"/> D4->1

Camera alarms are numbered by the camera channel, with a prefix that is set by the camera manufacturer (Luma cameras use D as a prefix). Most cameras can only trigger one alarm, but some can trigger either or both of two (e.g., D4->2 means the camera on channel 4 triggers its second alarm circuit).

Trigger Channel

When an alarm is triggered, this determines which cameras get activated to an event state (and therefore, presumably, recording actively and at a higher frame rate). The cameras are numbered by channel. By default, the selected camera activates and the others do not.

<input type="checkbox"/> Trigger Channel
<input checked="" type="checkbox"/> D1
<input type="checkbox"/> D2
<input type="checkbox"/> D3
<input type="checkbox"/> D4

PTZ Linking

This allows you to set your cameras to specific behaviors once an event has been detected. For example, when a door is opened, you could move a camera to a preset orientation that focuses on that door. Select the camera that you want to trigger, choose whether you want that camera to move to a preset or begin a pattern or patrol, then choose the proper preset, patrol, or pattern number.

PTZ Linking	D1
<input type="checkbox"/> Preset No.	1
<input type="checkbox"/> Patrol No.	1
<input type="checkbox"/> Pattern No.	1

Advanced Network Settings

SNMP Tab

This stands for simple network management protocol. If you need SNMP functionality, contact your IT admin.

We recommend that you leave this function disabled.

Email Tab

This section sets the recorder up to send email alerts when desired. Note that these settings may not be enough: you may need to change your email security settings to allow your recorder to send email alerts. Refer to our online guide or the documentation provided by your email provider for further information.

Be sure to click **Save** when you are done with the page.

Authentication Settings

Click the Authentication box if you are required to do so by your email provider.

Enter the user name and password for the email account that will be used to send the alerts. This is needed to log in to the outgoing email server. You may also need to adjust your account security settings on the provider side.

For full details on this, including using two-step verification, see “Setting Up Email Alerts” on page A-14.

Customize the Email

Refer to the tech note on our website or to your email provider’s documentation to enter the proper SMTP server and port, and to see if you need to enable an encrypted connection. You may also need to adjust your email account settings on the provider side.

Interval sets how often the recorder sends updates with attached snapshot images to the email address. It is enabled when you enable Attached Image (below).

Attached Image sets the recorder to include a photo of the incident in the email notification it sends.

The sender and sender’s address boxes let you edit whom

the message appears to be from. Set the sender to read *Luma Surveillance Recorder* or something similar.

Define Recipients

You can define up to three people (or distribution lists) to receive these email alerts, and customize how they receive them. Select a recipient number in the Choose Receiver menu, then enter that person's name and email address in the fields immediately below.

Enable Mail Interval reveals a dropdown menu that sets a minimum time that the recorder observes before sending notifications. After the amount of time has elapsed, the recorder sends a log of all activity since the last email.

The checkbox labeled **Enable Mobile App** is not supported at this time; it is included for forward-compatibility with a future update.

Enable Schedule allows you to limit the times that the recipient gets alert emails.

When you click this checkbox, a schedule area opens below, color-coded to show whether or not emailing is allowed (blue means yes, white means no). To adjust the schedule, press the **Edit** button at the top right. For details, see "Arming Schedule Tool" on page E-5.

Click **Test** to get a trial email sent to the currently selected recipient.

Helpful Links

You can set your system to send emails for any of a number of reasons, including

- Alarms (triggered by other security devices attached to your system): see "Alarm Input Tab" on page E-30.
- Exceptions (non-surveillance issues): see "" on page E-31.
- Motion Detection (if the camera sees something moving): see "Motion Tab" on page E-26.
- Video Loss (if a camera loses power or connection): see "Video Loss Tab" on page E-29.
- Video Tampering (if someone blocks a camera's view): see "Video Tampering Tab" on page E-27.
- Smart Video Analysis Events (various smart-detection features): see "Visualint Event Tab" on page E-40.

HTTPS Tab

This is disabled by default. You cannot enable it until you have created a certificate.

If you create an HTTPS certificate, click **Save** to preserve your work.

We recommend that you create a certificate using the local interface, or using the web interface from within your network (rather than remotely) so that you do not risk locking yourself out of the system!

To create a certificate, first forward the HTTPS port (default 443) on your router.

Next, decide whether you want to do a self-signed certificate or file a certificate request, and click the appropriate button.

Self-signed Certificate

This feature has been disabled.

Load a Signed Certificate

When you select this, a **Browse** button appears. Use this to navigate to your certificate, then click **Install** to add it to your system.

Certificate Request

Fill out the required data for the security certificate. This includes the standard two-letter Internet code for your country (use US for the United States, and CA for Canada). Click **OK** when finished.

Then you have to send it off to your certificate authority. Click **Download** to save the certificate request to your machine, then email the file to your preferred certificate authority.

If you cannot find your saved certificate request, this means that some system setting is preventing you from viewing it. Try saving the certificate request file to a flash drive or other external media. Alternatively, save another copy of the request, but, before you save it, locate the older request on your system (it should be visible) and open it by right-clicking on the file from within the save-file dialog. Either of these solutions should solve the problem.

Once you have your certificate, you can click **Enable HTTPS** to begin using it.

Other Tab

This catch-all category holds a variety of commands.

Alarm Host IP

This entry is not currently used. It is included to make your recorder forward compatible with a central monitoring service (CMS).

Alarm Host Port

This feature is not currently used. It is included here for future compatibility and upgrades, which will enable your recorder to contact your central monitoring system.

Multicast Address

If you need to have multiple simultaneous connections for streaming your surveillance, contact your IT administrator for this address. Multicast creates an Internet broadcast, and anyone with the proper address can grab the stream, including someone who got the address illegally.

Enable Virtual Host

This feature is only available on NVR models.

Virtual hosting allows for multiple NVRs at a site, as well as remote access and management of IP cameras directly connected to your NVR through the system's IP address.

Virtual Host Port

This feature is only available on NVR models.

The virtual host port (VHP) allows you to port forward your camera from the NVR for use with your HTTP port (used for MJPEG stream). This must be set to a value from 60000–65000. You must configure port forwarding to the NVR for the appropriate range of port numbers in order to access the directly connected IP cameras.

Each camera connected to your NVR gets a unique port number created by mathematically adding (not appending) its PoE port number to the NVR's base VHP number. For example, if your VHP is 62200, then the camera at channel 4 has the port number 62204. This assigned port is shown under **Camera Management > IP Camera** under the Connect column.

If multiple NVRs are on the same network, each must be set to a

port number such that neither it nor its attached cameras conflict or overlap with others. For example, with an 8-channel and 16-channel NVR on site, the 8-channel's virtual HTTP port could be set to 63100 (thus using ports 63101–63108 for the cameras), and the 16-channel could be set to 65100 (thus using ports 65101–65116 for the cameras).

Virtual RTSP Port

This feature is only available on NVR models.

The virtual RTSP port allows you to port forward your camera from the NVR for use with your RTSP port (used for H.264 streams). This must be set to a value from 60000–65100.

Each camera connected to your NVR gets a unique port number created by mathematically adding (not appending) its PoE port number to the base RTSP port number. For example, if your RTSP port is 65100, then the camera at channel 7 has the port number 65107.

You must configure port forwarding to the NVR for the appropriate range of port numbers in order to access the directly connected IP cameras.

If multiple NVRs are on the same network, each must be set to a port number such that neither it nor its attached cameras conflict or overlap with others. For example, with an 8-channel and 16-channel NVR on site, the 8-channel's virtual RTSP port could be set to 63100 (thus using ports 63101–63108 for the cameras), and the 16-channel could be set to 65100 (thus using ports 65101–65116 for the cameras).

Enable CGI Control

This is enabled by default and must remain enabled to allow CGI commands from your control system to work.

Enable Flow Control

This is for your RS-232 and RS-485 connections that use the flow control.

Advanced Settings

Holiday Tab

This screen lets you specify up to 32 different holiday times. Holidays are used by your camera's scheduling tools to define different camera behavior on special days (e.g., holidays, planned vacations, open houses, etc.).

The holiday chart shows the name and date(s) of each holiday, as well as whether or not it has been enabled (disabled holidays do not affect your system's performance).

To edit a holiday, click the pencil icon to the right. This brings up a small dialog box.

Enter the holiday's name in the box, and enable it (if desired).

- If the holiday is on a fixed date (e.g., New Year's Day is always January 1st), then choose By Month from the Type selector, and select the start and end dates. A holiday starts at 12:00 a.m. on the start date, and ends at 11:59 p.m. on the end date, so it's okay for a holiday to start and end on the same day.
- If the holiday has a floating schedule (e.g., Thanksgiving is the fourth Thursday of November in the USA and the second Monday of October in Canada), then select By Week from the Type dropdown. This lets you specify the month, week of the month, and day of the week that the holiday begins and ends.
- For holidays that are not scheduled by the civil calendar (e.g., Easter, which can take place in March or April), you'll just have to edit the holiday dates each year. You can use the By Date options and select the date from the calendar pickers.

Once you enable one or more holidays, be sure to set the camera behavior on holidays for all applicable recording, motion detection, and video analysis activities.

Other Tab

This is a catch-all category. After adjusting your settings, be sure to click **Save** before switching to another window.

Enabling HDD Sleeping

If this box is checked it saves on power usage when nothing is being

recorded. The hard drive stops spinning when it is not in use.

Internal buffers should prevent any loss of data while the hard drive spins up again to continue recording.

Be sure to click Save if you change this setting.

Enable Overwriting

If this box is checked when the hard drives on the network become full of archived surveillance footage, the system automatically begins overwriting the oldest files with new ones. This allows your system to operate continually, but does put older data at risk.

If this is not selected, then old recordings must be deleted manually, and if your hard drives become full, no further video is recorded.

Packet Time

By default, as your recorder saves surveillance files, it closes the file when it reaches 1 GB in size, then continues recording in a new file. If you wish, you can set a different maximum file size by run time. Enter a number here (from 1–300) to limit individual recording files to that number of minutes, or 1 GB, whichever comes first.

Disable IP/RS-232 Remote Control

Clicking this disables the use of IP or RS-232 enabled commands sent from a third-party device like a control system.

Basic Network Settings

TCP/IP Tab

This section helps set up Internet connectivity for your system.

Click **Save** before leaving the page to keep your changes

All recorders have a setting for LAN 1. Depending on how your network is set up, you may also have a LAN 2 option. Ensure you are editing the proper network.

Working Mode

The 8- and 16-channel DVRs each have two Ethernet ports. Thus you have the option for LAN 1 and LAN 2.

Multi-address Mode: When set to multi-address, you have two LAN ports. The parameters of the two network cards can be configured independently. You can select LAN1 or LAN2 in the NIC type field for parameter settings. You can select one NIC card as default route; when the DVR connects to the outside world (e.g., your router, OvrC.com) its data is forwarded through the default route.

Net-fault Tolerance Mode: Net-fault tolerance mode gives you one LAN port. The two network cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. This way, if one network card fails the DVR automatically enables the standby network card and continues operation as normal.

NIC Settings

NIC Type: If you are connecting this recorder to an older, slower network, you can customize the interface to minimize the bandwidth use if needed.

We recommend leaving this set to Auto, which identifies your system and adjusts operation automatically.

DHCP: Clicking this enables your network to assign IP addresses as needed to link with other IP devices. While DHCP is active, most of the boxes on this page are deactivated, as they may be changed by the system as needed.

Once the recorder is linked, deselect this box to ensure the recorder has an unchanging IP address. This allows you to use the web interface and mobile utility to access your system.

IPv4 Address: This is the IP address of your recorder, which is needed to allow you to access the system remotely, and to use the Luma mobile application. If you will be accessing your system remotely, be sure to deselect DHCP. You cannot use the Internet to access your system if DHCP is enabled.

IPv4 Subnet Mask: If you need to edit this to connect to your network, contact your IT administrator.

IPv4 Default Gateway: This holds the address of your router, once the recorder has found the router and established a connection.

IPv6 Address: This entry cannot be changed, but is included for informational purposes (and to allow forward compatibility with future systems).

IPv6 Default Gateway: This entry cannot be changed. It will display your router's address if your router is IPv6 capable.

MAC Address: This entry cannot be edited. It provides the information on the device's unique identity code, so your router can identify it even if the IP address changes due to DHCP.

MTU: This entry displays the largest packet of data the unit is allowed to send. There is no need to change it unless your network requires a specific packet size as determined by the IT admin.

DNS Server

Preferred DNS Server: These is where your system looks to convert a URL to an IP address. Generally, this should be your router (see IPv4 Default Gateway, above); contact your IT admin for details.

Alternate DNS Server: These is the second place that your system looks to convert a URL to an IP address. Contact your IT admin for details.

For the 8- and 16-channel DVR using multi-address mode, choose LAN 1 or LAN 2 for the default route. In the net-fault tolerance mode, choose LAN 1 or LAN 2 for the main NIC option for the DNS server.

DDNS Tab

The DDNS feature allows you to connect to this recorder from anywhere, via the Internet, using a web address that's easy to remember.

Click the box labeled **Enable DDNS**, then choose a type from the

DDNS Type menu. Next, choose a server address. [We recommend WirepathDDNS and ns2.wirepathdns.com.](#)

Enter your desired domain in the **Domain** box. This creates a personalized server address, which is shown under **Device URL** at the bottom.

Enter your username and password if required by your DDNS type. Note that Wirepath DDNS does not require these.

At the bottom of the screen, the system displays your device status and the DNS-assigned URL. If someone has already registered your desired domain, the system adds a unique ID (typically two to four digits) to your domain. If you do not like these digits, try another domain or server address.

Example: If you choose the domain myhome, your system's URL would be myhome.WirepathDNS.com. If someone already has myhome, then your system's URL would be something like myhome13.WirepathDNS.com.

When your ports have also been forwarded properly on your router, the Status entry changes to indicate that the DDNS status is normal.

Click **Save** to finalize the settings here.

PPPoE Tab

This stands for point-to-point protocol over Ethernet, a peer-to-peer communication system. Basically, if the camera knows it's on the same local network as the device it is trying to communicate with (e.g., your NVR), it sends traffic directly to that device rather than going through the router.

ALERT! This setting is not supported at this time.

Port Tab

These regulate how you connect with your recorder via the Internet.

HTTP Port is used to access the recorder through an Internet browser. This port defaults to 80. [We recommend changing it to an easy to remember alternative.](#) For example, you could append the last two digits of your IP address. Thus if your IP address ended in .242, you could change the port to 8042. Changing the port number like this makes Internet attacks harder to execute. However, if you wish to access your device remotely, you must also forward this port on your router.

RTSP Port stands for real time streaming protocol. You can leave this at its default unless you want to stream live video to external multiple devices, all from one common DDNS address. In that case, consult your IT admin. RTSP creates one-to-one connections; remote devices must request the stream and be admitted.

If you wish to access the live view of your DVR remotely, or pull RTSP streams remotely, you must forward this port on your router.

HTTPS Port is for a secure HTTP setting. You can change this port if you wish, however the security protocol does not provide a security certificate. To acquire a certificate, see “HTTPS Tab” on page E-11.

Server Port is used for your mobile app. If you wish to access your recorder remotely through your mobile device, you must forward this port on your router.

If you made changes, be sure to click **Save** before you leave this page.

Camera Management

This menu item is only available on NVR models.

This screen displays all cameras that are connected to the recorder either through a direct connection or over the local area network.

Channel No. (the leftmost text column) shows the camera's channel on the NVR.

Camera Name is a custom name to readily identify the camera.

IP Address shows what address the camera is currently using. If DHCP is enabled, this could change.

Channel No. (the column near the middle) shows which of the camera's internal channels is the source. This is usually 1, but can vary on a camera with a multi-channel encoder.

Management Port shows the port for that individual camera.

Security indicates the strength of the camera's password.

Status shows the camera's current condition. You may need to refresh the view after making a change.

Protocol shows which communication standard the camera is using.

Connect this column shows a link that can be used to access that camera directly. These are local links; they can only be used from within the system unless proper port forwarding has been set up.

The Modify Button

Click the **Modify** button to edit the cameras. Select a camera by clicking on its line entry. The row gets highlighted. Click **Modify**, then set the adding method (at the bottom) to manual. This allows you to edit all facets of the camera.

IP Camera Address lets you change the camera's address to remove any duplication.

Protocol sets the communication standard used by the camera. See your camera's documentation for details.

Management Port shows the port for that individual camera. For Luma IP cameras, this is the server port.

Channel No. shows which internal channel the camera is using. This will usually be 1, but can be changed on a camera with a multi-channel encoder.

Camera Name is the custom identifier used for that camera.

User Name, **Password**, and **Confirm** are all used for logging into the camera itself.

Transfer Protocol allows you to set the protocol to TCP, UDP, or Auto, which lets the system decide which is best.

Adding Method is how you want the NVR to connect to the camera. If you set the adding method to plug and play, you cannot edit any other entry. To make changes, this must be set to manual.

PoE Power determines whether you want the camera to draw power from the NVR. This tool allows you to turn off any IP camera connected to a PoE port on the recorder. This is a great troubleshooting feature.

Click **Save** to keep your changes, or **Back** to discard them.

Custom Protocol Button

You can create up to 16 custom protocols to cameras that only have RTSP streams available. One protocol covers both the main stream and the sub stream.

POE Password Button

This button lets you reset all plug-and-play IP cameras (those cameras connected to the POE ports on the rear of the NVR) to the same password. This allows easy password maintenance while maintaining plug-and-play functionality. Use the dialog to enter your new desired password. Reboot the camera to enable this new PoE password.

This new password is for the NVR's internal PoE switch. It has nothing to do with NVR's admin password. The cameras can thus have a (collective) PoE password that is different from the NVR's.

Press **OK** to save and close the dialog, or **Cancel** to leave without saving changes.

Activation Button

This feature is not used, as the Luma NVR automatically activates every defaulted (inactive) Luma IP camera connected to it.

The NVR cannot activate third-party cameras or cameras connected via a network switch. Direct connection to the NVR PoE port is required for activation.

Configure This Computer

This defines the settings used by your computer when it accesses your recorder over the web. Each computer has its own customized settings; they are stored locally on each computer. Because they are stored locally, these settings are used for any Luma system you access from that specific computer.

After adjusting your settings, click **Save** before switching to another window.

Live View Parameters

Here you adjust the recorder's view.

Protocol

TCP checks the network connection state and favors preserving data. It places less importance on transmission speed. This can result in lag, but is more stable and reliable.

We strongly recommend TCP whenever remote access is required.

UDP favors sending data quickly. It places less importance on preserving data. It is faster than TCP, but should only be used with strong, reliable network connections.

We recommend UDP only on isolated networks and VLANs. Do not use UDP when remote access is required.

Multicast is required when using the multicast capability. Set up the multicast address under Basic Network Settings > TCP/IP.

We do not recommend using multicast if you can avoid it.

Play Performance

Shortest Delay sacrifices smoothness for immediacy. The view updates when a single frame has been buffered.

Balanced updates when six frames have been buffered, for a smooth rendition with fewer pauses. This is our recommended setting.

Fluency gives you the smoothest playback, but at the cost of timeliness. Buffering times (15 frames) and therefore viewing delays are highest at this setting.

Rules

If your browser can perform dynamic analysis for motion, you can enable those rules here. If you do, then, when motion is detected, green boxes highlight those areas where motion occurs.

Image Size

This lets you set the aspect ratio of your PC screen to minimize image distortion.

Auto-fill detects your browser's aspect ratio and gives you the best fit. It distorts the image as needed to fill the camera channels completely. If the distortion is too great, you can manually set the aspect ratio to either 4:3 or 16:9; note that fixing the aspect ratio may result in gray bands appearing in the channel to fill the unused space. Alternatively, you can adjust the browser window itself for best appearance. We recommend this setting.

Image Format

You have the option of choosing JPEG ([preferred](#)) and BMP.

Encryption Key

After this feature is enabled, the verification code is required for remote access and live view.

Point of Sale

This activates the POS feature. Point of Sale is not supported on Mac computers. You can only set up the POS in the local interface.

For full details on setting this up, see “Setting Up POS Surveillance” on page A-22.

Video File Settings

At the top of this section, you can set your desired maximum video file size. When this size is exceeded, a new file is created to continue your recording.

The bottom two boxes specify where video files are saved when created or downloaded. These files are saved to the PC, not to a hard drive on the network. To change the file paths, click **Browse** and navigate to the folder you want.

Save recorded video to is the path for those files that you record

manually from the view page, while accessing the system from this particular PC.

Save exported files to is the path for photos and videos that you fetch using the export tool.

Snapshot Settings

The two boxes below that specify where to save snapshots when they are created or downloaded. These files are saved to the PC, not to a hard drive on the network. To change the file paths, click **Browse** and navigate to the folder you want.

Save snapshots from live view to is the path for those files that you record manually from the view page in live mode, while accessing the system from this PC.

Save snapshots from playback to is the path for photos that you take from the view page while watching saved footage.

Events

Motion Tab

This window lets you set the parameters of where your camera looks to detect motion (for example, you can have it detect motion on the client side of a teller's window, and not on the teller's side).

Whenever you make changes to your settings, click **Save** before switching to another camera or tab.

NOTE: It is also possible to set motion detection parameters on Luma IP cameras. If you set motion detection for a camera both on that camera itself and on the NVR, the NVR's settings supersede those of the IP camera.

Camera Selection

Channel No.: This selects which camera you are editing.

Enable Motion Detection: Check this box to set up motion detection on the selected camera, or uncheck it to disable motion detection.

Enable Dynamic Analysis for Motion: When checked, the camera evaluates the image in real time to determine if has detected actual motion, and shows grids where motion is detected.

If the Rules option is enabled (under **Configure This Computer > Live View Parameters**), the camera displays green markers across the sections of the image where motion has been detected.

Area Settings

This defines the areas in which motion detection is used.

The motion detection system divides the camera screen into a 22x15 grid. This makes each square roughly 0.3% of the total area, allowing for fine control over which areas to use for motion detection. You can designate an area of any shape for the camera to use for detection motion. To create an area, press **Draw Area**, then click-and-drag your mouse across the live feed. When you are done, click **Stop Drawing**. If you make a mistake, click **Clear All** and try again.

Draw Full Screen fills the camera view for motion detection.

Clear All: This button clears the screen of all areas designated for motion detection with the current camera.

Sensitivity: This slider determines how picky your camera is with regards to motion detection. If you are getting false positives, it may be that your camera's sensitivity is too high (for example, it's detecting a curtain moving in the breeze of the air conditioner). Moving the slider to the right makes your camera more sensitive to motion; moving the slider to the left makes it less sensitive.

When you are satisfied with your arrangement, click **Save**.

Arming Schedule

This schedules when the camera tries to detect motion in the areas designated above. Motion detection from this window and from schedule settings are independent, but must work together. If motion detection is disabled here, it is disabled for all purposes, even if motion detection is scheduled for the camera in schedule settings. However, if motion detection is enabled, the camera follows both the schedule settings and this arming schedule.

The main portion of the window shows the schedule for the selected camera. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the camera's scheduled activity. See the activity key to the right for explanation; white means the camera is not enabled during that time.

To adjust the schedule, press **Edit** at the top right. If you need help, see "Arming Schedule Tool" on page E-5.

Linkage Method

This tab sets up the camera to take action when an event occurs, like activating a siren, locking a door, or alerting key personnel. Despite its appearance, this is not a table; it's just separate columns.

For help on linkage, see "Linkage Control" on page E-8.

Video Tampering Tab

Video tampering detects the attempt to obscure a camera's surveillance by blocking its view or covering its lens.

You set up this option for each camera independently. Generally speaking, there is no reason not to have video tampering detection on.

At the top, choose the camera to edit. You must also check **Enable Video Tampering** to set up the selected camera's detection

operations. The main section of the window is divided into three tabs: Area Setting, Arming Schedule, and Linkage Method.

To accept your settings, you must click **Save** before switching to another camera or menu item.

Area Settings

When supported, you can designate one area on each camera for a video tampering mask. This mask blocks the camera from detecting tampering in a given portion of the camera's field of view. This is useful if, for example, a door swings into part of the frame when opened. Rather than have the door create a false alarm every time it is opened, you can mask off that portion of the screen to exclude it.

To create an area, click the **Draw Area** button, then click-and-drag your mouse across the live feed. A gray box appears. You can select a box you have drawn by clicking on it. You can resize a selected box by clicking and dragging on one of the red dots around its perimeter, or move it around the screen by clicking and dragging on its gray center.

You can always click **Clear All** to remove the video tampering mask.

Sensitivity: This slider determines how picky your camera is when detecting video tampering. If you are getting false positives, it may be that your camera's sensitivity is too high, or some background event is confusing it. Moving the slider to the right makes your camera more sensitive to video tampering; moving the slider to the left makes it less sensitive.

Arming Schedule

The main portion of the window shows the current schedule for the selected camera. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the camera's scheduled activity. See the activity key to the right for explanation; white means the camera is not enabled during that time.

To adjust the schedule, press **Edit** at the top right. If the button is disabled, check the **Enable Video Tampering** checkbox; this will enable the **Edit** button. If you need help, see "Arming Schedule Tool" on page E-5.

Linkage Method

This tab helps you set up the camera to take action when an

event occurs, like activating a siren, locking a door, or alerting key personnel. Despite its appearance, this is not a table; it's just an arrangement of columns.

For help with linkages, see “Linkage Control” on page E-8.

Video Loss Tab

Video loss is the interruption of a signal from a given camera. This may be caused by a power loss, someone cutting a cable, or a camera defect.

At the top, select the camera (channel number) and check **Enable Video Loss Detection** to allow your system to detect a loss of signal from the selected camera, as well as to set up the schedule.

The main section of the window is divided into two tabs: Arming Schedule, and Linkage Method.

Be sure to click **Save** before leaving this screen.

Arming Schedule

You set up this option for each camera independently. Generally speaking, there is no reason not to have video loss detection on.

The main portion of the window shows the schedule for the selected camera. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the camera's scheduled activity. Blue indicates video loss is active; white means the camera is not enabled during that time.

To adjust the schedule, press **Edit** at the top right (this button is only active if you have enabled video loss detection in the checkbox at the top). If you need help, see “Arming Schedule Tool” on page E-5.

Linkage Method

This tab helps you set up the camera to take action when an event occurs, like activating a siren, locking a door, or alerting key personnel. Despite its appearance, this is not a table; it's just an arrangement of columns.

For help on linkages, see “Linkage Control” on page E-8. Unlike other Linkage Method tabs, this one does not have the Trigger Channel column. This is because if communication to the camera has been lost, the recorder cannot tell it to trigger an alarm. However, your recorder could send an alert, trigger other alarms, etc.

Alarm Input Tab

This is where you set up the various alarms that may enter your system (for example, an alarm for a door opening).

Be sure to click **Save** before leaving this page.

Alarm Area

The Alarm Input No. selector lets you choose to configure a specific trigger signal entering your recorder or any of its alarm capable cameras. In this selector, A refers to an auxiliary alarm port on your recorder, while each camera is listed by its IP address. For example, A<-3 refers to the alarm trigger line entering input #3 on your recorder, while 192.168.92.11:80<-1 refers to the alarm going into input #1 of the camera at that IP address.

IP Address gives the camera's address when the alarm is selected.

Alarm Type lets you designate whether the alarm circuit is normally open (NO) or normally closed (NC).

Alarm Name is a custom field that you can use to specify exactly which alarm it is (e.g., South Freight Door).

Finally, select the Enable Alarm Input Handling checkbox.

Arming Schedule

The main portion of the schedule tab shows the schedule for the selected alarm. This lets you know when the selected alarm input will be active. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the alarm's scheduled activity (blue means active, white means inactive).

To adjust the schedule, press **Edit** at the top right. If you need help, see "Arming Schedule Tool" on page E-5.

Linkage Method

This tab helps you set up the camera to take action when an event occurs, like activating a siren, locking a door, or alerting key personnel. Despite its appearance, this is not a table; it's just an arrangement of columns.

For help, see "Linkage Control" on page E-8.

Alarm Output Tab

These settings add extra actions to the end of an alarm being triggered.

The **Alarm Output** selector lets you choose to configure a specific trigger signal exiting your camera. Most cameras have only one output.

IP Address gives the camera's address when the camera's alarm is selected.

Duration (Delay): Use this to set a pause between when an alarm is triggered and when the action based on that event starts. For example, if an alarm is triggered when a door is opened, you may want to give an employee five seconds to enter a security code before responding.

When motion detection is configured to provide an alarm output the status of the alarm output circuit is **Closed** immediately, triggering the connected siren.

For example, if the **Duration (Delay)** is set to 5 seconds and an event begins at 03:10:05am and lasts until 03:10:10am, the alarm output is active from 03:10:05am until 03:10:15am.

The **Alarm Name** is a custom field that you can use to specify exactly which alarm it is (e.g., South Door Buzzer, Death Star Thermal Port).

Alarm Status shows whether the alarm is currently on or off. This can be toggles with the Manual Alarm button.

The **Manual Alarm** button toggles the alarm status on or off. (This feature is not available on all cameras.)

Be sure to click **Save** before leaving this page.

Arming Schedule

The main portion of the window shows the schedule for the selected alarm. This area lets you know when the selected alarm output will be active. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the alarm's scheduled activity (blue means active, which means inactive).

If you need help, see "Arming Schedule Tool" on page E-5.

Exception Tab

Here you set how the recorder responds to non-surveillance concerns.

This page uses a truncated version of the linkage tool. If you need help, see “Linkage Control” on page E-8.

The various types of exceptions are explained here:

HDD Full: If your hard drive becomes full, and you have not enabled file overwriting (see “Enable Overwriting” on page E-16), you cannot record new surveillance video.

HDD Error: This indicates that a hard drive has returned any type of error code to the recorder.

Network Disconnected: If your recorder finds it cannot access your network router, it sends a notice. Of course, aside from local alarm warnings, the notice will be delayed due to the lack of a network connection.

IP Address Conflicted: If you accidentally end up with two items attached to your network that have the same IP address, this will inform you.

Illegal login: This is an attempt to log in with an incorrect user name/password combination, and is either a sign of a typo on the part of a user, or a hack attempt.

Input/Output Video Standard Mismatch (DVR only): This occurs when you mix PAL and NTSC video formats. NTSC is the standard used in North America. The also occurs if the camera is not getting enough power and the video output is distorted.

Record/Capture Exception: This exception triggers when your hard drive runs out of space, or fails to write for some other reason.

Resolution Mismatch (DVR only): This warns you when the input resolution is smaller than the camera’s configured recording resolution.

Image

Here you control the data that appears on each camera's screen.

Display Settings Tab

This lets you choose which camera (channel) to adjust. The exact adjustments vary based on your model.

OSD Settings Tab

Camera lets you customize the on-screen display (OSD) of the camera's information. You can click and drag the red OSD text boxes to position them as desired.

Display Name: This adds the camera name to the screen. You must name the camera if this setting is enabled.

Display Date: This adds the system's time stamp to the screen.

Display Day of Week: This adds the weekday to the date display.

Camera Name allows you to give the camera a descriptive title, for example its area of surveillance ("Second Floor Hall"). This box can only be edited if the Display Name box (under OSD Settings) is checked.

Time Format: Select whether you want the time shown in 12-hour (a.m./p.m.) or 24-hour time. This setting only affects on-screen display, not other system settings.

Date Format: Here you set the structure of the date display on the camera. This setting only affects on-screen display, not any other system settings.


Display Mode: This option appears below the camera image. Choose whether OSD text is displayed as opaque or translucent, as well as flashing or static.

Hue (DVR only): This adjusts the color of the picture to compensate for any shift from lighting.

Sharpness (DVR only): At higher sharpness settings, the picture is adjusted to enhance edges.

De-noising (DVR only): This removes random noise for a smoother picture..

OSD Size (DVR only): This option lets you set the size of the OSD.

When you are done with all the changes you want to make for a given camera, press the Save button and ensure you get the  Save succeeded. message.

Text Overlay

This window allows you to add special text to a camera's view. Each camera that has text overlay capability can have up to six different legends show on its screen. For example, these could be used to display which area of the house or yard is being shown, or, in larger buildings, which floor.

You can edit any legend by clicking in the text box. To add the legend to the camera, click the checkbox to the left of the text.

By default, this label appears in the upper left-hand corner of the screen, although you can click on it and drag it to the position you want. You cannot have two legends overlap; only one will show.

Changes that have not been saved are shown in the live feed in red. However, changes to fields that are not active do not show anywhere, so ensure that you press the **Save** button before changing cameras or exiting the Text Overlay screen.

Privacy Mask Tab

At times, there may be areas under surveillance that you want to exclude from visibility (e.g., a security keypad), or be required to block by law (e.g., a neighbor's window). These areas can be protected by a privacy mask. At the top, you must check **Enable Privacy Mask** to use this feature.

For legal reasons, the recording data covered by a privacy mask is lost forever. There is no way to recover it.

You can designate up to four areas on each camera for a privacy mask. To create an area, click **Draw Area**, then click-and-drag your mouse across the live feed. A gray box appears. You can select a box you have drawn by clicking on it. You can resize a selected box by clicking and dragging on one of the red dots around its perimeter, or move it around the screen by clicking and dragging on its gray center.

Click **Clear All** to remove all privacy masks.

Be sure to click the **Save** button before leaving this screen.

Maintenance

Maintenance Tab

These commands all keep your camera running smoothly.

Reboot

Reboot restarts the recorder.

Default

Restore reverts the recorder to its default values and settings, however it keeps the data required for network settings and user accounts. This command does not remove recordings from the hard drive.

Default clears all your settings and returns the unit to its factory status. This renders the recorder inactive; you must activate it again to resume use. This command does not remove recordings from the hard drive.

Export

The next set of controls allow you to move configuration files between systems.

NOTE: To avoid unintended errors, config files are only transferable between same-model cameras with the matching firmware versions.

Device Parameters: Copies a cfg file from the recorder's configuration.

IP Camera Parameters (NVR only): This collects the camera number, address, management port, channel number, user name, admin password, and transfer protocol of all *non-plug-and-play* cameras connected to the recorder; then saves it as an Excel file to a location you choose.

Pro Tip: Export your configuration settings before making any changes. It is a very useful backup tool; if you keep an archive of dated configuration files, it will be easy to restore your camera whenever it's needed.

Import Config. File

Device Parameters: This imports a config file to your recorder. Click

Browse and select the desired configuration file from the list, then click **Import**. This automatically installs the config file, overwriting the recorder's current configuration. The system reboots after the new config has been installed.

IP Camera Parameters (NVR only): To import IP camera settings to your recorder, click **Browse** and select the desired Excel file in the list, then click **Import**. This automatically installs the camera settings, overwriting the camera's current settings.

The Status indicates the progress of your import.

Update

This section lets you update your system to the latest firmware without having to be physically at your device. Be sure you are running your browser as administrator so you can update the recorder's firmware.

You must first download the new firmware to your computer. Be sure to download the file with the proper number of channels for your device. You cannot update your system directly from the Luma website.

Once you have downloaded the firmware to your local computer, click **Browse** and navigate to it (DVR files have a .dav extension, while NVR files have a .mav extension). Once you have selected the firmware update file, its path shows in the text box. Be sure to select the proper file; nothing prevents you from updating to an older file.

Click **Update**. While you are updating, the camera locks you out of navigating the configuration menus. You can track the status of the update to the right of the status label. Once the update reaches 100%, the recorder reboots (the word *Rebooting* appears near the center of your screen). When it has finished rebooting, it unlocks the configuration menus and you can resume operations.

During an update, if you click on either the log or live page, the update aborts and the system returns to normal operation without the update. If the update hangs for some reason, the update gets safely aborted but the system does not automatically unlock the configuration page. Just click over to the log or live page to resume operations.

Log Tab

This section provides an easily accessed list of events as recorded

by your recorder. The list is initially blank, and remains so until you execute a search.

The columns in this list give, in order:

#: An arbitrary number assigned by the system.

Time: The time stamp showing when the event began.

Major Type: The broad category of event.

Minor Type: The specific subtype of the major type of event listed.

Channel: The channel number of the camera involved. If no camera was involved, this remains blank.

Local/Remote User: This gives the account name used to access the camera.

Remote Host IP: If the system was accessed remotely, this shows the IP address of the user's computer.

If there are a lot of event results shown, you can use the page navigation controls at the bottom to access events not shown.

Filtering the List

At the top of the screen, you can set filters to search for the sorts of events you want to look at. You can select one of the Major Types using the drop-down menu, or choose to view all event types.

Once you have selected a major type, you can select a specific operation from the Minor Type drop-down menu.

Below those, you can select the start and stop time for your search. When you click on one of these, it opens a pop-up with a calendar on top, and a time stamp at the bottom. You can click on any date to select it.

To set the time, you can click on the hour, minute, or second entry to set it. Hours are given in 24-hour time. Minutes and seconds are provided in increments of 5, but when one of these is selected, you can also adjust them up and down by one by using the arrows at the right side of the time display.

Once you have set all your parameters, click **Search** to apply the filters.

If you press **Export**, the current log of events is saved directly to your PC. This opens a standard file-saving dialog box for your system.

Security

Enable SSH: Secure socket handling allows you to use a command line interface to access the recorder. [We recommend that this feature remains disabled.](#)

Smart Motion

The Sections of Each Tab

Area Settings

This defines where in the camera's field the camera looks for the event specified. You set up this option independently for each type of motion on each camera.

Draw Area / Stop Drawing: This button helps you set up the parameters for motion detection. Before drawing a new area, you may need to click **Clear All** to remove the default setting.

Sensitivity: This slider determines how picky your camera is with regards to motion detection. If you are getting false positives, it may be that your camera's sensitivity is too high (for example, it's detecting a curtain moving in the breeze of the air conditioner). Moving the slider to the right makes your camera more sensitive to motion; moving the slider to the left makes it less sensitive.

Threshold (where supported): Measured in seconds, this is the time required to determine whether an event is for example, an intrusion or a crossing.

Percentage (where supported): This sets the minimum required size of the intruding object as compared to the size of the intrusion area (for example, you could set it high enough that it would not detect your cat, but would detect people).

Be sure to click **Save** before leaving this screen.

Arming Schedule

You set up this option for each camera independently.

The main portion of the window shows the schedule for the selected camera. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the camera's scheduled activity. Blue indicates events are active; white means the camera is not enabled during that time.

If you need help, see "Arming Schedule Tool" on page E-5.

Linkage Method

This tab helps you set up the camera to take action when a smart

event occurs, like activating a siren, locking a door, or alerting key personnel. Despite its appearance, this is not a table; it's just an arrangement of columns.

For help on linkages, see “Linkage Control” on page E-8.

Visualint Event Tab

This option is only available on NVR models.

Visualint event allows your NVR to record events set up within your Visualint IP camera.

At the top, select the camera (channel number) and check **Enable** to allow your system to use Visualint event, as well as to set up the schedule.

The main section of the window is divided into two tabs: Arming Schedule, and Linkage Method.

Face Detection Tab

This option is only available on NVR models.

Face detection allows your NVR to record face detection events set up within your IP camera.

At the top, select the camera (channel number) and check **Enable** to allow your system to use face detection. You must also click the Enable Dynamic Analysis checkbox.

After making any changes, click **Save** before switching to another tab or menu item.

Intrusion Detection Tab

This detects people entering an area that you define.

At the top, select the camera (channel number) and check the **Enable** checkbox at the top to activate area intrusion.

After making any changes, click **Save** before switching to another tab or menu item.

Line Crossing Detection Tab

This detects people crossing a boundary of your choice.

At the top, select the camera (channel number) and check the

Enable checkbox at the top to activate line crossing detection. Note that line crossing does not detect movement that goes around the endpoints of the line you define.

To create an area for line crossing detection, click Draw Area just below the screen. Although you don't actually draw the line, this does allow you to adjust the line to use for crossing detection. Move your mouse into the screen display and click on the line. Once it is selected, the endpoints of the line become red boxes. Click-and-drag those lines to arrange the line on the screen. Note that line crossing will not detect movement that goes around the endpoints of the line.

Click the **Clear** button to erase the area so you can try again.

Once you have adjusted the line, use the Direction dropdown menu to determine whether you want to detect movement across the line in one direction or both.

After making any changes, click **Save** before switching to another tab or menu item.

Region Entrance Detection Tab

This option is only available on NVR models.

This detects objects entering a defined area.

At the top, select the camera (channel number) and check the **Enable** checkbox at the top to activate region entrance detection.

After making any changes, click **Save** before switching to another tab or menu item.

Region Exiting Detection Tab

This option is only available on NVR models.

This detects objects exiting a defined area.

At the top, select the camera (channel number) and check the **Enable** checkbox at the top to activate region exiting detection.

After making any changes, click **Save** before switching to another tab or menu item.

Unattended Baggage Detection Tab

This option is only available on NVR models.

This detects items that enter the detection area and stay (instead of

leaving).

At the top, select the camera (channel number) and check the **Enable** checkbox at the top to activate unattended baggage detection.

After making any changes, click **Save** before switching to another tab or menu item.

Object Removal Detection Tab

This option is only available on NVR models.

This detects if an object that is in the defined area is removed from its position.

At the top, select the camera (channel number) and check the Enable checkbox at the top to activate object removal detection.

After making any changes, click **Save** before switching to another tab or menu item.

Storage Management

These tabs help you manage your hard drives and protect against data loss due to drive failures.

HDD Management Tab

This section allows you to set basic functionality for your hard drives.

At the top is a table showing all of the hard drives on your network, their availability to the recorder, as well as other data that may be of interest. You can click on any hard drive to change its properties, or click multiples for a group edit.

R/W, or read-write, is the standard mode of operation. The recorder can use this hard drive normally to record surveillance.

Read-only means the drive is an archive. The recorder can access files stored on that drive, but cannot write files on that drive. Thus files on that drive are protected against being overwritten. In order to add files to an archive drive, you must either change it briefly to read/write, or use some network method to back up files to this drive.

Redundancy makes the drive an automatic backup drive. The system automatically makes a copy of everything it records and saves it onto the redundant drive.

When you press **Set**, the changes that you have specified are made.

From this window, you can also initialize the hard drives. To do so, select them either individually or with the Select All box, and then press **Format**.

Caution: This removes all data from all selected hard drives, and cannot be undone!

Network Drives Tab

Your recorder can track up to eight network drives.

- HDD Number (assigned by the system)
- Server Address: The IP address of the drive
- File Path: The shared folder to which the camera writes
- Type: This is either NAS or SD.

Adding a Network Drive

Click on a line in the Network Drives table. Enter the IP address of the NAS drive and the camera's folder in the fields provided.

Go to the HDD Management tab, tick the checkbox of the drive and click **Format**. After it is formatted, the NAS can record.

The NFS mount type does not require a user name or password when attached to an IP camera. You don't need to create a user on the NAS.

When assigning the NFS permission, select the No mapping for Squash option.

On the Network Drives tab, press **Test** to check connectivity.

If you made changes, be sure to click **Save**.

Editing a Network Drive

Click on one of the lines in the Network Drives table. The line turns dark gray and additional editing boxes appear, as shown here.

3			NAS	✘
Mounting Type	NFS	User Name	Password	Test

Here you can edit the server address (click in its cell), the file path in that server to which you want to data saved, and whether the drive is accessed as a Network File System (NFS) or Server Message Block (SMB/CIFS).

You can create a user name and password for the camera as necessary.

Press **Test** to check connectivity. Click the red **X** to delete all data from that line of the table.

If you made changes, be sure to click **Save**.

HDD Detection Tab

S.M.A.R.T. Settings

Western Digital Purple hard drives are equipped with self monitoring, analysis and reporting technology (S.M.A.R.T.). This feature keeps tabs on various indicators of drive reliability, with the goal of anticipating a drive failure before it happens.

At the very top is a checkbox that allows you to choose whether or not to continue using the selected disk when S.M.A.R.T. indicates that it is likely to fail soon.

HDD lets you choose the selected disk from a dropdown menu.

- Self-test Status gives you the status of the test in progress, or the results of the most recent test completed (if any). It also tells you if no test has been completed.
- Self-test Type is a dropdown that lets you choose the level of testing you want. You cannot stop a test once it has started, but you can still navigate around and do other tasks while it is running. A short test is cursory, but takes just a minute or two. An expanded test is in-depth, and can take several hours to complete. A conveyance test checks for physical damage incurred during transportation; it only takes a few minutes.
- S.M.A.R.T. has a button next to it; pressing this button starts the chosen test for the selected drive.
- Temperature shows how hot the hard drive is, expressed in degrees Celsius. If this is above 60, you need to address your cooling and ventilation system.
- Power On (days) shows how long the unit has been powered up and active. Time that it has been powered off is not counted.
- Self-evaluation shows the unit's current status.
- All-evaluation shows the overall result of the test.
- The S.M.A.R.T. Information table gives the data most recently collected about the unit's function.

Bad Sector Detection

This tab tests your hard drives, hopefully finding errors before they cause a problem for your system.

At the top, select the hard drive you want to test using the HDD No. dropdown menu. You can only test one hard drive at a time. Then select the type of test you want to perform in the dropdown next to the hard drive.

There are two types of tests: key area detection does a quick scan of only the critical portions of each sector of the hard drive, and takes less than a minute; full detection runs an exhaustive testing of the entire hard drive surface, and will take multiple hours to complete,

depending on the size of the hard drive.

Press **Detect** to begin the test. The tests do not suspend surveillance or recording.

As the test executes, it fills in sectors that have been tested with green (for sectors that passed), red (for sectors that didn't), or yellow (for partitions on the drive that are inaccessible to the recorder).

Below this section are various technical data about the hard drive and the current test (if any).

Error Info: Review details of any errors encountered.

Pause (or **Resume**): Suspends or resumes execution of the test.

Cancel: Stops the test completely.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Storage Schedule

These settings tell your system when to engage in various activities (recording, motion detection, etc.).

Select the channel (camera) that you want to edit at the top of the window.

The main portion of the window shows the schedule for the selected camera. Each box covers one hour of time (with a dotted line at the half-hour mark), and is color-coded to show the camera's scheduled activity. See the activity key to the right for explanation; white means the camera is not enabled during that time.

Click **Save** before exiting this screen or switching tabs.

Record Schedule Tab

This tab sets automated recordings from the cameras.

By default, motion detection is enabled 24/7. We strongly advise you to customize these settings for your needs.

This tab uses the standard schedule interface, with the exception of the Advanced button. To adjust the schedule, press **Edit** at the top right. If you need help, see "Arming Schedule Tool" on page E-5.

Advanced Button

This option is only available on NVR models.

Pressing **Advanced** on the Record tab opens a new window with a variety of extra options.

Enable ANR (automatic network replenishment) stores video data on the IP camera's SD card if the network connection to the attached NVR is lost. Once the connection is reestablished, the NVR recovers the video that was stashed on the camera's SD card. This requires an SD card to be installed in the camera.

Pre-record sets your channel to record footage before an event is triggered. The recorder creates a pre-record buffer with a duration (in seconds) set by the menu option you choose. Video from the camera continuously cycles through this buffer until an event is triggered, at which point the buffer becomes the start of the recording. Choosing Not Limited means the camera dumps everything it has buffered.

Note: The pre-record time is limited by the video buffer. If your bitrate is low, then you likely have the video duration to reach the time you set. If your bitrate is high, the pre-record time may be lower than you expected.

Post-record has the camera record additional footage past the end of an event.

Record Audio allows for pre- and post-recording audio, if the camera is capable of it.

Expired Time is the limit in days on how long the system keeps old files. Once recordings and snapshots pass the designated age, they are deleted automatically. Entering 0 removes the time limit; the system will never delete a file because it is old. However, files can always be overwritten if the hard drive gets full and more recording space is needed. See “Enable Overwriting” on page E-16.

Click **OK** (or **Cancel**) to exit the dialog.

Capture Tab

This schedules snapshot images to be taken automatically by the system, in the same way that the Record tab schedules recordings.

Under Capture Parameters you can set the format, resolution, quality, and interval based on a time or schedule.

You may also set format, resolution, quality, and interval based on a triggered event.

By default, the capture schedule is enabled 24/7, however the type of capture is left for you to define. We strongly advise you to customize these settings for your needs.

To adjust the schedule, press Edit at the top right. If you need help, see “Arming Schedule Tool” on page E-8.

System Settings

System Information Tab

This item allows you to rename your recorder, as well as assign it a new ID number (useful for setting network parameters) and matching your recorder to a remote control.

After adjusting your settings, be sure to click **Save** before switching to another window.

The rest of the data provided in this window are provided for reference purposes. This is the place to find your OvrC activation code, as well as which firmware version your system is running.

Time Settings Tab

NOTE: If your camera is hooked to your NVR, it automatically syncs time with your NVR every five minutes, regardless of these settings.

This window lets you choose your time zone, decide how your system will maintain the time, and opt in or out of daylight saving time. After adjusting your time settings, click **Save** before switching to another menu.

Choose your time zone with the drop down menu at the top. North American time zones range from Hawaii (GMT-10:00) in the west to Newfoundland (GMT-03:30) in the east.

Next, choose either network time protocol (NTP) or manual time sync. This determines how your system checks to ensure that its time stamps remain accurate. Selecting one option deselects the other. [We strongly recommend using NTP.](#)

NTP

With NTP, your network pings the national server to synchronize to Coordinated Universal Time. This provides you with your most accurate time stamping. Using NTP requires Internet access.

There is no need to change any of the settings, unless you want to adjust the interval due to bandwidth or precision concerns.

Server Address: This is the site your recorder pings for time stamps.

NTP Port: This port communicates with the time server.

Interval: This shows how often your recorder checks for an update.

Manual Time Sync

With manual sync, your recorder uses its internal clock. [We do not recommend this setting because any electronic system's internal clock can drift. However, this choice is your only option if your network is not connected to the Internet.](#)

Device Time shows the current time setting of the recorder. It cannot be edited here.

Set Time lets you specify a time that you want to use. As soon as you press **OK**, the recorder resets to that time.

Alternatively, you can click **Sync with computer time**. When you click the checkbox, the recorder communicates with the network computer and adjusts its time to match. Although the box remains checked, this synchronization happens only once (the box becomes unchecked when you leave this screen).

DST

The daylight saving time (DST) tool works with both NTP and manual time settings.

By default, daylight saving time is enabled. If your location does not observe daylight saving time, click **Enable DST** to remove the check mark and disable DST adjustment.

The **Start Time** and **End Time** boxes set the month, week, day, and hour (in 24-hour time) that daylight saving time starts and ends.

NOTE: [You are not setting the day and date with this tool. Instead, you are selecting \(for example\) the second Sunday in March.](#)

The **DST Offset** drop-down sets the amount that the time changes.

As of 2016 in the most of the US and Canada, you can keep the default settings.

Places that do not observe daylight saving time include Arizona (outside of Navajo territory), Hawaii, Saskatchewan, and a number of local exceptions across Canada. For Arizona and Hawaii, disable DST. For Saskatchewan, disable DST and set your system to Central Time. For other exceptions, check local regulations.

RS-232 Tab

This command is not available on 4-channel DVR models.

This helps you interface with systems that control devices using the RS-232 protocol (e.g., manned surveillance stations) to set up PTZ control through the recorder.

Check with your system documentation for information on the proper settings for baud, data bit, stop bit, parity, and flow control.

Usage determines what state the system is in. For development and debug purposes, set this to transparent channel. For all other purposes, set it to console.

Click **Save** before exiting this screen.

RS-485 Tab

Check your cameras (individually) for information on the proper settings for baud, data bit, stop bit, parity, and flow control. You should also confirm the appropriate PTZ protocol for your camera and the PTZ address for the camera.

Click **Save** before exiting this screen.

Menu Output Tab

These options let you choose the appearance and operation of the video monitor that is plugged into the recorder.

If you are unsure of the resolution of your monitor, set the Menu Output dropdown menu to **Automatic**. Otherwise, set the dropdown to **HDMI/VGA**, then select your monitor's resolution from the HDMI/VGA Resolution selector. The 510 series now supports resolutions up to 4k. Note that HDMI output of 4k @ 60Hz is not supported on all monitors. Monitors with deep color UHD do not display 4k @ 60Hz video from the recorders. You must revert to 4k @ 30 Hz.

The output selected for the Menu Output will be the main output, which makes the outputs you did not select the aux output. Note that you only receive control if it is selected in the **Menu Output** option for each interface.

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LUM-510-DVR-16CH

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Menu Output
VGA/HDMI2 ▼

VGA/HDMI2 Resolution
1920*1080/60HZ(1080P) ▼

HDMI Resolution
1920*1080/60HZ(1080P) ▼

As always, click **Save** before moving to another window.

Menu Output Behavior For Luma 510 NVRs

	LUM-510-NVR-4CH	LUM-510-NVR-8CH	LUM-510-NVR-16CH
Menu Output Mode	Auto, VGA, HDMI	Auto, VGA, HDMI	Auto, VGA, HDMI
VGA Audio Out	Yes	Yes	Yes
CVBS Audio Out	N/A	N/A	N/A
VGA	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.
HDMI 1	Full control (mouse, CGI, IR) if HDMI is selected as Menu Output mode.	Full control (mouse, CGI, IR) if HDMI is selected as Menu Output mode.	Full control (mouse, CGI, IR) if HDMI is selected as Menu Output mode.
HDMI 2	N/A	N/A	N/A
RS-232	N/A	N/A	N/A
RS-485	N/A	N/A	N/A

Menu Output Behavior For Luma 510 DVRs

	LUM-510-DVR-4CH	LUM-510-DVR-8CH	LUM-510-DVR-16CH
Menu Output Mode	Auto, VGA, HDMI 1, HDMI 2	Auto, VGA, HDMI 1, HDMI 2	Auto, VGA, HDMI 1, HDMI 2
VGA Audio Out	Yes	Yes	Yes
CVBS Audio Out	N/A	Yes	Yes
VGA	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.	Full control (mouse, CGI, IR) if VGA is selected as Menu Output mode.
HDMI 1	Full control (mouse, CGI, IR) if HDMI 1 is selected as Menu Output mode.	Full control (mouse, CGI, IR) if HDMI 1 is selected as Menu Output mode.	Full control (mouse, CGI, IR) if HDMI 1 is selected as Menu Output mode.
HDMI 2	N/A	Full control (mouse, CGI, IR) if HDMI 2 is selected as Menu Output mode.	Full control (mouse, CGI, IR) if HDMI 2 is selected as Menu Output mode.
RS-232	N/A	Yes	Yes
RS-485	N/A	Yes	Yes

About Tab

This tab lists the Open Source Software Licenses used.

User Management

This page lets you add, edit, or remove users from the system.

User Management Tab

Adding Users

Click the **Add** button.

Enter the new account's user name and password. Account names can be up to 32 characters long, and can contain numbers and letters. It cannot contain spaces, dashes, or underscores. We recommend that you add accounts by individual users' names (e.g., JohnSmith), so that if someone reboots the system or erases a log, you know which user did it.

Enter the user's password. It can be up to 16 characters long. Since most hacks come from automated programs, use a password that is long and easy to remember. A password like *parisinthefspring* is more secure and easier to remember than a password like *P4S\$w*rD*. To ensure compatibility with the local interface, passwords can only contain numbers, letters, and the following special characters: . - _ : / @ , ? ! ' ; () \$ & " [] { } # % ^ * + = \ | ~ < > `

Choose the account's level. There are two levels: operator and user. The only difference between them is the default permissions they are given (an operator has more camera control than a user). However, you can customize permissions for each account individually.

Entering a value in the MAC Binding box ensures that the user can only log in using the device with that specific MAC address, and prevents the user from logging in from any other system. This is useful to prevent an employee from logging into the corporate system from a home computer, for example.

Finally, assign tasks that are allowed for that specific user. *Local* tasks are ones the user can do while physically accessing the recorder by using its attached mouse. *Remote* tasks are those the user can do while using the web interface to control the surveillance system.

Click **OK** to save the new user, or **Back** to cancel creating that user.

Editing a User

Click on the desired account in the table of users, then click **Modify**. All controls are the same as for adding a user.

You cannot change anything about the admin account other than its password.

Deleting a User

Click on the account in the table of users, then click **Delete**. There is no undo option.

Security Question Button

Here you can create security questions to allow you to reset your admin password when you forget it.

Export GUID File Button

This allows you to export your recorder's globally unique identifier.

Online Users Tab

This displays the details of all users that are connected to the recorder over the Internet.

Video/Audio

Video Tab

This lets you set the performance characteristics of your cameras and streams.

When finished, be sure to click **Save**.

On the Luma DVR, you can also use **Copy to...** to duplicate that stream's settings (only) from the selected camera to other cameras.

Camera and Stream Selection

Camera lets you choose which camera (channel) you want to adjust.

Stream Type identifies whether you are editing the settings for the main stream for that camera (used when observing that camera's view by itself) or the sub stream for that camera (used when observing several cameras in grid mode).

You can also select whether the main stream is being used for normal surveillance or for recording during an event. The Main Stream (Event) setting is derived from the normal setting, except you can adjust the frame rate and maximum bitrate.

Settings

With the NVR, note that many settings for sub stream cannot be edited if the camera is not capable of accepting those edits.

Video Type: Determines whether you want audio (if the selected camera is audio-capable).

Resolution: Determines the quality of video delivered. The data in these fields are automatically detected from the individual camera features, although you can adjust the resolution you want. You can set the camera's resolution down from its rated resolution if you need reduced bandwidth.

Bitrate Type: Lets you choose whether you want the system to adjust how much data it sends based on bandwidth (variable) or whether it should always send a fixed amount of data (constant). The advantage of constant rate is that it is predictable and consistent, as long as your system can handle the load. Variable is best for congested networks, because the camera sends less data if no motion or alarms are active. However, this can result in lost data while a

camera decides that motion has been detected.

Video Quality: If you choose variable bitrate (above), this lets you determine how low video the quality can go. Lower settings free up more bandwidth at the expense of clarity. Note that if you switch back to constant bitrate, this field does not update; refresh your browser if needed.

Frame Rate: This determines how many frames per second the camera records for the selected stream.

- For recording events (main stream), 10–15 frames per second is large enough. It is typically unnecessary to record surveillance footage with frame rates rivaling film and television.
- For normal recording (that is, when there is no cause for concern), 2–4 frames per second is good enough. Note that if the NVR cannot read the data from the IP camera, it will display its default setting.

Maximum Bitrate: Enter the maximum data-transmission value you want for the camera. This choice depends on your camera, the processing capacity of your recorder, and the load on your network.

Video Encoding: At the moment, H.264 is the only encoding method supported. This item is here for forward compatibility with future upgrades.

H.265+: Enable this if it is supported by the camera. This only appears if at least one camera supports it.

Display Info. on Stream Tab

This option is only available on NVR models.

Here you can check the Enable Dual-VCA box to show motion boxes, and virtual lines you have drawn across your camera view.

Channel-zero Tab

Channel-zero takes all of the cameras directly attached to your system and converts their various signals to a single image stream. This makes it easier to view the aggregate stream on your mobile device. It is not used for either your local interface or the web interface.

You may view channel zero using your control system or your

mobile app. On the mobile application, channel Zero can be viewed on the ninth grid location.

If you check **Enable Channel-zero Encoding**, it activates the controls on this page.

You can then set the maximum bitrate in kilobits per second, as well as the maximum frame rate for your system.

Click **Save** before leaving this page.



LUM-510 Series
Surveillance Recorders

**Local
Interface**

Local Interface

Contents

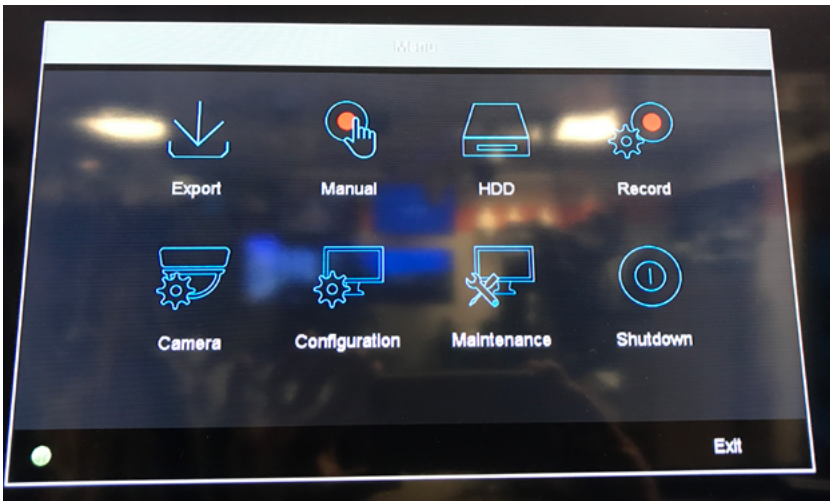
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Introduction

These tools are accessible by using the mouse and monitor directly attached to your recorder. If possible, we recommend you use the web interface, as these tools have been revised for greater ease of use.

Exit

Clicking this (at the lower right of the Settings window) returns you to the live view page.



Export

This window lets you search recorded files and download them to your computer.

Normal

This option searches your continuous (normal) recordings for specific types of events within them. For example, it can find a motion event within a continuous recording.

Choose which channels you want to include in the search. You can click channels individually, or click the checkbox at the left to choose them all.

The text box labeled *Start/End time of record* tells you what span of times are available for searching.

Under Record Type, choose what type of recording you wish to search for.

Under File Type you can filter by whether or not the file is locked (you can lock files in the search results window).

Select your start and end times for your search. Pick the dates by clicking on the date field and picking from the calendar. Set the times by clicking on the time field and adjusting the readings.


Quick Export (NVR only) exports all files from the last 24 hours.

Click **Search** at the bottom. The search results window pops up, showing all files that match the filters.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Search Results Window

Select one or more files using the checkboxes to the left.

You can review the recordings by pressing the **Play** icon  next to the file size.

Export downloads the selected recordings (with audio, if available), while **Export All** downloads all files shown in this window. These files export to an external drive (USB drive or eSATA).

Event

This option searches for recordings that were initiated by motion detection or other triggers. Files that were initiated by a scheduled recording session show up in the Normal page, above, even if they have motion detection events within them.

Choose the event type from the dropdown menu.

Select your start and end times for your search. Pick the dates by clicking on the date field and picking from the calendar. Set the times by clicking on the time field and adjusting the readings.


Choose which channels you want to include in the search. You can click channels individually, or click the checkbox at the left to choose them all.

Click **Search** at the bottom. The search results window pops up, showing all files that match the filters.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Search Results Window

Each item in the list shows the source camera, the start time, and the end time. You can view additional files by using the page navigation buttons.

In addition, you can review the recordings by pressing the **Play** icon  next to the file name.

Select one or more files using the checkboxes to the left. The **Export** button downloads the selected recordings (with audio, if available), while **Export All** downloads all files shown in this window. These files export to an external drive (USB drive or eSATA).

Picture

This search parses your digital recordings into snapshots to make it easy to select an individual frame.

Choose the channels you want to include in the search. You can choose the channels individually, or click the checkbox at the left to select all of them.

Use the dropdown to select the category of recording to browse.

Select start and end times for your search. Pick dates by clicking on

the date field and picking from the calendar. Set times by clicking on the time field and adjusting the readings.

Click **Search** at the bottom. The search results window (below) pops up, showing all files that match the filters.

Click **Back** to return to the settings menu, or Live View to return to the live page.

Search Results Window

Each item in the list shows the source camera, the drive the file is stored on, the time the photo was taken, and the file size. You can view additional files with the scroll bar and the page navigation buttons.

Select files using the checkboxes to the left.

Export downloads the selected photos, while **Export All** downloads all photos shown in this window. These files export to an external drive (USB drive or eSATA).

Manual

Here you can set the basic recording parameters of your cameras.

Record

This lets you control whether or not your cameras are recording.

Click a channel to turn recording for that camera on or off. Click the box to the left to make all cameras go on or off.

When switching cameras off, this overrides any scheduled recording that takes place. When switching them on, they are set to manual recording.

Neither of these settings changes or alters the schedule, however these changes remain in place until the next scheduled change in activity. **Caution: If your recorder is set to use just one activity 24/7, your schedule never changes and your recorder will continue with your override until you change the schedule.**

Alternatively, press the starbursts labeled Continuous or Motion Detection to start all channels on that operation.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Continuous Capture

This lets you control whether or not your cameras are recording snapshots. However, instead of recording one long surveillance file, it saves all recording as independent images.

Click on a channel to turn continuous capture for that camera on or off. Click on the box to the left to make all cameras go on or off.

When switching cameras off, this overrides any scheduled capture that takes place. Switching them on sets them to manual capture.

Neither of these settings changes or alters the schedule, however these changes remain in place until the next scheduled change in activity. **Caution: If your recorder is set to use just one activity 24/7, your schedule never changes and your recorder will continue with your override until you change the schedule.**

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Alarm

This shows the alarms that are available in your system, as well as their current status. **Trigger** activates the selected alarm(s). **Trigger All** to activates all alarms on your system.

You can click **Clear All** to cancel all alarms. This does not affect their settings; it just ends the test.

Manual Video Quality Diagnostics

This option is only available on DVR models.

This page let you perform a quick diagnostic test on the system's cameras.

At the top, select the cameras to test. You can click the checkbox at the left to select all cameras at once.

Press **Diagnose** at the bottom of the page. After a few seconds to a minute, the center of the page displays the testing results.

Channels that have no attached cameras show as normal in this test result.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

HDD

This section helps you manage your hard drives.

General

This provides information on all hard drives in the system.

In quota mode, you cannot edit the hard drives' parameters. Quota mode is the factory default setting; to change to group mode, go to the Advanced page, select group mode at the top, then click **Apply**. The system reboots to initialize the new mode.

In group mode (see "Advanced", below), you can edit the various drives by clicking the **Edit** icon, which opens the edit window (below).

If a hard drive is connected over a network, you can remove it from the recorder's list by clicking the **Delete** icon. You cannot delete a hard drive that is installed in the recorder itself.

At the bottom, click **Add** to fetch a hard drive that is connected over the network. Select a NetHDD slot for the drive, select its type, enter its IP Address, and its NetHDD directory. If you do not know the directory, you'll have to use the web interface to find it; see "Network Drives Tab" on page E-43.

On the DVR only, you have the option to enable RAID. RAID (Redundant Array of Independent Disks) is a data storage virtualization technology that combines multiple physical disk drive components into one or more logical units for the purposes of data redundancy and performance improvement.

To initialize one or more hard drives, select them by clicking the checkbox to the left of the hard drive label. Click **Init** to initialize the selected hard drive(s), erasing all information on it. **Note that this cannot be undone!**

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Edit Window

Here you can set the hard drive's property to read/write (normal), read-only (archive), or redundancy (back-up). You can also set its group number.

Click **Apply** when finished.

Advanced

On the DVR only you have the option to enable RAID. RAID (Redundant Array of Independent Disks) is a data storage protocol that combines multiple physical disk drive components into one or more logical units for the purposes of data redundancy, performance improvement, or both.

Mode sets the system methodology to allocate hard disk space to quota mode or group mode. To change the mode, select your desired mode at the top, then click **Apply**. The system reboots to initialize the new mode.

Quota Mode

Quota mode gives each camera its own allocated capacity, as shown. Cameras that use space in excess of that use the free quota space.

Choose the camera's channel number from the dropdown, assign its maximum recording capacity, and click **Apply**. Once you've done that, you can click **Copy** to assign that setting to other cameras.

Used Record Capacity shows the amount of space that camera has recorded thus far. This is informative; it cannot be edited.

Used Picture Capacity shows the amount of space that camera has filled thus far. This is informative; it cannot be edited.

HDD Capacity gives the total free capacity of the drive. This is informative; it cannot be edited.

Max. Record Capacity is the amount of space you set aside as this camera's quota for recordings. No other camera can overwrite this data.

Max. Picture Capacity is the amount of space you set aside as this camera's quota for pictures. No other camera can overwrite this data.

Free Quota Space is the remaining space on the drive, after subtracting out all the cameras' quotas (but not subtracting space used by overflow). This is informative; it cannot be edited.

Enable HDD Sleeping saves on power usage when nothing is being recorded. The hard drive stops spinning when it is not in use. Internal buffers should prevent any loss of data while the hard drive spins up again to continue recording.

Click **Copy** to duplicate the current camera's quota setting to other cameras.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Group Mode

Group mode is similar, but assigns groups of cameras to record on a specific hard drive designated for that group. You can have as many camera groups as you have hard drive groups. To assign a hard drive to a group, go to the General page (above) and edit the drive.

Select the cameras that you want assigned to a given hard drive group, then choose the associated hard drive group and click **Apply**, at the bottom.

Enable HDD Sleeping saves on power usage when nothing is being recorded. The hard drive stops spinning when it is not in use. Internal buffers should prevent any loss of data while the hard drive spins up again to continue recording.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Disk Clone

You can manually clone all the data on the HDD to an inserted eSATA disk. Make sure the usage of the eSATA disk is set as Export. The capacity of destination disk must be the same as that of the clone source disk. Check the box of the HDD to be cloned in the Clone Source list, then click **Clone**.

Record

This sets up specific activity on the camera based on the time of day.

Schedule

Both **record** and **Capture** (for snapshots) are structured identically.

At the top, select the camera you wish to edit, then ensure that **Enable Schedule** is selected. If scheduling is not enabled, you will only be able to record manually.

To modify the schedule, click **Edit**.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

At the bottom, click **Apply** to save the changes you have made.

Copy duplicates the current camera's settings to other cameras.

Edit Window

Choose the weekday (or pick *holiday*, if holidays are enabled) to schedule with the dropdown at the top of the window.

You can schedule to use an activity all day by clicking the **All Day** checkbox and choosing the activity to the right.

Alternatively, you can set the camera's activity hour-by-hour, even minute-by-minute. To adjust the schedule, deselect **All Day**, then click any of the time segments and enter new start and stop times (shown in 24-hour format). You can define up to eight separate time spans. During time spans not covered, no automatic camera recording takes place.

At the bottom of the window, click **Apply** to save the changes you have made.

Click **Copy** to copy the schedule to other days of the week (numbered 1–7, with Monday numbered 1).

Parameters

This window defines the settings for your recordings.

Click **Apply** to save the changes you have made, including using the **Restore** button, before you switch cameras or go to a different tab.

Copy (where supported) duplicates the current camera's settings

to other cameras. The system does its best to duplicate the settings based on the target camera's capabilities.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Record Tab

This sets the parameters for when the camera is recording either continuously or due to an event. This is the camera's main stream.

Choose a channel to edit. Below that are two columns for the stream types.

Stream Type determines whether to include audio on channels that are capable. You must also enable audio using the checkbox below.

Resolution shows the quality you want for that type of recording.

Bitrate Type can be set to variable, to adapt to network traffic, or constant for reliable resolution.

Video Quality sets the level of compression your recorder uses. Higher compression means smaller file size but also means lower video quality.

Frame Rate shows how often the camera records a frame. For most installations, 10–15 frames per second is adequate. Full Frame is 30 frames per second, which is equivalent to movie theaters.

Max Bitrate Mode affects how you choose your maximum bitrate. Selecting General gives you a variety of stock choices. Selecting Custom lets you use the virtual keyboard to enter any number between 32 and 6144.

Max Bitrate (Kbps) is where you actually determine your maximum bitrate. This will either be a dropdown or a manual entry, based on your choice above.

Max Bitrate Range Recommended is not editable. It provides a recommended speed based on throughput for typical installations.

Video Encoding is the encoding format the camera is using.

Enable H.264+ or 265+, when enabled, lets the camera take advantage of H.264+ or 265+ if supported.

More Settings reveals the following:

- **Pre-record** sets the channel to create a pre-record buffer with a duration (in seconds) set by the menu option. Video

from the camera continuously cycles through this buffer until an event is triggered, at which point the buffered video is appended to the start of the recording. Choosing Max means the camera dumps everything it has buffered.

NOTE: The pre-record time is limited by the video buffer. If your bitrate is low, then you likely have the video duration to reach the time you set. If your bitrate is high, the pre-record time may be lower than you expected.

- **Post-record** has the camera record additional footage past the end of an event.
- **Expired Time** is the limit in days on how long the system keeps old files. Once recordings and snapshots pass the designated age, they are deleted automatically. Entering 0 removes the time limit; the system never deletes a file because it is old. However, files can always be overwritten if the hard drive gets full and more recording space is needed. See “Advanced” on page F-15 for more.
- **Record Audio** determines if the recording is visual only, or audio as well, for channels that are audio capable. We recommend that this remain checked.
- **Video Stream (DVR only):** Main stream, Sub-stream and Double-stream are selectable for recording. When you select sub-stream, you can record for a longer time with the same storage space.

Substream Tab

This sets the parameters for when the camera is being viewed as a sub stream. This is typically used in grid mode.

Choose a channel to edit.

Stream Type determines whether audio is included.

Resolution shows the quality you want for that type of recording.

Bitrate Type can be set to variable, which adapts to network traffic, or constant for reliable resolution.

Video Quality is locked at medium on DVR models.

Frame Rate shows how often the camera records a frame. For most installations, 10–15 frames per second is adequate. Full Frame is 30 frames per second, which is equivalent to movie theaters.

Max Bitrate Mode affects how you choose your maximum bitrate.

Selecting General gives you a variety of stock choices. Selecting Custom lets you use the virtual keyboard to enter any number between 32 and 6144.

Max Bitrate (Kbps) is where you actually determine your maximum bitrate, This will either be a dropdown or a manual entry, based on your choice above.

Max Bitrate Range Recommended is not editable. It provides a recommended speed based on throughput for typical installations.

Video Encoding is a dropdown menu that contains the encoding formats available.

Capture Tab

This sets the parameters for when the camera is taking snapshots. This has two columns, one for snapshots taken when continuous recording is scheduled, and one for events.

Resolution sets the definition of the snapshot. Choosing AUTO lets the NVR choose the resolution.

Picture Quality determines how much compression is used. Higher compression equals lower quality.

Interval controls how many seconds the recorder pauses between each consecutive snapshot.

Advanced

On DVRs only, you may enable or disable H.264+/H.265+ for all the analog cameras.

Overwrite enables the recorder to overwrite old surveillance files with new data when the hard drive becomes full.

eSATA (not available on 4-channel NVRs) let you select an attached drive to edit.

Usage (not available on 4-channel NVRs) determines whether the selected eSATA is used as active storage for snapshots and video or as a designated target for file exports.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Holiday

This screen lets you specify up to 32 different holiday times (note the scroll bar at right). Holidays are used by your camera's scheduling tools to define different camera behavior on special days (e.g., holidays, planned vacations, open houses, etc.).

If you enable holidays, be sure to set the camera behavior for those days on your recording schedules.

The holiday chart shows the name and date(s) of each holiday, as well as whether or not it has been enabled. Disabled holidays do not affect your system's performance.

To edit a holiday, click the pencil icon to the right. This brings up a small dialog box.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Edit Holiday Window

Enter the holiday's name in the box, and enable it (if desired).

If the holiday is on a fixed date (e.g., New Year's Day is always January 1st), then choose *By Month* from the Mode selector, and select the start and end dates. A holiday starts at 12:00 a.m. on the start date, and ends at 11:59 p.m. on the end date, so it's okay for a holiday to start and end on the same day.

If the holiday has a floating schedule (e.g., Thanksgiving is the fourth Thursday of November in the USA and the second Monday of October in Canada), then select *By Week* from the Mode dropdown. This lets you specify the month, week of the month, and day of the week that the holiday begins and ends.

For holidays that are not scheduled by the civil calendar (e.g., Easter, which can take place in March or April), you'll just have to edit the holiday dates each year.

Camera

These pages allow you to customize a variety of special effects for your cameras.

Camera

IP Camera Tab

This option is only available on NVR models.

This presents the current status of all attached cameras. Network cameras in excess of your NVR's capacity are not shown.

Show Password of IP Camera: When checked, you must enter the admin password when loading this page. If you do not, the camera's password is not displayed.

POE Password: This button allows you to change the passwords for all attached cameras at once. We strongly recommend you change your camera passwords from their default values.

Camera Number: This is the channel for that camera.

Add/Delete: This lets you attach a camera over the network.

Status: This shows a warning triangle if there is an issue with the camera. If there is no warning icon, you can click the **Play** button to see the camera's live view.

Security: Shows the strength of the password.

IP Camera Address: This shows the camera's IP address if it is connected to the NVR over a network. If connected to the NVR, it shows the internal IP address that the NVR uses.

Edit: Calls the Edit pop-up window (discussed below).

Update: This updates your Luma cameras (or use OvrC).

Camera Name: Give the camera a name to remind you where it is.

Protocol: Select the system you want the recorder to use.

Device Model: Not editable.

Management Port: This is the camera's server port number.

Serial Number: Gives the camera's serial number.

Firmware: The version of firmware installed on the camera.

Advance Settings: The Network section allows you to update the individual camera's IP address and server port. The Password section lets you to change the password for the individual camera.

The **Refresh** button reloads the contents of the page.

One-Touch Activate: Allows you to activate the cameras at once.

Update: Click this to confirm changes made to the selected camera. The camera reboots.

Custom Adding: This lets you add cameras found on the network.

Enable H.265: This enables the recorder to take advantage of H.265 (if supported by connected cameras).

Edit Window

IP Camera Number is not editable; you select from the assigned numbers.

Adding Method: Choose Plug-and-Play or Manual. If you choose PnP, the remainder of this section is locked and cannot be edited. If you choose manual, you can edit the following fields.

IP Camera Address: This is used to log into the camera itself.

Protocol: Which method the camera uses for communications.

Management Port: This is the server port. Your NVR uses it to communicate with your Luma IP cameras and Luma mobile app.

Channel Port: This lets you select which of the device's channels you wish to connect to. This number is always 1 for cameras, because they have only one channel. If the connected device is an encoding device with multiple channels, choose the channel by selecting the channel port number in the dropdown list.

Transfer Protocol: Choose TCP, UDP, or Auto.

User Name: This is used to log into the camera itself.

Password: This is used to log into the camera itself.

Camera Name: This is the name of the camera.

Protocol Window

You can create up to 16 custom protocols. This lets you add cameras that only have RTSP streams available.

Select the transfer protocol, port and path for the camera to add it.

IP Camera Import/Export Tab

Here you can import/export IP camera configuration files from/to a USB or eSATA device.

PoE Configuration Tab

Here you set up the PoE overdrive feature and monitor the power consumed by each PoE port on the NVR. PoE overdrive lets you run an Ethernet cable up to 250m (as opposed to 100m as supported by the 802.3af standard).

Signal Input Status

This option is only available on DVR models.

Here you enable 5 MP long distance transmission on supported cameras.

OSD

This page allows you to add a variety of text to the channels. Each camera can have its own custom on-screen display.

Select the camera to edit.

You can give that camera a name (for example, *front door*) to clarify its field of coverage.

To the left, a screen shows how the selected camera currently looks. You can click and drag a text box in the screen to reposition it. To view the results of these changes, or changes made to the selections at right, click **Apply** at the bottom of the window

To the right, you can adjust the display with the following:

- **Display Name:** to show the camera name.
- **Display Date:** to show the date, formatted as below.
- **Display Week:** to show the weekday, if the date is displayed.
- **Date Format:** this determines how the date shows up for this camera's on-screen display. The weekday (if selected) and time always show up after the date.
- **Time Format:** 12-hour or 24-hour, for the on-screen display.
- **Display Mode:** Choose whether you want the text on this camera to be transparent and/or flashing.
- **OSD Font:** This determines how large the on-screen font is.

This option is only available on DVR models.

Click **Copy** to duplicate the current camera's settings to other cameras. This option is only available on DVR models.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Image

This page lets you set a variety of enhancements to get the best picture possible.

Choose the camera you want to edit with the selector at the top.

On the DVR you can choose the time segment that you want to edit. You can apply different image adjustments at different times to adapt to changing lighting situations. There are two time segments.

- **Time segment 1** is applied during a span of time that you specify. Adjust this spread by clicking the text box to the right. Note that time segment 1 cannot spread across midnight.
- **Time segment 2** applies at all times other than the spread defined by time segment 1.

Mode lets you select a basis for fine-tuning. Test the mode that works best for your situation.

For the following controls, you can click the up and down arrows to move the settings by one, click and hold the arrows to scroll the values, or drag the slider to set the value.

- **Brightness:** The overall lightness of the picture as a whole.
- **Contrast:** The variance between very dark and bright areas.
- **Saturation:** Low saturation makes the picture black and white; high saturation fills it with color.
- **Hue:** This adjusts the color of the picture to compensate for any shift from lighting.
- **Sharpness:** At higher sharpness settings, the picture is adjusted to enhance edges.
- **Denoising:** This removes random noise for a smoother picture.

On Luma DVRs, you can click **Restore** to return the camera to its default settings.

On Luma DVRs, **Copy** duplicates the current camera's settings to other cameras.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

PTZ

If you have PTZ-capable cameras on your system, you can use this page to create presets, patterns, and patrols.

At the top, select the camera you wish to edit.

Preset

Presets are fixed combinations of direction and zoom that your camera can move to. Each camera can have a number of presets defined for it, and these are stored on the camera itself, not on the recorder.

Click in the dialog to the right to enter a number for the preset. Adjust the camera's orientation using the PTZ panel below the screen, then click **Set** to create that preset.

Click **Clear** to remove that preset, or **Clear All** to remove all presets.

Patrol

Patrols are a set sequence of presets that the camera uses to continually scan its surroundings. Each camera can have several patrols defined for it. These patrols are stored locally on the camera, not the recorder, and the quantity it can have is based on the camera's capabilities.

To create a patrol, first choose the patrol you wish to edit in the selection box. Adjust the camera's orientation using the PTZ panel below the screen, then click **Set** to create the first waypoint used by that patrol. Continue adding waypoints until you are satisfied.

Click **Clear** to remove that patrol. Click **Clear All** to remove all presets from memory.

Pattern

This command recalls (replays) a series of motions that you programmed the camera to perform. To call a pattern, press the **Start**

button. Press **Stop** when you wish to end the pattern.

Linear Scan

This command establishes limits on the horizontal plane (left to right) that the camera will not move past. This prevents the PTZ camera from turning so far that it's looking at a brick wall or gutter.

Other Controls

Click **PTZ Parameter Settings** to open a window that gives you a variety of information about your RS-485 connection. You can edit the recorder's protocol as well as its address. For analog cameras, we recommend the HIK-C (Coaxitron) protocol. Alternatively, use the UTC protocol.

Click **Copy** to assign the current camera's settings to other cameras. [This option is only available on DVR models.](#)

Below the screen is a set of PTZ controls. This section is a duplicate of the control on the PTZ Control tab accessed through the live page.

The aim controls are a grid of eight buttons that let you pan your camera left and right, tilt it up and down, etc. The button in the center performs a 360° pan.

At the top right, the Zoom controls let you zoom the camera in or out, using the + and – buttons to either side.

In the center right, the Focus controls let you adjust the visual feed, using the + and – buttons to either side. The + button focuses the lens on objects close to the camera, and the – button makes it focus on objects that are farther away.

To the bottom right, the Iris controls let you determine how much light reaches the camera, using the + and – buttons to either side. This affects both the brightness of the screen and the depth of field.

Below the button grid, the Speed slider determines how rapidly your camera pans when manually commanded to change its orientation using the Aim controls. When moving to a preset alignment, the camera uses top speed.

At the bottom, clicking **PTZ** sends you to the live page, with a full-screen view of that channel with the PTZ control panel activated.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Motion

This window let you set the parameters of where your camera looks to detect motion (for example, you can have it detect motion on the client side of a teller's window, and not on the teller's side).

You can set a custom area on each camera for motion detection. At the top, select a camera and check **Enable Motion Detection**.

Choosing an Area

To the left, the camera view shows the area being used for motion detection. By default, this is the entire screen. If you want to use only a portion, click **Clear** to remove the defined motion detection zone.

Click and drag on the screen to create a new area for motion detection.

Click on the **Settings** starburst icon to set up a trigger, schedule, and alert linkage method.

Below the settings starburst, **Sensitivity** determines how picky your camera is with regards to motion detection. If you are getting false positives, it may be that your camera's sensitivity is too high (for example, it's detecting a curtain moving in the breeze of the air conditioner). Moving the slider to the right makes your camera more sensitive to motion; moving the slider to the left makes it less sensitive. Drag the slider to set the value.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Motion Detection Settings Window

The trigger channel tab allows you to define which cameras start recording when motion is detected. This defaults to the selected camera only, but others can be added. Click **Apply** to save the changes you have made.

The arming schedule tab lets you determine when motion detection is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when motion detection is active. During time spans not covered, motion detection will not cause an alarm. Click **Apply** to save

the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The linkage action tab lets you choose what the additional actions or alerts the recorder performs when the camera detects motion. Click **Apply** to save the changes you have made.

Privacy Mask

At times, there may be areas under surveillance that you want to exclude from visibility (e.g., a security keypad), or be required to block by law (e.g., a neighbor's window). These areas can be protected by a privacy mask. For legal reasons, the recording data covered by a privacy mask is lost forever.

At the top, you must select a camera and check **Enable Privacy Mask** to use this feature.

You can designate up to four areas on each camera for a privacy mask. To create an area for a privacy mask, click and drag the mouse in the camera view. You can resize an area by hovering the mouse over a border; when the mouse pointer turns into a double-headed arrow, you can click and drag to move that side of the area.

You can use the buttons on the side to clear all masks, or to clear individual areas by their color.

At the bottom, click **Copy** to duplicate the current camera's privacy settings to other cameras. [This option is only available on DVR models.](#)

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Video Tampering

Video tampering detects the attempt to obscure a camera's surveillance by blocking its view or covering its lens.

You set up this option for each camera independently. Generally, there is no reason not to have video tampering detection on.

At the top, choose a camera to edit. Check **Enable Video Tampering Detection** to set up the selected camera's detection operations.

Click on the **Settings** starburst icon to set up a schedule and an alert linkage method.

Below the settings starburst, **Sensitivity** determines how picky your camera is with regards to tampering detection. If you are getting false positives, your camera's sensitivity is set too high. Moving the slider to the right makes your camera more sensitive to motion; moving the slider to the left makes it less sensitive. You can click the up and down arrows to move the settings by one, click and hold the arrows to scroll the values, or drag the slider to set the value.

At the bottom, click **Copy** to duplicate the current camera's tamper settings to other cameras. [This option is only available on DVR models.](#)

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Video Tampering Settings Window

The arming schedule tab lets you determine when video tampering is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when video tampering is active. During time spans not covered, video tampering will not cause an alarm.

Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The linkage action tab lets you choose what the additional actions or alerts recorder performs when the camera detects tampering. Click **Apply** to save the changes you have made.

Video Loss

Video loss is the interruption of a signal from a given camera. This may be caused by a power loss, someone cutting a cable, or a camera defect. You set up this option for each camera independently. Generally speaking, there is no reason not to have video loss detection on.

At the top, select the camera (channel number) and check **Enable**

Video Loss Alarm to enable your system to detect a loss of signal from the selected camera and send a warning of some sort.

Click on the **Settings** starburst icon to set up a schedule and an alert linkage method.

At the bottom, click **Copy** to duplicate the current camera's settings to other cameras. [This option is only available on DVR models.](#)

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Video Loss Detection Settings Window

The arming schedule tab lets you determine when video loss detection is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when video loss detection is active. During time spans not covered, video loss will not cause an alarm.

Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The linkage action tab lets you choose what the additional actions or alerts recorder performs when the camera detects a video loss. Click **Apply** to save the changes you have made.

Video Quality Diagnostics

[This option is only available on DVR models.](#)

These commands issue a number of tests for your cameras. Once performed, these tests are finished; the camera does not continuously perform them.

At the top, select the camera (channel number) and check **Enable Video Quality Diagnostics** to enable your system to test the selected camera and send a warning of some sort if it fails.

Click on the **Settings** starburst icon to open the settings window and set up a schedule and an alert linkage method.

The Diagnostics Mode section (to the right of the screen) lets you set thresholds. For each setting, click on the checkbox to include it in

testing. Then click the up and down arrows to change the settings by one, click and hold the arrows to scroll the values, or drag the slider to set the value.

- Blurred Image
- Abnormal Brightness
- Color Cast

At the bottom, click **Restore** to return the camera to its defaults.

Copy duplicates the camera's diagnostic settings to other cameras.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Video Quality Diagnostics Handling Window

The arming schedule tab lets you determine when video loss detection is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when video loss detection is active. During time spans not covered, video loss will not cause an alarm.

Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The linkage action tab lets you choose what the additional actions or alerts recorder performs when the camera detects a video loss. Click **Apply** to save the changes you have made.

VCA

VCA allows you to record smart motion events set up within your camera. At the top, select the camera and check **Enable** to allow your system to use VCA. However, you can only click on VCA events supported by your camera.

Settings: Click the starburst to the right to open a dialog that allows you to choose the trigger channels, set the arming schedule, select linkages, and adjust PTZ settings.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Configuration

These windows customize your recorder's interface and display.

General

These set basic parameters like date, time, and basic controls.

General Tab

Language: Can only be set to English.

Resolution: This sets the resolution for the local monitor. You can set the resolution for the VGA and HDMI outputs.

Choose your **Time Zone** using the drop down menu. North American time zones range from Hawaii (GMT-10:00) in the west to Newfoundland (GMT-03:30) in the east.

Date Format: This format propagates throughout the internal menus of the recorder, but not to the live page or the cameras.

System Date: Pick the current date from the calendar.

System Time: Click on this to adjust the current time.

Mouse Pointer Speed: Drag this slider to determine how fast the mouse moves when using the local interface.

Enable Wizard: if you have disabled the wizard from running each time you reboot the recorder, select this to reinstate the wizard.

Enable Password: This resets the password on all IP cameras directly connected to the recorder. You can now use plug and play for all directly connected cameras, which speeds up install time. This has no effect on analog cameras.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

DST Settings Tab

This page lets you edit daylight saving time for your system.

By default, automatic adjustment for daylight saving time is enabled for the standard US/Canadian format.

If your location does not observe daylight saving time, click this box

to remove the check mark and disable automatic DST adjustment, then click the checkbox labeled **Enable DST** to deselect it, as well.

If your location uses a different DST setting than the US or Canada, leave **Enable DST** checked, and manually select when it starts and stops. The Start Time and End Time boxes let you set the month, week, day, and hour (in 24-hour time) that daylight saving time starts and ends. The DST Offset box lets you choose the amount that the time changes.

Places that do not observe daylight saving time include Arizona (outside of Navajo territory), Hawaii, Saskatchewan, and a number of local exceptions across Canada. For Arizona and Hawaii, just disable DST. For Saskatchewan, disable DST and set your system to Central Time (at the top of the window). For other exceptions, check local regulations.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

More Settings Tab

Device Name: Give your recorder whatever name you like for your network controls.

Device No.: Number this as you like.

Disable Remote Controller: Clicking this disables the use of the IR remote control provided with your unit.

CVBS Output Brightness (DVR only) adjusts the apparent brightness of the CVBS video stream.

Menu Output Mode determines which display (of several) is used for navigation and control. The mouse will not be visible on the displays that are not selected to be the control display.

Enable VCA Mode (DVR only) toggles VCA activation.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Network

This section helps set up Internet connectivity for your system.

General Tab

This page sets up the basic networks systems.

Working Mode: The 8- and 16-channel DVRs each have two Ethernet ports. Thus you have the option for LAN 1 and LAN 2.

- **Multi-address Mode:** When set to multi-address, you have two LAN ports. The parameters of the two network cards can be configured independently. You can select LAN1 or LAN2 in the NIC type field for parameter settings. You can select one NIC card as default route; when the DVR connects to the outside world (e.g., your router, OvrC.com) its data is forwarded through the default route.
- **Net-fault Tolerance Mode:** Net-fault tolerance mode gives you one LAN port. The two network cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. This way, if one network card fails the DVR automatically enables the standby network card and continues operation as normal.

NIC Type: If you are connecting this recorder to an older, slower network, you can customize the interface to minimize the bandwidth use if needed. We recommend leaving this set to Auto, which identifies your system and adjusts operation automatically.

Enable DHCP: Clicking this enables your network to assign IP addresses as needed to link with other IP devices. While DHCP is active, most of the rest of the boxes on this page are deactivated, as they are subject to be changed by the system as needed. Once the recorder is linked, deselect this box to ensure the recorder has an unchanging IP address. This allows you to use the web interface and mobile utility to access your system.

- **IPv4 Address:** This is the IP address of your recorder, which is needed to allow you to access the system remotely, and to use the Luma mobile application. If you will be accessing your system remotely, be sure to deselect DHCP. You cannot use the Internet to access your system if DHCP is enabled.
- **IPv4 Subnet Mask:** If you need to edit this to connect to your network, contact your IT administrator.
- **IPv4 Default Gateway:** This holds the address of your router, once the recorder has found it and established a connection.
- **IPv6 Address 1:** This entry cannot be changed, but is

included for informational purposes (and to allow forward compatibility with future systems).

- **IPv6 Address 2:** This entry cannot be changed, but is included for informational purposes (and to allow forward compatibility with future systems).
- **IPv6 Default Gateway:** This entry cannot be changed. It will display your router's address if your router is IPv6 capable.

MAC Address: This entry cannot be edited. It provides the information on the device's unique identity code, so your router can identify it even if the IP address changes due to DHCP.

MTU: This entry displays the largest packet of data the unit is allowed to send. There is no need to change it unless your network requires a specific packet size as determined by the IT admin.

- **Enable Obtain DNS Server Address Automatically:** Disable this if you want to enter your DNS server address manually.
- **Preferred DNS Server:** These is where your system looks to convert a URL to an IP address. Generally, this should be your router (see IPv4 Default Gateway, above); contact your IT admin for details.
- **Alternate DNS Server:** These is the second place that your system looks to convert a URL to an IP address. Contact your IT admin for details.
- **Internal NIC IPv4 Address:** This is the IP address for the network interface card on the NVR. [This option is only available on NVR models.](#)
- **Main NIC (DVRs only):** You may choose what NIC you want as the main path for communication.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

PPPOE Tab

This stands for point-to-point protocol over Ethernet, a peer-to-peer communication system. Basically, if the camera knows it's on the same local network as your NVR, it sends traffic directly to the recorder rather than going through the router.

ALERT! This setting is not supported at this time. It is included for future compatibility.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

DDNS Tab

This allows you to connect to your surveillance system from anywhere, via the Internet, using a web address that's easy to remember.

Click the box labeled Enable DDNS, then choose a type from the DDNS Type menu. Next, choose a server address. We recommend WirepathDDNS and ns2.wirepathdns.com.

Enter your desired domain in the Device Domain Name box. This creates a personalized server address for this particular recorder, which is shown under Device URL.

Enter your user name and password if required by your DDNS service. If not required, these fields cannot be edited.

If someone has already registered your desired domain, the system adds a unique ID (typically two to four digits) to your domain. If you do not like these digits, try another domain or server address.

Example: If you choose the domain myhome (as shown), your system's URL would be myhome.WirepathDNS.com. If someone already had myhome, then your system's URL would be something like myhome13.WirepathDNS.com.

At the bottom, **Update** finishes registering your DDNS URL and provides you with the device URL.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

NTP Tab

You can set your recorder to track time via network time protocol (NTP). With NTP, your network pings the national server every so often to maintain proper time. The NTP server synchronizes all participating systems to within a few milliseconds of Coordinated Universal Time. This provides you with your most accurate time stamping, and is our recommended system. Using NTP requires Internet access.

There is no need to change any of the settings, unless you want to adjust the interval due to bandwidth or precision concerns.

- **Enable NTP:** You must check this to use NTP.
- **Interval:** This is how often your system checks for an update.
- **NTP Server:** This is the site that your recorder will ping for time stamps.
- **NTP Port:** This shows the port used to communicate with the time server.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Email Tab

This section sets the recorder up to send email alerts when desired. Note that these settings may not be enough: you may need to change your email security settings to allow your recorder to send email alerts. Refer to your email provider for further information.

Click **Enable Server Authentication** at the top of the page if you are required to do so by your email provider. Below that, enter the user email account and password for the email account that will be used to send the alerts. This is needed to log in to the outgoing email server.

Next, format the sender's identity and choose the recipients.

Refer to your email provider's documentation to enter the proper SMTP server and port, and to see if you need to enable SSL and/or TLS.

The Sender and Sender's Address boxes let you edit whom the message appears to be from. The sender should be Luma Surveillance Recorder or something similar. The sender's email address could be a third party to whom you wish to respond when such an alert arrives.

You can define up to three people (or distribution lists) to receive these email alerts, and customize how they receive them. Select a recipient number in the Select Receivers dropdown, then enter that person's name and email address in the fields immediately below. You cannot enter more than one email address in this box.

Finally, set the email parameters.

Enable Attached Picture sets the recorder to include a photo of the incident in the email notification it sends. If this has been enabled,

the Interval dropdown sets how often the recorder sends updates with attached snapshot images to the email address.

Enable Schedule allows you to limit the times that the recipient gets alert emails.

When you click this checkbox, you can also click the starburst immediately below it to view and edit the schedule.

To adjust the schedule, choose the weekday to edit (or pick holiday) and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when email notifications are active. During time spans not covered, no emails will be sent. Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The Enable Mail interval button sets a minimum time that the recorder observes before sending notifications. After the amount of time has elapsed, the recorder sends a log of all activity since the last email.

The checkbox labeled **Enable App Link** is not supported at this time; it is included for forward-compatibility with a future update.

At the bottom, click **Test** to get a trial email sent to the currently selected recipient.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

SNMP Tab

This stands for simple network management protocol. If you need SNMP functionality, contact your IT admin.

ALERT! These settings are not supported at this time.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

More Settings Tab

This catch-all category holds a variety of commands.

- **Alarm Host IP:** This entry is not currently used. It is included to make your recorder forward compatible with a central

monitoring service (CMS).

- **Alarm Host Port:** This feature is not currently used. It is included here for future compatibility and upgrades, which will enable your recorder to contact your central monitoring system.
- **Server Port** is used for your mobile app.
- **HTTP Port** is used to access the recorder through an Internet browser. This port defaults to 80. We recommend changing it to an easy to remember alternative. For example, you could append the last two digits of your IP address. Thus if your IP address ended in .242, you could change the port to 8042. Changing the port number like this makes Internet attacks harder to execute.
- **Multicast IP:** If you need to have multiple simultaneous connections for streaming your surveillance, contact your IT administrator for this address. This creates an Internet broadcast, and anyone with the proper address can grab the stream, including someone who got the address illegally.
- **RTSP Port** stands for real time streaming protocol. You can leave this at its default unless you want to stream live video to external multiple devices, all from one common DDNS address. In that case, consult your IT admin. RTSP creates one-to-one connections; remote devices must request the stream and be admitted. If you wish to access the live view of your DVR remotely, or pull RTSP streams remotely, you must forward this port on your router.
- On the DVR only, you have the option to enable the **Output Bandwidth Limit**.
- **Enable CGI Control:** Activate this feature to allow CGI controls from third-party control systems to communicate with the recorder.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Alarm

Alarm Status Tab

This tab informs you about the current state of your system. You

cannot edit settings from here.

Alarm Input Tab

This tab is where you handle devices that can alert your surveillance system of a problem (e.g., door sensors, panic buttons, etc.).

Each camera has one or more local alarm inputs that can trigger activity.

Name the alarm (e.g., *Garage Side Door*) and select whether it is normally open or closed. Click **Enable** to activate the alarm or **Enable One-Key Disarming** to disable it.

Alarm Input Settings Window

The trigger channel tab allows you to define which cameras start recording when motion is detected. This defaults to the selected camera only, but others can be added. Click **Apply** to save the changes you have made.

The arming schedule tab lets you determine when the alarm input is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when motion detection is active. During time spans not covered, motion detection will not cause an alarm. Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

The linkage action tab lets you choose what the additional actions or alerts recorder performs when the camera has its alarm triggered. Click **Apply** to save the changes you have made.

The PTZ linking tab allows you to move cameras to predefined positions or actions when the alarm is activated. Click **Apply** to save the changes you have made.

Alarm Output Tab

Your recorder can also trigger alarms when an event occurs.

Choose the alarm number, name it if you like (e.g., *Activate Flood Lights*), and set its dwell time. The dwell time is how long the system waits before activating an alarm; you may want to give a worker five seconds to enter a security code before activating an alarm.

Click the Settings starburst to open the arming schedule window. The arming schedule tab lets you determine when the alarm output is active. To adjust the schedule, choose the day of the week and click any of the time segments and enter new start and stop times (shown in 24-hour format). All times included in the schedule are when the alarm is active. During time spans not covered, the alarm cannot be triggered by your recorder.

Click **Apply** to save the changes you have made. You can also click **Copy** to copy the schedule to other days of the week (numbered 1–8, with Monday numbered 1 through Sunday numbered 7; holidays are numbered 8).

RS-232

This option is not available on 4-channel DVR models.

The RS-232 settings allow communication between your recorder and a PC or control terminal. You can set the following parameters here.

- **Baud Rate:** Displays the baud setting currently in use for the device. This is the speed (in bits per second) at which the data is sent. Most find 4800 to be sufficient. If you have a short cable run or few devices you may use faster speeds. The risk to faster speeds is that the device may become inundated with requests that arrive too quickly.
- **Data Bit:** The number of data bits in each character.
- **Stop Bit:** An indicator of where the character ends.
- **Parity:** Used for error checking in transmission.
- **Flow Control:** Used to pause and resume transmission of data. Leave at the default setting of None.
- **Usage:** Leave at the default setting of Console. Transparent Channel is used only during debug and development.

Live View

This lets you customize the live view of the system.

General Tab

In this tab, you set the parameters for the video screen attached to the recorder.

- **Video Output Interface:** Select the resolution of the screen.
- **Live View Mode:** This determine the grid mode to use.
- **Dwell Time:** When sequence mode is active, the recorder displays various views in rotation. This setting determines how long the recorder pauses on each view.
- **Enable Audio Output:** This lets you listen to the audio from a camera equipped with a microphone.
- **Volume:** use the slider to set your desired level.
- **Event Output:** When your system detects an event (motion, a door alarm), this determines the resolution the screen uses.
- **Full Screen Monitoring Dwell Time:** When an event is triggered and the recorder is set to switch to full screen on an event, this setting shows how long it remains in full screen mode.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

View Tab

By default, your recorder displays your channels in numerical order. If you want to rearrange where the cameras appear in the live view grid without reconnecting everything, you can use this screen. For example, with a recorder that has six cameras, you could split the channels so that one 2x2 grid shows the three channels on one side of the building, and the next page of the grid shows the three on the other side, regardless of how those cameras are physically wired to the recorder.

At the top, Video Output Interface selects the resolution of grid mode on the local screen.

Down the left, the system lists your camera numbers and names. The small icon to the left shows yellow if that camera has been assigned to a grid channel, and white if it has not.

To the right is a diagram that represents the grid mode from the live page. You can change the grid mode that you are customizing by using the buttons below the display to the left.

Within each square of the grid, on the left, is the camera number (if a camera is assigned to transmit to that grid channel) or an X (if no camera is assigned). To the right of the channel number or X is

a yellow-and-white deletion box. To remove a camera from a given grid box, click the deletion box.

To add a camera to a grid box, click on that box so it shows a gold color, then double-click the camera name in the list to the left. Note that each camera can be assigned to only one channel, and each channel can have only one camera assigned to it.

There are eight virtual pages for you to work with, and you can leave multiple channels blank on a given page.

Click **Apply** to save the changes you have made. Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Channel-Zero Encoding Tab

Channel-zero takes all of the cameras directly attached to your system and converts their various signals to a single image stream. This makes it easier to view the aggregate stream on your mobile device. It is not used for either your local interface or the web interface.

You may view channel zero using your control system or your mobile app. On the mobile application, channel Zero can be viewed on the ninth grid location.

If you check enable channel-zero encoding, you then set the maximum bitrate in kilobits per second, as well as the maximum frame rate for your system. The mode cannot be edited.

Click **Save** before leaving this page.

Exceptions

Exceptions are system errors. You can choose which of these errors you want to be alerted to, and how the alert should be given.

This window allows you to set the recorder to respond when any of a variety of non-surveillance items of concern takes place.

The various types of exceptions are explained here:

HDD Full: If your hard drive becomes full, and you have not enabled file overwriting (See “Advanced” on page F-15), you cannot record new surveillance video.

HDD Error: This indicates that a hard drive has returned any type of error code to the recorder.

Network Disconnected: If your recorder finds it cannot access

your network router, it sends a notice. Of course, aside from local alarm warnings, the notice will be delayed due to the lack of a network connection.

IP Conflicted: If you accidentally end up with two items attached to your network that have the same IP address, this will inform you.

Illegal login: This is an attempt to log in with an incorrect user name/password combination, and is either a sign of a typo on the part of a user, or a hack attempt.

Input/Recording Resolution Mismatch (DVR only): This warns you when the input resolution is smaller than the camera's configured recording resolution.

Record/Capture Exception: This exception triggers when your hard drive runs out of space, or fails to write for some other reason.

You can select any or all of the following alerts to activate for each exception.

- Audible warning makes the recorder beep loudly, which is of use only if you are likely to hear it.
- Notify surveillance center is not yet functional, but is included for forward compatibility.
- Send email sends a notice to whichever address you configure (see “Email Tab” on page F-34).
- Trigger alarm output activates one or more alarm systems.

Click **Apply** to save the changes you have made.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.


User

This page controls who can access the recorder, and how much authority they have.

It shows a tabular list of user accounts, with the account name, level, and MAC address.

Permission changes what the user can and cannot do. The various permissions are sorted into three tabs. Local configuration affects what the user can do while standing at the recorder. Remote configuration determines what the user can do while logged into

the recorder over the network. Camera configuration controls which views the user can access on each camera; to change camera permissions, check an activity from the dropdown menu, then click on the channel(s) the user can select for that action. You must press **Apply** after making any changes.

Double-click on an account or click **Edit** () to change the account's user name, password, default access level, and MAC Address. You can also enable an unlock pattern for your recorder, to use in lieu of typing a password.

Click **OK** to accept the changes, or **Cancel** to leave the dialog without saving changes.

Delete removes that account from the database.

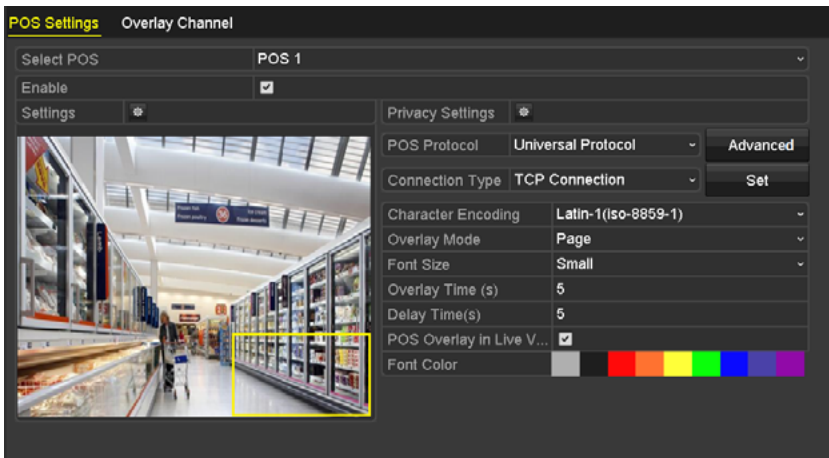
At the bottom, you can click **Add** to create a new account.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

POS Settings Tab

This feature is not supported on 4-channel recorders. Also, Point of Sale is not supported on Mac computers.

While POS can be enabled/disabled using the web interface, POS can only be set up using the local interface. For full details on setting this up see “Setting Up POS Surveillance” on page A-22.



Maintenance

These pages provide data and controls to keep your system running smoothly.

System Info

These windows all provide information only. You cannot change any settings in these windows.

Device Info Tab

This presents data for your recorder. This table is for information only; you cannot edit the details here.

- Device Name
- Model
- Serial No.
- Firmware Version
- Service Tag

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Camera Tab

This presents data for all cameras that your recorder can detect. It will not list a camera that is attached to a network but exceeds the connection capacity of your NVR. This table is for information only; you cannot edit the details here.

- Camera No.
- Camera Name
- Status
- Motion Detection
- Video Tampering
- Video Loss
- Video Quality Diagnostics ([DVR only](#))

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Record Tab

This gives data on the status of the system's recording activity. This is not updated continuously, the data is gathered at the moment you enter the System Info window and does not update until after you leave the window. The data include:

- Camera No.
- Recording Status
- Stream Type
- Frame Rate
- Bitrate (Kbps)
- Resolution
- Record Type
- Encoding Parameters
- Redundant Record

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Alarm Tab

This lists all potential alarm connections, both input and output. This list is informational only; it cannot be edited. For each connection it lists the following data:

- Number
- Alarm Name
- Alarm Type
- Alarm Status
- Triggered Cameras

Network Tab

This shows the vital data of the network to which your recorder is attached. This table is for information only; you cannot edit the details here.

- IPv4 Address
- IPv4 Subnet Mask
- IPv4 Default Gateway
- IPv6 Address 1

- IPv6 Address 2
- IPv6 Default Gateway
- MAC Address
- Preferred DNS Server
- Alternate DNS server
- Enable DHCP
- Enable Obtain DNS Server Address Automatically

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

HDD Tab

This presents a table of data regarding the various hard drives attached to your recorder. This table is for information only; you cannot edit the details here.

- Label
- Status
- Capacity
- Free Space
- Property
- Type
- Group

In addition, it gives the following data for your recording system as a whole:

- Total Capacity
- Free Space (calculated from the last time that the recorder started overwriting old files)

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Log Information

This section lets you create and export log files for review.

Log Search Tab

This lets you search through the recordings for specific types of events.

At the top, select your start and end times for your search. Pick the dates by clicking on the date field and picking from the calendar. Set the times by clicking on the time field and adjusting the readings.

You can choose to search among all event types, or use the Major type dropdown to restrict the search to certain categories of event.

You can select any or all of the specific events under Minor Type by clicking on their boxes. Note that the major type selected determines the minor types that are made available.

Once you've chosen your parameters, click **Search** at the bottom to search the log and filter for those results. If you want the entire log file for the recorder, click **Export All** instead.

This opens a pop-up window that lists all files that match the search parameters. Double-clicking on any file, or clicking its Details icon brings up a Log Information window that contains details of the recording.

Click the Play icon to see a playback of the incident (if available).

Export saves your search results to an attached storage device using the export dialog box described at the end of this section.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Export Dialog Box

At the top is a dropdown list that lets you select a USB storage device to hold the log. Click **Refresh** if the desired device has been plugged in but does not show in the list. From the dropdown, select the USB storage device to which the log will be saved.

In the center of the device is a list of the folders and files on the device. You can also click on a file to delete it or, if it is a recording, play it. Below that is the free space available.

At the bottom, the **New Folder** button creates a new folder on the USB storage device, **Format** formats the device (erasing all data on it), **Export** downloads the log to the storage device, and **Cancel** quits the dialog.

Import/Export

This window lets you save or reload a configuration file from an external storage device.

We strongly recommend that you make a dated backup copy of your configuration file immediately after installation as well as after any adjustment; this could save your hours of headache!

Plug the USB drive that holds (or will hold) the config file into a USB port of the recorder, then click **Refresh**. The drive should show up next to Device Name, with the contents of the drive displayed in the table below.

To import a config file, click on the file in the list, then click **Import**. This automatically installs the config file, overwriting the recorder's current configuration. The system reboots after the new config has been installed.

To export your recorder's config file, first navigate to the location on your flash drive where you want it saved. You can click **New Folder** to create a folder on the flash drive if desired. Then click **Export**. The recorder copies its configuration data to your drive. We recommend changing the name of the backup file to reflect the date and time of its creation.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Update

This page lets you upgrade (or downgrade, if necessary) your firmware.

We do not recommend using this interface. Using OvrC or the web interface is much easier.

Local Update Tab

Use this option if you are upgrading from a flash drive that is plugged into the recorder.

Plug the USB drive with the new firmware into a USB port of the recorder, then press **Refresh**. The drive shows up next to Device Name, with the contents of the drive displayed in the table below.

Click on the appropriate firmware file, then click **Update** to begin the operation. The system reboots when it is completed.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

FTP Tab

Use this option to upgrade by retrieving the new firmware over your network.

Enter the FTP server address in the area provided, then press **Enter** at the bottom of the virtual keypad.

Click on the appropriate firmware file, then click **Update** to begin. The system reboots when it is completed.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Default

This is used to restore your recorder to its default settings, but maintains the current firmware version.

Press **Restore Default Settings** to return the recorder to its factory default settings, but preserves network settings. There is no chance to undo.

Press **Restore Factory Settings** to return the recorder to its factory default settings, removing all customization. It also sets the recorder to DHCP. There is no chance to undo.

Press **Restore to Inactive** to erase the user credentials on the recorder (including the admin account's password, so you'll have to create a new one). Note that this does not remove any recordings or snapshots from your hard drives.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Net Detect

These windows provide data and testing for the recorder's network.

Traffic Tab

This window is provided for information only. At the top is a chart graphing data transfer activity between your recorder and your network. This chart only runs while this menu item is selected.

Below that is a chart of network devices showing the following data.

- **Name:** The name of the network.
- **Linking Status:** This shows whether or not the connection succeeded.
- **Type:** Typically ethernet.
- **MAC Address:** The specific number for this recorder.
- **MTU(B):** This gives the maximum size of data packet allowed, expressed in bytes.
- **NIC Type:** This shows your network card type.
- **Traffic:** Click this to set the graph to show network activity.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Network Detection Tab

This window lets you test your network's function, as well as view and adjust its parameters.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Network Delay, Packet Loss Test

This checks your network speed and reliability.

Use **Select NIC** to choose the network you want to test, and enter an IP address in the Destination Address text box.

Press **Test** to begin. The test is very short, and the results are shown in a dialog in the center of the window.

Network Packet Export

This performs a test to ensure your recorder can send network packets accurately. The test sends the packet to a USB storage device attached to your recorder.

Plug the USB drive into the recorder, then click **Refresh**. The drive should show up next to Device Name, with the contents of the drive displayed in the table below. Click **Export** to send the test packet.

At the bottom, click **Status** to update the current data.

Click **Network** to view a pop-up dialog that allows you to view and adjust network parameters.

Network Dialog

This lets you set parameters for your network.

- **NIC Type:** If you are connecting this recorder to an older, slower network, you can customize the interface to minimize the bandwidth use if needed. We recommend leaving this set to Auto, which identifies your system and adjusts operation automatically.
- **Enable DHCP:** Clicking this enables your network to assign IP addresses as needed to link with other IP devices. While DHCP is active, most of the rest of the boxes on this page are deactivated, as they are subject to be changed by the system as needed. Once the recorder is linked, deselect this box to ensure the recorder has an unchanging IP address. This allows you to use the web interface and mobile utility to access your system.
- **IPv4 Address:** This is the IP address of your recorder, which is needed to allow you to access the system remotely, and to use the Luma mobile application. If you will be accessing your system remotely, be sure to deselect DHCP. You cannot use the Internet to access your system if DHCP is enabled.
- **IPv4 Subnet Mask:** If you need to edit this to connect to your network, contact your IT administrator.
- **IPv4 Default Gateway:** This holds the address of your router, once the recorder has found the router and established a connection.
- **Enable Obtain DNS Server Address Automatically:** Disable this if you want to enter your DNS server address manually.
- **Preferred DNS Server:** These is where your system looks to convert a URL to an IP address. Generally, this should be your router (see IPv4 Default Gateway, above); contact your IT admin for details.
- **Alternate DNS Server:** These is the second place that your system looks to convert a URL to an IP address. Contact your IT admin for details.

Click **Apply** to save the changes you have made.

Network Statistics Tab

This tab is informational only; you cannot edit these fields.

This page shows the bandwidth used for the IP cameras (**NVR only**), remote live view, remote playback, and idle processes. These data are not dynamic; they are tabulated as of the moment you clicked the tab.

Click **Refresh** to update the data to the current situation.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

HDD Detect

These tabs help you manage your hard drives and protect against data loss due to drive failures.

S.M.A.R.T. Settings Tab

Western Digital Purple hard drives are equipped with self-monitoring, analysis and reporting technology (S.M.A.R.T.). This feature keeps tabs on various indicators of drive reliability, with the goal of anticipating a drive failure before it happens.

At the very top is a checkbox that allows you to choose whether or not to continue using the selected disk when S.M.A.R.T. indicates that it is likely to fail soon.

HDD lets you choose the selected disk from a dropdown menu.

- Self-test Status gives you the status of the test in progress, or the results of the most recent test completed (if any). It also tells you if no test has been completed.
- Self-test Type is a dropdown that lets you choose the level of testing you want. You cannot stop a test once it has started, but you can still navigate around and do other tasks while it is running. A short test is cursory, but takes just a minute or two. An expanded test is in-depth, and can take several hours to complete. A conveyance test checks for physical damage incurred during transportation; it only takes a few minutes.
- S.M.A.R.T. has a starburst next to it; pressing this starburst starts the chosen test for the selected drive.
- Temperature shows how hot the hard drive is, expressed in degrees Celsius. If this is above 60, you need to address your cooling and ventilation system.
- Power On (days) shows how long the unit has been powered up and active. Time that it has been powered off is not counted.
- Self-evaluation shows the unit's current status.
- All-evaluation shows the overall result of the test.
- In the center, the S.M.A.R.T. Information table gives the data

most recently collected about the unit's function.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Bad Sector Detection Tab

This tab tests your hard drives, hopefully finding errors before they cause problems for your system.

At the top, select the hard drive you want to test using the HDD No. dropdown menu. You can only test one hard drive at a time. Then select the type of test you want to perform in the dropdown next to the hard drive.

There are two types of tests: key area detection does a quick scan of only the critical portions of each sector of the hard drive, and takes less than a minute; full detection runs an exhaustive testing of the entire hard drive surface, and will take multiple hours to complete, depending on the size of the hard drive.

Press **Detect** to begin the test. The tests do not suspend surveillance or recording.

As the test executes, it fills in sectors that have been tested with green (for sectors that passed), red (for sectors that didn't), or yellow (for partitions on the drive that are inaccessible to the recorder).

Below this section are various technical data about the hard drive and the current test (if any).

Next are several buttons:

Error Info: lets you review details of any errors encountered.

Pause (or Resume): suspends or resumes execution of the test.

Cancel: Stops the test completely.

Click **Back** to return to the settings menu, or **Live View** to return to the live page.

Shutdown

This menu has three basic commands.

Logout

This immediately logs you out of the system and returns you to the live view page. There is no confirmation required. Note that someone must log into an account in order to access the Settings menu again.

Shutdown

This is the safest method (and the recommended one) to power off your system. Select this option, confirm your choice, then, when the system tells you to, flip the power switch to off.

Reboot

Use this to restart your system. Note that rebooting the system does not log you out from your account.



LUM-510 Series
Surveillance Recorders

Installing Network Cameras on an NVR

Network Setup

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Introduction

Use this as a supplement to the quick start guide if you are attaching IP cameras to the NVR over a network.

Prepare and Install


Install the system by following the quick start guide through port forwarding. The NVR should be able to locate all IP cameras, whether they are directly plugged in or if they are available only over the network.

This section helps you troubleshoot any problems.

Reinstalling Network Cameras

When taking cameras that were previously attached to a network and plugging them directly into your NVR, you must first do a hard reset *before* you connect the camera to the NVR. See the camera's documentation for details.

Note that with firmware V5.4.1 build 170522 and later, defaulting the camera also deactivates the camera.

Once you've performed the reset, attach the camera to your NVR. From the NVR's web interface, click on the settings icon (). Go to **Camera Management**.

This displays a table of all IP cameras configured for the NVR. In the rightmost column is a link to each such IP camera. This link opens a new tab in your browser for your camera's web interface menu (see your camera manual for details). It can only be used from within the network.

us	Protocol	Connect
ne	Wirepath	http://192.168.1.101:65001
ne	Wirepath	http://192.168.1.101:65002
ne	Wirepath	http://192.168.1.101:65003
ne	Wirepath	http://192.168.1.101:65004
ne	Wirepath	http://192.168.1.101:65005

If your camera does not appear, either it is unpowered, using an unrecognized protocol, or malfunctioning.

Open up the camera's individual page by clicking on the link. Once inside, set the camera's port to 80.

Locating Network IP Cameras

If your NVR cannot locate an IP camera through the network, first check to see that the camera’s cables are securely connected at both ends, and that it is powered up. If the NVR still can’t find the IP camera, you’ll need to use the Luma utility (for Luma IP cameras) or the IP Installer utility (for Wirepath IP cameras).

Locate the Camera with the Luma Utility

Download and Install the Luma Utility



Visit your product page at SnapAV.com and download the Luma Utility installer from the Support tab. **You must use v3.0.0.54 build 20180202 or later! Earlier versions of the utility will not work!**

Run the installer. You can click through and accept the defaults.

Run the Luma Utility



Plug the power supply into the camera.

Connect the camera to your PC and run the Luma Utility. It searches for attached Luma Surveillance devices.

Once the camera boots up (you’ll hear a click), the utility should find the camera. If your camera does not appear, check the connection, ensure the camera is powered up, then click the **Refresh** button.

Activate the Camera

Your camera appears in the data window as shown.

ID	MAC	NAME	TYPE	STATUS	IP	PORT	MODEL	FIRMWARE	MANUFACTURER
<input checked="" type="checkbox"/>	006	LUM-500-DVR-16...	Luma 16C...	Inactive	192.168.8.113	80	8000	554	V3.0.0build 1... snapav1002
<input type="checkbox"/>	007	LUM-700-BUL-IP...	IP CAMERA	Active	192.168.8.144	80	8000	554	V5.4.1build 1...
<input type="checkbox"/>	008	LUM-500-TUR-IP...	IP CAMERA	Active	192.168.8.145	8019	8000	554	V5.4.1build 1...
<input type="checkbox"/>	009	LUM-500-TUR-IP...	SaaS/Alert	Active	192.168.8.104	8025	8000	554	V5.3.0build 1... snapav1002
<input type="checkbox"/>	010	LUM-500-BUL-IP...	IP CAMERA	Active	192.168.254.3	80	8000	554	V5.4.1build 1...
<input type="checkbox"/>	011	LUM-500-BUL-IP-GR	IP CAMERA	Active	192.168.8.112	80	8000	554	V5.4.1build 1...
<input type="checkbox"/>	012	LUM-700-DM-IP...	IP CAMERA	Active	192.168.8.126	8016	8000	554	V5.4.1build 1...
<input type="checkbox"/>	013	LUM-700-BUL-IP...	IP CAMERA	Active	192.168.254.4	80	8000	554	V5.4.1build 1...

You can modify the network parameters after the device activation.

Refresh

New Password:

Confirm Password:

Activate

Click on the entry for your camera to view its details. If the camera is inactive, click the checkbox at the left of the camera's entry, then use the text boxes at the lower right of the Luma utility window to create a new password. This activates the camera.

- Passwords cannot be longer than 16 characters. To ensure compatibility with the local interface, only use numbers, letters, spaces, and the following special characters: . , : - /
- The password must be eight characters or longer, and contain at least two of the following: capital letters, lowercase letters, numbers, and symbols. Your password strength is displayed between the two text boxes.
- Use a password that is long and easy to remember. A password like *Parisinthefspring* is secure and much easier to remember than a password like *D3x-7b:O*.

Locate the Camera with the IP Installer Utility

Download and Extract the IP Installer Utility

The IP Installer utility only runs on PC-compatible machines; it does not run on Mac OS systems. The program only works with Wirepath Surveillance hardware; it does not discover third-party equipment.

Download the IP Installer program from SnapAV.com. Go to any Wirepath IP camera page, click on the support tab, and look under the Software Application heading for a hyperlink to WPS-IP Installer. Download and extract the .zip file.

Even though it has installer in its name, it does not install a program; it helps you install IP cameras. When it is done extracting, it is ready to use.

Run the IP Installer Utility



Double-click the icon for IP Installer to run the program. It discovers Wirepath brand IP-enabled hardware attached to your network: cameras, NVRs, and encoders.

Note: IP Installer only detects devices on one network adapter. If it does not find devices on a computer with multiple active adapters (e.g., a wired and a wireless connection to different subnets), ensure that only the connection to the network with surveillance devices is enabled.

Check that the Camera Is Working

If the above doesn't work, the next step is to check if the camera is actually working; the NVR can't find a malfunctioning camera.

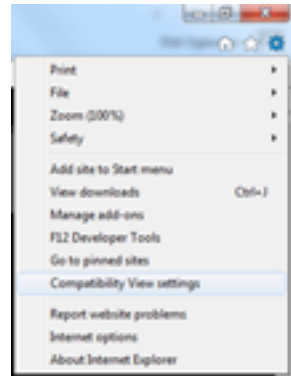
In the IP Installer software, double-click on that camera's entry in the chart on the left to open the camera's individual browser interface.

You can access the Wirepath IP camera's menu using the default user name and password admin.

When you log in the first time, you might not be able to see the video from the camera. To remedy this, you'll need to add the camera's IP address to Internet Explorer's Compatibility View settings.

Open the IE Tools menu by clicking on the gear icon in the top right corner, or by pressing Alt+X. Within the Tools menu, click Compatibility View settings. This opens a dialog.

The camera's IP address is added to the text box automatically. Press the Add button to allow the browser to use compatibility mode with the camera's IP address. Press Close. The browser window refreshes automatically.



The camera should now be visible. If you still cannot see the camera's field of view, contact SnapAV Technical Support (see back page).

Other browsers use different methods to achieve compatibility mode, and they may not work properly with the IP Installer program. Consult their documentation.

Continue with the Quick Start Guide

Finish setting up your system, continuing where you left off in the quick start guide.



LUM-510 Series
Surveillance Recorders

Installing with the Local UI Wizard

Local Setup Wizard

Contents

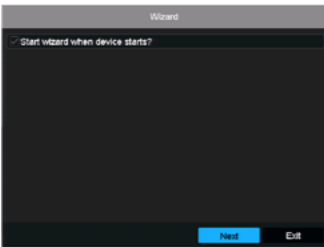
Local Setup Wizard	H-2
Run the Setup Wizard	H-3
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Run the Setup Wizard



While the system boots up, you'll see a welcome screen. When the recorder finishes powering up (roughly 30 seconds), a setup wizard guides you through getting your system customized and setting up your cameras.

If the wizard does not appear, that means that the unit has been previously installed, and whomever installed it deselected this option. To get the wizard back, log in as the administrator, right-click to open the menus, then go to **Settings > Configuration > General**. Near the bottom of that page, click **Enable Wizard**. Then go to **Settings > Shutdown > Reboot** to restart your system and launch the wizard.

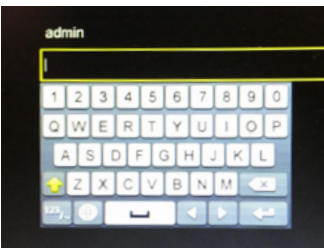


When the wizard launches, you first choose whether you want to run the wizard each time the system starts up. If you choose not to, you can still access all the tools at another time through the **Settings** menu, or reinstate the wizard as shown above.

We recommend that you disable the wizard; it is liable to cause your customer confusion if there is a power interruption at the site.

Make your choice and press **Next**, or press **Exit** to leave the wizard and go directly to the main screen.

We recommend that you do not exit the wizard during installation.



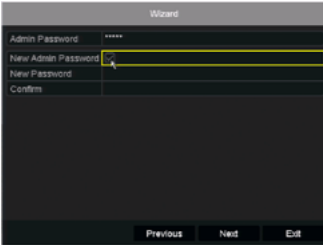
Next, you must log in to the system. Enter your admin password to continue. To enter your password, click on the text box to the right of the **Admin Password** label. The box highlights yellow and a virtual keyboard appears. Use the mouse to type in the password.

If you do not correctly enter your password after six tries, the wizard closes and locks you out from further attempts for 30 minutes.

Instead of waiting for 30 minutes, you may reach out to tech support for help resetting your password..

You cannot change anything about the admin account other than its password.

If you do not wish to change your admin password, just click **Next**.



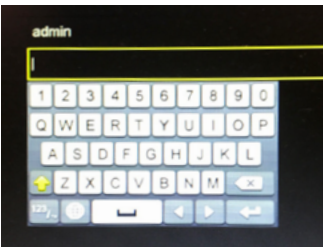
To change your admin password, click on the checkbox as shown. This enables you to enter text in the **New Password** and **Confirm** fields. The new passwords must match identically for the password to be changed; if they do not match, you will be prompted to reenter the passwords.

Passwords cannot be longer than 16 characters. To ensure compatibility with the web interface, passwords can only contain numbers, letters, and the following special characters: . - _ : / @ , ? ! ' ; () \$ & " [] { } # % ^ * + = \ | ~ < > `

Since most hacks these days come from automated programs, use a password that is long, easy to remember, and not found in any dictionary. A password like *parisinthespring* is more secure and easier to remember than one like *P4S\$w*rD*.

The Virtual Keyboard

When changing the password, you can switch the virtual keyboard between lower-case letters, capital letters, and symbols. The virtual keyboard starts in lower-case mode by default.



Click on the up arrow button, found at the lower left-hand corner of the keyboard, to switch to upper-case mode. You can tell it's upper-case mode because the up arrow is yellow.

To return to lower-case mode, click the up arrow key. Note that the up arrow becomes gray like the rest of the numbers and letters on the virtual keyboard.

Clicking on the **[123/..]** button, found near the lower left-hand corner of the keyboard, switches you to symbol mode.

You can switch between several sets of symbols by clicking the **[# +=]** button. To generate a symbol, click the key that matches the number next to the symbol you want to create.

To leave symbol mode without creating a symbol in the password, click on the **[abc]** button.

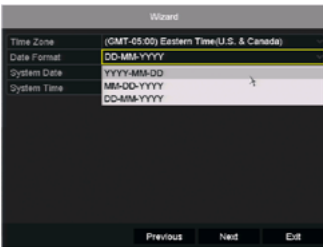
Synchronize the Time

The next window allows you to set your system’s date and time, and to format them for your system’s reporting.

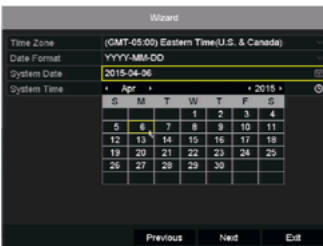


Use the Time Zone drop-down menu to select the proper time zone. North American time zones range from GMT -10:00 through GMT -3:30.

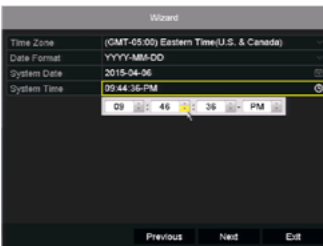
Daylight savings time is enabled automatically. You can disable or edit it through the local interface see “General Tab” on page F-29 or through the web interface using “Time Settings Tab” on page E-49.



You can select the date format from a drop-down menu. This choice affects how dates are displayed.



Click on the **System Date** box and pick the current date from the calendar. You can use the arrows next to the month and year (at the top of the calendar) to change those values if necessary.

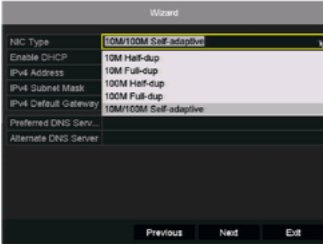


Click on the **System Time** box and use the up and down arrows next to each digit to adjust the system to your exact local time.

Click **Next** once you have finished with the time and date.

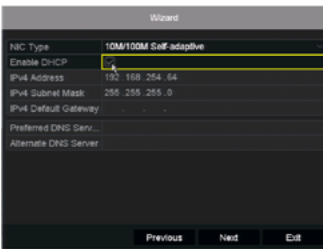
Network Setup

If the recorder is on a network, follow these steps. If not, just accept all defaults through this section.



Choose your network card type.

The default choice, self-adaptive, is ideal for most installations. However, if you have expert knowledge of the system, you can adjust the settings as needed.



The default setting for your system is to have DHCP enabled, shown by the check mark in the Enable DHCP box.

We suggest that you leave DHCP enabled so your system can auto-detect and set up the necessary protocols. This will handle all the settings needed for most installations.

With DHCP (Dynamic Host Control Protocol), your device automatically connects to other DHCP-enabled devices on the network. If this does not find your cameras or other devices, deselect **Enable DHCP**. This activates the various text boxes below, so you can enter network settings manually. See the manuals for your other devices for details.

Either way, disable DHCP once all cameras are found.

In the next screen, the system detects all of the hard drives on the system and lists them.

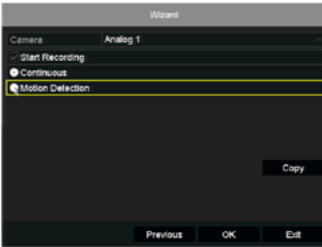


You don't need to do anything on this screen, other than verify that all the hard drives are listed (if not, consult your manual).

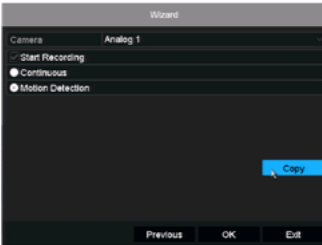
If you wish to purge any hard drives of old data, you can press the **Init** button. Caution: Data cannot be recovered after this purge!

Set Up Recording

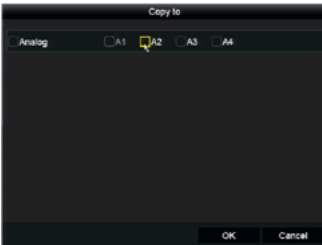
Finally, you choose the recording settings for the various cameras on your system. Select the camera you want to set using the dropdown menu at the top of the dialog.



If you want the camera only to record when manually controlled, deselect **Start Recording**. If you want to activate the camera, select **Start Recording**, then choose whether you want the camera to record continuously or only when it detects motion within its field of view.



Once you have made the choices for the selected camera, you have two options for how to continue. You can either select a new camera using the dropdown menu at the top of the dialog box and make choices for it manually, or else you can press the **Copy** button.



When you press **Copy**, a new dialog box opens. You can copy the current camera's settings to any or all of the other cameras in the system. Selecting the **Analog/Digital** button at the left automatically selects all analog or digital cameras on the system. You can also select or deselect the cameras individually by clicking their boxes.

Once you click **OK**, the current camera's settings are copied to all selected cameras. Pressing **Cancel** returns you to the previous dialog without copying any settings.

Once you have made your selections and pressed **OK**, the setup wizard ends.