reolink

User Manual

4CH/8CH/16CH Super HD 4.0MP

Network Video Recorder

4.0MP Network Camera

(For NVR)

Thank you for purchasing the Reolink Network Video
Surveillance (4CH/8CH/16CH) Product.

For the latest User Manual, Product Updates and more
information about the products, please visit our website at:

https://reolink.com/

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RICK OF ELECTRIC SHOCK DO
NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral
triangle, is intended to alert the user to the presence of uninsulated
"dangerous voltage" within the products ' enclosure that may be of
sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert
the user to the presence of important operating and maintenance
(servicing) instructions in the literature accompanying the appliance.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO
NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**

**CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH
WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND
FULLY INSERT.**

GETTING STARTED

We have developed user-friendly products and documentation. You may download the software and manual from https://reolink.com/software-and-manual/

If you have any questions, you may refer to https://reolink.com/faqs/ for the answer.

If you may need any technical support, please contact us at support@reolink.com.

You may download Firmware from https://reolink.com/firmware/

FCC Verification

Note: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

These devices comply with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- These devices may not cause harmful interference.
- These devices must accept any interference received, including interference that may cause undesired operation.

Important Note:

All jurisdictions have specific laws and regulations relating to the use of cameras. Before using any camera for any purpose, it is the buyer's responsibility to be aware of all applicable laws and regulations that prohibit or limit the use of cameras and to comply with the applicable laws and regulations.

FCC Regulation (for USA):
Prohibition against eavesdropping

Except for the operations of law enforcement officers conducted under lawful authority, no person shall use, either directly or indirectly, a device operated pursuant to the provisions of this Part for the purpose of overhearing or recording the private conversations of others unless such use is authorised by all of the parties engaging in the conversation.

WARNING:
Modifications not approved by the party responsible for compliance could void user's authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

- Make sure product is fixed correctly and stable if fastened in place
- Do not operate if wires and terminals are exposed
- Do not cover vents on the side or back of the NVR and allow adequate space for ventilation

RoHS:

This product is fully compliant with the European Union Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment ("RoHS") Directive (2002/95/EC). The RoHS directive prohibits the sale of electronic equipment containing certain hazardous substances such as lead, cadmium, mercury, and hexavalent chromium, PBB, and PBDE in the European Union.

BATTERY INFORMATION

This product contains a removable battery. If you need to replace or dispose of the internal battery.
The battery is located on the main board of the Camera. It is a primary lithium CR2032 button cell.
To access, remove and/or replace the battery:

- Ensure the NVR is turned OFF. NEVER open the NVR's case while power is connected.
- Remove the five screws holding the cover on the NVR.
- If replacing the battery, ensure that it is an exact match for **size**, **type** and **capacity**.
- Be sure to safely dispose of the battery. The process for battery disposal/recycling varies from location to location, please check with the relevant local authority for method.

BATTERY SAFETY INSTRUCTIONS

- Do **NOT** attempt to open, puncture, disassemble or modify the battery in any way.
- Do **NOT** subject it to sudden shock or heat.
- Do **NOT** dispose of battery in fire.

Network Video Recorder Features

- SUPER HD 4.0 Mega pixel Resolution
- Real-time Recording at 4.0MP 2560*1440 Resolution
- Simultaneous Playback and Live View on the same screen
- Selectable area Zoom during Live and Playback display
- Easy Camera Installation using Power over Ethernet (CAT5) cable
- 24/7 100% Duty Cycle Hard Disc Drive
- Expandable High Capacity Storage - up to 4TB
- HDMI output resolution 1080P & VGA output for simple connection to HDTVs (HDMI cable included)
- View, Record, Playback, Backup & Remotely control the system simultaneously

Connectivity Features

- Latest Reolink P2P Technology
- Instant Mobile Viewing on compatible Smartphones Dedicated iPad® and Android tablet apps with multi-channel live viewing and 1 channel playback
- ReoLink Easy Connect Internet Set-up Wizard
- Reolink Client Software
    - PC (Windows 7, 8, 10) compatible using client software (included) & web browser.
    - Mac remote client software (included) and Safari web browser.
- Instant e-mail alerts with snap shot attachments of event and web link

The system comes with the following components:

Reolink 8CH/16CH NVR   Bullet Camera   Ethernet Cable
2TB/3TB Hard Drive (Installed)

59ft Network Cable   Optical Mouse   Power Adapter

HDMI Cable   Quick Start Guide   CD

Front Panel

Power LED: Solid GREEN indicates that the NVR is supplied with power and turned on.

HDD LED: Blinking RED indicates the NVR is writing to / reading from the installed hard drive.

USB: Used for connecting the USB mouse or USB Flash drive.

Play/Stop: Used to play or stop the selected channel during playback.

Quad: Switch between display 1/4/9/16 CH on the Monitor

Menu: Open the Menu window

Select: start to use the selected item function

Direction Arrow: Choose the items on the menu.

Rear Panel

VGA: Used for connecting a television or PC monitor with a VGA input (make sure the monitor you use supports the resolution you set in the menu).

HDMI: The primary video output of the NVR.

Network (LAN) P o r t: connect t h e N V R to your router or network switch for Internet connectivity.

USB 2.0 : Used for connecting the USB mouse or USB Flash Drive.

POE Camera Ports : Plug the network cable for each camera into one of these sockets, it will transmit video and power simultaneously.

DC 48V Power Input : Plug the DC power adapter into this socket to provide power to the NVR and cameras

eSATA: Used to connect an additional Hard Drive for extra storage.

Audio Out: Used for connecting speakers.

You can follow below steps to connect your system:

Step 1: Connect the NVR to a Monitor or TV

Use the HDMI cable (supplied) to connect your NVR to the TV's HDMI port.
.(If there is no display, please connect it to a VGA monitor and change its resolution to 1920*1080). If you need audio output on your TV monitor, the resolution MUST be set to 1920*1080 or 1280*720.
Or VGA: Use the VGA cable (supplied) to connect your NVR to the Monitor's VGA port .

Step 2: Connect the IP Cameras

Connect the camera's RJ45 network socket to any POE Camera port on the NVR using the Ethernet cables provided.
You may also purchase longer LAN cables if required. The system supports up to 330ft CAT 6 cables.

Camera **Reset** button: It enables you to reset the camera's admin password back to factory default settings.

Please make sure POE Cable is 8 pin network Cable, for some Cable is 4 pin only. 4 Pin cable cannot be used for POE Camera.

Step 3: Connect to your network

Connect an Ethernet cable from the LAN port on the NVR to LAN port on your router.

Step 4: Connect the Mouse

Connect the mouse to the USB port.

The USB Mouse:
- **Left click**: Selects an item or confirms a choice.
- **Right click**:
- Opens the menu bar from the live viewing screen.
- Returns one "step" from a submenu.
- Opens a context menu in some settings screens.
- **The Scroll Wheel**: Can be used to adjust the values of sliders and scales when highlighted by the mouse.

Step 5: Connect the Power Adapter

Please use the supplied power adapter. For POE NVR device, it is 48 voltage.

Camera voltage is 12V only. Please don't use the NVR 48V power adapter directly to Camera. Otherwise, it will be damaged.
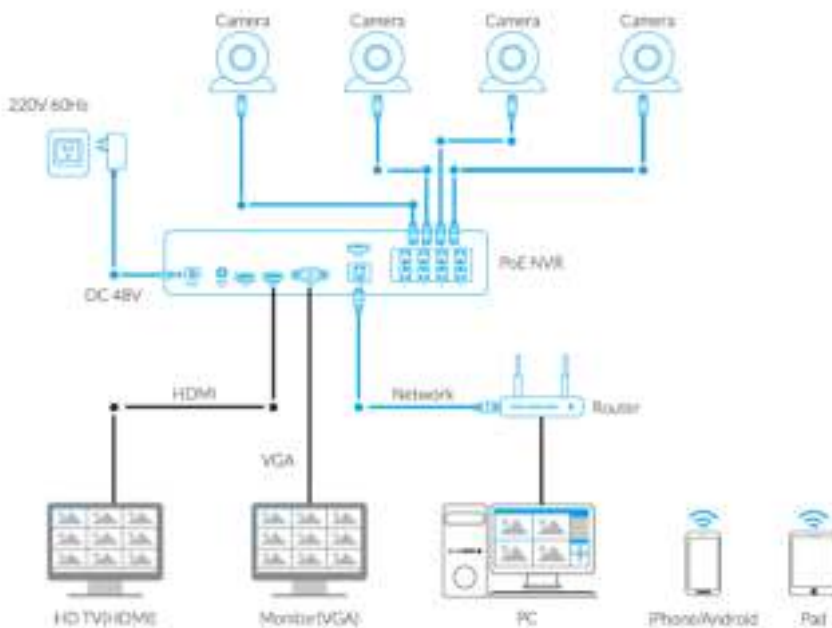
The Setup Wizard will run automatically the first time you start the NVR.
The wizard will guide you through all the settings you need to get your NVR up and working,
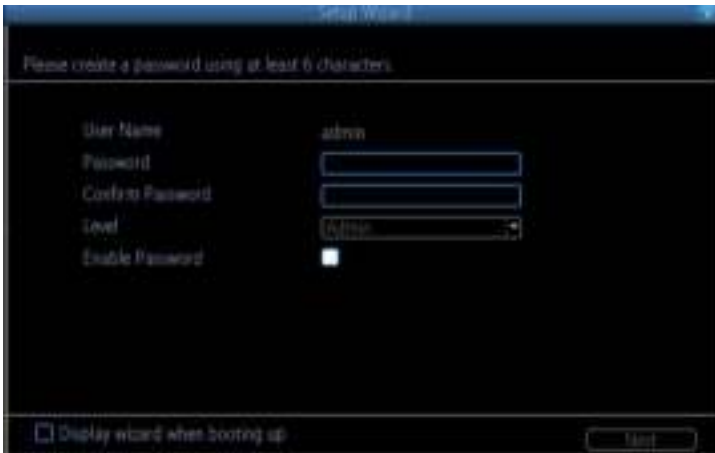
For Security Purpose, Here you need to create the password using at least 6 characters to continue. After Setting, then Click "Next "to continue.

🟦 **User Name:** The NVR's default account, which is "Admin". You can't change the **Admin** user name.

🟦 **Password:** The password you would like to be associated with the **Admin** account. A password can be between 6 and 31 characters in length, and may consist of numbers, letters or symbols. The first and last characters cannot be space. **The default password is blank, so you must create new password to continue.**

🟦 **Confirm Password:** Re-enter the password to ensure accuracy.

🟦 **Level:** This field is greyed out because the **Admin** account always has the highest level of access. There are two additional access levels available - Guest and Operator.

🟦 **Enable Password:** Select this if you want to be prompted for the user account's password when accessing the main menu.

🟦 **Display wizard when booting up (checkbox):** Select this if you want the NVR to automatically run the configuration wizard when it boots up. You may also run the wizard at any time by clicking the 🔷 icon on the NVR menu bar.

DEFAULT PASSWORD INFORMATION
To ensure your privacy, the NVR supports password protection.
The default, all-access username is '**admin**', the default password is '**blank**'. You need to create a password to continue. To ensure your privacy, we strongly recommend setting a password as soon as possible. Choose something that you will remember and others would be unlikely to guess.

IMPORTANT NOTICE - Do NOT lose or forget your password. To ensure that your NVR has the best security possible, password recovery has been designed to be a complicated and time consuming process. If you forget password, please contact support@reolink.com for super password tool downloading link.

General Configuration

● **Language:** Choose the language you would like the menu system to display.
● **Video Standard:** Choose between **NTSC** (USA, Canada, Mexico, Japan, Korea and some other regions) or **PAL** (UK, Europe, Australia and some other areas). If this is set incorrectly, images from your cameras may be distorted, black and white.
● **Resolution:** How many pixels the NVR will output. Typically, you may want to set this to be equal to the native resolution of your monitor/television. It is suggested to set it to 1920*1080 when you need HDMI monitor connection.
● **Time Zone:** Choose the time zone you are at. It is really important to select the right time zone if you are using NTP (Network Time Protocol).
Some common Time Zones: In the USA
EST (Eastern Standard Time) is GMT-5:00, PST (Pacific Standard Time) is GMT-8:00. UK is GMT +0:00, and the East Coast of Australia is GMT +10:00.
● **Menu Date Format:** How you would like the date to be displayed.
● **UID:** This is the NVR's **U**nique **Id**entifier number(16 characters) which will be used later to connect your PC or Smart Phone to the NVR using Reolink P2P Technology and access to the system anytime anywhere! Or you may use your phone scan the QR code on the side to add the device.

After finish Settings, click Next to continue.
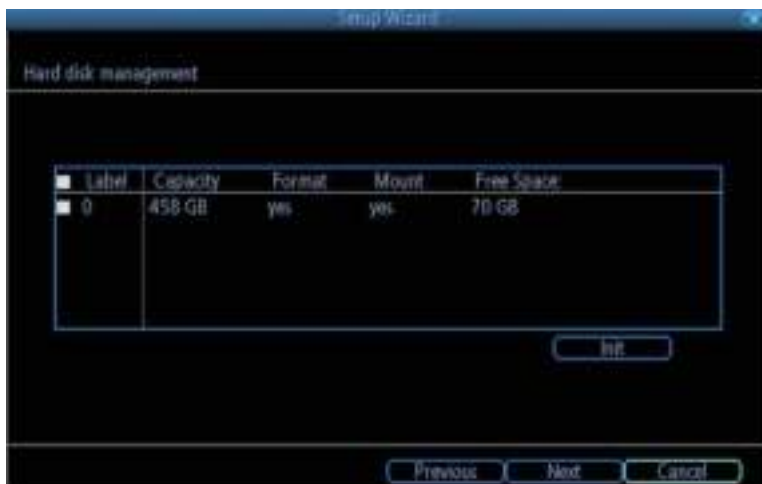
Here shows the HDD capacity and free space, if you want to format the HDD, choose the HDD, then click Init or you can click Next to continue.

Setup Wizard : Network Configuration

This page shows the current network conditions. we will introduce the details on the other chapter.

You can click Next to continue.

Here you can see the list of cameras that are connected to the NVR.

* **IP Address:** Displays the unique IP number and port number that is assigned to the network camera.
* **MAC Address:** The Media Access Control address. This is a unique code which cannot be shared - it is hard coded when the camera is manufactured.
* **Name:** All camera default name is "Camera1". Changing its name will help to easily identify the camera.
* **Channel:** The channel to which the camera has been assigned.

E-mail

If you want the NVR to send email alerts when alarm events are detected, then you need to configure an outgoing email server for the NVR and choose an email address for it.

We recommend creating an account with Gmail specifically for the NVR, and setup its security level to be low. These instructions assume you're using a Gmail account.

- **Enable SSL or TLS**: Check box to enable
- **SMTP Port:** The SMTP port of your email server. Gmail's port is 465 (this value will self-populate)
- **SMTP Server:** The SMTP address of your email server. There are 3 preset options to select from: *smtp.gmail.com, smtp.live.com or smtp.mail.yahoo. com*
- **Sender Address:** The email address you want your NVR to send alert from. For example, *your_email*@gmail.com
- **Sender Password:** The password of your sending email address.
- **Recipient Address:** Enter an email address for the NVR to send alerts to (usually your personal email address).
- **Attach Picture:** You may select **Disable, Attach Picture, or Attach Video**. Disable means there is only text information in the emai; Attach Picture means there will attach a snapshot(4MP) when MD alerts; and Attach Video means there will attach a video clip(30s) when MD alerts.
- **Interval:** The minimum amount of time that must elapse after the NVR sends an email alert before it can be triggered again.
- **Test:** To check if you've set up email alerts properly, click the Test button. If your connection and email details are ok, you will see a message on the NVR screen confirming the email was sent successfully. After a short delay, you will also receive an e-mail in your inbox (Recipient's Address) informing you that email alerts from the NVR has been set up. If the test is unsuccessful, please check your sender's address/password and recipient's address(es) and try again.

UID: This is the NVR's **U**nique **Id**entifier number which will be used later to connect your PC or Smart Phone to the NVR using Reolink P2P Technology.

Click Send UID, the UID Number will send to your sender's E-mail address. You may copy the UID code to Reolink Client for remote access.

Setup Wizard : DDNS Configuration

DDNS is not required for Reolink P2P remote access. If you intend to access your NVR using older IP technology you will need to configure this service.

Use domain name for access, please forward HTTP port and server port in your router.

◉ **DDNS Type:** Choose the server that you're using. DYNDNS is recommended.

◉ **Server Domain Name:** Enter the host name that you set up in your DDNS service. This is the address you use to access your network.

◉ **Username and Password:** Enter the username and password you setup with your DDNS server. These do not have to match your username/password combination in either your Camera or router. (for the sake of security, we suggest making them different).

◉ **Confirm Password:** Retype the password to confirm

If the test is unsuccessful, a message will appear onscreen informing you that the "Update was Unsuccessful". This could mean that there's a problem with your network setup, or there's a problem with the DDNS Account Name and Password you're using.

NTP stands for "Network Time Protocol". It is a way for the NVR to connect to the Internet and automatically update and maintain the accurate time. There is no requirement to use NTP. It is easy to setup and free to use.

* **Synchronize Every:** The interval when the time will SYNC from NTP server.
* **NTP Server:** The server you would like to use for NTP. They are all quite comparable in terms of reliability and accuracy. The default NTP server is recommended to use. (**pool. ntp.org**)
* **NTP Port:** The default port is **123**. You should only change this if you are using a different NTP server, and you know they use a different port. *If you're using **pool.ntp.org**, ensure that the port is 123.*
* **Sync:** Triggers the NVR to automatically synchronize its internal clock with the time server immediately. If your NVR is connected to the Internet and the network is correctly configured, this will update at an instant.
* **System Time:** The NVR's current date and time.

Setup Wizard : DST Configuration

If your time zone observes daylight saving time and you want your NVR's clock to be updated automatically when daylight saving time starts and ends, make sure the **Enable** checkbox is selected.

* **Offset:** The amount by which the time changes during DST. For the vast majority of locations, the offset is one hour, but exceptions to this rule exist.
* **Start Time** / **End Time:** When DST begins and ends in your locale.

Note: Make sure your time offset is set correctly or both your NVRs normal time and DST time may be out.

Finishing the Setup Wizard

When you click **Finish**, the NVR will update and save your settings. It may reboot while doing so.

Using the Live View Screen

Live View is the default mode for the NVR. All connected cameras are displayed on-screen. The NVR can display video feeds from up to 4/8/16 cameras depending on the model.
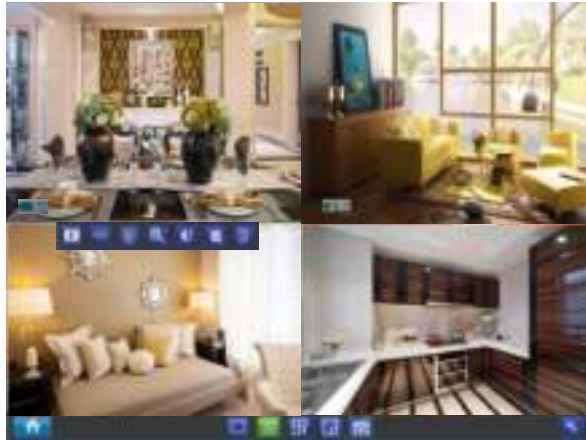
Status icon

Information on the NVR and camera status is displayed as icons on the Live View screen. Each camera will show its own status icons. Icons are there to give you a quick snippet of what's going on with your cameras - whether your camera has detected motion or even when your camera is having a connectivity issue. The following is a guide of what each icon represents:

This icon indicates that the camera can record at a 4MP high definition resolution.

The camera icon indicates that this camera is currently recording. This icon will be the same whether the recording was scheduled, initiated manually or triggered by motion (though the motion icon will also be present if there's motion detected).

The motion icon indicates that the NVR is detecting motion coming from this camera.

Video Loss indicates that the channel displaying this has lost the feed from its camera. This may be caused by a disconnected/damaged cable, the camera may have lost power, the camera may have been de-registered from the channel or defective, or the camera has not input the correct password in the IP CHANNEL list.

If you see this icon on-screen (it will be showing in the bottom right corner by default) It indicates an alarm warning happens. It might be alarm, video loss or HDD exception. Click the icon to access the **Event Log** where you will get more information about the problem.

Menu Bar

Right click with the mouse on the live view screen to open the Menu Bar

Menu: Opens the main menu.

Single Camera View: Shows images from one camera in full-screen.

Four-Camera View: Divides the screen into four viewing windows, each showing images from one camera.

Next Camera(s): Cycles the cameras displayed in viewing mode. Only work for 1/4/8 camera simultaneous live view mode.

PIP: Picture-in-Picture. Allows you to view two channels at once, with one full screen and the other as a small overlay.

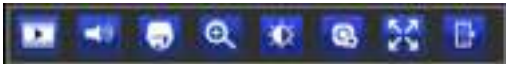**Start Tour:** Has 1 or 4 screens display automatically in turn.

Manual Record: Initiates manual recording (please refer next page of the settings)

Run Startup Wizard: Runs the initial startup wizard.

Camera Tool Bar

Left click the USB mouse once on one of the live video channels available to access the camera tool

bar. Note: Unavailable functions are greyed out.

✦ **Playback:** Opens the "Search: Playback" menu.

✦ **Audio**: Requires Audio Enabled NVR Audio Output

✦ **PTZ Control Menu**: Opens the PTZ control menu (requires for RLC-423).

✦ **Zoom**: Zoom in and out the live view.

RLC-410/420/423 will display as below bar.

Zoom In: Digital Zoom In

Zoom out: Digital Zoom Out

Draw a box over an area of the video that you want to zoom in.

Restore zoom back to default setting.

Exit Digital Zoom mode.

Note: RLC-423 Optical Zoom control panel is in its PTZ control page.

RLC-411/422 will display as below bar:

 Zoom In: Optical Zoom in

 Zoom Out: Optical Zoom out

 Manually focus far(Only use when AUTO FOCUS has problem)

 Manually focus near(Only use when AUTO FOCUS has problem)

 Exit

- **Image Setting:** Displays the selected video channel in full screen and shows the **Image Settings** window for you to change the brightness, contrast, saturation and hue. For more details, see Image Settings in "Display: Camera"
- **Camera Setting:** Opens the "Display" menu.
- **Exit:** Closes the toolbar.

On this page, it shows all the channel Schedule recording is On/Off.

if the schedule recording is ON, you can see next to Schedule is a Blue ON Button, and the start and stop is in grey, now you can't set the manual record.

if the schedule recording is OFF, you can see next to Schedule is a RED OFF button, now you can manual set the record start or stop by click the circle dot.

Note: This function can only work when the RECORDING→SCHEDULE is disabled.

On the IP Channel page, you can

- view specific information about cameras
- scan for cameras that the NVR is able to detect that are connected to NVR poe ports or under the same router with the NVR.
- add cameras to any available channels
- delete cameras from their existing channels

- **Name:** Shows the name of the camera associated with the channel.
- **IP Address:** The IP address assigned to the camera.
- **Channel:** The channel number that the camera is connected to.
- **Status:** Tells whether the camera is *Previewing, Offline or INVALID PWD.*
- **User Name:** *Admin* as default of the camera.
- **Password:** If your camera was set password from reolink client before, you need to input the correct password. If not, the default password is blank and no need to fill in anything.
- **Protocol:** Auto. It will connect by detecting the IP camera protocol. Reolink cameras and NVRs work by private reolink ip protocol.
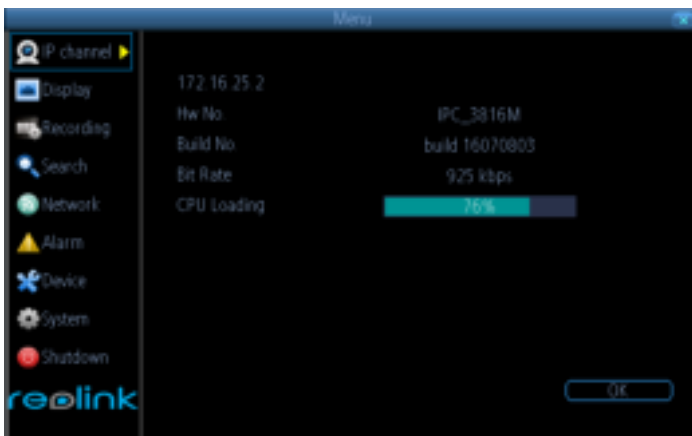
Select one camera and click **Detail**, it will show the camera firmware version and CPU Loading and bit rate.

Click the **Scan** button to generate a list of all cameras that your NVR can detect.

On The display: Camera page, you can
- Rename the camera
- Set the information that will be displayed on-screen
- Set where this information will be displayed
- Set whether information such as the date will be recorded directly to your videos
- Set any areas of the video you want to "mask"
- Set the camera video parameters

- **Camera No.:** Choose the channel you want to edit here.
- **Camera Name:** Shows the name of the camera that's currently connected to the channel. You may also specify a different name by using a virtual keyboard window.
- **Disable Preview:** Check the box to disable the preview of selected channel.
- **Display Camera Name:** When checked, the name will be displayed on-screen
- **Record Date:** When checked, the date will be recorded directly to your videos.
- **OSD Display Position:** Gives you access to a screen where you can easily set the exact positions of any over-lay text, such as the camera name and the date and time.

Image Settings
- **Brightness***:* Changes how light on the image appears to be.
- **Contrast***:* Increases the difference between the blackest black and the whitest white in the image. Useful if sections of the image "grey out" but setting the contrast too high will degrade image quality.
- **Saturation***:* Alters how much color is displayed in the image. The higher the saturation, the more bright and vivid colors will appear to be. Again, setting this too high can degrade image quality.
- **Hue***:* Changes the color mix of the image (this can have very dramatic results). It's somewhat like moving through a rainbow.

- **Mask:** When checked, allows you to create, place and shape a "privacy mask" which obscures part of the image on the associated channel.

Camera Parameters: Adjust various camera settings according to the environment where the camera is installed.
- **Anti-flicker***:* Use this feature if some devices such as TV screens and lights are flickering. For USA and Canada, set this to 60Hz. For Australia and the UK, set this to 50Hz. Outdoor mode is also available.
- **Exposure Mode***:* Select the exposure level of the camera based on pre-defined conditions. Select Manual to adjust the shutter speed and gain value of the camera.
- **Contextual:** Change the way the camera processes white balance to correct image colors. Auto, Day, Night or Manual (adjust the red and blue gain manually).
- **Day/Night***:* Set the camera's color mode during different times of the day and night - AGC (Auto set by image sensor, Color (Always in Day mode), Black&White (Always in Night mode) or CDS (Auto set by light sensor).
- **Backlight***:* Optimize brightness and contrast levels to compensate for differences between dark and bright objects using either BLC or WDR mode. This may improve image clarity in high contrast situations but should be tested at different times of the day and night to ensure that there is no negative effect.
- **Mirroring***:* Change the orientation of the image to be horizontally reversed.
- **Rotation:** Turns the image upside down.

On the Display output page, you may set the:

- output resolution on screen
- the transparency of the menu
- the sensitivity of the USB mouse
- the boarder of the live view

✤ **Resolution:** The number of "little dots" that make up an image. This should be set as high as possible, but equal to or lower than the maximum resolution your screen/monitor can display. Make sure your monitor supports or exceeds the resolution you choose or it may not be able to display.

The NVR has below formats available, in four different aspect ratios:

- **Standard (4:3)** - 1024 x 768
- **Standard (5:4)** - 1280 x 1024
- **Widescreen (16:10) -**1280 x 800, 1440 x 900
- **Widescreen (16:9)** - 1280 x 720 (720p) or 1920 x 1080 (1080p)

Standard Monitor via VGA: Use one of the 4:3 formats to correctly align the NVR's output on your screen. Using a widescreen format will "stretch" the image vertically.

Widescreen Monitor via VGA: If possible, use the widescreen (16:9 or 16:10) format. If your monitor can't display these resolution, you might need to enable letter-boxing on your monitor and use a 4:3 format.

PC Monitor via HDMI: Choose a format appropriate for your monitor. If it's a widescreen, use a widescreen format. Set to the highest option that is **equal to or less** than the screen's maximum resolution.

Widescreen Plasma/LCD HDTV via HDMI: The resolution should be set to the maximum your television can *process* not *display*. Typically, this will be 1080p, as even screens which don't have that many pixels can still display the image, just with less detail. Check your television's documentation to learn this value. If your television can't display 1080p, then use 720p instead.

✤ **Transparency:** You may set the NVR's menu to be partially transparent
✤ **Mouse Sensitivity:** Tells how sensitive the mouse will be.
✤ **Border Adjustment:** Changes the size and position of the cameras' images on the screen.

On Record: Encoding page, you can

- choose the resolution (per channel) of recording
- change the frame rate (how many images per second the NVR records)
- change the data-rate of each video stream.

  The higher the data rate, the "better" your images will look, but may take up more space in your HDD.
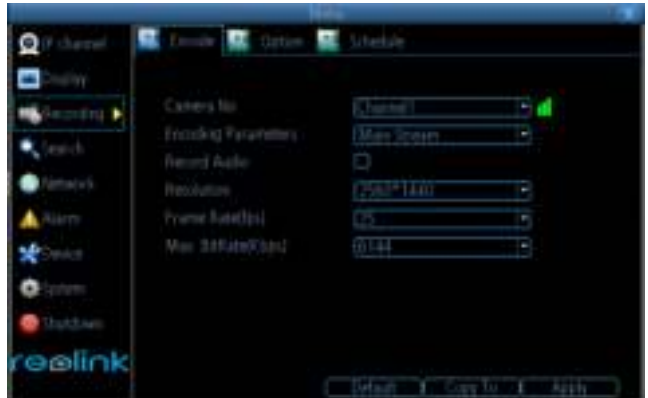
● **Camera No.:** Tells the channel you want to set.
● **Encoding Parameters:** Tells whether you're editing the parameters for the mainstream or the sub-stream.
● **Main-Stream:** The main-stream is the video feed that the NVR will record and display. This is the higher-quality stream.
● **Sub-Stream:** The sub-stream is the video stream that the NVR will send to remote devices via network or the Internet. It is the lower-quality stream since a reduction in video size makes it easier to send over a network.
● **Record Audio:** check this to record and display with Audio. This function is only for camera which have built-in Mic.
● **Resolution:** How many "little dots" are going to make up your image.
● **Frame Rate:** The number of frames per second (fps) that the NVR will record. The default (and maximum) is referred to as "**real-time"** and is 30fps (NTSC) or 25fps (PAL).

Reducing the number of fps will **not** save hard drive space but potentially **will** improve the data-rate per frame (depends on how you set the bit-rate - see the next point).

Remember that your FPS count is the same as saying "take X photograph per second" (where X is your FPS setting). 5fps doesn't sound like much, but it's still five individual photographs per second. If maintaining image clarity while reducing HDD consumption is your priority, it makes sense to lower the frame rate.

With above mentioned settings, some experimentation is encouraged to find the settings which will work best for you!

Max. Bitrate(Kbps): The actual amount of data that the NVR will use to record video. The higher the bitrate, the more space each recording will take up on the hard disk. Generally speaking, recordings encoded at higher bitrates will be of better quality, especially when recording movement.

On the recording: Option page, you may set
- Whether the NVR will record a short video before events take place,

- how long after events take place the NVR will continue to record

- how the NVR will store and divide long recording?

- Whether the NVR will continue to record and cover the earliest recording.

⏺ **Overwrite:** When enabled, the NVR will record over the files already stored on the hard drive. The NVR will always record over the **earliest** files on your hard drive.

⏺ **Pre-Record:** While Pre-Record is enabled, the NVR will record a few seconds *before* an event occurs. If you're using *Motion Detection* (recommended) based recording as your primary recording method(s), then it's a really good idea to use Pre-Record.

⏺ **Post-Record:** How long after an event occurs that the NVR will continue to record. It can be very useful - for example, if an intruder or potential target triggers the motion detection but pauses in view, having post-record enabled will get a much better look of the event.

⏺ **Pack Duration:** *Pack Duration* is a measurement of how long the NVR will record before splitting the output file into discrete units. "Packs" are something like the chapter numbers on a DVD - though the video is broken up into separate units, it will still play through as one continuous movie.

On Recording: Schedule Page, you may set the recording time schedule of each channel.
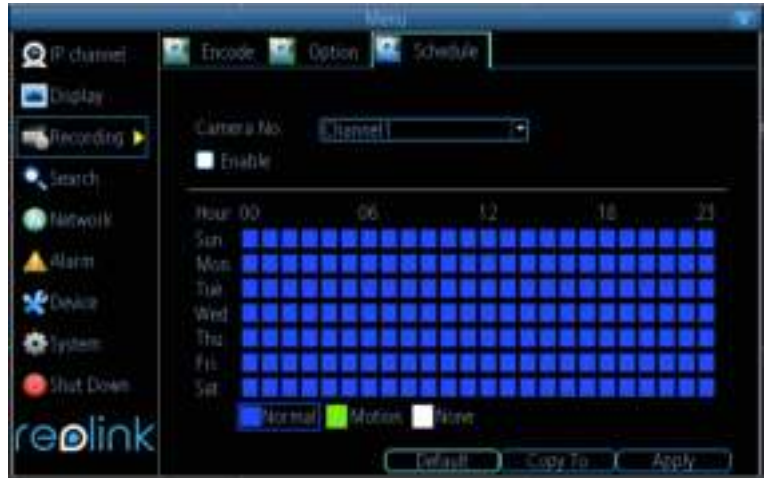
There are three types of recording to set:

❋ **Normal:** The NVR will constantly record for any period. You won't miss anything.

❋ **Motion:** The recommended recording setting for most applications. The NVR will only record when it detects something moving in front of the camera, and will then only record footage from the camera(s) that do detect motion unless you alter your Action settings "Alarm: Motion Detection - Action" to include other channels.

> Before setting any of your schedule to Motion, ensure that **Motion Detection** is properly configured for the channel(s) you want to associate with it. See "Alarm: Motion" for more information about setting up and configuring Motion Detection.

❋ **None**: As the name suggests, the NVR will not record anything.

Copy To (Channel): Located at the base of the screen, with **Default** on one side and **Apply** on the other. This will allow you to copy the schedule from the channel you're editing to another channel or channels.

Note: if the box after ENABLE is not checked, it will not record as scheduled, but you need to do MANUAL RECORD.

On the S**earch: Playback**

page, you can

- select the playback channel
- choose the video type
- Set the start and end time for
  playback

Click **Detail** button to check the
recording type for different time
period. You may click on any
grid at any time and at channel
to start playing.
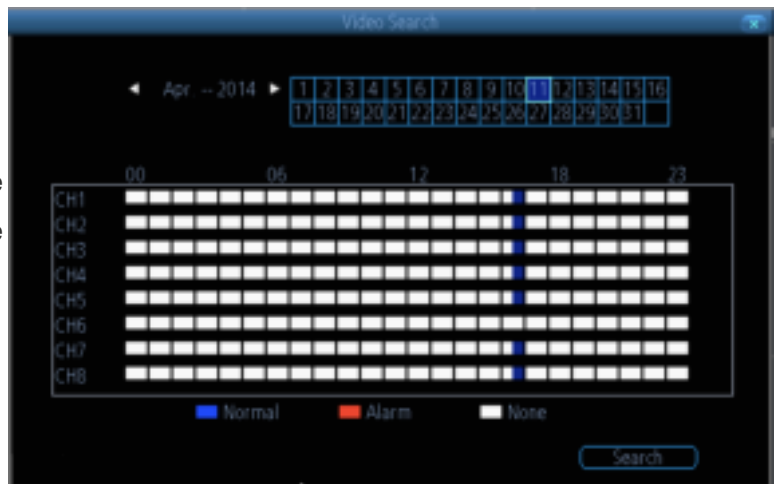
Or you may click **Search** and
see all the file you want to play,
then click play button.

The **Playback** interface is quite similar to a computer's media player. Most of the controls are quite straight forward and it operates in the same way as a standard media player.

⬤ **Playback Bar:** A basic progress meter. You can click to move the current position icon to quickly scan through video events.

⬤ 🔊**:** sets the output volume of playback.

⬤ 🔲 **:** Used to mark a ***Start Point*** and ***End Point*** for incident backups. Press 🔲 to mark a start point and press 🔲 again to mark an end point.

⬤ 🔲**:** Press the button to backup the video clip cut.

⬤ ◀**:** Reverses the footage.

⬤ ▶**:** Plays footage at normal speed.

⬤ ⏸**:** Pauses playback but retains still images on- screen. Subsequent presses will move a single frame forward in the video. This will usually be 1/30th (NTSC) or 1/25th (PAL) of a second.

⬤ ⏩**:** Speeds up playback.

⬤ ▷**:** Plays footage at a reduced speed. Press multiple times to further reduce the speed: 1/2 speed, 1/4 speed, 1/8th speed, 1/16th speed and so on.

⬤ 🟦**/**🟥**:** Tells whether the video being played back was recorded under **normal recording** (blue) or based on **motion event** (red).

⬤ 🔻**:** Maximizes the area on-screen for playing back your footage by hiding the on-screen controls.

⬤ ▶**:** Leaves the playback interface and returns to the Live Viewing mode.

⬤ ▭**:** Enlarge the time period on the time bar.

⬤ ▭**:** Shorten the time period on the time bar.

On the Search: Backup Page, you should
- Connect a USB flash drive to the **USB Port** on the front panel or at the rear panel of the NVR
- Choose the camera(s) you want to backup footage from.
- From the **Video Type** menu, select the type(s) of video you want to backup.
- Set your **Start Time** and **End Time.**
- Select **Backup**.

The backup file list will show you a list of all the video events between the start and end times you have selected. All the ticked files will be part of the backup.

The **Event Search** menu will show you recordings that were triggered by the NVR when detecting motion.

Typically, the majority of recordings based upon "Events" are likely to be recordings triggered by the NVR's **motion detection** feature.

The search function operates in the same way as the main playback search: the only difference is you'll select an **Event Type** rather than a **Video Type**.
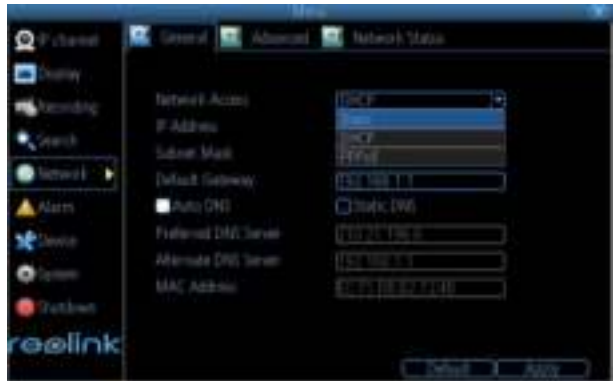
The **Log Search** displays a list of events, presented in chronological order: the most recent events will be at the end of the list.

The Log will list all events that the NVR experienced, like user login, restart, camera lost, HDD error, etc.

On the Network: General Page, you may
know the status of your network, like
• Network Access
• IP Address
• Subnet Mask
• DNS
• Mac Address

❋ **Network Access**: Here you can choose
  • **DHCP:** DHCP is a system where one device on your network (usually a router) will automatically
    assign IP address to device connected to the network.
  • **STATIC**: Static networks require all devices to have their IP addresses manually defined, as there is no
    device dedicated to automatically assign IP address.
❋**IP Address**: Just as Home and Office needs to have an address which identifies their location on the
  local network, the Camera uses IPv4 addressing, which consists of four groups of numbers between 0
  and 255, separated by periods. For example, a typical IP address might be "192.168.1.24" or similar.
❋**Subnet Mask**: If the IP address is like a street address, then a subnetwork is like your neighborhood.
  This will be formatted in a similar way to the IP address (ie. four numbers up to 255 separated by periods)
  but contain very different numbers. In the above example, the Subnet Mask might be something like:
  "255.255.255.0".
❋**Gateway**: This is the address of the "way to the Internet." To continue the road analogy, this is like your
  local access point to the highway. This is an IP address in the same format as the others, and is typically
  very similar to the IP address of the Camera. To continue the above example, it might be something such
  as: "192.168.1.1", which can access to your router directly.
❋**Auto DNS** / **Static DNS**: Choose how you would like to define your DNS servers. We recommend leaving
  it on Auto configuration.
❋**Auto DNS**: The Camera will automatically choose a DNS server. This is the recommended setting.
❋**Static DNS**: If you need to manually define a DNS server, then choose Static DNS. This must be copied
  from your router.
❋**Preferred DNS Server:** "Domain Name System". Everything on the Internet is located via an IP address -
  however, for ease of use, we associate domain names (such as "www.exampledomainname.com") with
  those IP addresses. These index are accessible in many locations online, and we call those locations
  "DNS servers".
❋**Alternate DNS Server:** A backup DNS server. This is for redundancy - your Camera will probably work
  without one.
❋**MAC Address:** The Media Access Control address. This is a unique code which cannot be shared. You
  can't change this one - it's pre-set when the Camera ships out.
❋**Note:** Many of the following networking settings are not required when using ReoLink P2P for remote
  access.

On the Network: Advanced page,
you can Set
- DDNS
- NTP
- E-mail
- FTP
- IP Filter
- related media port

◈ **DDNS:** DYNDNS is the only choice. If
you do not want to use Reolink UID for
access, you may need to apply a
DYNDNS account from

www.dyndns.com. .

◈ **NTP:** Network Time Protocol. If you've got the Camera connected to the Internet, you can have it automatically sync
time with an online server.

◈ **Email Settings:** You may configure the Camera to work with an email account of your choice. This must be correctly
configured for the Camera's auto-email feature to work.

◈ **FTP:** File Transfer Protocol, you can use FTP to transfer files between Camera and computers on a network.

◈ **Server Port:** Camera will use server port to send information through. Please note that,

You'll need to enable UPnP on your router so your router can selectively open these ports, allowing the
NVR to communicate via the Internet. If your router doesn't support UPnP, You may either get a new router
(which support UPNP) or you can manually forward ports from the router to the NVR. Port Forwarding is a
technical process and may require router knowledge.

The default port number is **9000**, which is not used by many other devices/programs. However, if you have
another Camera or Camera-like device, this port may be used already. If this is the case, change this value to
be unique. (If you use UID, there is no need to forward this port)

◈ **HTTP Port:** This is the port through which you will be able to log in to the NVR via web. It will need to be forwarded
properly in order to ensure smooth, latency-free communication. The default value is "80". If another device on your
network is using this port, please change to other value. This is the port number you'll need to remember when logging
in remotely from a remote PC via the HTTP interface. (If you use UID, there is no need to forward this port)

◈ **RTSP Port:** Real Time Streaming Protocol", you may use this port to send the streaming file to Realplayer , the default
RTSP port is 554

◈ **UPNP enable** (**This feature is not required if you are using Reolink P2P to access the Camera**)**:** UPnP makes
configuring your network easier and faster. To use the UPnP setting on the Camera, you'll need a router which
supports this feature, with UPnP enabled. Note that many routers which do support UPnP do not come with the feature
enabled by default. You may need to ask your Internet service provider to turn it on.

When UPnP is enabled on your Camera and your router, the Ports that the Camera requires to be open for access to
and from the Internet will automatically be opened and closed as necessary by your router, saving you the trouble of
manually forwarding these ports. If UPnP is not enabled, or your router does not support this feature, you'll need to
forward the ports the Camera uses from the router to the Camera - since this is a technically challenging process, we
strongly recommend using UPnP if possible.

◈ **UID Enable:** It is enabled with checked box by default. If you do not want to use it in internet, you may uncheck the box.
Note: it will not connect via internet if you uncheck the box.

UID: The Camera's **U**nique **Id**entifier code for P2P. For convenience, you may have this code sent to your email account
by clicking the **Send UID** button (provided that you've already set up your email account).

DDNS is not required for Reolink P2P remote access. If you intend to access your NVR using older IP
technology you will need to configure this service.

- **DDNS Type:** choose DynDns.
- **Server Domain Name:** Enter the host name that you set up in your DDNS service. This is the address you use to access your network.
- **Username and Password:** Enter the username and password you setup with your DDNS server. These do not have to match your username/password combination in either your Camera or router. (for the sake of security, we suggest making them different).
- **Confirm Password:** Retype the password to confirm
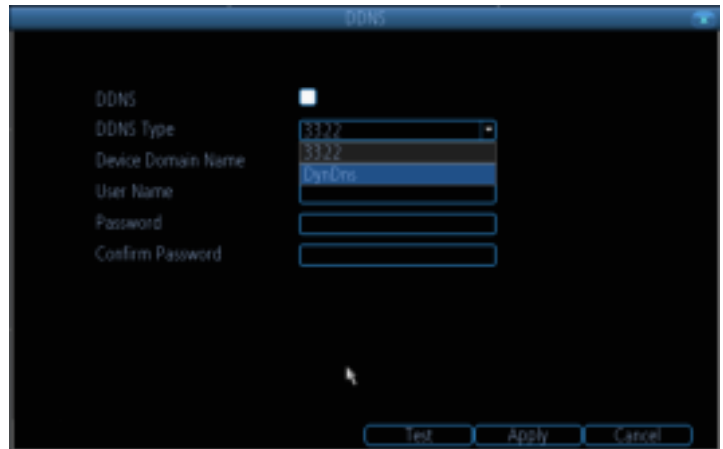
If the test is unsuccessful, a message will appear onscreen informing you that the "Update was Unsuccessful". This could mean that there's a problem with your network setup, or there's a problem with the DDNS Account Name and Password you're using.

Network -> Advanced -> NTP

NTP - set this to the time zone where you happen to be. For example, people in the USA and Canada is GMT-05:00. (GMT stands for Greenwich Mean Time - it's the baseline that keeps all the different time zones in sync.)

E-mail Notification tells you what's going on around your home or business as it happens, then you may configure it to automatically send email alerts as events happen.

We suggest using Gmail as your email client.

✤ **Enable SSL or TSL:** Tells whether the email server you're using requires a secure link. This is **on** by default, and should be left on if you're using any of the preset email servers.
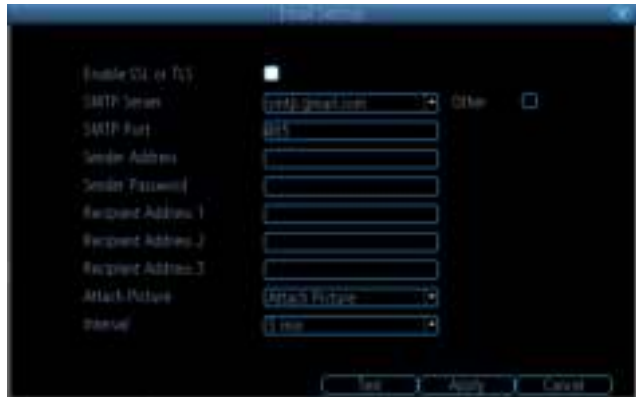
✤ **SMTP Server:** There are three preset options to choose from, Gmail (smtp.gmail.com), Windows Live Mail (smtp.live.com) and Yahoo Mail (smtp.mail.yahoo.com).

✤ **SMTP Port:** The SMTP port used by the email provider of your choice. This field will automatically self-populate if you use one of the presets.

✤ **Sender Address:** The address you're sending the email **from**. This will be the username you've set up for the email server you're using, For example: "youraddress@gmail.com" or similar.

✤ **Sender Password:** The password for the outgoing email account.

✤ **Recipient Address:** The email address you want the NVR to send emails to.

✤ **Attach Picture:**

   Attach Picture: When this is selected, the NVR will attach a 4MP image to each email alert. For motion-based email alerts, this will be an image of whatever triggered the motion detection.

   Attach Video: When this is selected, the NVR will attach a MP4 vide with 30s recording to each email alert.

   Disable: When this is selected, the NVR will not attach anything in your email.

✤ **Interval:** The length of time that must elapse after the NVR sends an email alert before it will send another.

Other (check-box): This is for user who want to use a different email server, typically the outgoing email server of their ISP. If you want to use your ISP's outgoing email, then you'll need to contact your ISP to learn the correct values for the other fields (such as the correct *SMTP server*, *SMTP port*, *SSL* or *TSL* requirements and so on).

Here you may set the FTP server related information. You should input the ftp server IP address: Port, User Name, Password, so the snapshot or video can directly store to your ftp server.

You can set the FTP alarm schedule, you can refer to "Recording: Schedule" on page 28. Check the box after Enable FTP will allow the NVR to do FTP uploading according to the schedule.
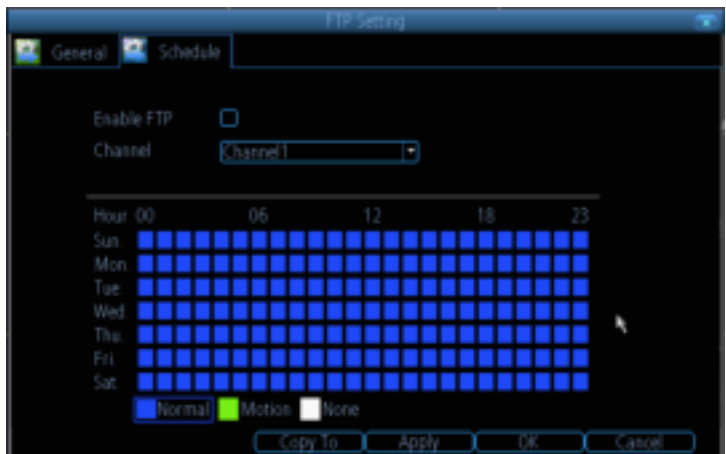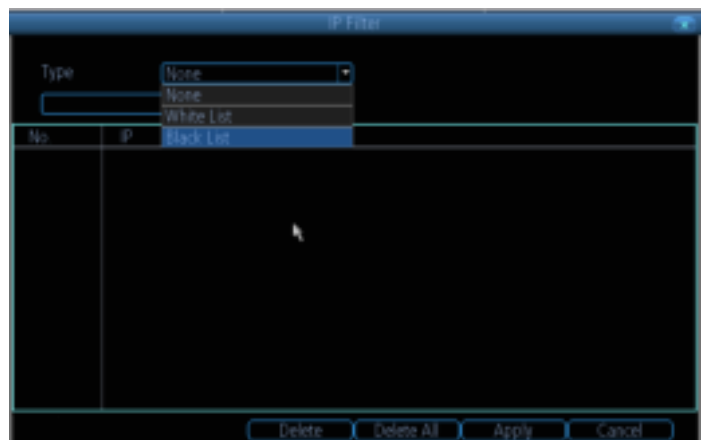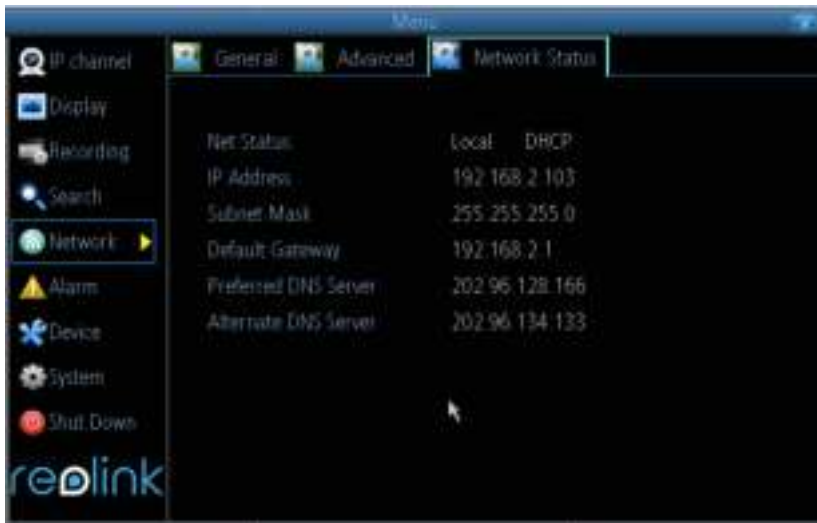
Network -> Advanced -> IP Filter

The **IP Filter** can be used to modify which IP addresses have permission to talk to the NVR and which do not.
This is an advanced feature and is recommended for advanced users only.
. **Black List:** the IP address that is not Allowed to access the NVR
.**White List:** the IP address that is only Allowed to access the NVR

Here you may find the network information which refers to IP Address / Subnet Mask / Gateway /Preferred DNS /Alternate DNS.

On **Alarm: Motion** Page, you may set the motion detection function.

What is Motion Detection?

Motion Detection is the process of detecting a change in the position of an object relative to its surroundings or a change in the surroundings relative to an object.

There are many approaches for motion detection in a continuous video stream. All of them are based on comparing of the current video frame with one from the previous frames or with something that we'll call background.

● **Enable:** Tells whether or not motion detection is enabled on a specific channel.
● **Motion Detection:** Click the applicable **Set** button to setup the motion detection area for that channel. See next page for the details
● **Schedule:** Setting the Motion detection Schedule
● **Action:** Here you may define what will happen when the camera you have selected detects motion.

Set Motion Detection

Click **Set** button next to Motion Detection, you will see a grid of red boxes. The outlined boxes mark the area that is sensitive to motion. The area without the red outlines is not sensitive to motion.

Use the mouse to move the cursor around the screen. By pressing select or left clicking an area in the grid, you can toggle motion detection ON or OFF in that location.


Right click the mouse, you may find the menu, you may set all page or delete all page.

Sensitivity: The Sensitivity setting is controlled by a slider, allowing you to set a value between 1 and 50. The lower the number, the more sensitive the motion detection will be. In the daylight time, it is suggested to set higher sensitivity between 10~40. In the night mode, it is suggested to set lower sensitivity between 40~50 to avoid noise triggers the MD. You may set 4 different period with different sensitivity.

You may set the Motion Detection schedule by clicking the Set button next to Schedule. And click ▮ and drag in the time grids to setup the alarm periods.
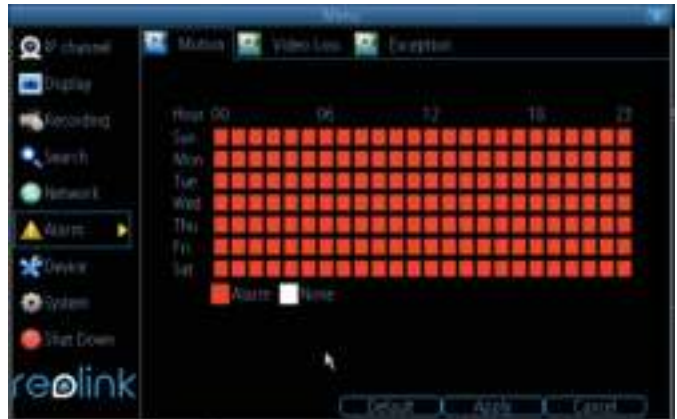
Action:

- **Audio Warning:** The NVR will use its internal buzzer to beep.

- **Send Email:** The NVR will send an auto-email alert when the event type you have selected occurs. The Email Settings button will take you to the same email configuration screen accessible from the Network menu - see "Network: Advanced: Email Settings"

- **Push:** The NVR will send a push message alert to your phone app when the event type you have select occurs.

- **Trigger Camera:** You may define one camera's motion detection to trigger recording on one or more other cameras.
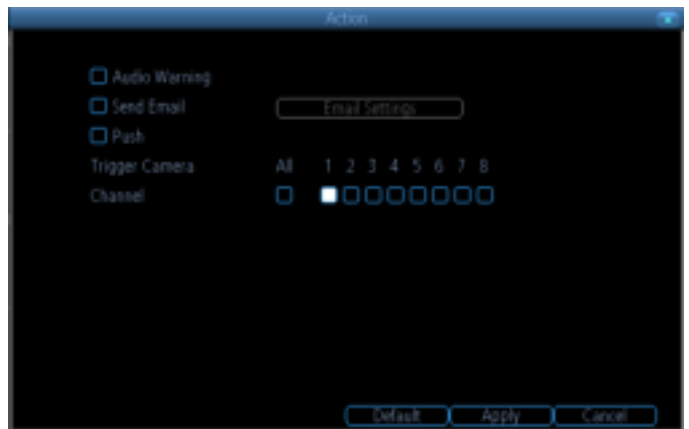

Device Setting -> Alarm -> Video Loss

Once the video lost the signal, because of unknown reason, you may enable the video loss action for the channels to send alarm.

You may also set the Schedule and Action for the video loss alarm.

An **Exception** is any deviation from the NVR's normal behavior - phrased another way, it's like saying the NVR's been working fine **except** for these events.
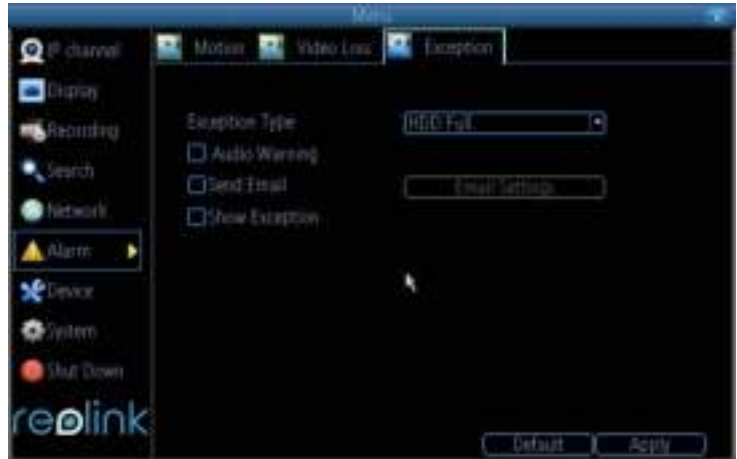
There are 4 Exception Type:

● **HDD Full:** As the name suggests, this event occurs when the NVR runs out of space on the hard drive to save new footage. This event is redundant if you've got overwrite enabled, as the NVR will automatically delete old footage to ensure it can continue to record.

● **HDD Error**: Occurs when the NVR has trouble accessing its hard drives, or when it cannot detect one at all. This error could be generated by either an internal hard drive, or an external one connected to the eSATA port.

● **Net Disconnected**: Will occur if the NVR has problems connecting to the Internet. This may indicate a problem with the NVR's configuration, a fault with your network or a problem with your Internet Service Provider (ISP).

● **IP Conflict**: This event will occur if the NVR detects another device on the same network with a conflicting IP address.

After above Exception type alarm happen, you may create any combination of the Audio Warning, Send Email or show exception for the alarm action.

Audio Warning: The NVR will use its internal buzzer to emit an alarm tone.

Send Email: The NVR will send an auto-email alert when the event type you've selected occurs.

Show Exception: The NVR will display the **ERROR** icon at the bottom right corner of the live view screen when the event type that you've selected occurs. Click on the icon to access the Event Log and know more about the exception that occurred.

Device -> HDD

Here you will find a comprehensive list of hard drives connected to the NVR.

External Hard Drive connected via eSATA will be listed here, and be labeled as eSATA.
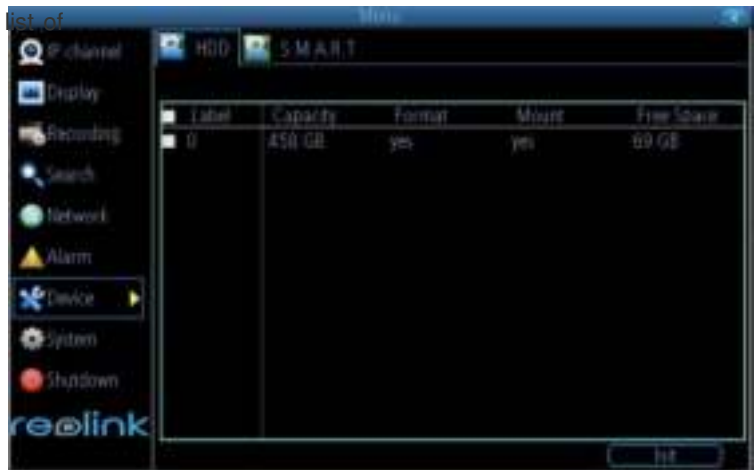
* **Init.:** Initializes the hard drive. You will only need to do this once, assuming that it is not yet initialized. If the **Format** column reads **"No"** then choose **Init.** to initialize the drive.
* **Label:** A quick way of differentiating between hard drives. For the first setup, there will usually only be one hard drive - you can always add and initialize another hard drive later (connected via the eSATA port).
* **Capacity:** The total amount of space on the hard drive. This will typically be slightly less than the rated capacity of the hard drive as a fraction of the space is required by the file allocation table (FAT).
* **Format:** Tells whether the hard drive has been formatted to operate with the NVR. When the hard drive is formatted appropriately, this will simply read "yes". If it says "no", then select the disk and choose **Init**.
* **Mount:** Tells whether the HDD drive can be detected by the NVR, if no, please check the cable connection.
* **Free Space:** The amount of available space on the hard drive.

Device -> S.M.A.R.T

S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology - gotta love a good acronym) is your hard drive's way of telling the NVR how it's going.
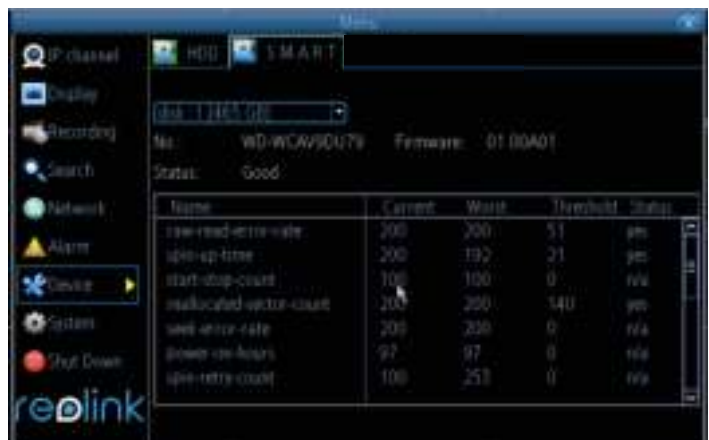
System -> General

On System: General Page, you may:
- Set the time and date
- Select the language you want for the Menu/GUI.
- Set the configuration for automatic adjustment to daylight saving time
- easily enable or disable password protection

These information has already been set on the Setup Wizard when you first time run the NVR.
You may modify from here.

System -> User

You may add more account username and password. You may set the authority level as guest or operator

Or modify the current user's password. Admin user name cannot be changed.

You may easily customize the level of access that each individual user has. Simply choose the **Permission** button on either the **Add User** or **Modify** to set the specific access for the user you want. The Permission menu has two tabs - **Configuration** and **Operation**.
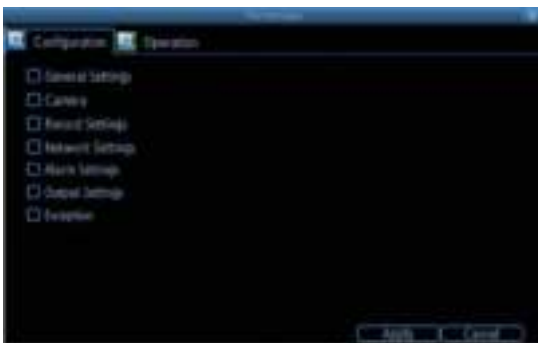
If you're looking at the System Information screen to check whether you have updated your system to the latest version by the information of BUILD NO.

To maintain the NVR, it is suggested that it be rebooted periodically. In much the same way that a computer can become unstable if left on for an extremely long time, the NVR can become unstable too. It is strongly suggested that the NVR be rebooted at least once per week.
However, as this can be a hassle, you may set the NVR to reboot itself.

●**Enable auto reboot:** Will automatically shut the NVR down and restart it at a certain time.
●**Auto reboot at:** Choose when you would like the NVR to reboot.

● **Firmware Upgrade (Upgrade):** Instructs the NVR to update its firmware. You will only need to use this option if instructed to do so by our Technical Support. (Remember to Export your configuration first so you don't have to re-set everything!)

A: Upgrade from Local
> a) Copy the upgrade NVR firmware to the USB
> b) Then click **Upgrade from Local**
> c) Choose the firmware from supplier USB
> d) then Click Upgrade

B: Check for Latest Version
the upgrade version already uploads to the server; you can check with Server if your version is already the latest or not here.

C. Upgrade IPC from USB
> a) Copy the upgrade IPC firmware to the USB
> b) Then click Upgrade IPC from USB
> c) Click Browser to choose the IPC firmware from supplier USB
> d) then Click Upgrade
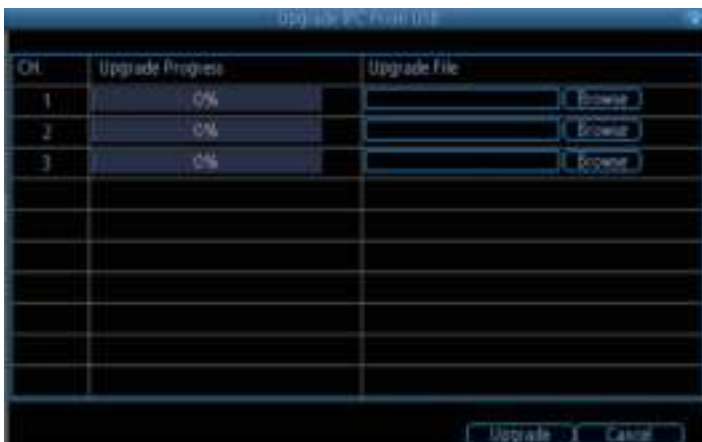
Note: **This must be done after a firmware upgrade to ensure proper operation of the NVR.** You may retain your settings, recording schedule and so on by using the Import/Export Configuration function before upgrading the firmware.

⊕ **Default Settings (Restore):** Loads the factory default settings. You can choose all or the field you want to set back to default.

⊕ **Configuration (Export):** Creates a file containing all the settings you have customized, including your recording preferences, schedule, user-list and so on. It is .tgz file.

  To export your settings:

      a) Insert a USB flash drive into the USB port. Ensure it has enough space and it is not write-protected.

      b) Choose Configuration: Import/Export.

      c) You will see a file browser, showing the contents of the storage device.

      d) Click **Export** to save your settings.

Configuration (Import): Operates in the same way as the **Export** function, but is used to load a previously saved configuration file.

Locate the file you want on your flash drive - it will be called **config(time/date).tgz**. Loading the file will cause the NVR to automatically reboot.

You can click Shut down when you want to log out the system.

when you click Shut down, it will pop up next windows, click OK to continue.

Follow the above same steps to Reboot the device.

You can click Lock to Lock the device, but when you want to login again, you need to input the password which you created to login the system.

Warranty

Reolink warrants this product against defects in workmanship and material for a period of Two (2) years from its original purchase date. You must present your receipt as proof of purchase for warranty validation. Any unit which proves defective during the stated period will be repaired without charge for parts or labor or replaced at the sole discretion of Reolink. The end user is responsible for all freight charges incurred to send the product to Reolink's repair center. The end user is responsible for all shipping costs incurred when shipping from and to any country other than the country of origin.

The warranty does not cover any incidental, accidental or consequential damages arising from the use of or the inability to use this product. Any costs associated with the fitting or removal of this product by a tradesman or other person or any other costs associated with its use are the responsibility of the end user. This warranty applies to the original purchaser of the product only and is not transferable to any third party. Unauthorized end user or third party modifications to any component or evidence of misuse or abuse of the device will render all warranties void.

By law some countries do not allow limitations on certain exclusions in this warranty. Where applicable by local laws, regulations and legal rights will take precedence.