Swann™
PRO-SERIES

English

4, 8 or 9 Channel 960H H.264 DVR

M4200_3200H160413E

Before You Begin

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, and
- 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 authorized 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 DVR and allow adequate space for ventilation

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Default Password Information

To ensure your privacy, this DVR supports password protection.

The default, all-access username is "admin". If the DVR asks you to log in before you've set a password, enter **admin** as your username and leave the password blank. This will give you access to all areas of the DVR.

The password function is disabled by default. However, if you're asked for a password, the default is "12345".

To ensure your ongoing privacy, **we strongly recommend setting a password as soon as possible**. Choose something that you'll remember, but that others would be unlikely to guess.

If you do manage to lock yourself out of the DVR, you'll need to contact us at the Swann Technical Support Telephone Helpdesk - the number is on the back cover.

Introduction

Congratuations on your purchase of this *Swann* DVR. You've made a fine choice for keeping a watchful eye over your home or business. Let's take a moment to talk about some of the features this DVR offers, and how to get the most out of them.

Oh my, this is a big manual. How long will this take?

Yes, but you won't have to read all of it - you should be up and running by page 25!

It can take a few hours to connect everything and run through the setup procedure.

The latter half of this manual is for advanced users only - the DVR is seriously configurable - the out-of-the-box settings do a great job in 90% of situations, but some users will want to get into the nitty-gritty detail, so that information is presented for those who need it.

The Basic Setup

The default settings of the DVR will cover most basic installation requirements of the DVR.

To get the most out of your hard drive, we've configured the DVR to record only when it detects motion - that way, you won't fill the hard drive with video of nothing happening.

Before installing anything, connect the DVR and cameras and test your system.

We ensure everything is working properly when we ship them out, but sometimes things can be damaged in transport, and occasionally components can fail. Better to find out now, before everything is fixed in place!

Getting the DVR Setup

There are three stages to getting your DVR set up. If you want to use the default settings, you'll only need to complete steps one and two.

Stage 1. Connecting the DVR (page 6 to page 9)

This section details what you can connect to the different inputs/outputs of the DVR.

Everyone's setup will vary a little bit - it depends what cameras came with the DVR (if any) and what device(s) you've already got.

Stage 2. Basic DVR Setup

The DVR needs a few things to be set properly before it can do its thing. Follow the instructions from page page 11 to page 24 to get everything working.

3. *Optional*: Advanced DVR Configuration

The latter part of this manual covers advanced DVR operations.

This DVR comes with all the professional-grade capabilities you'd expect from a quality *Swann* product, but many advanced capabilities require detailed setup to function correctly.

If you're not an advanced user, don't worry. The out-of-the-box settings really do work well, and we'd only suggest changing them if you've got a really specific plan in mind.

You'll need to read a page or two of this section if:

- you've got a PTZ capable camera - see page 48.
- you want to alter the motion detection sensitivity or the areas it applies to (page 42).
- you want to change some of the advanced options for recording quality and resolution (see page 28).

Now with extra "H": 960H and what it means

This DVR is compatible and is intended for use with 960H cameras. What does this really mean?

A traditional CCTV camera operates at a resolution of approximately 720 x 480 (NTSC) or 720 x 576 (PAL) pixels* and a 4:3 aspect ratio. By extending the image to a widescreen format, 960H technology increases the horizontal resolution of the camera, thereby increasing the area viewed and the resolution it's viewed at.

See *"About 960H Widescreen Videos"* on page 10 for more information.

In general, 960H is best suited:

- monitoring a wider area than traditional CCTV cameras could cover at the same detail
- being displayed on high-definition widescreen televisions/monitors
- for upgrading from traditional CCTV cameras, while reusing previously installed coaxial cables.

**The resolution is approximate as analog video doesn't really work this way. The resolution listed is the equivalent for a standard pixel matrix.*

Installation Guidelines

- **Do not expose the DVR to moisture.**
Water is the arch-enemy of electrical components and also poses a high risk of electric shock.

- **Avoid dusty locations.**
Dust has a tendency to build up inside the DVR case, leading to a high risk of failure or even fire.

- **Only install the DVR in a well ventilated space.**
Like all electronics, the circuitry and hard drive in the DVR produce heat, and this heat needs a way out.

- **Do not open the DVR case except to install/swap the hard drive or battery inside.**
There are no other user serviceable parts inside.

- **Never open the case whilst the DVR is plugged in**, and never plug in or turn the DVR on whilst the case is open.

- **Use only the supplied power adapter.**
Other adapters may cause damage to the DVR or cause a fire.

- **Do not cut or modify any cable for any reason.**
Doing so will void your warranty, and pose a risk of fire or electrical shock.

- **Do not expose the DVR to sudden bumps or shocks**
The DVR is as robust as possible, but many of the internal components are quite fragile.

- Remember that the DVR is, in all likelihood, going to be left on **24 hours a day, 7 days a week**. Keep this in mind when choosing a location for installation.

This product contains a removable battery. If you need to replace or dispose of the internal battery.

The battery is located on the mainboard of the DVR. It is a primary lithium CR2032 button cell.

To access, remove and/or replace the battery:

- Ensure the DVR is turned OFF. **NEVER** open the DVR's case while power is connected.
- Remove the five screws holding the cover on the DVR.
- 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.

Plasma Burns: Preventing *Burn In* on Plasma and CRT Screens

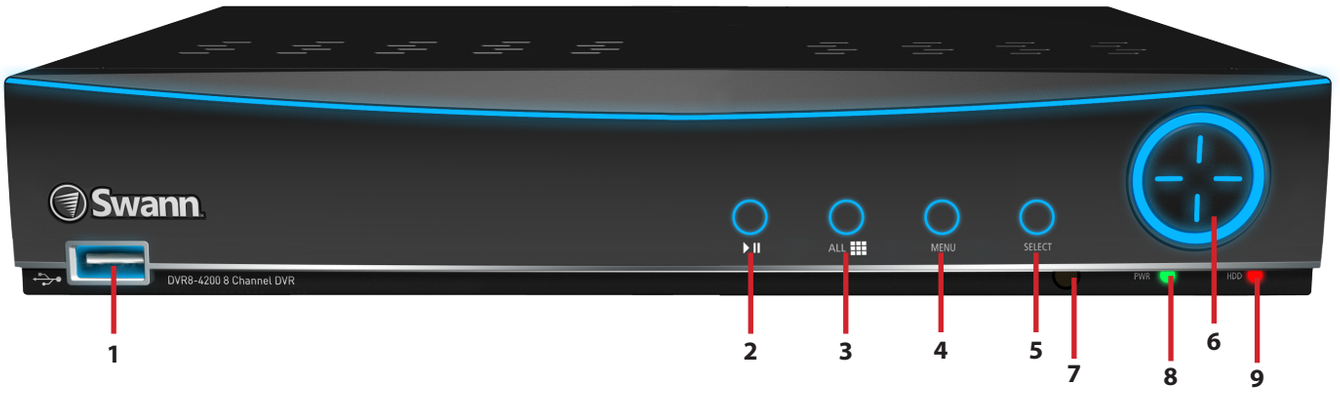
Many larger televisions and monitors feature plasma screen technology. While plasma offers large images at high contrast and resolution, it can be susceptible to image *burn in*. Burn in occurs when a static image is displayed for so long that the screen remains discolored when the image is no longer shown. CCTV systems are one of the leading causes of image burn in, as typically static images are displayed almost constantly while the system is on.

We recommend LCD or LED screens be used with the DVR, as these types are typically resilient. However, all screen technology suffers from some level of burn in (or burn *out*, depending on its type), so always exercise common sense and caution.

Some other ways to limit burn in include:

- Using the auto-sequence mode to change the channel being monitored. Remember that the time/date/title overlays may still burn in if they're in similar positions over each image.
- Turn down the brightness/contrast of the screen you're using – the less raw power the screen is using to display images, the lower the chance of burn in.
- Turn the screen off when the DVR is not in use. This will not only extend your screen's life, but will also help the environment and help cut your power bill. It's win-win-win, really.

Front Panel of the DVR



1) USB 2.0 Port: For connecting USB external storage to the DVR for backup, or for applying new firmware.

2) Play/Pause: Opens the playback interface from the live viewing mode. Pauses playback or resumes playback from paused.

3) Quad (4ch)/All (8ch or 9ch): Enters split-screen view, where the screen shows one, four (*"quad" mode 2 x 2*) or all eight/nine (*8ch or 9ch only - 3 x 3*) video feeds at once.

4) Menu: Opens the DVR's menu, or goes back one step from a submenu.

5) Select: As the name suggests, it selects an option or item from a menu.

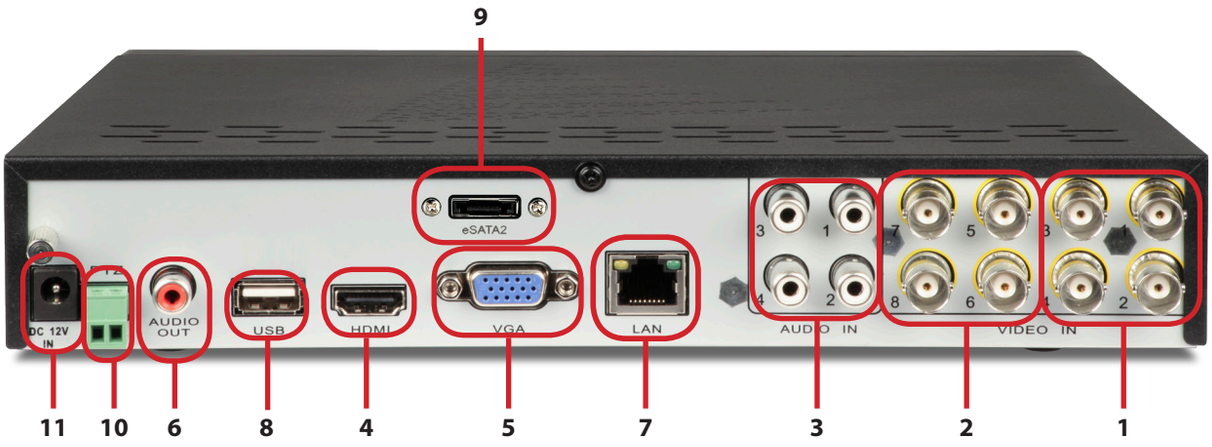
6) D-pad: For navigating around menus when you're not using the mouse. *(Why aren't you using the mouse? It's awesome.)*

7) IR Receiver: Where the DVR will pick up signals from the IR remote control. If this is obstructed, the remote will not work.

8) Power LED: Will be lit whenever the DVR is supplied power and turned on.

9) HDD LED: Will flash whenever the DVR is writing to/reading from the installed hard drive.

The Rear Panel of the DVR



1) Video Inputs 1 - 4: These are your primary video inputs. Each accepts a standard composite video signal and connects via a BNC connector.

The channels are labeled by number in the same order as they will appear on your DVR's interface.

2) Video Inputs 5 - 8/9: As 1) but apply to the 8 and 9-channel model only. Video input 9 is located in the same location as Audio Input 1 on the 8-channel model - three audio inputs are removed to allow the space for the extra BNC connector.

3) Audio Input(s): These will accept a standard line-level signal (<1V). The four and eight channel models feature four audio inputs. The nine channel model features one audio input.

4) HDMI Output: The primary output of the DVR. For the highest possible video output quality, we suggest using this output.

- For best results, use a monitor/television capable of displaying **Full HD 1080p**.

- Note that many televisions which can display 1080p signals are not actually *Full HD*. These kinds of televisions downscale a 1080p signal to the resolution of the screen. For the best possible image, use a television/monitor which can display 1920 x 1080 or higher.

5) VGA Output: For connecting a television or PC monitor with a VGA input.

6) Audio Output: A standard line-level audio output.

7) Network Port: Where you can connect the DVR to a network, typically directly into the router or network switch.

8) USB 2.0 Port: For connecting a USB mouse or a USB storage device. We suggest connecting USB storage to the USB port on the front of the DVR, and using the rear port for the mouse.

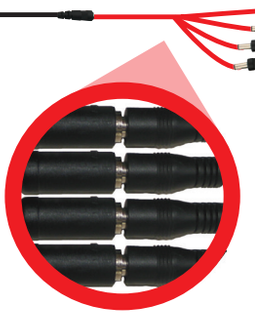
9) eSATA Port: To connect an external hard drive which will act as a live recording drive in the same manner as the installed HDD.

10) PTZ (RS485) Port: To connect the RS485 cables to control a PTZ (pan, tilt, zoom) device to the DVR.

11) DC 12V Power Input: Where you connect the included DC 12V power adapter. Use **only** the supplied power adapter with the DVR, and use the power adapter **only** with the DVR.

Connection Diagram

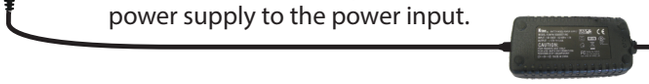
Connect your cameras to power, using the power-splitter (if included).



Connect the BNC outputs from your cameras into the BNC inputs on the rear of the DVR.

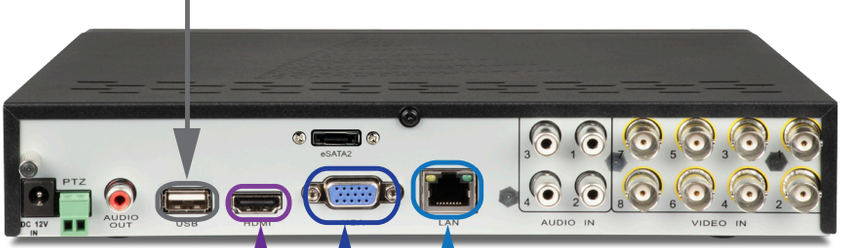
Connect the power supply to a wall outlet.

Connect the DC12V Output from the power supply to the power input.



Connect the mouse to the USB 2.0 port.

Connect an Ethernet cable from the LAN port on the DVR to a spare port on your router.

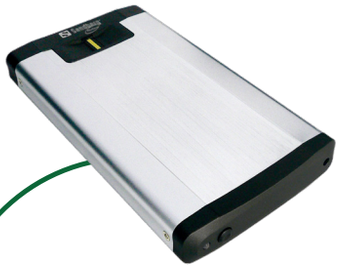


If you've got a TV or monitor with HDMI in, connect to the HDMI port on the DVR.

If you've got a monitor with VGA but **not** HDMI, connect it to the VGA output on the DVR.

Connecting Additional Devices

The Audio Out port can be used to connect a stereo, speakers, headphones or other external sound device.

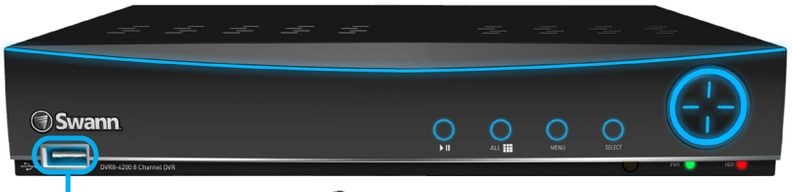


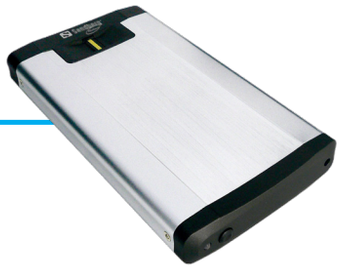
An external hard drive with an eSATA port can be connected to the eSATA port on the DVR.

It can be used to record live footage in the same way as the interal HDD(s).

The Audio In ports can be used to connect audio devices to the DVR. Obviously, your microphone probably won't look like that one - they're often built into cameras.

The PTZ port (RS485) can be used to connect compatible PTZ devices, such as this Swann PTZ dome.





An external hard drive with a USB-compatible interface (USB 2.0 recommended) can be connected to the front USB port of the DVR.

The front USB port also supports USB solid-state storage, such as flash drives.

Basic DVR Operation

The USB Mouse (Recommended)

The easiest way to operate the DVR is to use the included USB optical mouse - we put together the look and feel of the menu system specifically for mouse-friendly navigation.

The controls are pretty easy to remember - heck, there are only two buttons. It couldn't be simpler.

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.

Of course, you don't ***have*** to use the mouse.

The Front Panel

The buttons on the front panel are adequate for operating the DVR, but they're hardly ideal for ongoing use.

Between Menu, Select and the D-pad (directional pad) you can navigate through all the DVR's menus and configure almost any setting. It's a little clunkier than the mouse and it's not as quick and easy, but it does save a little space.

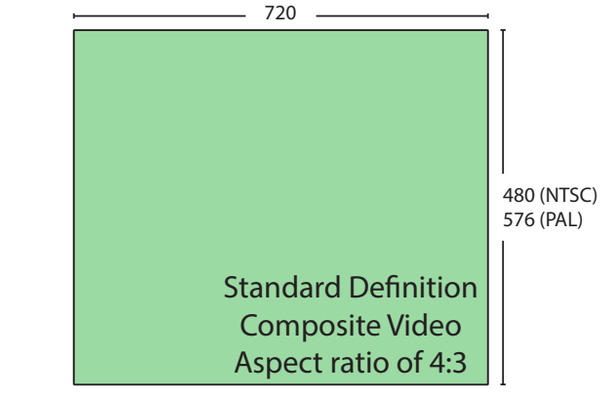
Wireless Mice: Best of Both Worlds

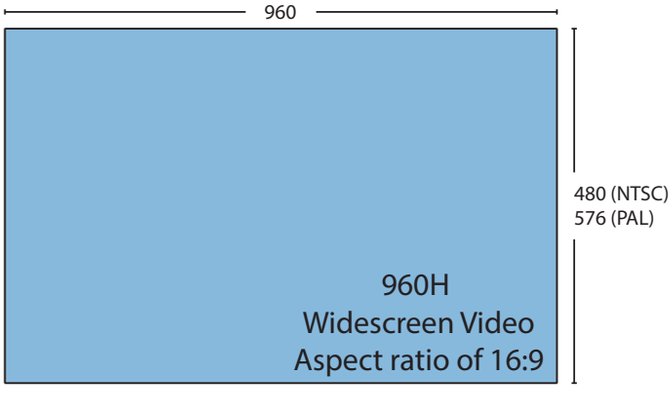
Many wireless mice are compatible with the DVR. The only kinds of wireless devices compatible are those that interface in the same manner as regular wired devices: typically, these will be mice which come with a dedicated USB receiver which is pre-paired to the mouse.

Combination wireless receivers (such as those that come with keyboard/mouse combinations) are usually **NOT** compatible with the DVR. We suggest avoiding them.

Note that **Bluetooth** devices are **NOT** compatible with the DVR. Use a wireless mouse that has a dedicated USB receiver.

About 960H Widescreen Videos





960H is the term used for a composite video signal which offers additional horizontal lines of resolution. The additional horizontal space creates a significantly larger and sharper image, and also allows for higher dynamic range.

If you connect traditional CCTV cameras to the DVR, then the DVR will automatically upscale the image to make use of all the available screen. This will allow for higher quality videos than would otherwise be vailable - particularly for 700TVL+ cameras - but will warp the image to appear a little wider than it should be.

If you do wind up with a recording at the wrong aspect ratio, this isn't a disaster. You'll still be able to clearly see details and identify individuals, up to the limits imposed by the camera itself.

The correct aspect ratio can easily be applied using a media player such as VLC. Just backup your footage as an AVI, play it back on a PC and select the appropriate aspect ratio (16:9 for 960H cameras and 4:3 for standard CCTV).

To correct the playback aspect ratio:

- Use VLC Media Player. It's free to download and use: visit www.videolan.org/VLC
- Follow the backup instructions in "Search: Backup" on page 34 to output an AVI file of the incident you want.
- Open that AVI in VLC Media Player.
- Press the A key on your computer's keyboard until the video appears at the correct ratio (typically 4:3).

Basic Setup: General

The Setup Wizard will run automatically the first time you start the DVR.

The wizard will guide you through all the settings you need to get your DVR up and working, specifically:

- *Choosing your Language*
- *Setting Video Input and Output Formats and Resolution*
- *Setting the Date, Time and your Time Zone*
- *Initializing and/or Formatting your Hard Drive*
- *Configuring the DVR to operate on your Network*
- *Setting up a Dynamic DNS for remote access*
- *Synchronizing the DVR's time with an online server*
- *Choosing the settings for Daylight Savings Time (DST)*
- *Creating Username(s) and Password(s)*

Note: *There are still a few things you'll really want to setup after you've finished with the wizard - the theory is that, once you've got through the set up wizard, you can install the MyDVR software on a PC connected to the same network and configure the remaining options via your computer.*

General Configuration

Language: Choose the language you'd like the menu system to be displayed in.

Video Standard: Choose between NTSC (for the 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 will be distorted, black and white, or simply not appear at all.

Resolution: How many pixels the DVR will output. Typically, you'll want to set this to be equal to the native resolution of your monitor/television (check the manufacturer's documentation). If your monitor's native resolution isn't an option, then you'll want to use the highest resolution possible without exceeding the maximum resolution of your monitor.

Time Zone: Choose the time zone you're in. It's really important to select the right time zone if you're using NTP (Network Time Protocol).

Some common time zones: In the USA, EST (Eastern Standard Time) is GMT -5:00, where PST (Pacific Standard Time) is GMT -8:00. The UK is GMT +0:00, and the East Coast of Australia is GMT +10:00.

Menu Date Format: How you'd like the date to be displayed. Choose whichever format is standard in your region.

If you need to change any of these settings later, you can find these options:

Main Menu -> System -> General

Basic Setup: HDD & Networking

HDD

Init.: Initializes the hard drive. You'll only need to do this for drives once, assuming that it's not already initialized. If the **Mount** column reads **"No"** then choose **Init.** to initialize the drive.

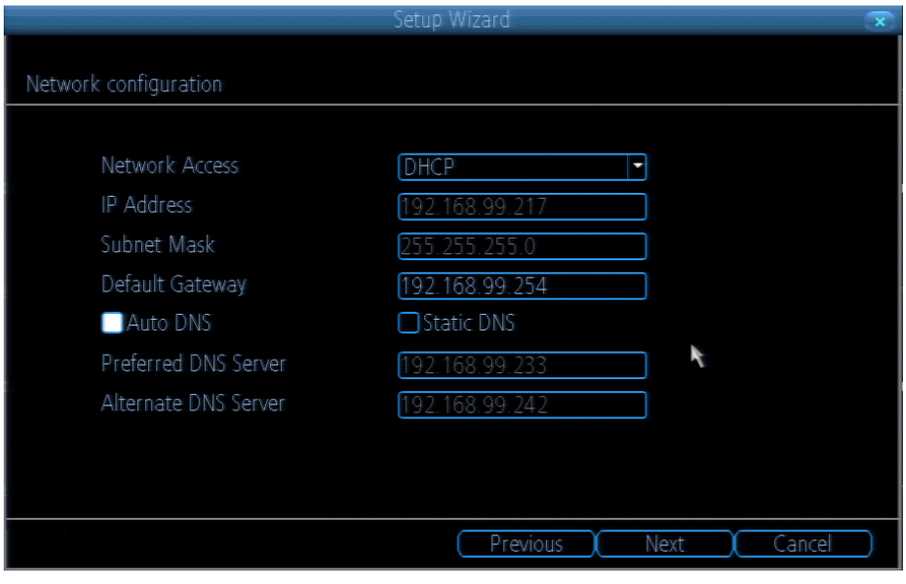
Label: A quick way of differentiating between hard drives. For the first setup, there will usually only be one hard drive. This displays internal HDDs and those connected to the eSATA port.

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: Whether the hard drive has been formatted to operate with the DVR. When the hard drive is formatted appropriately, this will simply read "yes". If it says anything else, such as an ominous "no", then select the disk and choose **Format**.

Mount: Whether the drive has been initialized and is detected by the DVR. If the drive isn't mounted then it needs to be **initialized** (see above).

Free Space: The amount of available space on the hard drive.



Network Access

We're not going to pretend this isn't the most complex aspect of configuring the DVR, but if your router supports DHCP and UPnP, then there's nothing to do here.

Recommended:

Don't change anything.

*Ensure that the **Network Access** is set to **DHCP** and that **UPnP is enabled on your router** - it should just work.*

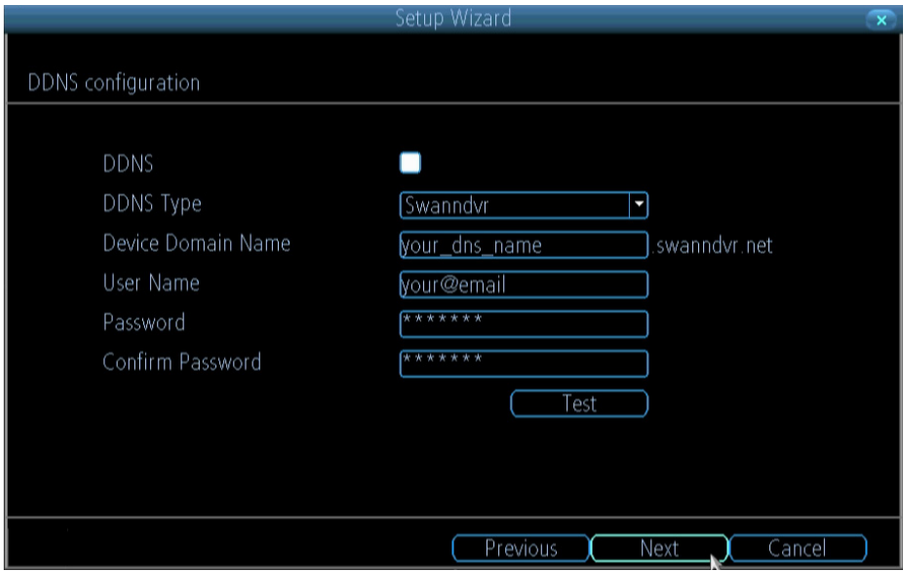
If your router doesn't support DHCP: Then you'll need to manually assign the address of the DVR. If you've already setup your network, we assume you know what you're doing. See "Addendum: Third Party Hardware" on page 55 for more information.

If your router supports DHCP but *not* UPnP: For local access (i.e. a PC connected to the same network) just set the Network Access to DHCP. For remote access (i.e. a device connected via the Internet), you'll need to *manually forward ports on your router*. See "Addendum: Third Party Hardware" on page 55 for more information.

If you don't know how to manually address devices and don't have access to someone who does, you may want to consider upgrading your router - we think that DHCP and UPnP are neat features that are well worth having.

There's heaps more information on IP Addresses, DHCP, UPnP and all manner of remote access information later in this booklet. In addition to "Addendum: Third Party Hardware" on page 55, have a look at "Network: General" on page 37 and have a word with whoever set up your network - they might be able to help you.

Basic Setup: DDNS & Email



DDNS

A Dynamic DNS is a service which will let you assign an address to your DVR so you can access it via the Internet.

There's more information about DDNS, how to configure it and what it means for you when remotely accessing the DVR later in this manual. Have a look at "Network: Advanced: DDNS" on page 39 for more.

DDNS Type: The DDNS server you're using. We recommend *SwannDVR* - you can sign up for your free account at www.swanndvr.com.

Device Domain Name: The domain name you chose when signing up for your DDNS account.

User Name: The username you selected when you signed up for your DDNS account. If you're using SwannDVR and followed the suggested username guidelines, this will be your email address.

Password: Enter the password you used when you signed up for your DDNS account.

Confirm Password: Re-enter the password to confirm.

Test: To check if the DDNS is working, click the Test button. After a short delay, a message will be displayed on-screen, informing you whether the update was successful or not.

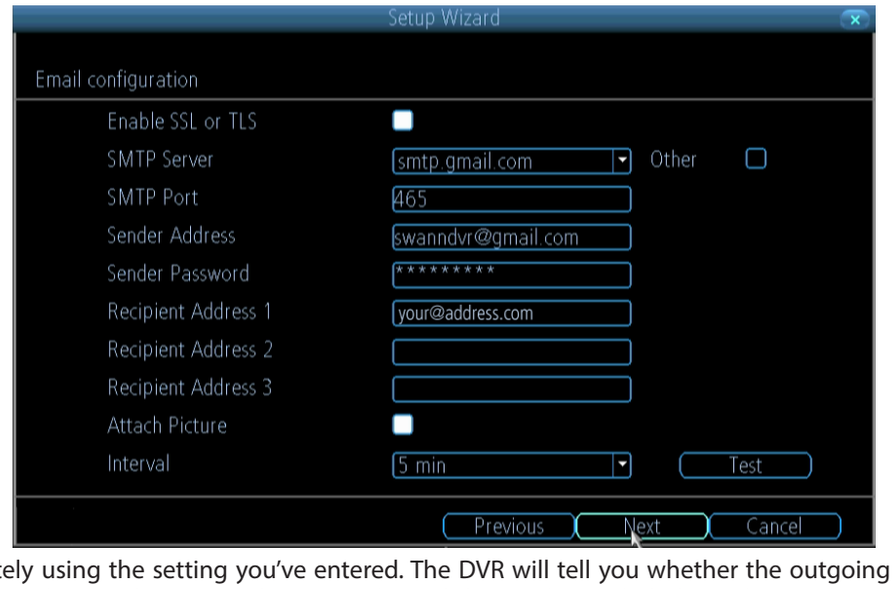
If the test is unsuccessful, a message will appear onscreen informing you that the "Update was Unsuccessful". This could mean there's a problem with your network setup, or there's a problem with the DDNS Account Name and Password you're using.

Before DDNS will work, you'll need to register an account with the DDNS provider of your choice. We recommend SwannDVR, as this is a free service which we support directly. Boot up your computer and sign up at www.swanndvr.com.

Email

If you want the DVR to send email alerts as alarm events are detected, then you'll need to configure an outgoing email server for the DVR to use, and choose an email address for it to send to.

We recommend creating an account with Gmail (www.gmail.com) specifically for the DVR. These instructions assume you're using a GMail account. If you're using a different email, see "Network: Advanced: Email Settings" on page 41 for details.



Enable SSL or TLS: Enable.

SMTP Server: Choose smtp.gmail.com

SMTP Port: 465 *(this value will self-populate)*

Sender Address: *your_email*@gmail.com

Sender Password: The password you chose for the GMail account.

Recepient Address 1, 2, 3: Choose up to three email addresses for the DVR to send mail to.

Attach Picture: When selected, the DVR will attach a still image to better illustrate what has caused the alarm/alert state.

Interval: The minimum amount of time that must elapse after the DVR sends an email alert before it can be triggered again.

Test: The DVR will send an email immediately using the setting you've entered. The DVR will tell you whether the outgoing mail server responded to the request to send the email or not. If the DVR indicated the sending failed, this indicates there's something wrong with the SMTP server details you've entered. If the DVR reports success but you don't receive the email, then it's likely there's something amiss with the recipient email - in particular, check the **Spam** folder/settings.

Other: *Allows for custom definition of an outgoing email server. See "Network: Advanced: Email Settings" on page 41if you want to use an email server other than Gmail.* ***For advanced users ONLY.***

Basic Setup: NTP & DST

NTP

NTP stands for "Network Time Protocol". It's a way for the DVR to automatically update its internal clock and ensure it's always in sync. There's no requirement to use NTP, but it's easy to setup and free to use, so there's really no reason not to.

NTP Server: The server you'd like to use for NTP. They're all quite comparable in terms of reliability and accuracy, so unless you've got some kind of master plan for world domination (which is affected by the time, for some reason) then the default (**pool.ntp.org**) works fine.

NTP Port: The default is **123**. You should only change this if you're using a different NTP server, and you know they use a different port. *If you're using **pool.ntp.org**, ensure the port is 123.*

Sync: Triggers the DVR to automatically synchronize its internal clock with the time server immediately. If your DVR is connected to the Internet and the network is correctly configured, this will update almost instantly.

System Time: The DVR's current clock reading.

DST Configuration

You can configure the DVR to automatically update its internal clock when daylight saving starts and ends.

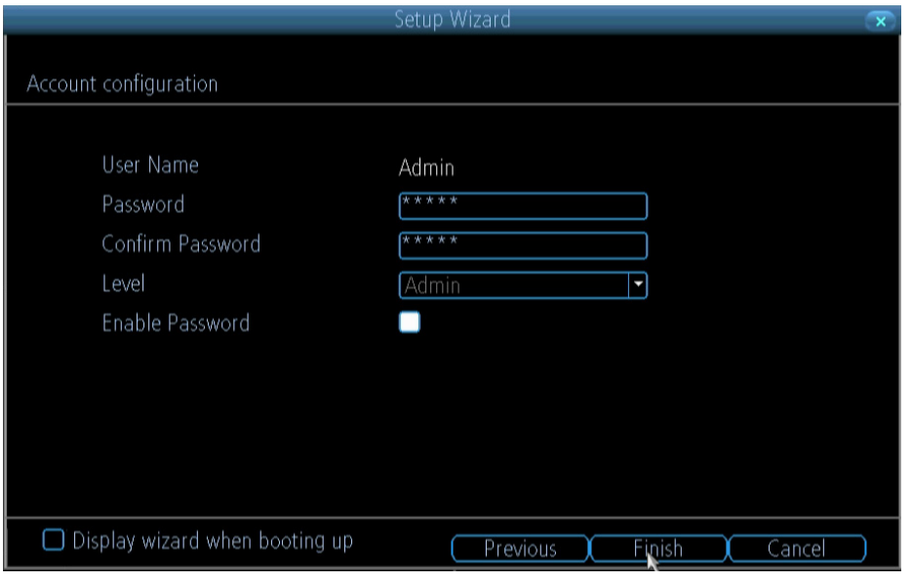
Note that using DST and NTP simultaneously can cause problems, depending on your NTP server and how DST works in your locale.

Enable: Whether the DVR will automatically adjust the time for DST or not.

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.

Basic Setup: Account Configuration & Completion



Account Configuration

User Name: The name you'd like to use for the account. An account can be called anything you like (up to 16 characters in length) except the default *Admin* account, which is always called "Admin". We suggest using this as the default all-access account for the DVR.

Password: The password you'd like to be associated with the selected account. A password can be between 1 and 8 characters in length, and consists of numbers only (no letters or symbols).

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

Level: The level of access that the selected account will have. There are three levels of access: Guest, User or Admin.

Guests: Can view live images from the cameras, but cannot access recorded footage, nor can they alter any settings.

User: The most customizable level of access to the DVR. You'll be able to set a User account to have as little access as a Guest account, or nearly as much power as an Admin account. User accounts will probably make up the majority of accounts registered to a DVR if there are multiple users requiring varying levels of access.

Finishing the Setup Wizard

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

Display wizard when booting up (checkbox): While this is highlighted, the DVR will automatically run the configuration wizard when booted up. Simply click this box to de-select it, and the wizard won't run automatically in future. You can run the wizard at any time by clicking the icon on the DVR menu tray.

If you don't want the Setup Wizard to be dispalyed upon startup in the future, uncheck the "**Run Wizard at Startup**" checkbox.

Basic Setup: Installing *MyDVR* on PC

Your DVR comes with powerful remote access and interface software, called *MyDVR*. You can setup and configure almost all aspects of the DVR from the *MyDVR* interface.

The *MyDVR* software will allow you to:

- view images from your DVR in real-time,
- playback recorded footage,
- copy footage to your local PC and
- adjust settings and configure the DVR.

In fact, the MyDVR software is so powerful, you don't even need to connect a monitor to the DVR if there's a computer on the local network that you're running *MyDVR* on.

For quick and easy configuration of the DVR's settings, recording quality and schedule, we suggest using the remote interface in *MyDVR*.

How to install MyDVR:

- Insert the included CD into your computer.
- Locate the file called **MyDVR.exe** and run this file.
- You may be asked by UAC (User Account Control) to allow MyDVR to "make changes" to your system. Select **Allow** or **Continue**.
- You'll see an installation wizard. Simply follow the prompts to install the software.
- Once the MyDVR software has been installed, it should automatically detect your DVR on your network.

Minimum PC Requirements:

2.0GHz or faster CPU	*(Dual-core recommended)*
1GB or more RAM	*(2GB recommended)*
10/100Mbps Network	*(1000Mbps recommended)*
Internet connection	*(512kbps+ recommended)*
1024x768 resolution	*(1280x720 recommended)*

Supported Operating Systems

Microsoft Windows XP *Microsoft Windows Vista*
Microsoft Windows 7 *Microsoft Windows 8*

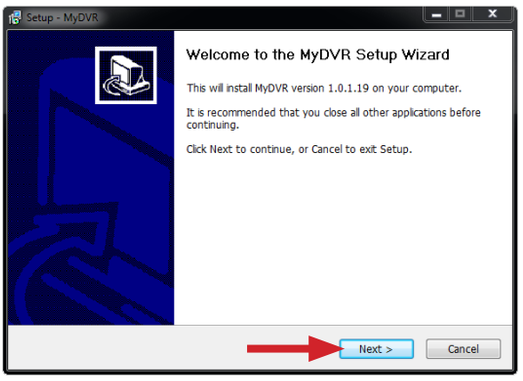
NOTE: Windows XP, Windows Vista, Windows 7 and Windows 8 are registered trademarks of Microsoft Corporation.

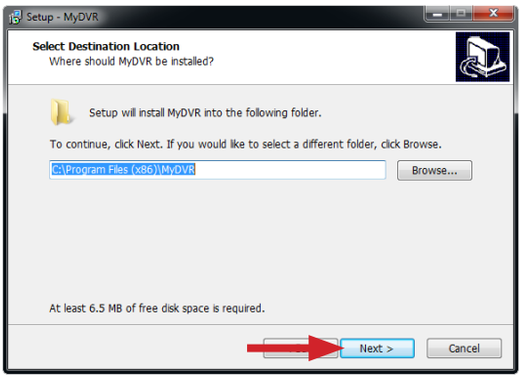
Got a Mac?

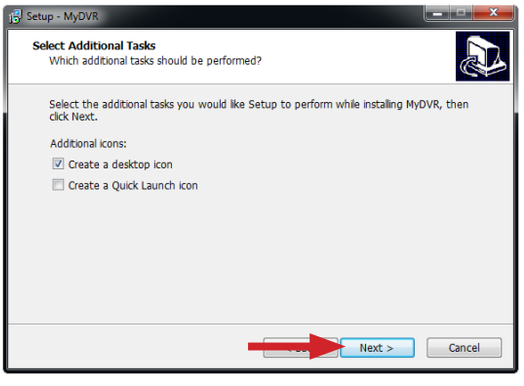
Check out

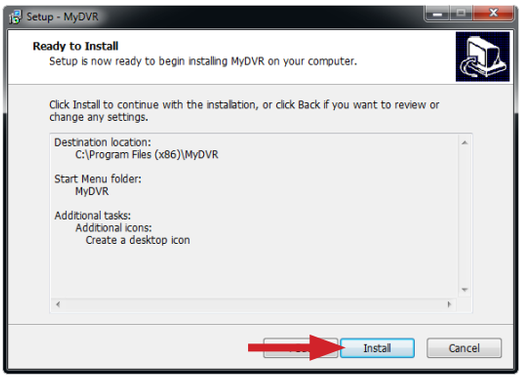
www.swann.com/mydvrmac

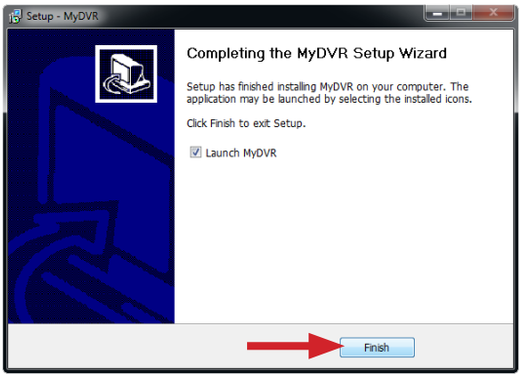
for the latest Mac-based remote access software.



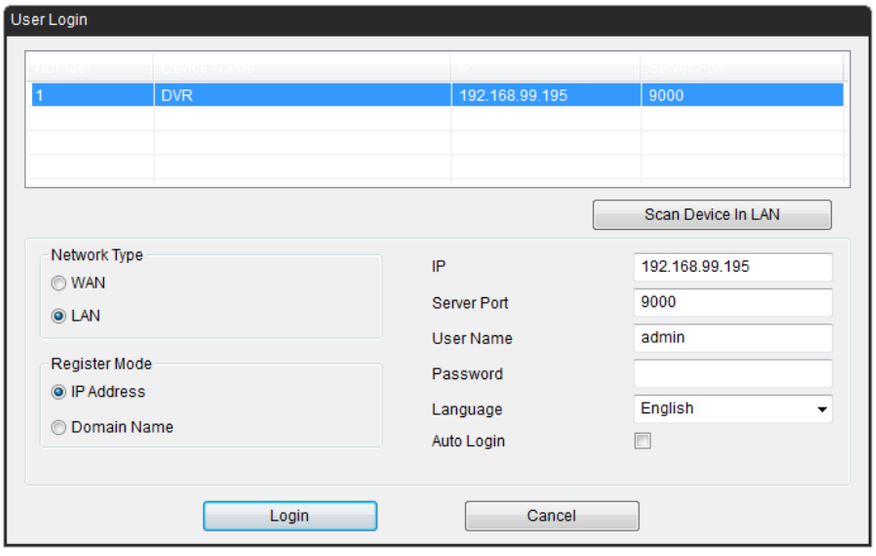








MyDVR: Logging In



If you're logging in to the DVR for the first time via a local network, then use the following settings:

- **IP:** This field will self-populate when you select a DVR from the list.
- **Server Port:** The default is 9000. MyDVR will automatically detect the server port of the DVR over a LAN, but you'll need to enter this value if connecting via the Internet.
- **Username:** To get full control of the DVR, use the default administrator username: **admin**. You can create other accounts, but the default is always called **admin**.
- **Password:** Enter the **admin** account password here. If you haven't set a password yet, then leave this field blank (and we suggest that you set a password as soon as possible).

Before running *MyDVR* for the first time:

Ensure your DVR is connected to a network and (if accessing via the Internet) you know the Public IP Address of the DVR or the DDNS address (see "Network: Advanced: DDNS" on "Network: Advanced: DDNS" on page 39 for more).

That your network is set to DHCP addressing or the DVR has been configured to use STATIC addressing (see "Network: General" on page 37).

That UPnP is enabled on your router (see your router's documentation to learn more).

If you're accessing the DVR via a LAN (local network):

- Select **LAN** under the heading **Network Type** *(unless your computer has performance issues - then select WAN. See the note on multiple monitors, below/right).*
- Your DVR should automatically appear in the list of compatible devices near the top of the window.
- If your DVR does not appear, choose **Scan Device** in LAN. If this doesn't work, then it indicates some kind of local network fault.
- Select your DVR from the list - it will probably be the only thing there, unless you've got another *Swann* DVR.

If you're accessing the DVR via the Internet:

- Select WAN under the heading **Network Type**.
- If you're using a **Fixed Public IP address**, choose **IP Address** under **Register Mode**, and enter the IP address into the space marked **IP**.
- If you're using a DDNS hostname, choose **Domain Name** under **Register Mode**, and enter the DDNS domain name into the field labeled **Domain**.
- If you're using the SwannDVR DDNS service, your address will be: *yourDDNSname*.swanndvr.net
- Enter the **Server Port** for the DVR. The default is 9000. *The DVR won't be able to automatically detect this over the Internet - you'll need to remember it if you've changed it!*
- Enter your **Username** and **Password**.
- Choose **Login**.

Note: Multiple Monitors

*The MyDVR software does **not** support hardware acceleration when using multiple monitors. On some systems, this can cause significantly reduced performance.*

If you experience slow playback or the video is not being displayed at all, disable all monitors but your primary one. Selecting WAN mode (even over a local network) can also improve performance.

Default Password Information

To ensure your privacy, this DVR supports password protection.

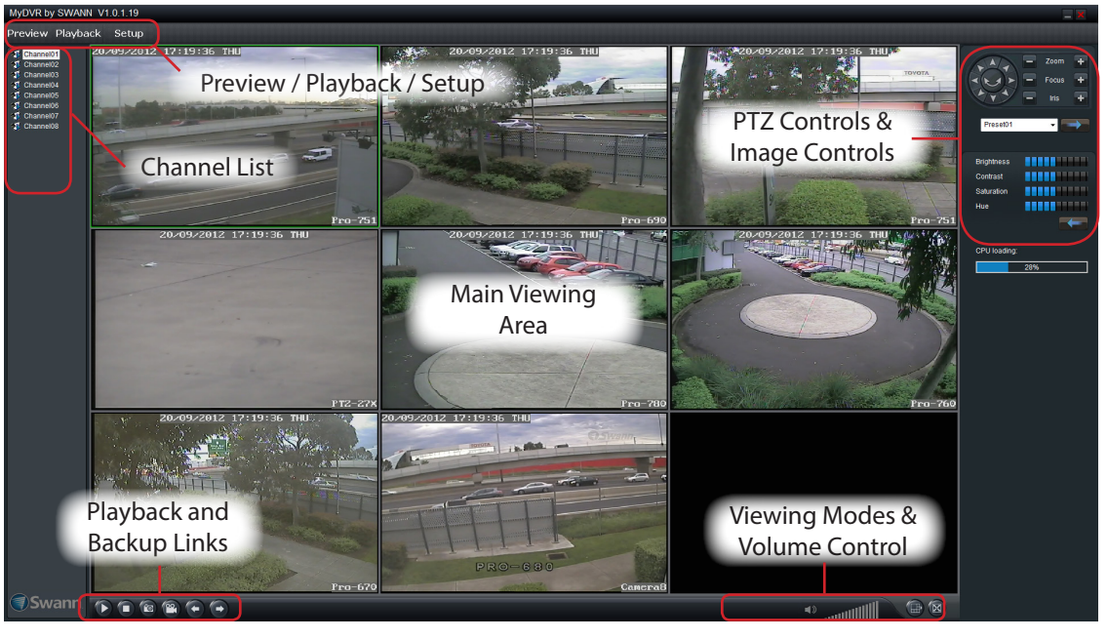
The default, all-access username is "admin". If the DVR asks you to log in before you've set a password, enter **admin** as your username and leave the password blank. This will give you access to all areas of the DVR.

The password function is disabled by default. However, if you're asked for a password, the default is "12345".

To ensure your ongoing privacy, **we strongly recommend setting a password as soon as possible**. Choose something that you'll remember, but that others would be unlikely to guess.

If you do manage to lock yourself out of the DVR, you'll need to contact us at the Swann Technical Support Telephone Helpdesk - the number is on the back cover.

MyDVR: Interface



The default live view interface of the 8 channel version. The 4 channel version is functionally identical, but opens Quad view (2 x 2) rather than All view (3 x 3) as default.

Preview: The default splash live-view screen of MyDVR.

The screen layout emulates the multi-channel live view screen of the DVR, showing you images coming directly from your cameras in near real-time (some delay is caused by the network/Internet connection you're using to access the DVR).

You can select a single camera, or multi-channel viewing by using the **Viewing Mode** buttons in the lower right corner.

Playback: Opens the Playback interface, which operates in much the same way as the playback interface on the DVR itself.

Setup (Configuration): Allows access to both the **Local Config** screen and **Remote Configuration** menus.

Local Config: Defines how MyDVR will manage and save footage and still images to your local PC.

Remote Config: Allows access to the DVR's settings. The configurable options are very similar to those you'll find in the DVR menus.

Main Viewing Area: Where images from your camera will be shown. Select **Preview** to return to this view from the **Playback** interface or the **Config** menus.

Playback / Backup Links: Quick access to playback and backup.

PTZ Controls: For controlling PTZ devices. They operate in the same way as those you'll find on the DVR itself.

Image Controls: You can alter the brightness, contrast, saturation and hue of your images here. They operate in the same way as those in the DVR's menu (see "Display: Camera" on page 28 for more information).

Viewing Modes: Choose between single camera viewing, four channels at once (*2 x 2*) or eight/nine channels at once (*3 x 3, 8ch or 9ch models only*).

Volume Control: Alters how loud the audio output from the DVR will be. Remember that the final output volume will also be affected by the master volume control of your operating system, as well as the levels set on speakers or amplifiers connected to your system.

CPU Loading: How hard your computer is working to decode and display images as they arrive from the DVR. If this is consistently high, you can try:

- disabling multiple monitor setups. The MyDVR application doesn't support hardware acceleration across multiple monitors. Disabling all but your primary monitor will greatly increase performance.
- reducing the quality of the video. Select WAN from the login screen instead of LAN.
- reduce the number of video feeds being displayed. Select a channel and click **Stop** to disable the monitoring.
- switch to single channel view.

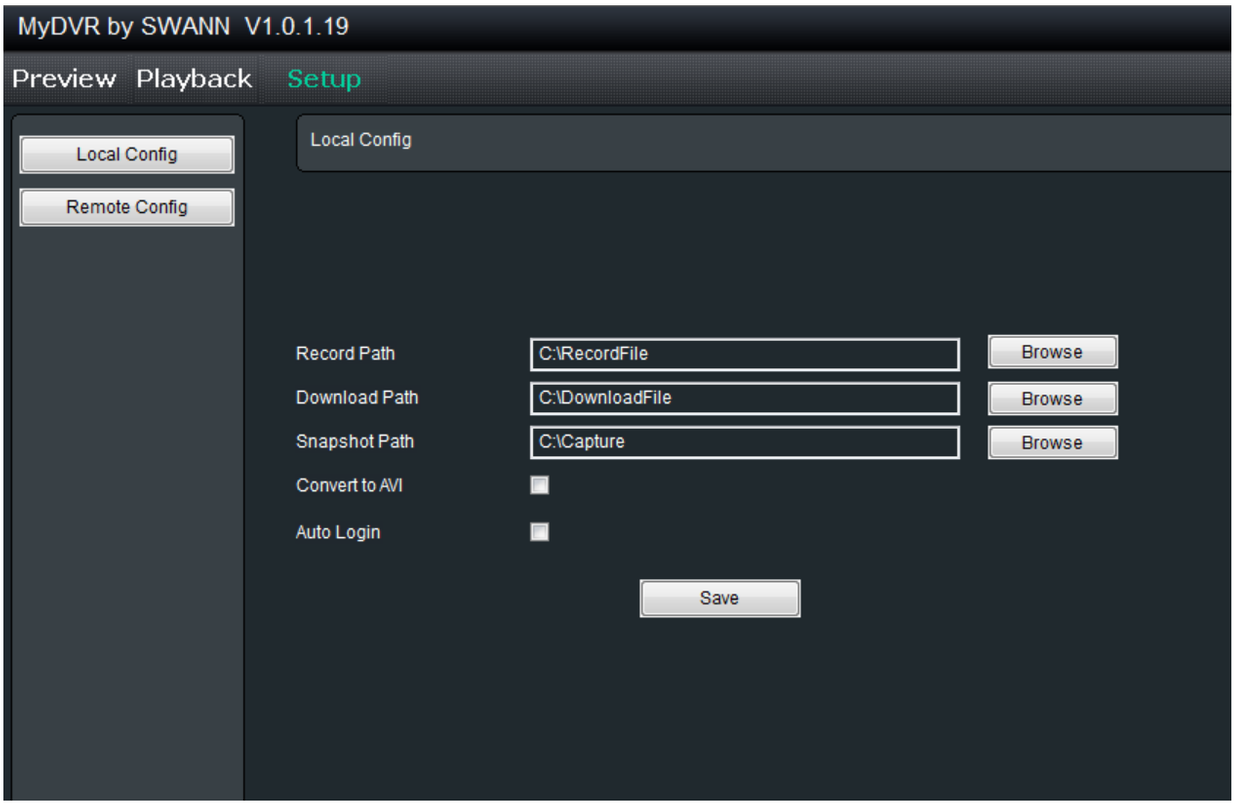
Need more details?

The overview of the DVR settings presented over the next few pages is just that - an overview.

The full explanation of the DVR's menu system and configuration options are listed in detail from page 25 onwards. The DVR's menu system is functionally very similar to the *MyDVR* software interface, and you'll find more detailed information about all menu options and settings there.

The relevant page for additional information is listed next to each menu screen.

MyDVR: Local Configuration



The local configuration screen is where you can customise how MyDVR will store and process footage on the local PC when you download it from the DVR.

Record Path: Where MyDVR will save recordings if you select **Record** from the **Preview** screen.

Download Path: Where MyDVR will save footage that you've downloaded from the DVR.

Snapshot Path: Where MyDVR will save still images captured using the **snapshot** function.

Convert to AVI: When selected, MyDVR will use your PC to ***transcode*** footage from the DVR's native format (H.264) into a format that your computer (indeed, almost any computer) will be able to playback without special software.

About transcoding to AVI:

Don't be put off by the complex word - transcoding is just a shortening of "translating code".

Transcoding, while a straight-forward process, is **very processor intensive**. You may notice significant slow-down on your computer while the transcoding takes place. For best results, try not to over-burden your computer - just let it transcode the footage in peace.

Auto-Login: When selected, MyDVR will automatically login and open the Preview screen for the DVR it is currently connected to. Simply un-check Auto-Login if you don't want MyDVR to do this anymore, or you want to change the default device (you'll just need to go through the manual login procedure once for the device you want).

Playback Problems?

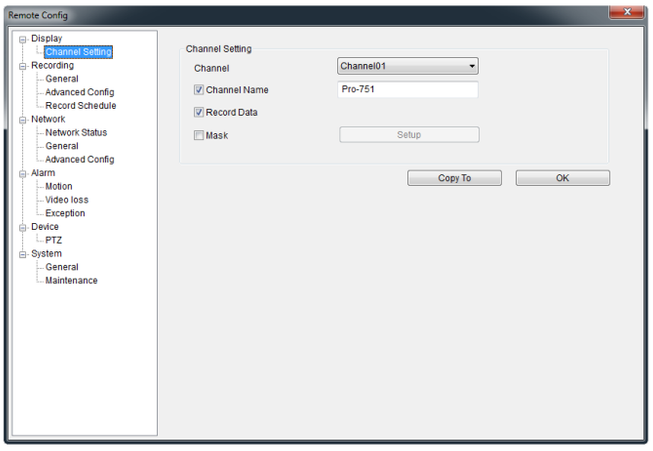
Some media players have trouble playing back the transcoded AVI files from the MyDVR software.

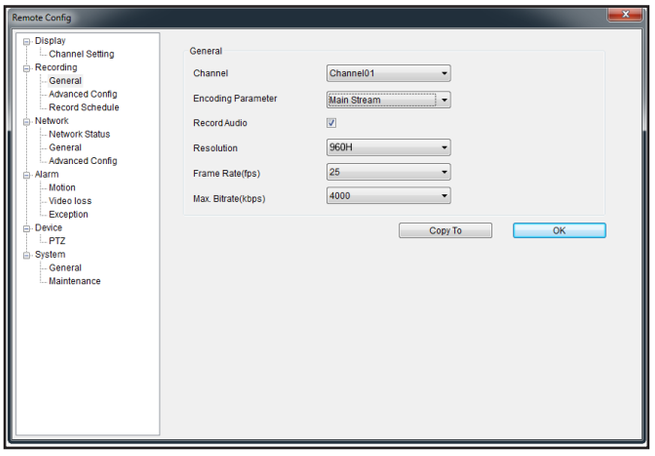
We recommend using VLC media player, which has no problems with the DVR's AVI files.

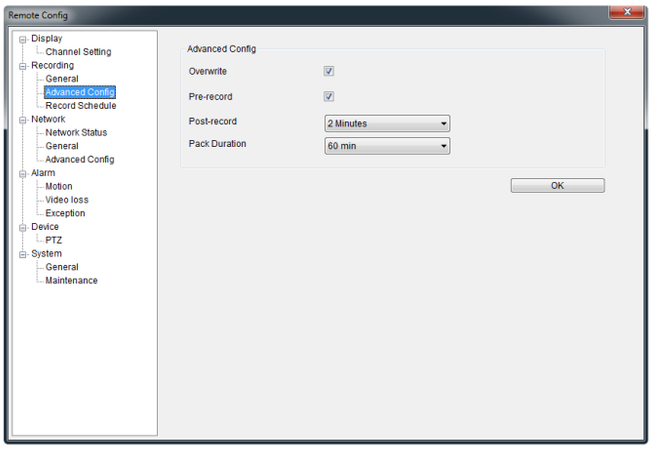
You can get it for free from www.videolan.org/vlc.

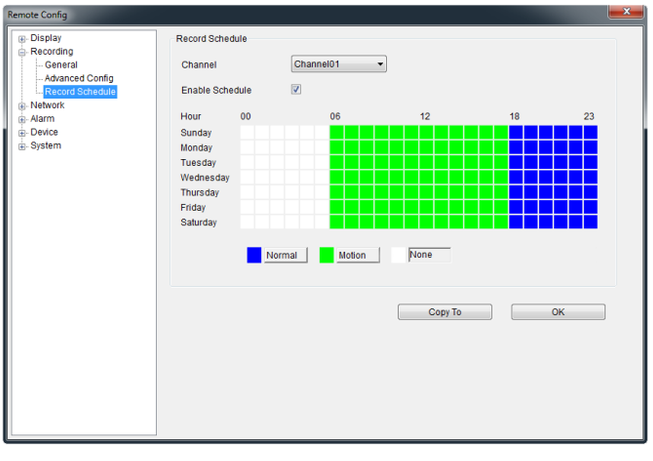
Note: *Very* few (if any) media players will be able to play the un-modified H.264 video streams that are the DVR's native format. The H.264 streams are raw video data with no "container" (AVI is a "container"). It's a little like trying to read a book with no punctuation or capital letters or spaces - the "transcoding" process puts in the spaces and the full stops and makes it possible to be "read" by someone other than the author.

MyDVR: Configuration Overview









Display: Channel Settings (see page 28)

Channel Name (Check Box): Whether the channel's name will be displayed on screen or not.

Channel Name: The title you'd like to give that camera.

Record Data: Whether the overlays (Channel Name, Date and so on) will be recorded onto the video with your images.

Mask (Check Box): Turns the masking function on or off.

Mask (Setup): Creates a black privacy overlay which masks part of your images. Will affect recordings.

Recording: General (page 30 for more)

Encoding Parameter: Choose from the main-stream or sub-stream to configure.

Main Stream: The way the DVR will internally process and record video.

Sub Stream: The way the DVR will encode and send video to a remote device (such as the PC you're using to access the DVR).

Record Audio (Check Box): Turn the audio recording function on or off. ***Note: Record Audio must be specifically enabled for the SubStream if you require audio via a remote connection.***

Resolution: How many pixels (little dots) make up your image. This DVR is hard-set to 960H to maximize the image processing power.

Frame Rate: How many images per second the DVR will capture. "Realtime" is 30fps (NTSC) or 25fps (PAL).

BitRate Limit: The maximum size that your video files will be. The higher this is set, the better recordings will look - however, they'll also fill the hard drive faster.

Recording: Advanced Config (see page 31)

Overwrite: Whether the DVR will erase old recordings to make room for new ones, or not.

Pre-record: Whether the DVR will cache and save footage that occurs immediately ***before*** an alarm/motion event.

Delay: How long ***after*** an alarm event or motion the DVR will continue to record for.

Pack Duration: The amount of video that will be stored as a single "pack". Unless you have very specific requirements, leave this at the default value.

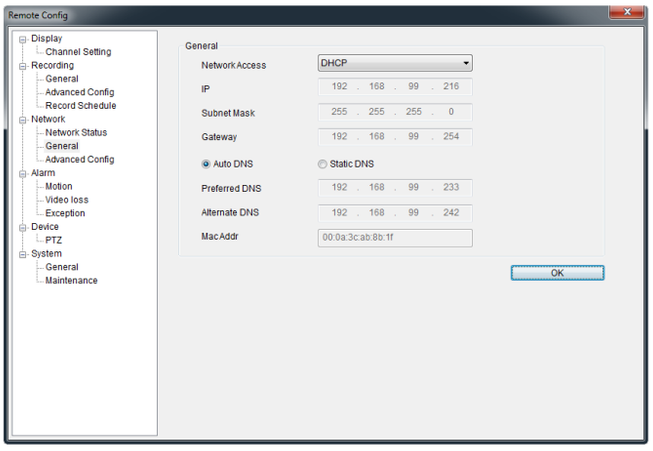
Recording: Schedule (see page 32)

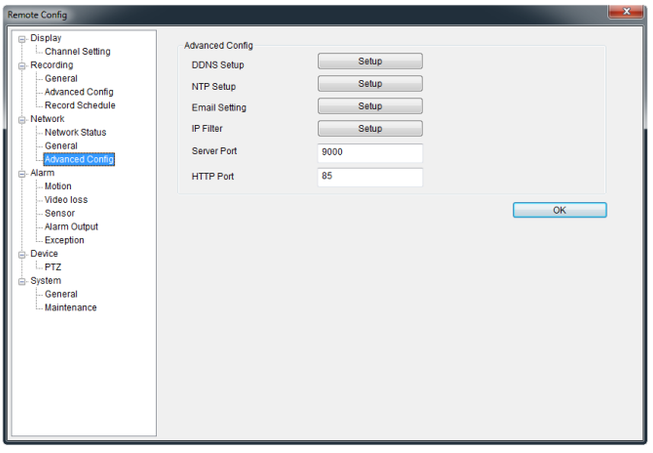
The schedule presented on-screen applies to **one channel** on **one specific day of the week** only.

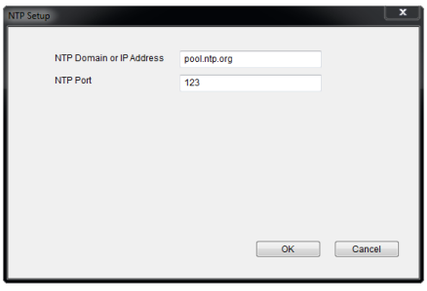
Use the **Copy To** functions to quickly assign identical schedule layouts to multiple days/channels at once.

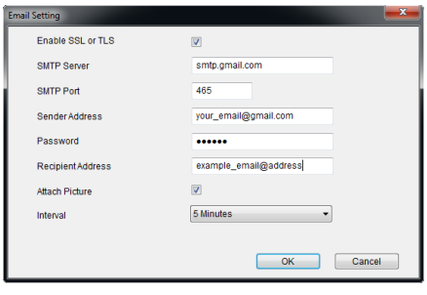
Be careful when programming your schedule. It's one of the most important aspects of setting up your DVR, and if it's wrong in any way, it could lead to complications later.

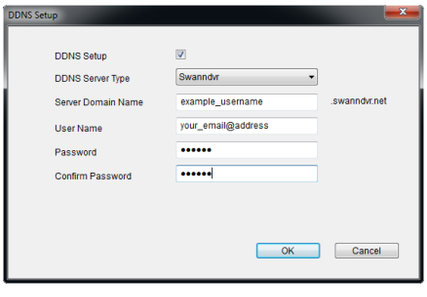
Note: Do NOT select Normal and Motion/Alarm-based recording at the same time on the same channel - this can cause conflicts in the way that the DVR interprets footage and event information.











Network: General (see page 37 for more)

Be careful adjusting settings here - if the DVR can't access the network anymore, you won't be able to configure it remotely!

Network Access: How your network is addressed - either DHCP or STATIC IP addressing.

Subnet Mask: A required additional piece of IP addressing information.

Gateway: The way "out" of your network, to the Internet.

Auto DNS / Static DNS: Whether the DVR will automatically select a DNS server, or use one you assign.

Preferred / Alternate DNS: The DVR has two DNS servers, essentially a primary and a backup.

MAC Address: The Media Access Control address. For some advanced networking, it can help to know this value.

Network: Advanced Config (see page 38)

DDNS Setup: Opens the DDNS setup window (below).

NTP Setup: Opens the Network Time Protocol setup window (see below).

Email Setting: Opens the Email Setup window (see below).

Server Port: One of the two ports the DVR needs to communicate over your network. Ensure nothing else uses this port. The default value is **9000**. This is the port number you'll use when logging in over the Internet from the *MyDVR* software or remote access from a mobile device.

HTTP Port: The second of two ports the DVR needs to communicate over your network. Ensure nothing else uses this port. The default value is **85**.

- **NTP Setup (see page 39)**

NTP Domain or IP Address: The server you intend to use to access the current date and time. The default is **pool.ntp.org**.

NTP Port: The port that the NTP server uses. The default for pool.ntp.org is **123**.

- **Email Setting (see page 41)**

Operates in the same way as the email setup menu in the DVR menu. Rather than attempt to summarize here, it's easier to simply turn to page 41 to learn more.

- **DDNS Setup (see page 39)**

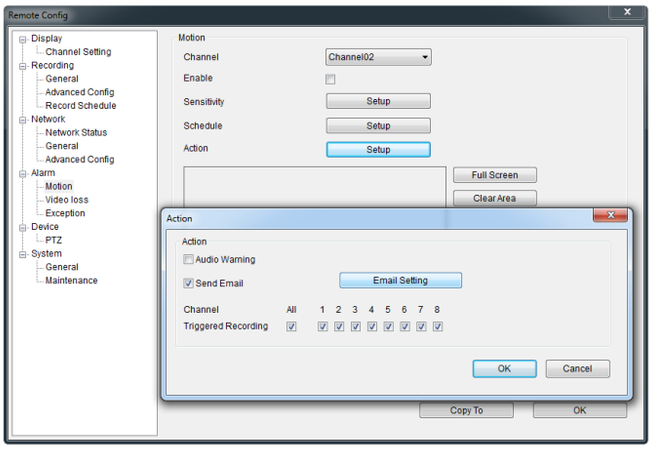
Where you can configure a Dynamic DNS server to track the "position" of your DVR over the Internet. Check out page 39 for more information on DDNS servers.

We recommend using SWANNDVR as your DNS service. This is a free service for Swann DVR owners, which we directly support.

To create an account with SWANNDVR, go to:

http://www.swanndvr.com/

*and click the **Registration** button. Follow the prompts to create your account.*



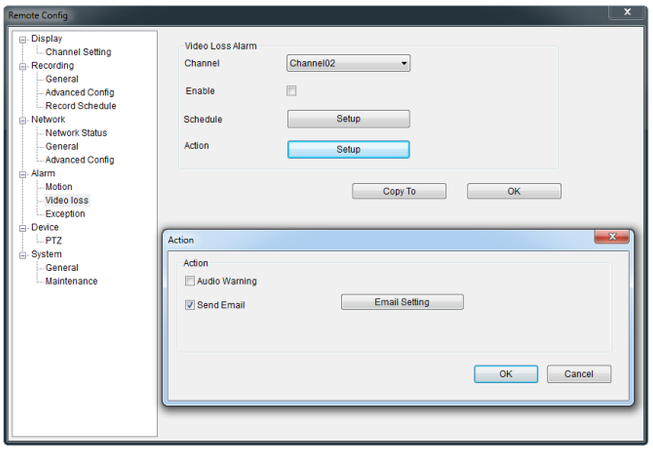
Alarm: Motion Detection (see page 42)

Channel: The channel you're configuring the motion detection settings for.

Enable: Whether the motion detection is enabled for the channel currently selected.

Sensitivity: A sliding scale between 1 and 50. The number refers to the number of pixels (as a percentage) that have to "change" between frames - okay, this one is a little more complex than this summary will allow. Seriously - check out page 42 for a much more useful explanation of how motion detection works.

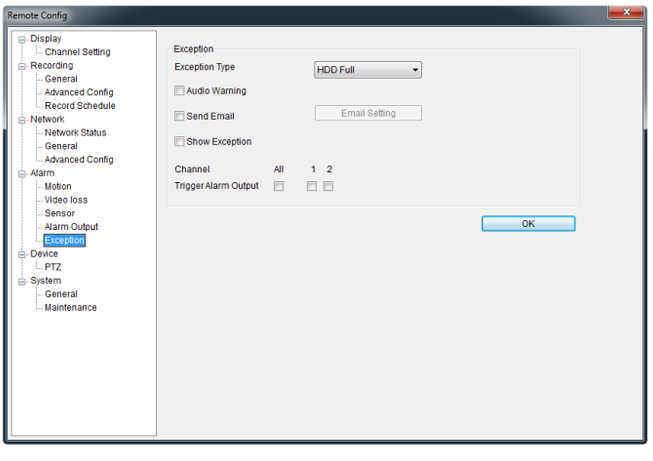
Action: What you'd like the DVR to do when it detects motion. Typically (assuming the schedule is configured to do so) this will be to record video. It can also be a cue to trigger an email alert, or to sound the DVR's internal buzzer.



Alarm: Video Loss (see page 45)

Action (Check boxes): Whether you'd like the DVR to send an email alert or to sound the DVR's internal buzzer.

Arm Schedule: The times of day/week you'd like the DVR to be "armed" to detect video loss.



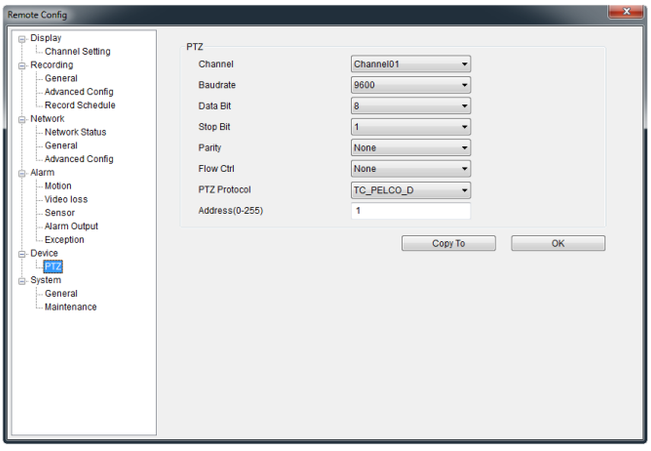
Alarm: Exception (see page 45)

Exception Type: What event type you'd like the DVR to react to. By configuring the ***Action*** for these events, you can create any combination of audio alerts (see below) or auto-emails to be sent for different event types.

Audio Warning: Sounds the DVR's internal buzzer.

Send Email: Commands the DVR to send an email alert.

Show Exception: Shows any alerts that occur at the bottom right corner of the main screen. Double-click on the alert notification to see details.

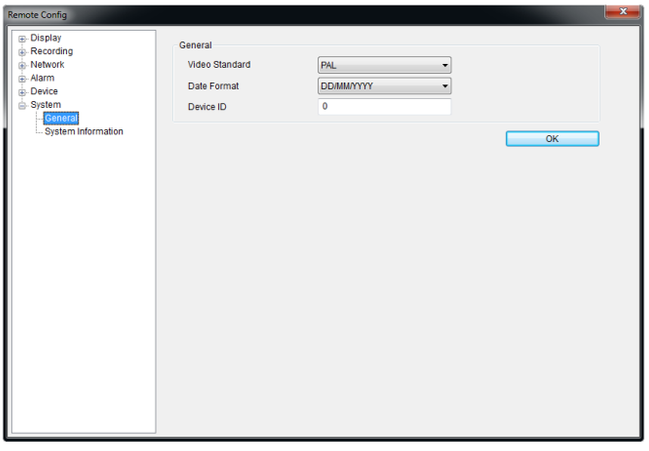


Device: PTZ (see page 48)

Channel: The channel you'd like to configure a PTZ camera for.

Settings: See page 48 for more information about the PTZ settings you'll find here.

You'll probably need the documentation that came with your PTZ camera to figure out how to fill out this configuration page.



System: General (see page 50)

System Standard: Changes between PAL or NTSC standards.

NTSC operates at 30 frames per second, and has an effective resolution of 720 x 480. It's used in countries with 60Hz power, such as the United States, Canada, Japan and so on.

PAL operates at 25 frames per second, and has a effective resolution of 720 x 576. It's used in countries with 50Hz power, such as most of Europe, the United Kingdom and Australia.

If this is not set correctly, images on your DVR may be black and white, flickering or simply not there at all.

If you change the *System Standard*,
it automatically forces a reboot of the DVR.
This will happen the instant you click *OK*.

Date Format: How you'd like the date displayed.

Device ID: A code differentiating this DVR from other DVRs or DVR-like devices. You can leave this setting - it's only important if you're got multiple DVR's and you're planning to use them on the same network or share PTZ device control.

Remote Access From a Mobile Device

Using the *SwannView* app for mobile devices, you'll be able to log into your DVR from almost anywhere you can imagine (or, at least, get a decent signal - like everyone, we're at the mercy of your phone company!) and view images coming from your cameras in real-time (or as close to as wireless networking will permit).

How cool is that? We're pretty sure this was science-fiction just a few short years ago.

You'll need a compatible mobile device. At the time of writing, there are apps for *iOS (iPhone / iPad)* and *Android*-based devices. We're working on apps for other mobile platforms.

*The apps for both iOS and Android are **free** to download and use.*

To download the latest mobile viewing apps, operating guides and to check the compatibility of your device, log onto:

www.swann.com/swannview

Above: A screen-capture of *SwannView* running on an *Android*-based tablet.

We're constantly making improvements to our software, so the interface may look slightly different to this, but the functionality will be much the same.

Operating the DVR Locally

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 DVR is detecting motion coming from this camera. It doesn't necessarily mean it's recording (the camera icon will be there, too, if that's the case!).

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 or the video standard might be wrong (PAL/NTSC).

If you see this icon on-screen (it'll be lurking in the lower right corner by default) it indicates that something has gone wrong. Click the icon to access the **Event Log** where you'll get more information about exactly what has gone wrong.

To open the Menu Bar:

- Right click with the mouse on the live viewing screen.

or

- Press the MENU button on the DVR.

1) Menu: Opens the main menu.

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

3) Quad-Camera (2 x 2) View: Divides the screen into four viewing windows, each showing images from one camera.

4) Eight-Camera View: Divides the screen into 8 sections, with one four times the size of the others.

5) All View (3 x 3): Divides the screen into nine segments, which will display up to 9 channels at once.

6) Next Camera(s): Cycles the cameras displayed in viewing mode.

7) Start/Stop Tour: Starts or stops auto channel switching.

8) PTZ Control: Opens the PTZ control window.

9) Digital Zoom: Increases the size of things in view, at the cost of visual quality.

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

11) Manual Record: Initiates manual recording.

12) Playback: Opens the **Search: Playback** (page 33) menu.

13) Audio On/Off: Enables or disables the audio function of the DVR.

14) Run Startup Wizard: Runs the initial startup wizard.

Default Password Information

To ensure your privacy, this DVR supports password protection.

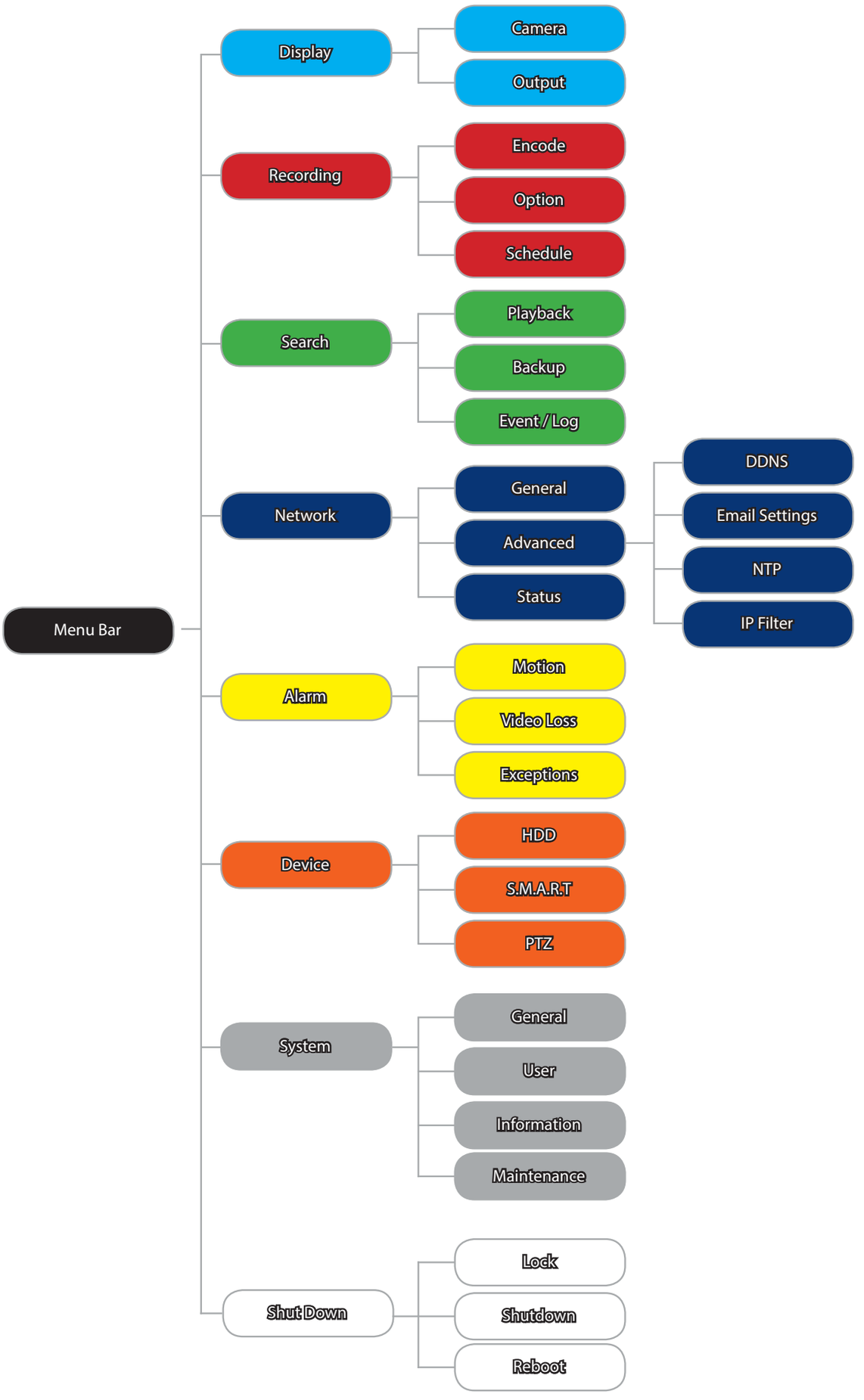
The default, all-access username is "admin". If the DVR asks you to log in before you've set a password, enter **admin** as your username and leave the password blank. This will give you access to all areas of the DVR.

The password function is disabled by default. However, if you're asked for a password, the default is "12345".

To ensure your ongoing privacy, **we strongly recommend setting a password as soon as possible**. Choose something that you'll remember, but that others would be unlikely to guess.

If you do manage to lock yourself out of the DVR, you'll need to contact us at the Swann Technical Support Telephone Helpdesk - the number is on the back cover.

Menu Layout


Menu Bar
Display
Camera
Output
Recording
Encode
Option
Schedule
Search
Playback
Backup
Event / Log
Network
General
Advanced
Status
DDNS
Email Settings
NTP
IP Filter
Alarm
Motion
Video Loss
Exceptions
Device
HDD
S.M.A.R.T
PTZ
System
General
User
Information
Maintenance
Shut Down
Lock
Shutdown
Reboot

Advanced Configuration

If you're reading this page, it means that either:

- **You've got the DVR setup, but it's standard recording program isn't for you.** Fair enough - we cater to all requirements here.
- **You're interested in what other options and capabilities the DVR has.** Excellent - the answer is "a lot".
- **Everything works except just that one thing that isn't right but you don't know where the option is.** Darn. We'll try and get you fixed up by the end of this page.

There are some sections of *Advanced Configuration* that we think are of benefit for most DVR owners to know about - in particular, the Alarm settings and the Email Configuration of the DVR.

By Default...

- The DVR has motion recording enabled on every channel, configured to operate at an average level of sensitivity.
- To be a little more likely to record an border-line motion event than not (we think it's better to get a false trigger than miss an event).
- To record video each time it detects a motion event, but not notify you via email (all events will be listed in the log).

To alter the DVR's default behavior, you'll need to change some of the advanced settings.

You can do this by using the MyDVR PC software (as detailed earlier, see "MyDVR: Configuration Overview" on page 20, or you can use the DVR's built-in interface.

Quick Reference

Some of the more common reasons to have a look in the ***Advanced Configuration*** include:

Altering the Recording Schedule

The recording schedule is one of the most important things to get right when configuring the DVR. More information about the schedule can be found at:

- *"Recording: Schedule" on page 32*

Configuring the Auto-Email Functions

If you want the DVR to notify you via email when it detects a motion event, then you'll need to configure:

- *"Network: Advanced: Email Settings" on page 41*
- *"Alarm: Motion Detection - Action" on page 45*
- *"Alarm: Motion Detection Notes" on page 44*

Altering the Motion Detection Settings

If you want to change the way the DVR handles motion, then you'll need to look at:

- *"Alarm: Motion" on page 42*
- *"Alarm: Motion Detection Configuration" on page 43*

You want to connect a PTZ Device

If you got your camera as part of a kit with the DVR, then there shouldn't be much configuration required. Follow the instructions in your Swann PTZ Camera manual.

If the camera did not come with the DVR, then you'll probably need to change the PTZ Configuration page. See:

- "Device: PTZ" on page 48

Display: Camera

The **Display: Camera** menu is where you can make adjustments to how the DVR displays the feed coming from your cameras.

You can adjust aspects of each channel/ camera, such as:

- the camera's name,
- what information will be displayed on-screen, and where this information will be displayed,
- whether information such as the date will be recorded directly onto your videos
- any areas of the video you want "masked" - that is, left blank.

Camera No.: Choose the camera / channel you want to edit here. The *Camera No* is the same thing as the number written on the rear panel next to the BNC socket used to connect the camera.

Camera Name: Select a name for the camera you've selected. By default, all channels are named as the *Camera No.* field, but this can be set to anything you'd like up to 16 characters.

Display Camera Name: When checked, the name you've selected for the camera/channel will be displayed on-screen as an overlay.

Record Date: When checked, the date (as displayed) will be recorded directly on to your videos. This can be useful, as it creates an inseperable record of exactly when the footage was captured.

OSD Display Position: Gives you access to a screen where you can easily set the exact positions of any overlayed text, such as the camera name and the date and time.

Simply select any item you want to move (such as the **Channel Name** and/or the **Date and Time**) and click and drag it to the position you'd like it to be.

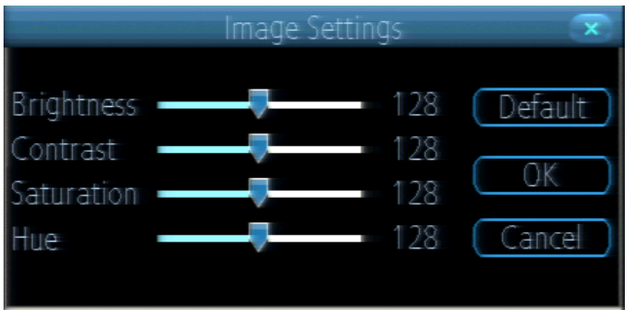
To exit the **OSD Display Position** screen, press the right click button. A context menu will appear with two options: Save and Exit. To exit without saving, simply choose **Exit**. If you want to save your changes, choose **Save** first.

Image Settings: Gives you access to image adjustment tools, allowing you to adjust the way the DVR interprets and displays video images. See opposite for more information.

The Image Settings you choose will affect your recorded footage. *Rather than applying the changes after the video has been processed (like many older DVRs) the Image Settings affect how the DVR decodes the video it is receiving from the cameras.*

The upside of this is that you can use the Image Settings to dramatically improve the quality of the images being recorded by the DVR. This can be particularly useful for improving the accuracy of your Motion Detection settings.

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



Brightness: Changes how light the image appears to be. However, it can't make the camera see further in the dark, or increase the clarity of an ill-lit image.

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.

Remember: *Your image settings* ***will*** *affect your recordings!*

You can use the Image Settings to help fine-tune your Motion Detection sensitivity. At night, your camera's images may seem to flicker slightly, or to have increased "noise". In video, "noise" is random fluctuations of pixels, a little like an old television that is not set to a station, often called "static".

By tweaking the *Brightness* and the *Contrast* you can eliminate much of this video noise, increasing the quality of your images and the accuracy of the Motion Detection.

Display: Output

The **Camera: Output** menu is where you can control how the DVR is going to deliver an image to your television, screen or monitor.

You'll be able to adjust items such as:

- screen resolution and position on your monitor
- the audio output,
- the appearance of the menus,
- the auto-sequence dwell time, and
- the sensitivity of the USB mouse.

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. Things change a little depending on what *kind* of monitor you're using, and how it's connected.

The DVR has many formats available, in four different aspect ratios:

Standard (4:3) *- 1024 x 768*
Standard (5:4) *- 1280 x 1024, or 1400 x 1050*
Widescreen (16:10) -1280 x 800, 1440 x 900, or 1680 x 1050
Widescreen (16:9) *- 1280 x 720 (720p), 1600 x 900, or 1920 x 1080 (1080p)*

Note: *1280 x 1024 and 1400 x 1050 are considered standard aspect ratios, and are best displayed on monitors with anamorphic pixels. "Anamorphic" is a fancy term for "not quite square".*

Most televisions are 16:9 widescreen. Computer monitors are still commonly produced in multiple aspect ratios, with 4:3, 16:9 and 16:10 being the most popular aspects.

Standard Monitor via VGA: Use one of the 4:3 formats to correctly align the DVR'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 those resolutions, you might need to enable letter-boxing on your monitor and use a 4:3 format.

PC Monitor via HMDI: 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 can set the DVR's menus to be partially transparent (see-though) - in case you need to keep an eye on things while adjusting settings (or it makes you feel like you're living in the future because it's so tech - we don't judge). The best way to set this is to simply experiment over time and see what works for you.

Mouse Sensitivity: How sensitive the mouse will be. On lowest, large and dramatic arm movements are required to move the mouse but a few inches onscreen. At the other end of the spectrum, a tiny bump or knock can send the cursor from one side of the screen to the other. Try somewhere around the lower end for starters, and then increase it little by little if it's moving too slowly.

Dwell Time: How long channels will be displayed when using auto-sequence mode.

Audio: Whether the DVR will output an audio signal. When checked, the DVR will output audio to a compatible device (via the HDMI ***[see note below]*** or the RCA Audio Output). When unchecked, the DVR will not output an audio signal at all.

Border Adjustment: Changes the size and position of the DVR's images on the screen. Altering the border size can be useful if you've got parts of the DVR's image extending beyond the part of the screen you can see.

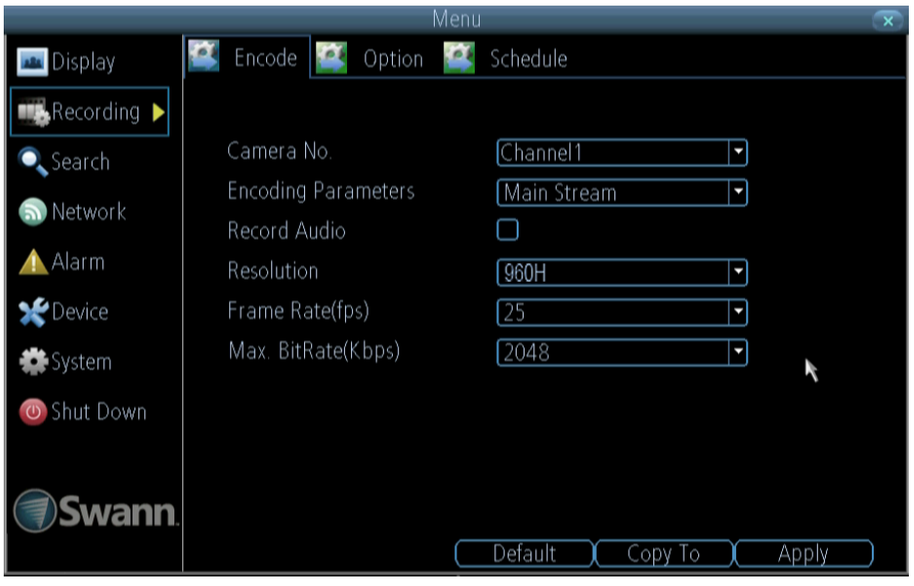
The border adjustment is more likely to be required for older, CRT computer monitors connected via the VGA output. HDMI should (in theory) automatically adjust the DVR's image to perfectly fit your screen.

Note: ***Audio via HDMI***

If you want to send audio via the HDMI, then you'll need to use a standard HD resolution. This is due to the way that HDMI embeds audio information around video information.

The two resolutions that will stream audio correctly are **720p** (1280 x 720) and **1080p** (1920 x 1080). Selecting any other resolution will prevent audio being sent via HDMI.

Recording: Encode



The **Recording: Encode** menu allows to alter and customize how the DVR records footage and "encodes" the files.

"Encoding" is a term which refers to the ***compression algorithm*** (a fancy computer term for "make the file smaller while retaining visual quality") used by the DVR.

You can choose and alter:

- the resolution (per channel),
- the frame rate (how many images per second the DVR records), and
- the data-rate of each video stream. The higher the data rate, the "better" your images will look, but the more space they'll require on your HDD.

Camera No.: The camera feed you want to alter the settings for. These will be numbered sequentially, and correspond to the BNC video inputs labelled on the rear of the DVR. *Note that the channel name here is independent of the Camera Name selected on the Display: Camera menu screen.*

Encoding Parameters (advanced user option): Whether you're editing the parameters for the mainstream or the substream.

Main-Stream: *The main-stream is the video feed that the DVR will record and display. This is the higher-quality stream.*

Sub-Stream: *The sub-stream is the video stream that the DVR will send to remote devices via a network or the Internet. It is the lower-quality stream as a reduction in video size makes it easier to send over a network.*

Record Audio: Choose whether the channel you've selected will record audio or not. If you don't have any audio devices connected, it's a good idea to disable audio, as it will save some space on your HDD.

Resolution: How many "little dots" are going to make up your image. There's only one option here, **960H**.

If you want to alter the amount of hard drive space required by your recordings, change the **Max Bit-Rate(Kbps)** setting.

As noted in "About 960H Widescreen Videos" on page 10, a standard CCTV camera's image will be slightly stretched horizontally when recorded by the DVR. We recommend using 960H cameras.

However, if you do want to use an older type of camera, you can - just be aware that the image will be slightly stretched when displayed on the DVR.

See "About 960H Widescreen Videos" on page 10 for details on correcting the slight stretch when playing back images on a personal computer.

Frame Rate: The number of frames per second (fps) that the DVR will record. The default (and maximum) is referred to as "**real-time"** and is 30fps (NTSC) or 25fps (PAL).

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

Remember that your FPS count is the same as saying "take X photographs 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.

As with all settings on this screen, some experimentation is encouraged to find the settings which will work best for you!

Max. BitRate(Kbps): The actual amount of data that the DVR will use to record video.

The **main-stream** uses a ***variable*** **bitrate** to record video - the more movement occurs in the video, the higher the bitrate will have to be. When there's little movement in view, the DVR will automatically reduce the bitrate to conserve HDD space.

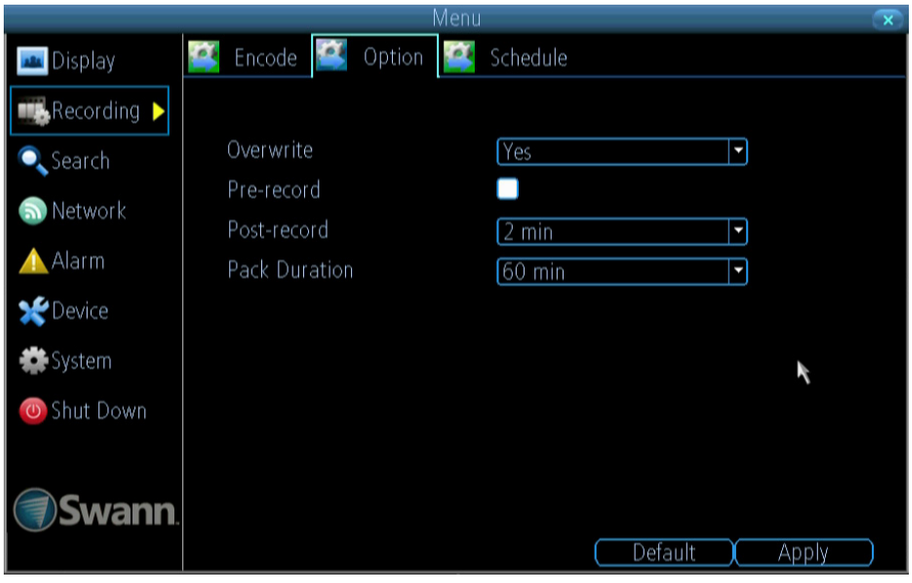
If the amount of movement in a recording would require a higher bitrate to accurately record than what you've selected as the maximum, the DVR will attempt to preserve as much of the quality as possible by applying compression to the image. This compression will take the form of irregular, fuzzy blocks over segments or the entire image. If you encounter this, it indicates that you might need to increase the overall bitrate.

If you've set a high bitrate but a low frame rate, the DVR will still use all the data it can, resulting in potentially higher quality per frame than at higher frame rates.

The **sub-stream** uses a ***constant*** **bit-rate**. This makes the video easier to stream over a network or the Internet.

Note: Both the **main-stream** and the **sub-stream** are always operating - in fact, the sub-stream forms part of the main-stream. The options will affect the output quality of each stream, but won't change which one is being used in different circumstances.

Recording: Option



The **Recording: Option** menu lets you change some aspects of how the DVR will record footage, such as:

- whether the DVR will record a short video *before* events take place,
- how long *after* events take place the DVR will continue to record for,
- how the DVR will store and divide long recordings into "packs" and
- whether the DVR will record over old footage to make room for new events.

Overwrite: When enabled, the DVR will record over the files already stored on the hard drive. The DVR will always record over the **oldest** files on your hard drive first.

Using the overwrite option is advisable, as the DVR will always be able to record events as they happen. However, it does mean that you'll need to get important events off the HDD before they're overwritten.

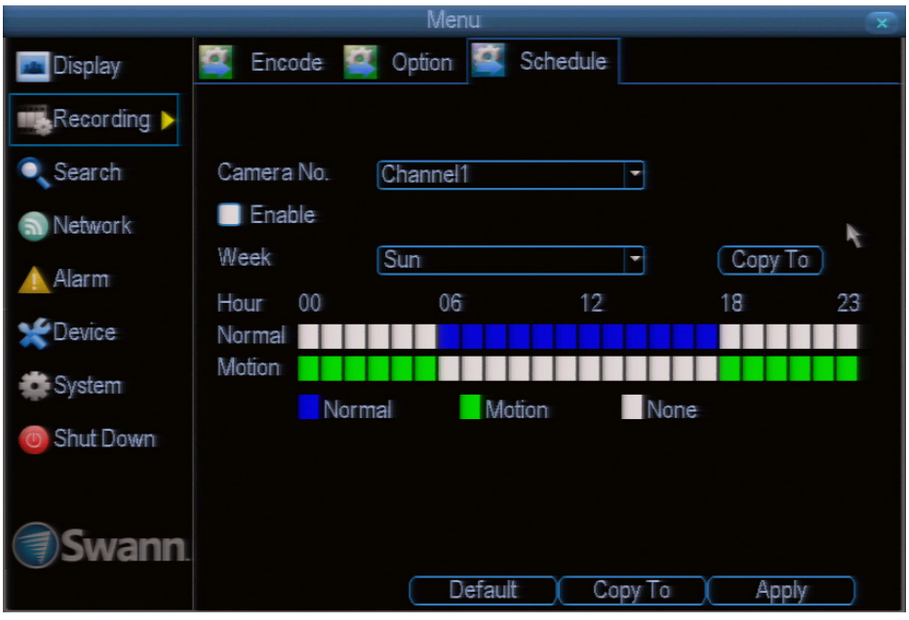
Pre-Record: While Pre-Record is enabled, the DVR will record a few seconds ***before*** an event occurs. It's a little like making the DVR psychic (but not really - it's actually just caching a few seconds of video which it adds to event recordings as they occur).

If you're using ***Motion Detection*** (recommended) and/or ***Alarm*** based recording as your primary recording method(s), then it's a really good idea to use Pre-Record - sometimes, if an event is fast enough, it might have left view before the DVR can trigger a recording. With Pre-Record, there's almost no chance you'll miss it.

Post-Record: How long after an event occurs that the DVR 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 at them. 30 seconds is the recommended length for the post-record setting, but it can be set higher (the options are 1, 2, 5 or 10 minutes) depending on your unique circumstances.

Pack Duration: *Pack Duration* is a measurement of how long the DVR will record for 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 (unless interrupted by the schedule or motion detection turning the recording on or off). If you don't want to worry about setting Pack Durations, you can leave it on the default value; it will make little difference to the day-to-day running of the DVR.

Recording: Schedule



Important Guidelines

The schedule presented on-screen applies to **one channel** on **one specific day of the week** only.

Use the **Copy To** functions to quickly assign identical schedule layouts to multiple days/channels at once.

Be careful when programming your schedule. It's one of the most important aspects of setting up your DVR, and if it's wrong in any way, it could lead to disastrous complications later.

Copy To: There are two Copy To buttons on the Schedule Menu screen.

Copy To (Week/Day): This is located above the schedule itself, next to the Week drop down menu where you can select a day of the week to edit the schedule for.

This button will allow you to copy your settings from one day to other days. It won't affect any other channels.

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.

Recording Modes:

There are two types of recording to choose from.

Normal: The DVR will constantly record for any period where **Normal** is selected. You won't miss anything, but constant recording will fill your hard drive very quickly. (The DVR does record the equivalent of a DVD film every two hours on every channel, so that's rather a lot of data!) Typically, we suggest Motion as a better recording mode for most users.

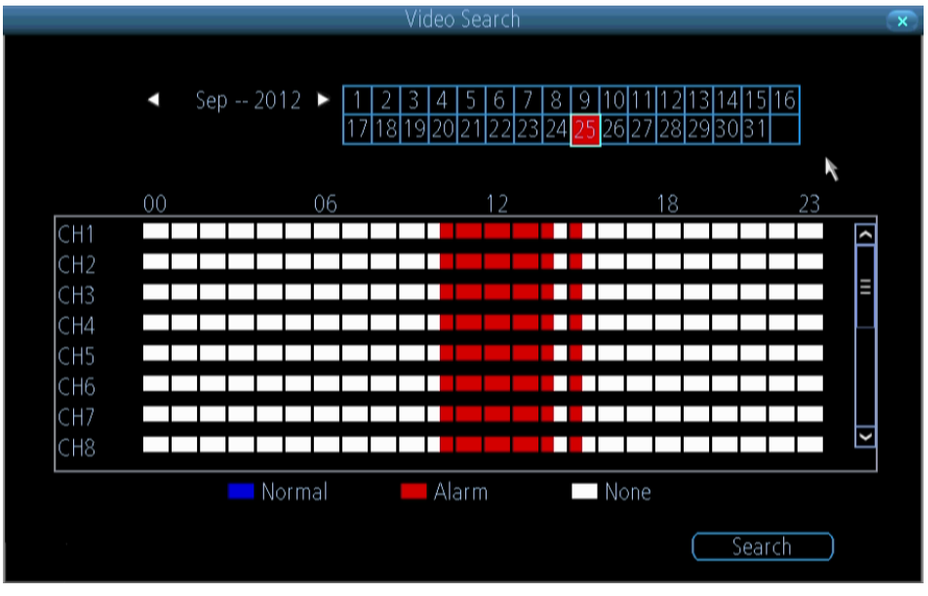
Motion: The recommended recording setting for most applications. The DVR will only record when it detects something moving in front of a camera, and will then only record footage from the camera(s) that do detect motion unless you alter your Action settings "Alarm: Motion Detection - Action" on page 45 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" on page 42 for more information about setting up and configuring Motion Detection.

None: As the name suggests, **the DVR will not record anything.** This isn't really a mode, but it's listed here for completeness.

Note: You can record using **Normal** and **Motion** at the same time. The DVR will record constantly, but tag motion events and mark them as such in the Video Search interface.

Search: Playback



The Video Search Details screen.

Recordings for the selected day are shown per channel by time.

Each recording is color-coded to match the recording mode the DVR was using at the time.

To initiate playback:

- Select the channels you'd like to playback. *The DVR can playback up to 4 channels simultaneously, however displaying so many video feeds simultaneously may cause a reduction in playback framerate from realtime to near-realtime.*
- From the **Video Type** menu, select the type(s) of video you'd like to playback. The options are *Manual*, *Schedule*, *Motion* and *All*.
- Set your **Start Date/Time** and your **End Date/Time**.
- If you want to see a graphical representation of when recordings were made and what recording mode triggered them, choose **Details**.
- Select **Search**.
- Choose which **event(s)** you want to play back, and up to four cameras you'd like to view the **video(s)** from.
- To initiate playback, select **Play**.

Performance and Playback

When playing back multiple channels at once, you may notice that they're not quite "in sync" and, in extreme cases, may be displayed in near real-time (instead of real-time).

Why?

The DVR only has so much processing power, and we've configured it so that it has more resources dedicated to recording than to playback.

While you're playing back footage, the DVR continues to monitor and record normally. Recording from up to four/eight/nine channels simultaneously is so resource intensive that playback performance may be sacrificed to ensure ongoing reliable recording.

When we say "near real-time", this doesn't mean things will be in slow motion. Rather, the action will unfold at normal speed, but be represented by half the number of frames per second (12.5fps/PAL or 15fps/NTSC).

When we say "near real-time", this doesn't mean things will be in slow motion. Rather, the action will unfold at normal speed, but be represented by half the number of frames per second (12.5fps/PAL or 15fps/NTSC).

Search: Backup

To backup footage:

- Connect a USB flash drive or a USB hard drive (HDD) to the **USB Port** on front of the DVR.
- 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**.

Note: The USB Ports are used for backing up footage, or connecting the USB mouse. If you want to use an external drive to record live video footage, use the eSATA port on the rear of the DVR.

The Backup File List

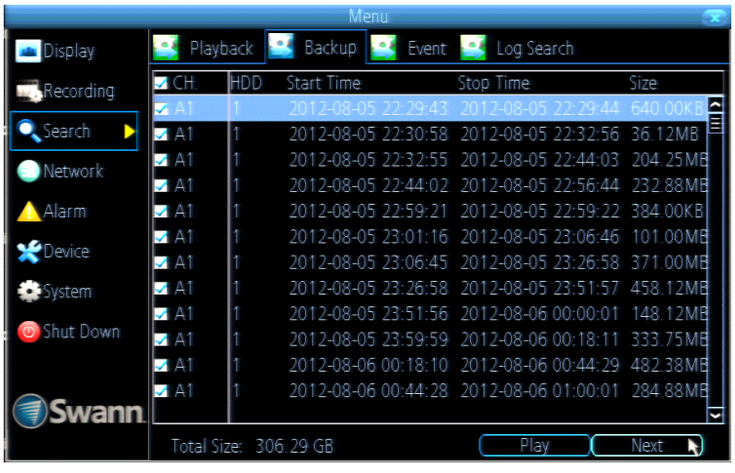
Will show you a list of all the video events between the start and end times you've selected. All the ticked files will be part of the backup.

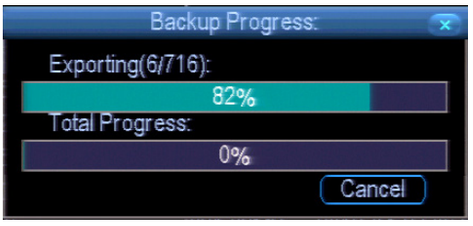
Refresh: Looks for devices to which footage can be backed up to. This will include USB flash drives or hard drives connected to the front USB port.

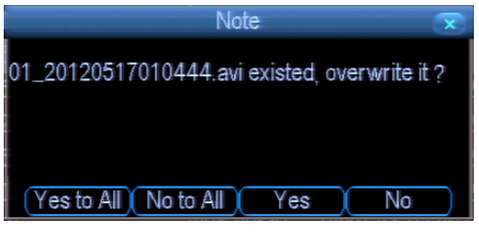
AVI Format File: When checked, the DVR will *transcode* the footage into a file format that can be played back on a computer.

About transcoding to AVI:

Don't be put off by the complex word - transcoding is just a shortening of "translating code". Transcoding, while a straight-forward process, is **very processor intensive**. You may notice significant slow-down (or apparent non-responsiveness) on your DVR while the transcoding takes place.







While the backup process is executed, the DVR will display a pair of progress meters. The top one indicates the progress of the current video event, the lower one shows the overall progress.

To end the backup process before it's complete, choose **Cancel**. Some or all of the incidents you selected will not have been copied. While backing up, particularly when transcoding to AVI, the DVR might take a few moments to register that you've selected **Cancel**.

Note that, while the backup is in progress the DVR will be inoperable locally. It will continue recording and monitoring, but won't respond to the mouse being moved or buttons being pressed (at least, not quickly - cut it some slack, it's working really, really hard).

You'll still be able to access the DVR remotely via the MyDVR software. However, due to the system requirements of backing up footage, the DVR's performance might be reduced.

Backing up footage can be a slow process - doubly so when transcoding to AVI. If you're backing up more than a few minutes footage at a time, you've got time to make a cup of coffee, maybe call a friend or catch up on some TV. Seriously, it can take a while - talk to any video editor about transcoding and they'll tell you it takes a long time.

Search: Event / Log Search

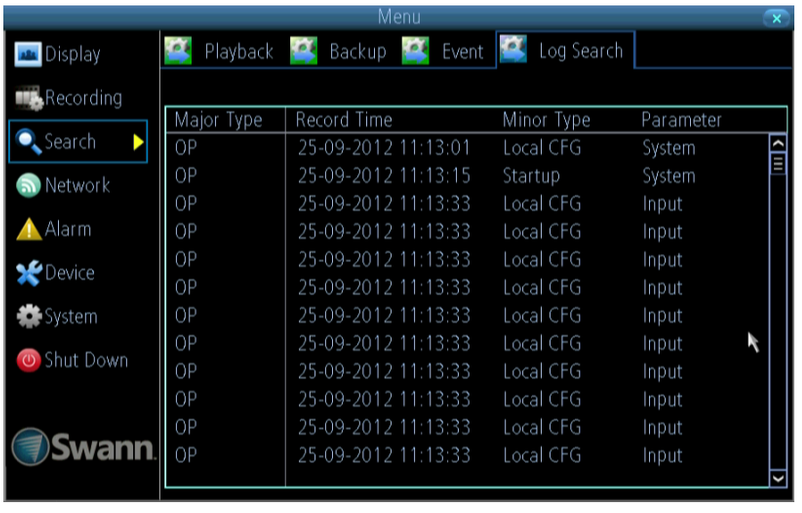
The **Event Search** menu will show you recordings that were triggered by the DVR detecting motion.

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

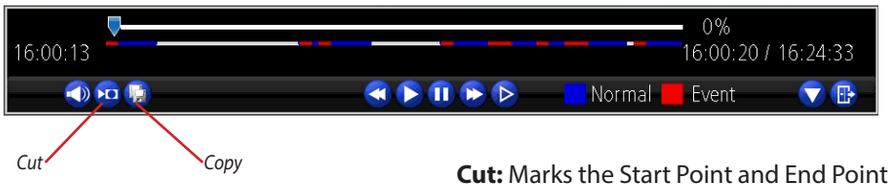
The search function operates in the same way as the main playback search: the only difference is you'll select an **Event Type** rather than a **Video Type**.

The **Log Search** displays a list of events, presented in chronoloical order: the most recent events will be at the end of the list.

The Log will list all events that the DVR monitored, whether or not any footage was recorded as a result.



Specific Incident Backup



Say you've got an hour of video recorded as a single pack, and the interesting bit is from 33:12 to 33:26. We're sure you don't want to copy and convert the whole hour for those precious 14 seconds. So, there is a better way!

Shown above is the *Playback Control Interface*, explained in more detail over the page (see "The Playback Interface" on page 36). We're going to discuss the functions of two buttons only, the **Cut** button and the **Copy** button.

Note: These don't work *quite* the same way they do on a computer! Those familiar with a video editor might recognize the function of the Cut button as being similar to the *Mark In/ Out* function.

Cut: Marks the Start Point and End Point for a specific incident backup.

Press once to mark an ***start point*** at the current position marker. Typically, this will be immediately before the incident you want to copy.

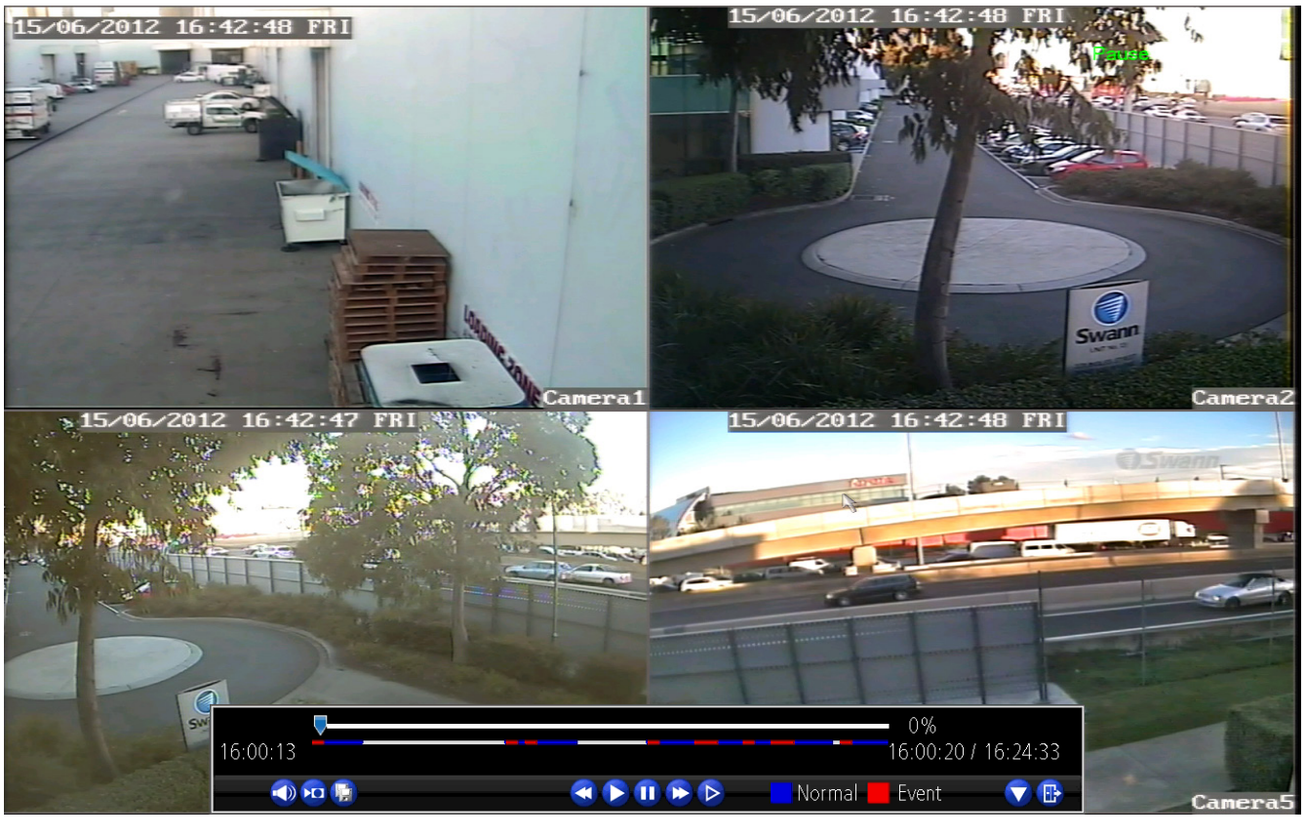
Let the video play past the incident you want to save, and then **press Cut again** to mark the ***end point***.

Pressing **Cut** a third time will erase the previous start/end points and begin the process again.

Copy: Initiates a backup of everything between the start and end points. You'll see the backup dialog shown above, but with only a single video listed.

If there is no start point marked, the backup will commence from the start of the timeline. If no end point is marked, the backup will continue until the end of the current timeline.

The Playback Interface



The Playback interface is quite similar to a computer's media player, or to the on-screen display of a DVD/Blu-ray player.

Most of the controls are quite straight forward, and operate in the same way as a standard media player.

Current Position: A basic progress meter. You can click to move the current position icon to quickly scan through video events.

Volume Control: Alters the output volume of playback.

Cut & Copy: Used to mark a ***Start Point*** and ***End Point*** for incident backups. Press **Cut** to mark an start point, and press **Cut** again to mark an end point. Press **Copy** to make a backup of everything in between. For more detail of the Cut & Copy commands, see "Specific Incident Backup" on page 35 for more details.

Rewind: Reverses the footage.

Play: Plays footage at normal speed.

Pause / Step: 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.

Fast-Forward: Speeds up playback.

Slow: Plays back footage at 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.

Recording Type: Whether the video being played back was recorded under n**ormal recording** (blue) or based on **motion** or an **alarm event** (red).

Hide Console: Maximizes the area on-screen for playing back your footage by hiding the on-screen controls.

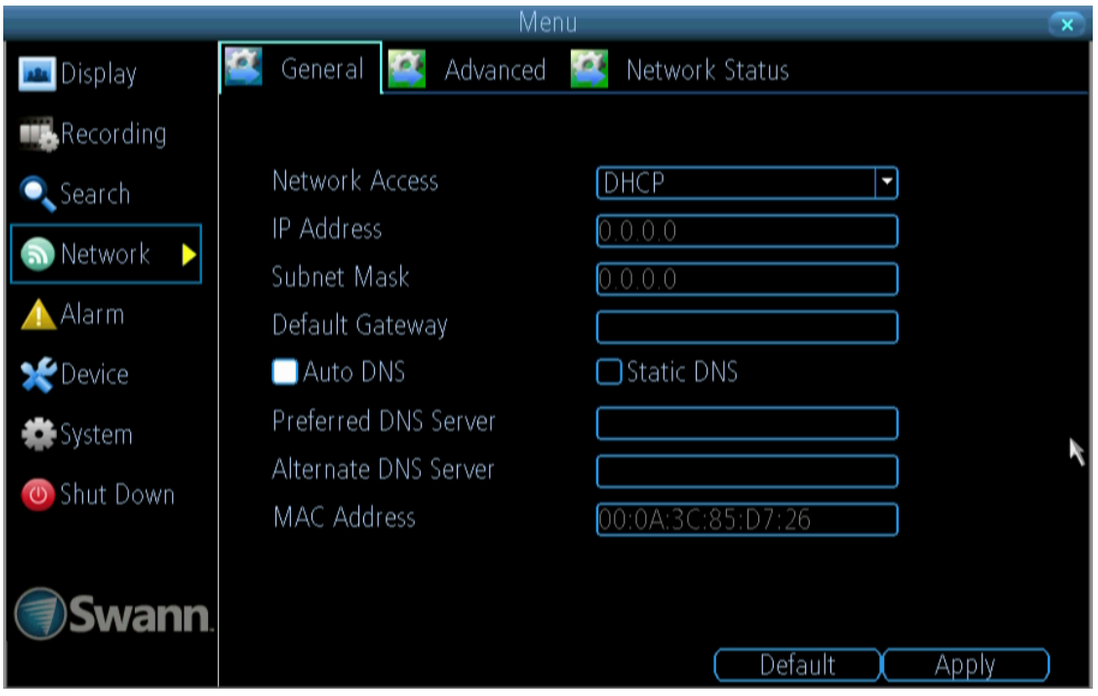
Exit Playback: Leaves the playback interface and returns to the live viewing mode.

Remember: Playback Limitations

While you're playing back footage, the DVR continues to monitor and record normally.

Simultaneously recording and playing back footage from many channels at once is extremely resource intensive. If the DVR is simultaneously recording/monitoring multiple channels and playing back multiple channels at once, there may be a slight reduction in performance from realtime to near-realtime.

Network: General



Network Access: Here you can choose between the three different types of networks that the DVR can be connected to. The three types of networks are:

DHCP: DHCP (Dynamic Host Configuration Protocol) is a system where one device on your network (usually a router) will automatically assign IP addresses to devices 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 assigning addresses.

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

IP Address: Just as houses and businesses need to have an address which identifies their location on the road network, so too do computers and other devices need addresses (called IP ADDRESSES) to identify their position on the electronic network. The DVR 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 something similar. The most important thing when setting the IP address is that nothing else on your network shares that IP address.

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".

Default 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 DVR. To continue the above examples, it might be something such as: "192.168.1.254".

Auto DNS / Static DNS: Choose how you'd like to define your DNS servers. We recommend leaving it on **Auto** unless you've got a specific reason not to.

Auto DNS: The DVR 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 is recommended for advanced users only.

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. This index is accessible in many locations online, and we call those locations "DNS servers".

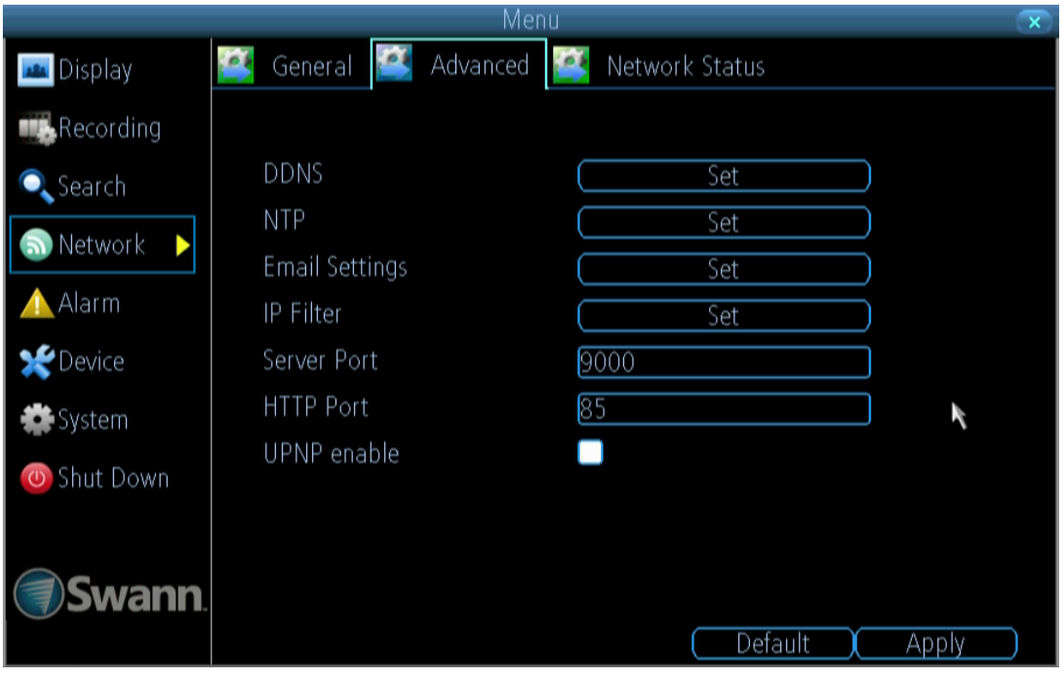
DNS for STATIC configuration: Under most circumstances, you can set the DNS Server address to be the same address as your router (this is usually the same address as *Gateway*).

DNS for DHCP configuration: Typically, the DNS Server address will automatically be detected by the DVR. In some cases, you'll need to enter a value - the address of your router (the same as the *Gateway*) should work.

Alternate DNS Server: A backup DNS server. This is here as a redundancy - your DVR will probably work without one.

MAC Address: The *Media Access Control* address. This is a unique code which nothing else should share. You can't change this one - it's pre-set when the DVR ships out.

Network: Advanced



DDNS: The place to configure the DVR to automatically update a dynamic DNS service. If you want to remotely access the DVR via the Internet, you'll probably need to configure a DDNS account. See "Network: Advanced: DDNS" on page 39 for details on setting up and configuring the DDNS.

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

Email Settings: Where you can configure the DVR to work with an email account of your choice. This must be correctly configured for the DVR's auto-email feature to work.

IP Filter: An advanced feature which allows you to exercise precise control over what devices/IP address(es) are allowed to communicate with the DVR and which are not. Recommended for **advanced users only.**

Server Port: This is the port that the DVR will use to send information through. The most important things are:

- You'll need to enable UPnP on your router so your router can selectively open these ports, allowing the DVR to communicate via the Internet. If your router doesn't support UPnP, you have two options. You can either get a new router (which we'd actually recommend - UPnP is such a good feature!) or you can manually forward ports from the router to the DVR. Port forwarding is a technical and involved process, recommended only for the technically inclined.
- **Nothing else uses this port.** The default port number is 9000, which is not used by many other devices/programs. However, particularly if you have another DVR or DVR-like device, something might be using this port already. **If this is the case, change this value to be unique.**
- **You'll need to know this port value when logging in from a mobile device or the *MyDVR* software - so, if you change it, remember what it is!**

HTTP Port: This is the port through which you will be able to log in to the DVR.

- Like the **server port**, it will need to be forwarded properly in order to ensure smooth, latency-free communication. The default value is "85", as this port is seldom used by other devices or applications. If there is another device on your network using this port, you'll need to change it to be unique.
- **This is the port number you'll need to remember when logging in remotely from a remote PC via the HTTP interface.**

What port number(s) should I use?

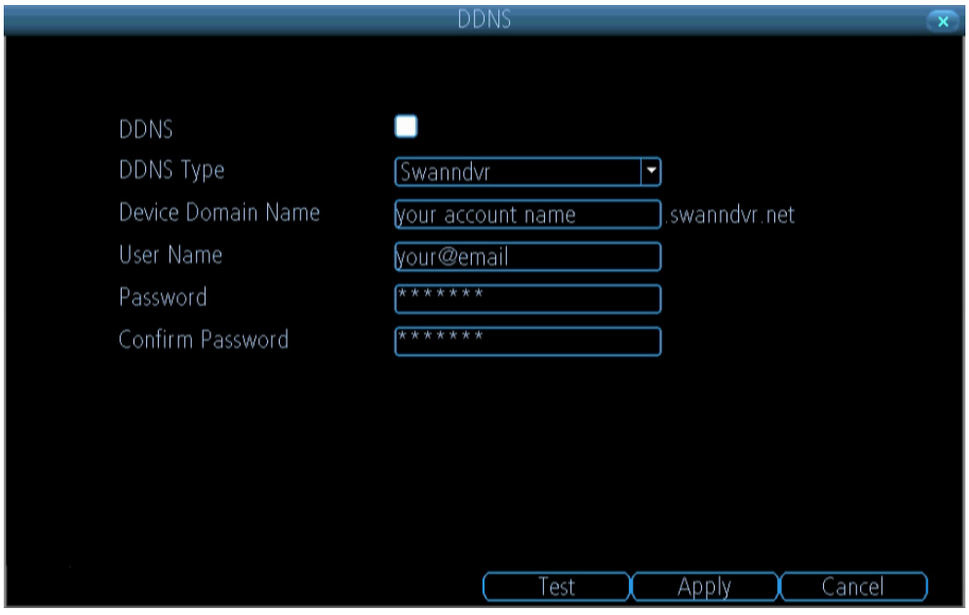
If the default port numbers are in use (85 and/or 9000) then the simplest solution is just to keep "adding one" until you find a port which is not in use. So, if 85 is already taken, try 86 or 87.

*There's no "right" port number(s) to use - any port number will work provided the DVR is the **only** device using it. For this reason, **avoid using port numbers 80, 81, 82, 88 , 90, and 99 as these are often used by other devices/programs/protocols.***

UPNP enable: UPnP makes configuring your network easier and faster. To use the UPnP setting on the DVR, 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 DVR and your router, the Ports that the DVR 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 DVR uses from the router to the DVR - since this is a technically challenging process, we strongly recommend using UPnP if possible.

Network: Advanced: DDNS



Static and Dynamic IP Addresses

In much the same way as your home network can use static or dynamic IP addresses, many Internet providers don't issue (or charge more for) a static IP address for users. The easiest way to find out is to contact your Internet service provider. Alternately, you can access the www.whatismyip.com service, make a note of your IP, then reboot your router/gateway. This should refresh your Internet connection. If your IP address changes, you have a dynamic IP address. If it stays the same, you may have a static IP - contact your ISP to confirm.

How do I deal with a dynamic IP address?

One option is to contact your ISP and request a static IP address. They'll usually charge a small fee for doing this. It's worth noting that not all ISPs offer static IP addresses.

If your ISP does not offer static IP addresses then you can use a dynamic referencing service. We provide one free of charge.

We recommend using SWANNDVR as your DNS service. This is a free service for Swann DVR owners, which we directly support.

To create an account with SWANNDVR, go to:
http://www.swanndvr.com/
*and click the **Registration** button.*
Follow the prompts to create your account.

Server: Choose the server that you're using. The options are DYNDNS and our own DDNS server, SWANNDVR.

Device Domain Name: Enter the host name that you set up in your DDNS service. This is the address you use to access your network. For example: yourhostname.swanndvr.net

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 DVR or router (for the sake of security, we suggest making them different).

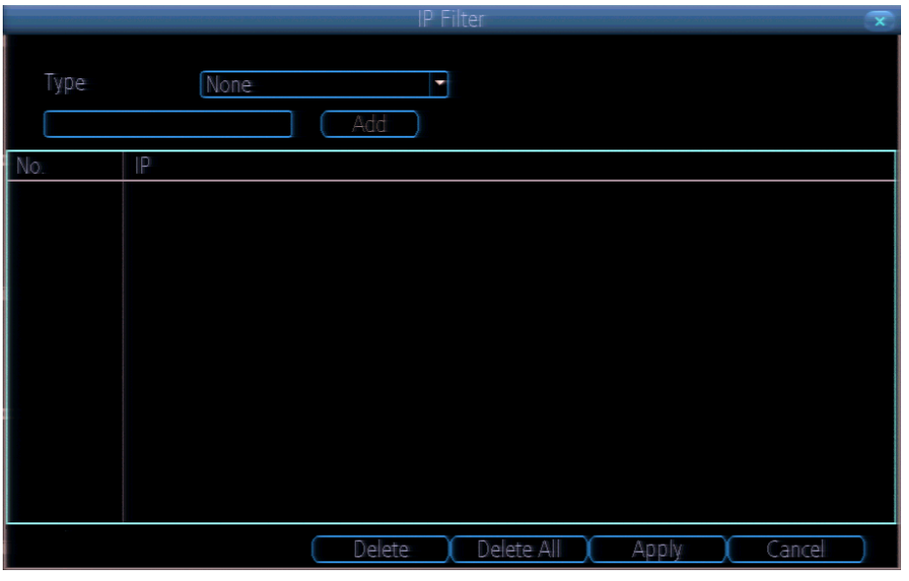
For SwannDVR users: Your username is the **email address** you used to register the account. The password is whatever you selected when you registered.

Network: Advanced: NTP

Particularly important if you've enabled NTP - set this to the time zone where you happen to be. For example, people in eastern Australia (Canberra, Sydney and Melbourne) choose GMT+10:00, whilst the Eastern Time zone 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.)

NOTE: Some NTP servers are NOT fully compatible with DST (Daylight Savings Time). This may cause your system to double-count adding one or removing one more hour than they should, or cancel each other out. You may need to intentionally change your time zone to compensate, or simply not use NTP and DST simultaneously.

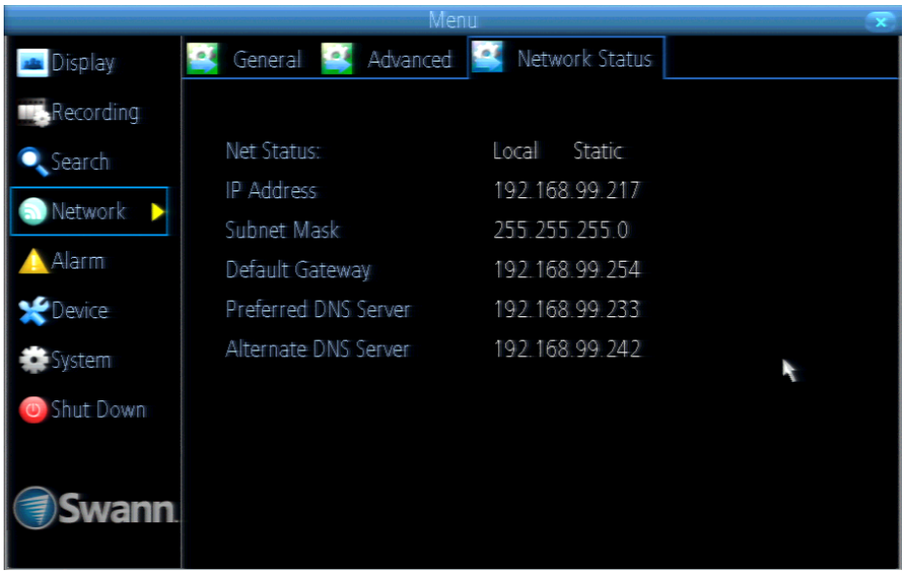
Network: Advanced: IP Filter



The IP Filter can be used to modify which IP addresses have permission to talk to the DVR and which do not.

This is an advanced feature, and is recommended for advanced users only. Tinkering with things here - if you're not sure what you're doing - is more likely to break things than make anything better.

Network: Network Status

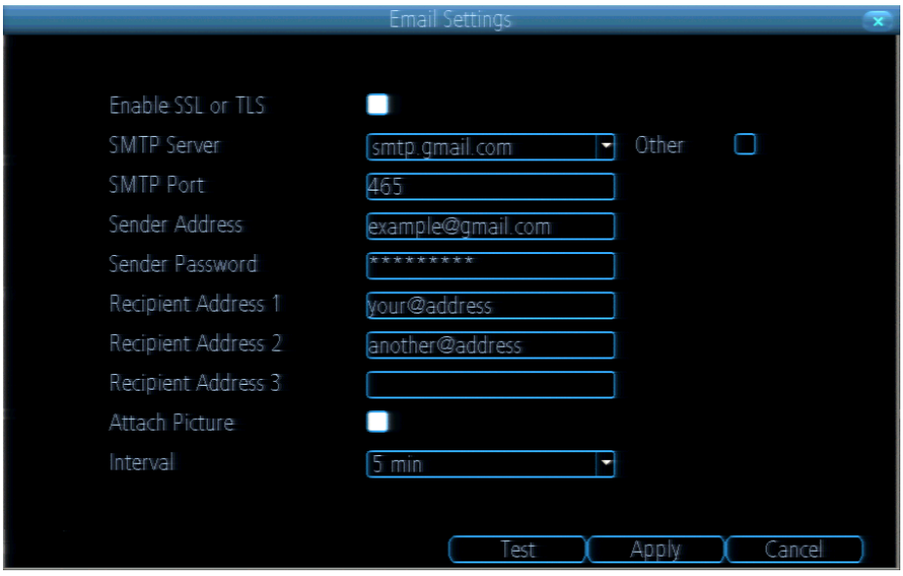


The **Network Status** screen displays a quick summary of your network settings. You can't alter things here - see the **General** and **Advanced** tabs for places to actually alter things.

Note that the values displayed in the image to the left are examples only. Your network settings may be similar or very different!

Network: Advanced: Email Settings

If you want the DVR to occasionally drop you a line, share news, tell you about its day and - more importantly - tell you what's going on around your home or business as it happens, then you can configure it to automatically send email alerts as events happen.



We suggest using Gmail as your email client - it's quite easy to set up an account and use it solely for the DVR. We've tested the email procedure with Gmail, and it does work.

Other email servers may not work correctly - many interpret the procedurally generated email from the DVR as *spam* and block the mail from being sent.

For the Auto-Mail function to work correctly, the DVR will need to be correctly configured with the details of the email servers and addresses you want to use.

Enable SSL or TLS: 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).

You'll need to setup an account with one of these email providers. All offer free email accounts. To signup, visit the email provider's website:

Gmail (Google):	smtp.gmail.com
Yahoo Mail:	smtp.mail.yahoo.com
Windows Live Mail (Hotmail):	smtp.live.com

The DVR will automatically adjust some settings (such as the SMTP port number) to make configuration significantly easier.

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).

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, followed by "@" and then the email server. For example: "youraddress@gmail.com" or similar.

Sender Password: The password for the outgoing email account.

Recipient Address: The email address you want the DVR to send emails to. This can be any email address you like, however, bear in mind that the DVR might send a large number of automatic emails under certain conditions.

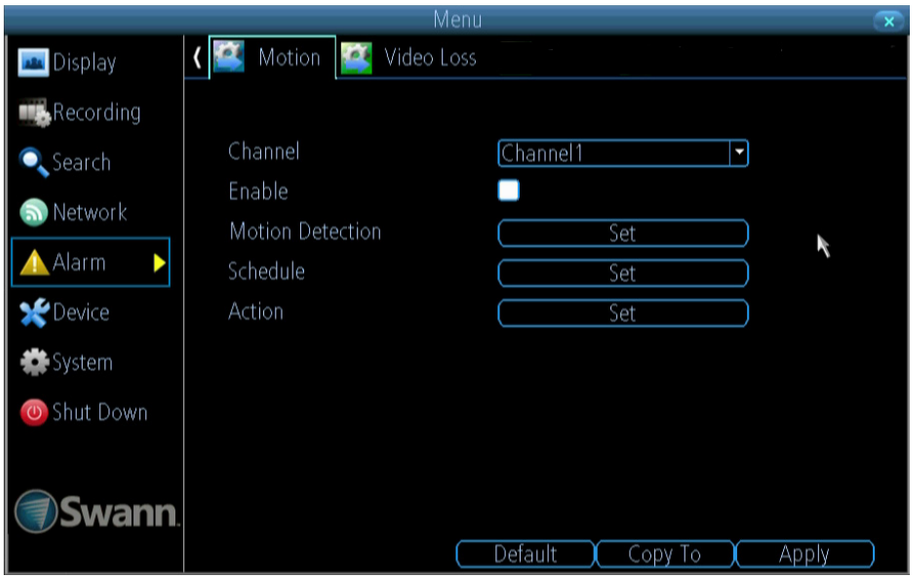
Attach Picture: When this is selected, the DVR will attach a small image to each email alert (where applicable).

For motion-based email alerts, this will be an image of whatever triggered the motion detection.

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

Short **Interval** settings are likely to lead to huge numbers of alerts being sent by the DVR - perhaps even several emails for one event (if that one event lasts longer than the interval setting). On the other hand, a long interval setting might mean you'll miss a specific update that you needed. There's no right answer, and you'll probably have to fine-tune this setting to get the results you're after - it'll be different for everyone's unique circumstances.

Alarm: Motion



If you're planning to use *Motion Detection* as the primary (or sole) recording mode for the DVR, it's worth taking a moment to ensure it's properly configured.

If the motion detection sensitivity is **too sensitive**, then the DVR will record too frequently or continually - any benefit of motion detection will be lost.

If the motion detection sensitivity is *not sensitive enough*, then the DVR will not record when it should and *may not record anything at all*.

We think that motion detection is the best way to get your DVR to operate almost autonomously for long periods of time (typically weeks to months) without you having to worry about losing old footage.

However, it can be important that it's configured correctly!

How Motion Detection Works

The way that the DVR looks for motion is quite straight forward - it's a process where it compares one frame (that is, a single image taken approximately a 25th/30th of a second from the previous image) with the next. A certain amount of "difference" between these two "frames" is interpreted as motion.

As a result, the DVR is able to detect when there is a change in the picture. However, this does not necessarily need to be something moving in the frame. For example, a light being turned on or off, a lightning flash or even the sun coming out momentarily on a cloudy day might be enough to trigger the motion detection on the DVR. However, as these events last only a moment (and are relatively rare) they will only create a few very short redundant clips, which will not take up too much space or pose a problem with scanning through footage.

This method of motion detection can, however, become problematic when using wireless cameras. As wireless technology is susceptible to interference, the static and image distortion common to wireless systems is often enough to trigger the motion detection inadvertently.

As a result, we **strongly advise against using wireless cameras with any of our motion sensitive recording equipment**, and advise the use of hard wired cameras. If you simply must use wireless technology, we advise using digital wireless technology as this technology is much more resistant to interference from other wireless equipment and environmental causes. However, any wireless technology, digital or otherwise, has serious limitations when combined with motion detection.

For a similar reason, **don't use PTZ systems and motion detection simultaneously**. The DVR will interpret the camera moving as 'motion' and record. This is particularly true when using Cruise Mode - as the camera is moving almost continually, so too is the DVR recording almost continually!

Here, you'll be able to set the motion detection features of the DVR for each channel. We suggest that motion detection is, under most circumstances, the most practical recording method for the DVR to employ.

How it Works: Once motion detection has been enabled for a channel, it will register to the DVR as a **Motion Event**. Thus, you can use the Motion recording mode in the schedule to trigger the DVR to record when motion detection triggers an alarm signal.

Enable: Whether or not motion detection is enabled on a specific channel. Each channel can be configured independently of one another.

Motion Detection: Click the applicable **Set** button to setup the motion detection area for that channel. See "Alarm: Motion Detection Configuration" on page 43 for details on how to do this, and what it means.

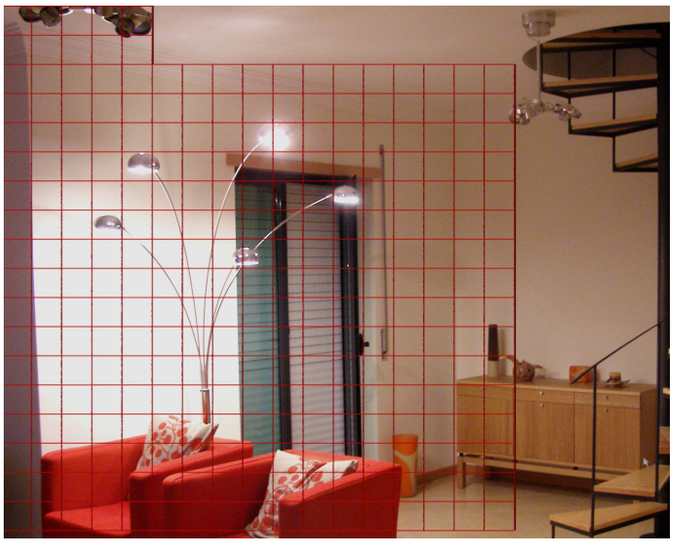
Say, for example, you are trying to monitor your front yard, whilst in the background there is a busy street, and the cars driving past continually set off the motion detection. What can you do about it? Setting only part of the camera's view to be motion sensitive might be the answer. This is useful in a number of circumstances, such as monitoring one particular door at the end of a busy hallway, or a backyard with a tree that keeps blowing in the wind.

Action: Here you can define what will happen when the camera you've selected detects motion.

Note: If you've used the Copy-To feature to copy from one camera to another, remember that you'll still need to set the *Action* for each channel independently - that information isn't copied.

Alarm: Motion Detection Configuration

To set the MOTION DETECTION AREA

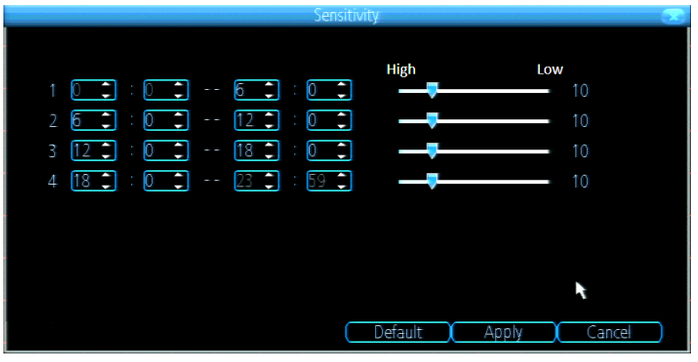


In the MOTION DETECTION menu, use the mouse or the arrow buttons to highlight the SETUP button for the channel you wish to setup the MOTION DETECTION AREA for, and confirm by pressing select or left clicking.

- 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.
- Areas marked by red boxes will be sensitive to motion, those not marked will not be.
- Click and drag to select the area you want to select or de-select.

In the sample image above, a person moving about the room would trigger the motion detection. However, a person entering from the right of screen and ascending the staircase should avoid the motion sensitive area. This is a good solution to monitor the door (center of image) without getting false triggers every time someone ascends the stairs.

Sensitivity: The Sensitivity setting is controlled by a slider, allowing you to set a value between 0 and 50. The lower the number, the more sensitive the motion detection will be.



There are **four time periods** which you can define different motion sensitivity values for.

You can change what time(s) each period starts and ends to best match the changing lighting conditions in your location.

Typically, values between 5 and 10 will give good results in the daytime.

At night, you may get numerous false triggers unless you raise the sensitivity setting, perhaps as high as 25 - 30. This is because when cameras (particularly CMOS-based ones) use active infrared night vision, they dramatically increase the gain controls to the image sensor. This creates a lot of "noise" in the camera's images, which are interpreted by the DVR as motion.

By default, the day is divided into four periods:

00:00 (Midnight) - 06:00 (6:00 AM)
06:00 (6:00 AM) - 12:00 (Midday)
12:00 (Midday) - 18:00 (6:00 PM)
18:00 (6:00 PM) - 00:00 (Midnight)

You might need to shift the beginning and ends of these times to best suit the time(s) that lighting changes at your location.

The start and end times can be set to anything you like, provided the different time periods don't overlap and there's no gap between one ending and the next starting.

There's no requirement for all four time periods to have different sensitivity levels, although we suggest that usually gives the best performance.

To find the best sensitivity values for different times of day/night, it's best to test the system during different time periods.

Get an able-bodied volunteer to move about in front of the cameras you'd like to tune the sensitivity for. The ideal sensitivity level is when your volunteer moving about always triggers the motion detection, but there are no false triggers (or very few) when your volunteer isn't moving about.

Alarm: Motion Detection Notes

Motion Detection Compatibility

You'll be able to use the DVR's motion detection with almost all static, wired cameras.

PTZ systems are fundamentally incompatible with motion detection. *Avoid enabling motion detection on a channel which has a PTZ system attached to it - especially when the PTZ system is set to Cruise Mode.*

Wireless cameras are **not** recommended for use with the motion detection - the visual distortion and dropped frames caused by wireless transmission of video data give numerous false triggers.

False Triggers

Setting the motion detection at high sensitivity levels (4 or lower) increases the frequency of false alarms. On the other hand, low sensitivity levels (20 or higher) increase the risk that a significant motion event (such as an intruder) will not trigger the motion detection to record.

Check the Motion Detection settings both during the day and at night. In low-light conditions (or when your cameras are using infrared night vision) the DVR may be more or less sensitive to motion, depending on your unique circumstances. The difference might be very dramatic!

Image Sensors: CMOS and CCD

There are two kinds of CCTV cameras out there: CMOS and CCD. Neither technology is inherrently "better" but they're quite different and you may need to adjust your motion detection sensitivity to suit the kind of cameras you have.

CCD: A *Charged-Coupled Device* outputs a clear, stable image. It's the best kind of sensor to use with motion detection, and typically requires lower settings (that is: *lower* number, *more* sensitive).

CMOS: A *Complementary Metal–Oxide–Semiconductor* is a different kind of image sensor, producing bold, vibrant images. It tends to have more noise than CCD, and typically requires a higher setting (that is, a *higher* number, which is *less* sensitive).

Weather

The weather conditions are going to affect your motion detection. Dramatic weather phenomenon such as heavy rain, strong winds, lightning and so on, may trigger the motion detection with surprising frequency.

On the other hand, things like fog, mist and other obscuring kinds of weather might mask or obscure something moving to the point that the DVR fails to detect them.

Here are a few steps you can take to minimize the amount of noise in your images.

- Try adjusting the **Image Settings** (see "Display: Camera" on page 28 for details) to fine-tune the brightness and contrast to get a more stable image.
- Limit the motion sensitive area to only the areas in view that a target could be. In particular, large featureless areas in the camera's view are the ones most likely to give false triggers - turning off the motion sensitivity to any area a target cannot move infront of will help reduce false triggers.

Note: The motion detection feature will seem more sensitive at night, particularly when using low-light or active infrared cameras. We recommend that you test your motion detection sensitivity both during the day and at night to ensure your sensitivity setting is suitable for either lighting condition.

Some tips to customizing your motion detection sensitivity and actions:

- **Consider how important it is to be notified of motion events as they happen.**

Using the email alerts is a great way to be kept up-to-speed on what's happening, but may quickly become annoying if something occurs which will generate a number of false triggers. As a rule, we suggest employing the email alert only on interior cameras during times that **no one** should be moving about in front of them.

- **It can be important to have a complete record of a subject's movements and actions for legal reasons.**

If your cameras capture an illegal event (typically an intruder, but we're continually surprised by stories from our users) it is important to have as much information as possible.

For example, images of someone in your home may not actually *prove* that they broke in - but footage of them breaking a window does. If you use a camera inside the home to trigger all exterior cameras with pre-record enabled, then you will have a record of how they entered in addition to what they did.

- **Always consider what's really important.**

Which is the bigger problem - a dozen false triggers per day, or missing one critical event?

There's no magic setting which will make motion detection work *perfectly*. There will always be some events that it's not sensitive enough to catch, or minor happenings that will trigger an overly sensitive camera to record. Typically, the best motion detection settings are one's that give few false triggers but *don't miss anything*.

Even motion detection which false triggers a few times per hour will still save a significant amount of hard drive space compared with a constant recording schedule for the same duration.

Alarm: Motion Detection - Action

Audio Warning: The DVR will use its internal buzzer to emit an alarm tone. It sounds like an old computer indicating an error, or a large truck backing up.

Send Email: The DVR will send an auto-email alert when the event type you've 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" on page 41 for details.

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

- If you have two cameras overlooking a yard, one with a wide view from well overhead and one with a much narrower view of a corner or path. You may find that using the camera with the narrow view for motion detection gives fewer false triggers and doesn't miss an event as often as the really wide view might, so triggering the wide view to record as well ensures you know where the subject went after they left the narrow view.
- One camera might face a public area, while another camera looks down a private corridor which exits into the public area. Having the camera in the private area trigger the one in the public area to record can give you a record of where a subject went after they left the private area, without filling your hard drive with recordings triggered by random passers by.

Alarm: Video Loss

Alarm: Video Loss

Video Loss is regarded as a potential alarm event, and is considered to occur any time that the DVR doesn't receive an active video signal on any of its inputs.

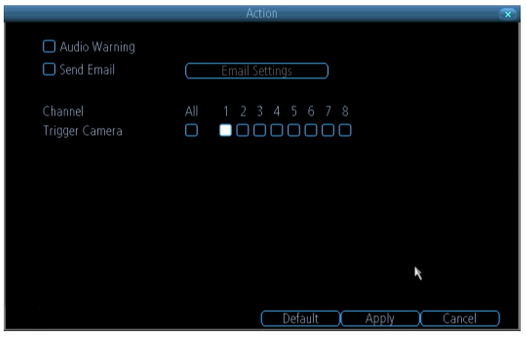
The default behaviour of the DVR, when a channel has no incoming video signal, is simply to display "Video Loss" in white text on a black background over the associated channel. If you're not using all the inputs on your DVR, then some channels will be in "permanent" Video Loss state. Just be sure that you don't Enable a video loss action for these channels.

Channel: Which channel/camera you'd like to set the Video Loss behaviour for.

Enable: Whether the selected channel has video loss monitoring active or not.

Schedule: Alters when the current **Video Loss Action** will be active.

Action: The action you'd like the DVR to take when this event occurs. It's set in the same way as the Action for any other event.

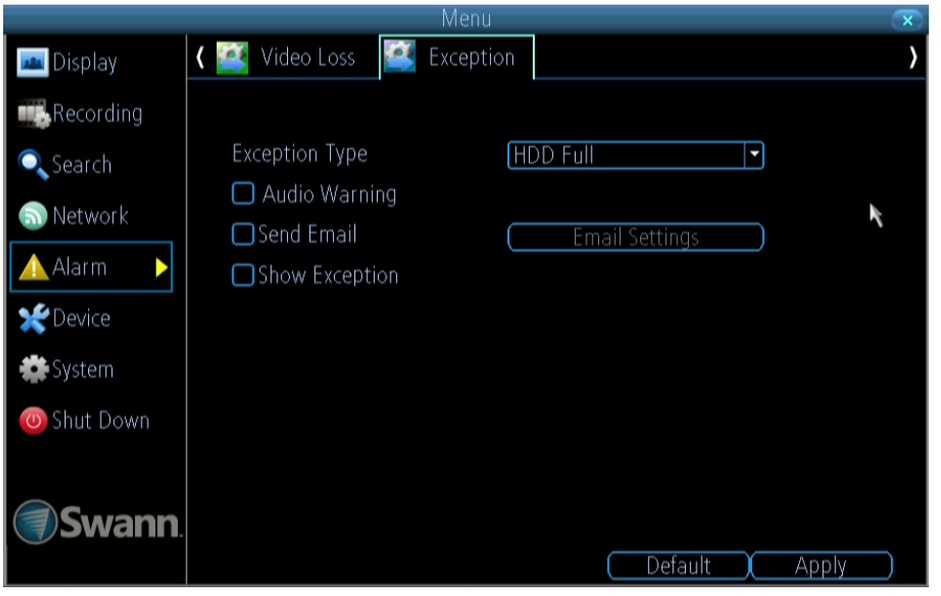


Alarm: Video Loss - Action

Audio Warning: The DVR will use its internal buzzer to emit an alarm tone. It sounds like an old computer indicating an error, or a large truck backing up.

Send Email: The DVR will send an auto-email alert when the event type you've 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" on page 41 for details.

Alarm: Exception



An **Exception** is any deviation from the DVR's normal behaviour - phrased another way, it's like saying the DVR's been working fine **except** for these events.

Exception Type: What event type you'd like the DVR to react to. By configuring the Action for these events, you can create any combination of audio alerts (see below) or auto-emails to be sent for different event types.

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

HDD Error: Occurs when the DVR 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 DVR has problems connecting to the Internet. This may indicate a problem with the DVR's configuration, a fault with your network or a problem with your Internet Service Provider (ISP).

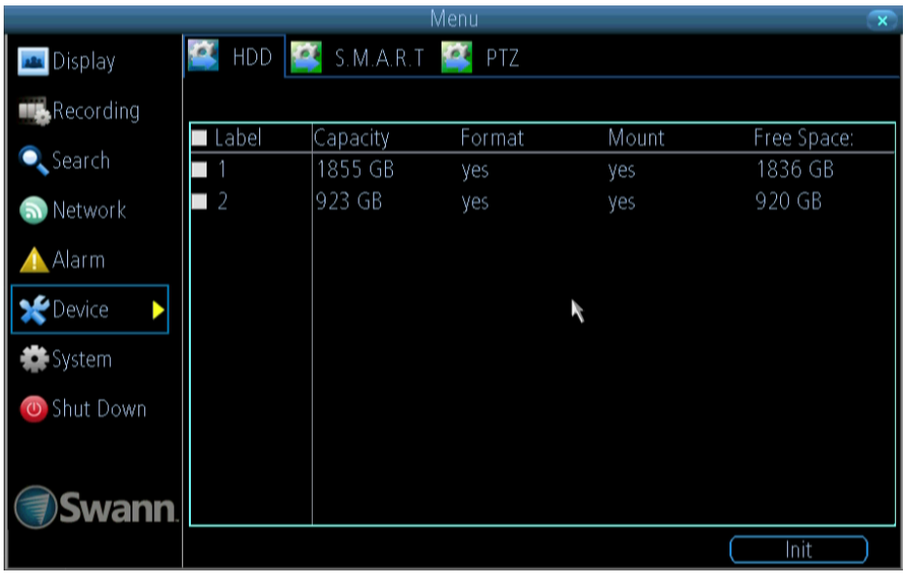
IP Conflict: This event will occur if the DVR detects another device on the same network with a conflicting IP address. It's a little like two houses with the same number being on the same street - one house might get the other's mail, or get woken up at all hours of the night being asked if someone named "Big Bob" lives there.

Basically, it indicates that two devices are trying to use the same IP address. This shouldn't occur if you're using DHCP addressing, unless one or more devices is set to use a STATIC IP (the static addressing method overrides the automatic assignment process).

Audio Warning: The DVR will use its internal buzzer to emit an alarm tone. It sounds like an old computer indicating an error, or a large truck backing up.

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

Device: HDD



Here you'll find a comprehensive list of hard drives connected to the DVR.

Typically, there will be one entry here, and it will be the hard drive that came with the DVR *(if one was included)* - you'll get many years of usage out of the included hard drive.

The drive connected to the internal SATA port will be listed here. A drive connected via eSATA will appear on this list, and be useable in the same manner as an internal HDD.

External drives connected via USB **will not** appear on this list, and can't be used to record footage - USB lacks the bandwidth to write multiple streams simultaneously. External USB drives can only be used for backing up footage.

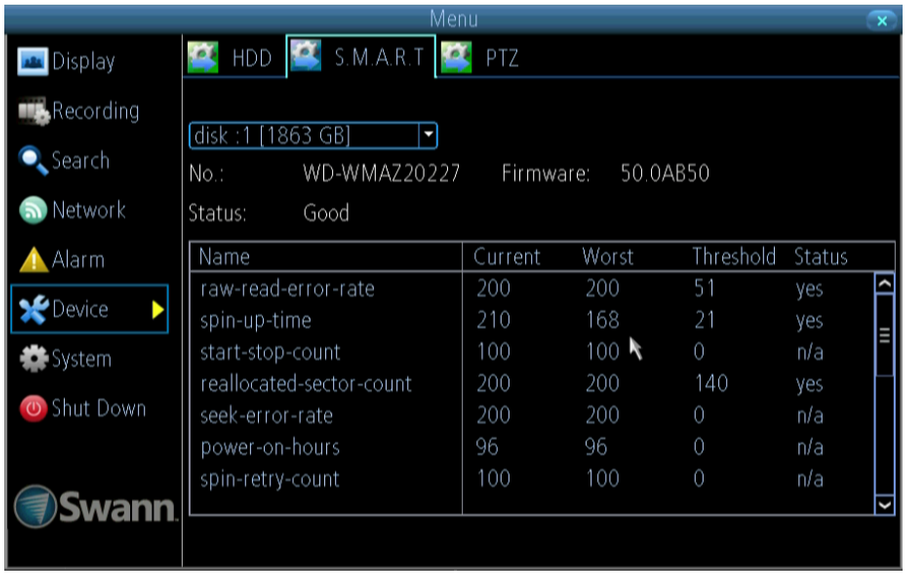
Device: S.M.A.R.T.

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 DVR how it's going.

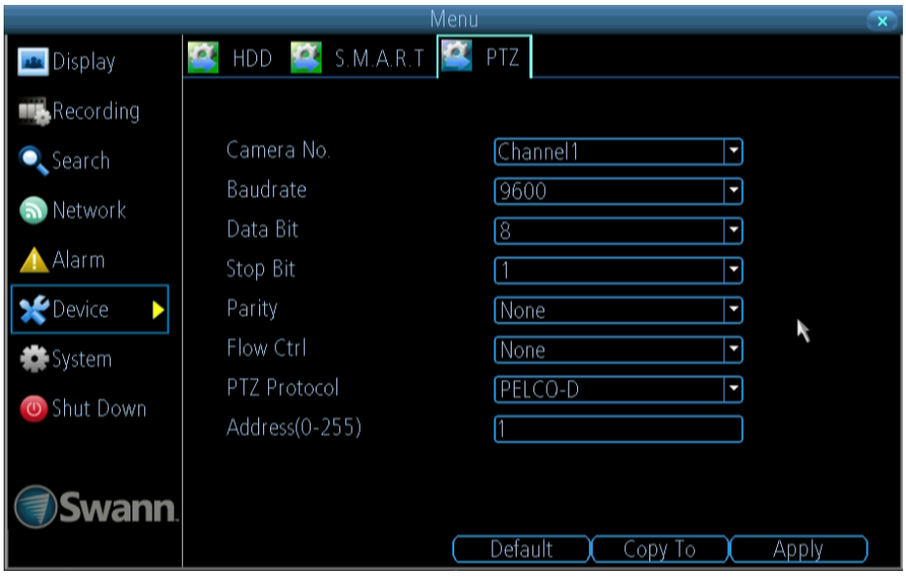
Status: The current condition of the hard drive. It should say "Good". If it says anything else, this indicates there's a problem with your hard drive.

If there's no problem, there's little else to do here, unless reading the output of the dozens of self-tests the hard drive performs on itself is of interest to you.

If you have been confronted with a HDD Error, or the Status entry doesn't read "Good" then you can use the S.M.A.R.T. information to attempt to diagnose the problem. The information presented in the S.M.A.R.T. report is practically identical to what you'd see on a desktop PC while using *Administrator Tools*, or a similar service.



Device: PTZ



Important:

Don't use Motion Detection on channels with PTZ cameras attached. The DVR can't tell the difference between something moving in front of the camera and the camera itself moving!

PTZ Settings

This is where you can configure the DVR to be able to operate PTZ devices. PTZ stands for Pan, Tilt & Zoom.

The DVR is compatible with many - but not all - PTZ devices available. For the best results, we suggest using a Swann PTZ camera, as we know what they're compatible with and we'll be able to offer support for both devices at once (should you need it).

Camera No: The camera you'd like to associate a PTZ device with.

Baudrate: Check the PTZ device's documentation to learn this value. Most *Swann* PTZ units operate at 2400 or 9600bps.

Data Bit, Stop Bit & Parity: Options that subtly change the way the DVR talks to the device. This is important to get right - check your PTZ device's documentation to learn the correct settings.

PTZ Protocol: A protocol is like a language that the DVR uses to talk to the PTZ device. Ensure that this setting matches the requirement of your device.

Address (0 - 255): The **command address** of the PTZ device you want to associate with this channel.

Accessing the PTZ Controls

The PTZ controls can be accessed from the Live Viewing screen by choosing the PTZ icon on the menu bar.

Note for Remote Access and Mobile Device users:

The PTZ functions of the DVR and compatible cameras can be controlled remotely via the MyDVR software, as well as by the SwannView mobile viewing app.

Please note: due to the latency (a fancy word for "delay") caused by streaming so much data over an Internet connection, there will be a momentary pause between selecting a direction for the camera to move and it actually moving.

Typically the delay will be less than one second, however periods of up to thirty seconds are not uncommon on mobile, wireless or slow Internet connections.

PTZ Controls

Arrows: Moves the camera in the direction selected.

Speed: How fast the camera will move. The higher the number, the faster the movement. Note that the actual speed of movement will depend upon the capabilities of your particular PTZ device.

Zoom: Increases or decreases the magnification of a vari-focal lens. ***Not all PTZ devices have vari-focal lenses.***

Focus: Alters the focal point of a PTZ device with a vari-focal lens. Try adjusting this control if your images seem "soft" or blurry. ***Not all cameras support this function.***

Iris: Alters how much light gets into the camera by opening and closing the iris of the camera. Not all PTZ cameras have

an adjustable iris. Also called an "aperture". ***Not all cameras support this function.***

Preset: A Preset is a position that the camera is in which is saved to memory to be retrieved later.

Patrol: Initates patrol mode (also sometimes called "cruise" mode). You'll need to define a series of Preset points for the camera to patrol between.

Exit: Closes the PTZ controls.

PTZ Context Menu

Camera No: Switch quickly between cameras.

Call Preset: Returns the camera to a Preset point.

Call Patrol: Initiates a patrol of your choice.

Preset: Defines a Preset point.

Patrol: Initiates or stops a patrol.

PTZ Menu: Toggles the appearance of the PTZ Control Menu onscreen. While the PTZ Control Menu is hidden, the DVR will still be in PTZ mode, and the context menu can still be opened via right-clicking the interface.

PTZ Settings: Opens the PTZ Settings menu, where you can adjust the control method for the camera.

OSD Controls for Swann 700-series Cameras

If you're using one of Swann's PRO-700 series cameras (such as the 760, 770 and so on) then you can use the DVR's PTZ interface to control the camera's setting via the on-screen display (OSD).

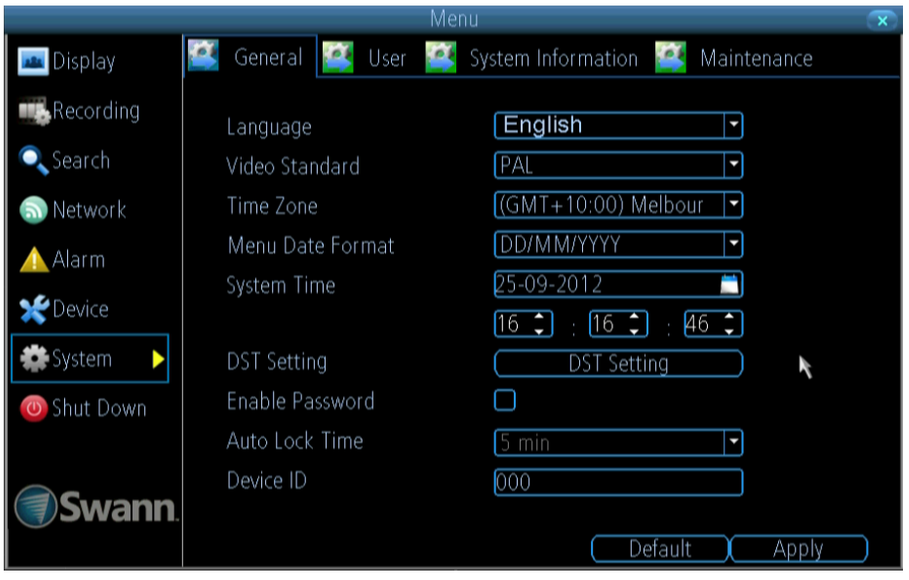
The steps to connect the camera's RS485 control wires to the DVR are the same as connecting a PTZ device - see "Connecting Additional Devices" on page 9.

Once the camera is connected, the following PTZ buttons will control the camera:

IRIS +: *Opens the camera's OSD and selects options.*

Arrows: *Navigates through the menu system.*

System: General



The **System: General** menu contains many of the settings you'll need to configure to get the most out of your DVR system. Most importantly:

- The time and date can be set here.
- You can select the language you want for the menus/GUI.
- The configuration for automatic adjustment to daylight savings time is here.
- You can easily enable or disable password protection - but will have to create a valid username/password

Language: The language that the DVR's menus, alerts and other communications will use. This usually defaults to English.

Be careful not to change this setting unintentionally - it might be tricky to find the setting to change it back when the DVR is speaking another language!

Video Standard: Here you can choose between PAL and NTSC. PAL is used in Western Europe and Australia, NTSC is used in the US, Canada and Japan. If the DVR's picture is black and white, flickering or similar, then this is probably caused by the video system being set incorrectly. **Don't change this setting unless advised to do so by *Swann* Technical Support. You may not be able to see the DVR's output on your screen anymore!**

Time Zone: Particularly important if you've enabled NTP - set this to the time zone where you happen to be. For example, people in eastern Australia (Canberra, Sydney and Melbourne) choose GMT+10:00, whilst the Eastern Time zone 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.)

Menu Date Format: The format of the date (eg. DD/MM/YYYY or MM/DD/YYYY and so on).

System Time: This can be edited manually, or set to update automatically by using NTP (see "Network: Advanced: NTP" on page 39).

DST Setting: As the standards for daylight savings differ from country to country, and often state to state, you might need to manually tell the DVR exactly when it commences and ends in your locality. First, turn DST on. We suggest setting the **Daylight Saving Time Mode** to **Date**, and manually entering the dates and times that daylight savings time applies to and from, in your locality.

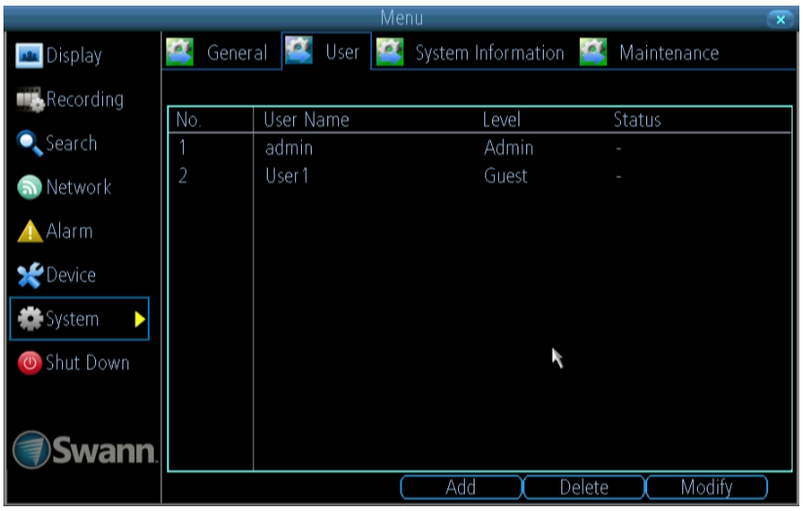
Note: Some NTP servers are NOT fully compatible with DST. This may cause your system to double-count adding one or removing one more hour than they should, or cancel each other out. You may need to intentionally change your time zone to compensate, or simply not use NTP and DST simultaneously.

Enable Password: When enabled, the DVR will require a password to access, even for local users. It's advisable to enable password protection

Auto Lock Time: When the password protection is enabled, the DVR will automatically time-out, whereafter it will ask for a password before returning to normal functioning. The **Auto Lock Time** determines how long a period of inactivity will cause the DVR to lock itself again.

Device ID: Differentiates your DVR from other devices. If you don't have any other DVR's or similar devices, then you can leave this as-is. If you've got multiple DVRs running on the same network, then it's a great idea to give each a unique ID.

System: User



The System: User menu is where you can define and configure the different levels of access various users have to the DVR.

We suggest that *at minimum* the admin account be password protected, as it has access to all aspects of the DVR's operation.

To add additional users, choose **Add**.

To remove a user, choose **Delete**.

To customize a user's level of access, choose **Modify**.

You cannot modify the access level of the default admin account - they can do everything. This is to prevent an unfortunate incident where, for example, no user has the permissions required to change another user's permissions - which could lead to the DVR being, in at least some senses, inoperable.

User Name: Select a name for the user you want to define. The best usernames are short, to the point, are relevant to the specific user they're intended for, are easily memorable and hard to guess.

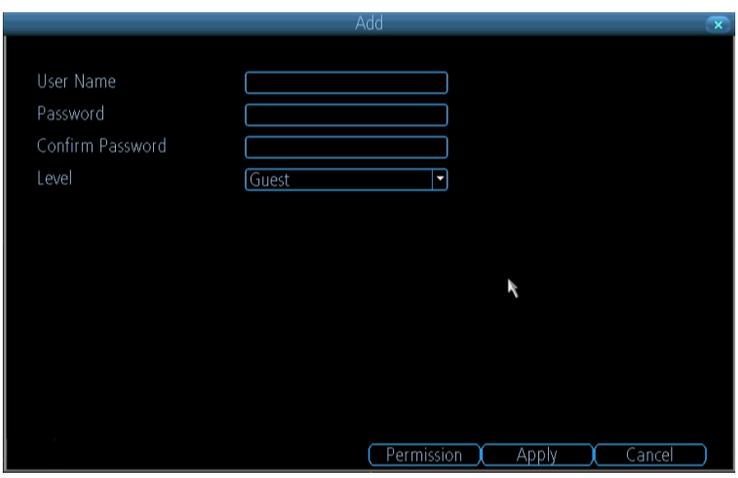
Password: A password can be any combination of numbers (0 though 9) between one and eight characters long.

Confirm Password: Must exactly match the password for the definintion of a new user to be successful.

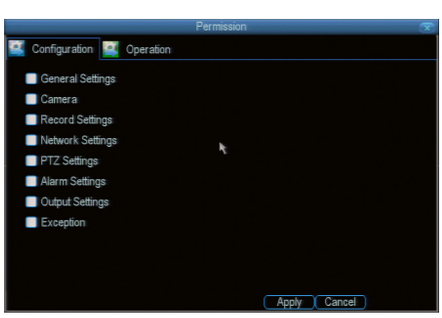
Level: There are two default levels of access to the DVR - Guests and Operators.

Guest: By default, a *Guest* user has access to the live images on the DVR and can search through recorded events. They cannot change any settings or configure the DVR in any way.

Operator: The default permissions of an *Operator* allow them to access and configure all aspects of the DVR.



You can easily customize the level of access 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***.



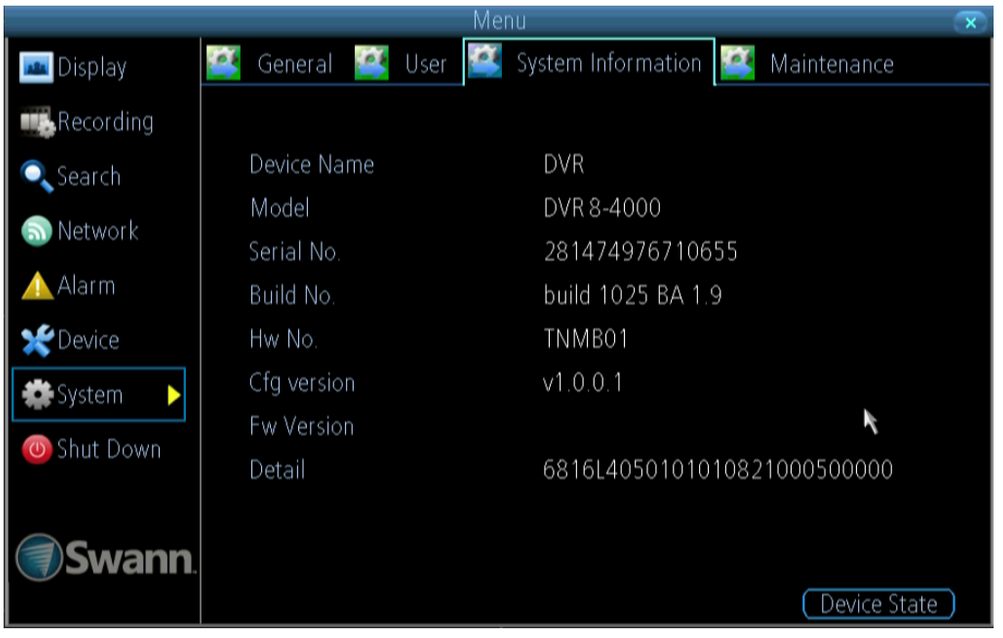
***Configuration*:** The configuration page specifies which menu(s) the user can access. There is no hierarchy and any combination of menus can be selected (although some combinations would make little sense in practice).

***Operation*:** You can select which channels the user has access to, and what they can do with them. For example, you could set a user to have permission to view all channels in live viewing mode, but only playback channels 2 and 4.

Press the **Set** button next to each type of access to select specific channels that the user can access.

Also, this page contains permissions for **HDD Management** and **Shutdown**. These are surprisingly powerful levels of access: between them, a user can remove all footage from a DVR's hard drive and turn the DVR off. Be careful assigning these permissions!

System: System Information



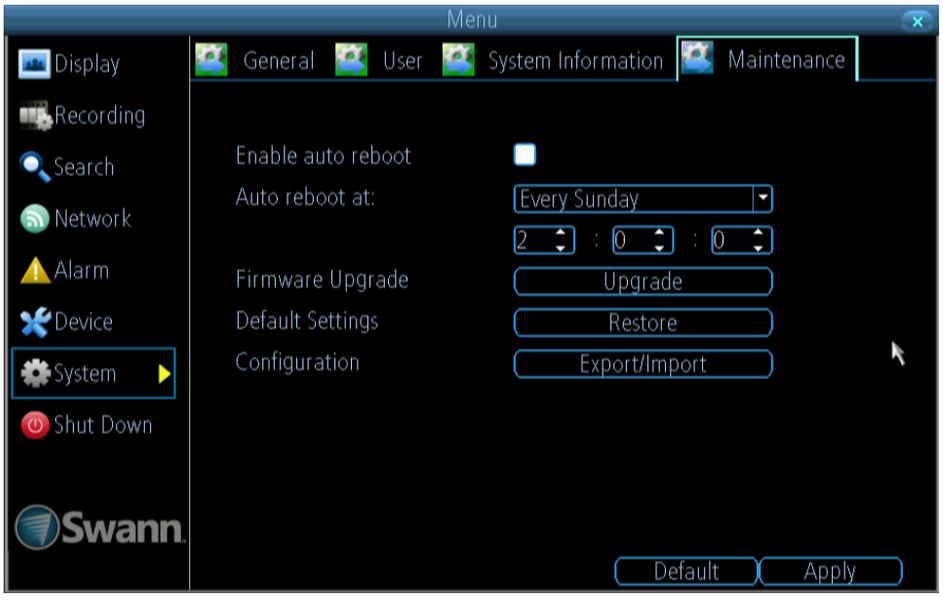
If you're looking at the System Information screen, you've probably been directed to do so by Swann Technical Support.

If we haven't told you to come here, you might be wondering what all the information means. On a day-to-day level, the answer is "very little". However, if you're still curious:

Device Name: The name that the DVR considers to be its own, and what it will use to register an IP address with your DHCP host.

The remaining information is for use by *Swann's* Technical Support, in the event that you require assistance. The various model and build numbers help us track down any known issues, or catalogue new issues as they come to light. It also helps us figure out if you're running the most recent firmware on the DVR, and whether you'd benefit from an upgrade.

System: Maintenance



To maintain the operational integrity of the DVR, 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 DVR can become unstable. It is strongly suggested that the DVR be rebooted at least once per week.

However, as this can be a hassle (particularly if the DVR is stashed away somewhere inconvenient) you can set the DVR up to reboot itself.

Enable auto reboot: Will automatically shut the DVR down and restart it at a certain time of the day or week.

Auto reboot at: Choose when you'd like the DVR to reboot. Typically, this will be a time when it's unlikely there'll be any activity for the DVR to record.

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

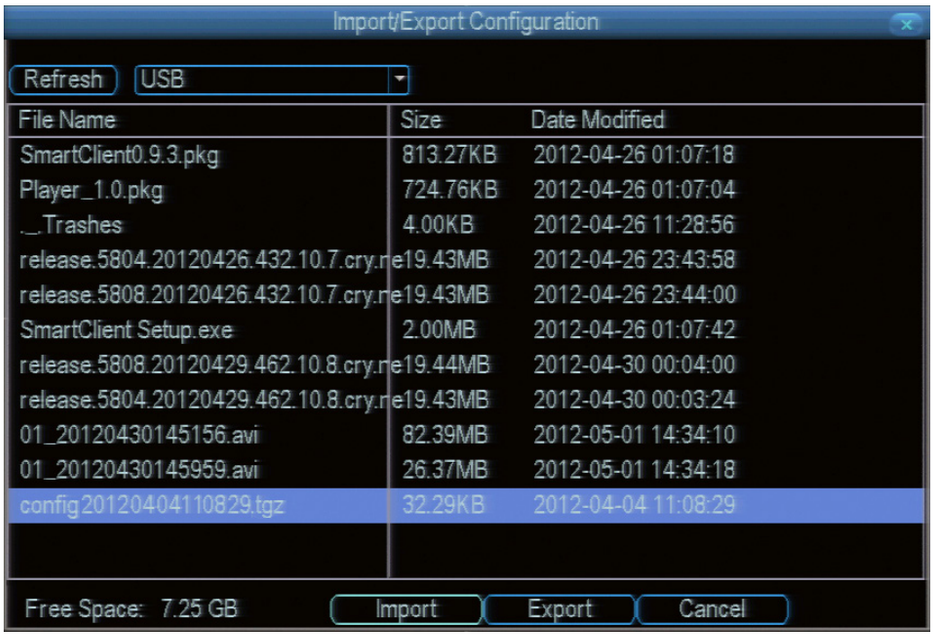
Default Settings (Restore): Loads the factory default settings.

This must be done after a firmware upgrade to ensure proper operation of the DVR. You can retain your settings, recording schedule and so on by using the Import/Export Configuration function *before* upgrading the firmware.

Configuration (Export): Creates a file containing all the settings you've customized, including your recording preferences, schedule, user-list and so on.

To export your settings:

- Insert a USB flash drive into the USB port on the front of the DVR. Ensure it has enough free space (a few MB is sufficient - the file is less than 50KB) and that it is not write-protected.
- Choose **Configuration: Import/Export**.
- You'll see a file browser, showing the contents of the storage device.
- Click **Export** to save your settings.
- **Exporting your settings will overwrite any previous settings you've saved to that flash drive.** If you want to do sequential configuration exports, you'll need multiple USB drives - or, rename the file using a PC (advanced users only).



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**. For example, *config20120404110829.tgz* would be the config file from April 4, 2012 at 11:08AM.

Loading the file will cause the DVR to automatically reboot.

Troubleshooting

Q: The images from my cameras are completely blank, black & white and/or flickering. What's up?

A: Most likely, your Video Standard isn't set correctly for your region. Check out the section on PAL/NTSC ("System: General" on page 50) for more information. As a rule of thumb, set your video standard to NTSC if you're in the USA or Canada, or PAL if you're in Europe, the UK or Australia.

If this is happening to only *some* of your cameras, then there may be a problem with the compatibility of those cameras. If you've got them from a kit, then this shouldn't be the case at all and it indicates that something quite strange is happening. If you have cameras purchased seperately - particularly if you've found them online or from overseas - then they might not match the standards of the cameras you've already got. The DVR can only support one video standard at a time: *mixing PAL and NTSC cameras does **not** work*.

Q: I can't login to or unlock the DVR - it says my password is wrong.

A: The default username/password combination for the DVR is "admin" with the password section left blank.

The DVR does have a default password ("12345") but it should be **disabled** by default. If leaving the password section blank doesn't work, try 12345. If that doesn't work (and you haven't set a password of your own that you've forgotten) then something strange has happened - contact Swann technical support (contact details are on the rear cover).

Q: The DVR will boot up and show live images, but there are no menus being displayed. Why?

A: There might be a fault with one (or more) of the hard drives installed in the DVR. Before the menu system is displayed, the DVR attempts to detect what drives are connected. If there is an ambiguous signal preventing the DVR from ascertaining whether there is a drive connected or not, then it will keep looking and waiting for the drive to respond.

If you've just installed a new drive, disconnect it and see if that fixes the problem. You can also try disconnecting one drive at a time to see if that one is the culprit.

Note that drives connected via eSATA can also cause the DVR's operating system to hang during startup.

Q: How do I eliminate false-triggers on my motion detection?

A: There's no guaranteed way to eliminate false triggers, but - in the majority of cases - you can fine-tune the DVR's motion detection settings to reduce the number of false triggers you're likely to get. (See "Alarm: Motion" on page 42 for more detailed information about setting motion detection.)

1. Mask any redundant movement. This includes obvious things like trees blowing in the wind, roads with cars passing and so forth. Some less obvious things which might cause false triggers include: the "flickering" of screens, monitors or fluorescent lights, reflections of movement in windows/ mirrors and so on, lights which are often turned on or off, shadows passing and so on. We can't possibly imagine what you're going to find in your unique circumstances, so we encourage you to experiment.

2. Fine-tune your sensitivity. There's no substitute for getting a volunteer to play the part of intruder and experimenting. Some cameras are just more "touchy" than others, some lighting conditions are harder to get the settings "right" for. As a "rule", CCD cameras require a lower value than CMOS cameras, and that motion detection is going to be more sensitive at night (whenever the active infrared nightvision is active).

3. *Adjust your image settings* (see "Display: Camera" on page 28). Unlike many image adjustment options, the DVR pre-processes video, which means that, when the DVR looks for motion, it's looking at your already processed images. By reducing the amount of video noise in your image, you can increase the accuracy of the motion detection dramatically. Typically, the settings that most often require adjustment are ***Brightness*** and ***Contrast***.

Video noise is a problem with any video signal. It's the very slight change in brightness and/or color of pixels between frames, and it's commonly regarded as being "just one of those things" when dealing with digital imaging. By tweaking the brightness and contrast, you can usually remove a good deal of this noise, as it tends to be most pronounced near the blacks (the really dark bits) and the whites (the really bright bits) of your images.

Q: I'm getting too many email alerts from the DVR.

A: There are a few things that might help, depending what's generating the email alerts. Here are a few possibilities:

- **The emails are for real events, however it is telling me about it multiple times.**

This indicates that the DVR is functioning properly, but that the **Interval** setting for your email alerts is too low. Increasing the Interval time will decrease the number of email alerts the DVR sends.

- **The DVR sends email alerts when nothing seems to be happening.**

This suggests that there might be something amiss with your Motion Detection settings.

The most likely explanation is that there is something in view of your cameras which is moving, or causes the illusion of movement. Have a look at "Alarm: Motion Detection Configuration" on page 43 for some more information.

- **The DVR keeps reporting errors (such as Video Loss, HDD Error or similar).**

There seems to be a hardware or configuration fault with the DVR. These are most often caused by a faulty (or simply poorly connected) connection or cable. Check the integrity of your cables and connections.

Addendum: Third Party Hardware

Due to it's nature as a networked device, the DVR is often required to operate with third party hardware. We do everything we can to ensure the DVR is compatible with as many third party devices as possible, there will always be some that require a little extra configuration.

Routers

I'm using a router which doesn't support DHCP addressing.

or

Some devices on my network require STATIC addressing.

You'll need to set the address of the DVR manually. You'll need to:

- **Find Your Networks IP Address Range**
- **Create a Unique IP Address**
- **Assign the IP address information to the DVR.**

Finding your Network's IP Address Range

First, you'll need to know the **IP address**, **Subnet Mask** and **DNS Server** of *at least* one other device on your network. It's easiest to find these addresses by using a computer on the same network.

For Windows-based PCs:

- Open the **Start Menu**, navigate to **Accessories** and open **Command Prompt**.
- Type "***ipconfig***" and press **Enter**.
- Your IP Address information will be displayed.

For Mac-based systems:

- From the **Apple** menu, select **System Preferences**.
- Click on the **Network** pane.
- Click on the **Advanced** button and look under the **TCP/IP, DNS**, and **Ethernet** tabs.

Creating a Unique IP Address

The IP Address of your computer will be made up of four groups of numbers, seperated by periods: *aaa.bbb.ccc.ddd*

The first three groups of numbers (*aaa.bbb.ccc*) must be the same as the other device on your network. The last number (*ddd*) must be changed to something unique that nothing else on your network uses.

For example:

If your computer's IP address is 192.168.1.10, then a suitable unique IP address for your DVR will be 192.168.1.210

Note: Each number in the IP address cannot exceed 255.

Assigning the IP Address information to the DVR.

*We recommend doing this locally (on the DVR itself) even if you can access the DVR via the network (using the **MyDVR** software) in the meantime.*

If you're connected remotely and the networking information changes, you might lose the connection to the DVR.

- Open the **Network: General** menu on your DVR (see "Network: General" on page 37).
- Select **Static** addressing.
- **IP Address:** Enter the unique IP that you created for the DVR here.
- **Subnet Mask:** Enter the same value as the computer's Subnet Mask.
- **DNS Server:** Enter the same value as the computer's DNS.

The DVR should now be accessible via your local network.

Before you can access the DVR remotely, you'll need to **Forward Ports** (STATIC addressing does not support UPnP, see below).

I'm using a router which doesn't support UPnP. How do I "forward ports"?

It depends on what type of router you have. There's no standard procedure for forwarding ports - each manufacturer has their own user interface and procedure for customising the behaviour of the router.

First, check the router's documentation - the instructions may be there.

If your router's documentation doesn't describe the method for port forwarding, then open a web browser and navigate to **www.portforward.com** - they've got instructions on port forwarding for (literally) thousands of different routers.

We can't offer much more information about forwarding ports here, as this is a process totally dependent on third-party hardware. If you do run into trouble, we suggest contacting the manufacturer of the router.

Alternately, if you're using an older router which doesn't support UPnP, then it might be time for an upgrade - modern routers are increasingly powerful and are (in most cases) easier than ever to setup. We think that UPnP is a fantastic feature that's well worth having, not just for DVRs.

Technical Specifications

Video Compression		H.264
Video System		NTSC / PAL
Operating System		Linux
Input/Output 4ch Model	Video	BNC: 4-ch inputs / VGA: 1 output / HDMI: 1 output
	Audio	RCA :4-ch inputs / RCA: 1-ch outputs / HDMI with integrated audio
Input/Output 8ch Model	Video	BNC: 8-ch inputs / VGA: 1 output / HDMI: 1 output
	Audio	RCA :4-ch inputs / RCA: 1-ch outputs / HDMI with integrated audio
Input/Output 9ch Model	Video	BNC: 9-ch inputs / VGA: 1 output / HDMI: 1 output
	Audio	RCA :1-ch inputs / RCA: 1-ch outputs / HDMI with integrated audio
Display	Resolution	VGA / HDMI: 1024 x 768, 1280 x 720, 1280 x 800,1280 x 1024, 1400 x 1050, 1440 x 900, 1600 x 900, 1680 x 1050, 1920 x 1080
	Refresh Rate	60Hz
	Aspect Ratio	16:9 on all channels
Record	Resolution	NTSC: 960H(960 x 480) PAL: 960H(960 x 576)
	Frame Rate	NTSC: 30fps/channel PAL: 25fps/channel
Feature	Display	Single / Quad / Octo *(8ch or 9ch only)* / All *(8ch or 9ch only)* / SEQ *(Auto-Sequence)*
	Recording Bitrate	Up to 4Mbps
Record Modes		Manual / Motion Detection / Schedule
HDD	Interface	2 x SATA Fixed HDD, 1 x eSATA HDD
	Capability	SATA 2, up to 2000GB (2TB)
Playback Search		Time & Date / Event Lists
USB Interface		USB 2.0 for Mouse and File Backup / Upgrade
PTZ Control		Built-in RS-485 / support PELCO-P & PELCO-D
LAN/Network Interface		RJ45, 10M/100M
Network Protocol(s)		Support TCP/IP (v4, static or DHCP addressing) or PPPoE
Networking Features		DHCP, DDNS, PPPoE, UPnP
Network Function		Supports live viewing with (Internet Explorer) & selected smartphones
Backup		USB Flash Drive or USB HDD
Recording Pack Time		15 / 30 / 45 / 60 mins selectable
IR Remote Control		Included
Mouse		USB (Included)
Power Supply		DC12V
Dimensions		11.8" x 8.5" x 2" 300mm x 215mm x 50mm
Weight		4.4lbs / 2kg

Get up to Date Information

We're constantly making improvements to our products, firmware, software, user manuals, video tutorials and more.

To ensure you're up to date with the latest documentation for your DVR, check out our website:

www.swann.com

Warranty Information

USA
Swann Communications USA Inc.
12636 Clark Street
Santa Fe Springs CA 90670
USA

Australia
Swann Communications
Unit 13, 331 Ingles Street,
Port Melbourne Vic 3207
Australia

United Kingdom
Swann Communications LTD.
Stag Gates House
63/64 The Avenue
SO171XS
United Kingdom

Warranty Terms & Conditions

Swann Communications warrants this product against defects in workmanship and material for a period of one (1) year from its original purchase date. You must present your receipt as proof of date 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 Swann. The end user is responsible for all freight charges incurred to send the product to Swann's repair centers. 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.

For Australia: Our goods come with guarantees which cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to major failure.

Notes

Notes

Helpdesk / Technical Support Details

Swann Technical Support
All Countries E-mail: tech@swann.com

Telephone Helpdesk

USA toll free
1-800-627-2799
(Su, 2pm-10pm US PT)
(M-Th, 6am-10pm US PT)
(F 6am-2pm US PT)

AUSTRALIA toll free
1300 138 324
(M 9am-5pm AUS ET)
(Tu-F 1am-5pm AUS ET)
(Sa 1am-9am AUS ET)

USA Exchange & Repairs
1-800-627-2799 (Option 1)
(M-F, 9am-5pm US PT)

NEW ZEALAND toll free
0800 479 266

UK
0203 027 0979

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