



# Digital Video Recorder

## Quick Install Guide

Supports models from:



**Thank you for purchasing this Digital Video Recorder.**

This install guide covers basic setup, installation and use of your surveillance system.

For detailed technical support and software downloads, visit our Help Centre at: [help.c5k.info](http://help.c5k.info)

**Note:** *This guide references the latest version of the DVR firmware (as of Q4 2021). Some images and instructions may differ depending on firmware version.*



[help.c5k.info](http://help.c5k.info)

Software utilised in this manual was current at the time of manual creation.

For the latest version of surveillance software for PC and Mac systems, please scan the QR code or follow the link to the right.

A brief overview of key software is listed below:

**SmartPSS:** Remote view application for live view, playback and configuration of your surveillance system. For Windows & Mac PCs.

**Smart Player:** Playback exported footage & convert video files for Windows & Mac PCs.

**DMSS:** Mobile surveillance application for iOS & Android



Scan QR code or navigate to: [help.c5k.info/software/software-downloads](http://help.c5k.info/software/software-downloads)

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# 1. Pre-Installation

## Thank you for purchasing this Digital Video Recorder.

This install guide covers basic setup, installation and use of your surveillance system. For a complete user manual, detailed product information & warranty details, please visit: [www.c5k.info](http://www.c5k.info)

## 1.1 Pre-Installation Safety Information

Before connecting your DVR (digital video recorder) or cameras, please ensure the following safe installation guidelines are adhered to.

These HDDs are built to handle the heavy workload of 24/7 recording; standard HDDs may encounter performance issues.

- Do not place cords from the DVR where they can be pinched or stepped on.
- Do not place heavy objects on cords, or cover cords with rugs or carpet.
- Do not expose the DVR to excessive heat or moisture.
- Leave at least 50mm of space between the DVR and other objects to allow ample air circulation.
- Never immerse any component in water and do not spray cleaners or solvents on the cameras.
- Shut down and unplug the recorder before cleaning. When cleaning, use a damp, lint-free cloth only.
- Service of your DVR or surveillance cameras should only be handled by qualified technicians.

We recommend only using **Surveillance-grade HDDs** with your DVR, such as Seagate Skyhawk or WD Purple.

## 1.2 Connecting your DVR and Cameras

The following section will detail connecting the DVR (digital video recorder) and surveillance cameras. It is recommended that cameras and connections are tested before mounting. If there is no image, an error message or dark screen when first connecting cameras, see the **Troubleshooting** in Section 6 in this guide.

Refer to **1.3 DVR Rear Panel & Setup Diagram** for full DVR & system diagrams.

1. **Connect the cameras to the DVR:** Using coaxial cables, connect the BNC plugs to the DVR.
2. **Connect camera power:** Use a 12VDC power supply (not included) to power the camera.
3. **Connect a display:** Using an HDMI or VGA cable, connect a monitor or television (not included).
4. **Connect the mouse:** Connect the USB mouse to the rear USB port, saving the front port for easy USB backup.
5. **Connect to your local network:** Using the included Ethernet patch cable, connect to your switch or router.
6. **Connect DVR power:** Use the supplied 12VDC power supply (or power cable depending on DVR model) to power the DVR.

Upon activating power, LED lights at the front of the DVR should turn on and the DVR will sound on startup. The DVR will then run your surveillance user interface. Cameras will be detected automatically. This completes a successful first boot of your surveillance system and you may begin configuring surveillance cameras.

# 1.3 DVR Rear Panel & Setup Diagram

**NOTE:** Your DVR (digital video recorder) model may differ - an 8 channel DVR is referenced below.

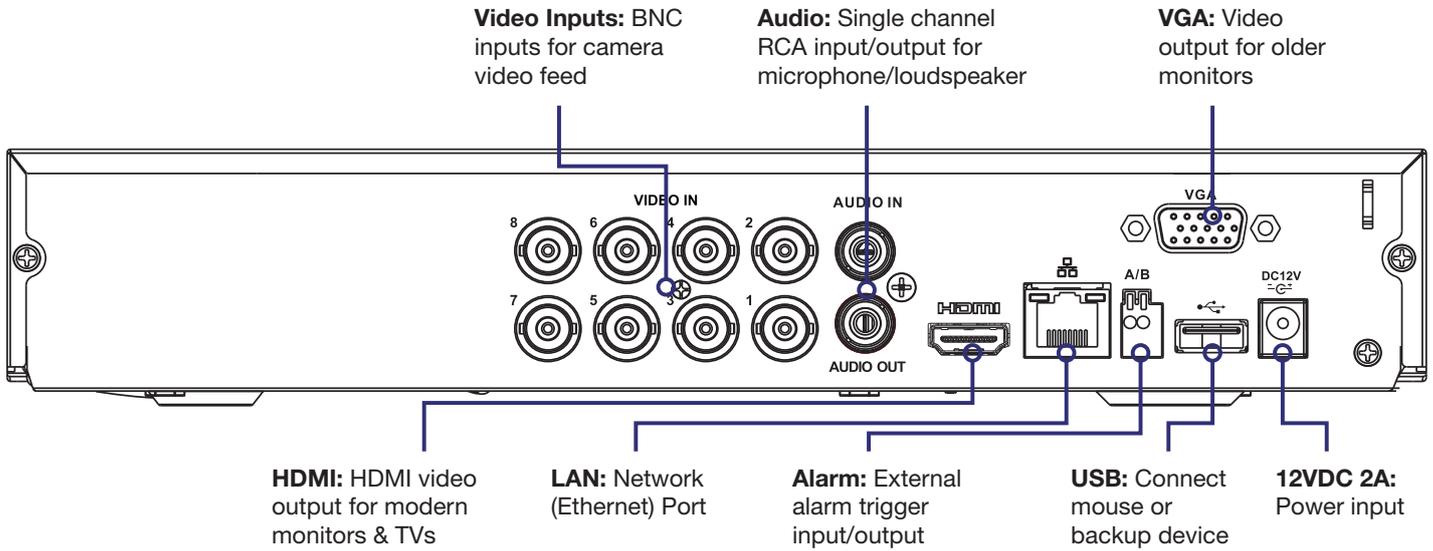


Fig. 1.1: DVR Rear Panel Diagram

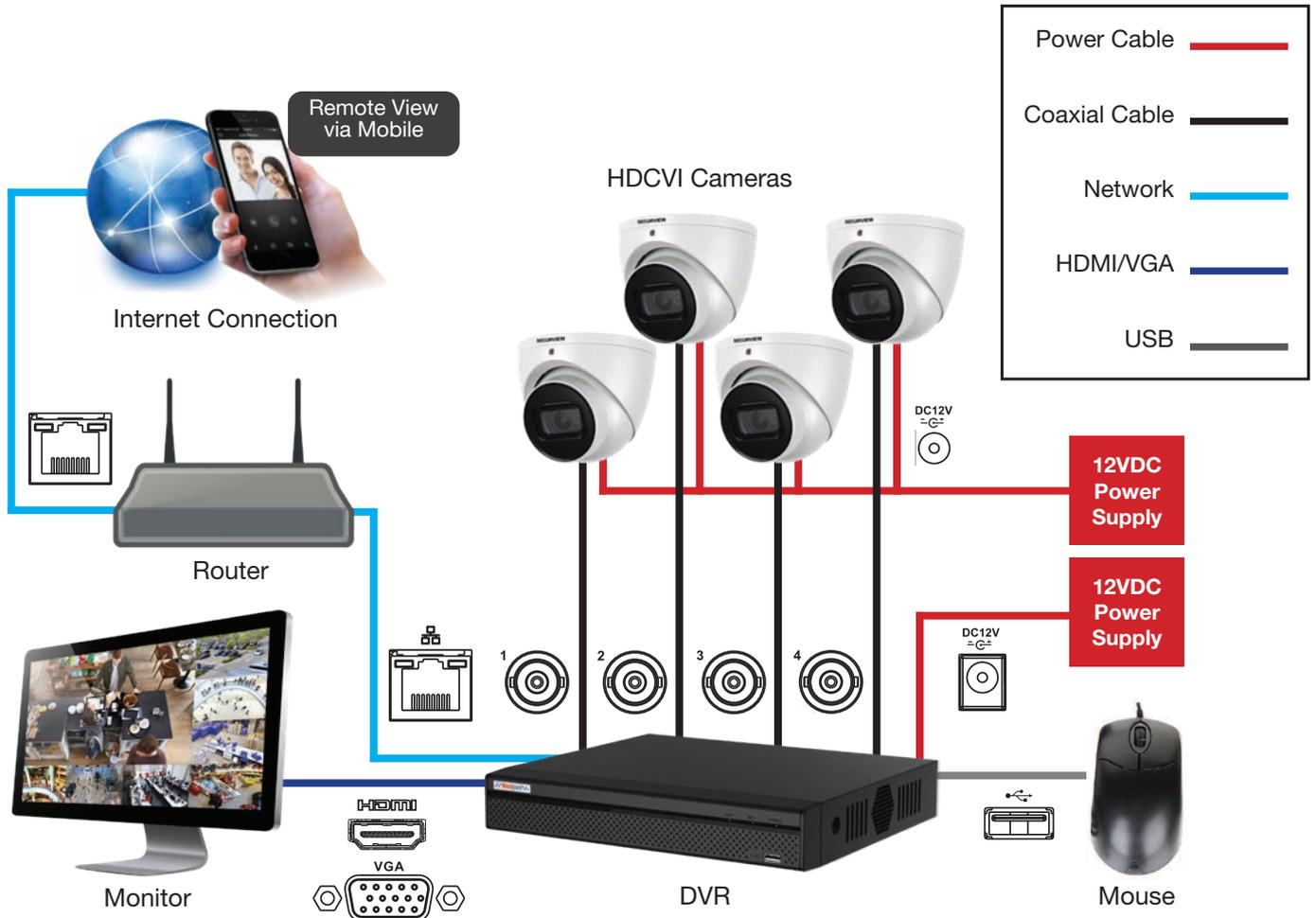


Fig. 1.2: System Setup Diagram

## 2. Installing Cameras

### 2.1 Maximising Camera Effectiveness

To maximise the effectiveness of your surveillance cameras, follow these guidelines for camera mounting.

- **Avoid pointing cameras directly in front of large objects, including walls & eaves.** When infrared turns on in at night or in low-light, it may be reflected back into the camera, resulting in an over-bright image.
- Consider how the sunlight changes during the day. Mount your camera where sunlight has minimum impact.
- Avoid pointing cameras directly in front of large objects. When infrared turns on in at night or in low-light, it may be reflected back into the camera, resulting in an over-bright image.
- Consider your local and state laws before installing your cameras. This may affect where you point your surveillance cameras.
- Avoid direct exposure to weather. If possible, mount under an eave or awning. While the cameras are water-resistant, rain on the lens will affect image quality.
- Ensure the mounting surface thickness can support triple the weight of the camera.
- Do not mount the camera behind glass as this can reduce performance and usability of surveillance in both day & night images.
- Light levels should be approximately the same between the camera and the targeted area.
- Do not place camera or cabling near high voltage wires or other sources of electrical interference.

### 2.2 Mounting Surveillance Cameras

Following the guidelines outlined in Fig. 3.1 to 3.4, mount your surveillance cameras.

1. Loosen the camera mount assembly by adjusting the locking screw with the included wrench.
2. Mark the screw position on the mounting surface.
3. Drill mounting holes for the wall plugs.
4. Drill a larger hole (approx. Ø10mm) so the camera cable can pass through the mounting surface.
5. Pull the cables through the building walls/ceiling from the camera to the recorder.
6. Connect the camera power/video cables, ensuring your camera is sealed away from rain and dust. If installing in an area where moisture exposure is possible, seal power and video connections with self-amalgamating tape (not included).
7. Affix the camera to the mounting surface using the supplier screws and wall plugs.
8. Reassemble the camera, loosely locking the enclosure using the locking screw and wrench.
9. Connect the camera power/video cable back to the DVR and view the video feed.
10. Adjust your camera to the desired position.
11. Tighten the locking screw(s) to complete mounting.

**NOTE:** All cameras feature tri-axis adjustment and can be rotated and tilted in any direction to suit your installation needs. Simply loosen the locking screw(s) to adjust your camera's position, then tighten again once finished.

## 2.2 Mounting Surveillance Cameras (cont.)

**NOTE:** Diagrams shown below assume camera to be mounted on masonry. Cameras mounted on drywall (gyprock, plasterboard, etc.) will require special mounting screws or toggles (not included).

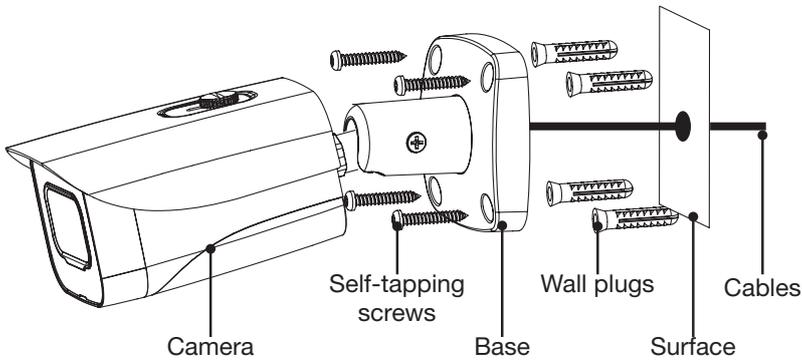


Fig. 2.1: Mounting diagram for fixed bullet

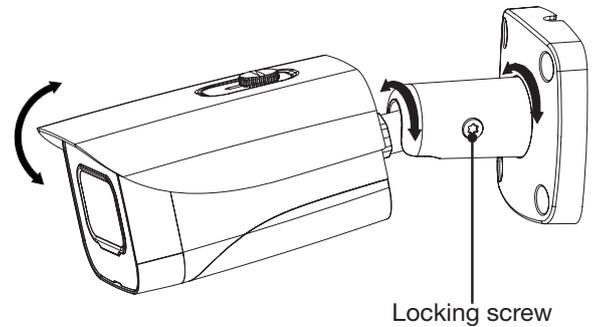


Fig. 2.2: Tri-axis fixed bullet adjustment

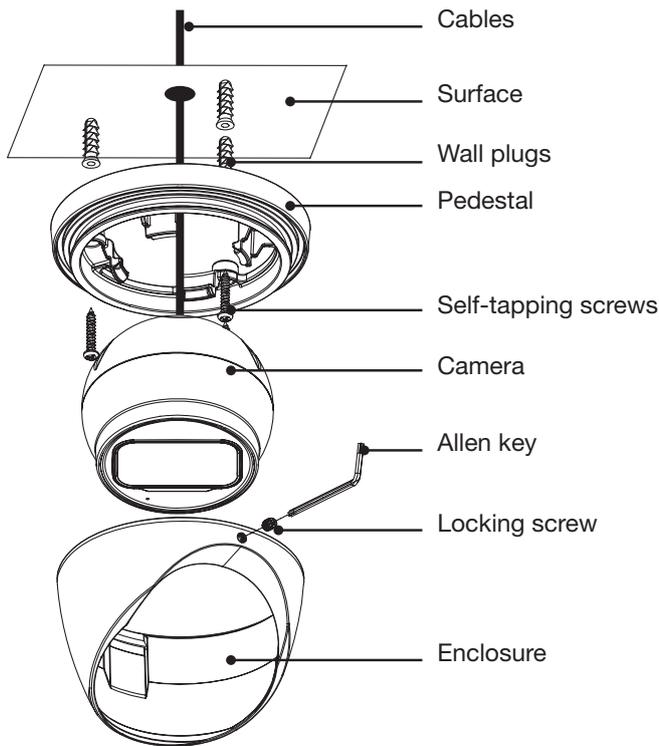


Fig. 2.3: Mounting diagram for fixed dome

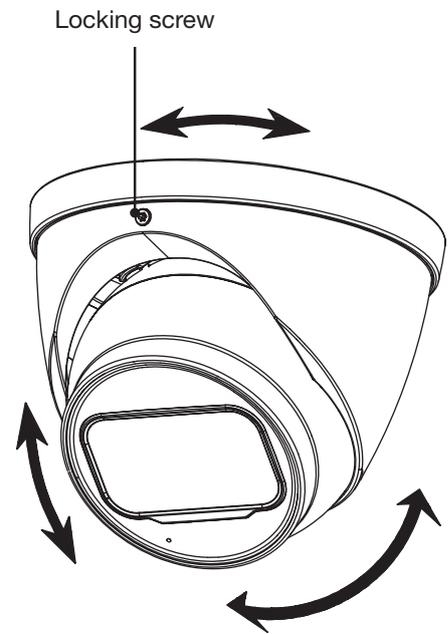


Fig. 2.4: Tri-axis fixed dome adjustment

## 3. DVR and Camera Configuration

### 3.1 First Boot and Startup Wizard

After successful connection and boot of your DVR, you will be taken through first-time setup for your surveillance system. Here you will configure system security and begin customising your DVR, including setting camera encoding options, record scheduling, network setup and remote view configuration. **USB keyboards are supported, but not required**; an on-screen keyboard will appear when needed.

**NOTE:** Each setting shown in the Startup Wizard can be modified later via the DVR Main Menu. See the Menu Quick Guide in Section 6 or see the full user manual for more information.

Following the prompts, complete each section in the Startup Wizard, as detailed below:

#### 3.1.1 Region, Language & Format

The Startup Wizard will first prompt you to select a **Region, Language** and **Video Standard**.

1. Select your desired **Region**.
2. Select your desired **Language**.
3. Select the **Video Standard** matching your region (**PAL** recommended for Australasia & Europe, **NTSC** for North America.).

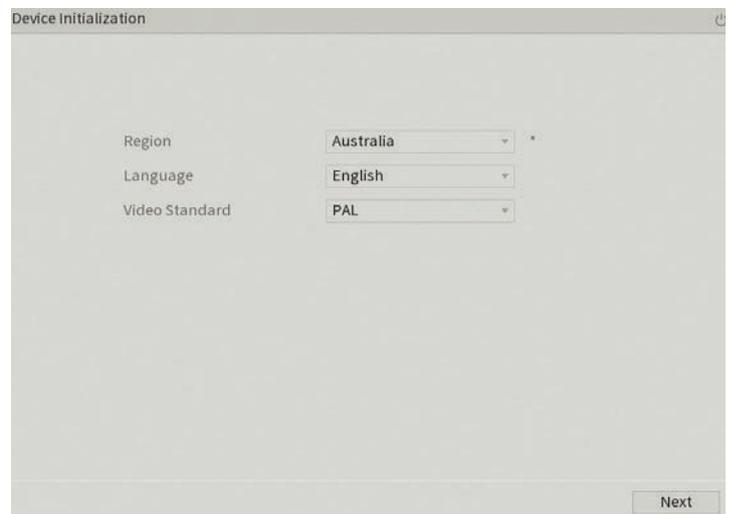


Fig. 3.1: Region, Language and Format

#### 3.1.2 Time and Date

Here you will set the **Time Zone** and **System Time**.

1. Select the **Time Zone**.
2. Update the **System Time** if necessary. This directly affects recording, footage search and playback.

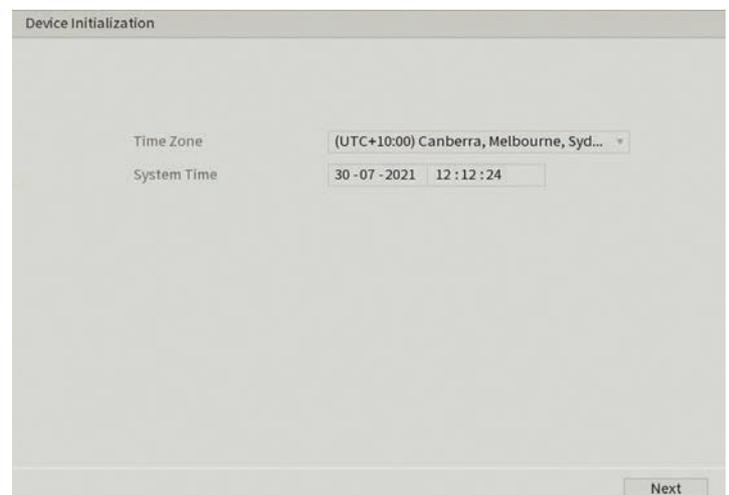


Fig. 3.2: Time Zone and System Time

## 3.1 First Boot and Startup Wizard (cont.)

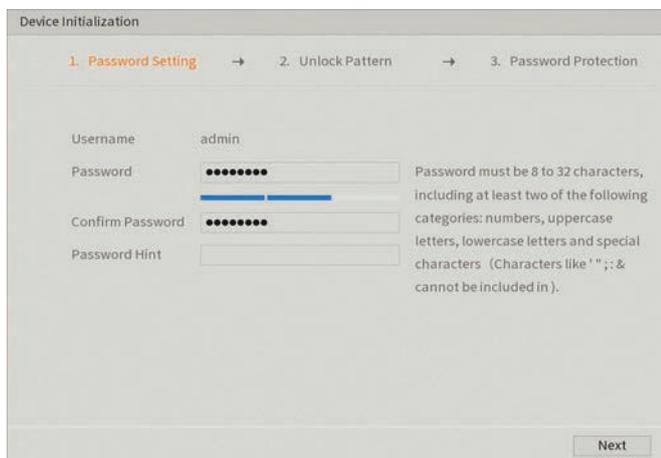
### 3.1.3 Securing your DVR

In the Startup Wizard, you will be prompted the setup the **admin account**.

1. Enter a strong **password** to be used for the **admin** account. It is recommended to use a combination of letters, numbers and symbols.
2. (Recommended) Enter a **Password Hint**.
3. Click **Next**.
4. (Optional) Draw an **Unlock Pattern** for quick unlocking or click **Skip**.
5. (Recommended) Enter an **Email Address** to be used for password resets.
6. (Recommended) Select three **Security Questions**, then enter the three Answers. This will be used if the admin password is forgotten. Please note that answers are **case-sensitive**.

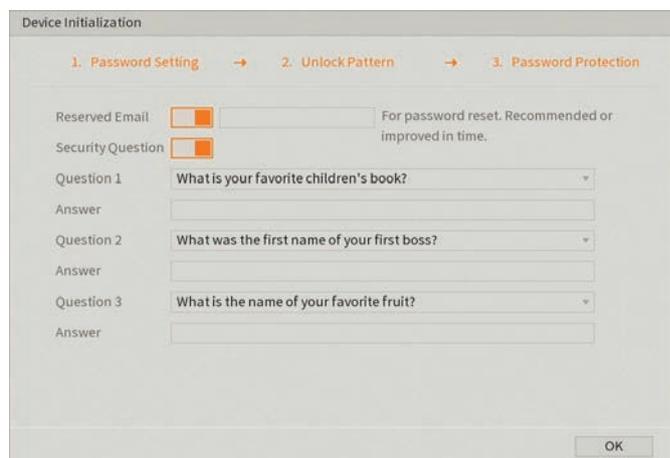
**NOTE:** Email address password resets require a mobile phone with the DMSS app & internet access.

**NOTE:** We **strongly recommend** setting up email password reset and security questions. If the password is forgotten and no recovery method is set up, the recorder will need to be sent back to the supplier for a system reset, which will incur a fee even if the system is still within the warranty period.



The screenshot shows the 'Device Initialization' screen with three steps: 1. Password Setting, 2. Unlock Pattern, and 3. Password Protection. The 'Password Setting' step is active. It includes fields for Username (admin), Password (masked with dots), Confirm Password (masked with dots), and Password Hint. A password strength indicator is shown below the password field. To the right, there is a text box explaining password requirements: 'Password must be 8 to 32 characters, including at least two of the following categories: numbers, uppercase letters, lowercase letters and special characters (Characters like '' ; : & cannot be included in.)'. A 'Next' button is at the bottom right.

Fig. 3.3: Password Setting Page.



The screenshot shows the 'Device Initialization' screen with three steps: 1. Password Setting, 2. Unlock Pattern, and 3. Password Protection. The 'Password Protection' step is active. It includes a 'Reserved Email' field with a checkbox, a 'Security Question' field with a checkbox, and three 'Question' and 'Answer' pairs. The questions are: 'What is your favorite children's book?', 'What was the first name of your first boss?', and 'What is the name of your favorite fruit?'. An 'OK' button is at the bottom right.

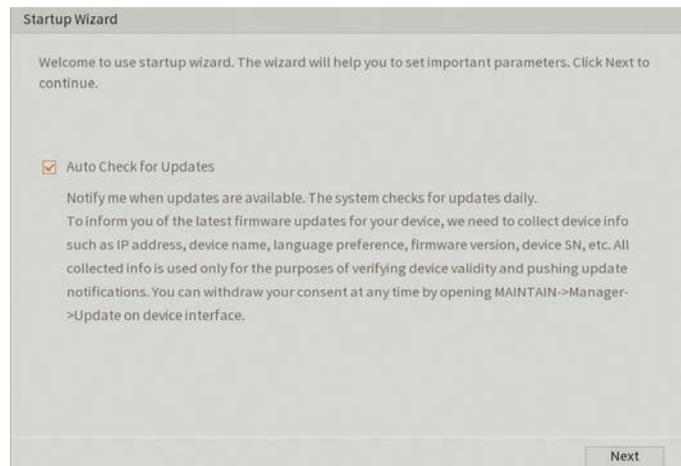
Fig. 3.4: Password Protection Page.

### 3.1.4 Automatic Updates

Here, you can choose whether you want your system to **Auto-check for updates**. This feature will notify you whenever a new firmware update is available.

For compatibility with future cameras and to receive security updates, we recommend Auto Check for Updates be turned **on**.

**NOTE:** Auto Check for Updates requires an internet connection.



The screenshot shows the 'Startup Wizard' screen. It starts with a welcome message: 'Welcome to use startup wizard. The wizard will help you to set important parameters. Click Next to continue.' Below this, there is a checkbox labeled 'Auto Check for Updates' which is checked. Underneath, there is a notification: 'Notify me when updates are available. The system checks for updates daily. To inform you of the latest firmware updates for your device, we need to collect device info such as IP address, device name, language preference, firmware version, device SN, etc. All collected info is used only for the purposes of verifying device validity and pushing update notifications. You can withdraw your consent at any time by opening MAINTAIN->Manager->Update on device interface.' A 'Next' button is at the bottom right.

Fig. 3.5: Auto Check for Updates

## 3.1 First Boot and Startup Wizard (cont.)

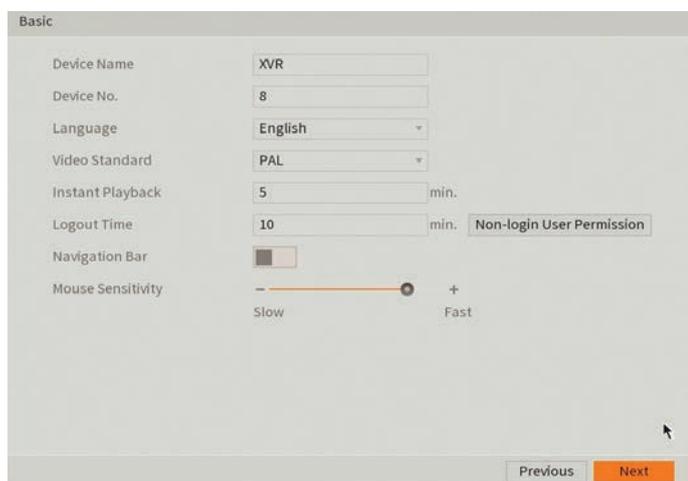
### 3.1.5 General DVR Setup

You will now be directed to **Basic** setup. Here you can confirm basic options of your DVR. By default, your DVR is set have 5 minutes instant playback and logout automatically after 10 minutes. You can also change mouse sensitivity and confirm date & time.

Default settings are adequate to get started, we recommend checking the following:

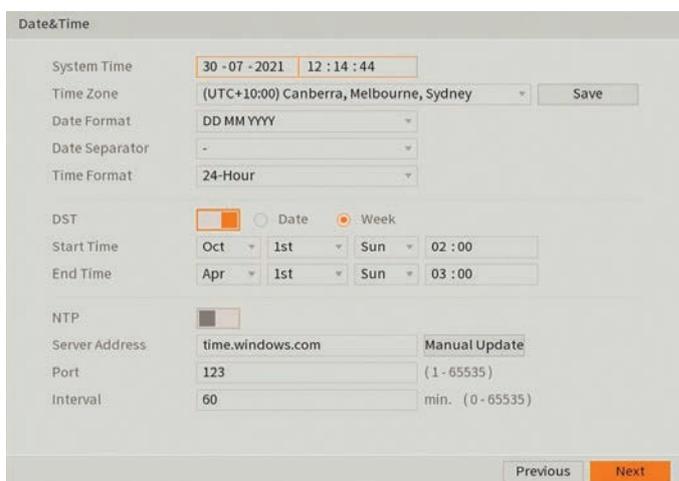
1. In the **Basic** menu, assign a name to your DVR by changing the **Device Name** field.
2. Click **Next** to go to the **Date & Time** menu and confirm correct settings. This directly affects recording, footage search & playback.
3. Users in NSW, VIC, SA, TAS and ACT will need to **enable DST** (Daylight Saving Time). Adjust **Start Time & End Time** settings.
4. (Optional) Enable **NTP** to sync the time with the internet. The recommended **Server Address** for Australia is **au.pool.ntp.org**.

**NOTE:** Daylight Saving Time begins at 2am on the first Sunday in October, when clocks are put forward one hour. It ends at 2am (which is 3am Daylight Saving Time) on the first Sunday in April, when clocks are put back one hour.



The screenshot shows the 'Basic' configuration page. It includes fields for Device Name (XVR), Device No. (8), Language (English), Video Standard (PAL), Instant Playback (5 min.), Logout Time (10 min.), Navigation Bar (checkbox), and Mouse Sensitivity (slider between Slow and Fast). A 'Non-login User Permission' checkbox is also present. 'Previous' and 'Next' buttons are at the bottom.

Fig. 3.6: Basic setup section



The screenshot shows the 'Date&Time' configuration page. It includes System Time (30-07-2021 12:14:44), Time Zone ((UTC+10:00) Canberra, Melbourne, Sydney), Date Format (DD MM YYYY), Date Separator (-), Time Format (24-Hour), DST (checkbox), Start Time (Oct 1st Sun 02:00), End Time (Apr 1st Sun 03:00), NTP (checkbox), Server Address (time.windows.com), Port (123), and Interval (60 min.). A 'Save' button is next to the Time Zone field. 'Previous' and 'Next' buttons are at the bottom.

Fig. 3.7: Date & Time setup

### 3.1.6 Configuring Network, P2P, and Remote View

Network setup will be prompted next, enabling you to connect your DVR to the Internet. First ensure that your DVR is connected to your switch or router via the included CAT5 cable (detailed in Section 1.3). For the simplest setup we recommend using DHCP to connect to the Internet. You will then be prompted to configure P2P for remote view on your internet connected phone or tablet.

1. In the **Network** section (Fig. 3.8), select **modify**  next to **nic1**.
2. Turn on **DHCP**, then click **OK**.
3. Click **Next** to continue.
4. Enable **P2P** to enable remote access.
5. **P2P Status** should read **Online**. This indicates an active internet connection. (This may take a few minutes).

## 3.1 First Boot and Startup Wizard (cont.)

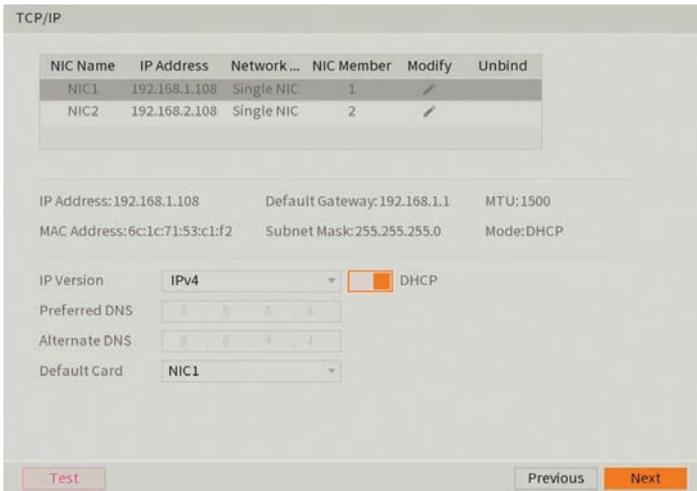


Fig. 3.8: Network setup section settings (example only)

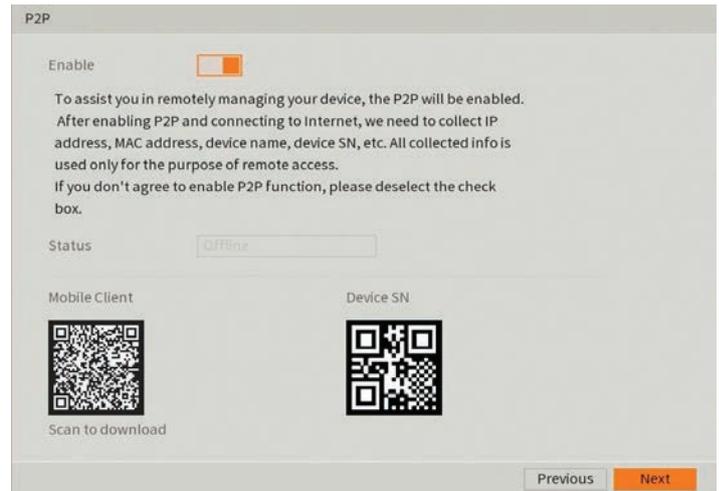


Fig. 3.9: P2P setup section, with QR codes (example only)

### Remote View: Adding DVR via QR Code

**NOTE:** Depending on the device or app version, menus may function or appear slightly different to those explained below.

1. Install **DMSS** from the App Store on your internet connected phone or tablet.
2. Tap **+** then select **SN/Scan**.
3. Scan the **Device SN QR Code** you see on the P2P Page (Fig. 3.9)
4. On the **Add Device** menu, tap **DVR/XVR**.
5. Choose a name for your DVR in **Device Name**.
6. Enter the **Username** and **Password** for your DVR. The default username is **admin** and the password is what was set in **Section 3.1.3**.
7. Tap **Save**.

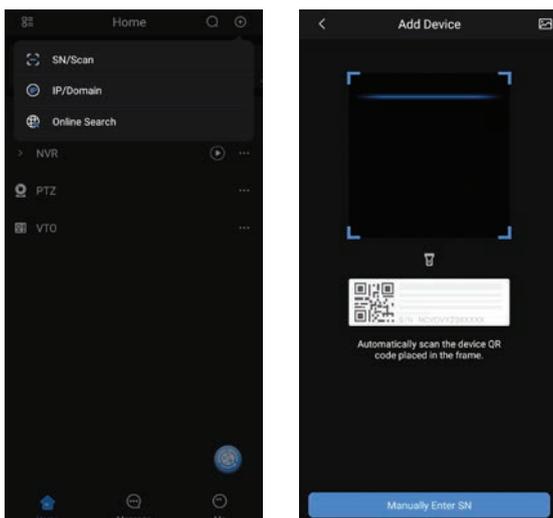


Fig. 3.10a: Home Page and Scan QR Code Page

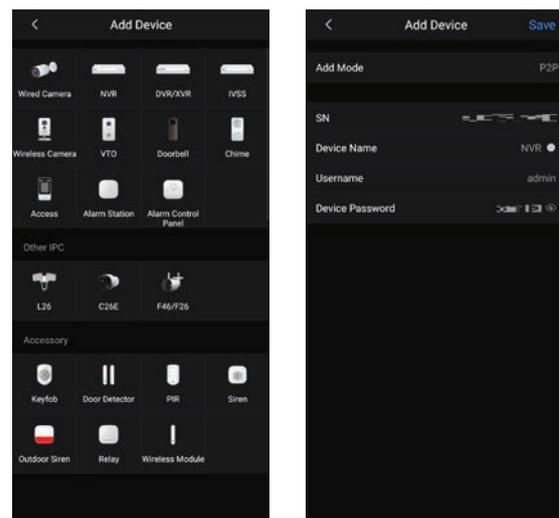


Fig. 3.10b: Scan QR code & Add Device details using gDMSS

## 3.1 First Boot and Startup Wizard (cont.)

### Remote View: Enabling Notifications

After adding your DVR to your iOS / Android device, the next step is to enable notifications. This will allow you to receive and respond to surveillance app alerts on your device.

1. In the DMSS app, tap on ... next to the device. (If you cannot see this, tap on the home icon first.)
2. Tap **Device Details**.
3. Tap on **Notification** or **Multi-channel Alarm Subscription**.
4. Turn on the switch to enable notifications.
5. (Optional) Set the time period you wish to receive notifications during.
6. Customise the notifications you wish to receive, (E.g. **Motion Detect**) Some functions listed may not be supported by your recorder.
7. Tap **Save** to apply setting.

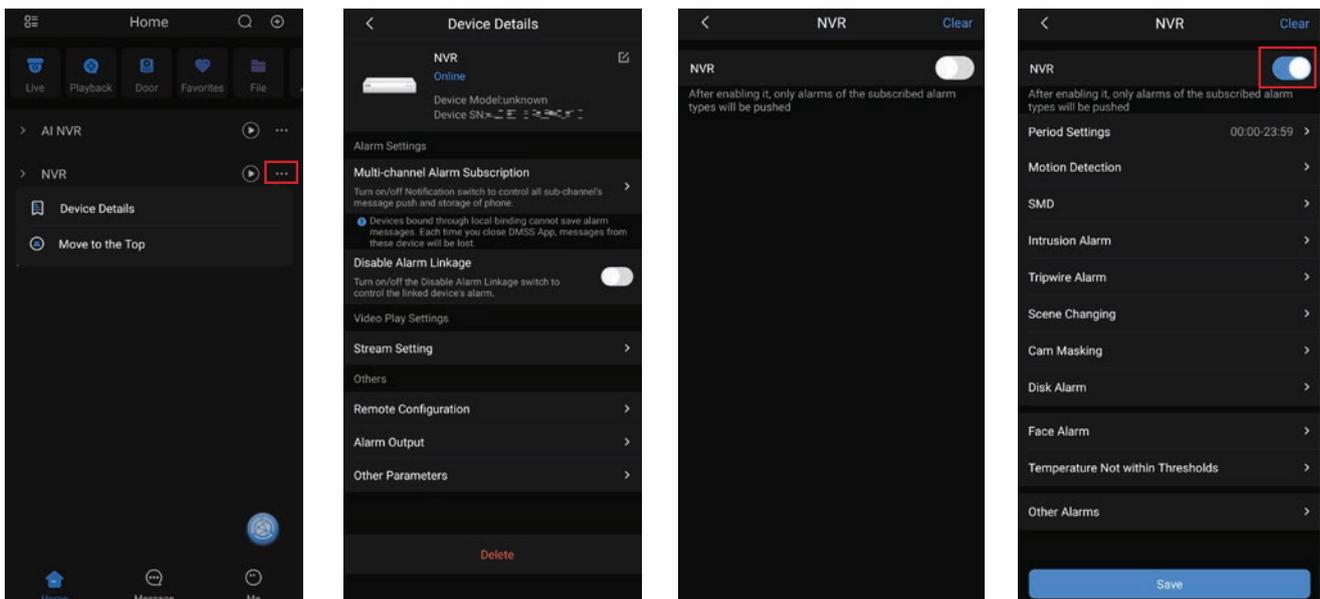


Fig. 3.10c: Enabling Notifications

### 3.1.7 Configuring Encode and Snapshot Settings

After configuring remote view, the **Startup Wizard** will take you through camera setup via the Encode menu. This section determines the overall quality of footage recorded by your DVR. These can be adjusted to optimise for video quality or recording time, depending on your preference.

Each camera features a **Main Stream** for **high quality** streaming to the DVR; and a **Sub Stream** for **low quality**, low data streaming to your remote view phone or tablet. You can configure both of these streams for each individual camera, so you can choose to prioritise quality for important cameras and recording time for others.

- For each camera channel set the desired encoding options. Refer to Fig 3.11 and the settings detailed below.
- If the camera has a built-in microphone, select **More**, then enable **Audio**.

## 3.1 First Boot and Startup Wizard (cont.)

Audio/Video			
Channel 1			
Main Stream	Sub Stream		
Coding Strategy	AI Codec	Video	<input checked="" type="checkbox"/>
Type	General	Stream Type	Sub Stream1
Compression	H.265	Compression	H.265
Resolution	1920x1080(1080P)	Resolution	352x288(CIF)
Frame Rate(FPS)	25	Frame Rate(FPS)	15
Bit Rate Type	CBR	Bit Rate Type	CBR
Quality	4	Quality	4
I Frame Interval	1sec.	I Frame Interval	1sec.
Bit Rate(Kb/S)	1024	Bit Rate(Kb/S)	160
<a href="#">More</a>		<a href="#">More</a>	

Fig. 3.11: Encode Setup section

### Encode Settings Explained

You can configure a number of settings to achieve greater image performance or increased record time. including:

**Coding Strategy:** The Coding strategy used for encoding footage for storage on a hard drive. AI Codec is the most effective for encoding footage with minimum storage requirements whilst maintaining the video quality of key areas. *AI codec is recommended.*

**Type:** This dropdown menu switches between encode settings for General, Motion and Alarm recording. Different encode settings can be separately set for each type of recording mode (Standard camera streams will use General settings, while camera streams with Motion Detection enabled will use Motion settings).

**Bit rate:** The rate at which video data travels from the camera to the recorder, measured in Kilobits per second. This directly determines the quality of the video stream and how much capacity footage will occupy on the hard drive. *It is recommended to leave this as the **default** value for **optimised quality**, or 2048 for **optimised recording time**.*

**Bit Rate Type:** How bit rate is controlled. By setting CBR (constant bit rate), the camera bit rate is pre-defined and camera quality is constant no matter what is being captured. By setting VBR (variable bit rate), the camera uses a low bit rate when there is little scene activity and switches to a high bit rate when there is more activity. CBR ensures constant quality, whilst VBR conserves hard drive capacity in times of low activity. *It is recommended to set this to **CBR** for **optimised quality**, or **VBR** for **optimised recording time**.*

**Compression:** The compression technology used when encoding footage for storage on a hard drive. H.265 is the most efficient at compressing footage for storage on your hard drive and will provide the most total record time. ***H.265** is recommended for **Main Stream**, **H.264** for **Sub Stream**.*

**Resolution:** The camera's image resolution; dictates the size of captured images. A high set resolution means larger pictures captured by the camera each frame, which means higher required bit rate & hard drive storage capacity. *It is recommended to set the **Resolution** as the **highest value** for **Main Stream** and **D1** for **Sub Stream**.*

**Frame Rate (FPS):** Frames per second, or, the number of images that make up each second of video captured by the camera. A high frame rate means more data per second is captured by the camera and sent to the recorder, this requires a higher set bit rate & hard drive storage capacity.

## 3.1 First Boot and Startup Wizard (cont.)

### Optimised Encode Settings

Fig. 3.12 details quality optimised values and max. recording-time optimised values for 4K cameras. Values will vary by camera model.

Field	Quality Optimised		Recording Time Optimised	
	Main Stream	Sub Stream	Main Stream	Sub Stream
Coding Strategy	AI Codec	-	AI Codec	-
Resolution	3840 * 2160	720 * 576	3840 * 2160	720 * 576
Frame Rate	7fps	7fps	7fps	7fps
Bit Rate Type	CBR	CBR	VBR	VBR
Bit Rate	6144Kbps	1536Kbps	2048Kbps	320Kbps

Fig. 3.12: Suggested camera stream values to be set for 8MP cameras

### 3.1.8 Snapshot Settings

On this page you can configure the DVR to record image snapshots to be taken at **Timing Intervals**, based on the snapshot recording schedule (See 3.1.10), or on **Trigger** (See 6.6 AI Trigger Actions). This creates images alongside your recorded footage.

Both scheduled and event snapshots can be active at the same time. Set **Type** to **Scheduled** to configure settings for snapshots to be taken at **Timing Intervals**. Set **Type** to **Event** to configure settings for snapshots taken on **Event Trigger**.

Fig. 3.13: Snapshot Setup section

### 3.1.9 Basic Storage Settings

Here, you can configure the settings for situations when the HDD is full, file size/time length of recorded video, and the settings for auto-deleting old files.

- **Disk Full:** Configure the settings for when all the read/write discs are full, and there is no more free disc space. **Overwrite** is recommended.
- **Create Video Files:** Configure the time length and file length for each recorded video.
- **Delete Expired Files:** Configure whether to delete the old files or not. If yes, also determines how much footage to delete in terms of either time length or file size. **Never** is recommended.

Fig. 3.14: Basic Storage settings

## 3.1 First Boot and Startup Wizard (cont.)

### 3.1.10 Configuring Recording and Snapshot Schedules

Finally, you will be prompted to setup your Schedule for recording. Here you can define the recorded footage schedule in the Record menu (Fig. 3.15), and the recorded image snapshot schedule in the Snapshot menu. By default, cameras are set to non-stop General recording (24 hours a day, 7 days a week).

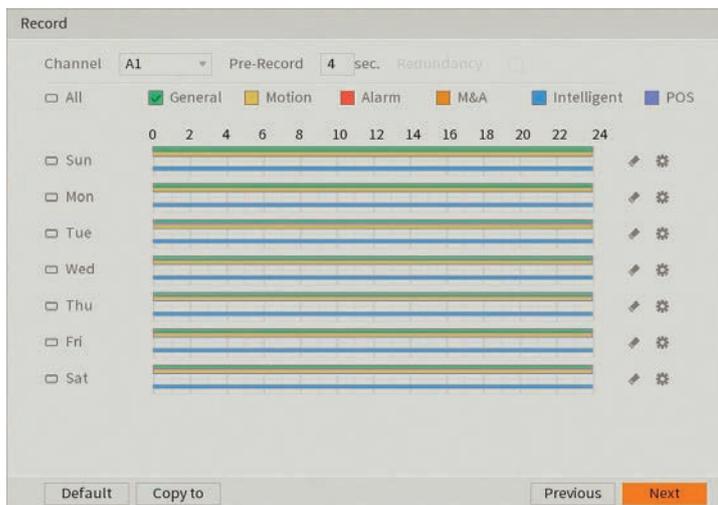
Schedules can be set in hourly periods for individual days for each camera, with colour-coded options for:

- **General (green)** for all regular recording.
- **Motion (yellow)** for recording on motion detection.
- **Alarm (red)** for recording on triggering an integrated alarm
- **M&A (orange)** for simultaneous alarm/motion detection recording
- **Intelligent (blue)** for recording on triggering IVS (Intelligent Video Surveillance) such as a virtual tripwire
- **POS (violet)** for point of sale transactions.

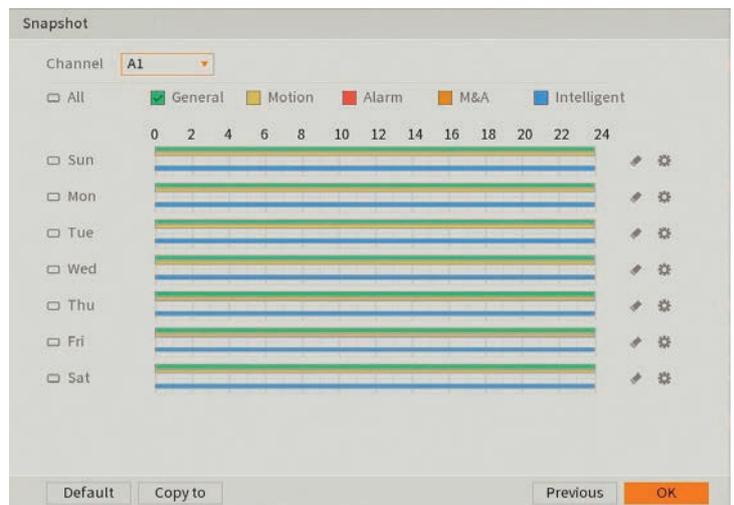
We recommend adding motion detection and intelligent recording to all channels to accompany your regular recording.

#### Setting Motion Detection & Intelligent Recording

1. Click the **Channel** drop down to select **All** cameras.
2. In the **Days** column, toggle the **All** check box to simultaneously set recording schedule parameters for every day of the week.
3. Check the yellow **Motion** check box to select motion detection recording.
4. Click the schedule to fill in areas for motion detection recording. We recommend a 24/7 schedule to mirror the General recording schedule (Fig. 3.15).
5. Repeat steps 3 & 4 with the blue **Intelligent** check box to set intelligent recording (tripwire, face detection, etc).
6. Click **Next**, then repeat steps 1-5 for Snapshot settings.



**Fig. 3.15:** Recording Schedule with General, Motion & Intelligent recording set to a 24/7 schedule.



**Fig. 3.16:** Snapshot Schedule with General, Motion & Intelligent recording set to a 24/7 schedule.

## 3.1 First Boot and Startup Wizard (cont.)

### 3.1.11 Completed Setup

#### User Interface

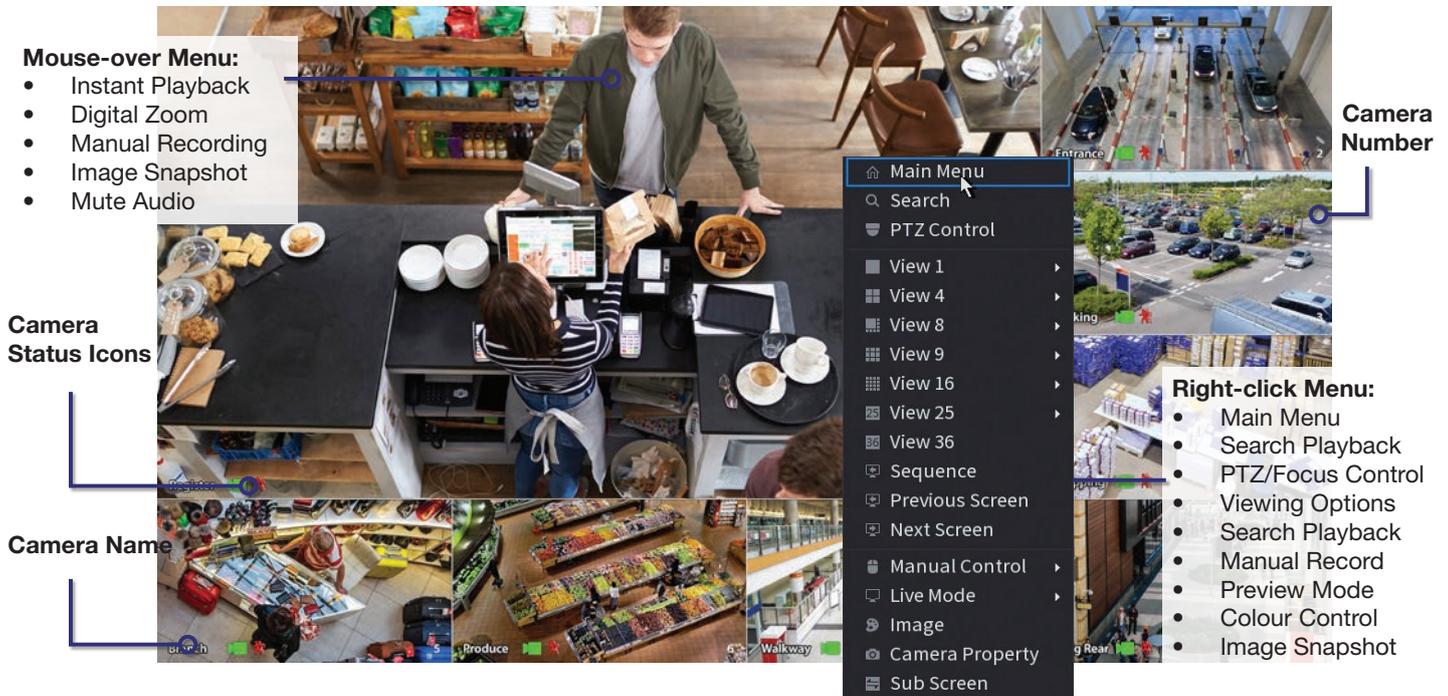


Fig. 3.17: View 8 Liveview screen with right-click context menu open.

#### Liveview Controls

- **Double-click** on a camera window to make it full-screen; double-click again to return to normal view.
- **Right-click** to access the right-click menu.
- From the right-click menu, click **Main Menu** to access most configuration settings.

#### Main Menu Controls

- **Mouse wheel scroll** to view more menu options.
- **Left-click** to enter a menu.
- **Right-click** to return to the Main Menu / return to the Liveview screen from the Main Menu.

#### Right Click Context Menu

- **Main menu** – Access the Main menu
- **Search** – Access the Search/Playback Page
- **PTZ Control** – Control PTZ cameras (requires PTZ camera)
- **View options** – Change how many cameras are on the liveview screen.
- **Sequence** – Rearrange camera channels on HDMI
- **Next/Previous Screen** – Cycle through cameras for the currently selected View.
- **Image** – Change Images settings for the currently selected camera
- **Sub Screen** – Configure the display of the Second HDMI

## 4. Footage Playback

### 4.1 Accessing Stored Footage

To access footage playback, select the **Search** button from the **Main Menu**. Stored footage can be accessed by searching by date and refined by footage type (General, Motion, Alarm, etc).

After locating the desired footage, you can immediately backup the video by using the search menu. See Section 5.1.1 for more information.

#### 4.1.1 Playback Footage by Date

Use Fig. 4.2 on the opposite page as a guide.

1. Ensure that the correct **HDD** is selected and that **REC** checked in **Source Select**.
2. Using the **Date Select** calendar, choose your date for footage playback. A coloured dot icon indicates stored footage is available for that day (Fig. 4.1).

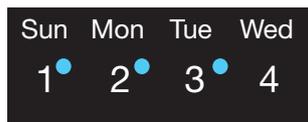


Fig. 4.1: Date select Calendar showing footage is available for Sun, Mon, Tue.

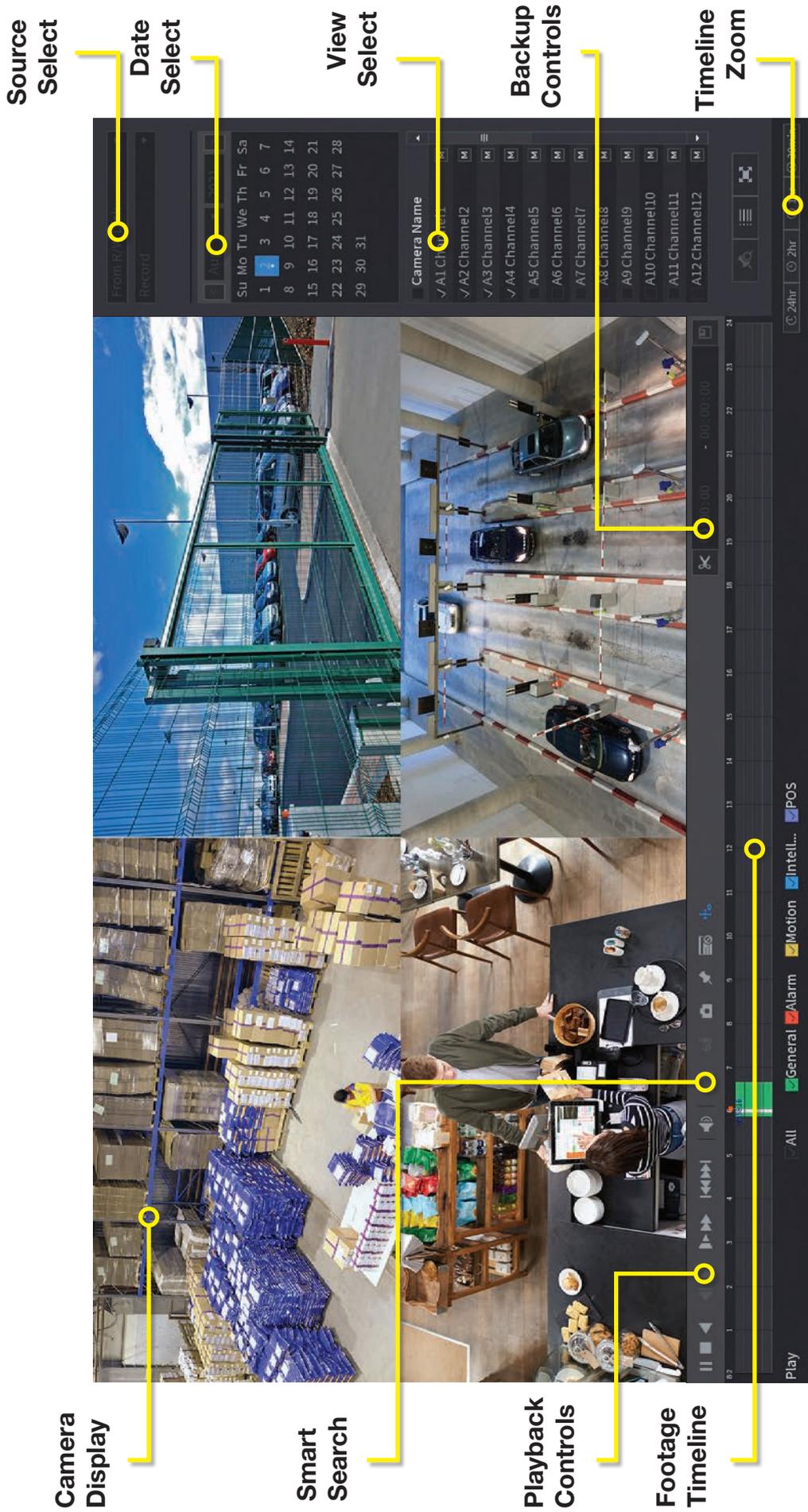
3. Select the cameras to be viewed. The screen will automatically split depending on the amount of cameras selected.
4. The **Footage Timeline** should populate with stored footage, indicated by coloured bars in the timeline. Click anywhere on the timeline to begin footage playback. Other cameras will automatically sync their playback to the selected camera.
5. For greater precision playback control, zoom in on areas using the **Timeline Zoom**, up to 30 minutes.
6. Using the **Playback Controls**, you can speed up or slow down playback, place marks on key footage times and take snapshots.

#### 4.1.2 Playback Footage by Smart Search

**NOTE:** Smart search requires motion detection to be recorded to function. You can only Smart Search playback footage one camera at a time. If Smart Search is not functioning, check Section 6 for troubleshooting.

1. As detailed in the previous section, use **Date Select** to locate your desired date for footage playback, and choose a single camera only in **View Select**.
2. Click anywhere on the Footage Timeline to begin playback. Then select the **Smart Search** button .
3. A grid will appear overlaid onto your camera playback. Highlight an area of interest on the grid. This will define the motion detection area that is used by Smart Search.
4. Select the **Smart Search** button again to begin playback of all motion detected events in the area you selected.

By configuring your recording schedule for motion detection and by using Smart Search, you can quickly find the footage you require. For **Footage Backup**, proceed to Section 5.



**Fig. 4.2:** Four camera view simultaneous footage playback.

# 5. Footage Backup & Viewing

## 5.1 Backup Footage to USB

Should you wish to preserve recorded footage before it is overwritten, you will need to perform a footage backup. Footage can be exported from your DVR in a **.DAV** or **.MP4** file. A **.DAV** file will require conversion for sharing, whereas an **.MP4** file is compatible with most video players on Windows or Mac PCs. Each file type is covered in Section 5.2.

There are two different ways to backup footage to USB: via the **Search** menu through searching playback footage; and by performing a direct backup via the **Backup** menu. Both are accessed via the **Main Menu**.

File selection (**.DAV/.MP4**) is only available in the **Backup** menu. Backup in **Search** Menu outputs **.DAV** files only.

**Note:** When backing up footage to an external HDD, it will first need to be formatted by selecting the **“Format”** button. **This will clear all data on the external HDD.**

### 5.1.1 Backup Footage via Search Menu

Using the **Search Menu**, find start/end points of backup footage by using playback video as a reference.

1. As detailed in Section 4, locate the footage you wish to backup. Select the desired camera in single view mode.
2. Using the **Footage Timeline**, click the approximate desired time for your backup video start point. Selecting the **Clip Button**  on the **Backup Controls** (Fig. 5.1), this will set your start point.
3. Again, using the **Footage Timeline**, click the approximate desired time for your backup video end point. Select the **Clip Button** again to set your end point.
4. Select the **Save Button**  to open the **Backup** menu.
5. This process can be repeated to add more clips from different channels.
6. Plug in your USB device, exiting any automated prompts, and select **Backup** to begin backup.



Fig. 5.1: Backup Controls in Search Menu.

### 5.1.2 Backup Footage via Backup Menu

Using the **Backup Menu**, specify start/end dates & times across multiple cameras simultaneously. This is useful for large footage export, such as full days.

1. Select **Backup** from the **Main Menu**, or, insert your USB device and select **File Backup**.
2. Here, you can select the **Type** of footage to backup (default: All), the **Start Time** and **End Time** and what **Record Channels** to backup video from.
3. Selecting **Search** will populate the list with individual video clips ready for backup. Clips can be added or removed from the backup process using the check box.
4. Select **Start** to begin backup.

**NOTE:** Regular type footage (R) will be split into in one hour segments, unless Motion Detection type footage (M) was recorded.

Storage capacity is also shown. Ensure you have the required storage to accept the backup video.

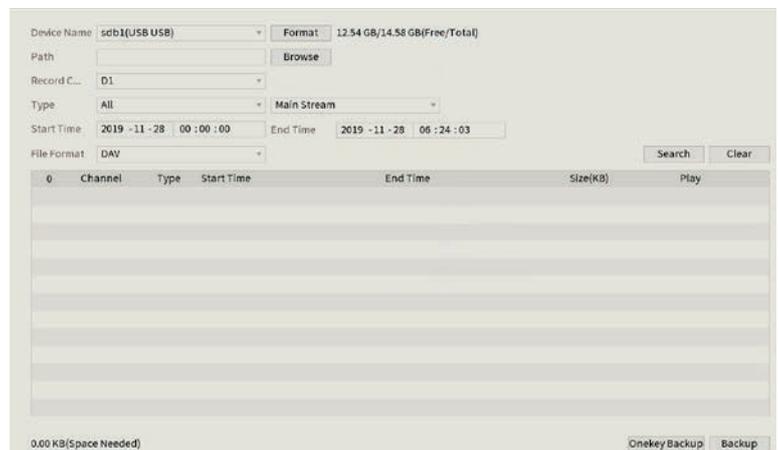


Fig. 5.2: Backup Menu

## 5.2 Viewing Footage on a Computer

The following details instructions for viewing footage on Windows or Mac personal computers. Video conversion may need to take place for viewing on other devices, eg: smartphones, tablets, etc.

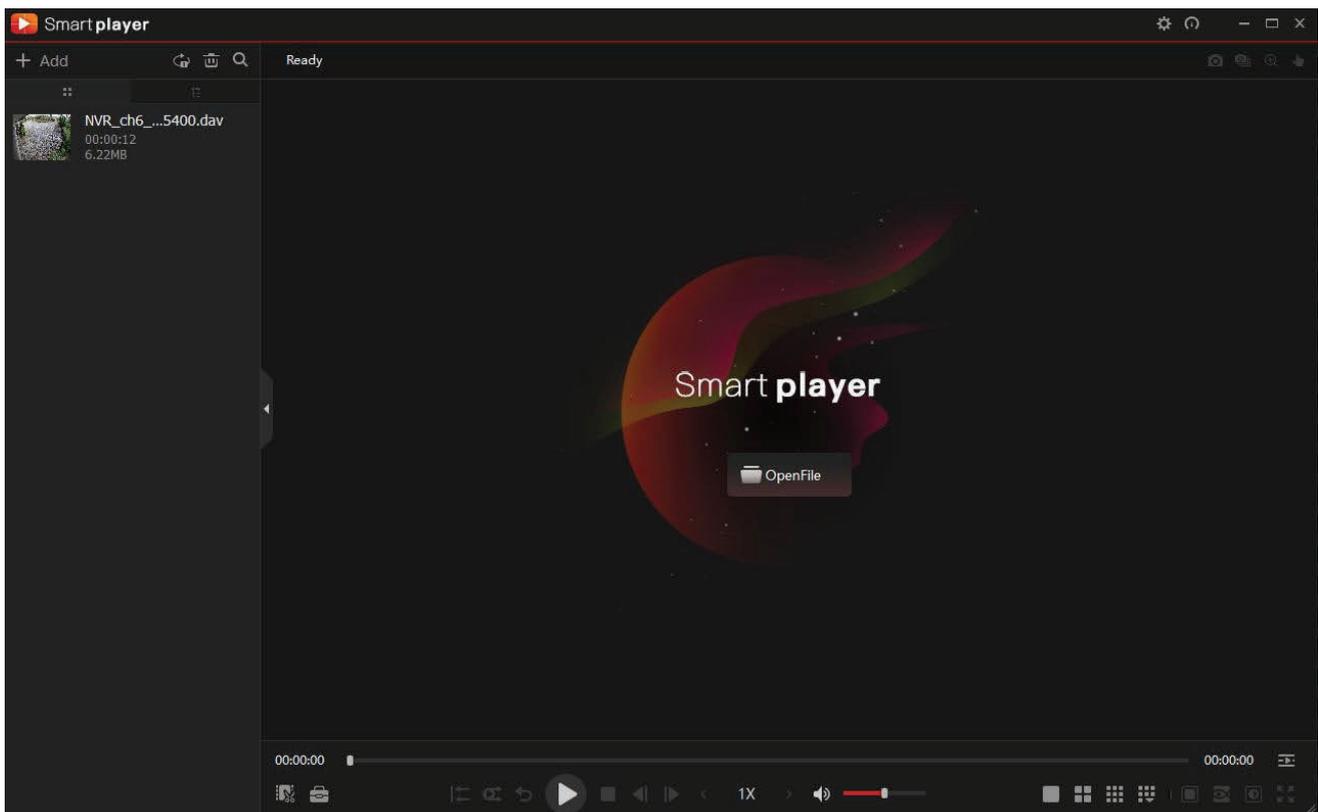
Now that you have backed up footage to a USB in .DAV / .MP4 format, you are ready to view it on a personal computer.

- **.DAV footage** can be viewed using the **Smart Player Lite** program and cannot be played on mainstream media players without file type conversion.
- Smart Player can export your videos to .AVI file type to be viewed using another media player such as Windows Media Player & VLC Media Player
- **.MP4 footage** can be directly viewed using most players, including Windows Media Player & VLC Media Player

### 5.2.1 Viewing .DAV Video Files on PC with Smart Player Lite

**Note:** *Smart Player Lite* is automatically copied onto the USB device when performing footage backup from the DVR.

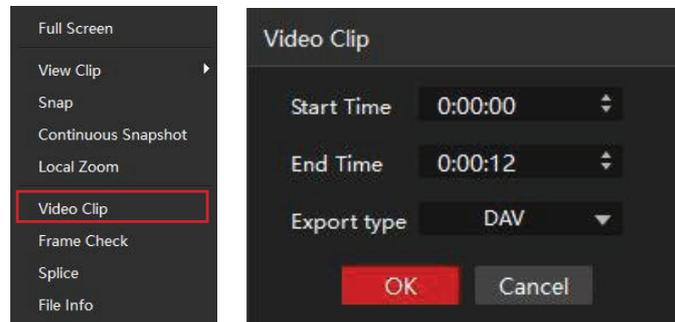
1. To view .DAV footage in Smart Player Lite, either click the **Add Files**  button and select the file from your USB, or drag & drop the file onto a selected play window.
2. Using the .DAV file, Smart Player Lite adds functionality similar to your DVR in footage playback, such as synchronous playback of multiple channels.
3. Open the **Options menu** . Here, you can set the directories and formats for saved snapshots (.BMP/.JPG) and videos (.DAV/.AVI). You can also adjust video aspect ratio and other options.
4. You can **export clips** by pressing the **Record button**  once to begin recording, then again to end recording.
5. Similarly, you can **take snapshots** by pressing the **Snapshot button**  once.



**Fig. 5.3:** Footage playback using the included Smart Player Lite for Windows

## 5.2 Viewing Footage on a Computer (cont.)

If you want to play the video on a different device that does not have Smart Player program, select **Export Type** as .AVI. File type .mp4 can be viewed on a wider range of devices, however you cannot choose to export files as .mp4 on the Smart Player program. You must export files as .mp4 via the recorders back up menu.



**Fig. 5.4:** Exporting footage to .AVI File on Smart Player program

### 5.2.2 Viewing .MP4 Video Files

The .MP4 file format is a common video format, compatible with Windows Media Player and most other video players. .MP4 videos can also be played by **VLC Media Player**. This free open source player is available across many platforms, including:

- **Desktop:** Windows, Mac OS and Linux
- **Mobile:** Android and iOS

1. Access your USB device and open your backup .MP4 footage video using one of the media players mentioned above.
2. .MP4 files **cannot** be viewed using Smart Player Lite. They do not retain time/date data like .DAV files.

Software utilised in this manual was current at the time of manual creation.

For the latest version of surveillance software for PC and Mac systems, please scan the QR code or follow the link to the right.

A brief overview of key software is listed below:

**SmartPSS:** Remote view application for live view, playback and configuration of your surveillance system. For Windows & Mac PCs.

**Smart Player:** Playback exported footage & convert video files for Windows & Mac PCs.

**DMSS:** Mobile surveillance application for iOS & Android



Scan QR code or navigate to:  
[help.c5k.info/software/software-downloads](http://help.c5k.info/software/software-downloads)

## 6. Intelligent Functions

**NOTE:** Before enabling Motion Detection, IVS or AI features, ensure that you have configured Motion Detection and Intelligent recording schedules (refer to 3.1.10 Configuring Recording and Snapshot Schedules), or these functions will not work.

AI lets your CCTV system go beyond surveillance, delivering advanced & powerful detection tools. When properly configured, these functions can alert you to suspicious activity in real time via email/smartphone notification and let you easily search through surveillance footage via event history.

Below will explain the different types of Intelligent functions.

- **Motion Detection** – Detect Motion within a specified area.
- **Smart Motion Detection** – Filter motion events to only occur when the trigger is a human and/or vehicle.
- **Face Detection** – Face Detection will trigger whenever any face has been detected. Best suited for use directly above entry doors.
- **Face Recognition** – Trigger events upon detecting specific pre-determined faces from a face database. Face Detection must be used in conjunction with Face Recognition,
- **Tripwire** – A virtual line is drawn over the camera image. If it gets broken, an event will be triggered. Suitable for both indoor and outdoor locations, with the camera mounted up high, looking down.
  - \* **Perimeter Protection** can also be applied to Tripwire, distinguishing vehicles and cars.
- **Intrusion** – A virtual area is drawn over the image. If it gets broken, an event will be triggered. Suitable for both indoor and outdoor locations, with the camera mounted up high, looking down.
  - \* **Perimeter Protection** can also be applied to Intrusion, distinguishing vehicles and cars.

### 6.1.1 Mounting for Tripwire, Intrusion, Missing, Abandoned, Fast Moving, and Loitering

When installing a camera for use with any of the above functions, the camera will need to be positioned looking over the area. When the trigger area is drawn, it should not be around the edges of the image, as this will cause inconsistent triggers.



Fig. 6.1: Tripwire camera view example

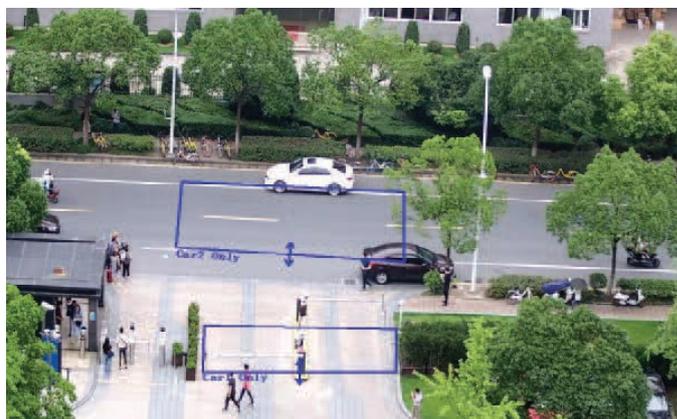


Fig. 6.2: Intrusion camera view example

## 6.1 Face Detection

### 6.1.1 Mounting for Face Detection/Recognition

When using face detection and/or face recognition, the camera will need to be dedicated to the task. It will need to be focused on the entry point to the premises, not covering a wide area.

When installing the camera it is vital to ensure that scene is well lit. Avoid light coming from the back or sides of the scene.

#### Recommended Mounting Distance

3.6mm 2.0MP IP camera

Parameter	Recommend Value
Height (H)	2.5m
Horizontal Distance (D)	6m
Degrees	15°

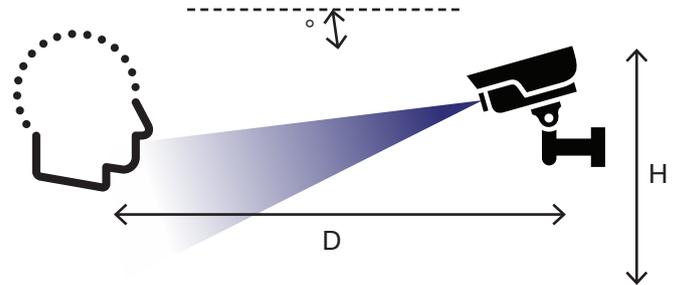


Fig. 6.3: Face Detection mounting diagram

## 6.2 AI Live View

AI Face Detection & Recognition results can be displayed in real-time on the Live View screen. This will show every face that is captured by the AI system, and additionally, if Face Recognition is activated, compare it to faces in the database and show comparison results (with accuracy %).

#### Enabling AI Mode in Live View

1. While on the Live View screen, **right-click** to open the menu.
2. Hover over **Preview Mode**.
3. By default, the General Preview Mode is enabled. Select **AI Mode**.
4. If AI & IVS have been configured correctly, live face capture results should now be displayed on the right side of the screen.

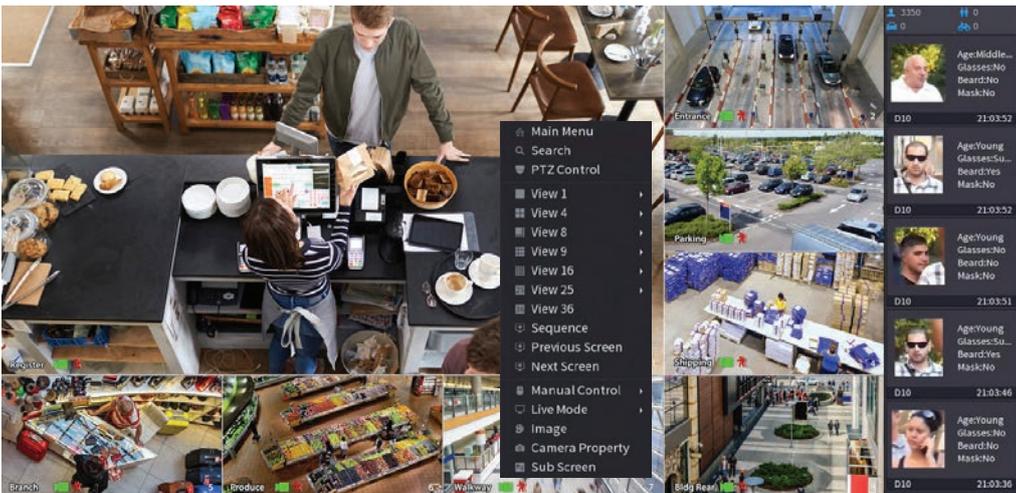


Fig. 6.3: Live playback with Face Detection info on right panel

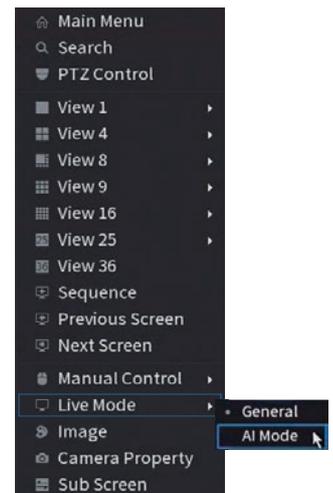


Fig. 6.4: AI Mode in Live View Menu

## 6.3 Motion Detection & Smart Motion Detection

**NOTE:** Before enabling motion detection, ensure that you've configured **Motion** recording schedules (refer to **3.1.10 Configuring Recording and Snapshot Schedules**).

### 6.3.1 Enabling Motion Detection

1. From the **Main Menu**, select **Alarm**.
2. Select the **Video Detection** tab and then the **Motion Detection** tab.
3. Select the **Channel** you want to configure motion detection on with the drop down menu.
4. Turn **Enable** on.
5. (Optional) Adjust Motion Detection Sensitivity and Region by selecting **Region Setting**.
6. You can also configure what actions are taken once the Motion event is triggered.
7. Click **Apply** to confirm settings.

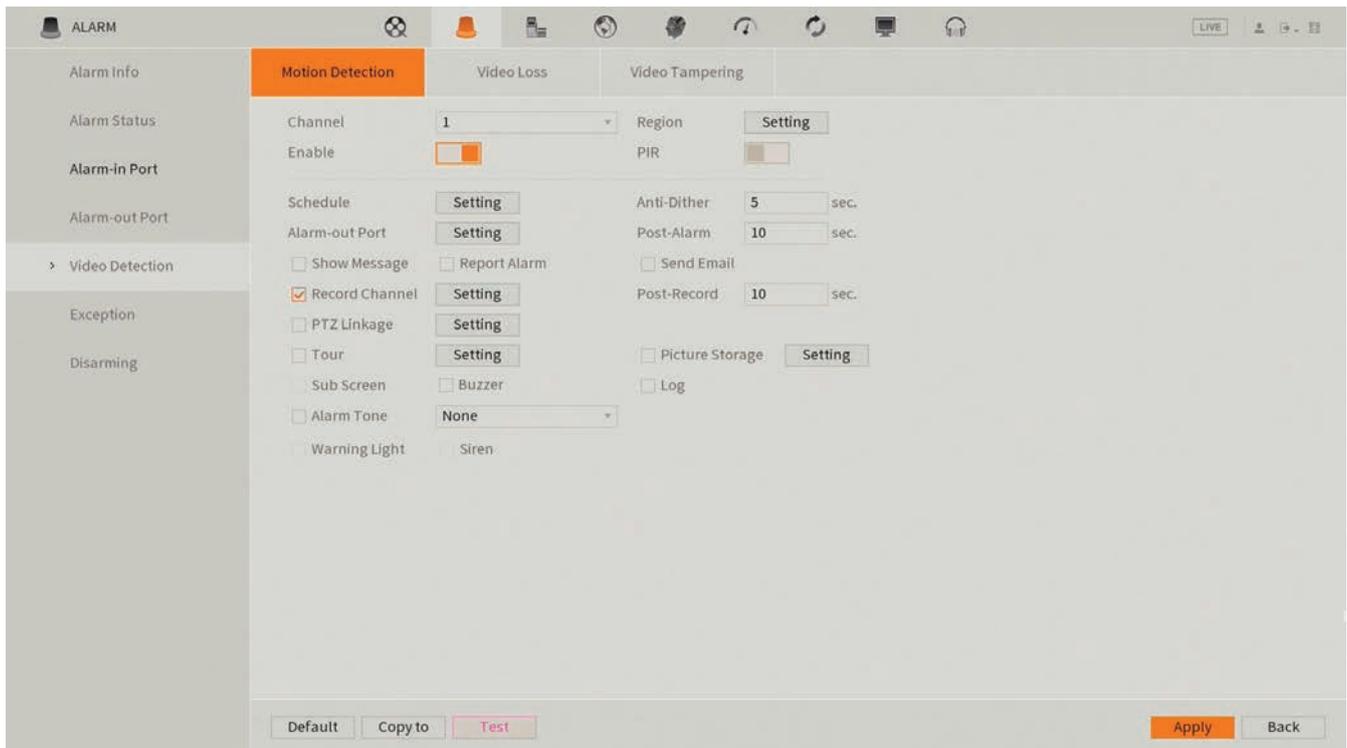


Fig. 6.5: Motion Detection Screen

### 6.3.2 Smart Motion Detection

Smart Motion Detection allows the DVR to identify and differentiate vehicles and people from other moving objects. To enable it, follow the same steps for Motion Detection outlined above, then do the following:

1. Return to the **Main Menu** and select **AI**.
2. Select **Parameters** -> **SMD**
3. Select the **Channel** to apply Smart Motion Detection for, then click **Enable**.
4. Set a **Sensitivity** level, then which **Effective Targets** will trigger it (Humans, Vehicles or both).

## 6.4 Tripwire & Intrusion

**NOTE:** Before enabling Tripwire or Intrusion, ensure that you've configured **Intelligent** recording schedules (refer to **3.1.10 Configuring Recording and Snapshot Schedules**).

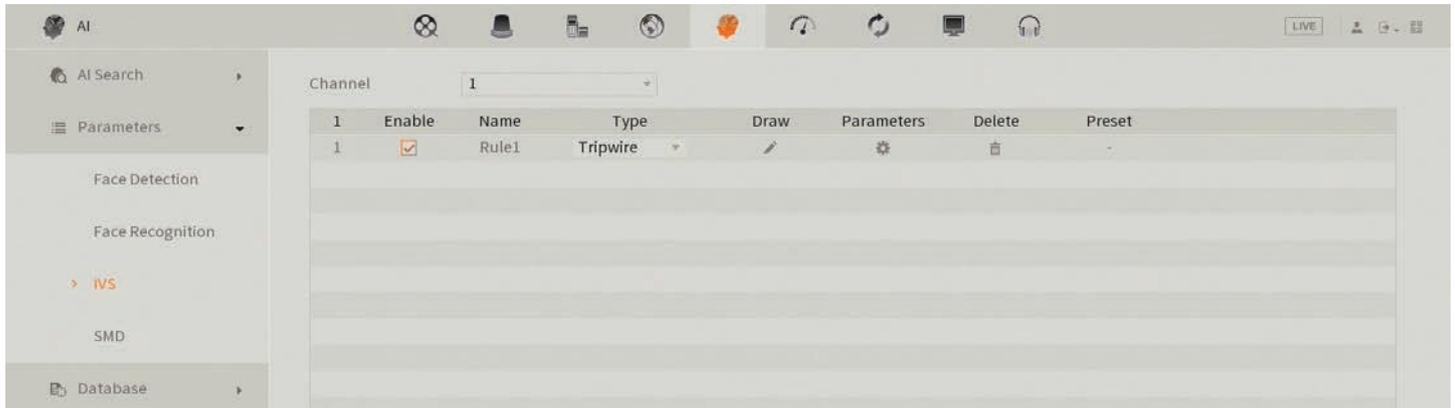


Fig. 6.6: IVS Setup Screen

### Tripwire/Intrusion Setup

1. From the **Main Menu**, select **AI** -> **Parameters** -> **IVS**
2. Select the camera **Channel**, then click **Add button** at the bottom. This will create a new IVS rule (Tripwire by default).
3. Click the **Draw** button  to open the Draw screen.
4. **Left-click** on the screen to start drawing the Tripwire line. **Left-click** again to finish the line (optionally, you can add additional corners to the line by continuing to left-click). **Right-click** to finish placing the line.
5. (*Intrusion only*) Set the **Action** required (i.e Appear and/or Cross)
6. Set the **Direction** that the line must be passed from to activate the event, as indicated by the arrow going across the line (A to B, B to A, or both ways).
7. Enable **Target Filter** then enable **Human** and/or **Vehicle**.
8. Click **OK** to finish.
9. Click the **Trigger Button** to bring up the Trigger menu, configuring what actions are taken once the IVS event is triggered. (Refer to 6.6 AI Trigger Actions).
10. Click the **Enable** box to turn on the IVS rule.
11. Click **Apply** to save changes. If done correctly, you will see the Tripwire/Intrusion in live view.



Fig. 6.7: Intrusion Draw Menu



Fig. 6.8: Tripwire Draw Menu

## 6.5 Face Detection & Recognition

### 6.5.1 Enabling Face Detection

1. From the Main Menu, select **AI -> Parameters -> Face Detection**. Select the channel you want to set up face detection for.
2. Select the **Enable** button.
3. Select **Rule** to adjust the minimum and maximum face detection size. The minimum and maximum value will depend on how far away the camera is from the faces that are getting captured. In most cases, this setting does not require adjustment.
4. Select **Apply**.
5. Refer to **7.4 AI Trigger Actions** for further trigger settings.

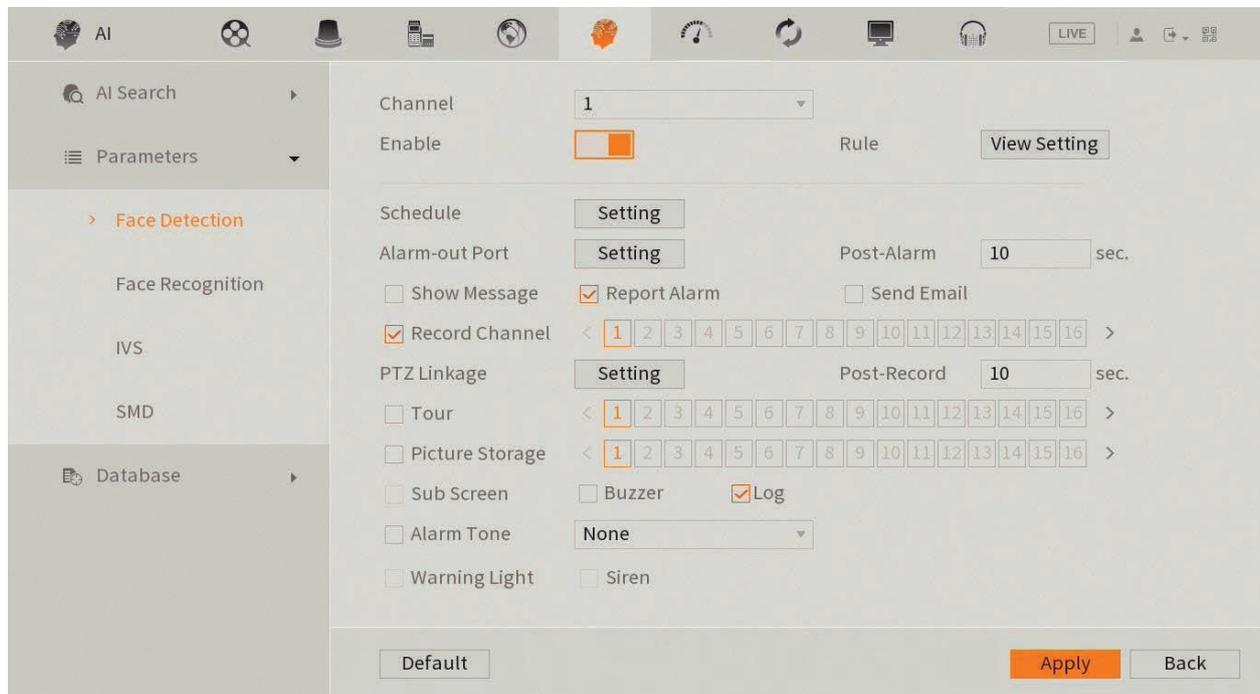


Fig. 6.9: Face Detection Parameters menu

### 6.5.2 Configuring Face Recognition

1. From the Main Menu, select **AI -> Database -> Face Library**.
2. Select **Add**. Give the Face Library a name, and then select **OK**.
3. Select **Parameters -> Face Recognition**.
4. Select the **channel** you wish to setup Face Recognition on. Select **Enable**.
5. Select **Target Face Database Setting** and select the **Face Library** you created in Step 2.
6. Select **OK**.
7. (Optional) Enable **Stranger Alarm**. Stranger Alarm will detect faces not in the Face Library and mark them as strangers.
8. Configure **trigger settings** to suit requirements (Refer to 6.6 AI Trigger Actions).
9. Select **Apply** to save your changes.

## 6.5 Face Detection & Recognition (cont.)

### 6.5.3 Add Faces to the Face Library from a Captured Face

1. Ensure AI Preview mode is configured as per section 6.2 and Face Detection has been configured as per section 6.5.1
2. Once a face appears in the list you would like to add to the Face Library, double click on it, and select **Add to Human Face Database**.
3. Enter the details of the person and select the Face Library you would like to add the face too.
4. Select **OK**.

### 6.5.4 Add Faces to the Face Library via Manual upload from USB drive

This method is useful if multiple faces are being added to the face database. You can also choose to import the faces and data, by naming the images files, explained below:

Name#SGender#BBirthDay#NCountry#TIDType#MIDNo.#AAddress.jpg

Gender: 1 Male, 2 Female / Identity: 1 – Identity Card, 2 - Passport, 3 – Military Office Passport

**Example: John#S1#B19900101#NAustralia#T1#M123456789#1 Smith St Sydney 2000 NSW.jpg**

1. Save the face/faces to a .jpg image file on a USB Flash drive.
2. Insert the USB Flash Drive into a free USB Port on the DVR.
3. From the Main Menu, select **AI -> Database -> Face Library**.
4. Select **Details**.
5. Select **Batch Register**, then select **File** or **Folder**, and select the photos you wish to upload.
6. The recorder will then upload the files. Once complete, press **Search** to update the Face Library
7. Select the **Edit** icon next to the faces that have been added, to update name and other details.

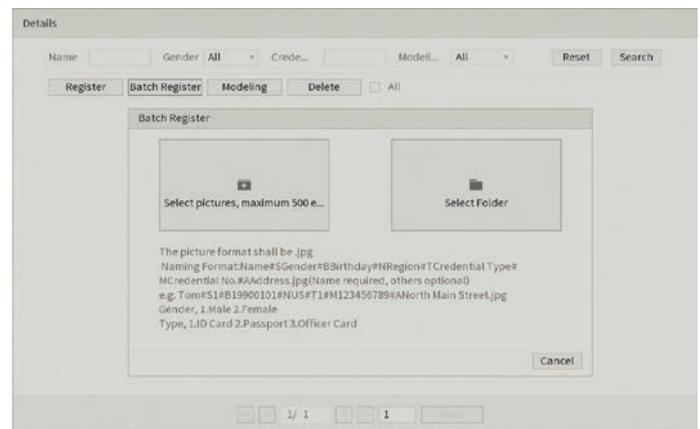


Fig. 6.10: Face details menu

### 6.5.4 Deleting Faces from Face Library

To remove a face from a face library, select **AI -> Database -> Face Library**. Select the **Details** button in the face library to view the faces that have been added to it. Select the face you wish to delete, then select **Delete**.

## 6.6 AI Trigger Actions

**Schedule** - Sets the times of day that the event will trigger (always on by default).

**Alarm Out** - Sets an external alarm to activate whenever a face is detected.

**Post-Alarm** - Sets how long the system waits after a trigger before detecting again (10 seconds by default).

**Report Alarm** - Updates the alarm system status on the network (Unused for this system).

**Send Email** - Notifies a specified email address whenever the event is triggered (Requires internet connection & setup)

**Record Channel** - Sets which camera to record to when the event is triggered.

**Post-Record** - Sets the amount of time recorded after the event is triggered.

**PTZ Activation** - Set PTZ behaviors in response to an event trigger, such as selecting a Tour to perform, etc (For use with PTZ camera(s) only).

**Buzzer** - Sets the DVR to beep whenever an event is triggered.

**Alarm Tone** - Plays a designated .wav file in response to an event trigger. This can be imported via a USB flash drive to the DVR.

The screenshot shows the 'Trigger' configuration menu. It contains several sections with various settings:

- Schedule**: A 'Setting' button.
- Alarm-out Port**: A 'Setting' button.
- Post-Alarm**: A numeric input field set to '10' followed by 'sec.'.
- Show Message**: An unchecked checkbox.
- Report Alarm**: A checked checkbox.
- Send Email**: An unchecked checkbox.
- Record Channel**: A checked checkbox and a numeric keypad with '1' selected.
- PTZ Linkage**: A 'Setting' button.
- Post-Record**: A numeric input field set to '10' followed by 'sec.'.
- Tour**: An unchecked checkbox and a numeric keypad with '1' selected.
- Picture Storage**: An unchecked checkbox and a numeric keypad with '1' selected.
- Sub Screen**: An unchecked checkbox.
- Buzzer**: An unchecked checkbox.
- Log**: A checked checkbox.
- Alarm Tone**: A dropdown menu currently set to 'None'.
- Warning Light**: An unchecked checkbox.
- Siren**: An unchecked checkbox.

At the bottom right, there are two buttons: 'OK' (orange) and 'Back' (grey).

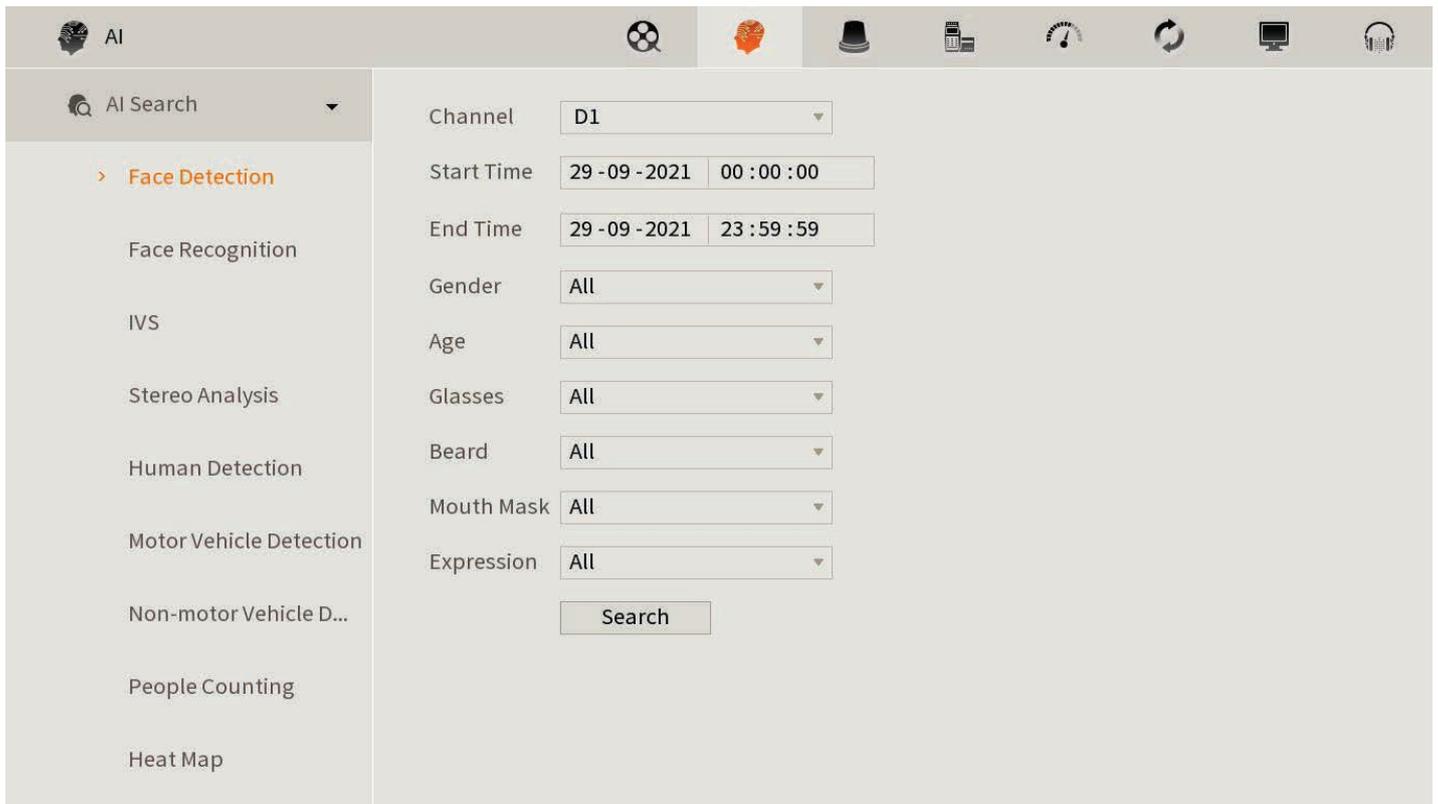
**Fig. 6.11:** Trigger Actions Menu

## 7. Smart Search

Smart Search for SMD, Face Detection, Vehicle Detection, Non-Motor Vehicle Detection or Human Body Detection. The available options will vary depending on the camera and recorder model. The AI function must be turned on to be able to perform a Smart Search.

### 7.1 Face / Vehicle / Non-Motor Vehicle / Human Body Detection

1. From the Main Menu, select **AI -> Smart Search** then **Face Detection, Face Recognition, SMD or IVS**.
2. Select the channel, time and attributes you would like to search for, then select **Smart Search**.
3. If any faces were detected in the specified timeframe, they will be displayed along with a timestamp. Double-click on one of the faces to view the recorded footage.
4. If you wish to backup footage, insert a USB stick, put a tick next to the item you want to backup, and select **Export**. Then you will be asked where on the USB Stick the file is to be saved.
5. Select **OK** to start the backup.



The screenshot shows a software interface for AI Search. On the left is a sidebar menu with options: AI Search (selected), Face Detection (highlighted in orange), Face Recognition, IVS, Stereo Analysis, Human Detection, Motor Vehicle Detection, Non-motor Vehicle D..., People Counting, and Heat Map. The main area contains search filters: Channel (D1), Start Time (29-09-2021 00:00:00), End Time (29-09-2021 23:59:59), Gender (All), Age (All), Glasses (All), Beard (All), Mouth Mask (All), and Expression (All). A Search button is located at the bottom of the filter section.

Fig. 7.1: Face Detection Smart Search menu

## 7.2 Face Recognition Smart Search

### 7.2.1 Method 1 - Search by Attribute

1. From the Main Menu, select **AI -> Smart Search -> Face Recognition**. Select the **Search By Attribute** tab.
2. Select the channel, time and facial features you would like to search for, then select **Smart Search**.
3. If any faces were detected in the specified timeframe, they will be displayed along with a timestamp. **Double-click** on one of the faces to view the recorded footage.
4. If you wish to backup footage, put a tick next to the item you want to backup, and select **Export**. Then you will be asked where on the USB Stick the file is to be saved.
5. Select **OK** to start the backup.

### 7.2.2 Method 2 - Search by Image

1. From the Main Menu, select **AI -> Smart Search -> Face Recognition**. Select the **Search By Image** tab.
2. Select the **Face Library** to search for a Face that is already saved to the Face Library or select **Local Upload** to import a new face via a USB Stick.
3. Select the Face, and select the channel and date and time, then **Smart Search**.
4. If any faces were detected in the specified timeframe, they will be displayed along with a timestamp. **Double-click** on one of the faces to view the recorded footage.
5. If you wish to backup footage, put a tick next to the item you want to backup, and select **Backup**. Then you will be asked where on the USB Stick the file is to be saved.
6. Select **OK** to start the backup.

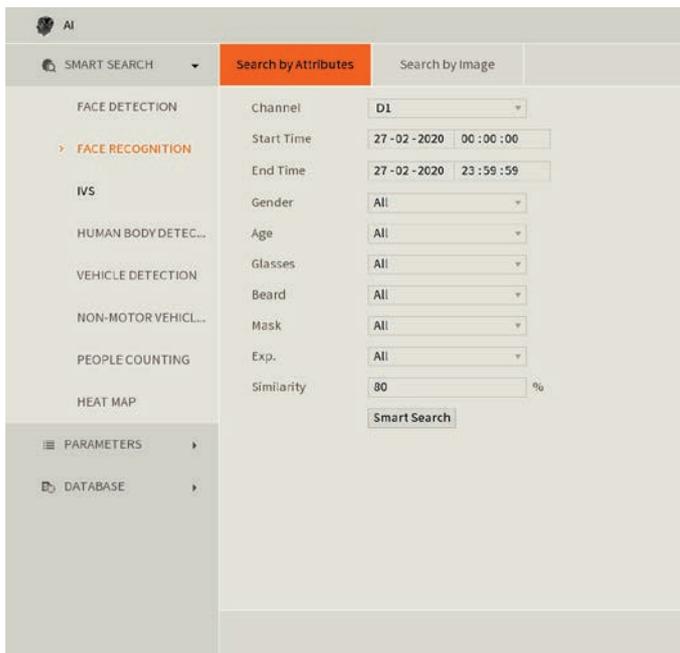


Fig. 7.2: Search by Attributes menu

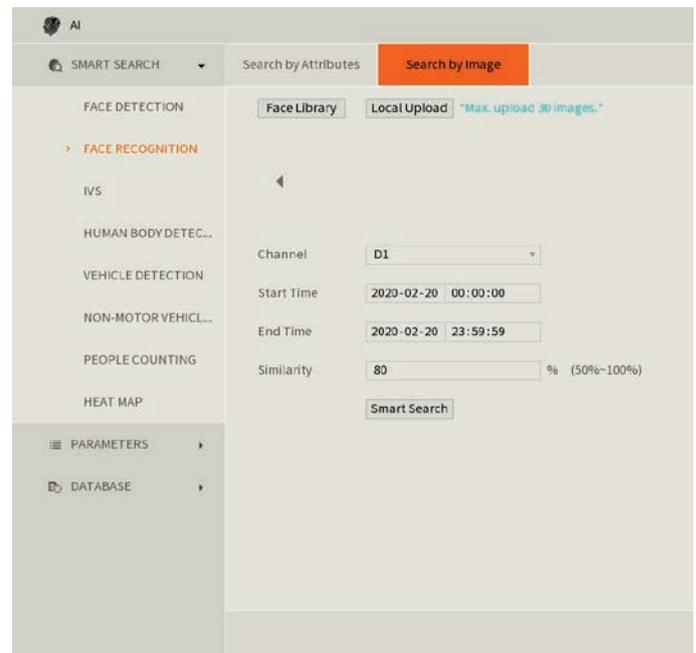


Fig. 7.3: Search by Image menu

## 7. Troubleshooting

This concludes the Quick Start Guide covering the basic functionality of your surveillance system. Should you encounter any difficulties with your setting up and using your system, please first refer to the tables.

Area	Menu Navigation	Guide Ref.
DVR Security Setup	Main Menu -> Account	Section 3.1.3
Changing General Settings	Main Menu -> System -> General	Section 3.1.5
DVR Network Setup	Main Menu -> Network -> TCP/IP	Section 3.1.6
P2P & Remote View Setup	Main Menu -> Network -> P2P	Section 3.1.6
Configuring Cameras	Main Menu -> Camera -> Encode	Section 3.1.7
Changing Recording Schedule	Main Menu -> Storage -> Schedule	Section 3.1.10
Accessing Playback Footage	Main Menu -> Video   Search	Section 4
Backing Up Footage	Main Menu -> Video   Backup	Section 5

Problem	Troubleshooting	Guide Ref.
The DVR won't power on.	<ul style="list-style-type: none"> <li>Ensure that the power cable is firmly connected to the recorder and to the wall socket.</li> <li>Confirm that there is power from the outlet.</li> </ul>	Section 1.2
The DVR is not being displayed on the monitor.	<ul style="list-style-type: none"> <li>Ensure the display cable is firmly connected to the recorder &amp; monitor.</li> <li>Ensure you have selected the correct input on your monitor.</li> <li>Test the recorder's display output with different monitor.</li> </ul>	Section 1.2
Cameras aren't displaying live video.	<ul style="list-style-type: none"> <li>Ensure that you are not in playback mode, right mouse click to exit.</li> <li>Ensure power is connected to cameras and that the BNC connectors are firmly connected to the DVR via the camera cable.</li> <li>Swap with known working cables and cameras to test.</li> </ul>	Section 1.2
The DVR is displaying No HDD.	<ul style="list-style-type: none"> <li>Check if the HDD is properly connected.</li> </ul>	-
The DVR is not recording video.	<ul style="list-style-type: none"> <li>Check if the HDD is installed and properly connected.</li> <li>Check that the recording method you have chosen to implement is in use.</li> </ul>	-
Motion is not being detected or recorded by the DVR or unable to Smart Search.	<ul style="list-style-type: none"> <li>By default motion detection is enabled, however, check by navigating to Main Menu -&gt; Setting   Event -&gt; Video Detect. The Enable check box should be checked for all relevant channels.</li> <li>Ensure that a period has been selected in the Recording Schedule for motion detection recording and that the period is filled in yellow.</li> <li>Check motion sensitivity and adjust motion detection area, see: Main Menu -&gt; Setting   Event -&gt; Video Detect: Region   Set.</li> </ul>	Section 6.3
Cannot connect to DVR on smartphone or tablet.	<ul style="list-style-type: none"> <li>Ensure that the DVR &amp; device are connected to the Internet and that the connection is strong enough to receive video (min. 3G speeds).</li> <li>Ensure that the admin password is correct in the DMSS app.</li> <li>Ensure the extra stream settings are set to recommended settings.</li> </ul>	Section 3.1.6
The recorder will not detect a USB device for backup.	<ul style="list-style-type: none"> <li>Ensure that the USB drive is formatted to FAT32 or NTFS.</li> <li>Try using another USB flash drive to test compatibility.</li> </ul>	Section 5.1
Face Detection / IVS features are not working correctly.	<ul style="list-style-type: none"> <li>Ensure that Intelligent (blue) recording schedules have been set up in Schedule.</li> <li>Ensure that Enable has been checked for each rule on the IVS screen.</li> </ul>	Section 3.1.10 Section 6.4







For detailed technical support and software downloads,  
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