DEFENDER 4K

DVR MANUAL

4K1T4B4 – 4K2T8B8 – 4K4T16B16

CONTENTS

1 THANK YOU 4

1.1 SUPPORT 4

1.2 FEEDBACK 4

2 WARRANTY INFORMATION 5

3 DISCLAIMERS 6

4 SAFETY WARNINGS 7

5 COMPLIANCE STATEMENTS 8

5.1 FCC STATEMENT 8

5.2 IC STATEMENT 8

6 WHATS INCLUDED 9

7 GETTING STARTED 10

7.1 FUNCTIONS 10

7.1.1 DVR 10

7.1.2 Camera 10

7.2 DVR SETUP 11

7.3 MOUSE CONTROLS 12

7.4 ON-SCREEN KEYBOARD 13

7.1 STANDARD COMMAND BUTTONS 13

7.2 ADDITIONAL INFORMATION 14

8 START UP 15

8.1 ACTIVATION (LOGIN SETUP) 15

8.2 SETUP WIZARD 17

9 USING YOUR SYSTEM 21

9.1 LIVE VIEW 21

9.2 RIGHT CLICK MENU 23

9.3 LOGIN & PASSWORD RESET 26

9.3.1 Login 26

9.3.2 Password Reset 26

9.4 SHUT DOWN 27

9.5 RESTORING SYSTEM DEFAULTS 28
10 PLAYBACK 29
11 EXPORT 31
11.1 NORMAL 31
11.2 EVENT 33
11.3 EXPORTING 34
11.4 PLAYING FOOTAGE 35
12 VIDEO RECORD SETTINGS 37
12.1 SCHEDULE 37
12.2 PARAMETERS 38
12.3 ADVANCED 40
12.4 HOLIDAY 40
13 CAMERA SETTINGS 41
13.1 CAMERA 41
13.2 OSD (ON-SCREEN DISPLAY) 41
13.3 IMAGE 42
13.3.1 Image Settings 42
13.3.2 Camera Parameter Settings 43
13.4 MOTION 44
13.5 PRIVACY MASK 45
13.6 VIDEO TAMPERING 46
13.7 VIDEO LOSS 47
13.8 VCA 48
13.9 VIDEO QUALITY DIAGNOSTICS 49
14 CONFIGURATION 49
14.1 GENERAL 50
14.1.1 General Settings 50
14.1.2 DST Settings 51
14.1.3 More Settings 52
14.2 NETWORK 52
14.2.1 Email 53
14.3 LIVE VIEW 54
14.3.1 General 54

14.3.2 View 55
14.3.3 Channel-Zero Encoding 55
14.4 EXCEPTIONS 56
14.5 USER SETUP 57
15 MANUAL CAMERA SETTINGS 58
15.1 RECORD 58
15.2 MANUAL VIDEO QUALITY DIAGNOSTICS 59
16 HDD SETTINGS 60
16.1 HDD INFORMATION 60
16.2 ADVANCED 61
17 SYSTEM MAINTENANCE 62
17.1 SYSTEM INFO 62
17.2 LOG INFORMATION 62
17.3 IMPORT/EXPORT 63
17.4 UPGRADE 63
17.5 NET DETECT 64
17.6 HDD DETECT 64
18 ANALYTICS (IP CAMERA REQUIRED) 65
18.1 BEHAVIOR SEARCH 65
18.2 FACE SEARCH 66
18.3 PLATE SEARCH 67
18.4 PEOPLE COUNTING 68
18.5 HEAT MAP 69
19 CAMERA INSTALLATION 70
20 HARD DRIVE INSTALLATION 71

1 THANK YOU

Congratulations on your Defender 4K purchase! You've made the best choice to protect what you value most.

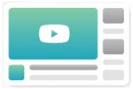
We take our product performance and quality very seriously and we want you to be completely satisfied with your purchase.

If you have any questions, or to get the most out of your product, visit us at **www.defender-usa.com** first for additional product information, specifications or assistance with setup.

1.1 SUPPORT

www.defender-usa.com/contact/

www.defender-usa.com/support/



www.defender-usa.com/videos/

1.2 FEEDBACK

At DEFENDER® we're always looking to improve our customer's experience! Please share any suggestions for this product manual to help us continue on this journey.

FEEDBACK SURVEY LINK

2 WARRANTY INFORMATION

All of our products come with a one-year warranty from the original date of purchase against defects in workmanship and materials. If you have warranty or support issues, please contact us at:

www.defender-usa.com

https://www.defender-usa.com/contact/

DEFENDER® Canada: 4080 Montrose Road Niagara Falls, Ontario, Canada L2H 1J9
DEFENDER® USA: 840 Aero Drive Cheektowaga, New York, USA 14225

WARRANTY TERMS

1. DEFENDER® products are guaranteed for a period of one year from the date of purchase against defects in workmanship and materials. This warranty is limited to the repair, replacement or refund of the purchase price at DEFENDER®'s option.
2. This warranty becomes void if the product shows evidence of having been misused, mishandled or tampered with contrary to the applicable instruction manual.
3. Routine cleaning, normal cosmetic, and mechanical wear and tear are not covered under the terms of this warranty.
4. The warranty expressly provided for herein is the sole warranty provided in connection with the product itself and no other warranty, expressed or implied is provided. DEFENDER® assumes no responsibilities for any other claims not specifically mentioned in this warranty.
5. The warranty does not cover shipping costs, insurance or any other incidental charges.
6. You MUST contact DEFENDER® before sending any product back for repair. You will be sent a Return Authorization Number with return instructions. When returning the product for warranty service, please pack it carefully in the original box with all supplied accessories, and enclose your original receipt or copy, and a brief explanation of the problem (include the RA#).
7. This warranty is valid in Canada and the contiguous US.
8. This warranty cannot be re-issued.
9. Tearing the tamper-proof sticker on the DVR cases will void the product warranty.

3 DISCLAIMERS

1. When viewing remotely: Video quality and connectivity is dependent on network performance.
2. DEFENDER® highly recommends the use of an Uninterruptible Power Supply (UPS) with surge protection for all products.
3. The product requires a broadband router and broadband internet connection – not included.
4. A user profile must be set up on the DVR before using the system and the mobile app.
5. DEFENDER® does not endorse any DEFENDER® products for illegal activities.
6. DEFENDER® is not responsible or liable in any way for any damage, vandalism, theft or any other action that may occur while a DEFENDER® product is in use by the purchaser.
7. We reserve the right to change models, configuration or specifications without notice or liability. Product may not be exactly as shown.
8. ©2019 DEFENDER®. All rights reserved. DEFENDER®, the DEFENDER® logo, and other DEFENDER® marks may be registered. All other Trademarks are the property of their respective owners.
9. Night vision range is up to 40M (130ft) under ideal conditions in ambient lighting. Objects at or beyond this range may be partially or completely obscured, depending on the camera application.
10. This product contains small parts. Exercise care when unpacking and assembling the product around children.
11. Firmware updates made on the DVR may affect the accuracy of this manual. Updated manuals are available at **www.defender-usa.com** > Product Page > Resources.

4 SAFETY WARNINGS

- **We recommend using an uninterruptable power supply (UPS):** Connecting your DVR and cameras to a UPS allow continuous use during a power outage. The remaining power duration will depend on the UPS used.
- **Use the Power Supply/Adapter provided:** Do not use these products with a power supply that exceed the specified voltage.
- **Do not install the DVR in a wet or dusty area:** Avoid placing the DVR in areas like a damp basement or dusty attic.
- **Do not expose the DVR to rain or use near water:** If the DVR is exposed to water, unplug the device and contact Customer Support.
- **Do not install the DVR near heat sources:** Avoid placing the DVR near any heat sources like stoves, heat registers, radiators, or electronic (including amplifiers) that produce heat.
- **Install the DVR in an area with good air circulation:** The internal hard drive generates heat during operation for video storage. Do not block the vents on the device. Vents are used to reduce heat while the device is running. Place the DVR in a well-ventilated area.
- **Handle with care:** The device may not work properly if dropped or damaged. If the device is not working correctly, unplug the device and contact Customer Support. Unplug the device when moving.
- **Cleaning:** Unplug the device before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth only, for cleaning.
- **Do not insert metal into the DVR case or its openings:** Inserting metal into the DVR may cause electrical shock.
- **Do not remove the DVR cover:** Do not attempt to open the DVR, if the device is not working properly, contact Customer Support. Opening the DVR may cause electrical shock.

5 COMPLIANCE STATEMENTS

5.1 FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. 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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

FCC Caution: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Non-modification Statement: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator.

5.2 IC STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

RF exposure statement: IC Radiation Exposure Statement. This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

ICES-003: CAN ICES (B)/ NMB-3 (B)

6 WHATS INCLUDED

COMPONENTS	4K1T4B4	4K2T8B8	4K4T16B16
DVR	1	1	1
HDD (Installed)	1 x 1TB	1 x 2TB	1 x 4TB
4K Analog Cameras	4	8	16
Camera Mounting Hardware	4	8	16
Power/Data Cable (Camera)	4	8	16
Power/Data Extension Cable (18.2m / 60ft)	4	8	16
Camera Power Supply	1	2	4
HDMI Cable (1m / 3.2ft)	1	1	1
Ethernet Cable (1.5m / 5ft)	1	1	1
DVR Power Supply	1	1	1
USB Mouse	1	1	1
SATA Cable (for HDD Installation)	N/A	N/A	1
HDD Screws	N/A	N/A	4

INCLUDED FOR ALL MODELS:

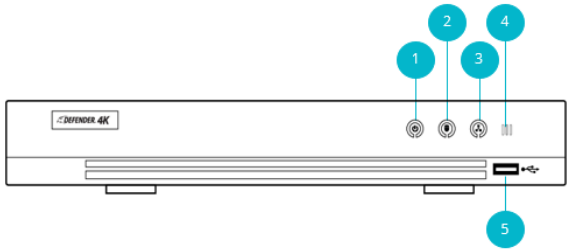
- Quick Start Guide
- 1 x Window Decal / Warning Sticker
- Free Lifetime Mobile App Access
- Free Lifetime Technical Support

7 GETTING STARTED

7.1 FUNCTIONS

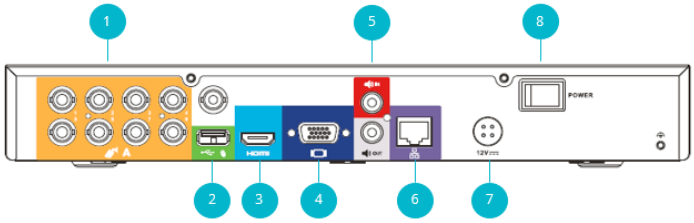
7.1.1 DVR

FRONT



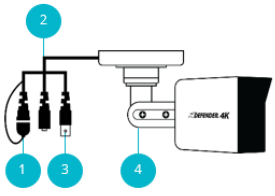
1	**Power LED** (white the DVR is on)	4	**IR Remote Receiver** (remote control not included)
2	**Hard Drive LED** (red data is being imported/exported)	5	**USB Port**
3	**Network LED** (white DVR is connected to a network)		

BACK



1	**Video Output (Camera Connections)**	5	**Audio IN/OUT**
2	**USB Port**	6	**Network Port**
3	**HDMI Port**	7	**Power Adapter**
4	**VGA (Monitor) Port**	8	**Power Switch**

7.1.2 Camera



1	**Video Output**	3	**BNC Connector**
2	**Power Input**	4	**Locking Screw**

The Video Output button is an optional feature used to change the video output of the camera. You can see the results on the Live View screen.

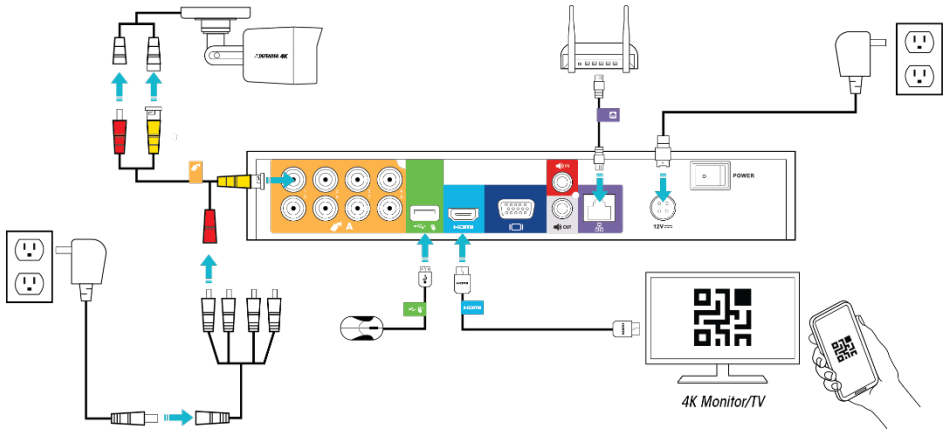
7.2 DVR SETUP

We recommend testing all components and accessories before installing. See section **19 CAMERA INSTALLATION** for details after testing. You will need a monitor/TV with an HDMI or VGA connection (not included). ***4K resolution will show only on a 4K monitor/TV. All other monitor/TV types will display the image in the available resolution.***

Before you start:

- **You will need a USB flash drive (not included) to save your login & password details during Activation.**
- Ensure all components are included in your kit.
- Ensure you have enough power outlets for the monitor/TV, cameras (while testing), and the DVR unit.
- Setup the DVR near your modem/router – you will need to connect your DVR unit to your modem/router using the Ethernet cable provided.

Connections may vary by model



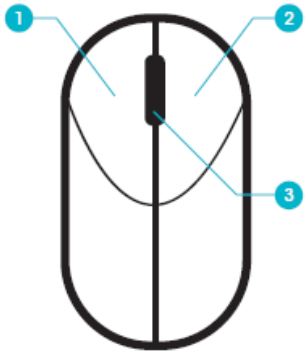
All cables and wires are labeled and color coded to the DVR unit to make connecting your system easier.

1. Connect the monitor/TV, USB mouse, cameras, modem/router, and power to the DVR.

A	Connect the BMC (YELLOW) connector to the camera and the DVR. Connect the power (RED) connector to the camera and power source.
B	Connect the HDMI (AQUA) cable to the DVR and monitor/TV (not included).
C	Connect the USB mouse (GREEN) to the DVR.
D	Connect the Ethernet cable (PURPLE) to the RJ45 port on the DVR and your modem/router. ***Wired Ethernet connection required – DVR cannot connect to the modem/router via Wi-Fi.***
E	Connect the DVR power adapter to the DVR and a power source.
F	Turn the DVR power switch ON. Turn on the monitor/TV (not included).

2. Follow the Activation and Setup Wizard to setup the DVR. See section **8 START UP** for details.

7.3 MOUSE CONTROLS



1 LEFT BUTTON

SINGLE CLICK	In **Live View** to select a camera (channel)
DOUBLE CLICK	In **Live View** to switch between single and multi view screens
CLICK & DRAG	To set Video Tampering, Privacy Mask, and Motion Detect target areas Moves Zoom area/view In **Live View** to move the Channel and Time Bar labels

2 RIGHT BUTTON

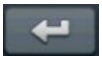
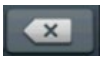
SINGLE CLICK	In **Live View** to open the Quick Menu In a Menu to exit to the current screen and return to the previous screen

3 SCROLL WHEEL

UP	In **Live View** to view the Previous screen In **Live View** when you select Zoom move the scroll wheel to zoom in.
DOWN	In **Live View** to view the Next screen In **Live View** when you select Zoom move the scroll wheel to zoom out.

7.4 ON-SCREEN KEYBOARD

To enter information, click (left button) on an input field to open the on-screen keyboard. This will allow you to select the characters/numbers using the mouse (left button).

	Moves to the next line
	Delete/Backspace
	Switches the letters between upper/lower case
	Switches the keyboard between letters/number/characters
	Inserts a space between letters/words

7.1 STANDARD COMMAND BUTTONS

APPLY	Click to apply the changes you have entered. In some case the next screen will appear and in others the screen will not change but the changes will be applied.
EXIT	Click to close the current screen.
NEXT	Click to move to the next screen.
PREVIOUS	Click to return to the previous screen.
OK	Click to accept the changes or option on the current screen.
CANCEL	Click to exit the current screen without saving any changes.
LIVE VIEW	Click to exit the current screen and return to the Live View screen.
SEARCH	Click to start a Search on a screen.
BACK	Click to return to the previous screen.
COPY	Click to open the Copy option when available. Select the Cameras (Channels) to copy the current setting to.
ADD	Click to open a new screen to add settings.

7.2 ADDITIONAL INFORMATION

- PTZ Cameras are mentioned in the DVR menu – **PTZ cameras are not available from Defender for the 4K system**. For PTZ camera instructions refer to the manual provided with your camera.
- IP Cameras are mentioned in the DVR menu – **IP cameras are not available from Defender for the 4K system**. For IP camera instructions refer to the manual provided with your camera.
- The cameras included in your system do not support sound capture.

Within this manual the following icons are used to callout information:

MENU LOCATION – Because it can be hard to remember where all the Defender 4K Menu options are located, it is listed at the beginning of each option section.

NOTES – Indicates that an exception or note about the topic.

IMPORTANT – Indicates a callout or important detail about the topic.

- Press CTRL + Click in the Table of Contents to move to the section selected.
- Press CTRL + Click on the Content links on each page to return to the content page.
- Press CTRL + Click on any **LINK** to go to that section (TIP: Press ALT + Left arrow to return).

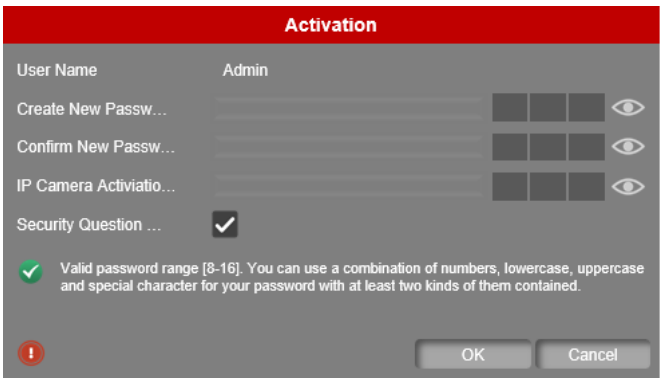
8 START UP

8.1 ACTIVATION (LOGIN SETUP)

When the system starts for the first time or when it has been reset to Inactive status, a series of Activation screens will appear allowing you to setup your Admin Password, Security Questions, and Lock Screen Pattern. **Before you start!** **YOU WILL NEED A USB FLASH DRIVE TO SAVE YOUR SECURITY SETTINGS**.

PASSWORD CREATION

The system does not have a default password, the first time the system starts you will need to create a password. This password is required to access the system and for adding the Device (DVR) in the mobile app.
The password must be 8-16 characters and must include at least 2 of the following: numbers, lowercase / uppercase letters, and special characters.



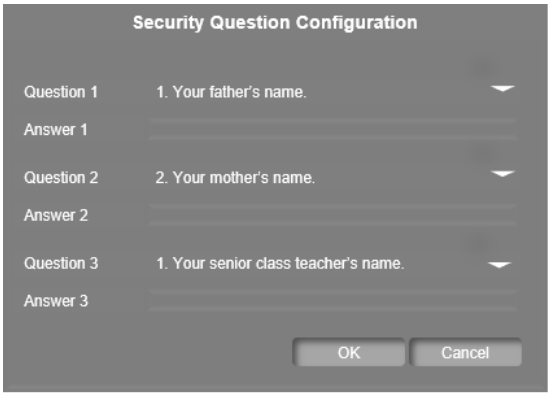
We recommend creating a password that is easy to remember but difficult for others to guess and resetting your password regularly for added protection. **REMEMBER YOUR PASSWORD!**

STEPS:

- **Admin:** Create and enter your password. ☐ ***This is the same password you will use when adding the device (DVR) in the mobile app.***
- **Confirm:** Re-enter your password.
- **IP Camera Activation:** Create and enter a password. ☐ ***This field is only required for IP Cameras which are not available from Defender for the 4K system however this field is mandatory to complete this screen.***
- Click the **Security Question** checkbox to set up the questions. ☐ ***If you forget your password there are only 2 ways to access your system: Security Questions and GUID Import so we highly recommend setting up these questions.***
- Click **OK** to set the password and to move to the next screen.

SECURITY QUESTIONS

If you forget your password Security Questions can be used to verify you are authorized to access the system. **WARNING: DO NOT RIGHT CLICK DURING ACTIVATION BECAUSE YOU WILL BE UNABLE TO COMPLETE THE SECURITY QUESTION SECTION. YOU WILL ONLY BE ABLE TO ACCESS THE SYSTEM USING GUID IF YOU FORGET YOUR PASSWORD**



STEPS:

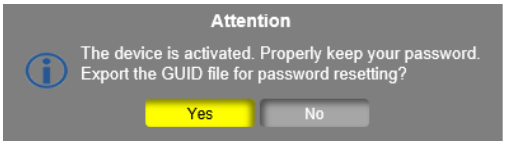
- Use the drop-down to select from the list of possible **Questions**.
- Enter a response in the **Answer** field.

- **Repeat** for the remaining 2 questions. All 3 questions are required for this section.
- Click **OK** to save the questions/answers and to move to the next screen.

Once you have completed the Security Questions the configuration is complete. Click **OK** to continue.

EXPORT GUID (GLOBAL UNIQUE IDENTIFIER)

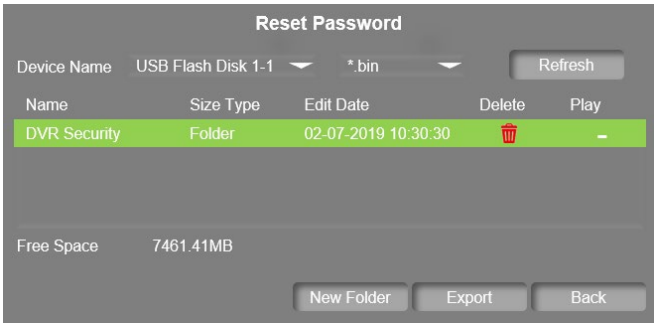
ⓘ We Strongly recommend exporting your security settings to a USB flash drive – if you forget your password and security questions/answers this is the only way to restore access to your system.



This option allows you to export your security settings to a USB flash drive. If you forget your password the USB can be inserted into the DVR to confirm your settings. See section **9.3 LOGIN & PASSWORD RESET** for details.

STEPS:

- Click **YES** to open the Export screen.



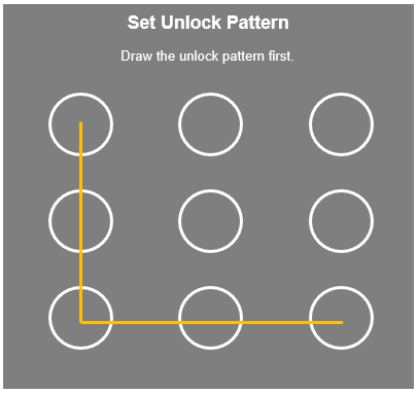
- INSERT THE USB INTO THE DVR (ADDITIONAL USB PORT)
- The Device Name will show as the USB
- Select the USB device and click **Export**. See section **11 EXPORT** for details.
- If you do not want to export your login details to a USB, click **No**.

UNLOCK PATTERN

You can setup an Unlock Pattern to access your system. This can provide a quicker way to access the DVR when it locks during periods of inactivity.

STEPS:

- Draw a **Pattern** using the mouse (click & drag). You must connect at least 4 dots to draw the pattern.
- **Re-draw** the pattern to confirm.



8.2 SETUP WIZARD

The Setup Wizard will take you through a series of basic setup screens to get you started. Once the system is setup, you can access the Defender 4K Menu from the Live View screen to customize your system and recording settings.

SIGNAL INPUT STATUS

Select the input type for each channel on the DVR. This is the type of camera that can be connected to each channel port. ***IP cameras are not available from Defender for the 4K system.***

STEPS:

- Make sure that **HD/CVBS** is select for each channel.
- Click **Apply** to save your selections and to move to the next screen.

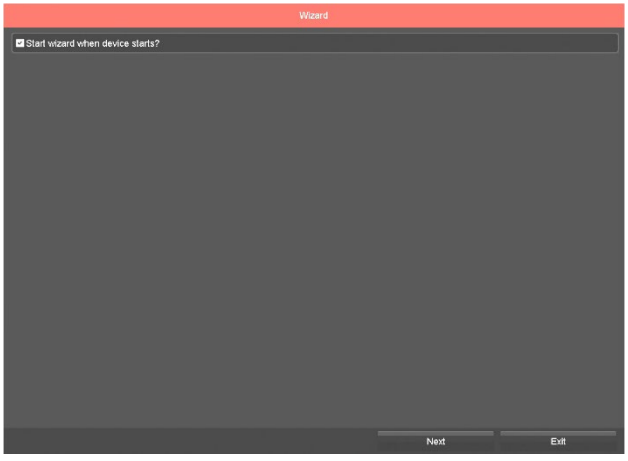
LANGUAGE

Your system supports multiple languages.

STEPS:

- Click the **System Language** drop-down and select your desired language.
- Click **Apply** to save your selection and to move to the next screen.

WIZARD ACCESS



You can choose to have the Setup Wizard appear each time the DVR is powered on. This will enable you to review and/or change these settings on start up.

STEPS:

- Click to select the **Start wizard when device start?** checkbox to have the Setup Wizard show each time the system is turned on. Uncheck the box to disable this.
- Click **Next** to save your selection and to move to the next screen.

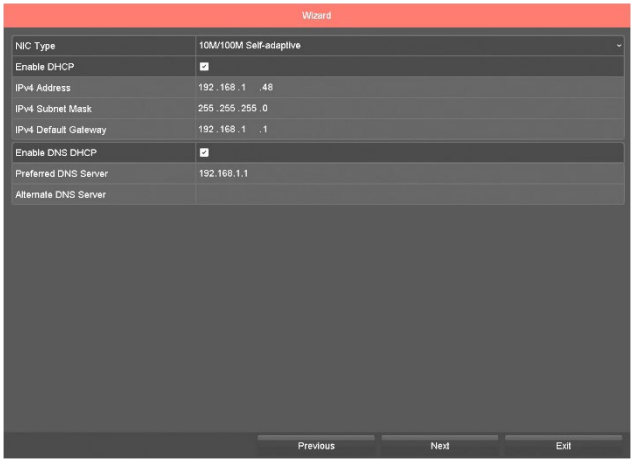
TIME & DATE FORMAT

Select your time zone and date/time format. This is used on the system and to date/time stamp recorded footage.

STEPS:

- Click the **Time Zone** drop-down and select your zone.
- Click the **Date Format** drop-down and select 12 or 24 hour.
- Click the **System Date** calendar icon to select the current date.
- Click the **System Time** clock icon to select the current **Hour : Minute : Seconds** using the up/down arrows to change the numbers.
- Click **Next** to save your selections and to move to the next screen.

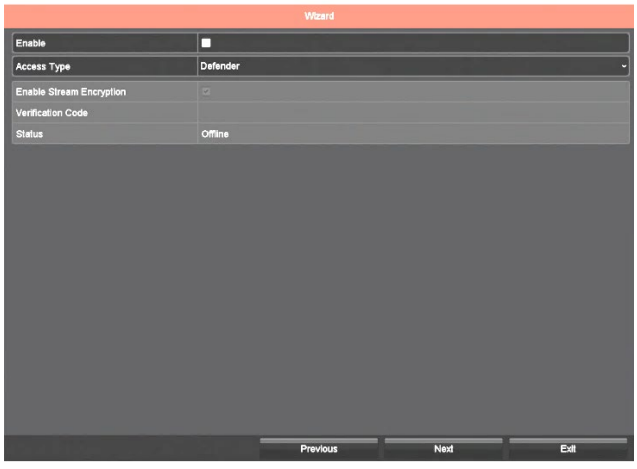
NETWORK CONNECTIONS



This screen shows the network connections for your system when the DVR is connected to your modem/router.

Changes are not required on the screen. Click **Next** to move to the next screen.

MOBILE APP ACCESS

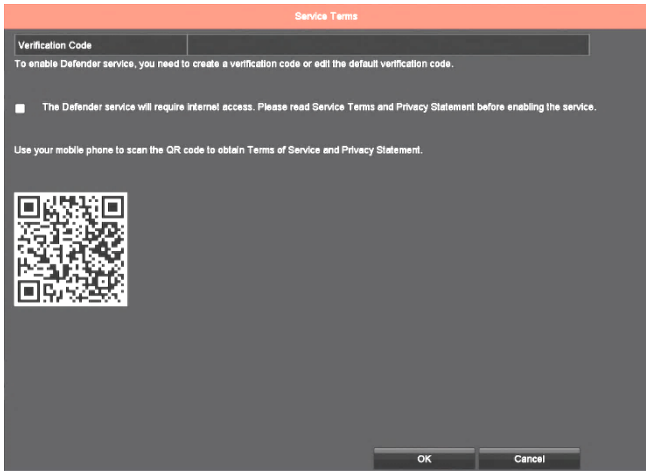


This screen controls the access for the Mobile App to connect to the DVR.

STEPS:

- Click the **Enable** checkbox to allow the app to connect to the DVR.
- Create a **Verification Code**. ***This code is required when adding the DVR in the Mobile App.***
- Click **Next** to save your entries and to move to the next screen.

- Enter the **Verification Code**
- You can use the **QR Code** on this screen to view the Defender Privacy Policy or you can view them from www.defender-usa.com
- Click the **Service Terms and Privacy Statement** confirmation checkbox to acknowledge that you have read them.
- Click **OK** to save your selections and to move to the next screen.



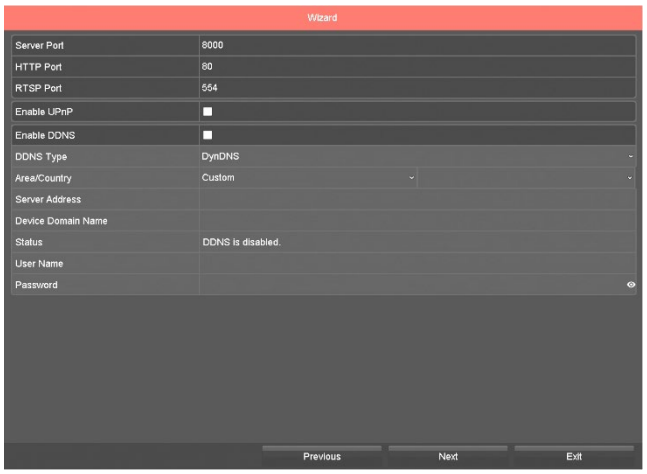
- Verify the **Enable** checkbox is selected.
- You can use the **QR Code** on this screen to add the DVR on the mobile. We recommend completing the Setup Wizard before installing the mobile app. This screen can be accessed through the Defender 4K Menu and the QR Code is also attached to the bottom of the DVR.
- Click **Next** to move to the next screen.
- ***The Status will remain Offline until the next screen is accessed.***

NETWORK PORTS

This screen shows the details and status of the Network ports.

Changes are only required for advanced users.

Click **Next** to move to the next screen.



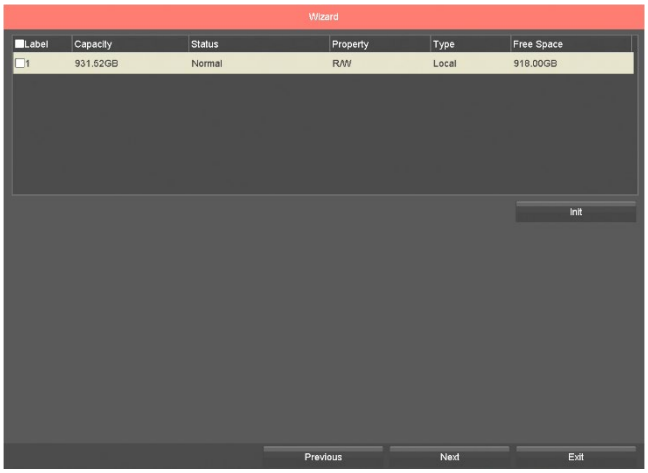
DVR HDD

This screen shows the details and status of the hard drive installed in your DVR.

You can select Init to format the hard drive. This will remove all exiting files from the hard drive.

Once the formatting process has started it cannot be stopped and all files will be lost. The DVR hard drive is pre-formatted and does not require formatting during setup.

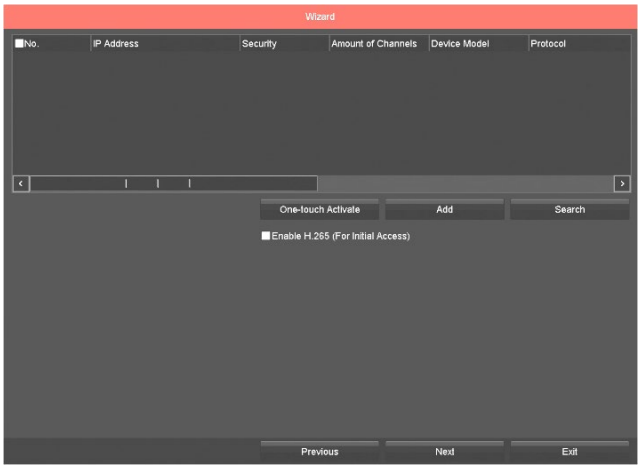
Changes are not required on this screen. Click **Next** to move to the next screen.



NETWORK STATUS

This screen shows the details and status of the modem/router connected to the DVR.

Changes are not required on this screen. Click **Next** to move to the next screen.



RECORDING OPTIONS

Select how the DVR will record footage (Continuous or Motion Detection). The system will record all day based on the option selected on all cameras (channels). You can change the recording schedule at any time from the Defender 4K Menu.

STEPS:

- Click the **Continuous** field and **YES** to record all day on all cameras.
- Click the **Motion Detection** field and **YES** to record only when motion is detected all day on all cameras.
- Click **OK** to save your selection.

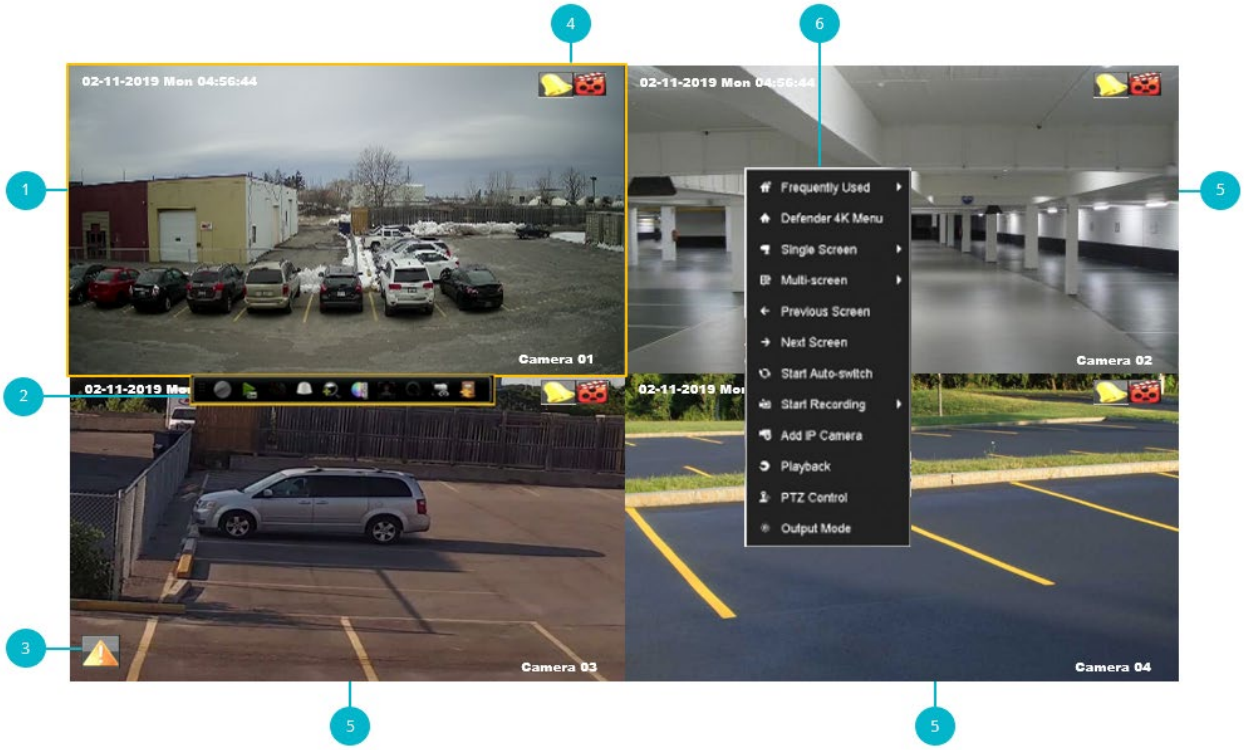
The Setup Wizard is complete, the **Live View** screen will open showing the feed from all connected cameras.

9 USING YOUR SYSTEM

9.1 LIVE VIEW

The Live View screen is the main screen on your DVR, from here you can:

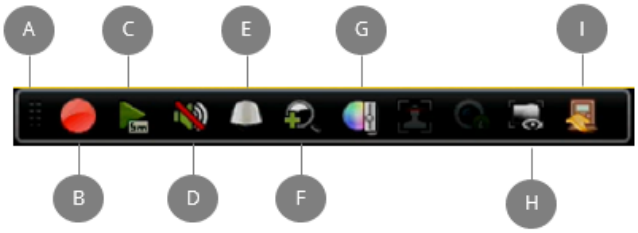
- ❑ Change the camera view options
- ❑ Use the Toolbar to play recorded footage, zoom in/out on the image, change the image settings, and more
- ❑ Access the Quick Access and Defender 4K menus



1 **Active View Window:** Move the mouse to ta camera view and click (left button) to select the camera and to access the Toolbar.

Active View Window Toolbar:

2



A Move the Toolbar to a different location on the Live View screen (click and drag).

B Click to Stop/Start Recording.

C — Playback the last 5 minutes of recorded footage. The progress bar will appear allowing you to move through the footage, pause/re-start playback.

D — Volume Controls 🗒 ***Defender systems do not support audio recording.***

E — PTZ 🗒 ***PTZ Cameras are not available from Defender for the 4K system.***

F — Zoom IN/OUT.

G — Open the Image Setting Window (click and drag the slide bars to change the settings).

H — VCA Info (click to Show/Hide the VCA settings applied to the selected camera).

I — Close the Toolbar.

- The other 2 icons on the Toolbar are not available on the Defender 4K system
- Double click the mouse (left button) to switch between single (camera in full screen) and multiple camera views.
- Use the scroll wheel on the mouse to view previous (up) cameras or next (down) cameras. 🗒 ***This will move through all cameras connected to the DVR when not viewing all.***
- Click and Drag a camera view to move it to a different location on the screen.

3 **Exceptions:** Shows when an Exception is reported. Exceptions are setup in **DEFENDER 4K MENU > CONFIGURATION > EXCEPTIONS**. When enabled and an event occurs the icon will appear on the screen. Click the icon to view the details.

Alarm: Shows when there is an Alarm setup on the camera.

4 **Recording:** Shows when footage is being recorded on the camera. (*example: you have set the camera to Motion Detection recording and motion is detected by the camera*).

5 **View Window:** Depending on the number of cameras connected and the Multi-screen option selected the live view image of the camera will appear on the screen.

6 **Right Click Menu:** Click the mouse (right button) to open the menu.

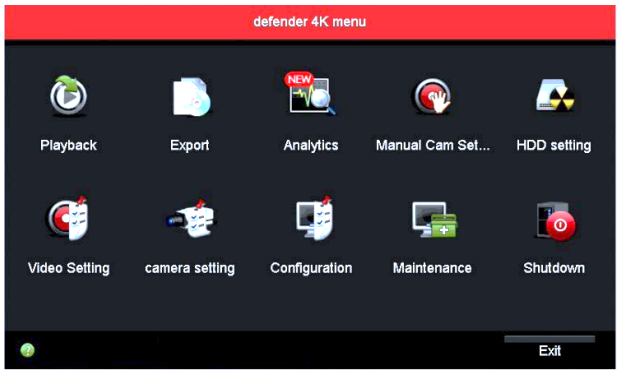
9.2 RIGHT CLICK MENU

FREQUENTLY USED

Select to view a list of screens you frequently visit. Click an option listed to open the screen instead of opening it through the Defender 4K Menu. This option will not appear until you have opened screens in the Defender 4K Menu. Once you have opened some of the screens this option will be visible.

DEFENDER 4K MENU

The main menu (Defender 4K Menu) allows you to access the DVR/Camera settings, schedules, features, functions, and status.

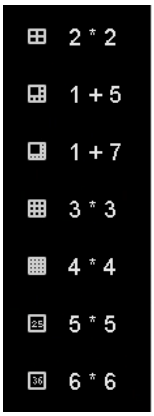


Playback	Search through recorded footage by type, create video clips, tag footage, and export files.
Export	Export recorded footage from the DVR hard drive to an external storage device (USB flash drive).
Analytics	**This feature only works with IP Cameras** (not available from Defender for the 4K system). Search footage based on analytics.
Manual Camera Setting	Manually change recording setting and run a video diagnostic.
HDD Setting	View the hard drive status and adjust settings.
Video Setting	Set up recording schedules, parameters, and holiday recording schedules.
Camera Setting	Create camera settings for OSD, image, motion, privacy masks, video tampering/loss, VCA, and scheduled video diagnostics.
Configuration	Create general system settings including DST, network, live view, exceptions, and users.
Maintenance	View and adjust system information, logs, import/export, upgrades, HDD, and defaults.
Shutdown	Shut your system off, reboot or log out.

SINGLE SCREEN

Select to change the Live View screen from multiple camera to view only one camera in full screen. Click the camera from the list of cameras. ***You can change the name of each camera to make selecting easier (example: Driveway, Main Entrance, etc.).***

MULTI-SCREEN



Select to change how multiple cameras are displayed on the Live View screen. ***The options will vary depending on the number of channels you have on the DVR (4, 8 or 16).*** Click an option and the Live View screen will change.

PREVIOUS/NEXT SCREEN

- **Previous Screen:** Click to move to the previous view/screen.
- **Next Screen:** Click to move to the next view/screen.

START AUTO-SWITCH

When set the view will switch between cameras (channels). This option will only work when the Dwell Time is setup in the Defender 4K Menu. See section **14.3.1 General** for setting Dwell Times.

This will show the camera view for the selected amount of time before switching to the next camera, like a slide-show.

START RECORDING

Select between Continuous and Motion Detection recording. This is the same feature that was set during the Setup Wizard. When selected the system will record all day on all cameras based on your selection.

ADD IP CAMERA

IP Cameras are not available from Defender for the 4K system. To add an IP camera, follow the direction provided with your camera.

PTZ CONTROL

PTZ Cameras are not available from Defender for the 4K system. Use the PTZ controls on-screen to set up your camera.

OUTPUT MODE

Output Mode changes the appearance of the image on the screen. Click to select between the options listed. ***This changes the view for all cameras when selected.***

9.3 LOGIN & PASSWORD RESET

9.3.1 Login

When the system times out (no activity is detected for a period of time) you will need to either enter your password or draw the unlock pattern to access the system functions. The Live View will remain on the screen. You can select to have the system open using the unlock pattern or password. See section General Settings **14.1.1 General Settings** for details.

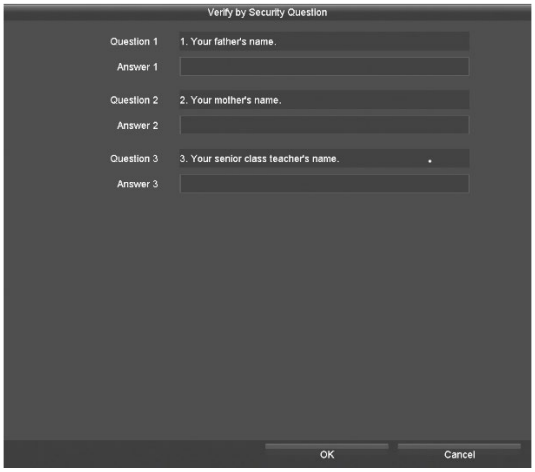
9.3.2 Password Reset

If you have forgotten your password, click **Forgot My Password** on either the password or unlock pattern screens.

Select the **Verification Method** to open the system by choosing either **Verify by GUID** or **Verify by Security Question**.

SECURITY QUESTION

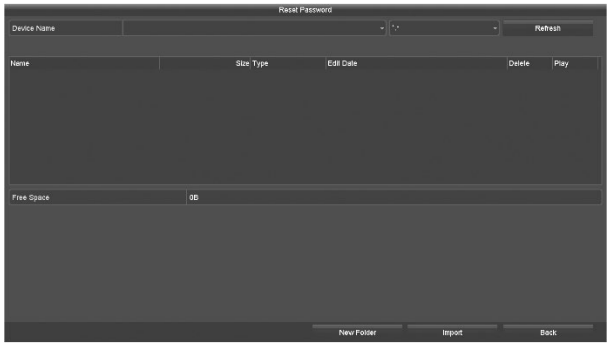
These are the questions you set up in the Activation section. You will need to remember the answers to all 3 questions.



Enter the **Answers** and click **OK** to unlock the system.

GUID IMPORT

If you selected to save your settings to a USB flash drive in the Activation section, you can use the USB to unlock the system.



Insert the **USB** into the DVR, select the **Device**, **File**, and click **Import**. The **Password Reset** screen will open allowing you to **create and enter another password**, **confirm** the password and click **OK**. In the Attention pop-up window select **OK** to export the new password file. The Duplicate password to the IP Camera password pop-up will appear. Click **Yes** to update the GUID file.

9.4 SHUT DOWN

RIGHT CLICK MENU > DEFENDER 4K MENU > SHUTDOWN

To shut down the system you have 3 options:

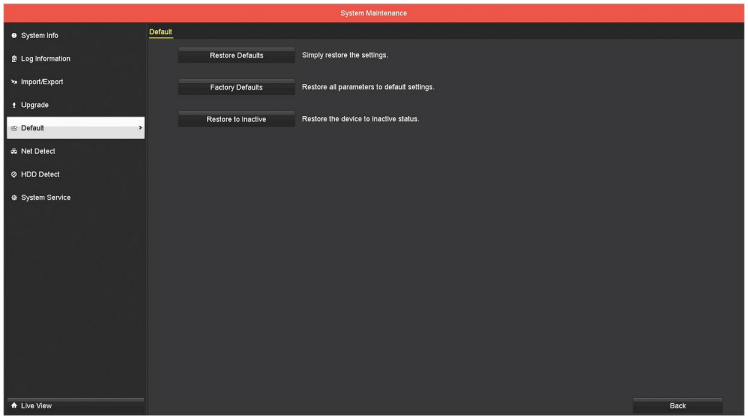
Logout: Closes the current user account and allows for another user to login.

Shutdown: Turns off the DVR.

Reboot: Restarts the DVR.

9.5 RESTORING SYSTEM DEFAULTS

RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE > DEFAULT

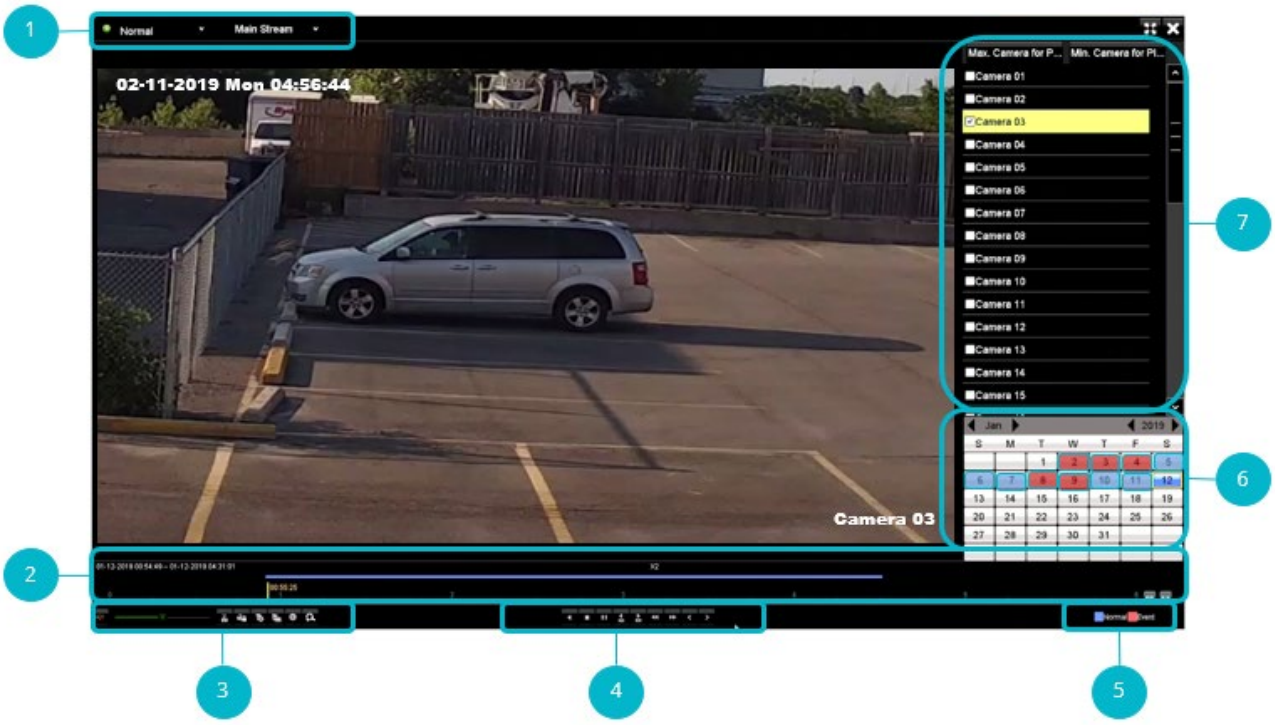


Select to restore defaults (settings), set factory defaults or restore to inactive. There is no confirmation screen for these options. Once our click the action will occur. ***If you have missed setting up your Security Questions during Activation, you can click Factory Default to start the Activation setting again.***

10 PLAYBACK

RIGHT CLICK MENU > DEFENDER 4K MENU > PLAYBACK

From this screen you can view all recorded footage. Features include viewing, creating clips, assigning tags, and exporting footage to an external storage device.



Type: Use the drop down to select the type of playback. Choose between:

- **Normal** – all normal footage will appear in the list
- **Event** – all event footage will appear in the list
- **Tag** – only tagged footage will appear in the list
- **Smart** – shows footage in fast forward (skips to action)

1 - **Sub-periods** – shows a grid of footage for cameras with different time stamps

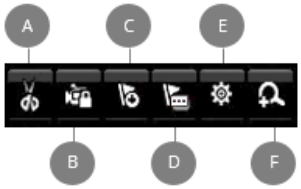
- **External Files** – shows all files located on a USB flash drive

Use the other drop-down to select between Main Stream and Sub Stream footage.

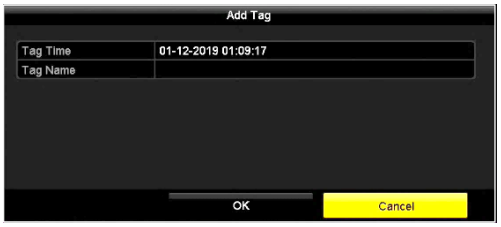
- **Main Stream** – higher steam resolution and frame rate.
- **Sub Stream** – low/standard stream resolution for lower bandwidth situations (*example: high internet traffic can cause lower bandwidth*)

2 **Playback Timeline:** The date and time stamp of the footage appears in this area. Use the progress bar (click and drag) to move through the recorded footage. Use the Arrow buttons to the right to Zoom IN/OUT on the timeline.

3 **Video File Management:**



A. **Clip (Start/Stop):** Create a Clip of part of the recorded footage. While playing the footage click the button to start creating a clip and again to stop.
B. **Lock File:** Click to Lock the file so that it cannot be overwritten or recorded over.
C. **Add Default Tag:** Click to assign a default tag to the footage. Tags make searching for footage easier. When selected the footage will be named **TAG**.
D. **Add Customized Tag:** Click to enter a custom tag to give the footage a name of your choice.



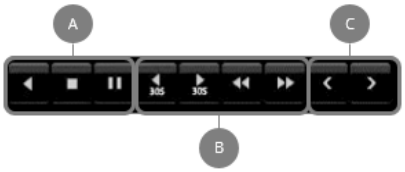
- Click the Tag Name field to enter the tag and click **OK** to save. You can add multiple tags to a video file

E. **File Management:** Click to Export files to an external storage device. ***To Export files, you will need to insert a USB flash drive into the USB port on the DVR. The files will export to this device.***

- Use the **Tabs** on the top of the screen to select the type of files to export (Videos, Locked files or Tagged files)
- Select the **Footage** listed on the screen by clicking the checkbox
- Select **Export All** to export all files listed
- Select **Export** to export only the selected files
- Select **Cancel** to exit the File Management screen without exporting files

F. **Zoom IN:** Click to zoom in on the footage. Click and drag to select an area of the screen to zoom in on.

Video Playback Controls:



A. **Reverse Playback / Play / Stop / Pause**
B. **Rewind / 30s Rewind / Fast Forward / 30s Fast Forward**
C. **View Previous / Next**
   - Normal mode will change by day
   - Event mode will change by event
   - Tag mode will change by tag

5 **Event Type:** This shows the type of recorded footage on the Timeline.
- **Normal** – footage will appear in blue as a line on the Timeline
- **Event** – footage will appear in red as a line of the Timeline

6 **Calendar:** When a date is highlighted on the calendar it indicates that recorded footage is available. Double click a date to select.

7 **Camera List:** Click the checkbox beside the camera names to select and search footage from one or more camera.

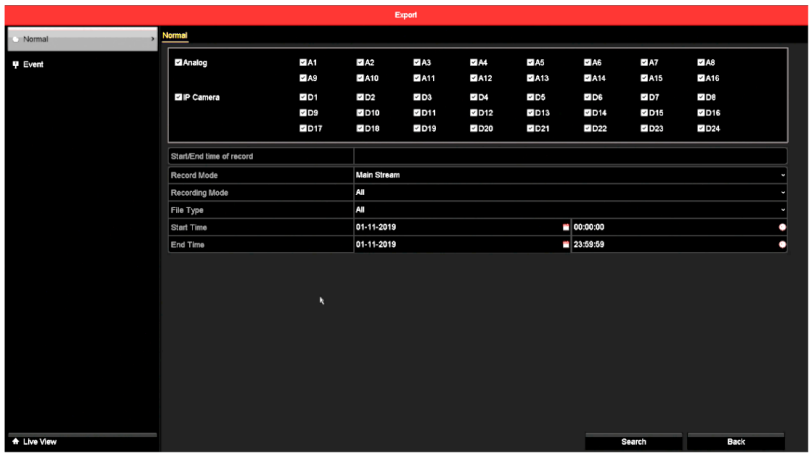
11 EXPORT

RIGHT CLICK MENU > DEFENDER 4K MENU > EXPORT

Use this section to export recorded footage from the DVR HDD to an external storage (USB flash drive). You MUST connect a USB flash drive to the DVR using the additional USB port before you can export files.

11.1 NORMAL

Allows you to search all regular type footage to select for export.



1. Click the checkbox to select the **Cameras** in the Analog section. These cameras will be included when searching for footage.
2. Click the **Record Mode** drop-down to choose between Main Stream and Sub Stream recorded footage.
3. Click the **Recording Mode** drop-down to narrow the amount of footage to a specific type (*example: select motion if you only want to export footage recorded when motion was detected*) or select **All** to include all types of recorded footage.

4. Click the **File Type** drop-down to narrow the amount of footage to a specific type (***example:*** *select locked if you only want to export footage you have locked on the Playback screen*) or select **All** to include all file types.
5. Click the calendar icons to select a date range in the **Start Time/End Time** fields. This allows you to export only the footage recorded between the dates selected.
6. Click the time icons to select a time frame for the dates selected in the **Start Time/End Time** fields. Enter the **Hour : Minutes : Seconds** using the up/down arrows. This allows you to export only the footage recorded during the time frame selected (***example:*** *you may only want to export footage recorded after 5 PM and before 7 AM*).
7. Click **Search** to view the list of available footage to export.

1. **File List:** Click the checkbox beside each recorded file to select it for export.
2. **Preview Section:** Click on a file to view it in the preview window. Use the Preview Controls to view the footage to Stop/Play/Show Previous/Show Next.

Select the List tab at the top of the screen to show a list of the recorded footage. This view also shows the file details.

8. Select **Export All** to export all files listed.
9. Select **Export** to export the selected files only.
10. Select **Cancel** to exit the screen without exporting files.

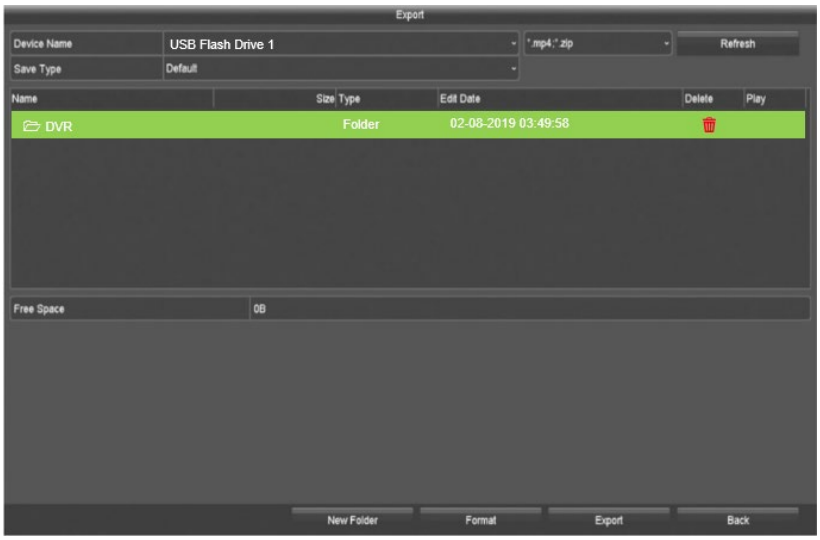
11.2 EVENT

Use this section to search all Event type footage to select for export.

1. Click the drop-down to select the **Major Type**. Choose from the options (Motion, Alarm Input or VGA) for the type of file to export.
2. Click the drop-down to select the **Record Mode**. Choose between Main Stream and Sub Stream recorded footage.
3. Click the calendar icons to select a date range in the **Start Time/End Time** fields. This allows you to export only the footage recorded between the dates selected.
4. Click the time icons to select a time frame for the dates selected in the **Start Time/End Time** fields. Enter the **Hour : Minutes : Seconds** using the up/down arrows. This allows you to export only the footage recorded during the time frame selected (*example: you may only want to export footage recorded after 5 PM and before 7 AM*).
5. Use the checkbox to select the **Cameras** in the Analog section. These cameras will be included when searching for footage.
6. Click **Search** to view the list of available footage to export. Select the footage to be exported from the options listed on the search results screen.

11.3 EXPORTING

Once you have selected footage to export you can select to either export the selected footage or all footage.

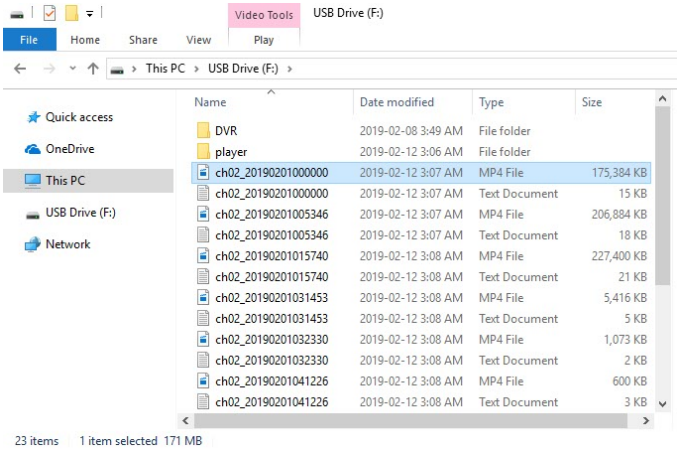


1. Insert a USB flash drive into the DVR (additional USB port). Ensure there is enough space on the USB to hold the video/image files. The USB size is dependent on the number of files you plan to export.
2. Use the drop-down to select the **Device Name**. ***The USB name should appear automatically, you will only need to do this if you have multiple devices (example USB flash drive or HDD).***
3. The list of folders and file on the USB will appear in the list widow. Double click on a folder to have the files save to it or click the Delete icon to remove a folder from the USB.
4. The File Type is automatically populated (*.mp4;*.zip) and includes a Player for the files when viewing on a PC.
5. You can select **New Folder** to change the export location on the external storage device. Click the **Name** field to enter a name for the folder. Click **OK** to add.
6. You can also **Format** the external storage device by clicking Format. ***Once select format all data will be lost and cannot be recovered.***
7. Click **Export** and choose **Video & Files** to copy the files from the DVR to the storage device. Once the files have been exported a confirmation pop-up window will appear. Click **OK**.

11.4 PLAYING FOOTAGE

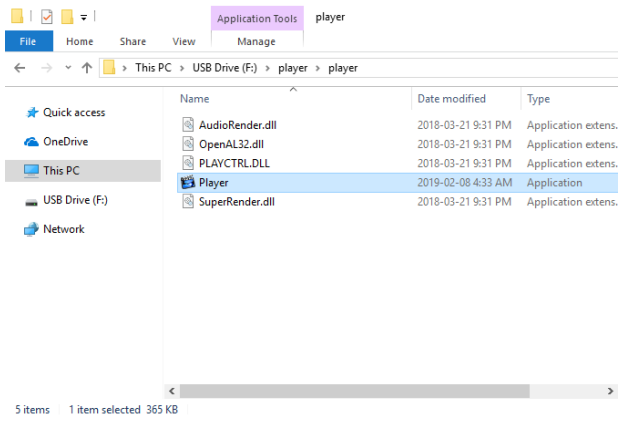
This section covers how to play footage on a PC. The Player exported with the files is not supported for Mac users. To download a Player, visit our website at **www.defender-usa/support**. The process for both PC and Mac users is similar once you have the Player.

Once the files have been exported to the USB, remove it from the DVR and insert it into your computer and open the folder.



When you open the folder, the files were exported to you will see the Player folder, a file for each footage you selected, and a text file with the details for each file.

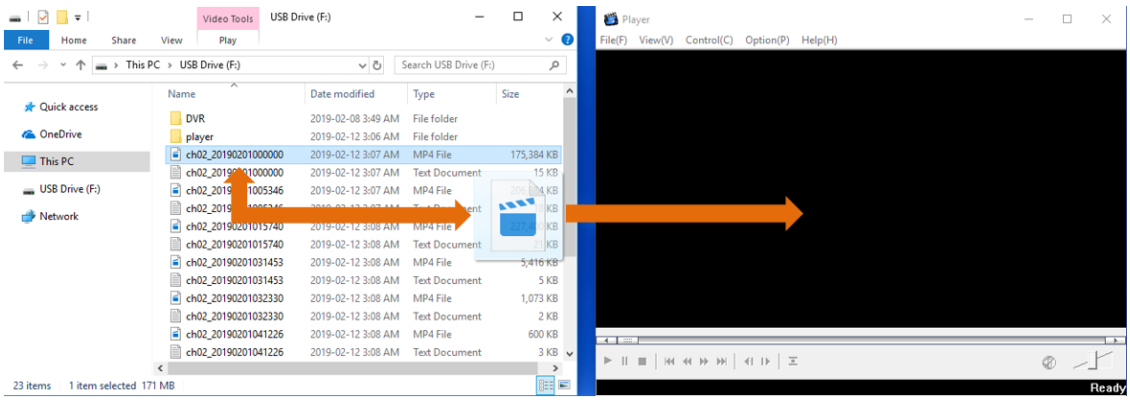
1. Double click on the player folder to open.
2. Click Player to open the media player app.



3. Select the File to play:

Drag & Drop

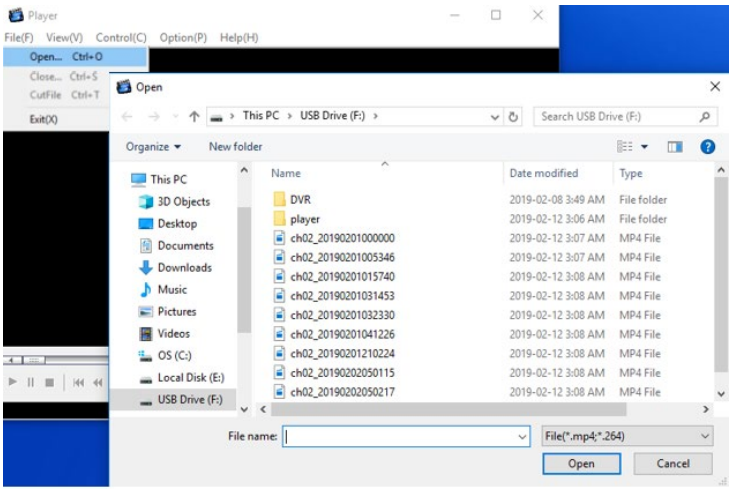
- With both the Player and Folder windows open



- **Click and drag** the file name to the Player window – the file will open in the Player.

Open File

- For the Player window click **File > Open.**



- Click to select the file name and click Open.

12 VIDEO RECORD SETTINGS

Video settings allow you to setup recording schedules, parameters, and holiday recording schedules.

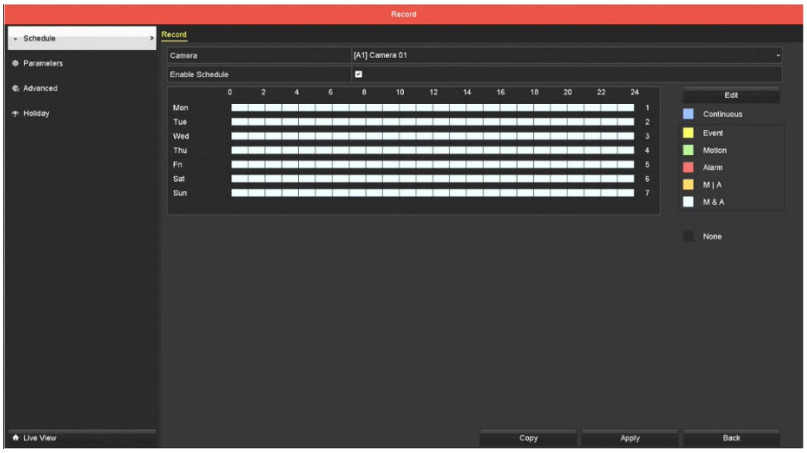
12.1 SCHEDULE

RIGHT CLICK MENU > DEFENDER 4K MENU > VIDEO SETTINGS

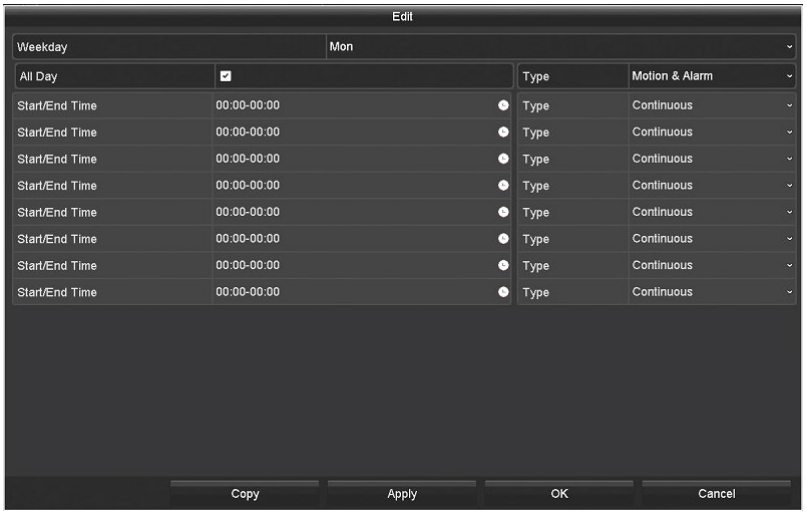
View the current recording schedule by camera. You can see when (day/time) all types of recordings are scheduled for the selected camera.

Schedule Types

CONTINUOUS	Set to record footage always on the selected camera. When set this overrides Motion and Alarm settings.
EVENT	Set to record footage only when an event occurs.
MOTION	Set to record footage only when motion is detected.
ALARM	Set to record footage only when an alarm is activated.
M | A	Set to record footage only when motion OR alarms are detected.
M & A	Set to record footage only when motion AND alarms are detected.



1. Use the **Camera** drop-down to select a camera from the list. ***This will show the current schedule for the selected camera.*** Changes made to the schedule will apply to the camera selected only.
2. Click the Recording Type and click a time block (or click and drag to select multiple time blocks) or Click the **Enable Schedule** checkbox to apply the schedule.
3. Click **Edit** to change the current schedule.



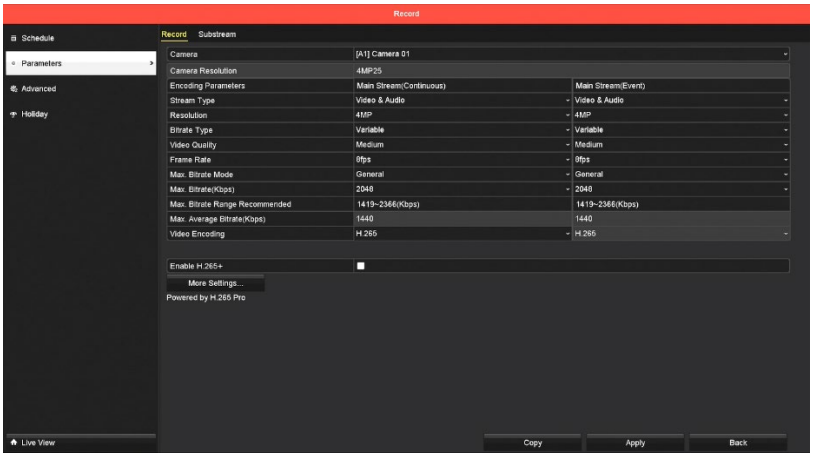
A. Use the **Weekday** drop-down to select a day of the week. *You can use the Copy function to select the same schedule for multiple or all days of the week.*
B. Click the **All Day** checkbox to apply the schedule to all times of the day or click the **Time** icon and enter the **Hour : Minutes : Seconds** using the up/down arrows.
C. Use the **Type** drop-down to select the type of recording. *You can select different recording types for different times of the day.*
D. Click **Apply** to save your settings.
E. Click **OK** to save all changes and exit the Edit screen.

4. You can select **Copy** (on the Schedule screen) to apply this schedule to other cameras.
5. Click **Apply** to save the new schedule settings.

12.2 PARAMETERS

RIGHT CLICK MENU > DEFENDER 4K MENU > VIDEO SETTINGS

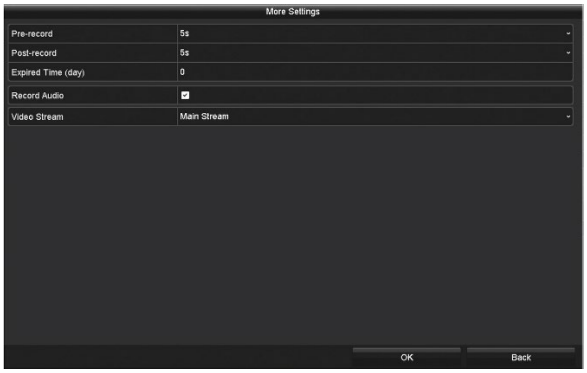
The settings on the Record and Sub stream tabs are set to default values and do not need to be changed for regular option of your system.



Camera	These setting apply to the camera selected.
Camera Resolution	Adjusts the video resolution and frame rate on the camera.

Encoding Parameters	Main Stream settings for Continuous and Event recordings. Encoding is the process of preparing the video for output. Video is encoded to meet proper formats and specifications for recording and playback.
Stream Type	Audio recording is not available on Defender cameras. Video should be selected for this setting.
Resolution	Adjusts the video resolution setting recorded by the camera.
Bitrate Settings	Adjusts the bitrate settings on the camera.
Video Quality	This setting affects the amount of space recorded footage uses on the hard drive. If the setting is increased it will reduce recording time and footage will take up more space on the hard drive.
Frame Rate	Adjusts the number of frames per second the DVR will record.
Video Encoding	Adjusts the encoding method used for the selected camera.
Enable H265+	When enabled the DVR will compress the video to the maximum compression rate (H.265) and will ensure optimal video quality. This will increase the recording space available on the DVR.

MORE SETTINGS



1. Use the **Pre-record** drop-down to select the amount of time the DVR will record before a scheduled time or event occurs. (*example: if the schedule is set to start recording at 10:00 AM and you select 5 seconds – the DVR will start recording at 9:59:55*).
2. Use the **Post-record** drop-down to select the amount of time the DVR will record after a scheduled time or event occurs. (*example: if the schedule is set to stop recording at 10:00 AM and you select 5 seconds – the DVR will stop recording at 10:00:05*).
3. Click the **Expired Time (day)** field to enter the number of days a recording will be kept on the hard drive before the file will be deleted. The default is set to 0 which means the recording will not be deleted and the footage will be kept until it is manually deleted or the system overrides the footage based on your settings.
4. Use the **Video Stream** drop-down to select between Main and Sub Stream for this setting.
5. Click **OK** to save your settings.

12.3 ADVANCED

RIGHT CLICK MENU > DEFENDER 4K MENU > VIDEO SETTINGS

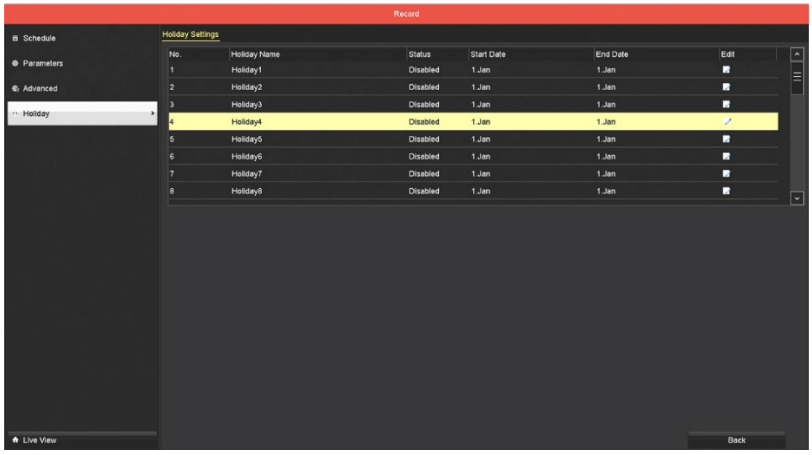
The advanced setting allows you to select the correct action when the hard drive is full.
Click the **Overwrite** checkbox to enable the DVR to record over the oldest footage when the disk is full. If not selected the DVR will stop recording when the hard drive is full and will report HDD Full as an event based on your exception settings. See section **14.4 EXCEPTIONS** for details.

12.4 HOLIDAY

RIGHT CLICK MENU > DEFENDER 4K MENU > VIDEO SETTINGS

You can setup breaks in the recording schedule using the Holiday function. When a holiday is setup the system will stop recording during the dates/times entered and will resume when the holiday is over.

Holidays will override the regular Schedule setup.



1. Select a **Holiday** from the list and click the **Edit** checkbox.

2. Click the **Enable** checkbox to apply the holiday to the schedule.
3. Use the **Mode** drop-down to select how often the holiday will repeat.
4. Use the **Start/End Date** drop-downs to select the holiday date range.
5. Click **Apply** to save the new settings.
6. Click **OK** to exit the Edit screen.

13 CAMERA SETTINGS

13.1 CAMERA

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

Signal Input Status is used to choose the allowable input type for each channel on the DVR. This is the type of camera that can be added to each channel port. **This should only be HD/CVBS for all channels because IP cameras are not currently available from Defender for the 4K system**. This screen is part of the Setup Wizard.

13.2 OSD (ON-SCREEN DISPLAY)

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

These settings allow you to adjust the on-screen display for each camera including what will be displayed, camera names, and formats. Change made will appear in the preview window on this screen.

1. Use the **Camera** drop-down to select a camera to adjust.
2. Click the **Camera Name** field to enter a new name. ***Giving the camera a descriptive name will make it easier when selecting the camera (example: driveway, front entrance, etc).***
3. Click the **Display Name** checkbox to have the name appear.
4. Click the **Display Date** checkbox to have the date appear.
5. Click the **Week** checkbox to have the week appear.
6. Use the **Date Format** drop-down to select how the date will appear.
7. Use the **Time Format** drop-down to select the type of clock (12 or 24 hour).
8. Use the **Display Mode** drop-down to select the appearance type (how the on-screen display will show on the screen). Choose if the OSD should flash and/or be transparent on the screen.
9. Use the **OSD Font** drop-down to select the size of the font.
10. Click **Apply** to save these settings to the current camera.
11. Click **Copy** to apply these settings to other cameras. ***If you have entered a name for this camera it will also be copied to the other camera(s).***

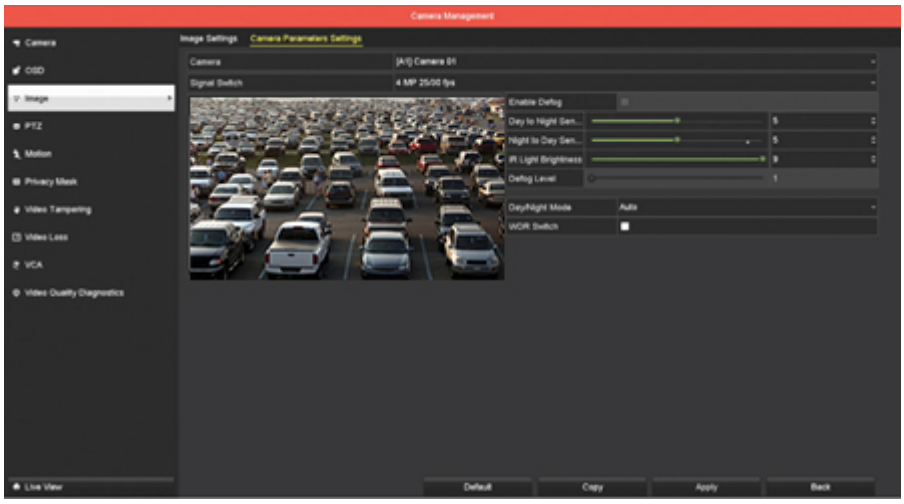
RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

Use this section to change the image settings for each camera.

13.3.1 Image Settings

1. Use the **Camera** drop-down to select a camera.
2. Use the **Time Segment** time icon to select a time frame the settings will be applied to. Select the Start/End **Hour : Minute** using the up/down arrows. ***The default is set to all day however depending on the location of the camera you may need to adjust the settings for a specific time of day to ensure a clear image.***
3. Use the **Mode** drop-down to select the mode that best fits the location of the camera (*example: if the camera is located under an overhang, you might want to select Dim Light*).
4. Use the slide bar or up/down arrows to adjust the **Image Settings**. ***You can see the results in the preview window.***
5. Click **Apply** to save these settings or **Default** to return to the original settings.
6. Use the **Copy** function to apply these settings to other cameras. ***The image settings requirements may not be the same for all camera locations.***

13.3.2 Camera Parameter Settings

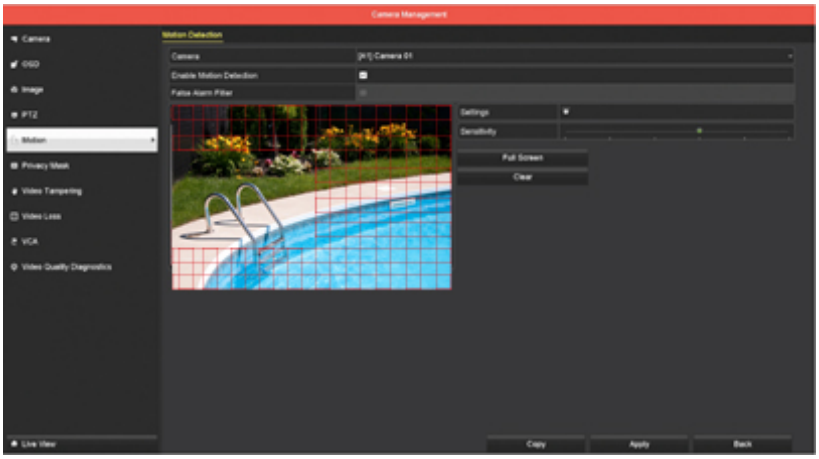


1. Use the **Camera** drop-down to select a camera.
2. Use the slide bar or up/down arrows to adjust the sensitivity level when switching between **Day to Night** and **Night to Day**.
3. Use the slide bar or up/down arrows to adjust the brightness of the **IR Lights** on the camera.
4. Use the **Day/Night Mode** drop-down to select how night vision will be enabled. You can select the camera to always use day or night mode or automatically adjust based on the illumination conditions of the camera location.
5. Click **Apply** to save these settings or **Default** to return to the original settings.
6. Use the **Copy** function to apply these settings to other cameras. ***The parameter requirements may not be the same for all camera locations.***

13.4 MOTION

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

This section allows you to set up area to exclude from motion detection. This can be helpful to block out areas that may trigger unnecessary recording (*example: background traffic areas*).

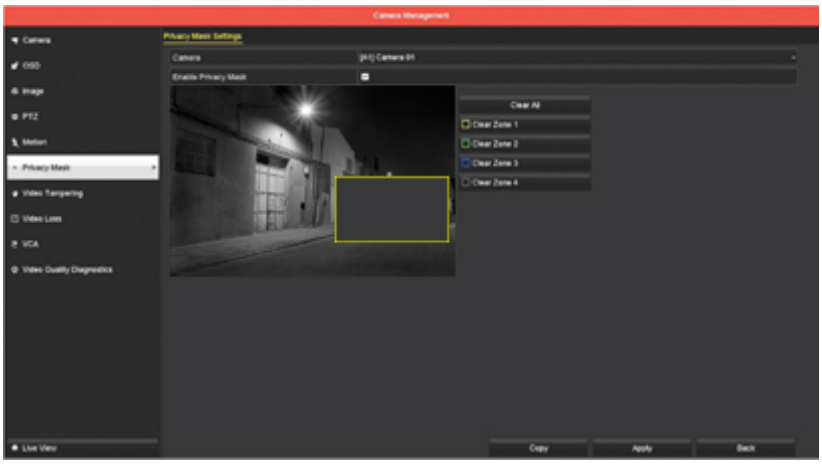


1. Use the **Camera** drop-down to select a camera.
2. Click the **Enable Motion Detection** checkbox to allow for motion only recording.
3. Click **Setting**:
   - **Pre-record:** The number of seconds the DVR will record before the motion event occurs
   - **Post-record:** The number of seconds the DVR will record after the motion event occurs
4. Use the slide bar to set the **Sensitivity** for how much motion needs to be detected to trigger recording. ***The greater the sensitivity (closer to the right side) the more sensitive to motion the system will be.***
5. **Click and drag** the mouse within the preview window to set the areas where motion will not be detected.
   - Red grid areas indicate motion will trigger recording
   - Clear areas indicate motion detected will not trigger recording
6. Click **Full-screen** to view the preview window in full screen to select motion areas.
7. Click **Clear** to remove all motion areas.
8. Click **Apply** to save these settings.
9. Use the **Copy** function to apply these settings to other cameras ***The motion detect areas may not be the same for all cameras.***

13.5 PRIVACY MASK

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

This section allows you to set areas that will not be recorded.

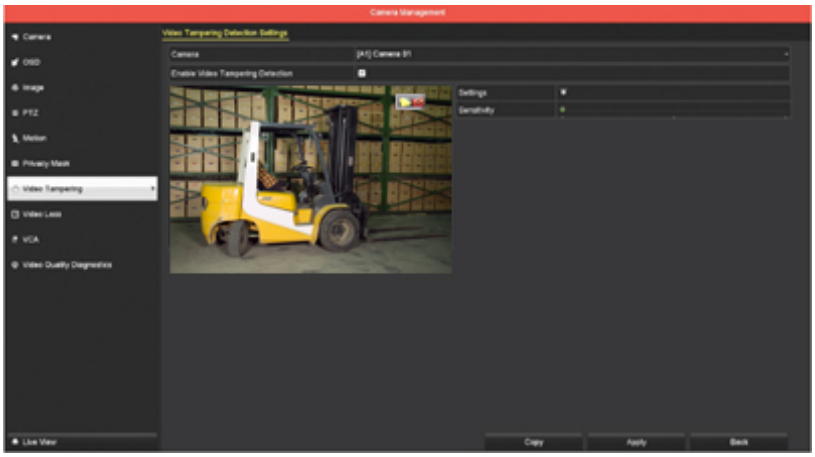


1. Use the **Camera** drop-down to select a camera.
2. Click the **Enable Privacy Mask** checkbox to allow for privacy areas to be applied.
3. **Click and drag** the mouse within the preview window to set the areas that will not be recorded. You can set up to 4 areas for each camera. Areas that are blocked out will not be recorded.
4. Click the **Clear All** or **Clear Zone 1-4** buttons to remove areas that have been set.
5. Click **Apply** to save these settings.
6. Use the **Copy** function to apply these settings to other cameras. ***The privacy areas may not be the same on all cameras.***

13.6 VIDEO TAMPERING

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

This section allows you to set parameters for system alerts when a camera has been tampered with.

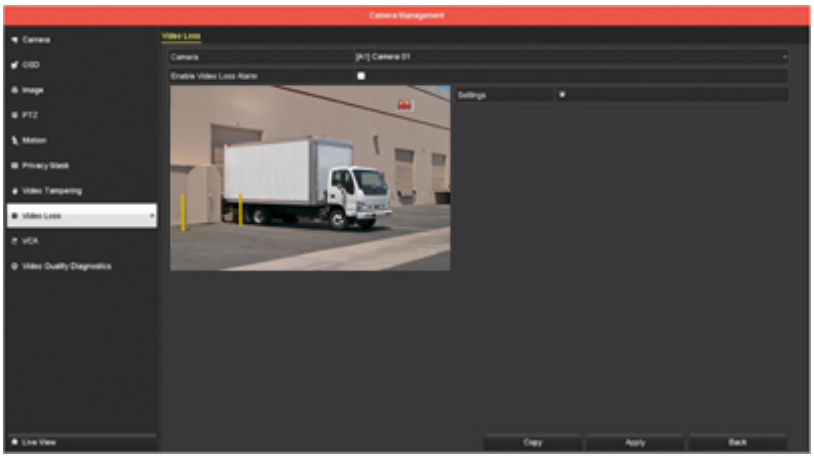


1. Use the **Camera** drop-down to select a camera.
2. Click the **Enable Video Tampering Detection** checkbox to allow for detection.
3. Click the **Settings** to apply an action when the DVR detects tampering on the camera.
4. Use the slide bar to set the **Sensitivity** level for tampering detection. ***The greater the sensitivity (closer to the right side) the more sensitive to motion the system will be.***
5. Click **Apply** to save these settings.
6. Use the **Copy** function to apply these setting to other cameras.

13.7 VIDEO LOSS

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

This section allows you to set parameters for the system to alert when a camera has lost connection with the DVR.



1. Use the **Camera** drop-down to select a camera.
2. Click the **Enable Video Loss Alarm** checkbox to all for loss detection.
3. Click **Settings** to apply an action when the DVR detects video loss on the camera.
4. Click **Apply** to save these settings.
5. Use the **Copy** function to apply these settings to other cameras.

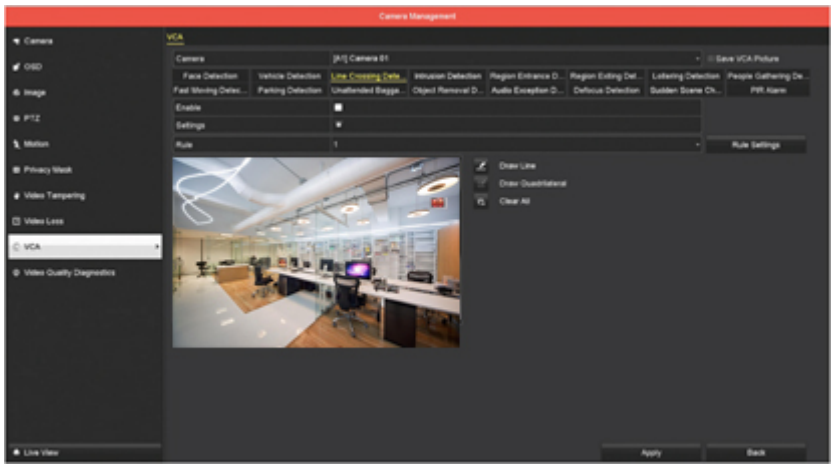
13.8 VCA

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

VCA allows you to setup rules for areas that will detect when an action has occurred (*example: setup an area on the camera to detect when motion crosses into the area*). The following settings will work with your wired cameras:

Line Crossing Detection	Set a line on the camera image with a rule that if something crosses the area an event will occur.
Intrusion Detection	Set an area on the camera image with a rule that if something enters the area an event will occur.
Sudden Scene Change Detection	Set a rule that if there is a sudden change on the camera image an event will occur.

The remaining setting will only work on an IP Camera (not available from Defender for the 4K system).

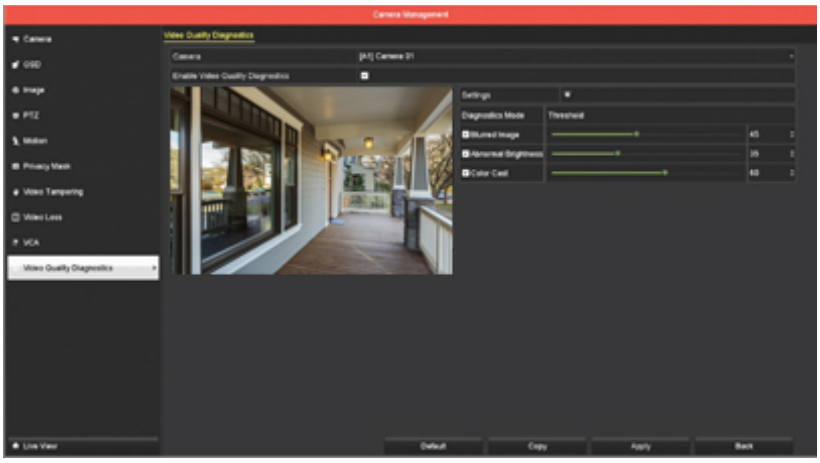


1. Use the **Camera** drop-down to select a camera.
2. Click the **Save VCA Picture** to enable the system to take a snap shot of the event. ***This will occur when an event is detected (example: something enters an area that is setup as a rule).***
3. Click the **Enable** checkbox to turn VCA detection on.
4. Click **Settings**:
   - **Trigger Channel:** Select the cameras to include in the settings
   - **Arming Schedule:** Select the days/time for monitoring
   - **Linkage Action:** Select the action the system should perform when an event occurs
5. Use the **Rule** drop-down to select the rule number.
6. Click the **Rule Setting** button to enter details. Set the Direction (action that happens to create the event – crossing from area A to B) and Sensitivity (how much motion needs to occur) for motion within the set area.
7. Use the **Draw Line** or **Draw Quadrilateral** functions to create an area for detection. When something enters the area, an event will occur.
8. Use **Clear All** to remove areas.
9. Click **Apply** to save these settings to the camera selected.

13.9 VIDEO QUALITY DIAGNOSTICS

RIGHT CLICK MENU > DEFENDER 4K MENU > CAMERA SETTINGS

This section allows you to set parameters for the quality of the video from each camera. When a diagnostic is run on the camera these parameters will be used to determine quality issues.



1. Use the **Camera** drop-down to select a camera.
2. Click the **Enable Video Quality Diagnostics** checkbox to all for diagnostics on the camera.
3. Click **Settings** to set the date/time and action for the diagnostics to run and action for the results:

Arming Schedule

A. Use the **Week** drop-down to select when the diagnostics will run.
B. Use the **Time** icon to set a time for running the diagnostics. ***It is recommended to run this during the day.***
C. Use the **Copy** function to apply these settings to other days of the week or everyday.
D. Click **Apply** to save these settings.

Linkage Action

A. Click the checkboxes to assign an **Action** for the results.
B. Click **Apply** to save these settings.

4. Use the slide bar or up/down arrows to assign a **Threshold** for acceptable quality on the camera view.
5. Click **Apply** to save these settings.
6. Use the **Copy** function to apply these setting to other cameras. ***The video quality may be different for each camera depending on the location.***

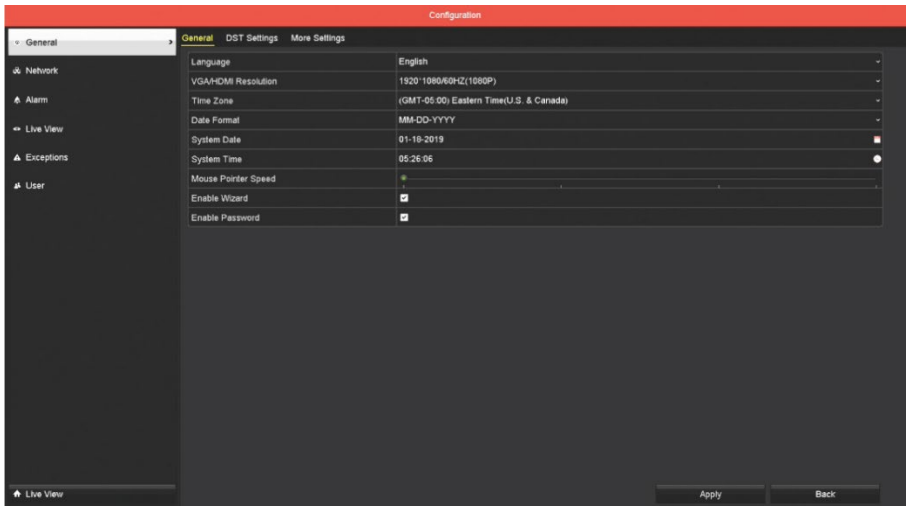
14 CONFIGURATION

14.1 GENERAL

RIGHT CLICK MENU > DEFENDER 4K MENU > CONFIGURATION

14.1.1 General Settings

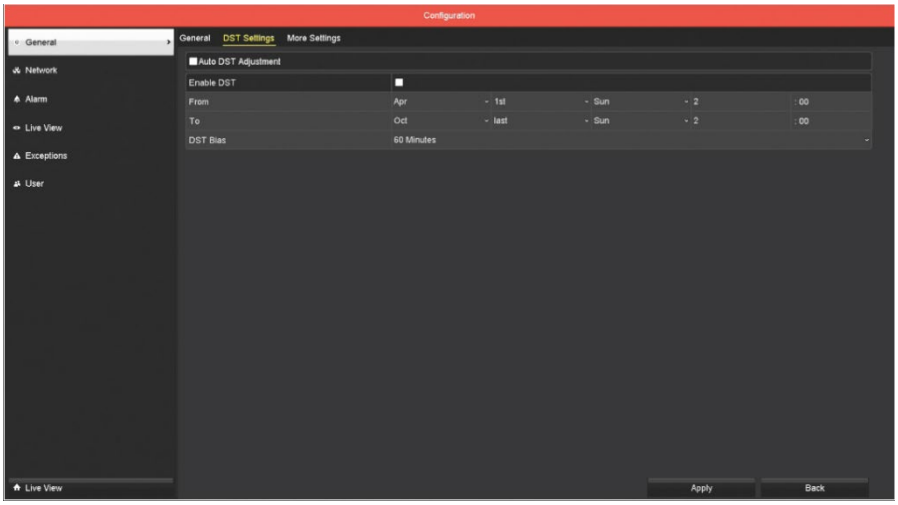
Some of the settings on this screen where set in the Setup Wizard. You can change these settings from this screen.



1. Use the **Language** drop-down to change the language of the menus and screens.
2. Use the **VGA/HDMI Resolution** drop-down to change the resolution of the monitor/TV being used. The DVR will automatically set the resolution. This setting does not need to be changed.
3. Use the **Time Zone** drop-down to change.
4. Use the **Date Format** drop-down to change the format for how the date is displayed on the screen and in recorded footage.
5. Use the calendar icon to change the **System Date**.
6. Use the time icon to change the **System Time**.
7. Use the slide bar to adjust the speed of the **Mouse Pointer**. ***As you move the slide bar the mouse response will change on the screen.***
8. Click the **Enable Wizard** checkbox to have the Setup Wizard launch each time the DVR is powered on.
9. Click the **Enable Password** checkbox to have the password required when the DVR screen locks after a period of inactivity.
10. Click to **Apply** to save these settings.

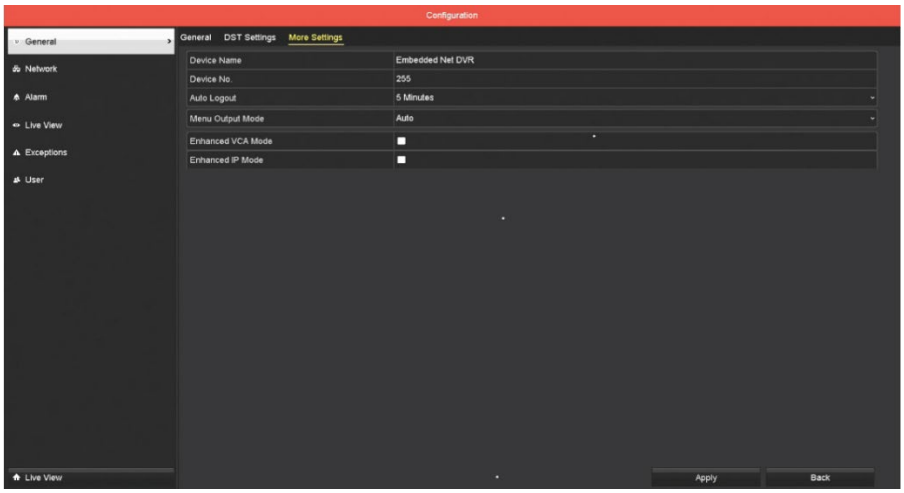
14.1.2 DST Settings

Use this section to set the DVR to automatically adjust for daylight saving time (DST). Based on these settings the system time will change at the start of DST and change back at the end.



1. Click the **Auto DST Adjustment** checkbox to have the DVR automatically adjust the system time for DST based on the local DST rules. ***This will only work if the DVR is connected to your modem/router.***
2. Click the **Enable DST** checkbox to have the DVR adjust the system time based on the day/times entered.
3. Use the **Month, Day #, Day** drop-downs to select the Start (From)/End (To) time frames for DST.
4. Click the **Time** fields to enter the start/end time for DST (time of day DST starts and ends).
5. Use the **DST Bias** drop-down to select the time difference or number of minutes/hours the time should adjust for the start/end of DST.
6. Click **Apply** to save these settings.

14.1.3 More Settings



1. Click the **Device Name** field to change the name of the DVR or leave it as the default. The **Device No.** is the internal device number of the DVR.
2. Use the **Auto Logout** drop-down to select the number of minutes before the DVR locks out the menu functions showing only the Live View screen. ***The DVR will require either the password or unlock pattern to re-open the menu once it has locked.***
3. Use the **Menu Output Mode** drop-down if you have more than one display connected to the DVR to select which display will show the Menu and Toolbar (VGA or HDMI).
4. Click **Apply** to save these settings.

14.2 NETWORK

RIGHT CLICK MENU > DEFENDER 4K MENU > CONFIGURATION

GENERAL

This section is covered in the Setup Wizard section. The settings on this screen do not need to be changed they are automatically assigned by your network when the Enable DHCP checkbox is selected and the NIC Type default should not be changed for regular use of the DVR.

APP ACCESS

This section is covered in the Setup Wizard section. The Enable checkbox must be selected for the Mobile App connection to work. You can change the Verification Code from this screen if needed. The Verification Code is required when setting up a Mobile App Account.

PPPOE

This is an advanced setting. Contact your Internet service provider for details about PPPOE services.

DDNS

Enable the DDNS service to view your DVR from a computer. Contact your Internet service provider to setup.

NTP

Allows you to setup your DVR to obtain the current date and time from our network. The Enable NTP checkbox needs to be selected to allow the DVR to be updated. Interval (min) is the number of minutes that will elapse for the internal clock on the DVR to update to match the NTP server – 60 minutes is recommended.

NAT

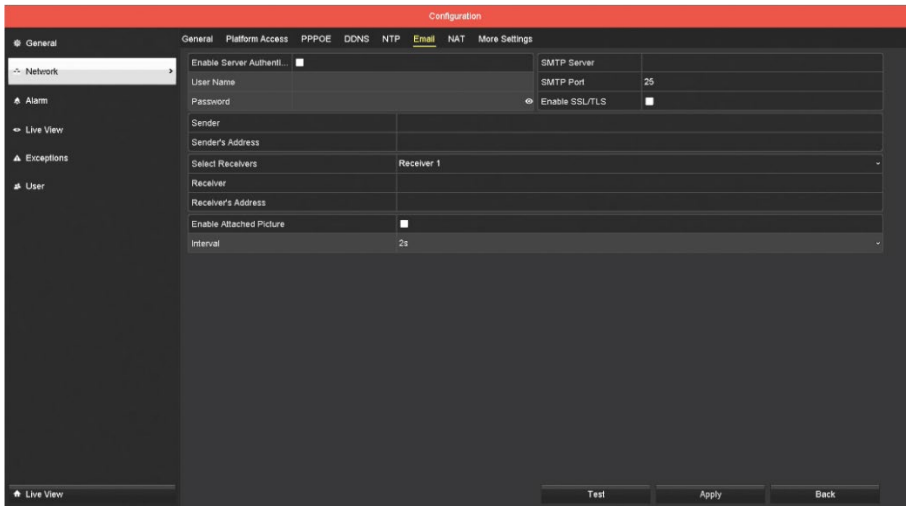
This is an advanced setting and should not be changed for regular use of the DVR.

MORE SETTINGS

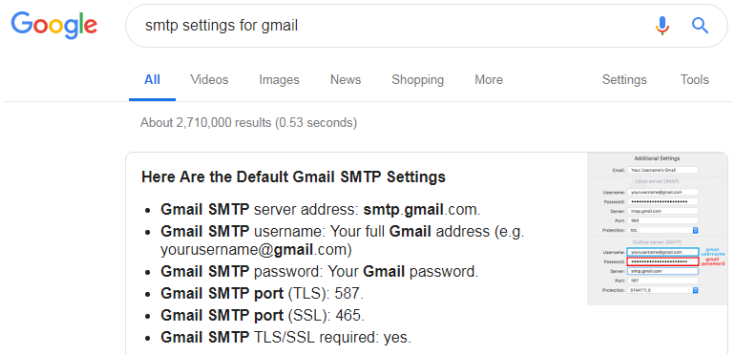
These are advanced settings and should not be changed for regular use of the DVR.

14.2.1 Email

Allows you to set up addresses for system notifications. This is an advanced setting and is not required for regular use of the DVR.



1. Click the **Enable Server Authentication** checkbox if your outgoing mail server requires authentication. If selected enter the **User Name** and **Password** for the outgoing mail server.
2. Enter the **Sender** name (name that will identify the sender).
3. Enter the **Sender' s Address** (your email address connected with the system).
4. Enter the **SMTP Server** and **SMTP Port** of your email service provider. ***Find your email provider's server address and port by typing SMTP settings followed by the name of your email provider in your Internet browser (example: SMTP settings Gmail).***



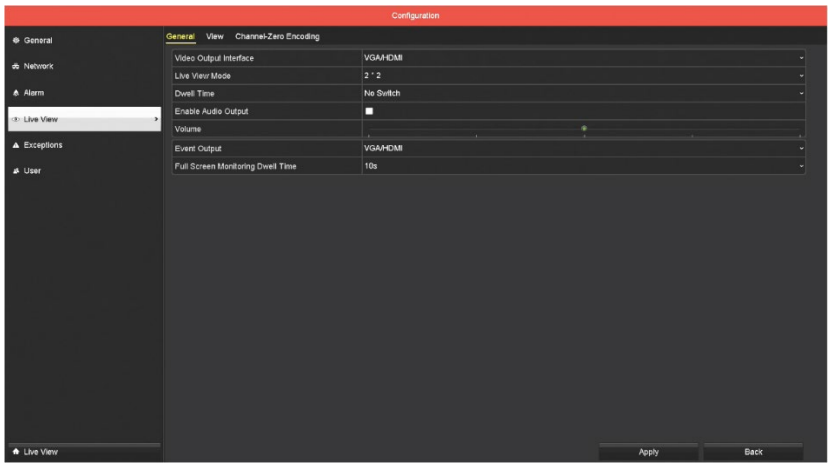
5. Click the **Enable SSL/TLS** if your service provider requires a secure link.
6. Use the **Select Receivers** drop-down to select up to 3 recipients for DVR notifications.
7. Enter the **Receiver** name.
8. Enter the **Receiver Address** (email address of the recipient).
9. **Repeat** steps 6 – 8 for each email contact (receiver).

10. Click the **Enable Attached Picture** checkbox to allow the DVR to send a small image for each alert (this will attach for recorded footage notification only). ***If the email is related to a motion alert the image will be of the object that triggered the alert only).***
11. Use the **Interval** drop-down to select the amount time that needs to pass after sending an email before another email can be sent.
12. Click **Test** to send an email to the receivers.
13. Click **Apply** to save these settings.

14.3 LIVE VIEW

RIGHT CLICK MENU > DEFENDER 4K MENU > CONFIGURATION

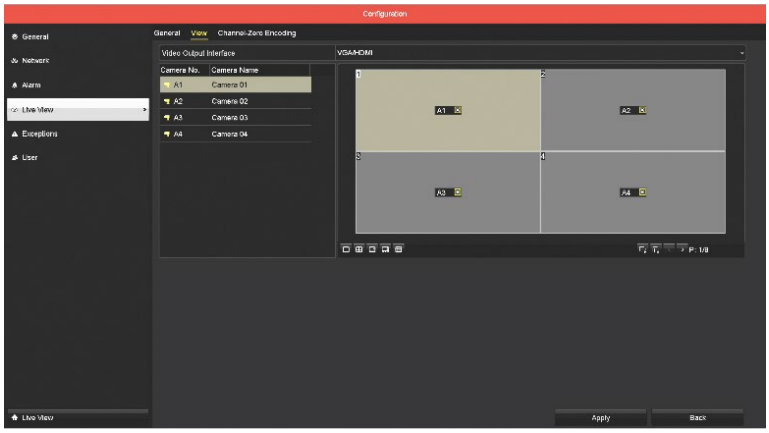
14.3.1 General



1. The **Video Output** default is VGA/HDM and does not need to be changed.
2. Use the **Live View Mode** drop-down to select a default screen view (number and positioning of cameras shown on the screen).
3. Use the **Dwell Time** drop-down to select the number of seconds a video will stay on the screen before switching to the next camera. ***This setting is required before Auto-switch can be selected from the Right Click Menu.***
4. **Audio Output** and **Volume** are not supported on the Defender 4K system.
5. The **Event Output** default is VGA/HDMI and does not need to be changed.
6. Use the **Full Screen Monitoring Dwell Time** drop-down to select the amount of time the alarm event window will be displayed.
7. Click **Apply** to save these settings.

14.3.2 View

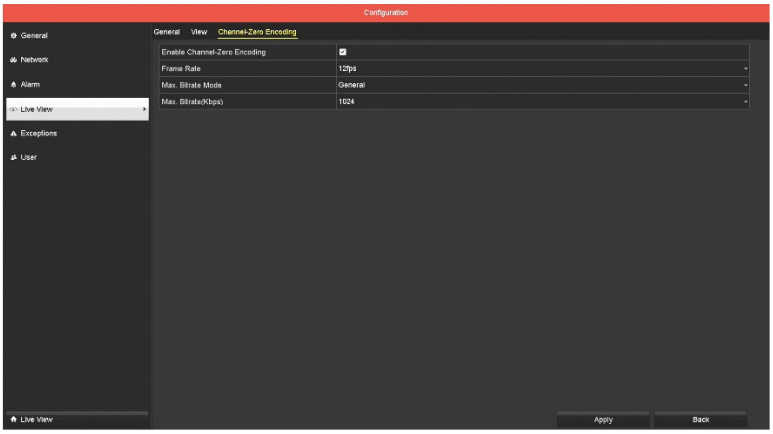
View allows you to set up the default position of the cameras on the Live View screen. This option can be changed from the Live View screen using the Right Click Menu > Multi-screen or Single Screen.



1. Use the **Video Output Interface** drop-down to select VGA/HDMI (DVR monitor) or Channel-Zero (App).
2. Click one of the **Screen Layout** options from the Toolbar below the preview screens.
3. Click and drag a **Camera** from the list to the widow it should appear in.
4. Click **Apply** to save these settings.

14.3.3 Channel-Zero Encoding

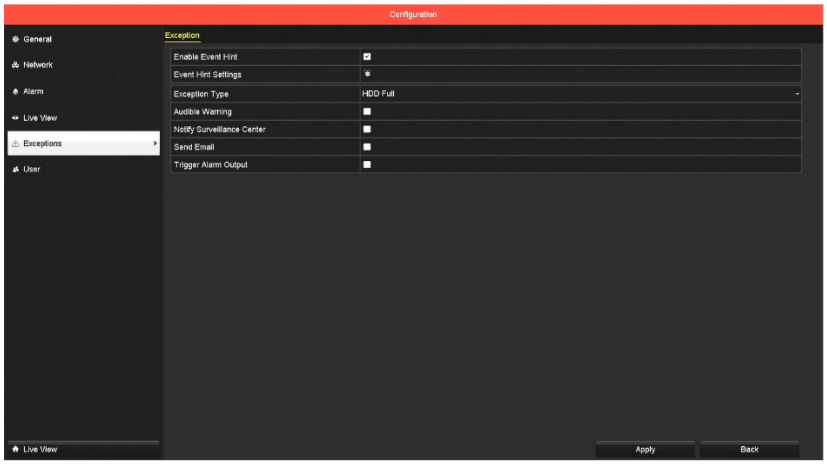
Click the Enable Channel-Zero Encoding checkbox to allow the remote viewing of many camera views (channels) in real-time on the app to decrease the bandwidth requirements without affecting the image quality.



The defaults on this screen should not be changed for regular use of the system. The **Enable Channel-Zero Encoding** checkbox should be checked.

14.4 EXCEPTIONS

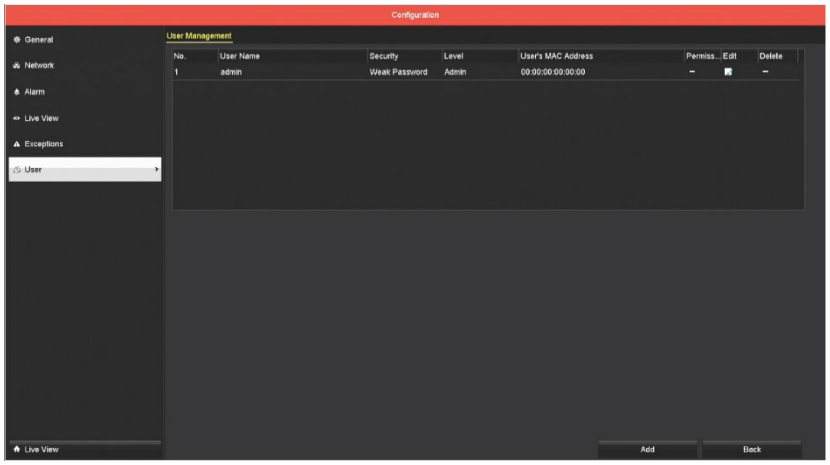
RIGHT CLICK MENU > DEFENDER 4K MENU > CONFIGURATION



5. Click the **Enable Event Hint** checkbox to turn on hints on the Live View screen. When a hint is available the triangle icon will appear on the camera view (bottom right corner). Click the icon to open the details.
6. Select the **Event Hint Settings** for the type of events and exceptions that will trigger the icon display.
7. Use the **Exception Type** drop-down to select an exception that will trigger an event (*example: HDD Full, HDD Error, Network Disconnected, etc*).
8. Click the **Audible Warning** checkbox to enable a continuous audible beeping that can be heard from the DVR when an event or exception occurs.
9. Click the **Send Email** checkbox to enable an alert email to be sent based on your Email Notification settings. See section **14.2.1 Email** for details on setting up email alerts.
10. Click **Apply** to save these settings.

14.5 USER SETUP

RIGHT CLICK MENU > DEFENDER 4K MENU > CONFIGURATION



1. You can click **Edit** to change user details like name, password and rights. Click **OK** to save changes. Select **Delete** to remove a user.
2. Click **Add** to create a new user account:

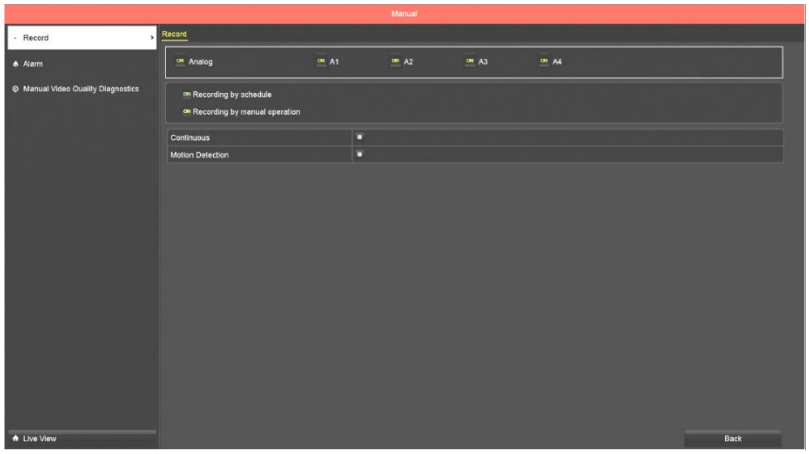
A. Click the **User Name** field to enter a login name.
B. Click the **Password** field to create a password for the user. ***The same password criteria used to set up your password applies to all users.***
C. Click the **Confirm** field to re-enter the password.
D. Use the **Level** drop-down to select the type of user:
   - **Guest:** User will be able to see the Live View screen and Playback recorded footage.
   - **Operator:** User will be able to access all camera operations (including Playback and Exporting) and they will have limited access to most menu functions. ***Operators are not able to change the DVR or Camera settings.***
E. If the **User's MAC Address** is entered, they will be able to access the DVR remotely only from the computer using that MAC Address.
F. Click **OK** to add the user.

15 MANUAL CAMERA SETTINGS

This section allows you to manually adjust recording options and perform a diagnostic on the video quality. The Alarm section will not work on this system because the DVR is not equipped to allow for an alarm to be attached.

15.1 RECORD

RIGHT CLICK MENU > DEFENDER 4K MENU > MANUAL CAMERA SETTINGS

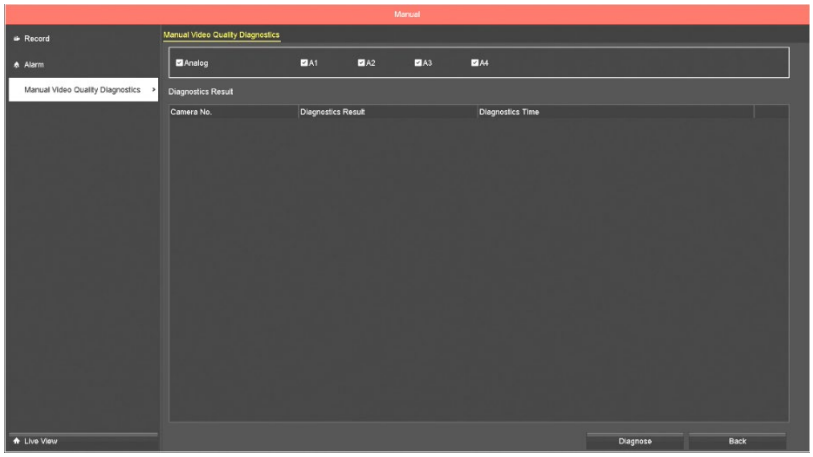


1. Click the **ON** icon beside **Analog** (all cameras) or beside each camera to turn off recording – click again to turn recording back on.
2. Click the **ON** icon beside **Recording by schedule** to disable the ability to record based on the schedule on the selected cameras – click again to turn this feature back on.
3. Click the **ON** icon beside **Recording by manual operation** to disable the ability to select record (manually from the Live View screen) on the selected cameras – click again to turn this feature back on.
4. Click the **Continuous** icon to select to record all the time on the selected cameras – this will override scheduled recording if set up for the selected cameras.
5. Click the **Motion Detection** icon to select to record only when motion is detected on the selected cameras.

15.2 MANUAL VIDEO QUALITY DIAGNOSTICS

RIGHT CLICK MENU > DEFENDER 4K MENU > MANUAL CAMERA SETTINGS

This feature allows you to run a video quality diagnostic manually on any or all cameras connected to the DVR. The criteria for good quality is setup on the Video Quality Diagnostics screen. When the criteria is set you can also setup a schedule for when this diagnostic should run automatically.



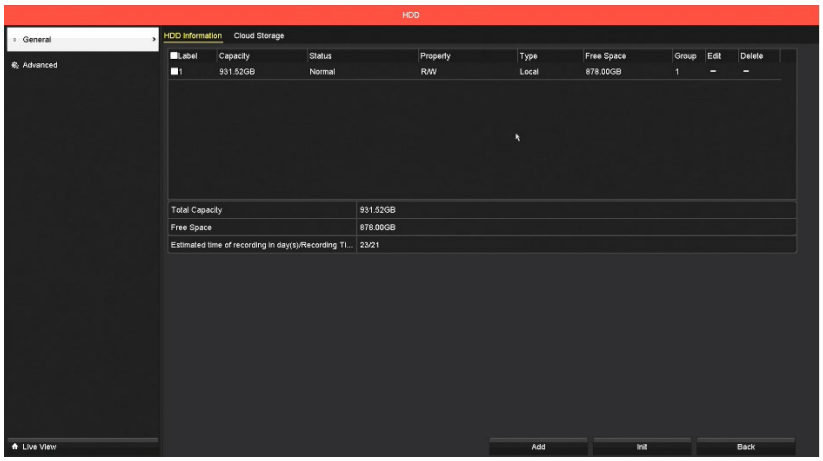
1. Click the **Analog** checkbox to select all cameras or select specific **Cameras**.
2. Click the **Diagnose** button to begin the check – the system will check based on the criteria assigned on the Video Quality Diagnostics screen. See section **13.9 VIDEO QUALITY DIAGNOSTICS** for details.
3. The **Results** will show on the screen indicating whether the quality settings have been compromised.

16 HDD SETTINGS

16.1 HDD INFORMATION

Provides the status of your hard drive and allows you to edit some details (*example: name*).

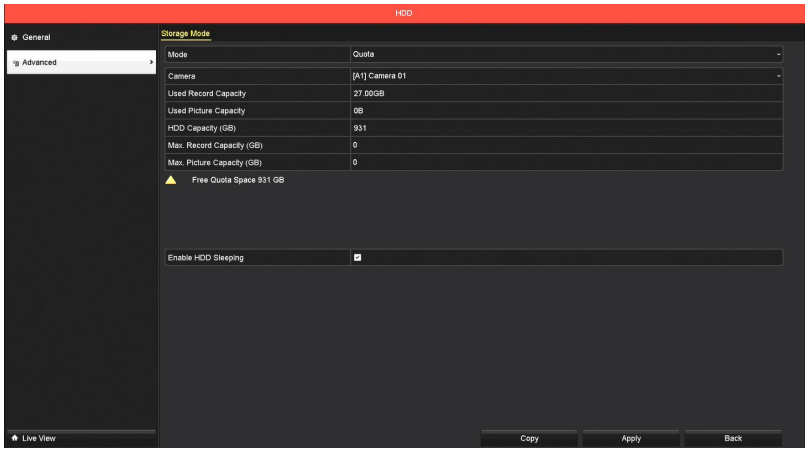
RIGHT CLICK MENU > DEFENDER 4K MENU > HDD SETTING



1. Click **Edit** to allow for hard drive details to be changed.
2. Click **Delete** to remove a hard drive from the DVR. ***This is advance function and is not required for regular use of the system.***
3. Click **Add** if you have installed an additional hard drive in your DVR. ***This is advance function and is not required for regular use of the system.***
4. Click **Init** to format the hard drive. ***Formatting the hard drive will erase all recorded data. Once formatting is started it cannot be stopped or undone.***

16.2 ADVANCED

RIGHT CLICK MENU > DEFENDER 4K MENU > HDD SETTING



1. Use the **Mode** drop-down to select:
   - **Quota** – Configure each camera to have a maximum quota for storage of recorded files or picture capture. This will limit the amount of hard drive space the camera is allowed to use. **Leave the Max. fields at 0 to allow each camera to share the available space on the hard drive.**
   - **Group** – If you have multiple HDD installed they can be managed in groups. Video from selected cameras can be recorded to a specific HDD through these settings.
2. Use the **Camera** drop-down to select.
3. When using Quota, you can change the **Max. Record Capacity (GB)** and **Max. Picture Capacity (GB)** for each camera – the default is 0 which means all cameras will share the total capacity of the hard drive.
4. Click the **Enable HDD Sleeping** to switch the status and reduce the storage consumption when there is no need to read or write to the HDD.
5. Click **Apply** to save your settings.
6. You can select **Copy** to apply these setting to other cameras.

17 SYSTEM MAINTENANCE

17.1 SYSTEM INFO

RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE

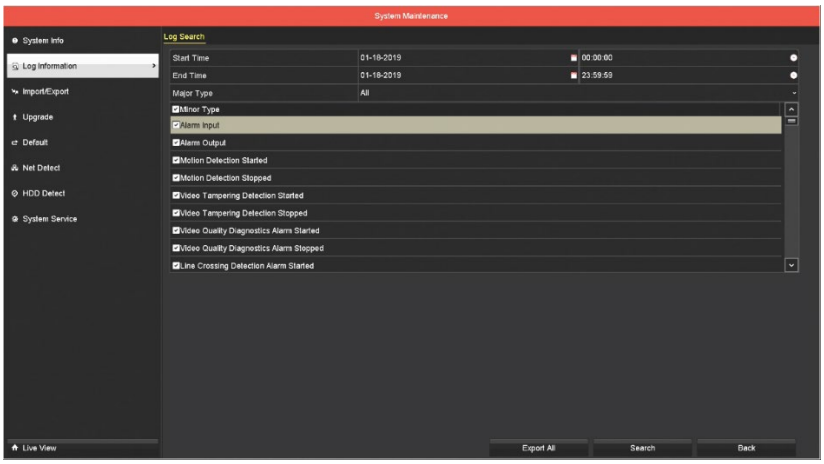
The system info section provides details about your Device, Cameras, Recordings, Alarms, Network, and hard drive (HDD). Open these screens to view the status of these functions.

In the **Device** section you can click the **Check Update** button to see if there is a Firmware Version update for your device.

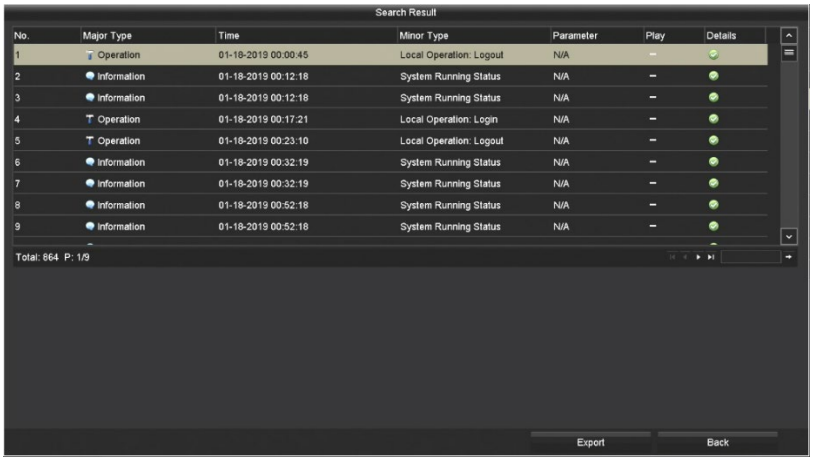
17.2 LOG INFORMATION

RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE

Allows you to view and export all activity logs captured by the system. The DVR creates a log for all Alarms, Events, Operations, and Exceptions when they occur.



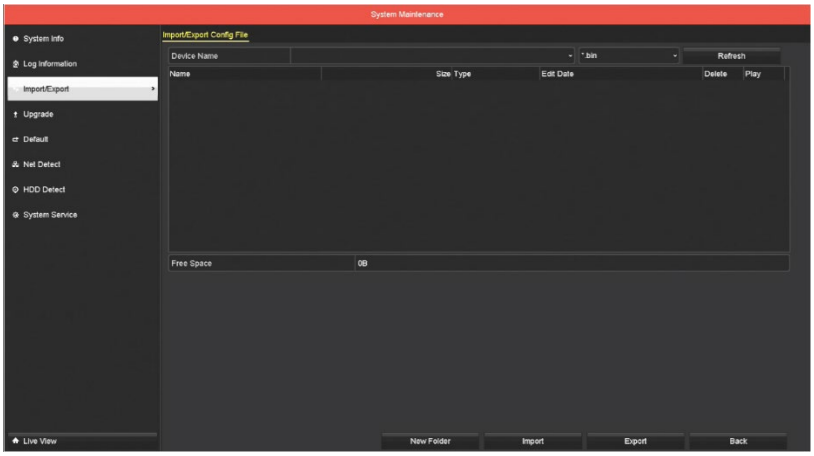
1. Use the calendar and time icons to select a **Start/End Time** for the log results.
2. Use the **Major Type** drop-down to select the type of log to search. Select All, Alarm, Exception, Operation or Information.
3. Use the checkboxes to select the **Type** of action to search. Use the scroll bar to view the entire list. By default, all are selected.
4. Click **Search** to view the list of logs or Export All to open the export screen.



A. Click **Details** to view the log.
B. Click **Delete** (scroll to the right) to remove a log from the export.
C. Click **Export** to open the export screen or **Back** to return to the Log screen without exporting the list.

17.3 IMPORT/EXPORT

RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE



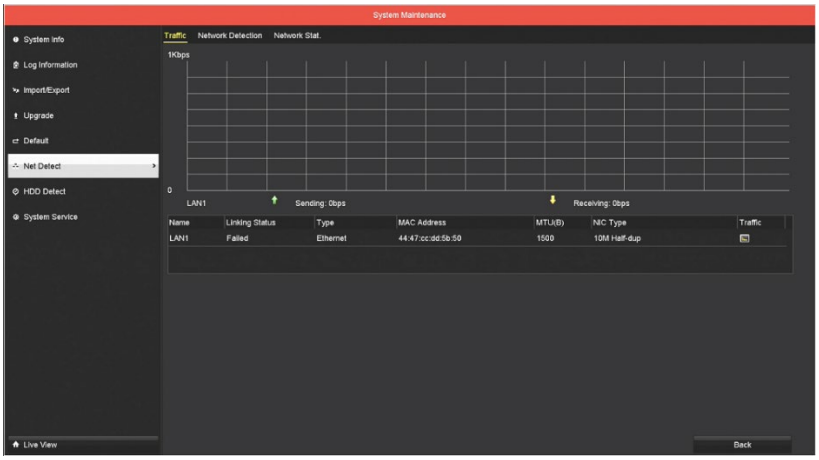
You can export or import a configuration file containing all your DVR settings (your customizations) to/from a USB flash drive. This can be used if you need to reset your DVR back to factory default settings or for updating the Firmware on the DVR. Insert the USB into the DVR and import/export the configuration file.

17.4 UPGRADE

You can upgrade (local) the Firmware on your DVR using a UBS flash drive. ***System upgrades should only be done when directed by Customer Support.***

17.5 NET DETECT

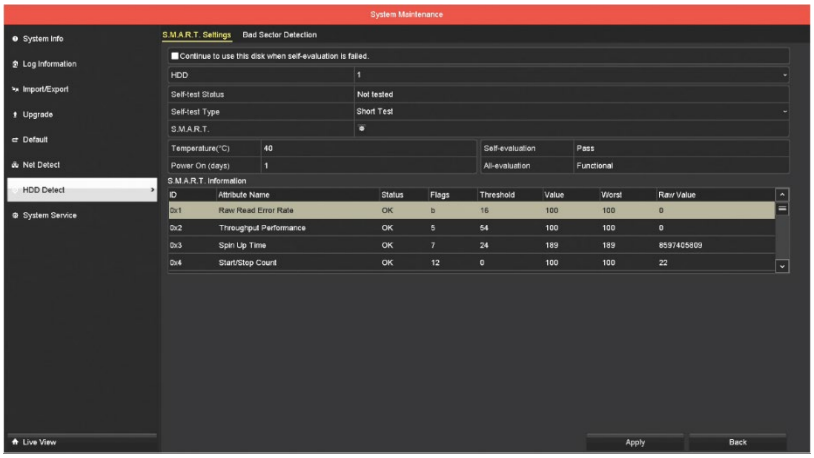
RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE



You can use the Net Detect screen to view the status and traffic details of your Network.

17.6 HDD DETECT

RIGHT CLICK MENU > DEFENDER 4K MENU > MAINTENANCE



Setup the parameters for the HDD test function. Each time the test is run the system will use these settings to determine the status of the HDD. The results can be viewed on the Bad Sector Detection screen.

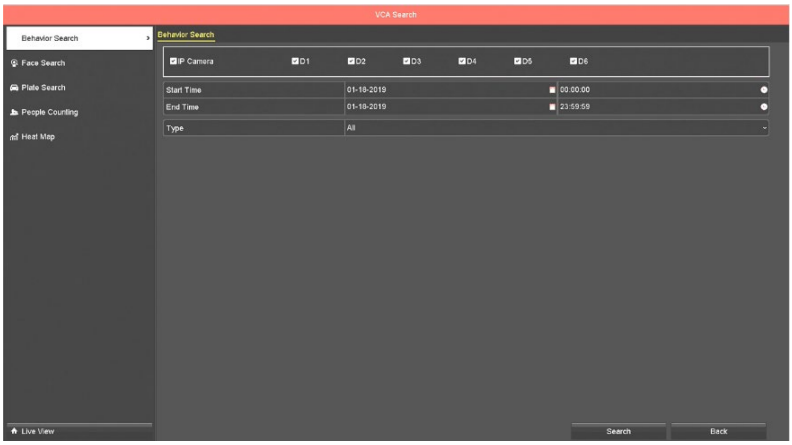
18 ANALYTICS (IP CAMERA REQUIRED)

The Analytics menu only works if you have set up an IP Camera on your DVR. IP Cameras are not available from Defender for the 4K system. To install an IP Camera, follow the direction from the camera supplier. These features work with the settings applied in the VCA section. See section **13.8 VCA** for setup details.

18.1 BEHAVIOR SEARCH

RIGHT CLICK MENU > DEFENDER 4K MENU > ANALYTICS > BEHAVIOUR SEARCH

Use this screen to search events that have been triggered as a result of a line crossing, object removal, fast moving detection, etc. across all cameras.

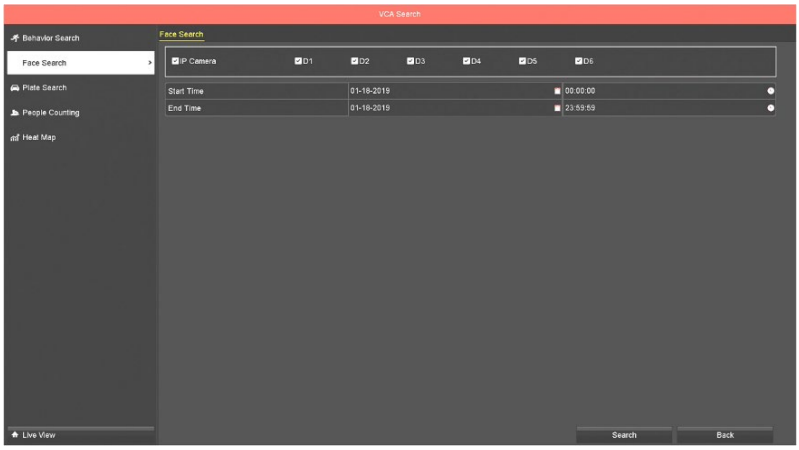


1. Click the **Camera** checkbox to include a camera in the search. ***By default, all cameras are selected.***
2. Use the **Start/End Date** calendar icons to select a date range for the search.
3. Use the **Start/End Time** icons to select a timeframe for the search.
4. Use the **Type** drop-down to select a type of behaviour or select all.
5. Click **Search** to view the results.

18.2 FACE SEARCH

RIGHT CLICK MENU > DEFENDER 4K MENU > ANALYTICS > FACE SEARCH

When there are face pictures included in the recorded footage, you can search these images on the Face search screen.

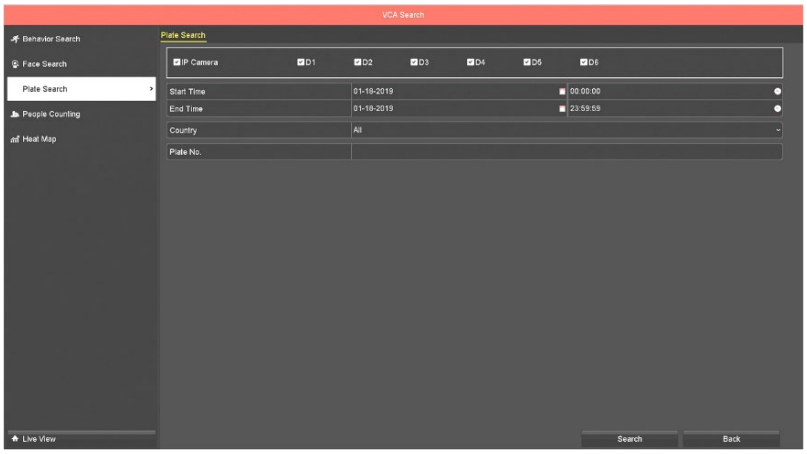


1. Click the **Camera** checkbox to include a camera in the search. ***By default, all cameras are selected.***
2. Use the **Start/End Date** calendar icons to select a date range for the search.
3. Use the **Start/End Time** icons to select a timeframe for the search.
4. Click **Search** to view the results.

18.3 PLATE SEARCH

RIGHT CLICK MENU > DEFENDER 4K MENU > ANALYTICS > PLATE SEARCH

When there are plate pictures included in the recorded footage, you can search these images on the Plate search screen.



1. Click the **Camera** checkbox to include a camera in the search. ***By default, all cameras are selected.***
2. Use the **Start/End Date** calendar icons to select a date range for the search.
3. Use the **Start/End Time** icons to select a timeframe for the search.
4. Use the **Country** drop-down to select your country or select all.
5. Enter the license plate number in the **Plate No.** field.
6. Click **Search** to view the results.

18.4 PEOPLE COUNTING

RIGHT CLICK MENU > DEFENDER 4K MENU > ANALYTICS > PEOPLE COUNTING

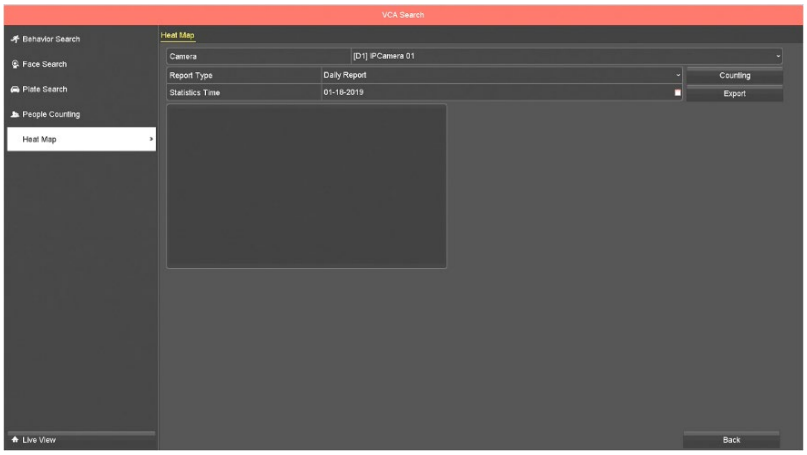
People counting is used to calculate the number of people that have entered or left a specific area. The parameters of this area need to be setup in the VCA section.

1. Use the **Camera** drop-down to select a camera for the search.
2. Use the **Report Type** drop-down to select Daily, Weekly, Monthly or Annual report.
3. Use the **Statistic Time** calendar icon to select a date range for the report type.
4. Click **Counting** to start the search and calculation. The results will appear in the grid below.
5. Click **Export** to save a copy of the report to a USB flash drive.

18.5 HEAT MAP

RIGHT CLICK MENU > DEFENDER 4K MENU > ANALYTICS > HEAT MAP

The Heat Map function is a graphical representation of data. This is usually used to analyze how many people visited and stayed in a specific area.



1. Use the **Camera** drop-down to select a camera for the search.
3. Use the **Report Type** drop-down to select Daily, Weekly, Monthly or Annual report.
4. Use the **Statistic Time** calendar icon to select a date range for the report type.
5. Click **Counting** to start the search. The results will appear in the window below.
6. Click **Export** to save a copy of the report to a USB flash drive.

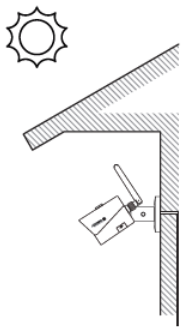
19 CAMERA INSTALLATION

- We recommend testing all cameras before installing them to ensure all components work properly.
- Determine all areas you want to cover and plan out where each camera should be installed.
- Make sure there is access to power outlets where the cameras will be installed.
- Place the cameras up high to ensure the camera view covers the maximum area.
- Make sure there are no objects obstructing the camera view area.
- Do not place cameras where light will shine in the view lens – this will obstruct your view and the recorded footage.
- Protect camera cables – install in a place where the wires can be hidden.
- Place cameras under shelter to reduce the amount of rain or snow on the lens.
- Place cameras where they will can be seen – this may deter potential intruders.

Before you start – you will need:

- Drill
- Screwdriver (Phillips #2)
- Ladder (as required)
- Cable Protectors (as required)

STEPS:



1. Place the camera in the location and mark the holes using the drilling template included in the camera box
2. Install the camera using the hardware provided and ensure that it is secure against the surface (not hanging down)
3. Connect the BNC cable and power adapter to the camera. Connect the ends and twist to secure. ***Hide the cable so they cannot be seen or easily accessed.***
4. Connect the power adapter or power splitter to a power outlet/source.
5. Connect the other end of the BNC cable to the DVR unit. Connect the ends and twist to secure.

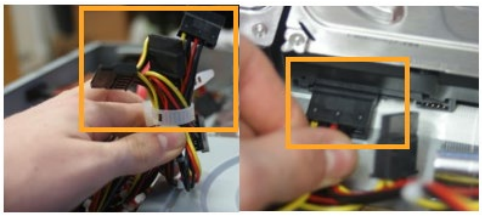
20 HARD DRIVE INSTALLATION

The 16 Channel DVR Kit comes a SATA cable and 4 screws so that you can install a second hard drive in the DVR unit. This will increase the storage capability of your DVR to accommodate the additional camera recordings.

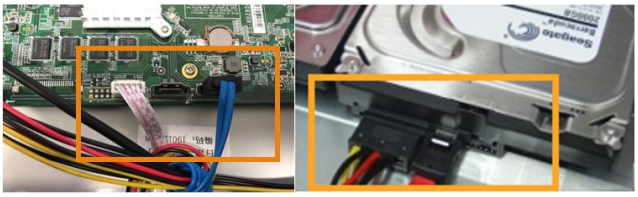
INSTALLATION STEPS:

1. Remove the DVR cover screws from the back of the DVR unit.
2. Slide the cover to the back of the DVR and lift upwards to remove it.
3. Inside the DVR there is a space available for a second hard drive beside the one installed in the DVR.

4. Use the 4 screws provided with your system to secure the second HDD to the DVR.
5. Connect the Power cable inside the DVR to the second hard drive. ***There are multiple plugs available, pick one.***



6. Use the SATA cable provided with your system to the HDD and the motherboard. Secure all cables using the tie inside the unit.



7. Reconnect all the cables at the back of the DVR and turn on the unit.
8. You will need to format the new HDD from either the **SETUP WIZARD** DVR HDD or by accessing the **HDD SETTINGS** General > HDD Information screen. You will now see the second HDD in the list. Click the checkbox and Init to begin formatting.