Digital Video Recorder

Quick Start Guide

TABLE OF CONTENTS

<u>Quick Start Guide</u>

This Manual is applicable to TVI HD Digital Video Recorder (DVR).

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website

Please use this user manual under the guidance of professionals.

Legal Disclaimer

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. OUR COMPANY SHALL NOT TAKE ANY RESPONSIBILITES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, OUR COMPANY WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS THE APPLICABLE LAW. OUR COMPANY SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED WITH ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

⚠	⚠
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

⚠ Warnings

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.

- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.

- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.

- Please make sure that the plug is firmly connected to the power socket.

- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.

- Unit is designed for indoor use only.

- Keep all liquids away from the device.

- Ensure environmental conditions meet factory specifications.

- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.

- Use the device in conjunction with an UPS if possible.

- Power down the unit before connecting and disconnecting accessories and peripherals.

- A factory recommended HDD should be used for this device.

- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Applicable Models

This manual is applicable to the TVI DVR.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
⚠️	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
NOTE	Provides additional information to emphasize or supplement important points of the main text.

Chapter 1 Description of Panels

1.1 Front Panel

NOTE

The front panel vaires according to different models. Please refer to the actual product. The following figures only take examples of several models.

Front Panel 1

Figure 1. 1 Front Panel 2

Table 1. 1 Description of Front Panel 2

No.	Name	Function Description
1	POWER	Power indicator turns yellow when the power switch on the real panel is turned on.
	STATUS	Status indicator blinks red when data is being read from or written to HDD.
	Tx/Rx	Tx/Rx indictor blinks yellow when network connection is functioning properly.
2	DIRECTIONS	The DIRECTION buttons are used to navigate between different fields and items in menus. In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files. In Live View mode, these buttons can be used to cycle through channels. In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER	The ENTER button is used to confirm selection in any of the menu modes. It can also be used to *tick* checkbox fields. In Playback mode, it can be used to play or pause the video. In single-frame Playback mode, pressing the button will advance the video by a single frame.
3	Menu	Access the main menu interface

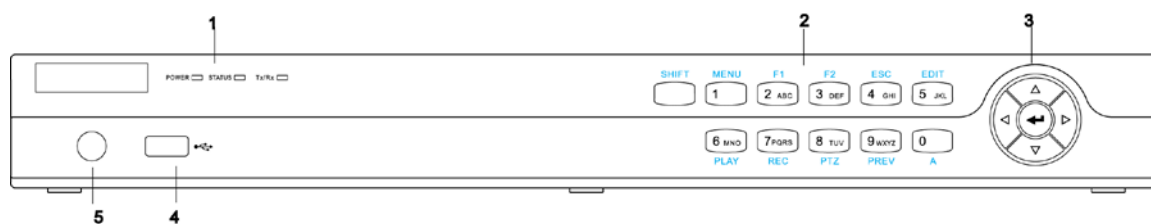| No.	Name	Function Description
4	ESC	Exit and back to the previous menu.
5	IR Receiver	Receiver for IR remote controller.
6	USB Interfaces	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

Front Panel 2

Figure 1. 2 Front Panel 2

Table 1. 2 Description of Front Panel 2

No.	Name		Function Description
1	POWER		Turns yellow when the device s running.
	STATUS		Flickers red when data is being read from or written to HDD, and turns yellow when the SHIFT function is realized.
	Tx/Rx		Flickers yellow when network connection is functioning properly.
2	Composite Keys	SHIFT	Switches between the numeric or letter input and functions of the composite keys.
		1/MENU	Enters numeral "1"; Accesses the main menu interface.
		2/ABC/F1	Enters numeral "2"; Enters letters "ABC"; Uses the F1 button to select all items in a list field; Turns on/off PTZ light in PTZ Control mode, and use it to zoom out the image; Switches between main and spot video output in live view or playback mode.
		3/DEF/F2	Enters numeral "3"; Enters letters "DEF"; Uses the F2 button to change the tab pages; Zooms in the image in PTZ control mode.
		4/GHI/ESC	Enters numeral "4"; Enters letters "GHI"; Exits and back to the previous menu.
		5/JKL/EDIT	Enters numeral "5"; Enters letters "JKL";

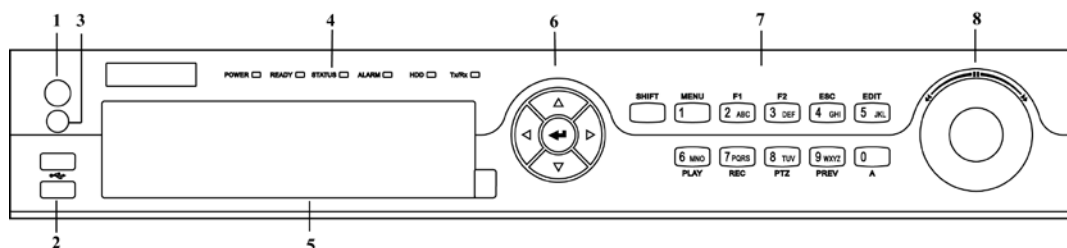| No.	Name	Function Description
		Deletes characters before cursor;
		Checks the checkbox and select the ON/OFF switch;
		Starts/stops record clipping in playback.
	6/MNO/PLAY	Enters numeral "6";
		Enters letters "MNO";
		Accesses to playback interface in Playback mode.
	7/PQRS/REC	Enters numeral "7";
		Enters letters "PQRS";
		Accesses to manual record interface; Manually enables/disables record.
	8/TUV/PTZ	Enters numeral "8";
		Enters letters "TUV";
		Accesses PTZ control interface.
	9/WXYZ/PREV	Enters numeral "9";
		Enters letters "WXYZ";
		Multi-channel display in live view.
	0/A	Enters numeral "0";
		Shifts the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
3	DIRECTION	Navigates between different fields and items in menus.
		Uses the Up and Down buttons to speed up and slow down the playing of video files in Playback mode. The Left and Right button will select the next and previous record files.
		Cycles through channels in Live View mode.
		Controls the movement of the PTZ camera in PTZ control mode.
	ENTER	Confirms selection in any of the menu modes.
		Checks the checkbox.
		Plays or pauses the playing of video files in Playback mode.
		Advances the video by a single frame in single-frame Playback mode.
		Stops/starts auto switch in Auto-switch mode.
4	USB Interface	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
5	IR Receiver	Receiver for IR remote control.

Front Panel 3

Figure 1. 3 Front Panel 3

Table 1. 3 Description of Front Panel 3

No.	Name	Function Description
1	**POWER ON/OFF**	Power on/off switch.
2	**USB Interface**	Connect to USB mouse or USB flash memory.
3	**IR Receiver**	Receiver for IR remote control. devices.
4	**POWER**	Power indicator lights in green when DVR is powered up.
	READY	Ready indicator is normally green, indicating that the DVR is functioning properly.
	STATUS	Indicator turns green when DVR is controlled by an IR remote control with the address from 1~254; Indicator turns red when the SHIFT button is used; Indicator does not light when the DVR is controlled by a keyboard or by the IR remote control with the address of 255; Indicator turns green when the DVR is controlled by IR remote control (with the address from 1~254) and keyboard at the same time , and the SHIFT button is not used; Indicator turns orange : (a) when the DVR is controlled by IR remote control (with the address from 1~254) and keyboard at the same time and the SHIFT button is used as well; (b) when the DVR is controlled by IR remote control (with the address from 1~254) and the SHIFT button is used.
	ALARM	Alarm indicator turns red when a sensor alarm is detected.
	HDD	HDD indicator blinks in red when data is being read from or written to HDD.
	Tx/Rx	TX/RX indictor blinks in green when network connection is functioning properly.
5	**DVD-ROM**	Slot for DVD-ROM.
6	**DIRECTION**	The DIRECTION buttons are used to navigate between different fields and items in menus. In Playback mode, the Up and Down button is used to speed up and slow down recorded video. In All-day Playback mode, the Left/Right button can be used to select the recorded video of next/previous day; in Playback by Normal Video Search, the Left/Right button can be used to select the next/previous recorded file. In Live View mode, the directional buttons can be used to cycle through channels. In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER	Confirm selection in any of the menu modes. It can also be used to tick checkbox fields. In Playback mode, it can be used to play or pause the video. In Single-frame Playback mode, pressing the ENTER button will advance the video by a single frame. In Auto-switch mode, it can be used to stop /start auto switch.
7	**SHIFT**	Switch of compound keys between the numeric/letter input and functional control.
	1/MENU	Enter numeral "1"; Access the main menu interface.
	2ABC/F1	Enter numeral "2"; Enter letters "ABC"; The F1 button can be used to select all items on the list; In PTZ Control mode, the F1 button can be used to zoom out (zoom-) the PTZ

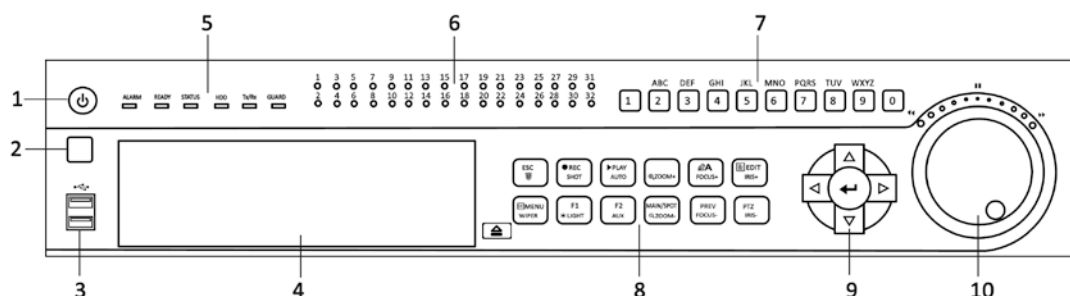|		camera; In live view or playback mode, the F1 button can be used to switch between main and spot video output.
	3DEF/F2	Enter numeral "3"; Enter letters "DEF"; In PTZ Control mode, the F1 button can be used to zoom in (zoom+) the PTZ camera; The F2 button can be used to cycle through tab pages.
	4GHI/ESC	Enter numeral "4"; Enter letters "GHI"; Exit and back to the previous menu.
	5JKL/EDIT	Enter numeral "5"; Enter letters "JKL"; Delete characters before cursor; Select the checkbox and ON/OFF switch; Start/stop record clipping in playback.
	6MNO/PLAY	Enter numeral "6"; Enter letters "MNO"; In Playback mode, it is used for direct access to playback interface.
	7PQRS/REC	Enter numeral "7"; Enter letters "PQRS"; Manual record, for direct access to manual record interface; manually enable/disable record.
	8TUV/PTZ	Enter numeral "8"; Enter letters "TUV"; Access PTZ control interface.
	9WXYZ/PREV	Enter numeral "9"; Enter letters "WXYZ"; Multi-camera display in live view; In Playback mode or Menu→Playback→Tag playback interface, this button can be used to delete the selected tag.
	0/A	Enter numeral "0"; Switch between input methods (upper and lowercase alphabet, symbols and numeric input). In Playback mode, this button can be used to add the default tag.
8	**JOG SHUTTLE Control**	Move the active selection in a menu. The inner ring will move the selection up and down; the outer ring will move it left and right. In Playback mode, the inner ring is used to jump 30s forward/backward in video files. The outer ring can be used to speed up/slow down the video. In Live View mode, it can be used to cycle through different channels. In PTZ control mode, in can control the movement of the PTZ camera.

Front Panel 4

Figure 1. 4 Front Panel 4

Table 1. 4 Description of Front Panel 4

No.	Name	Function Description
1	**POWER ON/OFF**	Power on/off switch.
2	**IR Receiver**	Receiver for IR remote control.
3	**USB**	Connect to USB mouse or USB flash memory devices.
4	**DVD-R/W**	Slot for DVD-R/W.
5	**ALARM**	Alarm indicator turns red when a sensor alarm is detected.
	READY	Ready indicator is normally blue, indicating that the DVR is functioning properly.
	STATUS	Indicator turns blue when DVR is controlled by an IR remote. Indicator turns red when controlled by a keyboard and orange when IR remote and keyboard is used at the same time. Indicator does not light when the DVR is controlled by the IR remote control with the address of 255.
	HDD	HDD indicator blinks in red when data is being read from or written to HDD.
	Tx/Rx	Tx/Rx indictor blinks in blue when network connection is functioning properly.
	GUARD	Indicator turns blue when the device is armed; Indicator does not light when the device is disarmed; The arm/disarm state can be initiated by pressing and holding on the ESC button for more than 3 seconds in live view mode.
6	**Channel Status LED Indicators**	The button lights in blue when the corresponding channel is recording; it is red when the channel is in network transmission status; it is pink when the channel is recording and transmitting.
7	**Alphanumeric Buttons**	Switch to the corresponding channel in Live View or PTZ Control mode. Input numbers and characters in Edit mode. Switch between different channels in All-day Playback mode.
8	**ESC**	Exit and back to the previous menu. Arm/disarm the DVR in live view mode.
	REC/SHOT	Enter the Manual Record interface. Turn audio on/off in Playback mode; In PTZ control mode, pressing the REC/SHOT button and a Numeric button will call a PTZ preset.
	PLAY/AUTO	Enter the Playback menu; Auto scan in the PTZ Control mode.
	ZOOM+ Button	In PTZ control mode, the ZOOM+ button is used to zoom in the PTZ camera.
	A/FOCUS+	Adjust focus in the PTZ Control mode. Switch between input methods (upper and lowercase alphabet, symbols and numeric input).
	EDIT/IRIS+	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor. On checkbox fields, pressing the button will *tick* the checkbox. In PTZ Control mode, the button adjusts the iris of the camera. In Playback mode, it can be used to generate video clips for backup.
	MENU/WIPER	Return to the Main menu (after successful login); Turn off audible key beeper by pressing and holding the button for 5 seconds; Start wiper (if applicable) in PTZ Control mode.
	F1/LIGHT	The F1/LIGHT button when used in a list field will select all items on the list. In PTZ Control mode, it will turn on/off PTZ light.
	F2/AUX	The F2/AUX button is used to cycle through tab pages.
	MAIN/SPOT/ZOOM-	Switch to the control of spot output; In PTZ Control mode, it can be used to zoom out the PTZ camera.
	PREV/FOCUS-	Switch between single screen and multi-screen mode. In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
	PTZ/IRIS-	Enter the PTZ Control mode. In PTZ Control mode, it is used to close the iris of the PTZ camera.
9	**DIRECTION**	The DIRECTION buttons are used to navigate between different fields and items in menus.

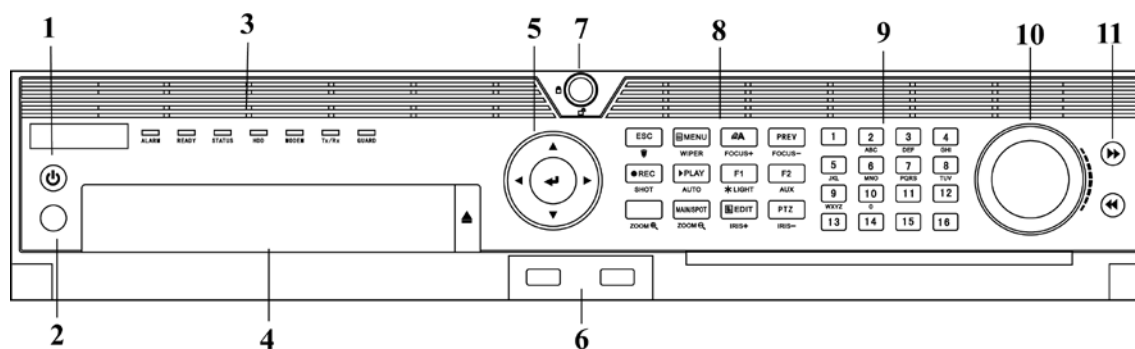|		
		In Playback mode, the Up and Down button is used to speed up and slow down recorded video. In All-day Playback mode, the Left/Right button can be used to select the recorded video of next/previous day; in Playback by Normal Video Search, the Left/Right button can be used to select the next/previous recorded file. In Live View mode, the directional buttons can be used to cycle through channels. In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER	Confirm selection in any of the menu modes. It can also be used to tick checkbox fields. In Playback mode, it can be used to play or pause the video. In Single-frame Playback mode, pressing the ENTER button will advance the video by a single frame. In Auto-switch mode, it can be used to stop /start auto switch.
10	**JOG SHUTTLE Control**	Move the active selection in a menu. The inner ring will move the selection up and down; the outer ring will move it left and right. In Playback mode, the inner ring is used to jump 30s forward/backward in video files. The outer ring can be used to speed up/slow down the video. In Live View mode, it can be used to cycle through different channels. In PTZ control mode, in can control the movement of the PTZ camera.

Front Panel 5

Figure 1. 5 Front Panel 5

Table 1. 5 Description of Front Panel 5

No.	Name		Function Description
1	**POWER ON/OFF**		Power on/off switch.
2	**IR Receiver**		Receiver for IR remote
3	**Status Indicators**	**ALARM**	Turns red when a sensor alarm is detected.
		READY	Ready LED is normally blue, indicating that the device is functioning properly.
		STATUS	Turns blue when device is controlled by an IR remote.
			Turns red when controlled by a keyboard and purple when IR remote and keyboard is used at the same time.
		HDD	Flashes red when data is being read from or written to HDD.
		MODEM	Reserved for future usage.
		TX/RX	Flashes blue when network connection is functioning properly.

No.	Name		Function Description
		GUARD	Guard LED turns blue when the device is in armed status; at this time, an alarm is enabled when an event is detected.
			The LED turns off when the device is unarmed. The arm/disarm status can be changed by pressing and holding on the ESC button for more than 3 seconds in live view mode.
4	**DVD-R/W**		Slot for DVD-R/W.
5	**Control Buttons**	**DIRECTION**	The DIRECTION buttons are used to navigate between different fields and items in menus.
			In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files.
			In Live View mode, these buttons can be used to cycle through channels.
			In PTZ control mode, it can control the movement of the PTZ camera.
		ENTER	The ENTER button is used to confirm selection in any of the menu modes.
			It can also be used to *tick* checkbox fields.
			In Playback mode, it can be used to play or pause the video.
			In single-frame Playback mode, pressing the button will advance the video by a single frame.
			In Auto-switch mode, it can be used to stop /start auto switch.
6	**USB Interfaces**		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
7	**Front Panel Lock**		You can lock or unlock the panel by the key.
8	**Composite Keys**	**ESC**	Back to the previous menu.
			Press for Arming/disarming the device in Live View mode.
		REC/SHOT	Enter the Manual Record setting menu.
			In PTZ control settings, press the button and then you can call a PTZ preset by pressing Numeric button.
			It is also used to turn audio on/off in the Playback mode.
		PLAY/AUTO	The button is used to enter the Playback mode.
			It is also used to auto scan in the PTZ Control menu.
		ZOOM+	Zoom in the PTZ camera in the PTZ Control setting.
		A/FOCUS+	Adjust focus in the PTZ Control menu.
			It is also used to switch between input methods (upper and lowercase alphabet, symbols and numeric input).
		EDIT/IRIS+	Edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor.
			On checkbox fields, pressing the button will *tick* the checkbox.
			In PTZ Control mode, the button adjusts the iris of the camera.
			In Playback mode, it can be used to generate video clips for backup.
			Enter/exit the folder of USB device and eSATA HDD.
		MAIN/SPOT/ZOOM-	Switch between main and spot output.
			In PTZ Control mode, it can be used to zoom out the image.

No.	Name		Function Description
		F1/ LIGHT	Select all items on the list when used in a list field.
			In PTZ Control mode, it will turn on/off PTZ light (if applicable).
			In Playback mode, it is used to switch between play and reverse play.
		F2/ AUX	Cycle through tab pages.
			In synchronous playback mode, it is used to switch between channels.
		MENU/WIPER	Press the button will help you return to the Main menu (after successful login).
			Press and hold the button for 5 seconds will turn off audible key beep.
			In PTZ Control mode, the MENU/WIPER button will start wiper (if applicable).
			In Playback mode, it is used to show/hide the control interface.
		PREV/FOCUS-	Switch between single screen and multi-screen mode.
			In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS+ button.
		PTZ/IRIS-	Enter the PTZ Control mode.
			In the PTZ Control mode, it is used to adjust the iris of the PTZ camera.
9	**Alphanumeric Buttons**		Switch to the corresponding channel in Live view or PTZ Control mode.
			Input numbers and characters in Edit mode.
			Switch between different channels in Playback mode.
			The light of the button is blue when the corresponding channel is recording; it is red when the channel is in network transmission status; it is pink when the channel is recording and transmitting.
10	**JOG SHUTTLE Control**		Move the active selection in a menu. It will move the selection up and down.
			In Live View mode, it can be used to cycle through different channels.
			In the Playback mode: the ring is used to jump 30s forward/backward in video files.
			In PTZ control mode, it can control the movement of the PTZ camera.
11	**SLOW DOWN/SPEED UP**		Slow down/speed up in playback mode.

1.2 Rear Panel

NOTE

The rear panel vaires according to different models. Please refer to the actual product. The following figures only take examples of several models.
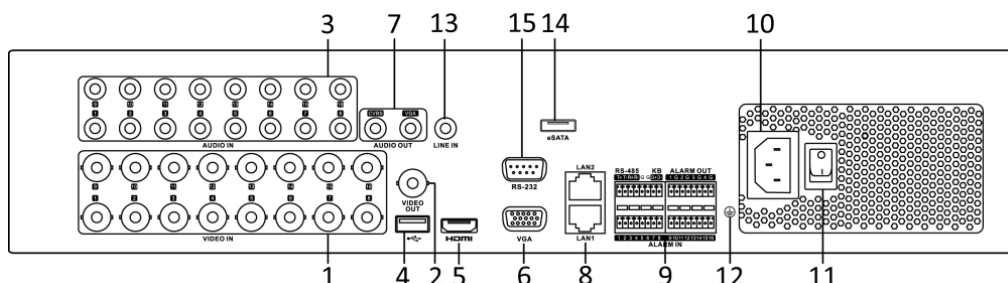
Rear Panel 1

Figure 1. 6 Rear Panel 1

Table 1. 6 Description of Rear Panel 1

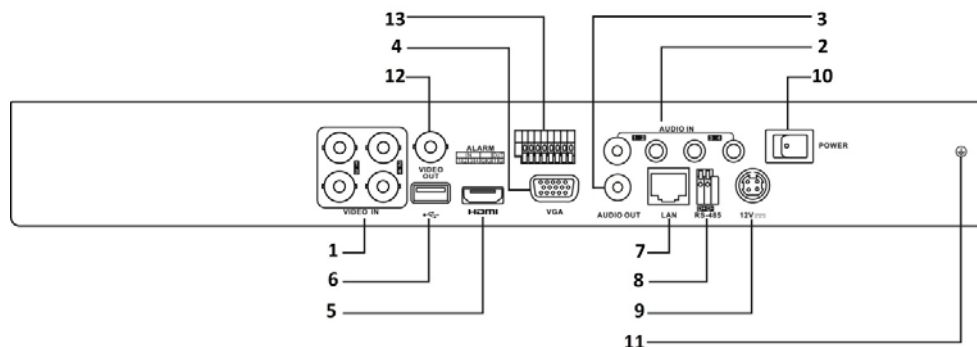| No.	Item	Function Description
1	VIDEO IN	BNC interface for TVI and analog video input.
2	VIDEO OUT	BNC connector for video output.
3	AUDIO IN	RCA connector
4	USB Port	Universal Serial Bus (USB) port for additional devices.
5	HDMI	HDMI video output connector.
6	VGA	DB15 connector for VGA output. Display local video output and menu.
7	AUDIO OUT	RCA connector.
8	Network Interface	Connector for network
9	RS-485 and Alarm Interface	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.
		D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first DVR's D+, D- pin should be connected with the D+, D- pin of the next DVR.
		Connector for alarm input.
		Connector for alarm output.
10	Power Supply	100 to 240 VAC power supply.
11	Power Switch	Switch for turning on/off the device.
12	GND	Ground
13	LINE IN	BNC connector for audio input.
14	eSATA	Connects external SATA HDD, CD/DVD-RW.
15	RS-232 Interface	Connector for RS-232 devices.

Rear Panel 2

Figure 1. 7 Rear Panel 2

Table 1. 7 Description of Rear Panel 2

No.	Item	Function Description
1	**VIDEO IN**	BNC interface for TVI and analog video input.
2	**VIDEO OUT**	BNC connector for video output.
3	**AUDIO IN**	RCA connector
4	**USB Port**	Universal Serial Bus (USB) port for additional devices.
5	**HDMI1/VGA**	Simultaneous HDMI1/VGA output. Display local video output and menu.
6	**HDMI2**	HDMI2 video output connector.
7	**AUDIO OUT**	RCA connector.
8	**Network Interface**	Connector for network
9	**RS-485 and Alarm Interface**	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.
		D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first DVR's D+, D- pin should be connected with the D+, D- pin of the next DVR.
		Connector for alarm input.
		Connector for alarm output.
10	**Power Supply**	100 to 240V AC power supply.
11	**Power Switch**	Switch for turning on/off the device.
12	**GND**	Ground
13	**LINE IN**	BNC connector for audio input.
14	**eSATA**	Connects external SATA HDD, CD/DVD-RW.
15	**RS-232 Interface**	Connector for RS-232 devices.

Rear Panel 3

Figure 1. 8 Rear Panel 3

Table 1. 8 Description of Rear Panel 3

No.	Item	Description
1	**VIDEO IN**	BNC interface for TVI and analog video input.
2	**AUDIO IN**	RCA connector
3	**AUDIO OUT**	RCA connector.
4	**VGA**	DB15 connector for VGA output. Display local video output and menu.
5	**HDMI**	HDMI video output connector.
6	**USB**	Universal Serial Bus (USB) ports for additional devices
7	**Network Interface**	Connector for network
8	**RS-485**	Half-duplex connector for RS-485 devices.
9	**Power Supply**	12VDC power supply.
10	**Power Switch**	Switch for turning on/off the device.
11	**GND**	Ground (needs to be connected when DVR starts up).
12	**VIDEO OUT**	BNC connector for video output.
13	**GND**	Ground (needs to be connected when DVR starts up).
14	**Alarm Interface**	Connector for alarm input.
		Connector for alarm output.

Rear Panel 4
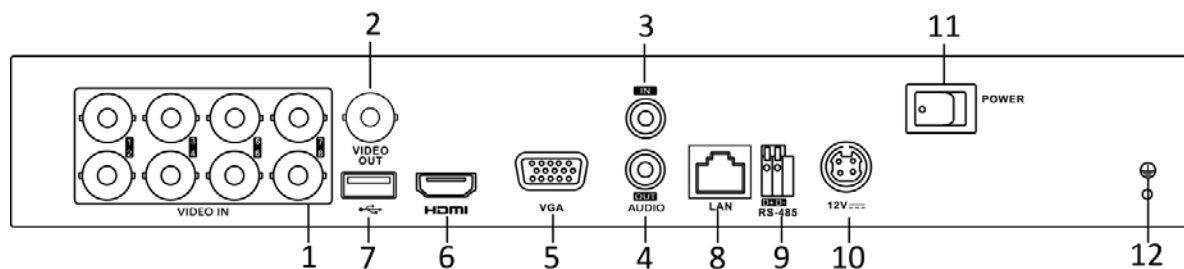
Figure 1. 9 Rear Panel 4

Table 1. 9 Description of Rear Panel 4

No.	Item	Description
1	**VIDEO IN**	BNC interface for TVI and analog video input.
2	**VIDEO OUT**	BNC connector for video output.
3	**AUDIO IN**	RCA connector
4	**AUDIO OUT**	RCA Connector
5	**VGA**	DB15 connector for VGA output. Display local video output and menu.
6	**HDMI**	HDMI video output connector.DB15 connector for VGA output. Display local video output and menu.
7	**USB Port**	Universal Serial Bus (USB) port for additional devices.
8	**Network Interface**	Connector for network
9	**RS-485**	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first DVR's D+, D- pin should be connected with the D+, D- pin of the next DVR.
10	**Power Supply**	12VDC Power Input
11	**Power Switch**	Switch for turning on/off the device.
12	**GND**	Ground

Chapter 2 Installation and Connections

2.1 DVR Installation

During the installation of the DVR:

1. Use brackets for rack mounting.
2. Ensure there is ample room for audio and video cables.
3. When installing cables, ensure that the bend radius of the cables are no less than five times than its diameter.
4. Connect both the alarm and RS-485 cable.
5. Allow at least 2cm (≈0.75-inch) of space between racks mounted devices.
6. Ensure the DVR is grounded.
7. Environmental temperature should be within the range of -10º C to 55º C, 14º F to 131º F.
8. Environmental humidity should be within the range of 10% to 90%.

2.2 Hard Disk Installation

Before you start:

Before installing a hard disk drive (HDD), please make sure the power is disconnected from the DVR. A factory recommended HDD should be used for this installation.

1/2/4/8 SATA hard disks can be installed depending on different models.

Tools Required: Screwdriver.

NOTE

As the installation steps of HDD are similar among different models, here we take some models as the example.

HDD Installation (A)

Steps:

1. Remove the cover from the DVR by unfastening the screws on the back and side.

2. Connect one end of the data cable to the motherboard of DVR and the other end to the HDD.
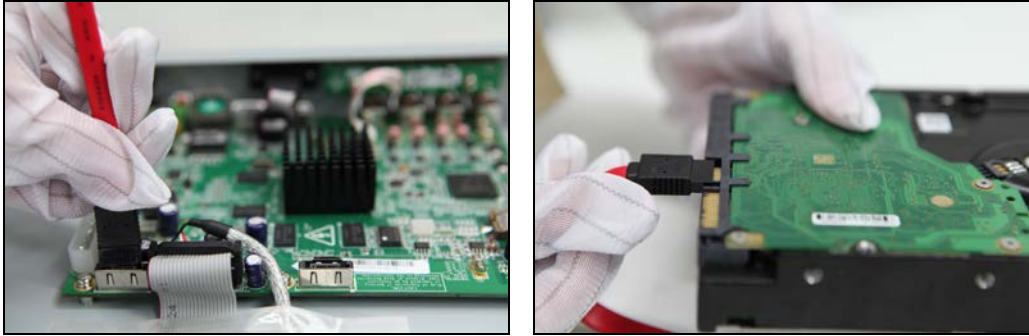
3. Connect the power cable to the HDD.
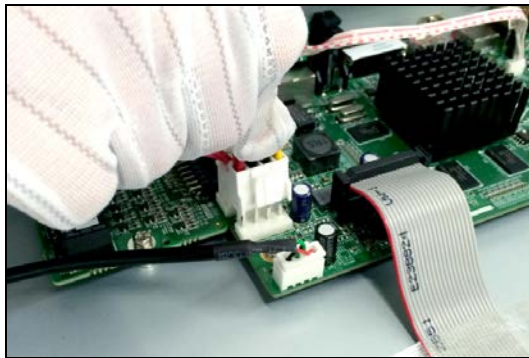
4. Place the HDD on the bottom of the device and then fasten the screws on the bottom to fix the HDD.

5. Re-install the cover of the DVR and fasten screws.

HDD Installation (B)

Steps:

1. Remove the cover from the DVR by unfastening the screws on the back and side.

2. Install the HDD to the HDD rack using the provided screws, and then fasten the screws to fix the HDD.
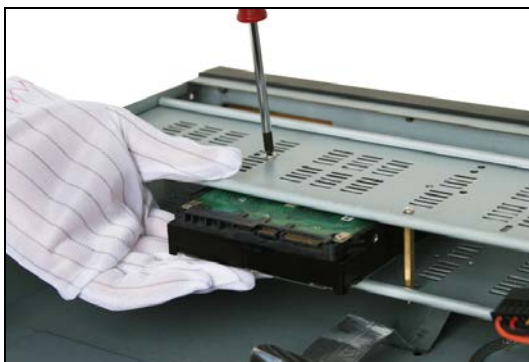
3. Connect one end of the data cable to the motherboard of DVR and the other end to the HDD.

4. Connect the power cable to the HDD.

5. Re-install the cover of the DVR and fasten screws.

HDD Installation (C)

1. Fasten the hard disk mounting handle to the hard disk with screws.

2. Insert the key and turn in clockwise direction to open the panel lock.
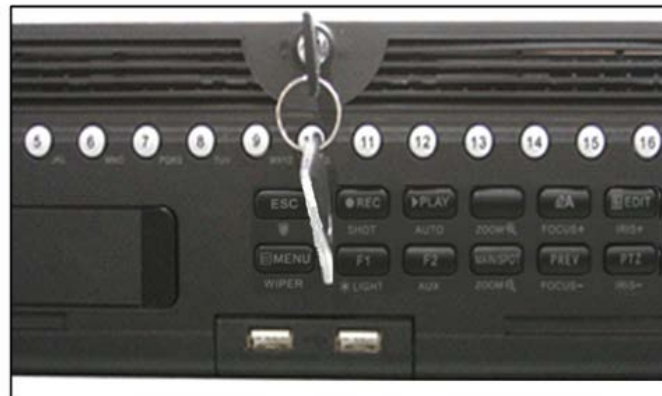
3. Press the buttons on the two sides of the front panel to open it.

4. Insert the hard disk along the slot until it is placed into position.
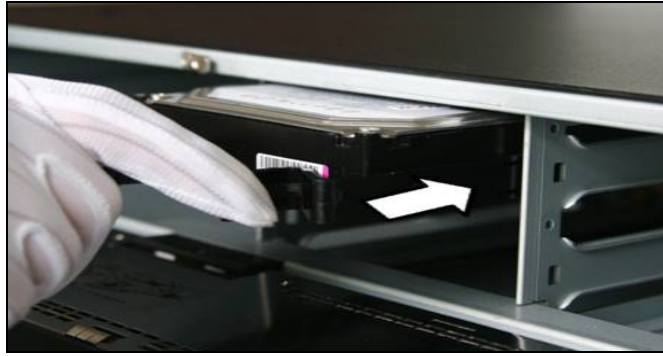
5. Repeat the above steps to install other hard disks onto the DVR. After having finished the installation of all hard disks, close the front panel and lock it with the key again.

2.3 Peripheral Connections

Wiring of Alarm Input

The alarm input is an open/closed relay. To connect the alarm input to the device, use the following diagram.

NOTE

If the alarm input is not an open/close relay, please connect an external relay between the alarm input and the device.
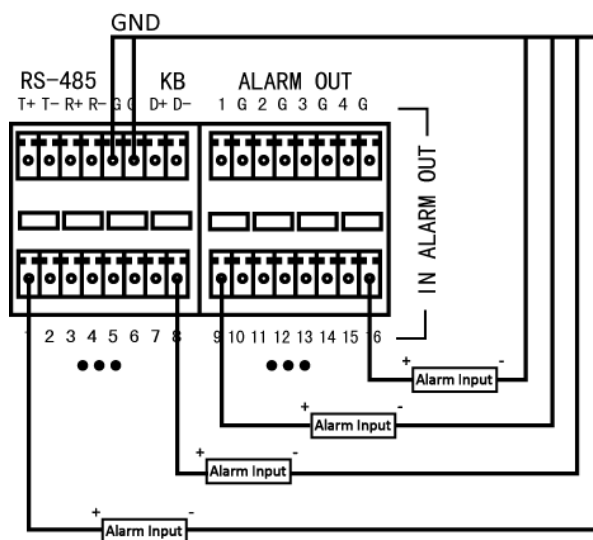
Wiring of Alarm Input

To connect to an alarm output (AC or DC load), use the following diagram:
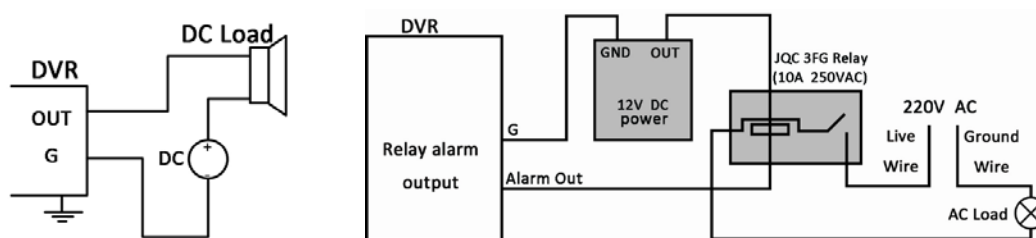
DC Load Connection Diagram   **AC Load Connection Diagram**

For DC load, the jumpers can be used within the limit of 12V/1A safely.

To connect an AC load, jumpers should be left open (you must remove the jumper on the motherboard in the DVR). Use an external relay for safety (as shown in the figure above).

There are 4 jumpers (JP1, JP2, JP3, and JP4) on the motherboard, each corresponding with one alarm output. By default, jumpers are connected. To connect an AC load, jumpers should be removed.

Example:

If you connect an AC load to the alarm output 3 of the DVR, then you must remove the JP 3.

Alarm Connection

To connect alarm devices to the DVR:

1. Disconnect *pluggable block* from the ALARM IN /ALARM OUT terminal block.

2. Press and hold the orange part of the *pluggable block*; insert signal cables into slots and release the orange part. Ensure signal cables are in tight.

3. Connect *pluggable block* back into terminal block.

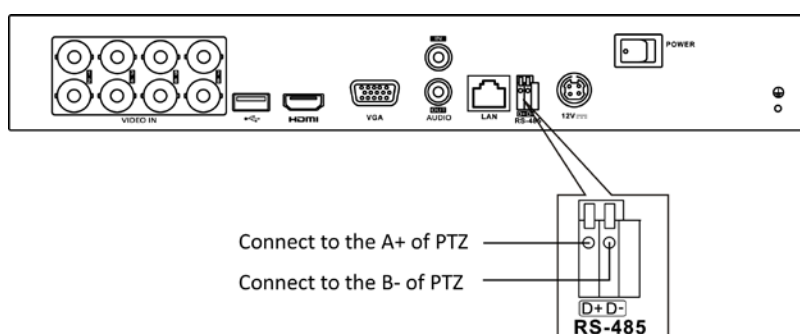# RS-485 and Controller Connection

Typical Connection :

Figure 2. 1 Controller Connection A

To connect PTZ to the DVR:

1. Disconnect *pluggable block* from the RS-485 terminal block.

2. Press and hold the orange part of the *pluggable block*; insert signal cables into slots and release the orange part. Ensure signal cables are in tight.

3. Connect A+ on PTZ to D+ on terminal block and B- on controller to D- on terminal block. Fasten stop screws.

4. Connect *pluggable block* back into terminal block.

Make sure both the controller and DVR are grounded.

2.4   HDD Storage Calculation Chart

The following chart shows an estimation of storage space used based on recording at one channel for an hour at a fixed bit rate.

Bit Rate	Storage Used
96K	42M
128K	56M
160K	70M
192K	84M
224K	98M
256K	112M
320K	140M
384K	168M
448K	196M
512K	225M
640K	281M
768K	337M
896K	393M
1024K	450M
1280K	562M
1536K	675M
1792K	787M
2048K	900M
4096K	1.76G
8192K	3.52G
16384K	7.03G

NOTE

Please note that supplied values for storage space used are just for reference. Storage space used is estimated by formulas and may have some deviation from actual value.

Chapter 3 Menu Operation

3.1 Menu Structure

NOTE

The menu structure varies according to different models.
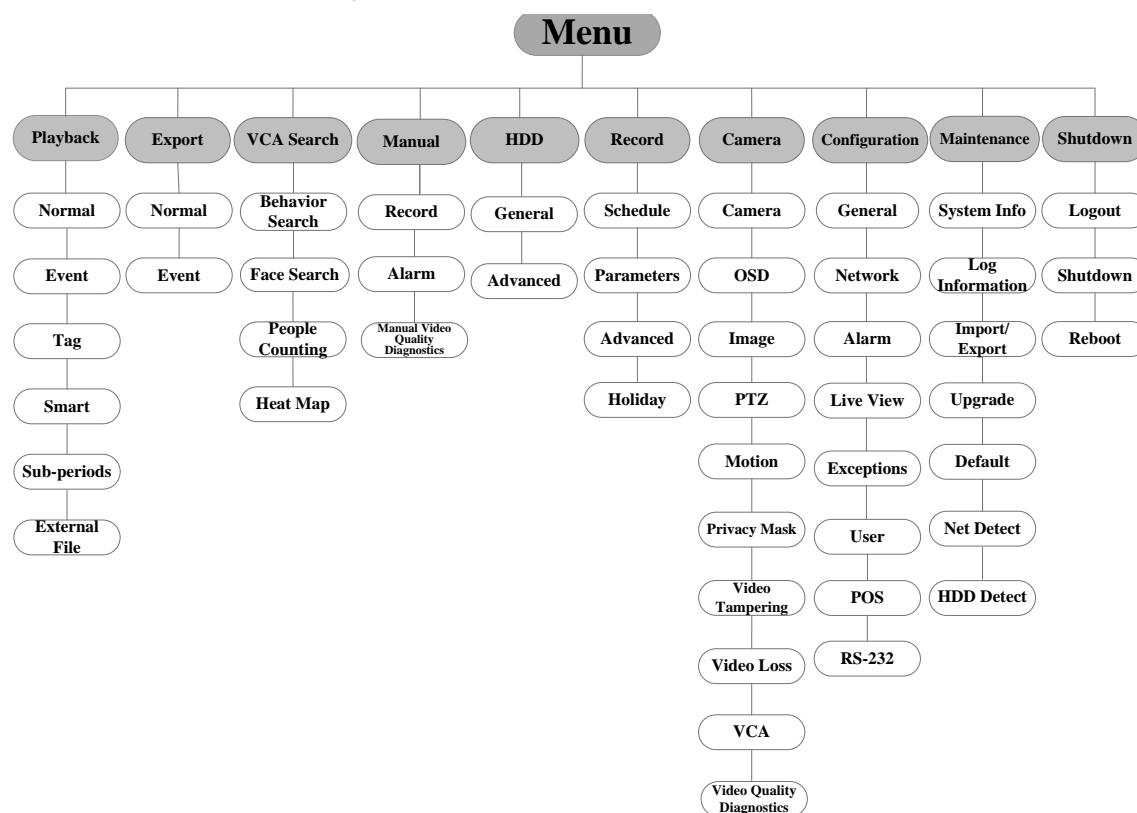
Figure 3. 1 Menu Structure

NOTE

POS function is suporrted by certain series only.

3.2 Startup and Shutdown

Proper startup and shutdown procedures are crucial to expanding the life of the DVR.
To start your DVR:

1. Check the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an
   Uninterruptible Power Supply (UPS) be used in conjunction with the device. The Power button) on the front

panel should be red, indicating the device is receiving the power.

2. Press the POWER button on the front panel. The Power LED should turn blue. The unit will begin to start.

After the device starts up, the wizard will guide you through the initial settings, including modifying password, date and time settings, network settings, HDD initializing, and recording.

To shut down the DVR:

1. Enter the Shutdown menu.

Menu > Shutdown

Figure 3. 2 Shutdown

2. Select the **Shutdown** button.

3. Click the **Yes** button.

3.3   Activating Your Device

Purpose:

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation. You can also activate the device via Web Browser, SADP or client software.

Steps:

1. Input the same password in the text field of **Create New Password** and **Confirm New Password**.
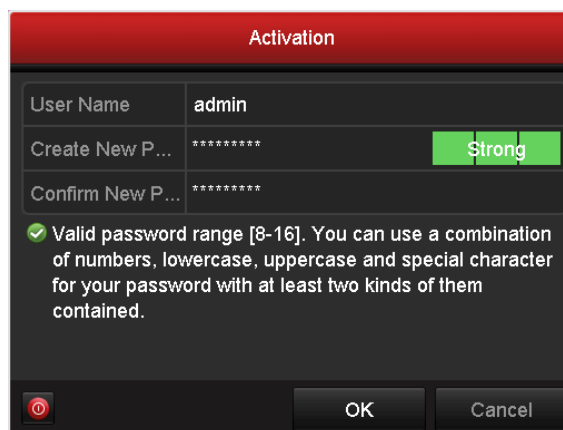
Figure 3. 3 Set Admin Password

⚠ **STRONG PASSWORD RECOMMENDED**–*We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

27

2. Click **OK** to save the password and activate the device.

NOTE

For the old version device, if you upgrade it to the new version, the following dialog box will pop up once the device starts up. You can click **YES** and follow the wizard to set a strong password.
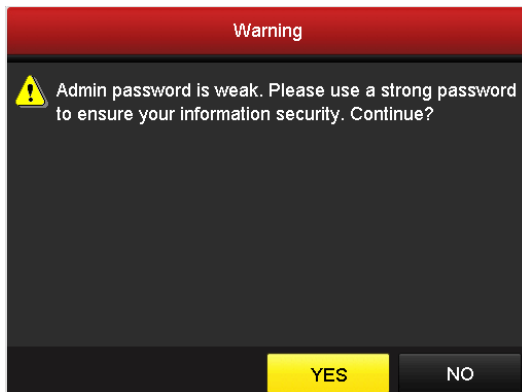

Figure 3. 4 Warning of Weak Password

3.4   Login and Logout

User Login

Purpose:

You have to log in to the device before operating the menu and other functions.

Steps:

1.   Select the **User Name** in the dropdown list.
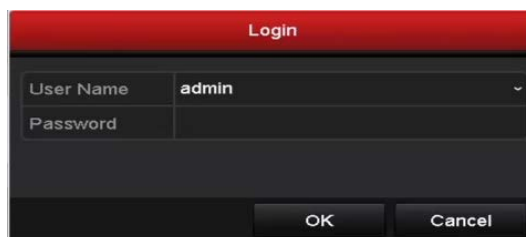
Figure 3. 5 Login

2.   Input **Password**.

3.   Click **OK** to log in.

NOTE

In the Login interface, for the admin, if you have entered the wrong password for 7 times, the account will be locked for 60 seconds. For the operator, if you have entered the wrong password for 5 times, the account will be locked for 60 seconds.
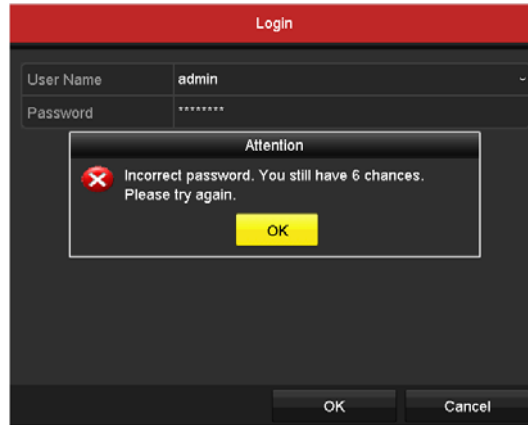
Figure 3. 6 User Account Protection for the Admin
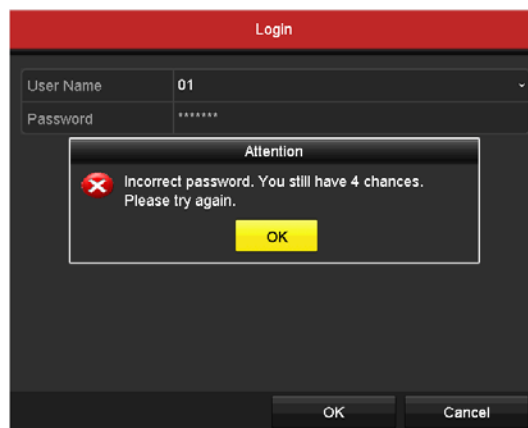
Figure 3. 7 User Account Protection for the Operator

User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to perform any operations, you need to enter user name and password log in again.

Steps:

1. Enter the Shutdown menu.

   Menu > Shutdown

Figure 3. 8 Logout

2. Click **Logout**.

NOTE

After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

3.5 Configuring the Signal Input

After the startup and login, the device system enters the Wizard for configuring the signal input.

Steps:

1. Check the checkbox to select different signal input types: TVI/CVBS, AHD, and IP.
2. Click **Apply** to save the settings.

Figure 3. 9 Configure Signal Input Type

NOTE

You can also click Menu > Camera > Signal Input Status to configure the signal input.

Steps:

1. Enter the **Signal Input Status** interface.

   Menu > Camera > Signal Input Status

2. Check the checkbox to select different signal input types: TVI/CVBS, AHD or IP.
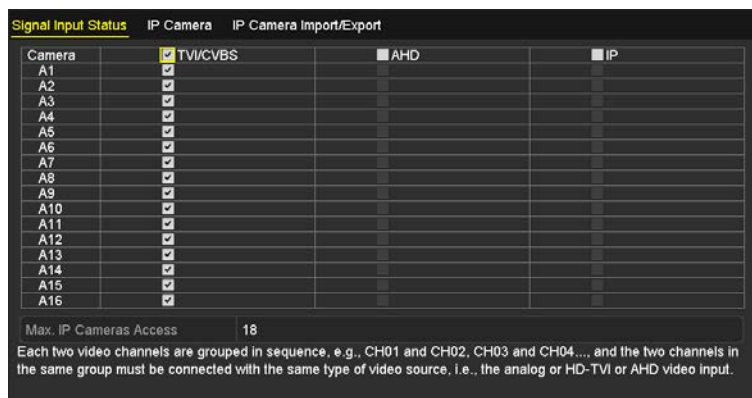
Figure 3. 10 Configure Signal Input Type

3. Click **Apply** to save the settings.

NOTE

● For this series DVR, each two video channels are grouped in sequence, e.g., CH01 and CH02, CH03 and CH04..., and each two channels in the same group must be connected with the same type of video source selected on GUI. For example, when the TVI/CVBS signal mode is selected, then either TVI or CVBS signal input can be connected to the channels in the same group; and when the AHD signal mode is selected, only the AHD signal input can be connected.

● For 3MP non-real time series, the default TVI/CVBS signal input type also supports the auto detection of 3MP signal. Each two types of the TVI/CVBS signals can be mixed randomly.

● In the live view interface, when there is no video signal of the analog channel, the corresponding connectable video signal type message can be displayed on the screen.

● For 3MP non-real time models, the IP channels will not be displayed on the interface and you can view the max. IP camera accessible number in the Max. IP Camera Access text field. Disabling one analog channel will add one IP channel.

3.6 Using the Setup Wizard

The Setup Wizard can walk you through some important settings of the device. By default, the Setup Wizard starts once the device has loaded.

Check the checkbox to enable Setup Wizard when device starts. Click **Next** to continue the setup wizard. Follow the guide of the Setup Wizard to configure the system resolution, system date/time, network settings, HDD management, record settings, etc.

Figure 3. 11 Wizard

3.7 Network Settings

Purpose:

Network settings must be properly configured before you operate DVR over network.

Steps:

1. Enter the Network Settings interface.

   Menu > Configuration > Network

<div align="center">Figure 3. 12 Network Settings</div>

2 self-adaptive 10M/100M/1000M network interfaces for 1.5U and 2U 3MP nnon-real time series.and multi-address and network fault tolerance are configurable. 1 self-adaptive 10M/100M/1000M network interface or 1 self-adaptive 10M/100Mbps network interface provided for other models.

2. Select the **General** tab.

3. In the **General Settings** interface, you can configure the following settings: Working Mode (applicable for certain series only), NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

   If the DHCP server is available, you can check the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.

4. After having configured the general settings, click the **Apply** button to save the settings.

3.8   Adding IP Cameras

Purpose:

Before you can get live video or record the video files, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct, and the IP camera to add has already been activated. Please refer to the *User Manual* for activating the inactive IP camera.

You can select one of the following three options to add the IP camera.

- **OPTION 1:**

Steps:

1. Select the **Add IP Camera** option from the right-click menu in live view mode or click Menu> Camera> Camera to enter the IP camera management interface.
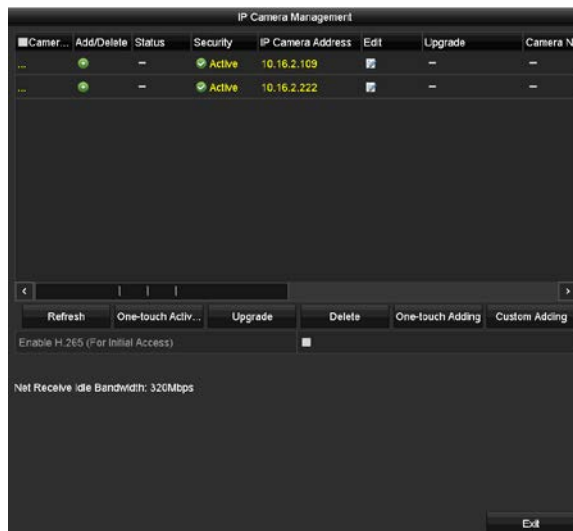
Figure 3. 13 IP Camera Management

2. Select the IP camera from the list and click the ⊕ button to add the camera (with the same admin password of the DVR's).

- **OPTION 2:**

Steps:

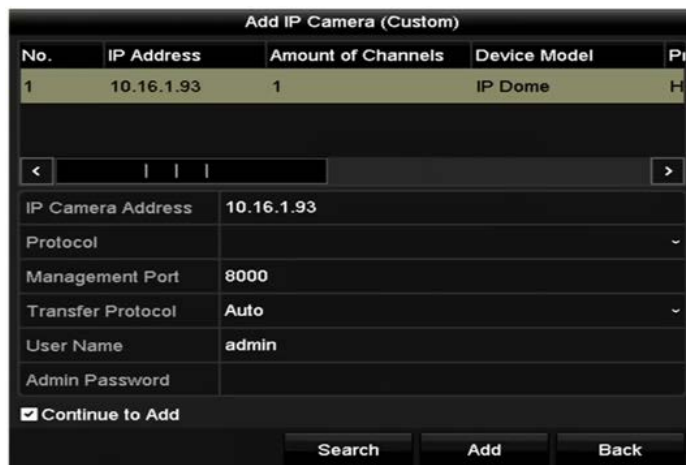1. Click the **Custom Adding** button to pop up the Add IP Camera (Custom) interface.

Figure 3. 14 Add IP Camera

2. Select the detected IP camera and click the **Add** button to add it directly, and you can click the **Search** button to refresh the online IP camera manually.

- **OPTION 3:**

You can choose to custom add the IP camera by editing the parameters in the corresponding text field and then click the **Add** button to add it.

3.9 Live View

Some icons are provided on screen in Live View mode to indicate different camera status. These icons include:

Live View Icons

In the live view mode, there are icons at the right top of the screen for each channel, showing the status of the record and alarm in the channel, so that you can find problems as soon as possible.

Indicating that there is an alarm or are alarms. Alarm includes video loss, tampering, motion detection or
   sensor alarm, etc.

Recording (manual record, continuous record, motion detection or alarm triggered record)
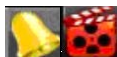
Alarm & Recording

Event/Exception (event and exception information, appears at the lower-left corner of the screen.)

3.10 Recording Settings

Before you start:

Make sure that the disk has already been installed. If not, please install a disk and initialize it. You may refer to the user manual for detailed information.

Purpose:

Two kinds of record types are introduced in the following section, including Instant Record and All-day Record. And for other record types, you may refer to the user manual for detailed information.

NOTE

After rebooting all the manual records enabled are canceled.

Steps:

1. On the live view window, right lick the window and move the cursor to the **Start Recording** option, and
   select **Continuous Record** or **Motion Detection Record** on your demand.
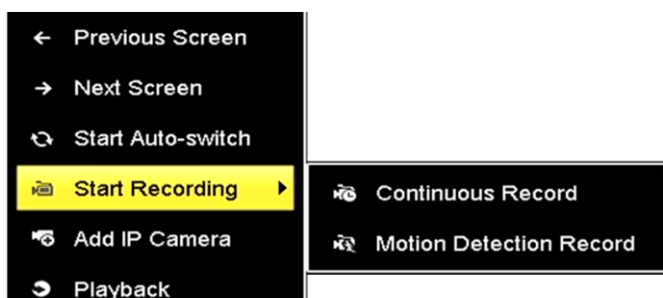

Figure 3. 15 Start Recording from Right-Click Menu

2. Click the **Yes** button in the pop-up Attention message box to confirm the settings. All the channels will start
   to record in the selected mode.

3.11 Playback

The recorded video files on the hard disk can be played back in the following modes: instant playback, all-day

playback for the specified channel, and playback by normal/event/smart/tag/sub-periods/external file search.

Steps:

1. Enter playback interface.

   Click Menu>Playback or select Playback from the right-click menu

2. Check the checkbox of channel(s) in the channel list and then double-click to select a date on the calendar.

3. You can use the toolbar in the bottom part of Playback interface to control playing progress.

Figure 3. 16 Playback Interface

NOTE

This enable/disable POS overlay function is supported by certain series DVR only. When the POS is enabled when playing back, the POS information will be overlain on the video.

4. Select the channel(s) you want to play back by checking the checkbox(s), or execute simultaneous playback of multiple channels.

Chapter 4 Accessing by Web Browser

You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.

Purpose:

You can get access to the device via web browser. You may use one of the following listed web browsers: Internet Explorer 6.0, Internet Explorer 7.0, Internet Explorer 8.0, Internet Explorer 9.0, Internet Explorer 10.0, Apple Safari, Mozilla Firefox, and Google Chrome. The supported resolutions include 1024*768 and above.

Steps:

1. Open web browser, input the IP address of the device and then press Enter.
2. Log in to the device.
    - If the device has not been activated, you need to activate the device first before login.

Figure 4. 1 Set Admin Password

1) Set the password for the admin user account.
2) Click **OK** to log in to the device.

> ⚠ **STRONG PASSWORD RECOMMENDED**–*We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

- If the device is already activated, enter the user name and password in the login interface, and click the **Login** button.
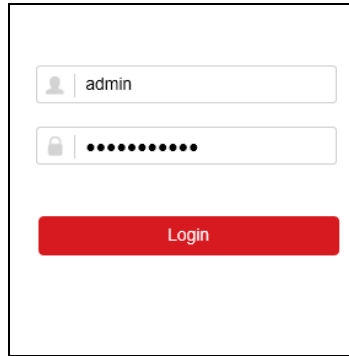
Figure 4. 2 Login

3. Install the plug-in before viewing the live video and managing the camera. Please follow the installation prompts to install the plug-in.

NOTE

You may have to close the web browser to finish the installation of the plug-in.

After login, you can perform the operation and configuration of the device, including the live view, playback, log search, configuration, etc.