

HD18EXP

Explosion-proof, high-speed analogue PTZ Camera

User Manual



Note: To ensure proper operation, please read this manual thoroughly before using the product and retain the information for future reference.

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HD18EXP
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Contents

1	About this manual	5
2	Safety and compliance information	6
2.1	Safety information	6
2.2	Compliance information	7
3	Product overview	8
3.1	Features	8
3.2	Models	8
3.3	Description	8
4	Configure and operate the camera	10
4.1	Display camera parameters on screen	10
4.2	Access the OSD menu	11
4.3	Navigate the OSD menu	11
4.4	Use the OSD menu	16
4.4.1	<i>Main Page 1</i>	<i>16</i>
4.4.1.1	Language	17
4.4.1.2	Default Camera	17
4.4.1.3	Backlight Compensation	17
4.4.1.4	Focus	17
4.4.1.5	Auto Exposure	18
4.4.1.6	White Balance Control	18
4.4.2	<i>Setup Menu 1</i>	<i>19</i>
4.4.2.1	Zoom Speed	19
4.4.2.2	Digital Zoom	20
4.4.2.3	Slow Shutter	20
4.4.2.4	DNR	20
4.4.2.5	Image Inverse	20
4.4.2.6	Freeze	20
4.4.2.7	Aperture	20
4.4.3	<i>Setup Menu 2</i>	<i>21</i>
4.4.3.1	Flip	21
4.4.3.2	Angle Adjuster	21
4.4.3.3	Speed by Zoom	22
4.4.3.4	Auto Calibration	22
4.4.3.5	Password	22
4.4.3.6	OSD Auto Close	22
4.4.3.7	System Reset	23
4.4.4	<i>Main Page 2</i>	<i>23</i>
4.4.4.1	ID Display	23
4.4.4.2	Title Display	23
4.4.4.3	Title Setting	24
4.4.4.4	Preset	24
4.4.4.5	Sequence	25
4.4.4.6	Autopan	26
4.4.4.7	Cruise	27
4.4.4.8	Home Setting	28
4.4.5	<i>Main Page 3</i>	<i>29</i>
4.4.5.1	IR Function	29
4.4.5.2	Alarm Setting	29
4.4.5.3	Alarm Detect	31

- 4.4.5.4 WDR Function 33
- 4.4.5.5 Privacy Mask 33
- 4.4.5.6 Time Setting 34
- 4.4.5.7 Schedule 35
- 4.4.5.8 Exit OSD 36

1 About this manual

What this manual covers

This manual applies to the HD18EXP, Siqura's explosion-proof, high-speed analog PTZ camera.

It explains:

- How to communicate with the unit
- How to configure the device settings
- How to operate the unit

Who should read this manual

This manual is intended for technicians and operators involved in the configuration and operation of HD18EXP cameras.

What you should already know

To work with a HD18EXP a technician or operator should have adequate knowledge and skills in the following fields:

- Basic understanding of camera technologies
- CCTV systems and components
- Using a control keyboard to navigate an OSD menu
- Video, data, and contact closure transmissions

Why specifications may change

At Siqura, we are committed to delivering high-quality products and services. The information given in this manual was current when published. As we are relentlessly working to improve our products and user experience, all specifications are subject to change without notice.

We like to hear from you!

Customer satisfaction is our first priority. We welcome and value your opinion about our products and services. Should you detect errors or inaccuracies in this manual, we would be grateful if you would inform us. We invite you to offer your suggestions and comments via t.writing@tkhsecurity.com. Your feedback helps us to further improve our documentation.

2 Safety and compliance information

This chapter contains the HD18EXP safety instructions and compliance information.

In This Chapter

2.1 Safety information.....	6
2.2 Compliance information.....	7

2.1 Safety information

General

The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of design, manufacture, and intended use of the module. Siqura assumes no liability for the customer's failure to comply with any of these safety requirements.

Handle the camera carefully

Do not abuse the camera. Avoid bumping and shaking. The camera can be damaged by improper handling or storage.

Do not disassemble the camera

To prevent electric shock, do not remove screws or covers. There are no user serviceable parts inside. Consult technical support if a camera is suspected of malfunctioning.

Do not block the cooling vent on indoor cameras

This camera has a cooling fan inside. Blocking the cooling holes may lead to overheating and cause malfunction. Overheating is not covered by warranty.

Do not exceed the ratings given in the Technical Specifications

Verify that the power source is appropriate before you plug in and operate the unit. Use the camera under conditions where the temperature remains within the range given in the Technical Specifications of this product.




Do not use strong or abrasive detergents to clean the camera

Use a dry cloth to clean the camera when it is dirty. If the dirt is hard to remove, use a mild detergent and wipe gently. To clean the lens, use lens tissue or a cotton tipped applicator and ethanol. Do *not* clean the lens with strong detergents.

Never face the camera towards the sun

Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects, as this can damage the camera.

2.2 Compliance information

	<p>This device complies with Part 15 of the FCC Rules.</p> <p>Operation is subject to the following conditions.</p> <ul style="list-style-type: none">• This device may not cause harmful interference.• This device must accept any interference received, including interference that may cause undesired operation.
	<p>This symbol on the product or on its packaging indicates that this product shall not be treated as household waste in accordance with Directive 2002/96/EC. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By proper waste handling of this product you ensure that it has no negative consequences for the environment and human health, which could otherwise be caused if this product is thrown into the garbage bin. The recycling of materials will help to conserve natural resources.</p> <p>For more information on how to recycle this product, please contact your local city office, your household waste disposal service or the seller of the product.</p>
	<p>Compliance is evidenced by written declaration from our suppliers, assuring that any potential trace contamination levels of restricted substances are below the maximum level set by EU Directive 2002/95/EC, or are exempted due to their application.</p>

3 Product overview

The Siqura HD18EXP is an explosion-proof, high speed analogue PTZ dome camera with exceptional imaging controls to provide for highly detailed surveillance footage. This chapter introduces the camera and its features.

In This Chapter

3.1 Features.....	8
3.2 Models.....	8
3.3 Description.....	8

3.1 Features

Siqura HD18EXP PTZ Dome



- 1/4" CCD (Super HAD 2 CCD)
- 36x Optical zoom
- 12x Digital zoom
- Preset speed up to 400°/sec
- Preset position / Sequence / Autopan / Cruise
- Multiple PTZ protocols supported
- Digital slow shutter
- Day/Night with IR-cut filter
- Auto white balance
- Wide dynamic range
- Backlight compensation
- 16 Masking zones
- 4 Alarm inputs, 1 alarm output
- Stainless steel housing
- IP67 Ingress Protection
- ATEX Approved for gas and dust

3.2 Models

The HD18EXP series includes models with NTSC (/N) and PAL support (/P).

3.3 Description

General

HD18EXP cameras are explosion-proof, high-speed, PTZ dome cameras with day/night functionality, backlight compensation, and wide dynamic range.

Superior protection

The HD18EXP has an IP67 ingress rating. The robust construction of the HD18EXP guarantees the safety of your facility even if the camera should come into contact with hazardous material. Its fully integrated stainless steel housing and mounting bracket protect this Siqura camera in exceptionally taxing conditions, including offshore installations, where corrosion is a constant threat. The camera housing is manufactured completely from Stainless Steel 316 which is ideally suited for use within the offshore and onshore environments. Stainless Steel screws and mounting bracket for additional wall or pole mount are incorporated ensuring a totally corrosion free unit.

High-speed dome

The HD18EXP has a 36x autofocus zoom lens with 12x digital zoom. The lens can move in almost any direction offering a wide view without missing any details. The dome provides variable pan/tilt speeds ranging from a fast patrol of 400° per second to a slow ramble of 0.5° per second with +/- 0.1° pan accuracy for fast and accurate tracking. 360° endless rotation and -10°~190° tilt travel allow for the tracking of objects passing directly underneath the dome. Up to 256 preset points can be programmed for precise location of target areas. Users can also define eight sequence routes, four autopan routes, and eight cruise routes for the camera to operate automatically.

4 Configure and operate the camera

This chapter explains how to use the on-screen display (OSD) menu of your HD18EXP to configure its camera functions and parameter settings.

In This Chapter

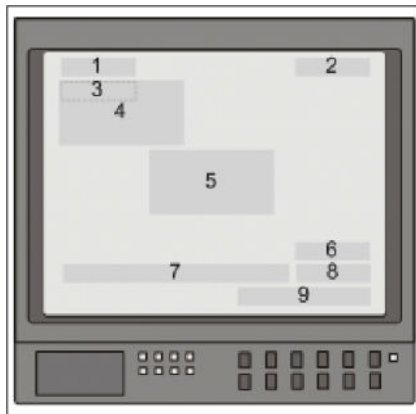
4.1 Display camera parameters on screen.....	10
4.2 Access the OSD menu.....	11
4.3 Navigate the OSD menu.....	11
4.4 Use the OSD menu.....	16

4.1 Display camera parameters on screen

The following camera parameters can be selectively displayed on screen.

Position	Function	OSD Display	Description
1	Motion	MOTION	Alarm detect message
2	Alarm	ALARM 1	Alarm message
3	Focus modes & Backlight	A	Autofocus mode
		M	Manual focus mode
		X	Backlight compensation OFF
		B	Backlight compensation ON
4	Boot message	XX... (dome type); ID: 001 (default) DSCP/9600 (default) INITIALIZING	Shows dome type, ID address, protocol, and baud rate
5	Error message	PAN ERROR TILT ERROR CAM MODULE ERROR	Shows system initialising error message
6	Zoom ratio	x1	Current zoom ratio (Optical zoom/Digital zoom)
7	Title	<ul style="list-style-type: none"> Max. 20 characters for each title 16 Sets of titles are available 	
8	Camera ID	001	Shows the camera ID
9	Time	XXXX/XX/XX XX:XX	Year/month/day hour:minute

OSD Summary, for positions see below



On-screen display positions

4.2 Access the OSD menu

The detailed functions and parameter setting of your high-speed dome camera can be set by the OSD (On-Screen Display) menu with a control device such as a control keyboard.

» To enter the OSD menu

- Press the **<CAMERA MENU>** key on the control keyboard and hold it for 3 seconds.

» To select a setup item

- Use the direction keys on the keyboard to move the OSD cursor in the OSD menu.
- For items with an arrow (→), press the right/left direction keys on the control keyboard to select it.
- For items with a (↓), press the **<CAMERA MENU>** key on the control keyboard to enter the submenu.
- For items with several arrows (→↓), use the right/left direction keys to select these functions, and then press the **<CAMERA MENU>** key on the control keyboard to enter their submenus.

In the Camera OSD menu, the **<CAMERA MENU>** key functions as "ENTER" and "EXIT".

Note: The command to enter the OSD menu is specific to the control keyboard. For example, keyboards using the Pelco D protocol use Set/Get Preset 95 to enter the OSD menu.

For further setup procedures or information on how to enter the various menus, refer to the user manual of your control device.

4.3 Navigate the OSD menu

The OSD setup menu structure is listed in the following table. The asterisk symbol (*) indicates the factory default setting. For a detailed function description, see Use the OSD menu (on page 16).

Item	Layer 1	Layer 2	Layer 3	Default
LANGUAGE	ENGLISH, FRENCH, GERMAN, ITALIAN, PORTUGUESE, SPANISH, RUSSIAN, POLISH, SIMPLIFIED CHINESE, TRADITIONAL CHINESE, JAPANESE, TURKISH			ENGLISH
DEFAULT CAMERA	<ON>, <OFF>			ON
BACKLIGHT	<ON>, <OFF>	BLC LEVEL <00> ~ <30>		OFF
		EXIT + SAVE: YES		
	<OFF>			
FOCUS	AUTO	AF MODE <NORMAL>, <Z. TRIG.>, <PTZ TRIG.>		NORMAL
		EXIT + SAVE		
	MANUAL			
AE MODE	EXPOSURE COMP.	<OFF>, EXPOSURE VALUE: <-10.5dB> ~ <10.5dB>		OFF
		EXIT + SAVE: YES		
	AE MODE	AUTO	BRIGHT VALUE/ SHUTTER SPEED/ IRIS VALUE/ GAIN VALUE: AUTO	AUTO
			EXIT + SAVE: YES	
		SHUTTER	SHUTTER SPEED PAL: <1/50> ~ <1/10000> SEC. NTSC: <1/60> ~ <1/10000> SEC.	
			EXIT + SAVE: YES	
	IRIS	IRIS VALUE <F1.6>		
		EXIT + SAVE: YES		
	MANUAL	BRIGHT VALUE: AUTO		
		SHUTTER SPEED PAL: <1/50> ~ <1/10000> SEC. NTSC: <1/60> ~ <1/10000> SEC.		
IRIS VALUE <F1.6>				
GAIN VALUE <-3>dB ~ <28>dB				
	EXIT + SAVE: YES			
	EXIT + SAVE	YES		
WBC MODE	AUTO (Auto White Balance)			*
	INDOOR			
	OUTDOOR			
	ATW (Autotracing WBC)			

Item	Layer 1	Layer 2	Layer 3	Default
	MANUAL	R GAIN <000> ~ <127>		
		B GAIN <000> ~ <127>		
		EXIT + SAVE: YES		
SETUP MENU 1	ZOOM SPEED	<8>		8
	DIGITAL ZOOM	<OFF>, <2x> ~ <12x>		OFF
	SLOW SHUTTER	<ON>, <OFF>		OFF
	D.N.R.	2D N.R. <ON>, <OFF>		ON
		3D N.R. <ON>, <OFF>		
		EXIT + SAVE: YES		
	IMAGE INVERSE	<ON>, <OFF>		OFF
	FREEZE	<ON>, <OFF>		OFF
APERTURE	<01> ~ <16>		7	
EXIT	<YES>			
SETUP MENU 2	FLIP	<OFF>, <M.E.>, <IMAGE>		OFF
		EXIT + SET: YES		
	ANGLE ADJUSTER	MIN ANGLE <-10 ~ +10 DEG>		0
		MAX ANGLE <080 ~ 100 DEG>		90
		EXIT + SET: YES		
	SPEED BY ZOOM	<ON>, <OFF>		OFF
	AUTO CALI.	<ON>, <OFF>		OFF
	PASSWORD	<ON>, <OFF>		OFF
	OSD AUTO CLOSE	<OFF>, <5> ~ <30> SEC.		20
	SYSTEM RESET	SYSTEM RESET <YES>		
DEFAULT SYSTEM <YES>				
EXIT <YES>				
EXIT	YES			
ID DISPLAY	<ON>, <OFF>			ON
TITLE DISPLAY	<ON>, <OFF>			OFF
TITLE SETTING	<01> ~ <16>			01
PRESET	PRESET SET	<001> ~ <256>		ENTER
	PRESET RUN	<001> ~ <256>		ENTER
	EXIT	YES		
SEQUENCE	SEQUENCE LINE	<1> ~ <8>		1

Item	Layer 1	Layer 2	Layer 3	Default
	SEQUENCE POINT	<01> ~ <64>		01
	PRESET POSITION	<001> ~ <255>, <END>		001
	SPEED	<01> ~ <15>		01
	DWELL TIME	<000> ~ <127> SEC		000
	RUN SEQUENCE	ENTER		
	EXIT	YES		
AUTOPAN	AUTOPAN LINE	<1> ~ <4>		1
	START POINT	<TO FIND>, <TO SAVE>		
	END POINT	<TO FIND>, <TO SAVE>		
	DIRECTION	<RIGHT>, <LEFT>		RIGHT
	SPEED	<01> ~ <04>		1
	RUN AUTOPAN	ENTER		
	EXIT	YES		
CRUISE	CRUISE LINE	<1> ~ <8>		1
	RECORD START	ENTER		
	RECORD END	ENTER		
	RUN CRUISE	ENTER		
	EXIT	YES		
HOME SETTING	HOME FUNCTION	<ON>, <OFF>		OFF
	SELECT MODE	<PRESET>, <SEQUENCE>, <AUTOPAN>, <CRUISE>		PRESET
	PRESET POINT	<001> ~ <256>		1
	SEQUENCE LINE	<1> ~ <8>		1
	AUTOPAN LINE	<1> ~ <4>		1
	CRUISE LINE	<1> ~ <8>		1
	RETURN TIME	<1> ~ <128> MIN.		1
	GO	ENTER		
	EXIT	YES		
IR FUNCTION	AUTO	THRESHOLD <MID>, <HI>, <LOW>		LOW
		EXIT + SAVE: YES		
	MANUAL	IR MANUAL: <ON>, <OFF>		
		EXIT + SAVE: YES		
ALARM SETTING	ALARM PIN	<1> ~ <8>		1

Item	Layer 1	Layer 2	Layer 3	Default	
	ALARM SWITCH	<ON>, <OFF>		OFF	
	ALARM TYPE	<NO> (Normal Open), <NC> (Normal Close)		N.C.	
	ALARM ACTION	<PRESET>, <SEQUENCE>, <AUTOPAN>, <CRUISE>		PRESET	
	PRESET POINT	<001> ~ <256>		1	
	SEQUENCE LINE	<1> ~ <8>		1	
	AUTOPAN LINE	<1> ~ <4>		1	
	CRUISE LINE	<1> ~ <8>		1	
	DWELL TIME	<001> ~ <127> SEC., <ALWAYS>		ALWAYS	
	EXIT	YES			
ALARM DETECT	DETECT SWITCH	<ON>, <OFF>		OFF	
	DETECT MODE	<MOTION>			
	BLOCK MODE	NONE; MOTION: <ON>, <OFF>			
	FRAME SET	NONE; MOTION: <01> ~ <04>			
	FRAME DISABLE	NONE; MOTION: <01> ~ <04>			
	THRESHOLD	NONE; MOTION: <01> ~ <255>			
	EXIT	YES			
WDR FUNCTION	<ON>, <OFF>			OFF	
PRIVACY MASK	PRIVACY SWITCH	<ON>, <OFF>		OFF	
	TRANSPARENCY	<ON>, <OFF>		OFF	
	COLOR	<BLACK>, <WHITE>, <RED>, <GREEN>, <BLUE>, <CYAN>, <YELLOW>, <MAGENTA>		BLACK	
	SET MASK	<1> ~ <16>	H CENTER: L/R		
			V CENTER: d/U		
			H SIZE <000> ~ <080>		0
			V SIZE <000> ~ <060>		0
			EXIT + SAVE		
CLEAR MASK	<01> ~ <16>		1		
EXIT	YES				
TIME SETTING	TIME DISPLAY	<ON>, <OFF>		OFF	
	SET YEAR	<00> ~ <99>			

Item	Layer 1	Layer 2	Layer 3	Default	
	SET MONTH	<01> ~ <12>			
	SET DAY	<00> ~ <31>			
	SET HOUR	<00> ~ <23>			
	SET MINUTE	<00> ~ <59>			
	EXIT + SAVE				
SCHEDULE	SWITCH	<ON>, <OFF>		OFF	
	POINT	<01> ~ <32>		1	
	HOUR	<00> ~ <23>		0	
	MINUTE	<00> ~ <59>		0	
	MODE	NONE		NO FUNCTION	*
		PRESET		PRESET POINT <001> ~ <256>	
		SEQUENCE		SEQUENCE LINE <1> ~ <8>	
		AUTOPAN		AUTOPAN LINE <1> ~ <4>	
		CRUISE		CRUISE LINE <1> ~ <8>	
		IR FUNC.		IR FUNCTION <AUTO>, <ON>, <OFF>	
SCHEDULE RESET	YES				
EXIT	YES				
EXIT OSD	YES				

4.4 Use the OSD menu

This section provides a description of the OSD menu and the camera functions and parameter settings that you can configure through this menu.

4.4.1 Main Page 1

Main Page 1 is the home page of the OSD menu.

MAIN PAGE 1	
LANGUAGE	ENGLISH
DEFAULT CAMERA	ON
BACKLIGHT	OFF
FOCUS	AUTO
AE MODE	ENTER
WBC MODE	AUTO
SETUP MENU 1	ENTER
SETUP MENU 2	ENTER

4.4.1.1 Language

The camera supports multilanguage OSD operation. The available languages include English, Chinese, Simplified Chinese, Spanish, Portuguese, French, German, Italian, Polish, Russian, Japanese, and Turkish. You can directly set the language on the Main Page 1 menu. As you select a language with the arrow keys, the OSD automatically changes to the language you select. The default language is English.

4.4.1.2 Default Camera

Default Camera is used to restore specific camera settings to factory defaults. The settings that are affected include backlight compensation, focus, auto exposure (AE), white balance control (WBC), aperture, slow shutter, and digital zoom. Once any one of the items is modified, the Default Camera setting changes to OFF automatically. Select **ON** to recall the default settings for these camera parameters.

4.4.1.3 Backlight Compensation

The Backlight Compensation function prevents the centre object from being too dark in surroundings where there is excessive light behind the centre object.

►► To activate backlight compensation

- Select **ON**.
The centre object is brightened in contrast to the edges of the picture (where backlight would most likely be located).

4.4.1.4 Focus

The focus of the dome camera can be operated in two modes: Auto Focus and Manual Focus.

AUTO

There are three options for users to select for different conditions:

- **Normal Mode**
The camera stays focused automatically and continuously in any condition.
- **Zoom Trigger Mode**
AF is activated when users press the TELE or WIDE keys on a control device to change the zoom.
- **PTZ Trigger Mode**
AF is triggered when panning, tilting, or zooming the dome camera.

MANUAL

In this focus mode, users can adjust focus near/far via the Focus Near/Far key of a control keyboard.

Note: The AF mode is resumed after every camera reboot.

4.4.1.5 Auto Exposure

Exposure is the amount of light received by the image sensor and is determined by how wide you open the lens diaphragm (iris adjustment), by how long you keep the sensor exposed (shutter speed), and by other exposure parameters. Under this menu, users can define how the auto exposure (AE) function works.

EXPOSURE COMPENSATION

The exposure value ranges from -10.5dB ~ 10.5dB. Select **OFF** to disable the function.

AE MODE

- **AUTO**
In this mode, the camera's brightness, shutter speed, iris and AGC (Auto Gain Control) control circuits work together automatically to achieve a consistent video output level.
- **SHUTTER**
With this option, shutter speed controls the exposure, and both iris and AGC function automatically in cooperation with shutter speed to achieve consistent exposure output. The shutter speed ranges from 1/10000 ~ 1/50.
- **IRIS**
In this mode, the iris function controls the exposure. Shutter speed and AGC circuit function automatically in cooperation with the iris function to achieve consistent exposure output. The iris value is fixed at F1.6.
- **MANUAL**
In this mode, users can adjust shutter speed (1/10000 ~ 1/50 for PAL; 1/10000 ~ 1/60 for NTSC), and gain value (-3dB ~ 28dB) for optimised video output.

EXIT

Exit the AE MODE menu and return to Main Page 1.

4.4.1.6 White Balance Control

A camera needs to measure the quality of a light source and find a reference colour temperature in order to calculate all the other colours. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the white balance control (WBC) modes, according to the operating environment. The table below provides the colour temperatures of some light sources as a general reference.

Light source	Colour temperature in K
Cloudy sky	6,000 to 8,000
Noon sun and clear sky	6,500
Household lighting	2,500 to 3,000
75-watt bulb	2,820
Candle flame	1,200 to 1,500

Light source reference

WBC MODE

- **AUTO**
In this mode, white balance works within its colour temperature range. This mode computes the white balance value output using colour information from the entire screen. It outputs the proper value using the colour temperature radiating from a black subject based on a range of values from 3000 K to 7500 K.
- **INDOOR**
3200 K Base mode.
- **OUTDOOR**
5800 K Base mode.
- **ATW (Auto Tracking White Balance)**
The dome takes out the signals in a screen in the range from 2000 K to 10000 K.
- **MANUAL**
In this mode, users can change the White Balance value manually; R gain and B gain are adjustable and range from 0 to 127.

WBC MENU	
R GAIN	050
B GAIN	050
EXIT + SAVE	YES

4.4.2 Setup Menu 1

Setup Menu 1 is accessed from the Main Page 1 menu.

SETUP MENU 1	
ZOOM SPEED	8
MAX DIGI. ZOOM	OFF
SLOW SHUTTER	OFF
D.N.R.	ENTER
IMAGE INVERSE	OFF
FREEZE	OFF
APERTURE	07
EXIT	YES

4.4.2.1 Zoom Speed

Zoom speed is fixed (at value <8>).

4.4.2.2 Digital Zoom

With this item, users can enable or disable 12× digital zoom. When enabled, digital zoom is activated after the full optical zoom level has been reached.

The digital zoom ratio is adjustable from 02 to 12. The default setting is OFF.

Note on digital and optical zoom: The difference between optical and digital zoom is that optical zoom uses the lens within the camera to draw the image closer via zoom in or out to achieve the desired effect. Optical zoom keeps the same resolution in the zoomed image as there was in the original image, therefore the image quality stays the same. In contrast, digital zoom takes a part of the image and expands that part to the full size of the original image. Image quality is thereby reduced.

4.4.2.3 Slow Shutter

The shutter speed determines how long the image sensor is exposed to light. To see clear images in a dark environment, enable this function and select a slower shutter speed.

When the digital slow shutter function is enabled, the dome automatically adjusts the shutter speed based on the light conditions of the installation environment. It enables users to see objects in a dark environment below 0.1 lux.

4.4.2.4 DNR

With 2D/3D Noise Reduction, the processor analyses pixel by pixel and frame by frame to eliminate environmental noise signals so that the highest quality image can be produced even in low light conditions. In comparison with 2D DNR, 3D DNR generates better denoising effects.

4.4.2.5 Image Inverse

Users can select **ON** to inverse the displayed image both vertically and horizontally. The image inverse function can be applied when the dome is placed on a desk top in a conference, for instance.

The default setting is OFF.

Note: When this function is enabled, the privacy mask(s) are disabled automatically; see Privacy Mask.

4.4.2.6 Freeze

The Freeze function allows to hold the image while the camera is moving between preset positions such as in Preset (on page 24) and Sequence modes. For example, when the dome camera is manipulated to run from point A to point B, if the Freeze function is activated, the first view that users would see is point A. Then the next view would directly change to point B, without displaying the moving path.

The default setting is OFF.

4.4.2.7 Aperture

Under this setup menu, users can enhance the edges of objects in an image. There are 16 levels of adjustment. The options are 01 (no enhancement) to 16 (full enhancement). When shooting text, this function sharpens it.

4.4.3 Setup Menu 2

Setup Menu 2 is accessed from the Main Page 1 menu.

SETUP MENU 2	
FLIP	ENTER
ANGLE ADJUSTER	ENTER
SPEED BY ZOOM	OFF
AUTO CALI.	OFF
PASSWORD	OFF
OSD AUTO CLOSE	20 SEC
SYSTEM RESET	ENTER
EXIT	YES

4.4.3.1 Flip

Users can track an object continuously as it passes through underneath the dome camera by setting Flip to IMAGE (digital flip) or M.E. (mechanical flip) mode.

FLIP SETTING	
FLIP	OFF
EXIT+SET	YES

Mode

- IMAGE

IMAGE represents digital image flip, which enables users to track objects seamlessly. Under this mode, almost no delay occurs when compared to the M.E. mode.

Note: The Privacy Mask function is automatically disabled when the image flip function is enabled. The screen will show "MASK WILL BE SET OFF."

- M.E.

M.E. is a standard mechanical operation. As the dome tilts to the maximum angle, it pans 180°, and then continues tilting to keep tracking objects.

Note: The Flip setting can be controlled manually only. If a Preset position or a point for an other function (Sequence, for example) is set in a position that can be reached through Flip motion only, this point can no longer be reached when Flip is off.

- OFF

Select this item to disable the flip function.

Note: To make the dome tilt between a specific range, such as -10° to +100°, use the angle adjuster (described below) to set the angle range of tilt. Otherwise, the dome will tilt 90° (as set in the default setting).

4.4.3.2 Angle Adjuster

Use this item to adjust the camera view angle. The range of the view angle is between -10° ~ +100°.

ANGLE ADJUSTER	
MIN ANGLE	+00 DEG
MAX ANGLE	090 DEG
EXIT + SET	YES

4.4.3.3 Speed by Zoom

When enabled, the pan/tilt speed is adjusted automatically by an internal algorithm when zooming. The larger the zoom ratio, the lower the rotation speed.

4.4.3.4 Auto Calibration

There is one horizontal and one vertical infrared ray check point in each dome. When the dome camera's position is moved during installation or maintenance, the relative distance between the original set point and the check point may change. When enabled, the Auto Calibration function automatically detects this change and resets the point back to the original position.

4.4.3.5 Password

The administrator can activate the OSD password function to control access to the OSD menu. Once the function is activated, users are required to enter the password every time when accessing the OSD menu.



» To set a password

- 1 Using the direction keys, select a number, and then press the **CAMERA MENU** key (**ENTER**) to set the number.
- 2 Repeat step 1 to set three more numbers.
- 3 In the second row, enter the same password to confirm the setting.
- 4 Move the cursor to **SAVE**, and then press **CAMERA MENU** to save the setting.
- 5 Move the cursor to **EXIT** and press **CAMERA MENU** to exit the password setting page.

If the password function is enabled, a password request message is displayed when the <CAMERA MENU> key is pressed to open the OSD menu.



Note: On first time activation of the password function, enter the master password (9527) to set up the new password.

4.4.3.6 OSD Auto Close

The OSD Auto Close setting is a time-out determining how long the OSD remains visible with no user navigation of the menu options or screens. Time selection ranges from 5 to 30 seconds. To keep the OSD menu on the screen permanently, set this option to OFF.

4.4.3.7 System Reset

Two types of system resets can be selected.

SYSTEM RESET

Select this function for system reboot. Press ENTER and the system will reboot.

DEFAULT SYSTEM

This function allows users to restore the camera to its factory default state. Press ENTER and the system reset will start.

EXIT

Exit Setup Menu 2.

4.4.4 Main Page 2

Main Page 2 is accessed by pressing the direction key to switch the Main Page from 1 to 2.

MAIN PAGE 2	
ID DISPLAY	ON
TITLE DISPLAY	OFF
TITLE SETTING	01
PRESET	ENTER
SEQUENCE	ENTER
AUTOPAN	ENTER
CRUISE	ENTER
HOME SETTING	ENTER

4.4.4.1 ID Display

Users may choose whether the dome ID is displayed on screen to identify the dome. For more information on the Dome ID setting, refer to the installation manual.

Mode

- **ON**
Display the ID of the selected dome on the bottom right of the monitor screen (default).
- **OFF**
Hide the ID of the selected dome.

4.4.4.2 Title Display

Users may name a certain view area and display its title for easy recognition.

Mode

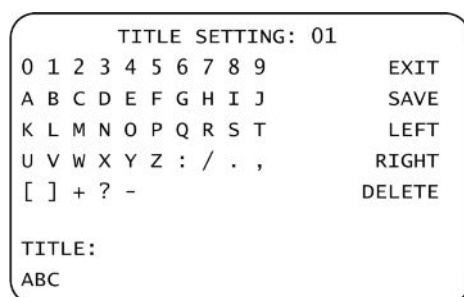
- **ON**
A title set for a certain view is displayed when the dome is focused on that view area.
- **OFF**
When title display is set to OFF, no title is displayed on the screen, even if set in advance.

4.4.4.3 Title Setting

Up to 16 zone titles can be set with a maximum of 20 characters for each title.

» To set a camera title

- 1 Move the dome to a view area for which you want to set a title.
- 2 Enter the OSD, and then go to Main Page 2 to select **TITLE SETTING**.
- 3 Select a number to represent the view area.
- 4 Press the **CAMERA MENU** key (**ENTER**) to go to the editing page.
- 5 Choose a character with the direction keys and then press the **CAMERA MENU** key (**ENTER**) for input.
 For example: <A> ENTER, ENTER, <C> ENTER. TITLE: ABC
 To delete input characters, move the cursor LEFT or RIGHT and press the **CAMERA MENU** key (**ENTER**) to select a character in the entry field. Then move the cursor to DELETE and press the **CAMERA MENU** key (**ENTER**) to delete the selected character.
- 6 To save a complete title, move the cursor to SAVE and press **ENTER**.



4.4.4.4 Preset

PRESET SET

The HD18EXP series cameras support a total of 256 preset points - that is, 256 minus the presets used for the special commands listed in Appendix: Hot Key Definitions.

» To set a preset point

- 1 Go to the Preset menu.
- 2 Press the LEFT/RIGHT key on the keyboard to select a number (1 represents preset point 1, 2 represents preset point 2, etc.).
- 3 Press the **CAMERA MENU** key (**ENTER**), and then rotate the dome camera to the targeted point.
- 4 Press the **CAMERA MENU** key (**ENTER**) again to save the defined preset point.

Once you have set a preset point, move the cursor to the next item to run the preset point.

PRESET RUN

Select the preset point that you want to execute. After pressing **ENTER**, the camera turns to the specified point.

To run other defined preset points, simply press the right/left key on the keyboard, select the preset point that you want to execute, and press **ENTER** again.

EXIT

Exit the Preset menu and return to the Main Page 2 menu.

Note: Users can set preset points through a keyboard. Refer to the control keyboard's quick guide for further information.

4.4.4.5 Sequence

This function executes repositioning of the pan, tilt, zoom and focus features in a certain sequence for a camera. Before setting this function, users must define at least two preset points.

SEQUENCE	
SEQUENCE LINE	1
SEQUENCE POINT	01
PRESET POS.	01
SPEED	01
DWELL TIME	000SEC
RUN SEQUENCE	ENTER
EXIT	YES

Parameters

- **SEQUENCE LINE**

There are eight sets of sequence lines built in the dome camera. Use the left/right direction keys to select a line first and then set its sequence points.

- **SEQUENCE POINT**

Up to 64 points can be specified for each sequence line. A sequence points represents the location of a preset in an order of preset points that the dome will automatically run. The following setup items, including PRESET POSITION, SPEED, and DWELL TIME, influence how the camera runs through each sequence point.

- **PRESET POSITION**

Users can assign a specific preset position to the selected sequence point with this item. Options include "1~255" and "END." END is used for the sequence point following the last sequence point when the number of sequence points (see the previous section) is below 64.

Note: If not using all 64 points, set the point following the last sequence point as "END" (PRESET POSITION) so that the sequence line can work properly. For example, if a user intends to set a sequence line with 5 sequence points, it is required to set the preset position of sequence point 06 as "END."

- **SPEED**

Users can set the pan/tilt speed of the dome camera from one sequence point to the next. The range of setup speed is from 1 to 15. Within the range, pan speed varies from 10 to 400 (degrees/sec.), and tilt speed varies from 8 to 400(degrees/sec.).

- **DWELL TIME**

The dwell time is the duration the dome stays at a sequence point. The range is from 0 to 127 seconds. The dome goes to the next sequence point when the dwell time expires. If the setting is 000, the dome stays at this sequence point for less than 1 second and then shifts to the next point.

- **RUN SEQUENCE**

Use this item to command the dome camera to run the selected sequence line manually. Press the **CAMERA MENU** key (**ENTER**) to execute a sequence line.

- **EXIT**

Exit the Sequence menu and return to Main Page 2.

Note: Users may execute the Sequence function via keyboard. Refer to the control keyboard's quick guide for further information.

4.4.4.6 Autopan

Autopan is the motion of scanning an area horizontally so that the dome camera captures a horizontal view. The parameters are as follows.

AUTOPAN	
AUTOPAN LINE	1
START POINT	TO FIND
END POINT	TO FIND
DIRECTION	RIGHT
SPEED	01
RUN AUTOPAN	ENTER
EXIT	YES

AUTOPAN LINE

There are four sets of autopan lines built into a dome camera. Choose a line to execute by using the left/right direction keys. To perform endless panning, set the start point and end point to the same value.

START POINT

» To set the start position of the autopan path

- 1 Move the cursor to **START POINT** and press **ENTER** while the item **TO FIND**, is flashing. The item changes to **TO SAVE** automatically.
- 2 Focus the dome on the desired position and press **ENTER** to save the position as the start point. The cursor will move to **END POINT** automatically.
- 3 Set the end point as described below to complete the autopan setting.

Note: The tilt and zoom values of the start point will be recorded and fixed for the selected autopan line.

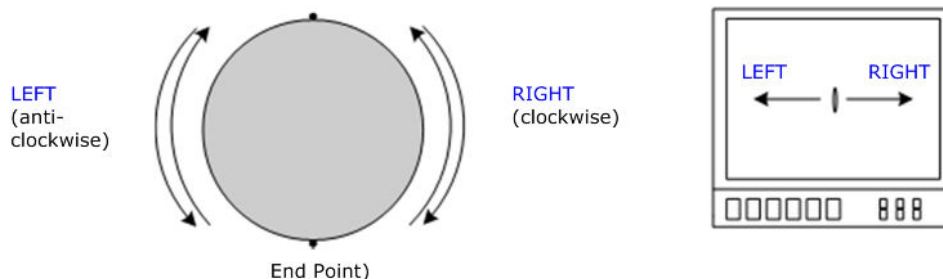
END POINT

» To set the end point after the start point is defined

- Pan the dome to another position and press **ENTER** to save the position as the end point.

DIRECTION

Use this item to set the autopan direction of the dome camera. The dome will start to pan clockwise from the start point to the end point if your selection is **RIGHT**, and then return to the start point. The dome will start to pan counterclockwise from the start point to the end point if your selection is **LEFT**, as shown below.



SPEED

Use this item to define the dome camera rotation speed while running autopan. The speed is adjustable from 1 to 4 (10 ~ 45 degree/sec.).

RUN AUTOPAN

Having configured all autopan settings, select this item to execute the autopan function. Press **ENTER** to run an autopan path.

EXIT

Exit the Autopan setup menu and return to Main Page 2.

Note: Users can execute the Autopan function via a keyboard. Refer to the control keyboard's quick guide for more information.

4.4.4.7

Cruise

Cruise is a route performed through manual operation - that is, through adjusting the pan and tilt position manually. A saved cruise can be recalled repeatedly, which means that this cruise can be executed time and again if necessary.

CRUISE	
CRUISE LINE	1
RECORD START	ENTER
RECORD END	ENTER
RUN CRUISE	ENTER
EXIT	YES

CRUISE LINE

Up to eight sets of cruise routes can be created for one camera. Using the left/right direction keys, select a line first, and then follow the steps below to start recording the cruise route.

RECORD START

» To record a cruise path

- 1 Select a cruise line.
- 2 Rotate the dome camera to a desired view area.
For some protocols, users may need to do this before entering the OSD.
- 3 Press **ENTER** to build the cruise path using the joystick on the control device.
The already used up percentage of the memory buffer is displayed on the screen.
- 4 Pan and tilt the dome camera to describe a path.

Note: Be aware of the memory size when building a cruise path. Once the buffer percentage reaches 100%, recording of the path will stop.

RECORD END

The cursor is moved to RECORD END when building the cruise line. When the setting is completed, press **ENTER** to save the path.

RUN CRUISE

After cruise setting is completed, press **ENTER** to execute the defined cruise.

EXIT

Exit the Cruise setup menu and return to Main Page 2.

Note: Users can execute the Cruise function via a keyboard. Refer to the control keyboard's quick guide for more information.

4.4.4.8 Home Setting

Users are able to set an operation mode to ensure constant monitoring. If the dome idles for a period of time, the selected function is activated automatically. The Home function allows constant and accurate monitoring to prevent the dome camera from idling or missing events.

HOME SETTING	
HOME FUNCTION	OFF
SELECT MODE	PRESET
PRESET POINT	001
RETURN TIME	001 MIN.
GO	ENTER
EXIT	YES

HOME FUNCTION

Use this menu item to enable or disable the Home function. Use the left/right direction keys to change the setting.

SELECT MODE

Select one of the modes that the dome should execute when the Home function is enabled and the RETURN TIME has elapsed. The options include AUTOPAN, SEQUENCE, CRUISE, and PRESET. Use the left/right direction keys to change the setting. The items listed below will change to reflect your selection.

- **PRESET POINT**
Select a preset point where the dome should go after the Return Time function described below is activated. The preset point(s) should be defined in advance, either in the Preset setup menu or through the keyboard.
- **SEQUENCE LINE**
Select a sequence line that the dome camera should execute when an alarm is triggered. The sequence line(s) should be defined in advance in the Sequence setup menu.
- **AUTOPAN LINE**
Select an autopan line that the dome camera should execute when an alarm is triggered. The autopan line(s) can be defined in the Autopan setup menu.
- **CRUISE LINE**
Select a cruise line that the dome camera should execute when an alarm is triggered. The cruise line(s) can be defined in the Cruise setup menu.

RETURN TIME

When the dome idles, it starts to count down the time specified in the Return Time setting. Once the return time has elapsed, the dome executes the action set for the select mode function. The return time ranges from 1 ~ 128 minutes.

GO

If the Home function is enabled, users may execute the Home function manually by selecting this item.

EXIT

Exit the Home Setting menu.

4.4.5 Main Page 3

Main Page 3 is accessed by pressing the direction key to switch the Main Page from 2 to 3.

MAIN PAGE 3	
IR FUNCTION	AUTO
ALARM SETTING	ENTER
ALARM DETECT	ENTER
WDR FUNCTION	OFF
PRIVACY MASK	ENTER
TIME SETTING	ENTER
SCHEDULE	ENTER
EXIT OSD	YES

4.4.5.1 IR Function

With the IR cut filter, the dome can still catch clear images at night or in low-light conditions. In daylight, the IR cut filter will be on to block infrared light for clear images; at night, the IR cut filter is removed to catch infrared light and the displayed images will be in black and white.

AUTO

The internal circuit automatically decides when to remove the IR cut filter according to the value of light conditions calculated by the internal light algorithm. The options include LOW, MID, and HI. LOW indicates a higher sensitivity and can improve the lens reliability so that it is quicker to switch to Day mode and relatively slow to change to Night mode, whereas HI indicates that it is quicker to switch to Night mode and slow to change in Day mode.

MANUAL

- **IR MANUAL ON**
Select the item to remove the IR cut filter. The camera will change to B/W (Night) mode.
- **IR MANUAL OFF**
Select the item to activate the IR cut filter. The camera will be in colour (Day) mode.

4.4.5.2 Alarm Setting

The HD18EXP provides eight alarm inputs and one alarm output (N.O. and N.C.) to connect alarm devices. With this function, the dome camera interacts with the alarm system to catch the event images.

For wiring, refer to the HD18EXP Installation Manual. The adjustable alarm parameters are listed below.

ALARM SETTING	
ALARM PIN	1
ALARM SWITCH	OFF
ALARM TYPE	NC
ALARM ACTION	PRESET
PRESET POINT	001
DWELL TIME	ALWAYS
EXIT	YES

ALARM PIN

The HD18EXP camera includes eight alarm inputs and one alarm output (1x normally open (NO) and 1x normally closed (NC)) to connect to alarm devices. Select the alarm pin of which you want to set the alarm-related parameters, and then set its alarm-related parameters in the Alarm Setting menu. For alarm pin definitions, refer to the HD18EXP Installation Manual.

Note: If two or more alarm pins are triggered at the same time, the pin with the lower number will have the highest priority and only that alarm will be handled. For example, if alarm-1 and alarm-3 are triggered simultaneously, alarm-1 will implement an alarm action and alarm-3 will be disregarded.

ALARM SWITCH

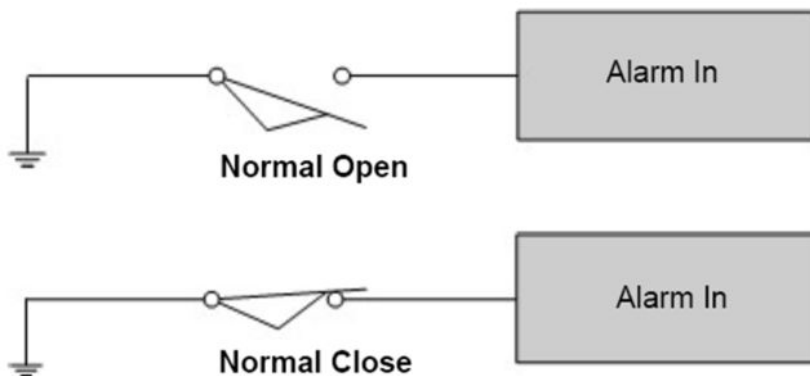
This item may be used to enable or disable the selected alarm pin function. Use the left/right direction keys on the control keyboard to change the setting.

ALARM TYPE

There are two alarm types:

- Normally open (NO)
- Normally closed (NC)

Select an alarm type that corresponds with your alarm application.



ALARM ACTION

When an alarm is triggered, the warning notice "ALARM" is displayed in the upper right corner of the screen and any configured alarm action will be initiated. It is possible to configure the following alarm actions:

- Preset
- Sequence
- Autopan
- Cruise

The selected action mode will accordingly alter the remaining options in the Alarm Setting menu.

Setting the applicable ALARM ACTION

Depending on the selected alarm action, one of the following options will be available in the Alarm Setting menu:

- **PRESET POINT.** Select a preset point to which the HD18EXP camera should travel when an alarm is triggered.
- **SEQUENCE LINE.** Select the sequence line that the HD18EXP should execute upon an alarm.
- **AUTOPAN LINE.** Select an autopan line that the HD18EXP should execute when an alarm triggers.
- **CRUISE LINE.** Select a cruise line that the HD18EXP should execute when an alarm pin is triggered.

Note: Configure the desired alarm action via the applicable menu prior to setting alarm actions.

DWELL TIME.

The dwell time is the duration during which an alarm action is executed. If the PRESET mode is selected when an alarm takes place, the dome camera will go to the selected preset position and stay there for a user-defined period of time (1 ~ 127 seconds/Always) when an alarm takes place. If other modes (SEQUENCE/AUTOPAN/CRUISE) have been selected, the camera will keep executing the selected mode (DWELL TIME: ALWAYS) until the alarm condition is released or the users rotate the joystick to change the status of the dome camera.

EXIT

Select this item to exit the ALARM SETTING menu.

4.4.5.3 Alarm Detect

When the alarm detect function is activated, the camera detects movement within a monitoring area and then sends an alarm signal automatically. The flashing warning notice "MOTION" will be displayed in the upper left corner of the screen. Alarm connection setups must be completed in advance of activating this function.

MAIN PAGE 3	
DETECT SWITCH	OFF
DETECT MODE	NONE
BLOCK MODE	NONE
FRAME SET	NONE
FRAME DISABLE	NONE
THRESHOLD	NONE
EXIT OSD	YES

DETECT SWITCH

Use this item to enable or disable the ALARM DETECT function.

DETECT MODE

The Motion Mode is set in this section.

- MOTION

The Motion Detection function allows detecting suspicious motion and triggers alarms when the motion volume in the detected area reaches/exceeds the determined sensitivity threshold value.

BLOCK MODE

In Motion Detect mode, users can set Block Mode to "ON" or "OFF". When Block Mode is turned on and there are any variations (caused by intrusion in the observed area, for example) in the sections of the monitoring image, the affected parts will be highlighted dynamically.

FRAME SET

In a monitored field, users can define specific areas as motion detection target zones. Refer to the following instructions to configure the parameters for each motion detection zone, the so-called "frames". When motion is detected within a defined frame, the flashing warning notice "MOTION" will be displayed in the upper left corner of the screen. In total, four frames can be set. Select a frame using the right/left keys on the keyboard, and press the ENTER key to enter the frame's submenu, as shown below.

FRAME SET 1	
LEFT LIMIT	L/R
TOP LIMIT	D/U
H SIZE	000
V SIZE	000
MODE	PRESET
PRESET POINT	001
DWELL TIME	001 SEC
EXIT	YES

- **LEFT LIMIT**
Move the frame right/left using the right/left keys on the keyboard.
- **TOP LIMIT**
Shift the frame up/down using the right/left keys on the keyboard.
- **H/V SIZE**
Adjust the frame size via changing the H/V size value using the right/left keys on the keyboard.
- **MODE**
Assign a trigger action to a specific motion detection frame. The options include PRESET, SEQUENCE, AUTOPAN and CRUISE. When motion is detected within a frame, the dome camera will execute the specific trigger action.
- **DWELL TIME**
The dwell time is the duration of executing a trigger action. If the PRESET mode is selected, when motion is detected, the dome camera will go to the selected Preset position and stay there for a user-defined period of time (1~127 seconds/Always). If you select other modes (SEQUENCE / AUTOPAN / CRUISE), the dome camera will keep executing the selected mode (DWELL TIME: ALWAYS) until the alarm condition is released or interrupted by commands sent from a connected control device.
- **EXIT**
Exit the FRAME setting page and go back to the ALARM DETECT main page.

FRAME DISABLE

Select a frame to be deactivated and press ENTER. The selected frame is then removed from the monitored field.

THRESHOLD

The Threshold range is adjustable from 1~255. The smaller the value, the more sensitive it is - that is 1: highest sensitivity, 255: lowest sensitivity.

EXIT

Exit the Alarm Detect menu.

4.4.5.4 WDR Function

The Wide Dynamic Range (WDR) function is especially effective in solving indoor and outdoor contrast issues to enhance image quality and video display. It enables the dome to catch detailed data from the dark part (indoor) of an image without any saturation from the brighter parts (outdoor).

MODES

- **ON**
Select this option to activate the WDR function. In this mode, the dome camera operates the WDR function automatically.
- **OFF**
Select this option to deactivate the WDR function.

4.4.5.5 Privacy Mask

The Privacy Mask function aims to avoid any intrusive monitoring. Users can adjust the camera view position using the joystick and adjust the mask size and area via the direction keys on the control keyboard. The dome camera memorises the centre of the selected view as an original point and locks the lens in place as users enter the Set Mask menu, as described below.

You are advised to set masks to at least twice the size (height and width) of the object to be masked. The available area for setting a privacy mask is restricted within a tilt angle of 70°. Up to eight masks can be displayed in one scene.

Note: The Image Flip function and the Image Inverse function are disabled automatically when the Privacy Mask function is enabled.

PRIVACY MASK MENU	
PRIVACY SWITCH	OFF
TRANSPARENCY	OFF
COLOR	BLACK
SET MASK	01
CLEAR MASK	01
EXIT	YES

PRIVACY SWITCH

Use this item to enable or disable the masking function. Set this item to **ON** before configuring mask zones.

TRANSPARENCY

The colour of a privacy mask can be set to transparent. Select **ON** to display transparent masks.

COLOR

Use this item to set the colour of a privacy mask. Available colours are black, white, red, green, blue, cyan, yellow, and magenta.

SET MASK

Use the control device to move the dome camera to the area where you wish to set a mask. Press **ENTER** to open the Set Mask submenu. The dome memorises the present position as a privacy mask position.

MASK01 MENU	
H CENTER	L/R
V CENTER	D/U
H SIZE	000
V SIZE	000
EXIT+SAVE	YES

- **H CENTER**
The original centre of a mask zone is the centre of a screen. To move the centre of the mask zone to another position, adjust this value using the LEFT/RIGHT keys on the keyboard. The camera will pan right or left accordingly.
- **V CENTER**
The original centre of a mask zone is the centre of screen. To move the centre of the mask zone to another position, adjust this value using the DOWN/UP keys on the keyboard. The camera will tilt up or down accordingly.
- **H SIZE (00~80)**
Users can adjust the horizontal size of a privacy mask through this item. Set the H and V size to 0 to delete the selected mask.
- **V SIZE (00~60)**
Users can adjust the vertical size of a privacy mask through this item. Set the H and V size to 0 to delete the selected mask.

CLEAR MASK

▶▶ To delete a preset mask zone

- 1 Select the mask zone to be erased (01, for example).
- 2 Press **ENTER** to confirm the selection.

EXIT

Exit the Privacy Mask menu.

4.4.5.6 Time Setting

The Time Setting menu is used to set the time related parameters of the dome. The menu items are as follows.

TIME SETTING	
TIME DISPLAY	OFF
SET YEAR	00
SET MONTH	01
SET DAY	00
SET HOUR	00
SET MINUTE	00
EXIT+SAVE	YES

TIME DISPLAY

Select **ON** to display time information on the screen or **OFF** to conceal it.

SET YEAR / MONTH / DAY

Use these items to configure the system date.

SET HOUR / MINUTE

Use these items to configure the system time.

EXIT+SAVE

Select this item to exit the TIME SETTING menu.

4.4.5.7 Schedule

With the schedule function, users can program the HD18EXP to perform certain tasks (for example, preset/sequence/autopan/cruise) at a specified time.

SCHEDULE	
SWITCH	OFF
POINT	00
HOUR	00
MINUTE	00
MODE	PRESET
PRESET POINT	001
SCHEDULE RESET	YES
EXIT	YES

SWITCH

Select **ON** to enable or **OFF** to disable the schedule function.

POINT

Users can arrange 32 sets of schedule points. Each set of schedule points can be assigned one kind of schedule mode.

HOUR / MINUTE

These items allow users to set up the time in which to execute each schedule point.

MODE

Use the mode setting to configure a function to be performed at the selected schedule time. The options include:

- **NONE**
No action will be executed for the selected schedule.
- **PRESET**
If selected, set the preset point in the menu option under PRESET POINT.
- **SEQUENCE**
If selected, set the sequence line in the menu option under SEQUENCE LINE.
- **AUTOPAN**
If selected, set the auto pan line in the menu option under AUTOPAN LINE.
- **CRUISE**
If selected, set the cruise line in the menu option under CRUISE LINE.
- **IR FUNCTION**
If the IR function mode is selected, the AUTO IR FUNCTION will be **activated** for a schedule point.

SCHEDULE RESET

Use this item to return the schedule to its default settings.

EXIT

Exit the SCHEDULE menu.

4.4.5.8 Exit OSD

To exit the OSM, users can either select this item at the bottom of Main Page 3 or press the ESC key on a control keyboard.