

HD CCTV Total Solution

Speed Dome Camera User Manual



The product image shown above may differ from the actual product.
Please use this camera with a DVR which supports HD video recording.
Please read the instructions thoroughly before using the product.



CAUTION

RISK OF ELECTRIC SHOCK



CAUTION:

To reduce the risk of electric shock, do not expose this apparatus to rain or moisture.

Only operate this apparatus from the type of power source indicated on the label.

The company shall not be liable for any damages arising out of any improper use, even if we have been advised of the possibility of such damages.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



ROHS Announcement

All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly "lead-free" and without the hazardous substances cited in the directive.



The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste.



CE Mark

This apparatus is manufactured to comply with the radio interference.

The company does not warrant that this manual will be uninterrupted or error-free. We reserve the right to revise or remove any content in this manual at any time.

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FEATURES

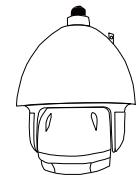
1. 1/2.9" CMOS Sensor with 1080P video output
2. Zoom lens with 18X optical zoom and auto focus, suitable for various monitoring environments
3. PTZ control for seamless monitoring
 - Capable of 360° pan rotation continuously, allowing quick and smooth action of the camera lens
 - Auto Tracking to follow moving objects
 - Up to 256 preset points & four sequence groups programmable for multiple points monitoring, and auto pan
4. DWDR to increase image recognizability in overexposure and dark areas
5. External alarm I/O device connection
6. IP66 for outdoor application
7. Camera parameters adjustable when used with AVTECH HD CCTV DVR
8. New IR technology adapted to enhance brightness at night as well as the effective distance of 200 meters or even more

SPECIFICATIONS*

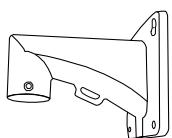
		18X Speed Dome Camera
■ General		
Pick-up Element		1/2.9" CMOS image sensor
Number of Pixels		1936(H) × 1096(V)
Video Frame Rate		1080P@30fps / 1080P@25fps
Min. Illumination		0.1 Lux / F1.6(Wide)~F2.7(Tele), 0 Lux (IR LED ON)
S/N Ratio		More than 48dB (AGC OFF)
Shutter Speed		1 / 60 (1/50) to 1 / 100,000 sec.
Lens		f4.7 ~ 84.6mm / F1.6 (Wide) ~ 2.7(Tele)
Lens Angle	Horizontal	1X: 60.6° / 18X: 3.7°
	Vertical	1X: 36.4° / 18X: 2.1°
	Diagonal	1X: 67.7° / 18X: 4.3°
IR LED		8 units
IR Effective Distance		Default: Up to 200 meters / IR Turbo mode: More than 200 meters
IR Shift		YES
IRIS Mode		YES
White Balance		Auto / 2500K / 3200K / 4200K / 5800K / 9500K
AGC		YES
Sharpness		YES
DWDR		YES
External alarm I/O		YES (1 input / 1 output)
RS485		YES
IP Rating		IP66
Operating Temperature		-20°C ~ 50°C
Operating Humidity		90% or less relative humidity
Power Source (±10%)		AC 24V / DC19V
Power Consumption (±10%)		25W
Optional Peripherals		USB Joystick
■ PTZ Mechanism		
Pan Range		360° endless
Max. Pan Speed		180°/s
Tilt Range		-6° ~ 90°
Max. Tilt Speed		100°/s
Zoom Ratio		18X Optical Zoom
Max. Zoom Speed		Approx. 3s (Tele ~ Wide)
Preset Points		Up to 256 preset points
Sequence Group		1. Up to four groups can be set 2. One group can include up to 16 preset points
Auto Tracking		YES

* The specifications are subject to change without notice.

PACKAGE CONTENT



Camera



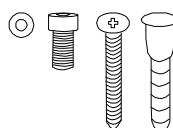
Bracket



Instructions



CD manual



Screw Kit



Carabiner



Wrench



Terminal Block

CABLE OVERVIEW

Cable	Description
Power cable	Connect to the supplied adapter.
BNC cable	Connect to a coaxial cable.
Terminal block	
1. ALARM IN	Alarm input for an alarm device like magnetic contacts.
2. ALARM OUT	Alarm output for an alarm device like a siren.
3. GND	Ground wire
4. RS485_A	Used for PTZ camera or other device connection.
5. RS485_B	Used for PTZ camera or other device connection.
Line-in	Colored as blue, used to connect to a microphone for audio input.
Line-out	Colored as green, used to connect to a speaker for audio output.
RESET	A wire reserved for hardware reset.
GND	Remove the insulating coating of the wire, and twist it with the GND wire together to reset the camera to its factory values.
RJ45 network cable	No function.

INSTALLATION

Step1: Locate to where you want to install this camera and drill 4 holes for bracket installation. (**Figure 1**)

NOTE: Drill one hole for the cable to go through if necessary.

Step2: Pass the cables to be connected through the bracket, and fasten the bracket to the wall (**Figure 2**)

Step3: Hook the camera and the bracket together with the supplied carabiner, and connect the cables. Then, pull the cables from the other side of the bracket to hide the connectors in the bracket. (**Figure 3**)

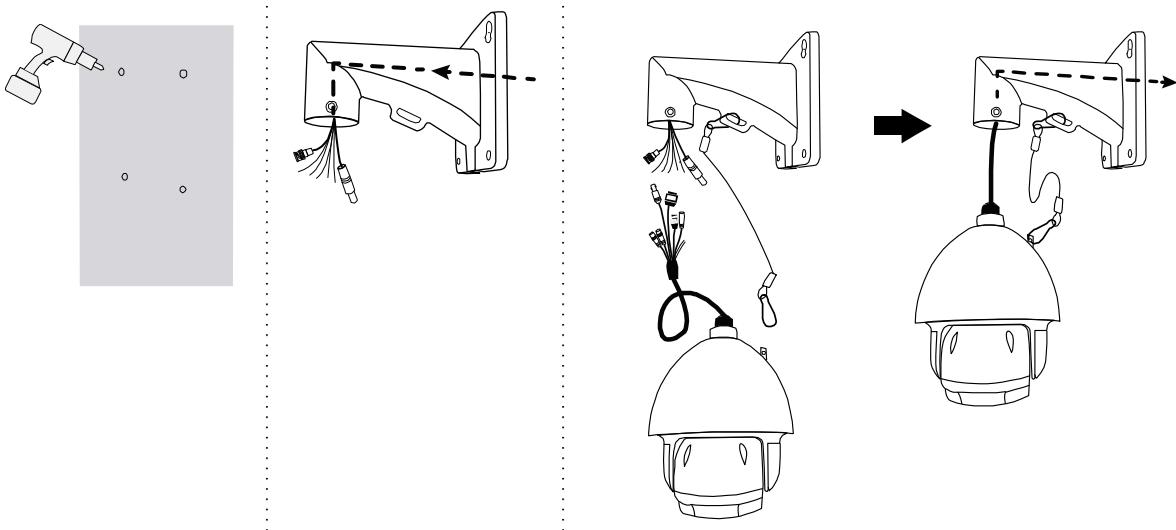


Figure 1

Figure 2

Figure 3

Step4: Secure the bracket onto the wall with the supplied screws. (**Figure 4**)

NOTE: You might need another hand to hold the camera in this step.

Step5: Insert the camera to the bracket. Then, use the supplied wrench and screws to fasten the bracket and the camera. (**Figure 5**)

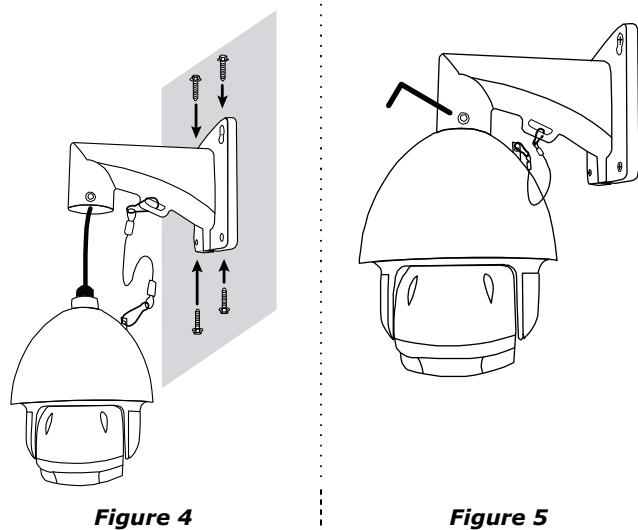


Figure 4

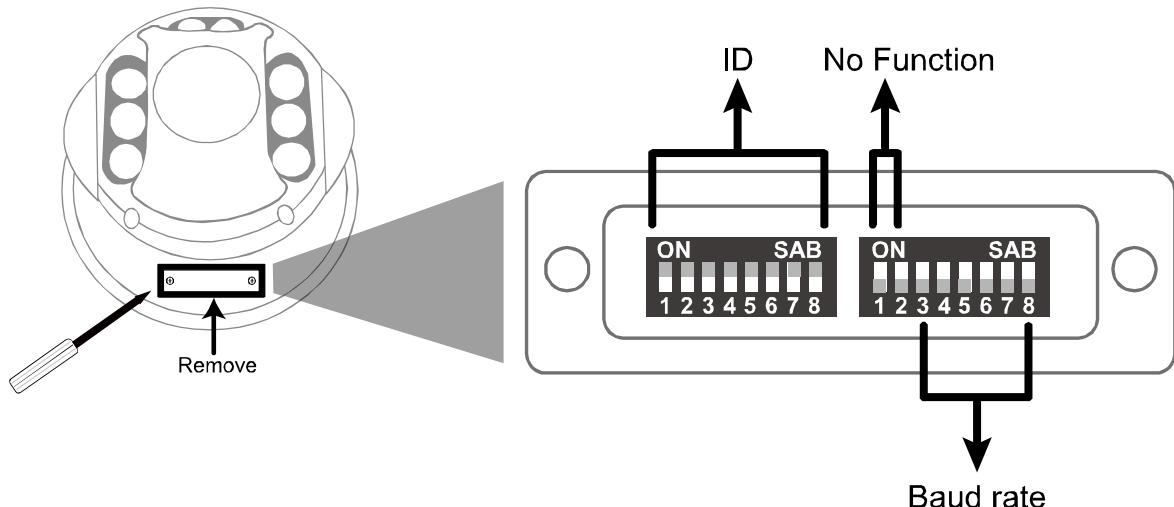
Figure 5

BAUD RATE AND ID SETTINGS

Before connecting this camera to other brand's DVR, you may need to manually set the ID & baud rate for the camera to work properly. Please check the description below for details.

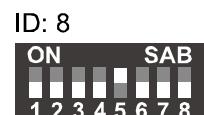
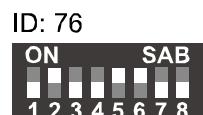
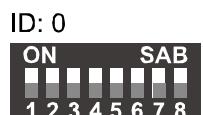
NOTE: The on / off of the DIP switch is shown as gray.

Remove the panel as indicated below to find the dip switch.

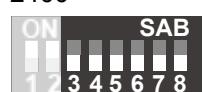


ID: The ID number can be set from 0~255 (binary).

Please check the examples below.



Baud Rate: 2400



4800



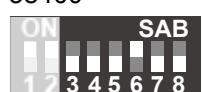
9600



19200



38400

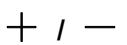
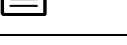


PTZ CONTROL

NOTE: The panel below is available only when the camera is used with our brand's HD CCTV DVR, and not all functions in the panel are supported for this camera.

Right-click to return to the live view, and click the channel with this speed dome camera connected. Then, click  on the bottom left side of the screen to show the PTZ control panel.



	Enter	Click to confirm your selection / enter the menu.
	Up / Down / Left / Right	Click the arrow keys ( /  /  / ) to move the camera lens up / down / left /right.
	Iris + / Iris -	This two buttons are designed for the PTZ camera which uses Pelco-D to control. To know the actions after clicking Iris + and Iris -, please refer to the camera's user manual.
	Zoom in / out max	Click to zoom in on the image to the max. zoom ratio / zoom out on the image to its original size.
	Zoom in / out	Click to zoom in / out on the image. Users could also zoom in / out on the image by simply drawing a square on the screen, and the zoom ratio depends on how large the square is. <ul style="list-style-type: none">■ Zoom in: Draw the square from top left to bottom right.■ Zoom out: Draw the square from bottom right to left top.
	Focus near / far	Click to adjust the focus of the image.
	Auto mode	Click to activate the auto function. Before using it, you need to assign a specific function that will be enabled when "  " is clicked. For details, please see "CAMERA PARAMETERS".
	Auto tracking	Click to start auto tracking, and click again to stop.
	Preset point	Click to configure or go to the preset point you want to see. For details, please see "SEQUENCE SETUP".
	Camera Menu	No use for the speed dome camera.
	Manual Focus	This function is used to memorize the focus parameters you've made after you use  /  /  to manually adjust the focal length and focus. The next time when you move to the same focal length, the camera will use the parameters as the ones for Auto Focus.
	Auto Focus	Click to automatically adjust the focus of the camera.

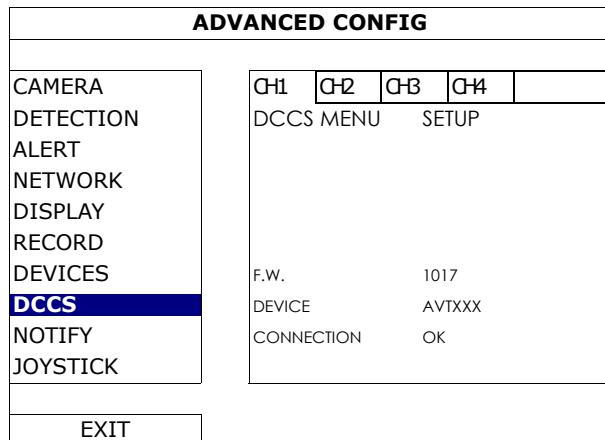
	Joystick	Click to control the movement of a speed dome camera or a motorized-pan camera. Drag and hold the mouse on the screen to move the camera. You'll see ● and ➔ on the screen. The farther these two icons, the faster the movement.
	Config.	Click to configure the speed to pan / tilt the speed dome camera.

NOTE: PTZ control is also available via the optional USB joystick and EagleEyes. For details, please check their respective user manuals.

CAMERA PARAMETERS

NOTE: The method below is available only when the camera is used with our brand's HD CCTV DVR.

On the DVR live view, right click to show the DVR main menu, and select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



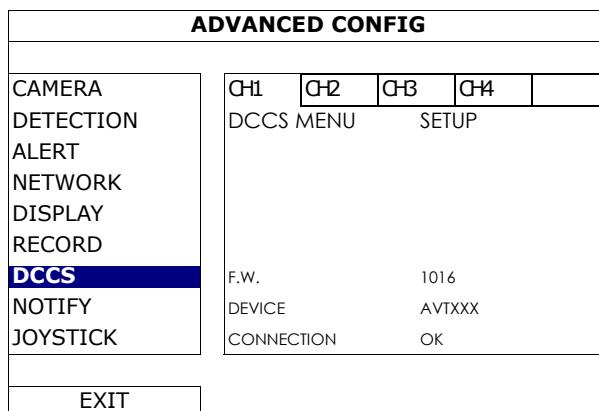
Item	Description
BRIGHTNESS	Click the current value to manually adjust the brightness of the image. The higher the value, the brighter the image.
CONTRAST	Click the current value to manually adjust the contrast of the image. The higher the value, the higher the contrast ratio.
HUE	Click the current value to manually adjust the hue of the image.
SATURATION	Click the current value to manually adjust the saturation of the image. The higher the value, the more saturated the image.
CAMERA GUARD	Enable GUARD LOCK to temporarily disable the pan function of this camera and fix the camera surveillance area. For details, please refer to the section "CAMERA GUARD".
CRUISE MODE	Select the cruise mode when the  is selected in the PTZ mode. There are three options: AUTO PAN , SEQUENCE and CRUISE . AUTO PAN: Pan within the range specified in CRUISE CONFIG . SEQUENCE: Patrol based on the sequence group specified in CRUISE CONFIG . CRUISE: Patrol based on the route recorded in CRUISE CONFIG .
CRUISE CONFIG	The setting shown here depends on what you selected in CRUISE MODE : AUTO PAN: Specify the range for auto pan to run. For details, please refer to the section "AUTO PAN SETUP". SEQUENCE: Configure a sequence group for area patrol. For details, please refer to the section "SEQUENCE SETUP". CRUISE: Customize the patrol route in 200 seconds. For details, please refer to the section "CRUISE SETUP".
AUTO TRACKING	Set the surveillance area for auto tracking, and the tracking timeout. For details, please refer to the section "AUTO TRACKING SETUP".
DISPLAY ZOOM RATIO	Select ON to show the zoom ratio on the live view.
SPEED BY ZOOM	Select ON to automatically adjust the moving speed of the camera in each zoom ratio. In another word, the moving speed in different zoom ratio is different.
HOME	Configure this camera to always return to a specific point when the camera is not operated for the specified time. For details, please refer to the section "HOME SETUP".
VIDEO FORMAT	Select the video format: NTSC / PAL .
WHITE BALANCE	Process the current image to retain color balance over a color temperature range. The options are: AUTO , 2500K , 3200K , 4200K , 5800K & 9500K .
SHARPNESS	Sharpness enhances the clarity of image detail by adjusting the aperture and sharpening the edges in the pictures. Hold and drag the slider to adjust the level of sharpness. The higher the value, the sharper the image.
SLOW SHUTTER	Slow shutter is used to increase the exposure time to get clearer image, for example, at night. The options are: AUTO , 1/15 and 1/6 .
IRIS	IRIS is used to adjust the amount of light reaching the image sensor for best image results. You can choose AUTO , or select any suitable value based on your environment.
MIRROR	Select ON to rotate the images horizontally based on your installation situation when necessary.
FLIP	Select ON to rotate the image 180° when necessary.

Item	Description													
3D DENOISE	<p>Click and drag the slider to adjust the level from 0 ~ 5 to decrease the noise shown in the dark environment.</p> <p>3D denoise analyzes successive pictures to decrease the noise dramatically, but the moving objects might be shown as blurred.</p>													
2D DENOISE	<p>Click and drag the slider to adjust the level from 0 ~ 5 to decrease the noise shown in the dark environment.</p> <p>2D denoise analyzes only a single picture to decrease the noise. The moving objects can remain smooth edges, but the effect might be limited.</p>													
EXPOSURE CONTROL	<p>This function is used to synchronize the shutter time to the fluorescent light to suppress image flickering.</p> <p>The options are: AUTO, FLICKER-FREE 50 Hz and FLICKER-FREE 60 Hz</p>													
EXPOSURE VALUE	Drag the slider to adjust the exposure level from 0 ~ 4 .													
FIXED SHUTTER	Shutter Speed is a function that can adjust the duration of the electronic shutter to produce optimum image quality. Select the shutter speed suitable for your environment.													
EFLIP	<p>This function is used to keep the image upright always after pan / tilt movement.</p> <p>The options are: OFF / MECHANICAL.</p>													
DAY AND NIGHT	<p>This function is used to configure the day and night mode:</p> <table border="1"> <tr> <td>DAY</td><td>Always stay in the day mode (color).</td></tr> <tr> <td>NIGHT</td><td>Always stay in the night mode (B/W).</td></tr> <tr> <td>TIME</td><td>The night mode is activated during the time specified in DAY AND NIGHT TIME CONFIG.</td></tr> <tr> <td>SENSOR</td><td>Automatically switch based on the light sensor of the camera.</td></tr> <tr> <td>DIGITAL INPUT N.O.</td><td>(Used with Alarm In) Normally stay in the day mode, and switch to the night mode when the alarm is triggered.</td></tr> <tr> <td>DIGITAL INPUT N.C.</td><td>(Used with Alarm In) Normally stay in the night mode, and switch to the day mode when the alarm is triggered.</td></tr> </table>		DAY	Always stay in the day mode (color).	NIGHT	Always stay in the night mode (B/W).	TIME	The night mode is activated during the time specified in DAY AND NIGHT TIME CONFIG .	SENSOR	Automatically switch based on the light sensor of the camera.	DIGITAL INPUT N.O.	(Used with Alarm In) Normally stay in the day mode, and switch to the night mode when the alarm is triggered.	DIGITAL INPUT N.C.	(Used with Alarm In) Normally stay in the night mode, and switch to the day mode when the alarm is triggered.
DAY	Always stay in the day mode (color).													
NIGHT	Always stay in the night mode (B/W).													
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DIGITAL INPUT N.C.	(Used with Alarm In) Normally stay in the night mode, and switch to the day mode when the alarm is triggered.													
DAY AND NIGHT TIME CONFIG	<p>This function is applicable only when TIME is selected in DAY AND NIGHT.</p> <p>Configure the time you want the night mode to be activated.</p>													
DEFOG	Select ON to enable the defog function in poor weather conditions such as fog, smog or smoke. The captured image can be improved.													
MECHANICAL IRIS CALIBRATION	Select START to begin mechanical iris calibration.													
MAX AGC	Configure the max AGC value from 0 ~ 10 . The larger the value, the stronger the AGC.													
IR CONTROL	Select AUTO to automatically enable IR LEDs at night or in the dark environment, or OFF to disable this function.													
IR TURN ON LEVEL	Select the level for IR light to activate. 0 ~ 20													
IR DELAY TIME	<p>Configure from 1 ~ 60 seconds to delay the switch of the IR mode at night.</p> <p>This is used for the environment where the light condition may change suddenly and usually last for a short time, for example, the entrance of a parking lot. It may cause the day & night mode switching constantly and damage the camera.</p> <p>With this function, the camera will delay the mode switch at night since the light change is temporary and unnecessary to pay attention.</p>													
RESET DEFAULT	Click to reset all camera settings to their default values.													
REBOOT THE SYSTEM	Click to reboot the camera if necessary.													

AUTO PAN SETUP

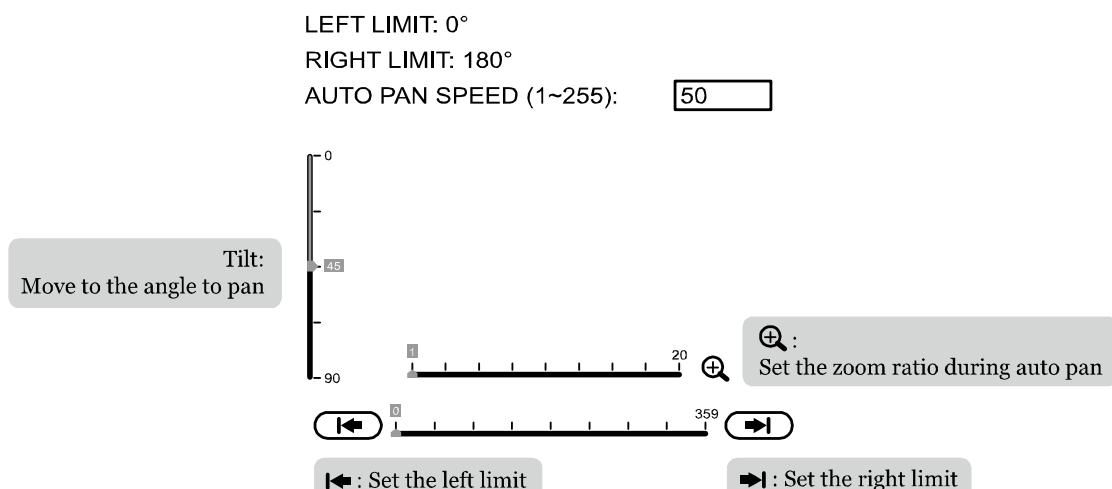
Step1: In the live view, right click to show the main menu.

Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



Step2: Select **CRUISE MODE**, and choose **AUTO PAN**. Then, go to **CRUISE CONFIG** to select **SETUP**.

Step3: You'll see the setting panel on the bottom left side of the screen:



Icon	Function	Description
←	Left limit	Move the slider to where you want to set as the most left side of the surveillance area, and click ← to set.
→	Right limit	Move the slider to where you want to set as the most right side of the surveillance area, and click → to set.
--	Tilt angle	Move the slider to the height you want.
⊕	Zoom ratio	Move the slider to confirm the zoom ratio you need for the current area.
--	Pan speed	Set the speed to pan.

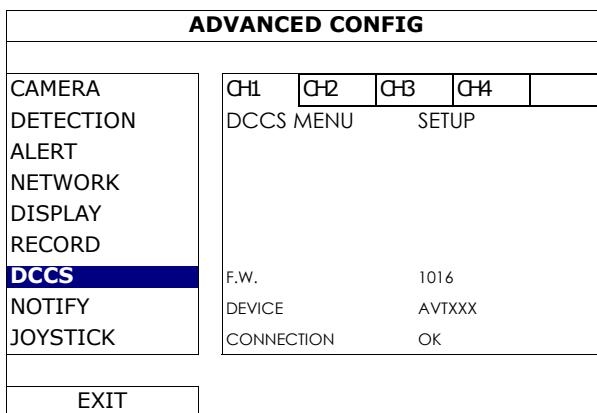
Step4: Right-click to return to the live view, and click the channel with this speed dome camera connected. Then, click on the bottom left side of the screen to show the PTZ control panel, and select to start.

NOTE: To stop camera panning, click again to escape.

CRUISE SETUP

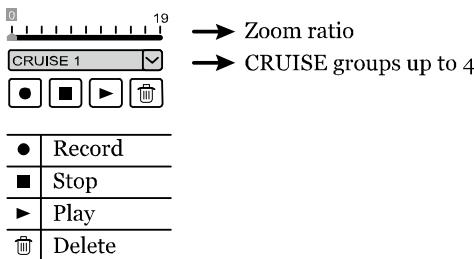
Step1: In the live view, right click to show the main menu.

Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



Step2: Select **CRUISE MODE**, and choose **CRUISE**. Then, go to **CRUISE CONFIG** to select **SETUP**.

Step3: You'll see the setting panel on the bottom right side of the screen:



- Select the cruise group to which you want to record the route. There are 4 groups to be used.
- Move to the scene you want the cruise to be started.
- Click ● (Record). Then, drag and hold the mouse to move the camera for route planning, and scroll the mouse to zoom in / out. You'll see ● and ➤ on the screen.

NOTE: The closer these two icons, the slower the camera moving; the farther these two icons, the faster the camera moving.

NOTE: You have 200 seconds to customize the cruise route.

- Click ■ to stop route planning, and click ▶ to replay the route you just made. To discard the route you just made, click 🗑.

Step4: Right-click to return to the live view, and click the channel with this speed dome camera connected. Then, click 📺 on the bottom left side of the screen to show the PTZ control panel, and select 🕹 to start.

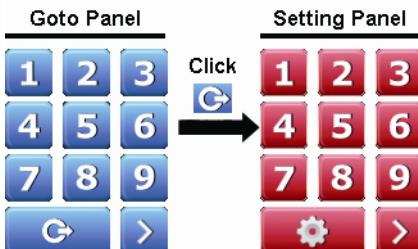
NOTE: To stop camera cruising, click 🕹 again to escape.

SEQUENCE SETUP

Step1: On the DVR live view, click the channel with this speed dome camera connected. Then, click  on the bottom left side of the screen to show the PTZ control panel.



Step2: Click  to display the preset point panel, and click  to go to the setting panel.



Step3: Click  /  to move to the point you want to configure as a preset point, and click the numbering you want to appoint for this point. Then, wait till you see  (command sending) appearing and disappearing on the DVR status bar.

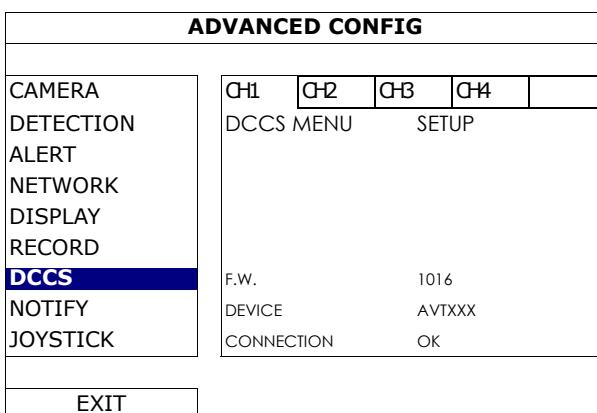
NOTE: Up to 256 preset points could be configured.

Step4: Repeat Step3 until you've added all the points you need, or click  to return to the **Goto** panel.

Step5: In the **Goto** panel, select the numbering you've appointed for the preset points to check if they're working properly.

Step6: Return to the live view, and right click to show the main menu.

Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



Step6: Select **CRUISE MODE**, and choose **SEQUENCE**. Then, go to **CRUISE CONFIG** to select **SETUP**.

SEQUENCE					
ACTIVE NO:				1	▼
No1	▲	PRESET	DWELL TIME	PAN SPEED	TILT SPEED
No2		01 No2			
No3		02 No4			
No4		03 No5			
No5	>>	04 No1			
No6	<<	05 No3			
No7					
No8					
No9					
No10					
No11					
No12					
No13					
No14	▼				
EXIT					

DWELL TIME	Select the time in second after which to move to the next point. The time ranges from 3 to 60.
PAN / TILT SPEED	Select how fast to move the camera to the next point. The speed ranges from 0 to 255.

Step6: Select **EXIT**, and right click to return to the live view.

Click the channel with this speed dome camera connected. Then, click on the bottom left side of the screen to show the PTZ control panel, and select to start.

NOTE: To stop camera panning, click again to escape.

CAMERA GUARD

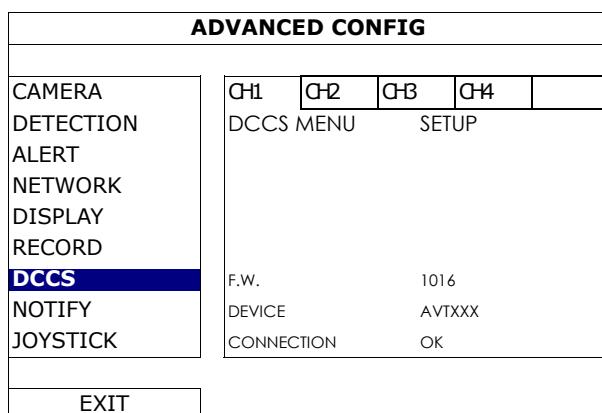
This function is used to lock the camera to a fixed point and no pan action could be made until the lock mode is disabled. Before using this function, make sure:

- You have an iOS or android mobile device with our free app, EagleEyes, installed.
- Your HD CCTV DVR is connected to Internet, and registered in the address book of EagleEyes.

NOTE: To know how to connect the DVR to Internet, please refer to its user manual.

Step1: In the live view, and right click to show the main menu.

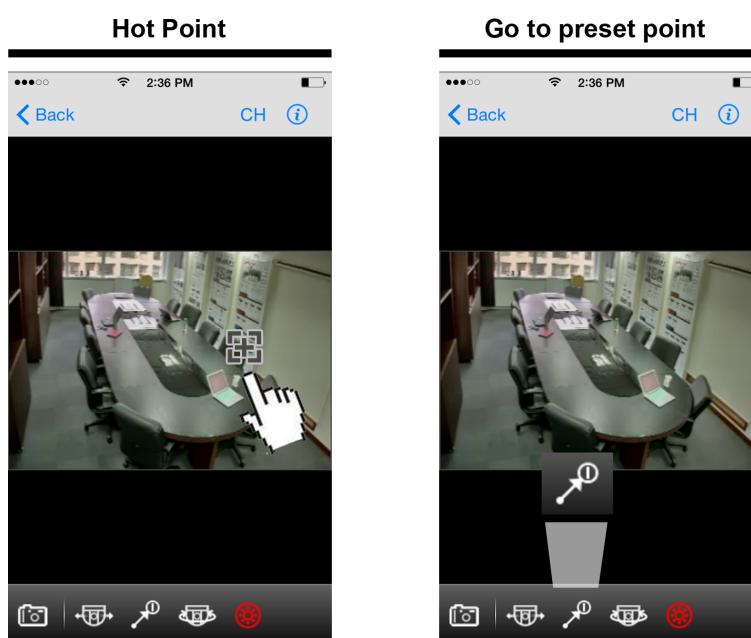
Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



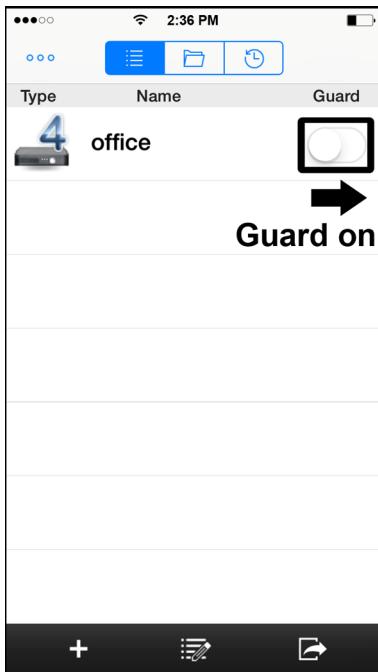
Step2: Select **CAMERA GUARD**, and enable this lock function. Then, configure the timeout after which the camera will be fixed to the current point and any attempt to pan the camera to another point will be failed.



Step3: Go to EagleEyes on your mobile phone or tablet, and access your HD CCTV DVR. Then, click on the channel with this camera connected, and choose any of the following methods to move the camera to the point you want:



Step4: Return to the address book of EagleEyes, and enable **Guard**. The camera will fix at the point after the time specified in Step2 unless the **Guard** status is disabled.



HOME SETUP

This function is used to configure this camera to always return to a specific point when the camera is not operated for the specified time.

Step1: In the live view, and right click to show the main menu.

Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.

Step2: Select **HOME**, and enable this function.

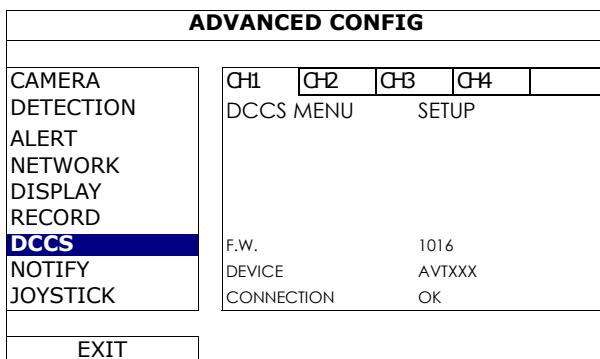
HOME	
FUNCTION	ON
IDLE TIME (MINUTES)	1
TYPE	CRUISE ▼
PRESET GROUP	1 ▼
PRESET NUMBER	5 ▼

IDLE TIME (MINUTES)	Configure the idle time from 1 to 120 after which the camera returns to the specified point.
TYPE	Select the action to work with this function. There are four options: PRESET / AUTO PAN / SEQUENCE / CRUISE.
PRESET GROUP	Select the preset group within which has the preset point you want to configure. Then, go to PRESET NUMBER to select the preset point you want. To know how to configure preset group, please refer to the section "SEQUENCE SETUP".
PRESET NUMBER	Select the preset point you want to force the camera returning to after the specified time.

AUTO TRACKING SETUP

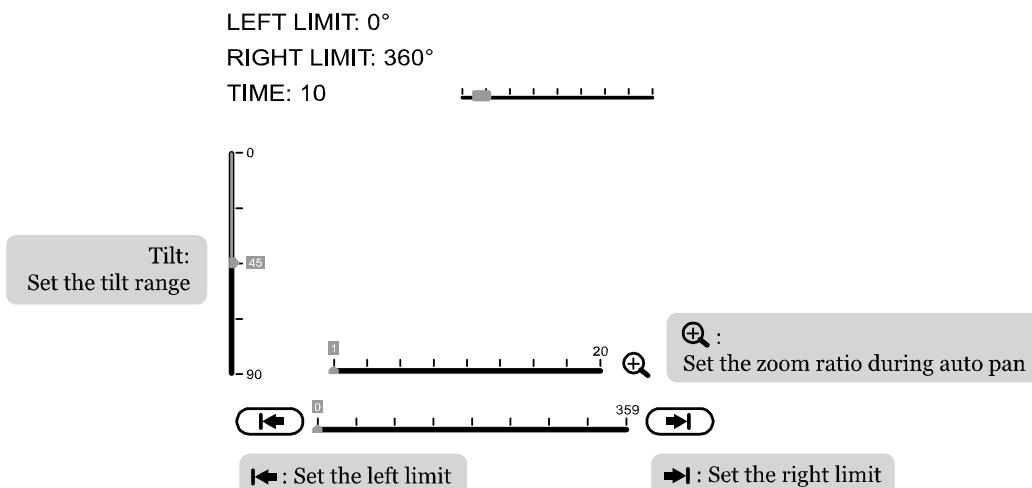
Step1: In the live view, right click to show the main menu.

Select **ADVANCED CONFIG** → **DCCS**. Then, select the channel which connects this camera, and click **SETUP** to enter the menu of camera parameters.



Step2: Go to **AUTO TRACKING**, and select **SETUP**.

Step3: You'll see the setting panel on the bottom left side of the screen:



Icon	Function	Description
◀	Left limit	Move the slider to where you want to set as the most left side of the surveillance area, and click ◀ to set.
▶	Right limit	Move the slider to where you want to set as the most right side of the surveillance area, and click ▶ to set.
--	Tilt angle	Move the slider to select the tilt range of the surveillance area.
⊕	Zoom ratio	Move the slider to confirm the zoom ratio you need for the current area.
--	Time	Set pre-defined tracking timeout of the camera from 5 ~ 60 seconds, or drag directly to the right end for no time limit (INFINITE). When the locked target stops moving longer than the pre-defined tracking timeout, the camera returns to the point it originally monitors after the preset tracking timeout.

Step4: Right-click to return to the live view, and click the channel with this speed dome camera connected. Then, click on the bottom left side of the screen to show the PTZ control panel, and select to start.

NOTE: To stop camera panning, click again to escape.