

6MP 180° Panoramic Analog High Definition Bullet Camera

DWC-PB753WTW



ABOUT MANUAL

Before installing and using the camera, please read this manual carefully.
Be sure to keep it handy for future reference.

PRECAUTIONS

- Do not open or modify.
- Do not open the case except during maintenance and installation, for it may be dangerous and can cause damages.
- Do not put objects into the unit.
- Keep metal objects and flammable substances from entering the camera. It can cause fire, short-circuits, or other damages.
- Be careful when handling the unit.
- To prevent damages, do not drop the camera or subject it to shock or vibration.
- Do not install near electric or magnetic fields.
- Protect from humidity and dust.
- Protect from high temperature.
- Be careful when installing near the ceiling of a kitchen or a boiler room, as the temperature may rise to high levels.
- Cleaning:
To remove dirt from the case, moisten a soft cloth with a soft detergent solution and wipe.
- Mounting Surface:
The material of the mounting surface must be strong enough to support the camera.

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference, when the equipment is operated in a residential environment. This equipment generates, uses, and radiates radio frequency energy; and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications.

WARNING: Changes or modifications are not expressly approved by the manufacturer.

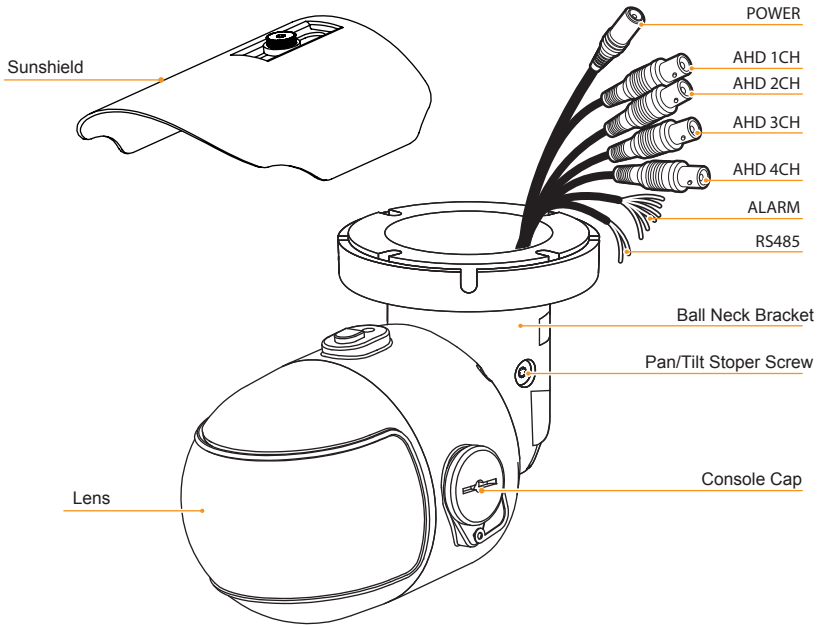
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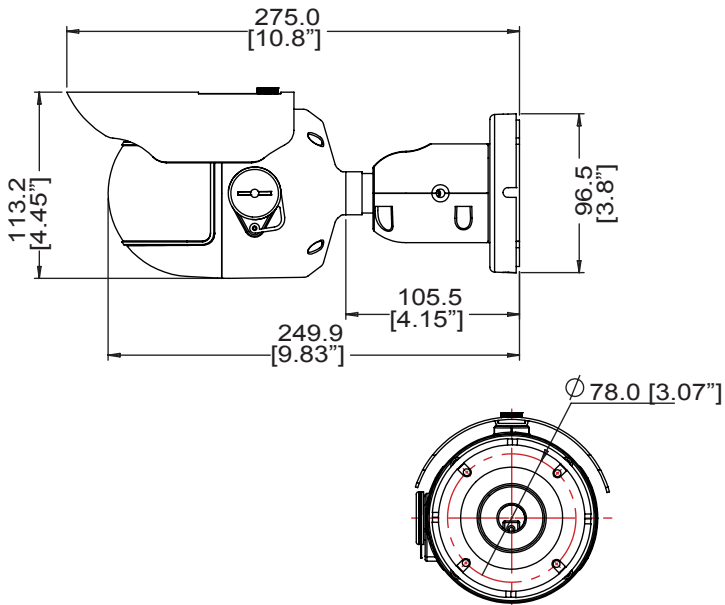
FEATURES*

- Analog High Definition (AHD) HD over Coax Technology
- 3x2MP Panasonic 1/3" CMOS Sensor
- 6MP 180° Panoramic Camera
- STAR-LIGHT™ Super Low Light Technology
- 6MP Resolution at 30fps
- 3x 4.3mm Fixed Lenses
- Wide Dynamic Range (WDR)
- OSD Control Via Coaxial (UTC)
- Smart DNR™ 3D Digital Noise Reduction
- Highlight Masking Exposure (HME)
- True Day/Night Mechanical IR Cut Filter
- De-Fog™ Extreme Weather Image Compensation
- Auto Sensing 24VAC/12VDC with Line Lock
- Secondary Video-BNC Output
- Easy Icon Driven OSD Menu with Built-in Joystick
- Programmable Privacy Zones
- Auto Gain Control (AGC)
- Backlight Compensation (BLC)
- Dynamic Range Compressor (DRC) Reveals Low Light Detail
- Auto White Balance (AWB)
- 5 Year Warranty
- IP66 Certified (Weather Resistant)

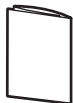
PARTS & DESCRIPTION*



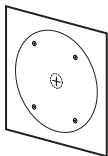
DIMENSIONS IN MILLIMETERS (MM/IN)*



INSIDE THE BOX*



Quick Manual



Template Sheet



Test Monitor Cable



T-Wrench



Screw & Plastic Anchor-4pcs



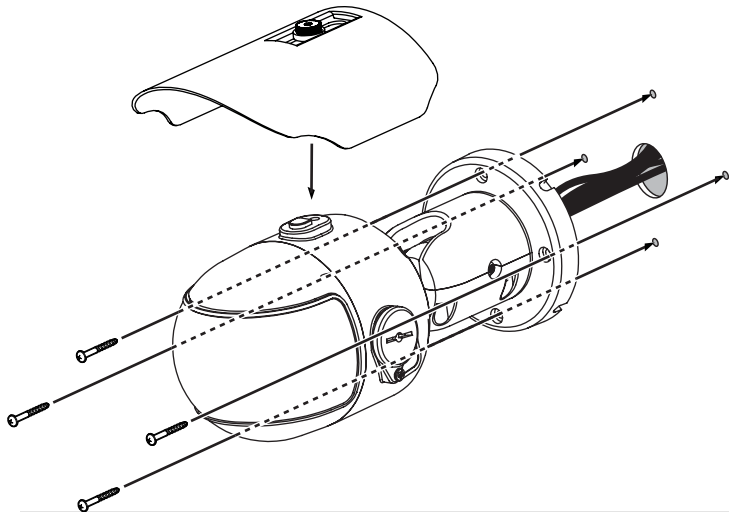
Sunshield



Sunshield Screws

INSTALLATION INSTRUCTIONS*

1. Using the mounting template or your own camera, mark and drill the necessary holes to mount the bracket to a wall or ceiling.
2. Pull all necessary wires through and make the proper connections.
3. Use the four (4) mounting screws to install the camera on the wall or ceiling.
4. Using the subshiled screws, secure the sunshiled cover to the camera's housing.



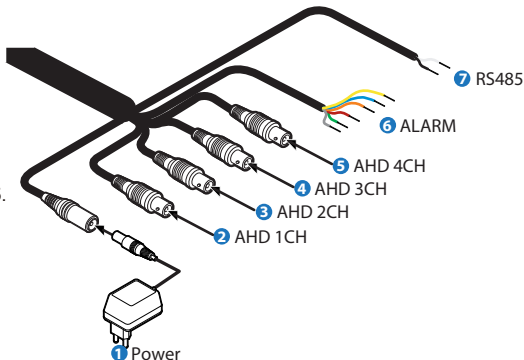
CABLING INSTRUCTIONS*

Use the diagram below to connect the camera to external devices:

1. Power: connect the camera to a proper power supply.
- 2~4. AHD BNC Outputs 1~3: Connect each of the camera's lenses as a separate output to a DVR supporting AHD signal such as the VMAX AHD CORE™ and VMAX A1™. On the DVR side, each lens will be set as a different channel.
5. AHD Output 4: Connect all 3 of the camera's lenses as a single output to a DVR supporting AHD signal such as the VMAX AHD CORE™ and VMAX A1™. On the DVR side, the camera's full panoramic view will appear on a single channel.
6. Alarm:

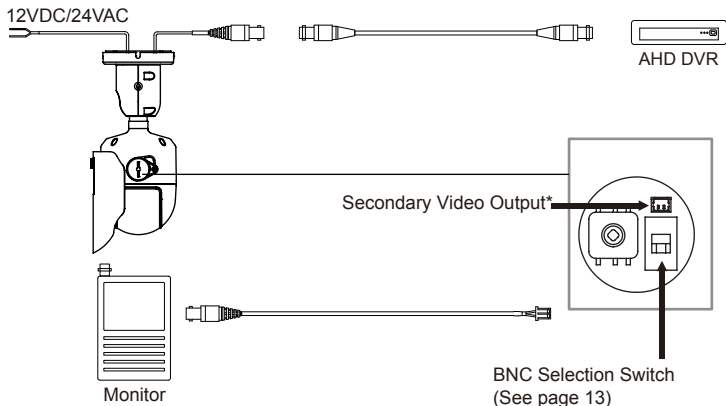
1# DOUT +	ORANGE
1# DOUT -	RED
2# DOUT +	YELLOW
2# DOUT -	BLUE
3# DOUT +	GREEN
3# DOUT -	GRAY

7. RS485: Connect the camera to a controller or the DVR using RS485.



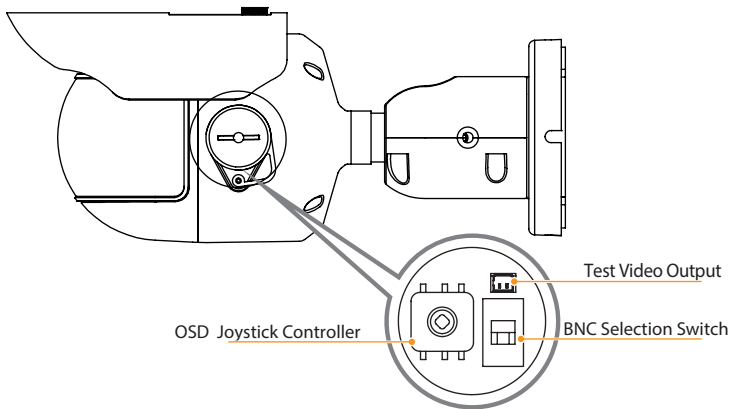
CONNECTING TO MONITORS*

Use the diagram below to connect to a Monitor or CRT Monitor properly.



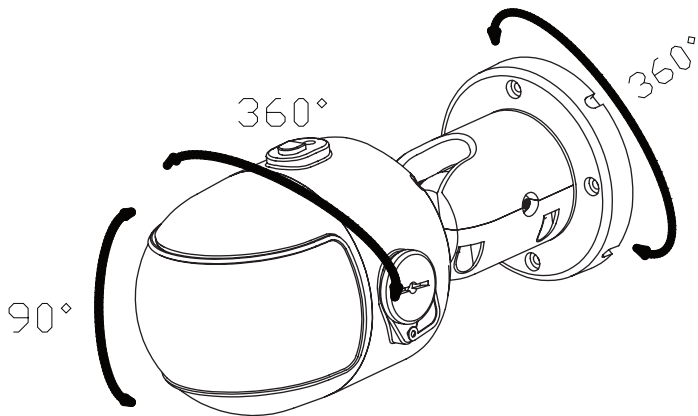
- Power Connection - 12VDC/24VAC Dual Voltage (Auto Polarity Detection and Protection)
- All cameras are equipped with a second video output for on-site configuration.
- *NOTE: 2nd BNC Output will display video for 60 seconds.

CONTROL BOARD*



- 1 Remove the console's cover by rotating it counter-clockwise.
- 2 Use the Joystick to control the camera's OSD options.

ADJUSTING THE CAMERA ANGLE*



CAUTION :

- 1 Do not rotate more than 360°.
- 2 Do not unnecessarily twist too many times.

HOW TO ACCESS THE CAMERA'S OSD MENU*

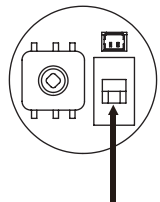
The camera has three separate sensors, each with its own OSD menu and settings. When adjusting the camera's settings, each lens/ sensor will have their own set of values and settings and will be set separately.

In addition, the camera offers a 4th BNC output of a combined 180° view as a single camera output. This output has an additional Panoramic OSD menu with special settings including stitching and motion and patrol setup.

To access each sensor's OSD menu select one of the following options:

1. The camera has four (4) BNC outputs, each supporting UTC (Up the Coax) communication. When the camera is connected to a DVR supporting UTC communication like the VMAX A1™, you can access the camera's OSD menu directly from the DVR.
2. The camera supports RS485 communication, allowing to control the camera remotely.
3. In the camera's external control board, there is a switch next to the joystick controller. The switch determines which of the three (3) sensor will be displayed in the secondary BNC output. When selected, the selected sensor's display will appear in the 2nd video out for 60 sec.

NOTE: Option 3 does not support access to the fourth Panoramic OSD menu. Please use UTC or RS485 cabling to access those options.



BNC Selection
Switch

MODULE OSD MENU*

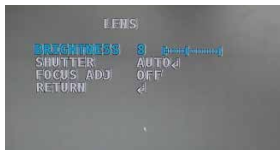
EXPOSURE	COLOR	DAY & NIGHT	FUNCTION
<ul style="list-style-type: none"> — LENS BRIGHTNESS / SHUTTER / FOCUS ADJ — BACKLIGHT OFF / HME / BLC / WDR — DRC OFF / LOW / MIDDLE / HIGH — DEFOG OFF / ON — AGC 0-10 — STARLIGHT OFF / X4 ~ X32 — 3D DNR OFF / LOW / MIDDLE / HIGH — EXIT JUMP SAVE & EXIT / EXIT 	<ul style="list-style-type: none"> — WHITE BAL. AUTO / AUTO-EX / PRESET / MANUAL — COLOR GAIN 0 ~ 20 — EXIT JUMP SAVE & EXIT / EXIT 	<ul style="list-style-type: none"> — MODE AUTO / COLOR / BW — CDS THRES 0 ~ 20 — CDS MARGIN 0 ~ 20 	<ul style="list-style-type: none"> — SHARPNESS 0 ~ 20 — EXIT JUMP SAVE & EXIT / EXIT
MOTION	PRIVACY	SETUP	EXIT
<ul style="list-style-type: none"> — MOTION — DET. WINDOWS — SENSITIVITY 0 ~ 10 — MOTION OSD OFF / ON — TEXT ALARM OFF / ON — EXIT JUMP SAVE & EXIT / EXIT 	<ul style="list-style-type: none"> — BOX OFF / ON — POLYGON OFF / ON — EXIT JUMP SAVE & EXIT / EXIT 	<ul style="list-style-type: none"> — CAM TITLE OFF / ON — FREQUENCY 50Hz / 60Hz — LANGUAGE ENG / CHN / CHN (S) / JPN — DEFECT DET ON — INITIAL ON — EXIT JUMP SAVE & EXIT / EXIT 	<ul style="list-style-type: none"> — SAVE — EXIT
4 th BNC OUTPUT PANORAMIC OSD MENU			
<ul style="list-style-type: none"> — MOTION OFF / ON — PATROL OFF / ON — STITCH FIX / CAM1+ / CAM2+ / CAM3+ — EXIT 			



EXPOSURE

LENS

The camera's lens mode is set by default to AUTO. This allows the camera's iris automatically.



Under the LENS sub-menu, you can adjust the following settings:

- Brightness: Adjust the camera's brightness from 0~20. The higher the number, the brighter the image will appear.
- Shutter: Set the shutter speed to AUTO, Manual, or FLC (Flicker-less mode).
 - If AUTO is selected:
 - Select NORMAL for **INDOOR** applications.
 - Select DEBLUR for **OUTDOOR** applications.
 - If MANUAL is selected, set the shutter speed from the options: 1/30,1/60, 1/120 ~ 1/30000.
 - Select FLC if the camera is experiencing some flickering in the image.
 - The shutter speed will be set to 1/100 (NTSC).

- Focus Adjustment: When on, the default level is set automatically by controlling lens focus and based on the installation and environment circumstances.





EXPOSURE

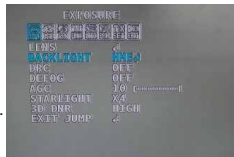
BACKLIGHT

OFF

HME

HIGHLIGHT MASKING EXPOSURE

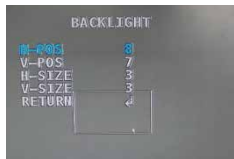
HME allows objects to appear clearly on the screen by masking extremely bright areas. To setup HME, set the level and color. The lower the setting, the darker the masking areas have to be. Select from: 0 ~ 20, default is 10.
Color: Set the color of the HME mask. Select from:
BLACK / WHITE / YELLOW / CYAN / GREEN /
MAGENTA / RED / BLUE



BLC BACK LIGHT COMPENSATION

If BLC is selected, adjust the size and position of the mask:

- H-POS: Move the Zone position left or right. The higher the number, the zone will move to the right.
- V-POS: Move the Zone position up or down. The higher the number, the zone will move down.
- H-Size: Reset the zone's size horizontally. The higher the number, the right side panel will move further to the right.
- V-Size: Reset the zone's size vertically. The higher the number, the bottom side panel will move further down.



WDR Wide Dynamic Range

If WDR is selected, adjust the WDR level (Weight) in the submenu. Select from Low, Middle, or High (Default). If WDR is enabled, the DRC settings are set automatically and will not be available for adjustment.



EXPOSURE

DRC DYNAMIC RANGE COMPRESSOR

Enables dark areas in images to become more visible without overexposing the bright areas to create one perfect image. Select from: OFF / LOW / MIDDLE / HIGH.

If WDR or DEFOG are enabled, the DRC menu is disabled.

DEFOG Allows the camera to process a scene that is obscured by fog or weather conditions and provides a visibly improved image.
 AUTO / Manual: Select AUTO to have the WDR and DRC levels adjusted automatically. Set the DEFOG level from LOW / MIDDLE / HIGH.



AGC AUTO GAIN CONTROL

0~10
 (Default: X10)
 Enhances the picture's brightness in low light conditions. A higher AGC makes the images brighter; however, it could increase the amount of noise.

STARLIGHT SUPER LOW LIGHT TECHNOLOGY
 OFF / x4 ~ x34
 (Default: X4)
 Automatically activates the slow shutter function when the image is too dark. High values may cause the image to lag. STARLIGHT menu is disabled if the SHUTTER setting is above 1/60.

3D DNR 3D DIGITAL NOISE REDUCTION
 OFF / LOW / MID / HIGH
 3D-DNR reduces the noise on the screen in low light conditions and allows for clearer images, even at night.



COLOR

WB MODE

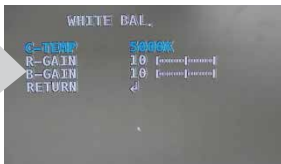
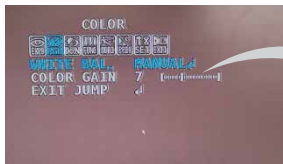
AUTO Auto Tracking White Balance Control mode compensates for color temperature changes between 2400K° and 11000K°.

AUTO-EX Auto White Balance Control mode compensates for color temperature changes lower than 2000K° and higher than 15000K°.

PRESET Preset fixes the white balance based on the current lighting automatically.

MANUAL Users can control the white balance manually by changing RED GAIN and BLUE GAIN (see below).

C-TEMP: Select the color temperature for the white balance setup. If enabled, the Red and Blue Gain settings will be set automatically according to the C-TEMP selected. Select from 3000K, 5000K, or 8000K. The default value is 5000K.
RED GAIN: 0 ~ 20. Adjusts the amount of red in the image. The default value is 10.
BLUE GAIN: 0 ~ 20. Adjust the amount of blue in the image. The default value is 10.



COLOR GAIN

Set the color gain from 0~20. The default value is 7.



DAY & NIGHT

D&N MODE

AUTO / COLOR / B&W

AUTO: The camera will switch between color and B/W based on the AGC levels.

- AGC THRESHOLD: Set when the camera switches between Day & Night.
- AGC MARGIN: Set the value added to the AGC Threshold. Adjust the value based on the environment in which the camera is installed. If the margin is too low, the camera will switch from color to B/W and back.
- EXT. LED: If set to AUTO: the LEDs are enabled/ disabled by the CDS Sensor on the LED Board. If disabled, the camera's LEDs are disabled manually.
- DELAY: Set the time interval delay before switching from day mode to night mode.
- SMART IR: Enable Smart IR and set the level. Higher values will make Smart IR stronger.



COLOR: The camera will remain in COLOR mode regardless of the lighting environment.

B/W: The camera will remain in B/W mode regardless of the lighting environment.

*NOTE: Day/Night setup menu is available on the 2nd sensor only. Settings adjusted in the 2nd sensor will be applied to the 1st and 3rd sensors.



FUNCTION

SHARPNESS

0 ~ 10 Sets the image sharpness. The higher the number, the sharper the image.





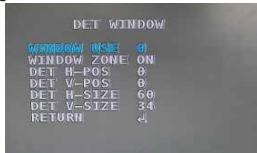
MOTION

The camera can detect motion and display an alarm on the screen.

Motion detection settings must be adjusted for each sensor.

DET. WINDOW

- WINDOW ZONE: Select a zone to setup from the 4 zones available.
- WINDOW USE: Enable or disable the selected motion zone.
- DET H-POS: Move the Zone left or right. The higher the number, the zone will move to the right.
- DET V-POS: Move the Zone up or down. The higher the number, the zone will move down.
- DET H-Size: Adjust the zone's size horizontally. The higher the number, the right side panel will move further to the right.
- DET V-Size: Adjust the zone's size vertically. The higher the number, the bottom side panel will move further down.



SENSITIVITY

The smaller the movement you want to detect, the higher the sensitivity value must be.

MOTION OSD

If enabled, the text MOTION ZONE will appear on the screen indicating the area of motion detection.

TEXT ALARM

Setup a text to appear on the screen when motion is detected explaining the alarm situation.

- WINDOW MOTION: Will appear when a motion alarm is detected.
- CAMERA MOVING: Will appear if the camera is shaken abruptly.
- BRIGHT CHANGE: Will appear if the brightness in the scene changes suddenly and drastically.



PRIVACY

You can hide some parts of the screen for privacy masking. A total of 8 different privacy masking zones are available. The cameras support square privacy masks or advanced polygon masks.



BOX

- ZONE NUM.: Select the zone number you want to setup.
- ZONE DISP.: To enable it, turn the display option ON.
- H-POS: Move the Zone position Left or right. The higher the number, the zone will move to the right.
- V-POS: Move the Zone position up or down. The higher the number, the zone will move down.
- H-SIZE: Reset the zone's size horizontally. The higher the number, the right side panel will move further to the right.
- V-SIZE: Reset the zone's size vertically. The higher the number, the bottom side panel will move further down.
- Y LEVEL- The higher the number, the brighter the color will appear.
- CR LEVEL- The higher the number, the more red tone will be added to the zone's color. The lower the number, the more green will be added to the zone's color.
- CB LEVEL- High CB Level + High CR Level = Red
High CB Level + Low CR Level = Blue
Low CB Level + High CR Level = Orange
- TRANS: Set the mask's transparency level from 0~3. The default value is 2.



PRIVACY

You can hide some parts of the screen for privacy masking. A total of 8 different privacy masking zones are available. The cameras support square privacy masks or advanced polygon masks.



POLYGON MASKS

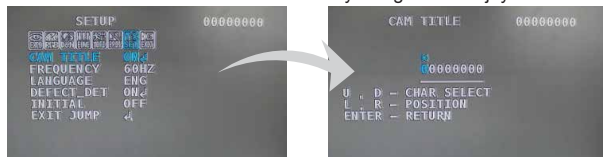
- ZONE NUM.: Select the zone number you want to setup.
- ZONE DISP.: To enable it, turn the display option ON.
- POS0-X: Move the mask's upper left angle left to right.
- POS0-Y: Move the mask's upper left angle up and down.
- POS1-X: Move the mask's upper right angle left to right.
- POS1-Y: Move the mask's upper right angle up and down.
- POS2-X: Move the mask's lower right angle left to right.
- POS2-Y: Move the mask's lower right angle up and down.
- POS3-X: Move the mask's lower left angle left to right.
- POS3-Y: Move the mask's lower left angle up and down.
- Y LEVEL- The higher the number, the brighter the color will appear.
- CR LEVEL- The higher the number, the more red tone will be added to the zone's color. The lower the number, the more green will be added to the zone's color.
- CB LEVEL- High CB Level + High CR Level = Red
 High CB Level + Low CR Level = Blue
 Low CB Level + High CR Level = Orange
- TRANS: Set the mask's transparency level from 0~3. The default value is 2.



SETUP

CAM. TITLE

Add a name to the camera. Set the title by using the OSD joystick.



FREQUENCY*

When the camera's image has flickering issues, change the frequency value to adjust the image.



LANGUAGE

Select from the following: English (Default), Chinese, Chinese (S), and Japanese.

*NOTE: Frequency setup menu is available on the 2nd sensor only. Settings adjusted in the 2nd sensor will be applied to the 1st and 3rd sensors.



SETUP

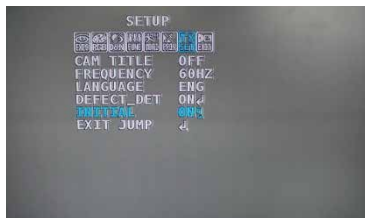
DEFECT DET.

The camera can detect and correct dead pixels in the image. Press the select button and set the threshold level. The camera will detect and adjust the pixels automatically.



INITIAL

Reset the camera to its default settings. Press and hold the select button for five (5) seconds.





EXIT

EXIT

Exit the OSD menu without saving any changes.

SAVE&EXIT

Exit the OSD menu after saving the recent changes.



4th BNC OUTPUT PANORAMIC OSD MENU*

MOTION When enabled, the camera will focus into the sensor's display where motion is detected. This feature is available only in the 4th BNC output, when the camera's image is displayed as a 180° view as a single camera output. The focused area will be shown in the top screen above the panoramic camera view. This motion alarm is not related to the individual channel motion setup. To enable, change the value to ON.

PATROL When enabled, a white frame will appear in the panoramic image, moving from left to right. The frame's view will be displayed in the top screen above the panoramic camera view. This feature is available only in the 4th BNC output, when the camera's image is displayed as a 180° view as a single camera output.

If MOTION and PATROL are both enabled, the camera will zoom into a motion area and track motion across the camera's view. Once no motion is detected after ten (10) seconds, the camera will return to PATROL mode.



4th BNC OUTPUT PANORAMIC OSD MENU*

STITCH Use this menu to adjust the stitching between each of the cameras as needed. You can adjust each individual camera's position by selecting the camera name and move the image up, down, left and right to align with the camera next to it. Once the individual cameras' position is properly adjusted, select FIX and exit the STITCH menu to save the stitching changes. It is not recommended to manually adjust the camera's stitching. The camera's stitching is pre-set in the factory settings.

EXIT When all setup is complete, press the EXIT to save all changes and exit the menu.



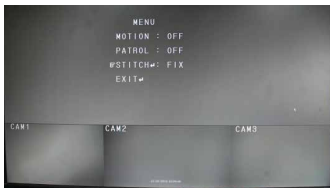
Stitching adjustment on CAM1



Stitching adjustment on CAM2



Stitching adjustment on CAM3



FIX Changes

TROUBLESHOOTING

Before sending your camera for repair, check the following or contact our technical specialist.

FOR NO VIDEO

Check the coaxial cable and make sure it is connected securely.

Check the lens' iris adjustment at the camera's OSD menu.

Check the power supply and make sure the camera has the proper voltage and current.

FOR OUT-OF-FOCUS VIDEO

Check the clear dome cover and the lens for dirt or fingerprints. Use a soft cloth and gently clean. Check the lens' manual focal and zoom adjustment. The use of a field test monitor is recommended.

WARRANTY INFORMATION*

Digital Watchdog (referred to as “the Warrantor”) warrants the Digital Watchdog Camera against defects in materials or workmanship as follows:

LABOR: For the initial five (5) years and one (1) year on IR LED from the original purchase date, if the camera is determined to be defective, the Warrantor will repair or replace the unit with a new or refurbished product at its option at no charge.

PARTS: In addition, the Warrantor will supply replacement parts for the initial five (5) years and one (1) year on IR LED.

To obtain warranty or out of warranty service, please contact a Technical Support Representative at **1-866-446-3595** Monday through Friday from 9:00AM to 8:00PM Eastern Standard Time.

A purchase receipt or other proof of the original purchase date is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damage which occurs in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than an authorized repair facility or damage that is attributable to acts of God.



LIMITS & EXCLUSIONS*

There are no express warranties except as listed. The warrantor will not be liable for incidental or consequential damages (including damage to recording media without limitation) resulting from the use of these products or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions or limitations listed above may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state-to-state.

If the problem is not handled to your satisfaction, then write to the following address:

Digital Watchdog, Inc.
ATTN: RMA Department
5436 W. Crenshaw Street
Tampa, FL 33634

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Costs of such service calls are the responsibility of the purchaser.

SPECIFICATIONS*

VIDEO	
Image Sensor	3x Panasonic 1/3" CMOS Sensors
Active Pixels	3X 1944 (H) x 1092 (V)
Scanning System	Progressive scan
Frequency	60Hz/50Hz
Signal Technology	6.0 Megapixel AHD (3 x 2MP Sensors)
Synchronization	Internal
Resolution	6.0 Megapixel (3x 1920x1080 Sensors)
Minimum Scene Illumination	F2.0 (30IRE): 0.06Lux [Color]
	F2.0 (30IRE): 0.01 Lux [B&W]
S/N Ratio	55dB
Video Output	AHD6MP (3x 1080p at 30fps + 4ch /180° Panoramic View)
Alarm Output	3 Alarm Outputs
LENS	
Focal Length	4.3mm
Lens Type	Fixed Lens
OPERATIONAL	
Shutter Speed	1/30(25) - 1/30,000
Backlight	On, Off
STAR-LIGHT (Sens-up)	Off, 2x - 32x
Wide Dynamic Range	On, Off
Digital Noise Reduction	Off, Low, Middle, High

*Specification is subject to change without prior notice.

SPECIFICATIONS*

OPERATIONAL (CONT.)	
White Balance	Auto / Auto-Ex/ Preset / Manual
Day and Night	Day/ Night/ Auto
Auto Gain Control	Max 60dB
Motion Detection	3 Zones per Camera, total 12 Motion Zones
Privacy Zones	16 Masks per Camera, total 72 Privacy Masks
RS485	PELCO D/PELCO C
Digital Zoom	x1.0 ~ x16.0
ENVIRONMENTAL	
Operating Temperature	-20°C ~ 50°C (-4°F ~ 122°F)
Operating Humidity	No more than 90% (Non-Condensing)
IP Rating	IP66 (Weather Resistant)
Other Certifications	FCC, CE, ROHS
ELECTRICAL	
Power Requirements	DC12V/AC24V Dual Voltage
Power Consumption	DC12V: 8.5W, 708mA
	AC24V: 7.5W, 354mA
MECHANICAL	
Housing Material and Dimensions	Aluminum, 234.5 x 82.2 mm (9.23 X 3.23 in)
Weight	1.65lbs

MEMO*

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Complete Surveillance Solutions

5436 W Crenshaw St. Tampa, FL 33634

Tel : 866-446-3595 / 813-888-9555

Fax : 813-888-9262

www.Digital-Watchdog.com

technicalsupport@dwcc.tv

Technical Support Hours : Monday-Friday

9:00am to 8:00pm EST