Honeywell

HCS544

Day/Night
Color Camera

NTSC   PAL
HCS544   **HCS544X**

User Guide

Revisions

| Issue	Date	Revisions
A	01/08	New document
B	02/08	Amended specifications, page 21: changed power consumption to 3.5 W; added lens connector; removed ALC.

Warnings

Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

WARNING! **12 VDC/24 VAC models require the use of CSA Certified/UL Listed Class 2 power adapters to ensure compliance with electrical safety standards.**

Caution To reduce the risk of fire or shock hazard, do not expose this camera to rain or moisture.
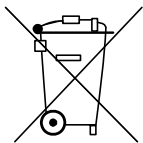
WEEE (Waste Electrical and Electronic Equipment). Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Explanation of Graphical Symbols

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.

THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.

FCC Compliance Statement

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

Caution Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Manufacturer's Declaration of Conformance

The manufacturer declares that the equipment supplied with this guide is compliant with the essential protection requirements of the EMC direction 89/336/EEC and the Low Voltage Directive LVD 73/23 EEC, conforming to the requirements of standards EN 55013 for emissions, EN 50130-4 for immunity, and EN 60065 for Electrical Equipment safety.

Contents

Introduction

The Honeywell HCS544 Day/Night Color Camera is designed for general surveillance applications and is ideally suited for low-light indoor environments. An intuitive menu and Graphical User Interface (GUI) helps you quickly set up the camera to ensure the best picture quality for your unique environment. It requires little or no adjustment after initial installation.

Features
- High resolution 540 TVL 1.3" CCD provides a high quality picture in low-light conditions
- Digital noise reduction (DNR) minimizes video noise in low light
- Automatic day/night switching with adjustable threshold level control
- 12 VDC or 24 VAC operation

Before You Begin

Please read this guide carefully before you install the HCS544 Day/Night camera. Keep this guide for future reference.

Unpack Everything
Check that the items received match those listed on the order form and packing slip. The HCS544 packing box should include, in addition to this user guide, one HCS544 camera.

If any parts are missing or damaged, contact the dealer you purchased the camera from or call Honeywell Customer Service (see the back of this guide for contact information).

Note   You will also require a Phillips screwdriver and a flathead screwdriver to complete the installation.
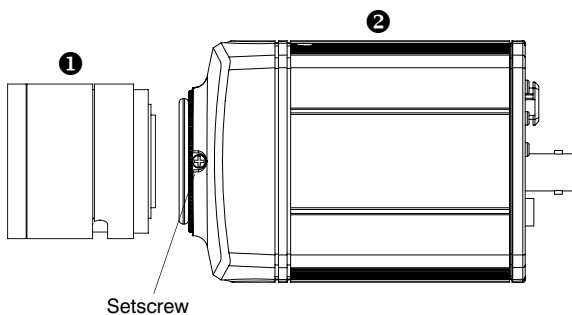
Installation

Installing the Lens

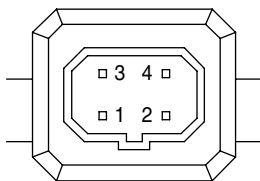The HCS544 Series camera is factory configured for a CS-mount lens.

Follow Figure 1 to attach a customer supplied lens, screw the lens ❶ into the front of the camera body ❷.

Figure 1   CS Mount

Setscrew

Figure 2   Pin Definitions

Pin	DC Lens
1	CTRL -
2	CTRL +
3	DRV +
4	DRV -

Adjusting the Flange Back Focus

The back focus adjustment is accessible at the front end of the camera housing to adjust the back focal length or picture focus.

1. Loosen the setscrews with a Phillips screwdriver.
2. Adjust the focus ring to focus the picture.
3. Retighten the setscrew.

Connecting Monitor and Power

Note   Check the power source from the external power supply before applying power to the camera.

1. Connect the VIDEO connector on the rear of the camera to the video-in connector on your monitor.
2. Connect the camera to a 12 VDC or 24 VAC power supply (appropriate to your installation). Use a screwdriver to first loosen the ~AC24V/DC12V terminal screws on the terminal block.

Figure 3   Video Connections
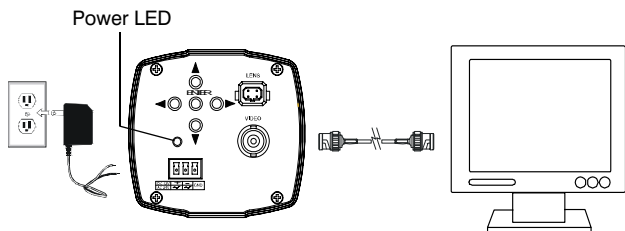
Power LED

Note   To ease installation, the terminal block can be removed. The power connections of the removable terminal block are not polarity-sensitive. Connect either power lead to either connector terminal.

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3. Secure the power leads by retightening the terminal screws until snug.

4. Plug the power supply into an appropriate power source. The power LED illuminates to show that the camera is receiving power. If it does not illuminate, check the removable terminal block connections and the power source.

Mounting the Camera

Mounting points are provided on the top and bottom of the camera and are used to mount the camera on a bracket or tripod. They are designed to accept standard sized mounting bolts. The mounting bracket must be capable of supporting the weight of the camera and its lens.

Caution   Some installation codes dictate that the mounting bracket must be capable of supporting up to four times the combined weight of the camera and lens.

Making Final Adjustments

Adjust the focus in your field of view; that is, until you see a clear image. If necessary, adjust the brightness using the OSD menu controls (see *"LENS DC/Brightness' - DC/BRIGHTNESS* or *"AGC (Automatic Gain Control) DC/Brightness'* on *page 12*). Confirm the exposure on the monitor screen.

Programming

Use the OSD (On-Screen Display) to program the camera.

OSD Menu Controls

Figure 4   OSD Menu Control
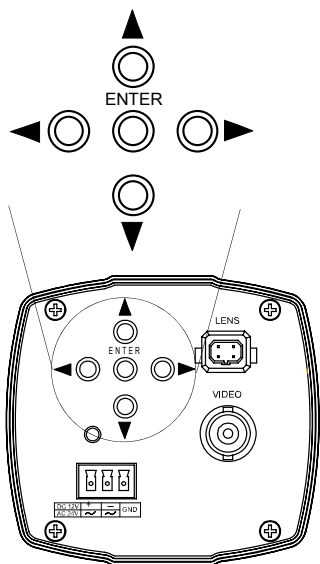
Navigating through the menus

ENTER (SET)
Press to access the SETUP MENU.
Press to enter a screen or select a menu option.

◀, ▶
Move horizontally to and between menus and options.

▲, ▼
Move vertically to and between menus and options.

"↵" indicates submenus. Select the menu, then press ENTER.
Select RETURN, then press ENTER, to return to the previous menu.

Select EXIT, then press ENTER, to save your changes. Settings remain in effect when power is turned off, then on again.

When no buttons are pressed, the menu display turns off automatically after 70 seconds.

SETUP Menu

The HCS544 menu system consists of one main SETUP menu (see *Figure 5*) for easy camera programming.

Figure 5   Menu Structure

```
            <<SETUP>>
  1  LENS           DC↵
  2  SHUTTER        –––
  3  WHITE BAL.     ATW
  4  BACKLIGHT      OFF
  5  AGC            HIGH↵
  6  DNR            MIDDLE
  7  DSS            AUTO
  8  SPECIAL↵
  9  EXIT MENU
```

↵ indicates submenus

Submenu	Menu Options
LENS	DC↵ MANUAL
SHUTTER	FLK ESC↵ MANUAL
WHITE BAL	ATW MANUAL↵ AWC↵
BACKLIGHT	OFF LOW MIDDLE HIGH
AGC	OFF LOW↵ MIDDLE↵ HIGH↵
DNR	OFF LOW MIDDLE HIGH
DSS	OFF AUTO↵
SPECIAL↵	See "SPECIAL Menu" on *page 14*.

SETUP Menu

See "SETUP Menu Functions" on *page 12* for a description of the submenus and menu options.

SETUP Menu Functions

	Menu Item	Option	Description
1	LENS	DC↵ MANUAL	Selects Lens type.
			Press ENTER with DC selected to access "BRIGHTNESS" for iris level adjustment.
2	SHUTTER	FLK ESC↵ MANUAL	Adjusts shutter settings.
			Flickerless mode (FLK) reduces on-screen flickering.
			Electronic Shutter Control (ESC) adjusts brightness level on screen when using a manual lens.
			Manual mode allows you to adjust the shutter speed from 1/60-1/120,000 of a second (NTSC), or 1/50-1/120,000 (PAL).
3	WHITE BAL. (White Balance)	ATW MANUAL↵ AWC↵	Controls color on the screen.
			Select Auto Tracing White Balance (ATW) when the color temp is 1800°K-10500°K (for example when under a fluorescent light, or outdoors).
			Manual mode allows you to increase or decrease the red or blue GAIN on screen.
			Select Auto White Balance Control (AWC), then press ENTER to automatically adjust the white balance to your specific environment.
4	BACKLIGHT	OFF LOW MIDDLE HIGH	Provides light level control to overcome severe backlighting conditions.
5	AGC (Automatic Gain Control)	OFF LOW↵ MIDDLE↵ HIGH↵	Adjusts value of AGC gain.
			Increase the GAIN level to brighten the picture in low light conditions (noise/distortion may develop). The submenu provides access to the brightness control.

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	Menu Item	Option	Description
6	DNR (Digital Noise Reduction)	OFF LOW MIDDLE HIGH	Reduces noise on the screen. Increasing the DNR level reduces noise but may introduce video artifacts. DNR is deactivated if AGC is turned off.
7	DSS (Digital Slow Shutter)	OFF AUTO↵	Automatically provides a clear image under low-light conditions. You can control the maximum low-light magnification from 2x to 128x (increasing magnification may cause noise/distortion). DSS is deactivated when SHUTTER is set to FLK mode.
8	SPECIAL↵		Takes you to the SPECIAL menu (see next section).
10	EXIT		Exits the SETUP menu and returns to video monitoring.

SPECIAL Menu

1. On the SETUP menu, press the menu control **UP** or **DOWN** and then select **SPECIAL**.
2. Press the **ENTER (SET)** control to access the SPECIAL menu.

Figure 6   SPECIAL Menu

```
        <<SPECIAL MENU>>
1   CAMERA ID          OFF
2   DAY/NIGHT          AUTO
3   SYNC               INT
4   MOTION DET         OFF
5   PRIVACY            OFF
6   MIRROR             OFF
7   SHARPNESS          ON↵
8   RESET
9   RETURN↵
```

↵ indicates submenus

Submenu	Menu Options
CAMERA ID	OFF, ON↵
DAY/NIGHT	AUTO, COLOR
SYNC	INT (L/L)
MOTION DET	OFF, ON↵
PRIVACY	OFF, ON↵
MIRROR	OFF, ON
SHARPNESS	ON↵, OFF
RESET	

SPECIAL Menu

For a description of the submenus and menu options, "SPECIAL Menu Functions" on *page 15*.

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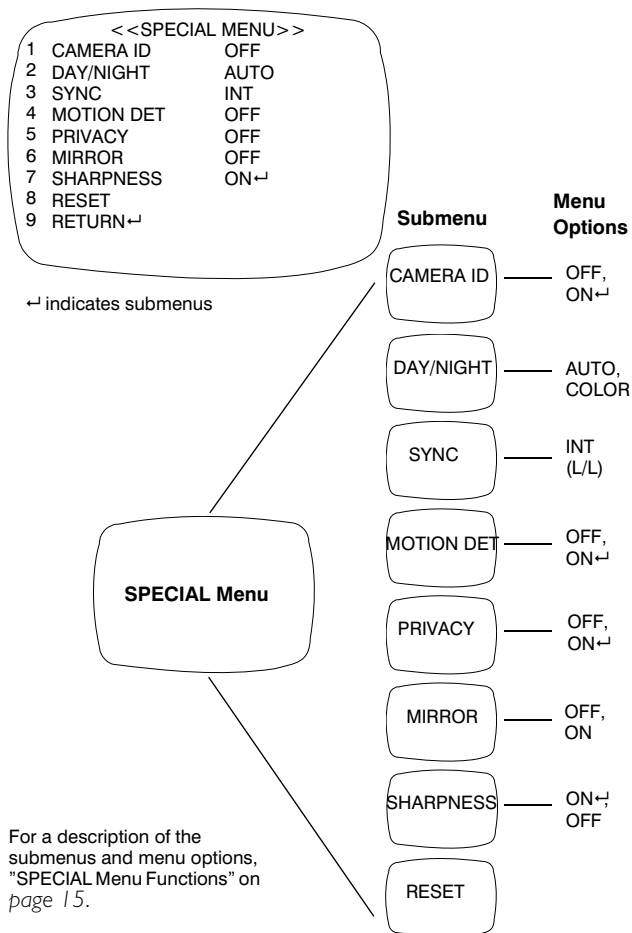
SPECIAL Menu Functions

	Menu Item	Option	Description
1	CAMERA ID	OFF ON↵	Sets a name to be displayed on the monitor. See *"Adding a Camera Title Display DC/Brightness'*.
2	DAY/NIGHT	AUTO COLOR	Sets the camera to either automatic color/black and white or full-time color mode.
3	SYNC	INT L/L↵	Synchronizes the vertical interval sync pulse of your camera with other equipment to reduce the effect of picture roll on the monitor. In Line Lock (L/L) mode you can adjust the phase from 0−359°.
4	MOTION DET	OFF ON↵	Detects moving objects on screen, and displays MOTION DETECTED when movement is detected. Allows you to select the area on screen you want to observe. See *"Motion Detection Setup DC/ Brightness'*.
5	PRIVACY	OFF ON↵	Allows you to mask certain areas of the screen from observation.
6	MIRROR	OFF ON	Produces a horizontal mirror image on screen.
7	SHARPNESS	ON↵ OFF	Sharpens the image on screen. You can adjust the sharpness level from 0−31 (excessive sharpening may cause picture noise to develop).
8	RESET		Restores all factory default settings.
9	RETURN↵		Returns to the main SETUP menu.

Adding a Camera Title Display

To add a camera title:

1. On the SPECIAL menu, select **CAMERA ID** and then press **ENTER (SET)**.

Figure 7   Adding Camera Title

```
        CAMERA ID

A B C D E F G H I J K L M
N O P R Q S T U V W X Y Z
a b c d e f g h i j k l m
n o p q r s t u v w x y z
−  .   0 1 2 3 4 5 6 7 8 9

←  →  CLR  POS  END


_ _ _ _ _ _ _ _ _ _ _ _ _ _
```

2. Press the menu control **UP**, **DOWN, LEFT, or RIGHT** to select a character, then press **ENTER (SET)** to accept it. The character is saved and the title cursor at the bottom of the screen moves to the next position. You can use the ← → symbols to go back or forward in the title name to make changes, and you can also select CLR to delete the entire title and start again.

3. Repeat *step 2* until your camera title is complete.

4. Select POS to position where you would like the camera title to be located on screen. Select the position using the menu control, then press **ENTER (SET)** to confirm the position.

5. Select **END** when you are finished.

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Sync Control/Line-lock Setup

This screen allows you to synchronize the vertical interval sync pulse of your camera with other equipment to reduce the effect of picture roll on the monitor. Line lock mode is only available when using 24 VAC power.

Figure 8   Sync Control Setup

```
        <SYNC. CONTROL>

   SYNC           INT (L/L)
```
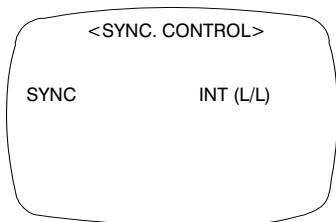
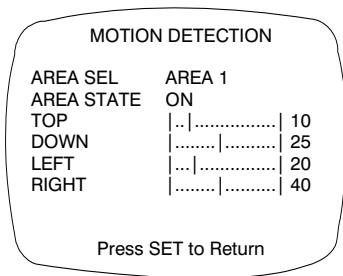| Menu Item	Description
INTERNAL	When line lock is not required.
LINELOCK	Adjust the vertical phase (VPH):
	VPH: 000−359 (factory default is 0)
RETURN	Press **ENTER (SET)** to return to the SETUP menu.

Motion Detection Setup

Set up to four areas of the screen to detect moving objects. The screen will display MOTION DETECTED when movement is detected.
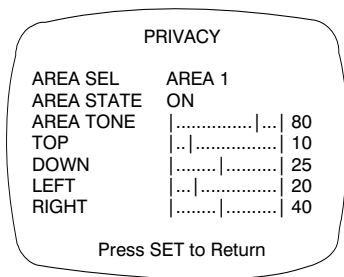
Figure 9   Motion Detection Setup

```
                MOTION DETECTION

         AREA SEL       AREA 1
         AREA STATE     ON
         TOP            |..|................| 10
         DOWN           |........|.........| 25
         LEFT           |...|...............| 20
         RIGHT          |........|.........| 40

              Press SET to Return
```

Menu Item	Option	Description
AREA SEL	AREA 1 AREA 2 AREA 3 AREA 4	Select which of the four motion detection grids top left, top right, bottom left, bottom right) you would like to modify.
AREA STATE	ON OFF	Choose whether to activate or deactivate the selected grid.
TOP DOWN LEFT RIGHT		Press **LEFT** or **RIGHT** menu control to alter the dimensions of the selected grid.

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Privacy Mode Setup

Set up to four areas of the screen for privacy mode (that is, the camera will not display a masking grid in these areas).

Figure 10   Privacy Mode Setup

```
                      PRIVACY

        AREA SEL       AREA 1
        AREA STATE     ON
        AREA TONE      |...............|...| 80
        TOP            |..|................| 10
        DOWN           |........|..........| 25
        LEFT           |...|..............| 20
        RIGHT          |........|..........| 40

            Press SET to Return
```

Menu Item		Description
AREA SEL	AREA 1 AREA 2 AREA 3 AREA 4	Select which of the four masking grids (top left, top right, bottom left, bottom right) you would like to modify.
AREA STATE	ON OFF	Choose whether to activate or deactivate the selected grid.
AREA TONE		Press **LEFT** or **RIGHT** menu control to change the shade of the masking grids.
TOP DOWN LEFT RIGHT		Press **LEFT** or **RIGHT** menu control to alter the dimensions of the selected grid.

Warranty and Service

Subject to the terms and conditions listed on the Product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective product returned prepaid.

In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.796.CCTV (North America only) for assistance or to request a **Return Merchandise Authorization (RMA)** number. For Europe and the United Kingdom, please contact your Honeywell dealer.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization **must** be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused**.

Specifications

	HCS544 (NTSC)	HCS544X (PAL)
Operational		
Image Sensor:	1/3" CCD	
Video Standard:	NTSC	PAL
Scanning System:	525/60 lines	625/50 lines
Number of Pixels (H x V):	768 x 494	752 x 582
Minimum Illumination:	0.3 lux color/0.1 lux B/W	
Horizontal Resolution:	Greater than 540 TVL	
Video Output:	1 Vp-p @ 75 Ohms	
Sync System:	12 VDC: Internal	
	24 VAC: Internal/Line lock	
S/N Ratio:	50 dB or more (AGC off)	
Auto Gain Control:	Off/On, selectable	
Automatic Electronic Shutter:	1/60−1/120,000 sec	1/50−1/120,000 sec
White Balance:	ATW/AWC/Manual	
BLC:	Off/On, selectable	
Gamma:	0.45	
Line Lock Phase Adjustment:	Adjustable Line lock vertical phase	
Digital Noise Reduction:	Off/Low/Middle/High	
Digital Slow Shutter:	x2~x128	
Electrical		
Input Voltage:	12 VDC/24 VAC	
Input Range:	11−16 VDC, 17−28 VAC	
Surge Suppression:	1.5 kW transient	
Power Consumption:	3.5 W (max)	

|	HCS544 (NTSC)	HCS544X (PAL)
Mechanical		
Dimensions:	See diagram below	
Weight:	1.1 lb (.5 kg), camera only	
Construction:	Housing: extruded aluminum	
	Housing finish: cool gray powder coated	
Connector:	Main Video Output: BNC connector	
	Lens: 4-pin connector	
	Power Input: Removable screw terminal block	
Environmental		
Temperature:	Operating: 14°F to 122°F (-10°C to 50°C)	
	Storage: -4°F to140°F (-20°C to 60°C)	
Relative Humidity:	0% to 85%, non-condensing	
Regulatory		
Emissions:	FCC, CE (EN55013)	
Immunity:	CE (EN50130-4)	
Safety:	EU: 73/23/EEC LVD	

Dimensions

2.44″ (61.90 mm)

2.65″ (67.22 mm)

3.93″ (99.93 mm)

3.36″ (85.36 mm)

2.44″ (61.90 mm)
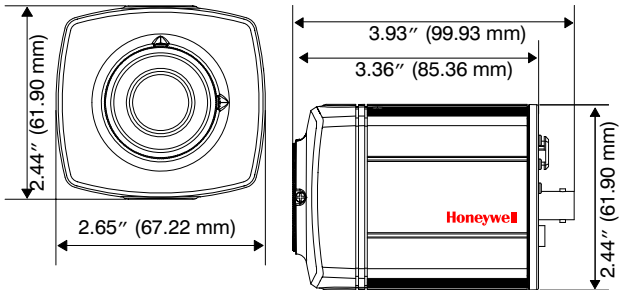
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www.honeywellvideo.com
+1.800.796.CCTV (North America only)
HVSsupport@honeywell.com

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