

# Paradox Insight™ HD77 Camera

## Quick Installation Guide V1.11



P R D O X™

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## Introduction

The Paradox Insight™ HD77 camera ("HD77 camera") is a state-of-the-art, highly reliable HD video (720p in color) and high quality audio PIR camera. This quick-start guide describes how to install and configure the HD77 camera.

**Packing contents:** The box for the HD77 camera includes the HD77 camera and quick-start guide.

The following chart describes the HD77 installation workflow.



## Wiring

Wire the HD77 camera with either a CAT5e cable for both 4-wire Combus and Ethernet, or with two separate cables, one cable for the 4-wire Combus, the other cable for the Ethernet.

### Wiring the HD77 Camera with a CAT5e Cable

Wire the HD77 camera with a single CAT5e or higher cable including two twisted pairs for the 4-wire Combus and two twisted pairs for the Ethernet lines as displayed below. The maximum CAT5e cable length is 50 meters.

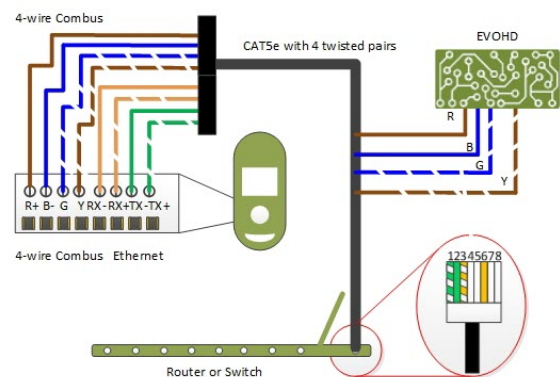


Figure 1 – HD77 Camera - CAT5e Cable Wiring

The following table displays Cat 5e cable wiring connectivity.

Table 1: Cat 5e Cable Wiring Connectivity

| Recommended Wiring Assignment |                | Ethernet Connector       |                |
|-------------------------------|----------------|--------------------------|----------------|
| Bus Label                     | Wire Color     | Ethernet Wire Assignment | Wire Color     |
| R                             | Brown          | 1                        | Green Striped  |
| B                             | Blue           | 2                        | Green          |
| G                             | Blue striped   | 3                        | Orange Striped |
| Y                             | Brown striped  | 4                        |                |
| RX-                           | Orange         | 5                        |                |
| RX+                           | Orange striped | 6                        | Orange         |
| TX-                           | Green          | 7                        |                |
| TX+                           | Green striped  | 8                        |                |

### Wiring the HD77 Camera with Dual Cables

Wire the 4-wire Combus cable (A) to the EVOHD control panel and the Ethernet cable (B) to the Ethernet router or switch as displayed below.

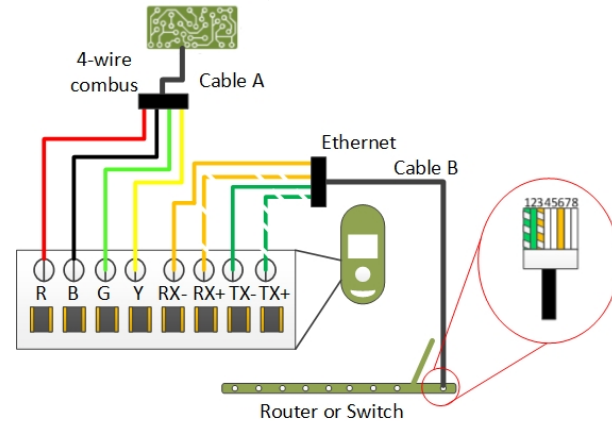


Figure 2 – HD77 Camera - Dual Cable Wiring

The following table displays dual cable wiring connectivity.

Table 2: Dual Cable Wiring Connectivity

| Recommended Wiring Assignment |                | Ethernet Connector       |                |
|-------------------------------|----------------|--------------------------|----------------|
| Bus Label                     | Wire Color     | Ethernet Wire Assignment | Wire Color     |
| R                             | Red            | 1                        | Green Striped  |
| B                             | Black          | 2                        | Green          |
| G                             | Green          | 3                        | Orange Striped |
| Y                             | Yellow         | 4                        |                |
| RX-                           | Orange         | 5                        |                |
| RX+                           | Orange striped | 6                        | Orange         |
| TX-                           | Green          | 7                        |                |
| TX+                           | Green striped  | 8                        |                |

## Mounting

Mount the HD77 camera directly to the wall or on a swivel bracket attached to the wall.

### Mounting Requirements

Mount the HD77 camera on the wall at a height of 2.1m - 2.7m (7ft - 9ft), with a minimum gap of 2cm (~1 in) from the ceiling (to open/close the cover)

### Warnings

- Do not install the HD77 camera:
  - Near objects causing environmental temperature changes such as heaters, refrigerators and ovens
  - In the path of air flow from air conditioning / heating vents, fans or windows
  - In the path of reflective surfaces, direct sunlight or infrared light
  - Where exposed to oil vapors or steam
- Do not touch the sensor surface or the camera lens as this could result in detector malfunction

## Mounting the HD77 Camera on Wall or Corner

- Remove the front cover:
  - Open the lock at the bottom of the HD77 camera with a screwdriver.
  - Pry the cover apart from the back plate starting from the bottom.
- Insert the cable/s through the wiring slot in the back plate.
- Knock-out the mounting holes in the backplate.

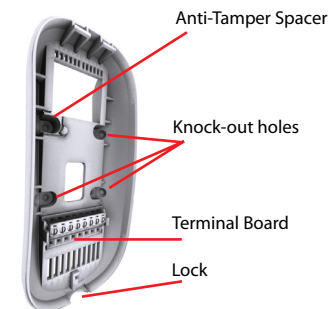


Figure 3 – HD77 Camera Back Plate

- Secure the backplate to the wall with a screw through each knock-out hole including through the anti-tamper spacer.
 

**Note:** Use wall anchors if required.
- Connect the wires to the terminal board on the HD77 camera back plate.
- Attach the front cover to the back plate (do not lock).
- Note:** Record the serial number found on the inner side of the front cover.
- Connect the wires to the EVOHD panel and router (if not already connected).
- Power-up the system. The LED3 indicator flashes blue until the boot-up process is complete (boot-up can take up to 3 minutes).
- Close the lock (The installer diagnostic LEDs switch-off).
- Verify the HD77 camera vision / image / angle positioning and functionality:
  - Open the BabyWare application (download, install and program BabyWare before verifying HD77 camera functionality - see **Programming the HD77 Camera** below).
  - Navigate to the **Programming** page => Video tab => Play button. Ensure that the HD77 camera vision / image / angle is positioned and functioning.

## Mounting the HD77 Camera with a Swivel Bracket

The following diagram describes the Swivel Bracket and mounting procedure.

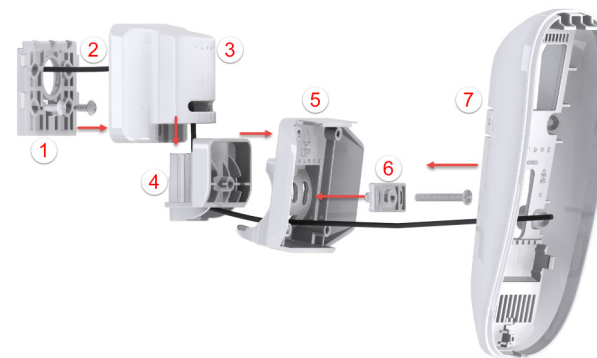


Figure 4 – Mounting HD77 Camera with Swivel Brackets

The following table describes the swivel bracket mounting components.

Table 3: Swivel Bracket Components

|   |                      |   |                   |
|---|----------------------|---|-------------------|
| 1 | Wall Plate           | 5 | Adaptor Plate     |
| 2 | Cable                | 6 | Angle Bracket     |
| 3 | Swivel Hinge Housing | 7 | Camera Back Plate |
| 4 | Swivel Hinge         |   |                   |

- Run the cable(s) (2) through the wall plate (1). Secure the wall plate to the wall.
 

**Note:** The top of the wall plate must be at least 3" (8cm) from the ceiling.
- Run the cable through the bottom of the swivel hinge housing (3), swivel hinge (4), and adapter plate (5).
- Attach the swivel housing to the swivel hinge - ensure that it clicks closed.

- Secure the swivel housing to the wall plate-snap the bracket assembly to the wall by placing it on top of the wall plate and sliding it down until it locks.
- Determine the HD77 camera angle of view and secure the angle by attaching the angle bracket (6) to the adaptor plate and inserting a pan head screw #6-32 through the angle bracket and adaptor plate and attaching them to the swivel hinge.
- Mount the HD77 camera back panel (7) to the swivel bracket with a screw through each knock out hole and through the anti-tamper spacer (see figure 3).
 

**Note:** Use wall anchors if required.
- Execute steps 5-10 of **Mounting the HD77 Camera on Wall or Corner** (see above).

## LED Status Indicators

The following graphic describes the HD77 camera LED light display.



Figure 5 – LED Arrangement

LEDs 1, 2, 4, and 5 are installer diagnostic indicators that are active when the lock mechanism is open. LED 3 displays various system functionalities.

The following table displays the LEDs and their functionality.

Table 4: LED Assignments

| LED  | Functionality   | LED Display   |
|--|---|---|
| LED 1  | Digiplex Data TX  | Flashing green: Data transmission<br>Off: No data transmission  |
| LED 2  | Digiplex Data RX  | Flashing green: Data reception<br>Off: No data reception  |
| LED 3 (with front cover locked or un-locked) | <ul style="list-style-type: none"> <li>HD77 camera is powered-up and functioning. There are currently no PIR detections or VOD streaming.</li> <li>Unit has no power</li> </ul> | Off   |
|  | Firmware upgrade in progress.   | Flashing purple   |
|  | VOD   | Blue on   |
|  | Power-up  | Flashing blue   |
|  | Locate mode   | Flashing blue   |
|  | General Combus failure, wiring or communication problem   | Red on  |
|  | Bus low power   | Flashing red  |
|  | PIR detection   | Red on for 3 seconds  |
| LED 4  | Active Web connection   | Green on  |
| LED 5  | LAN 10/100Mb link<br>LAN 10100Mb data TX or RX  | Green on: LAN active<br>Off: No connection<br>Flashing green: Data transfer<br>Flashing red: UPnP failure |

**Note:** For LED 3:

- The PIR indicator can be set On/Off by the installer
- The VOD indicator can only be turned-off by the Master User using the Paradox Insight™ application.

**IMPORTANT:** Turning the VOD indicator off may be considered a violation of applicable laws in some countries. Install the HD77 camera according to local laws

## Programming the HD77 Camera

Configure the HD77 camera settings with the Paradox BabyWare application (BabyWare). PIR settings can also be configured from the TM50 Touchpad and supported K641 series and K656 Keypads.

**Requirements:** Fulfill the following requirements before configuring HD77 camera settings.

- Install Windows 7 and above
- Connect the PC to the HD77 camera with a 307USB Direct Connect Interface **OR** an IP150 Internet module connecting the EVOHD serial port and an Internet connection to the PC
- Download and install BabyWare: Open the Paradox website: [www.paradox.com](http://www.paradox.com). Login with the name and password supplied by Paradox. Select the **Software** field from the menu and click Download. The Download window opens. Click on the Download file. BabyWare downloads to the PC
- Create an account in BabyWare

## Creating an Account in BabyWare

Create an account in BabyWare before configuring HD77 camera settings:

- Open BabyWare and login. The **Accounts** window opens.

- Select the **Add** field to add a new account for the HD77 camera and fill the required details in the provided fields.
- Configure **IP150** settings:
  - In the new account field: Select the **Additional Info** box in the **Connection** window.

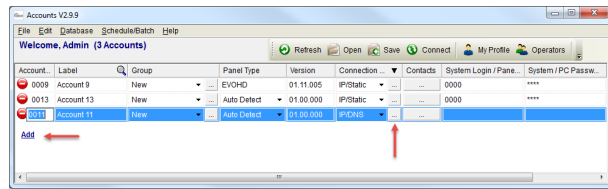



Figure 6 – Accounts Window

The **Settings** window opens displaying the Connection tab settings.

- Select the **IP/Static** radio button and click the IP Locator icon . The **Locate IP Device on Network** window opens, displaying a list of all IP150 devices.
  - Select your IP150 device and click **OK**. The **IP Device Configuration** window opens.
  - Enter the **IP 150 module password** in the IP Module Password field of the IP/Static pane and click **OK**. The Setting window closes.
- In the Accounts window: Click **Connect** to connect the account.

## Updating Configuration Parameters

Before programming, ensure that the HD77 camera configurations are up-to-date:

- Stand on the HD77 camera in the **Security Module** field and right-click.
- Select the **Receive Programming** field from the drop-down menu. If necessary, the configurations are automatically updated.

**IMPORTANT:** Ensure all HD77 camera configurations are updated.

## Labeling Devices and Locations

Label the HD77 camera and define its location: In the **Security Modules** field of the BabyWare **Home** window: Locate each device by its serial number and add a **Label** (for example front window) and **Location** (for example motion detector with camera) in the provided fields.

**Note:** Serial numbers are acquired through the module scan and automatically inserted by BabyWare.

**IMPORTANT:** Assign all HD cameras to the same area.

## Configuring HD77 Camera Settings with BabyWare

Configure HD77 camera settings from the BabyWare Programming window: Open BabyWare> Select the required HD77 camera from the Security Modules field> Double-click > Select Properties> The Programming window opens.

This section includes:

- Configuring Server Settings
- Configuring PIR Settings

## Configuring Server Settings

Configure Server settings from the **Server Parameters** pane of the Programming window. Server settings include Installer, Central Monitoring Station (“CMS”), Receiver and TCP/IP settings.

### Configuring Installer/CMS Settings

- Enter Installer/CMS details in the following panes respectively:
  - Installer Parameters** field
  - Central Monitoring Station** field
- Check the **Reporting Enabled** box to enable the HD77 camera to report events to IPR57 software.

### Configuring Receiver Settings

Configure Receiver parameters received from the CMS in the provided fields of the **Receiver Parameters** pane.

### Configuring TCP/IP Settings

Configure TCP/IP settings from the **TCP/IP** pane of the Programming window.

When supported by the router, we recommend enabling UPnP and configuring Dynamic IP settings. This ensures easy and fast network installation.

Configure Static IP settings if one of the key parameters needs to be fixed, such as working with a static WAN IP (not using PMH) or if UPnP is not supported (or fails) in the router. Set a Static IP address for the HD77 camera (either with static LAN IP or by binding a MAC address (recommended) that always assigns the same IP address to the HD77 camera. Configure

static port settings to enable port-forwarding, which prevents loss of connection due to port or IP modifications.

## Configuring Static IP or Dynamic IP for the WAN

### Dynamic IP for WAN

If your ISP assigns a dynamic WAN IP (as in most cases), check the **Poll PMH(ParadoxMyHome)** box in the Programming window.

### Static IP for WAN

If you do not use ParadoxMyHome (“PMH”), acquire a static WAN IP from your ISP and uncheck the **Poll PMH (ParadoxMyHome)** box. Manually key-in the static WAN IP address into the Paradox Insight™ Application and the BabyWare application HD77 camera programming page.

## Configuring Dynamic IP Settings

- Configure the **Server Parameters** (see Configuring the Server Parameters above).
- Configure DHCP: In the TCP/IP Parameters pane: Check the **DHCP Enabled** box.
- Configure UPnP (UPnP provides automatic port-forwarding functionality): In the TCP/IP Parameters pane: Check the **UPnP (Universal Plug and Play)** box.
- Configure **Auto Detect** mode:
  - Select the **Communication Settings** tab from the Programming window tool bar.

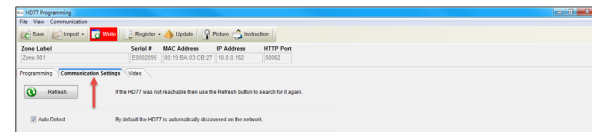


Figure 7 – Communications Tab of the Programming Window

- Select the **Auto Detect** radio button.
  - Click **Refresh**.
  - Click **OK**.
- Register the HD77 camera to **PMH**:
    - Select the **Register** tab from the top menu bar of the Programming window.
    - Select **Register to PMH (ParadoxMyHome)** from the drop-down menu (see **Fig. 8** above).
    - Enter your Installer credentials.
    - Enter a unique Site ID to identify the system on ParadoxMyHome. Site ID is required for the Paradox Insight Application.
    - Click **OK** to complete registration.
    - Click **OK**. Dynamic IP is configured.

**Note:** If your router does not support UPnP configure IP settings statically.

## Configuring Reserved/Static IP Settings

### Requirements

- If the router supports reserved IP addresses, bind the MAC address in the router to a reserved IP address for the LAN
- If using a reserved IP address the HD77 camera must be DHCP enabled. The reserved IP address must be within the DHCP range
- If using a static IP address the camera must be DHCP disabled. The static IP address must be outside the DHCP range

### Setting Up the Router for Port Forwarding

Configure router port-forwarding if UPnP is not supported by the router:

- Ensure that the router is connected according to the router instruction manual.
- Access the router Configuration window:
  - Refer to the router manual for the exact configuration procedure (Usually access Configuration window by the entering the router’s IP address in the address bar of the web browser)
  - The router IP address may be indicated in the router instructions or on a sticker on the router
- Verify the router **DHCP settings** in the router **Configuration** window:
  - If DHCP is enabled, verify that the IP address range leaves at least one IP address available outside the range
  - Record an address outside the DHCP range to be used for the HD77 camera

**Example:** The range displayed in the following figure leaves addresses 2- 4 and 101 to 254 available (all numbers in an IP address are between 1 and 254).

**Note:** 192.168.1.1 is configured as the IP address as it is a common default router IP address.

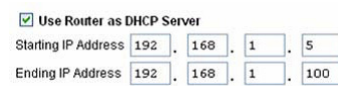


Figure 8 – DHCP Settings

- Add a **service/item** in the **Port Forwarding** section (also known as Port Mapping or Port Redirection) of the router Configuration window:
  - Set the Port value to >10000.

- Enter the IP address selected in **step 3** above.
- Configure the HD77 camera IP Address and IP Port parameters in BabyWare:
    - Select the Accounts tab in the Homepage. The Accounts window opens.
    - Select the **Additional Info** box in the **Connection** window (see Fig. 6 above).
    - Enter IP Address and IP Port parameters in the provided fields of the IP/Static pane.
    - Click **OK**.

The following screen-shot displays configured Port Forwarding settings (screen-shots may differ depending on the type of router).

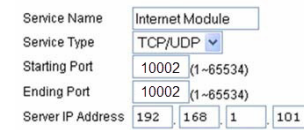


Figure 9 – Port Forwarding

**Note:** If unable to connect to the HD77, verify with the ISP that the selected ports are available and functioning.

**IMPORTANT:** Each camera requires a unique port number. **DO NOT** use the same port number more than once.

## Configuring PIR Settings

Configure PIR settings in the **PIR Parameters** branch of the Programming window:

- Check the **Show PIR LED** box.
- Set the **PIR Sensitivity** level: Select the required PIR sensitivity from the **Value** drop-down menu in the PIR Sensitivity field.
- Set the **Security** level from the **Security** drop-down menu in the PIR Security field.

The following table displays PIR parameters.

| Description        | Section | Setting           | Setting Details                             | Example   |
|--------------------|---------|-------------------|---|---|
| PIR LED Display    | [001]   | [*] Off<br>[1] On | PIR LED Off<br><b>PIR LED On Default</b>    | (1*****)  |
| PIR Sensitivity    | [002]   | [0]               | Low (Sensitivity level)                     | (002) 000-005 as displayed on the TM50  |
|                    |         | [1]               |   |   |
|                    |         | [2]               | <b>Default</b>                              |   |
|                    |         | [3]               |   |   |
|                    |         | [4]               | High (Sensitivity level)                    | (002) as displayed on the K641series keypads  |
| PIR Security Level | [003]   | [0]               | <i>(Mild environment)</i><br><b>Default</b> | (003) 000-002 as displayed on the TM50 (000) as displayed on the K641series keypads |
|                    |         | [1]               | Medium                                      |   |
|                    |         | [2]               | High (Harsh environment)                    |   |

## Saving BabyWare Configurations

Save HD77 camera settings after configuring/modifying: Select the **Write** button in the Programming window. The configurations are saved.

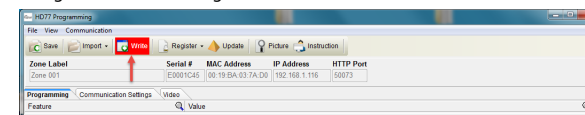


Figure 10 – Write Button

## Registering the IP Receiver

Register the IP Receiver after saving BabyWare configurations.

- Select the **Register** tab from the top menu bar of the Programming window.
- Select **Register to IP Receiver** from the Register drop down menu.
- Click **OK**.

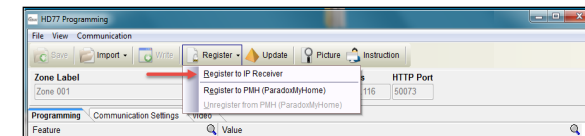


Figure 11 – Communication Drop Down Menu

## Programming PIR Settings with the TM50 Touchpad

Configure PIR parameters for the HD77 camera (see Table 5 above) with the TM50 Touchpad.

**Requirement:** Disconnect BabyWare when programming with the TM50 Touchpad.

- Select the **Menu** key.

- Select the **Advanced** key.
- Select the **Installer Programming** key.
- Enter your **Installer Code**.
- Select the **System Programming** key.
- Key-in **[4003]** in the Enter Section field.
- Key-in the **Serial Number** in the Serial Number field.
- Click **Next**.
- Configure the **PIR LED Display**:
  - Key-in Section **[001]**:
  - Option 1** is for PIR LED On/Off:
    - On [1] – LED#3 is red when PIR motion is detected
    - Off [\*] – LED#3 stays off when PIR motion is detected
  - Default** is On

**Note:** Do not configure **Options 2 - 8**.

- Configure the **PIR Sensitivity** level: Enter Section **[002]**. Select PIR sensitivity level: level 0 to level 4. The **Default** is level 2.
- Configure the **PIR Security** level: Enter Section **[003]**. Select PIR security level, level 0 to level 2. The **Default** is level 0.

## Programming PIR Settings with Keypads

Configure PIR parameters for the HD77 camera (see Table 5 above) through any of the K641 series keypads and the K656 keypad. Configure additional parameters with BabyWare. Key-in letters with the following hexadecimal keypads:



Figure 12 – Keypad Key-ins

**Requirement:** Disconnect BabyWare when programming with Keypads.

- Press and hold the **[0]** key.
- Enter your **Installer Code**. The default installer code is 000000.
- Key-in **[4003]** in the Enter Section field.
- Key-in the **Serial Number** in the Serial Number field.
- Execute steps 9-11 of the **Configuring PIR Settings with the TM50 Touchpad** above.

## HD77 Camera Specifications

|                                |   |
|--------------------------------|---|
| <b>Voltage input</b>           | Nominal: 12VDC, range 9-16VDC   |
| <b>Current consumption Max</b> | 200 mA without illumination LEDs<br>330 mA with illumination LEDs lit                             |
| <b>PIR Type</b>                | Quad PIR, Auto pulse  |
| <b>Weight</b>                  | 166g (5.86 OZ)  |
| <b>Dimensions</b>              | (H x W x D): 15 cm x 7.5 cm x 5 cm (6 in x 3 in x 2 in)   |
| <b>Operating temperature</b>   | -10° C to +55° C (14° F to 131° F)  |
| <b>Compliance</b>              | EN 50131-2-2 Grade 2 Environmental Class II<br>Certification Body: Applica Test and Certification |

## HD77 Camera Compatibility

This device is compatible with the Paradox EVOHD control panel.

## Certifications



See the HD77 EI03 for further information concerning Certifications.

### WARRANTY

For complete warranty information on this product, please refer to the Limited Warranty Statement found on the website [www.paradox.com/terms](http://www.paradox.com/terms). The terms and conditions are subject to change without notice, from time to time, at Paradox’s sole discretion. We invite you to visit our website on a regular basis for the latest Limited Warranty Statement. Your use of the Paradox product signifies your acceptance of all warranty terms and conditions. Please ensure that your use of the Paradox product is in compliance with local, national, and international laws.

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