Paradox Insight™ HD77 Camera

Quick Installation Guide V1.11

P A R A D O X™

HD77-EQ02   11/2014   Printed in Canada

HD77 Instructions

The Paradox Insight™ HD77 camera is a highly reliable HD video (720p in color) and high-quality audio PIR camera. The HD77 delivers unlimited live video and audio streaming, at 360p resolution, to allow users to see and hear events and activities and to protect their homes or businesses anytime, anywhere, directly from a smartphone.

In case of a security breach, the HD77 camera provides HD videos with high-quality audio of events for visual verification and reporting. When an alarm is triggered, the HD77 sends a pre-recorded video (360p) in color or black and white (night vision) and 10 images (JPEGs) to allow users and the CMS to view what triggered the alarm. The user can also access HD 720p video and audio recordings, as required.

Cabling Options

There are two cabling options available, one CAT5e cable for both Ethernet and 4-wire combus and two separate cables one for the combus and a separate one for the Ethernet.

Option 1: HD77 Cabling One CAT5e Cable

A single CAT5 or higher cable can be used to wire a single HD77 camera. This cable includes two twisted pairs for the 4-wire combus and two twisted pairs for the Ethernet lines. When using this option the cable length is limited to 50 meters.

Table 1: Recommended Wiring Assignment

Bus Label	Wire color
R	Brown
B	Blue
G	Blue striped
Y	Brown striped
RD-	Green
RD+	Green striped
TX-	Orange
TX+	Orange striped

Table 2: Ethernet Connector

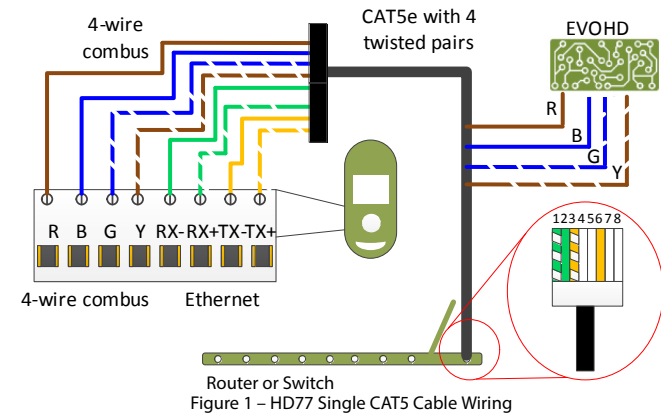| Ethernet wire locations	Wire color
1	Green striped
2	Green
3	Orange striped
4	
5	
6	Orange
7	
8	

Figure 1 – HD77 Single CAT5 Cable Wiring

Option 2: HD77 Cabling Two Separate Cables

This option requires two separate cables (A) and (B) going to two different locations. One cable to the Ethernet router or switch and one cable to the EVOHD control panel.
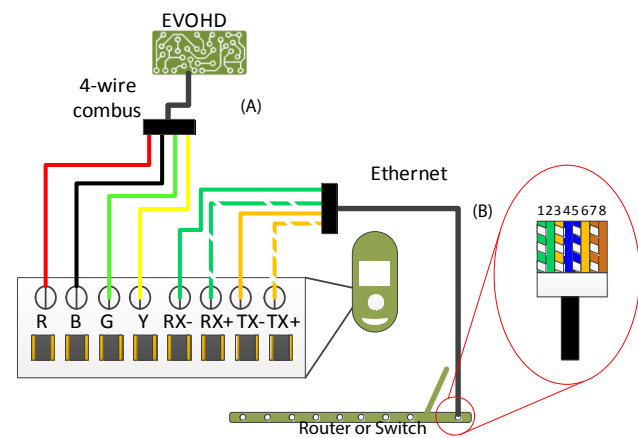

Figure 2 – HD77 2 Cables Wiring

Table 3: Option 2 Recommended Wiring Assignment

Bus Label	Wire color
R	Red
B	Black
G	Green
Y	Yellow
RD-	Green
RD+	Green striped
TX-	Orange
TX+	Orange striped

Table 4: Ethernet Connector

Ethernet wire locations	Wire color
1	Green striped
2	Green
3	Orange striped
4	Blue
5	Blue striped
6	Orange
7	Brown striped
8	Brown

Location and Mounting

- Install the device at a height between 2.1m and 2.7m (7ft to 9ft), allowing a minimum gap of 2cm (~1 in) from the ceiling (for opening/closing of the cover).
- Install the device in a location where the detector & camera's view is clear of any obstacles.
- For LAN connection, use a CAT5 or higher Ethernet cable (70m Max.) between the HD77 and router.

Warnings

- Do not install the device near objects causing temperature changes such as heaters, refrigerators and ovens.
- Do not install the device in the path of air flow from air conditioning and heating vents, fans or windows.
- Do not install the device in the path of reflective surfaces, direct sunlight or infrared light.
- Do not install the device where it is exposed to oil vapors or steam.
- Do not touch the sensor surface or the camera lens as this could result in a detector malfunction.

HD77 Installation

There are two mounting options available, mounting directly on the wall and mounting with a swivel bracket.

Mounting on the Wall or Corner

1. Separate the front cover from the backplate of the HD77.
   a. Open the lock mechanism at the bottom of the device.
   b. Pry the cover apart at the bottom of the unit.
   c. Lift the front cover up and away.
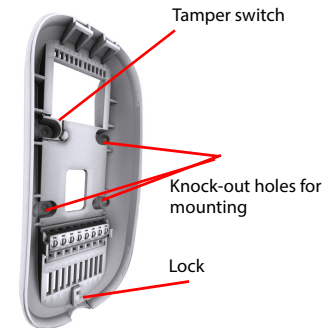2. Knock out the appropriate holes on the backplate.

Figure 3 – HD77 Back Plate

3. Secure the backplate to the wall at the desired location using 3 screw-holes plus the anti-tamper spacer (use wall anchors if required).
   Note: Install the top of the device a minimum of 2cm (~1 in) from the ceiling.
   a. Insert the Ethernet and 4-wire bus cables through wiring slot of the backplate.
   b. Screw the back plate to the wall using the proper screws and anchors if necessary.
4. Connect the wires to the terminal board.
5. Reinstall the front cover.
6. Connect the Ethernet line to the router (if not already connected). Make sure the router is turned on.
7. Power up the system, the HD77 will boot-up:
   a. LED3 will flash blue until the boot up process is complete. This can take up to 3 minutes.
   Note: Make sure that the box and EVOHD panel are connected to a valid ground connection.
8. Closing the HD77:
   a. Close the lock (note that by securing the lock, the installer diagnostics LEDs will be turned off).
   b. Ensure that the camera lens is clean.

Optional Mounting with Swivel Bracket

1. Run the cable(s) through the wall plate and secure it to the wall.
   Note: The top of the wall plate must be at least 3" (8cm) from the ceiling.
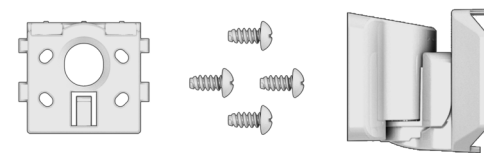

Figure 4 – Swivel Bracket Parts

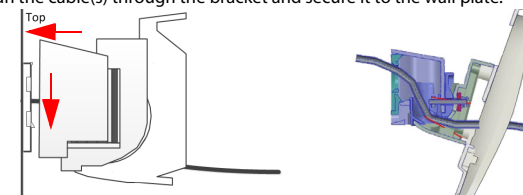2. Run the cable(s) through the bracket and secure it to the wall plate.

Figure 5 – Secure Swivel Bracket on the Wall

3. Mount the HD77 back plate to the swivel bracket using the 4 self tapping screws provided.
4. Connect the wires to the terminal board.
5. Replace the front cover.

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a. Install the top of the unit first.
b. Close the HD77 onto the backplate.
6. Connect the wires to the panel and to the router (if not already connected).
7. Connect the Ethernet line to the router (if not already connected). Make sure the router is turned on.
8. Power up the system, the HD77 will boot-up:
   a. After a short pause, LED3 will flash blue until the boot up process is complete. This can take up to 3 min.
   Note: Make sure that the box and EVOHD panel are connected to a valid ground connection.
9. Lock the HD77:
   a. Close the lock (note that by securing the lock, the installer diagnostics LEDs will be turned off).
   b. Ensure that the camera lens is clean.

LED Status Indicators

The following table describes the HD77 LEDS and their functionality.
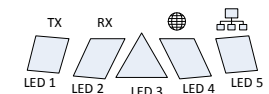

Figure 6 – LED Arrangement

LEDs 1, 2, 4, and 5 are used for installer diagnostics. These LEDs are active when the lock mechanism is opened.

Table 5: LED Assignments

LED	Functionality	LED display
LED 1	Digiplex Data TX	Flashing green = data transmission Off = No data transmission
LED 2	Digiplex Data RX	Flashing green = data reception Off = No data reception
LED 3 (both with the front cover locked and un-locked)	HD77 module is up and running. There are currently no PIR detections or VOD streaming.	OFF
	Firmware upgrade in progress	Flashing Purple
	VOD	Blue on
	Power-up	Flashing Blue
	Locate mode	Flashing Blue
	General combus failure, wiring problem, or communication problem	Red on
	Bus low power	Flashing Red
	PIR detection	Red for 3 sec
LED 4	Active Web connection	Green
LED 5	LAN 10/100Mb link LAN 10100Mb data TX or RX	Green On = LAN Active Off = No Connection Flashing green = data transfer Flashing red = UPnP failure

Note: LED3; PIR indication can be set to On or Off by the installer, however, the VOD indication can be turned off only by the master user using the Paradox Insight™ application.

Note: Turning the VOD LED off may be considered in some countries as a violation of applicable laws. Make sure to install the HD77 according to local laws.

Create an Account in BabyWare

Once the system is wired and powered up:
1. Open BabyWare.
2. On the accounts page, open a new account.
3. Enter the requested information.

Open the Connection Options Settings window.
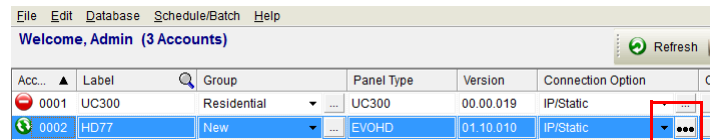
Paradox Insight™

Designed for your lifestyle

Figure 7 – Connections Options Settings

4. The **Settings** window opens. Click the Locate button [icon]. A list of all IP150 devices appears.
5. Select your IP150 device and Click **Configure**. The IP Device Configuration window opens.
6. Click **OK**.
7. Enter the IP 150 module password.
8. Click **OK** to confirm password.
9. Click **OK** to finish configuring the IP 150 device.
10. Click **Connect** to finalize the connection settings.

Device Location and Label

With BabyWare open, locate each device by its serial number and add its label (for example front window) and its location (for example Living room).

Serial numbers are acquired through the module scan and automatically inserted by Babyware.

Receive Programming

At the BabyWare homepage always start by going to the HD77 security module, right click and select Receive programming. This assures that you will start with the latest device configuration parameters. **Do this for each HD77 Camera.**

HD77 Programming

In BabyWare under the **Security Modules** heading, double click or right click the HD77 module and Click **Properties**. The HD77 Programming screen appears. Wait for the properties to appear.

Before you start programming each camera do a **Read** of the existing camera parameters.

Whenever you make a change to the HD77 programming the Write button will be enabled and highlighted.
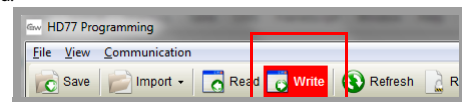

Figure 8 – Write Button

Click **Write** to implement your changes to the device.

HD77 Server Parameters

Enter the **Installer** parameters.

Enter the **Central Monitoring Station** (CMS) parameters.

Receiver Parameters (Monitoring Station Reporting)

1. To configure your HD77 to report events to an IPRS7 software, check the **Reporting Enabled** checkbox.
2. Enter the **Receiver** parameters. These parameters come from the Central Monitoring Station.
   a. Select **Communication** from the tool bar.
   b. Select **Register to IP Receiver**.
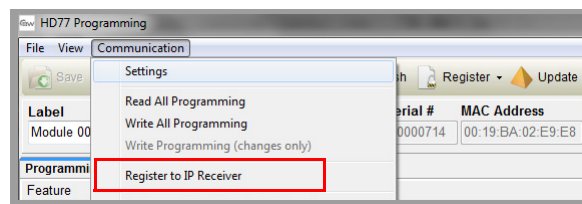   c. Click **OK**.

Figure 9 – Communication Drop Down Menu

TCP/IP Parameters

When supported by your router, we recommend to enable DHCP, enable UPnP, and work with the PMH (enable PollPMH, see below). This will allow for easy and fast network installation.

When one of the key parameters needs to be fixed, such as working with a static WAN IP (not using PMH) or when UPnP is not supported (or fails) in your router, we **HIGHLY** recommend setting all parameters statically. Meaning, the IP address of the camera should be static (either with static LAN IP or better with using MAC binding which will always assign

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the same IP address to the camera). The port selection should also be static in order to be able to do port forwarding that will not break in case of port or IP change.

Static IP or Dynamic IP for the WAN

If your ISP assigns a dynamic WAN IP (as in most cases) you must check the **Poll PMH(ParadoxMyHome)** checkbox.

If you do not wish to use the PMH, you must acquire a static WAN IP from your ISP and uncheck the **Poll PMH (ParadoxMyHome)** checkbox. Later, you will have to manually key-in the static WAN IP address into the Paradox Insight™ Application and the BabyWare application HD77 programming page.

Dynamic Configuration

1. From the HD77 programming page set the HD77 **Server Parameters**, check the **DHCP Enabled** box**.**
   • If your router supports UPnP check the **UPnP (Universal Plug and Play)** box**.** UPnP takes care of the port forwarding automatically.

   Note: If your router does not support UPnP, we **HIGHLY** recommend setting all parameters statically.

2. From the HD77 programming page set the HD77 Settings:
   a. Select **Communication** from the tool bar.
   b. Select **Settings** from the drop down menu. The settings page opens.

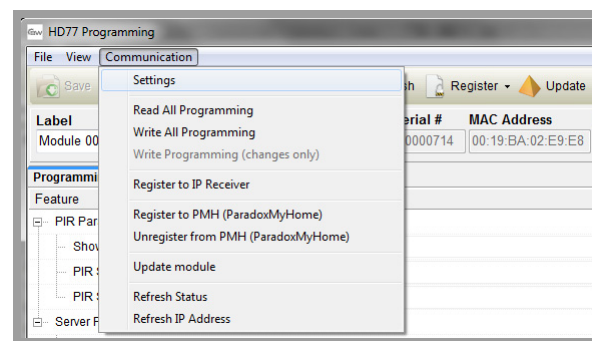   **Note:** For your router settings please contact your Internet Service Provider (ISP).

Figure 10 – Communication Drop Down Menu

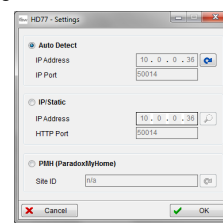c. On the HD77 Settings window select **Auto Detect**.

Figure 11 – HD77 Settings Window

d. Click Refresh [icon].
e. Click OK, and return to the HD77 programming page.
3. From the HD77 programming page register the HD77 to **PMH**:
   a. Select **Communication** from the tool bar.
   b. Select **Register to PMH (ParadoxMyHome)**.
   c. Enter your Installer credentials.
   d. Enter a unique Site ID, to identify the system on ParadoxMyHome. This site ID is needed for the Paradox Insight App.
   e. Click **OK** to finish the successful registration.
   f. Click **OK** and return to the BabyWare homepage.

   Note: If your router supports UPnP you are now DONE configuring Server Parameters. Skip to "**Static IP or Dynamic IP for the WAN**"

Reserved/Static IP Configuration

Note: If your router supports reserved IP addresses, in the router bind the MAC address to a reserved IP address for the LAN.

Note: If you are using a reserved IP address the camera must be DHCP enabled. The reserved IP address must be within the DHCP range.

Note: If you are using a static IP address the camera must be DHCP disabled. The static IP address must be outside of the DHCP range.

Setting Up the Router for Port Forwarding

This step allows you to manually set up the router port forwarding should UPnP not be supported by your router.

1. Ensure that the router is connected properly as indicated in the router's instructions.

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2. Access your router's configuration page:
   • Refer to your router's manual for the exact procedure. In most cases, this is done by entering the router's IP address in the address bar of your web browser.
   • For this instruction sheet, we will use 192.168.1.1 as an example, since it is a commonly used default router IP address.
   • Your router's IP address may be indicated in the router's instructions or on a sticker on the router.
3. In the **router's configuration** page, check the DHCP settings:
   • If DHCP is enabled, verify that the IP address range leaves at least one IP address available outside of the range.
   • The range shown in following figure, would leave addresses two to four and 101 to 254 available (all the numbers in an IP address are between 1 and 254.).
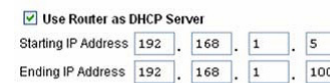

Figure 12 – DHCP Settings

   • Record one of the addresses outside the DHCP range as the one you will use for the HD77.
   • DHCP must be enabled.
4. In the router's configuration page, go to the Port Forwarding section (also known as "Port Mapping" or "Port Redirection"):
   • Add a service/item, set the Port to >10000, for example 10001, and enter the IP address selected in the previous step 3 or the HD77 module.
   • If port 10001 is already used, you can use another one, such as 10002 or 10003.
   • Update the camera port parameter in BabyWare.
   • If you have trouble connecting to the camera, verify with the ISP that these ports are available and working.

   Note: Each camera needs a unique port number. DO NOT use the same port number more than once.

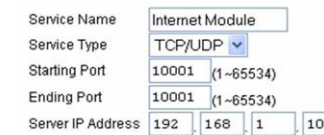Port Forwarding (screenshot may differ depending on type of router used).

Figure 13 – Port Numbering

Programming PIR Settings with BabyWare

Always perform a **Receive Programming** before configuring.
1. Select the PIR parameters.
   PIR LED On/Off – Default is on.
2. Set PIR sensitivity Level.
3. Set Security Level

Table 6: PIR Parameters

Description	Section	Setting	Setting Details	Example
1. PIR LED display	[001]	[*] Off [1] On	PIR LED Off PIR LED On **Default**	(1*******)
2. PIR Sensitivity	[002]	[0]	Low (Sensitivity level)	(002) 000-002 as seen on the TM50
		[1]		
		[2]	**Default**	(002)
		[3]		as seen on the
		[4]	High (Sensitivity level)	K641series keypads
3 Security Level	[003]	[0] Normal	(Mild environment) **Default**	(003) 000-000 as seen on the TM50
		[1]	Medium	(000)
		[2]	High (Harsh environment)	as seen on the K641series keypads

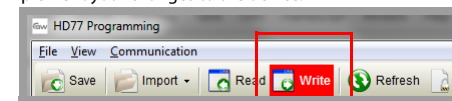Click **Write** to implement your changes to the device.

Figure 14 – Send the New Configuration to the Module

Programming PIR Settings with the TM50 Touchpad

Only PIR parameters of the HD77 can be configured through the TM50 touchpad.

Note: To program the HD77 from any installed keypad, BabyWare must be disconnected from the system.

1. Select the [**Menu**] key.

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2. Select the [**Advanced**] key.
3. Select the [**Installer Programming**] key.
4. Enter your [**Installer Code**].
5. Select the [**System Programming**] key.
6. Key in Section [**4003**].
7. Enter the module's [Serial Number].
8. Click **Next**.
9. Enter Section [**001**].
   Option 1 is for PIR LED On/Off;
   On – LED#3 will light up red when PIR motion is detected.
   Off – LED#3 stays off when the PIR motion is detected.
   Default is On.
   Options 2 through 8 are to remain off.
10. Enter Section [**002**].
11. Input the PIR Sensitivity level.
    Select PIR sensitivity level, level 0 to level 4 – Default is #2.
12. Enter Section [**003**].
13. Select PIR security level, level 0 to level 2 – Default is #0.

Programming PIR Settings with Keypads

Only PIR parameters for the HD77 can be configured through any of the K641 series keypads plus the K656 keypad.

Note: To program the HD77 from any installed keypad, BabyWare must be disconnected from the system.

1. Press and hold the [**0**] key.
2. Enter your [**Installer Code**]. The default installer code is 000000.
3. Key in Section [**4003**].
4. Enter the module's [**Serial Number**].
5. Enter Section [**001**].
6. 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 the PIR motion is detected.
   Default is On.
   Options 2 through 8 are to remain off.
7. Enter Section [**002**].
8. Select PIR sensitivity level, level 0 to level 4. Default is level 2.
9. Enter Section [**003**].
10. Select PIR security level, level 0 to level 2. Default is level 0.

HD77 Specifications

Voltage input	Nominal: 12VDC, range 9-16VDC
Current consumption Max	200 mA without illumination LEDs 330 mA with illumination LEDs lit
PIR Type	Quad PIR, Auto pulse
Weight	166g (5.86 OZ)
Dimensions	(H x W x D) 15 cm x 7.5 cm x 5 cm (6 in x 3 in x 2 in)
Operating temperature	-10° C to +40° C (14° F to 104° F)
Compliance	EN 50131-2-2 Grade 2 Environmental Class II Certification Body: Applica Test and Certification

HD77 Compatibility

This device is compatible with the Paradox EVOHD control panel.

Certifications

[CE mark] [WEEE mark]