



# Installation Instructions

## Camera/Monitor System

The EC7000-QK Camera and Monitor Kit from ECCO is designed to provide a driver with video and audio from up to four cameras (kit is supplied with one EC2014-C) individually or together on a split screen for ultimate driver awareness. When properly installed and used in conjunction with vehicle mirrors, ECCO's EC7000-QK assists drivers during hazardous parking and backing situations. This manual provides information about installation, function, safety, maintenance, replacement parts and warranty.



### **WARNING!**

Failure to install or use this product according to manufacturers recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!

### Do not install and/or operate this safety product unless you have read and understand the safety information contained


1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of you and those you are seeking to protect.
2. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation are vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. It is the responsibility of the vehicle operator to ensure during use that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.

### Specifications:

Camera	EC2014-C
Image	1/3" CMOS PC1089 Color Effective Pixels: 725 x 488
Voltage Requirement	12V
Power Consumption	3 W
Lens	F=2.8mm / F=2.0
Lens Angle	120°
Audio	Yes
Light Sensor	Auto Switch B&W
Infrared LEDs	11 (10M Max. Visibility)
Pigtail Connection: CAM	Male 4 Pin Threaded
Housing	Aluminum Alloy
Mech. Vibration	10g
Mounting	Rear/Front
Dimensions (WxHxD)	2.87" x2.99" x2.60"
Operating Temp.	-22°F to 158°F
IP Rating	IP69K
Approvals	FCC, CE, C-Tick, E13/R10
Current Consumption	175mA Max

Monitors	EC7003-QM 7" LCD Monitor
Image	7" LCD Color, 16:9
Controller	4 Camera
Voltage	12-24VDC
Power Consumption	25 W Max
Mirror Imaging	Yes (via Camera and Monitor Switch)
Split Screen Feature	Yes
AV Compatible	Yes
DVR Compatible	No
Audio	Yes
Contrast/Brightness	Yes
Light Sensor	Day/Night Auto Dim
Camera Selection	1-4 Via Trigger Wires
Connection: CAM	Female 4 Pin Threaded
Connection (Monitor Pigtail)	Male 22 Pin
Connection: CB	N/A
Housing	Plastic
Mounting	Permanent - HD (2 bracket options provided)
Mech. Vibration	Pedestal Bracket - 3G Cradle Bracket - 8G
Weight	1.26 lbs
Dimensions (WxHxD)	7.21" x5.04" x1.24"
Operating Temp	4°F to 158°F
Remote Control	Yes
Approvals	FCC, CE, RoHS

### Installation, Wiring and Function

 **Caution!** When drilling into any vehicle surface, make sure that the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged.

**Notes:**

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors)
2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. High ambient temperatures (e.g., under-hood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should be only be made to substantial chassis components, preferably directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

**Installation:**

**Camera Model EC2014-C**

**Important!** Mount the camera at a location that provides the best view of the area immediately behind the vehicle. Generally, mounting locations toward the top of the vehicle provide the best field of view. Lower mounting locations reduce the field of view and increase the likelihood of damage from road spray.

1. Find an appropriate location for installation.
2. Drill holes according to the size of U-bracket and fix the U-bracket.
3. Drill a 3/4" (19mm) hole next to U-bracket.
4. Install the camera and sun-visor on U-bracket.
5. Connect the camera tail with the extension cable from inside the vehicle.
6. Loosen the hex head screws and adjust the camera's position to get the best view angle in the monitor.

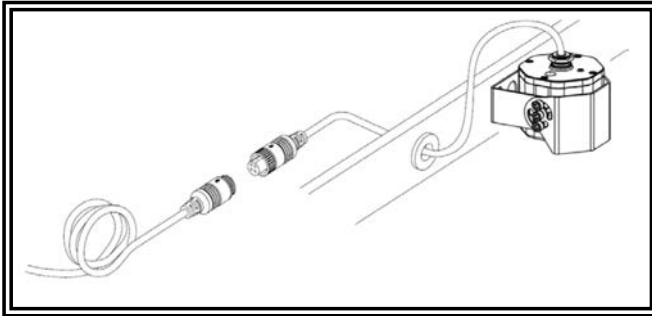


**Figure 1**

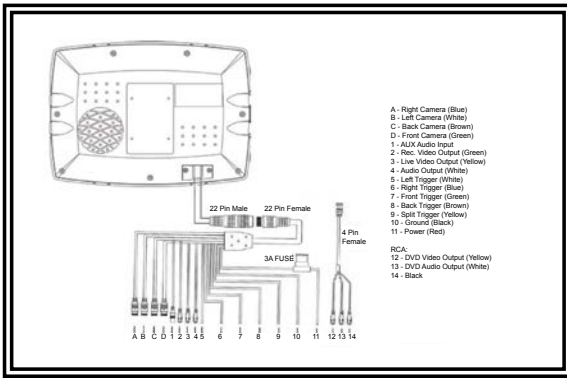
**Wiring:**

**ECTC20-4**

**Important!** Waterproof all connections whether inside or outside the vehicle by using sealant and wrapping with insulation tape. Wrap tape tightly, overlapping by one-half widths so there are no gaps.



**Figure 2**



**WIRING DEFINED**

**Monitor:  
Model EC7000-QM**



**WARNING!**

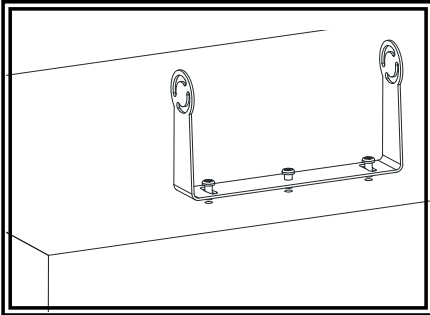
To prevent accidental shock, **DO NOT OPEN THE MONITOR CASE.** Opening the monitor case will expose the inside of the monitor to conditions that could adversely affect performance. Any evidence of tampering with sealed components will void the warranty.

**Important!** Do not expose the monitor to water, it is not waterproof. Any water that leaks into the monitor could cause extensive damage.

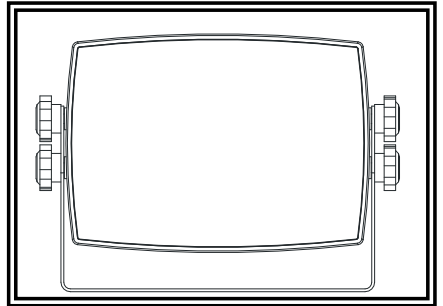
**Installation:EC7000-QM**

Installation instruction of using U-support bracket

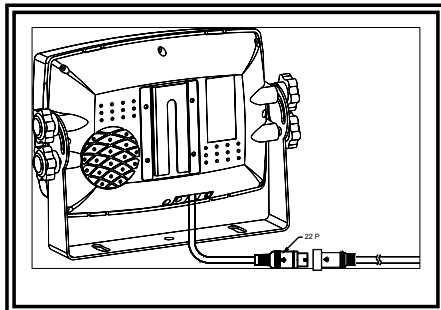
1. Select suitable position on vehicle and fix the U-support bracket with screws (Figure 3)
2. Fix the monitor to the U-support bracket with angle adjustment screws and adjust the view angle of the monitor (Figure 4)
3. Put on the sun-visor and connect the monitor with the AV and power supply conversion cable (Figure 5)



**Figure 3**



**Figure 4**



**Figure 5**

Installation instruction of using pedestal base

1. Select suitable position on vehicle and fix the base support. (Figure 6)
2. Fix the monitor to the base support and adjust the view angle. (Figure 7)
3. Put on the sun-visor and connect the monitor with the AV and power supply conversion cable (Figure 8)

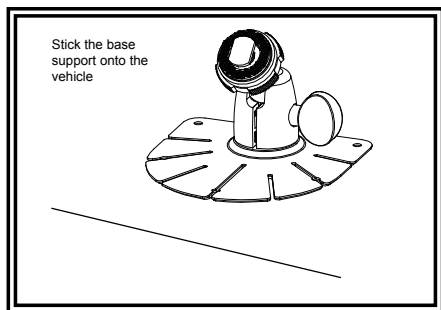


Figure 6

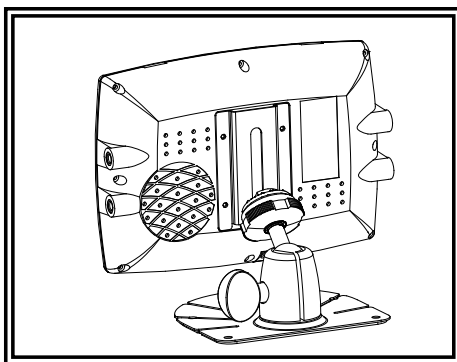


Figure 7

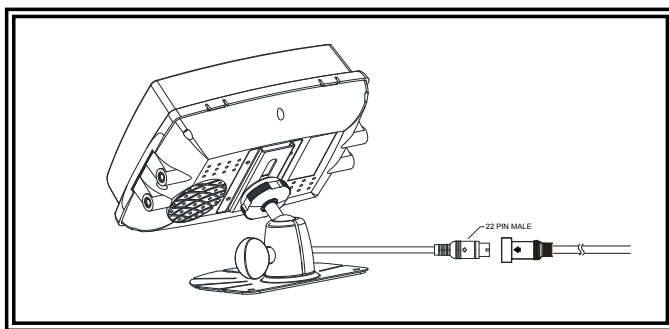
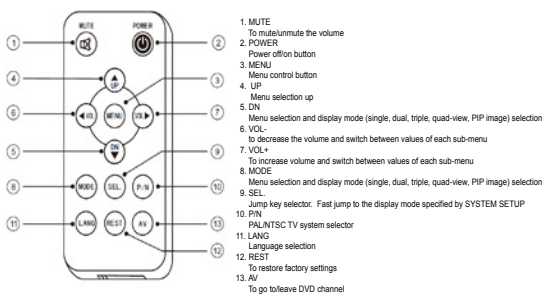


Figure 8

Remote Control Operation

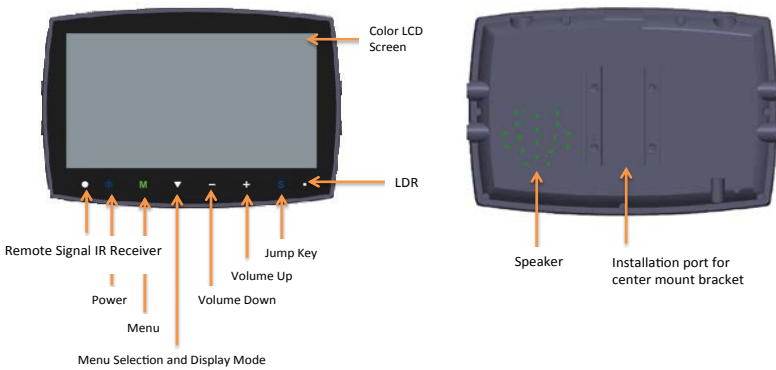


**WARNING!**

1. Please align the remote control with the remote signal receiver window to operate.
2. Never disassemble the remote control or allow it to drop or get wet.



# Monitor Parts Identification

EC7003-M

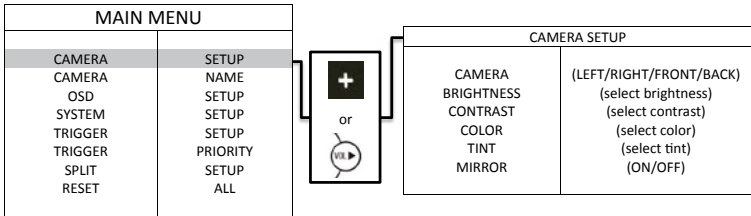


## Menu Operation

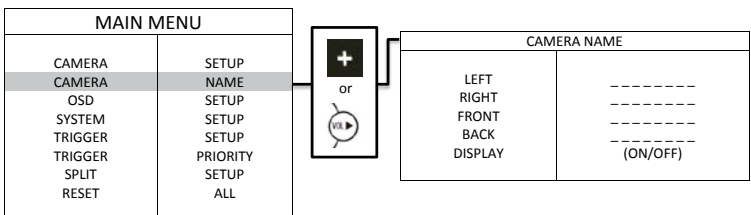
Press the Menu button on the remote control  or the Menu button on the monitor screen. 

Use the Up & Down arrow  on the remote control or the down arrow  on the monitor screen to toggle between menus.

Use Volume Up on the remote control or the + button on the monitor screen to select highlighted menu or Volume Down on the remote control or the - button on the monitor screen to go back to the previous menu.

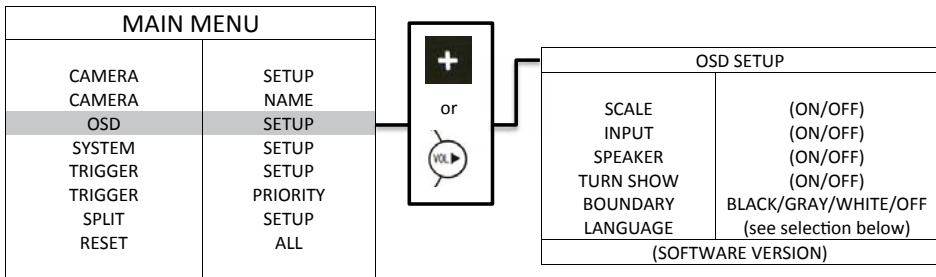


- CAMERA: To select the camera that needs adjustment.
- BRIGHTNESS: To adjust the camera's brightness.
- CONTRAST: To adjust the camera's contrast.
- COLOR: To adjust the camera's color.
- TINT: To adjust camera's tint.
- MIRROR: To turn mirror feature on or off.



LEFT/RIGHT/FRONT/BACK: To rename the camera locations.

DISPLAY: To turn on/off display.



SCALE: Turn on/off electric distance label. When set as ON, electronic distance label will be displaced when rear view camera (camera 3) is activated.

INPUT SCAN: To turn on/off auto identification of camera inputs. When INPUT SCAN is set as ON, monitor will display connected cameras and skip inputs not in connection.

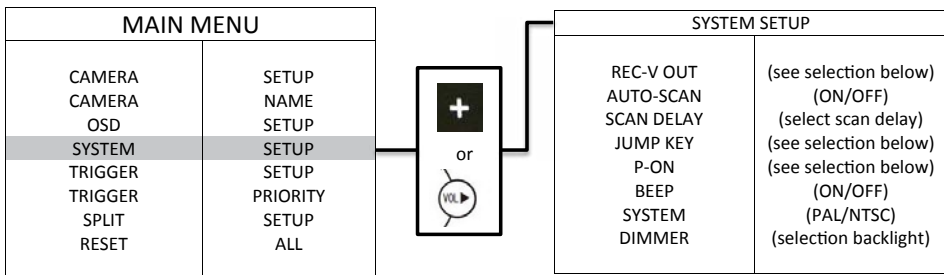
SPEAKER: To turn speaker on/off.

TURN SHOW: To turn Turn Show on/off.

BOUNDARY: To set color of the separation line between camera inputs. White, gray, black and uncolored are available.

LANGUAGE: To set OSD language. English, Finish, Netherlands, Español, Deutsch and Italiano.

SOFTWARE VERSION: To be updated at all times.



REC-V OUT: To set the camera input(s) to be recorded when connected to DVR via the green RCA wire. Left-side, right-side, front view, rear view camera and quad view image can be selected.

AUTOSCAN: To set the auto scanning function. When AUTOSCAN is set as ON, monitor will automatically switch between connected camera inputs and quad image.

SCAN DELAY: To set the switching time of AUTOSCAN. Switching time frame: 0-60 seconds.

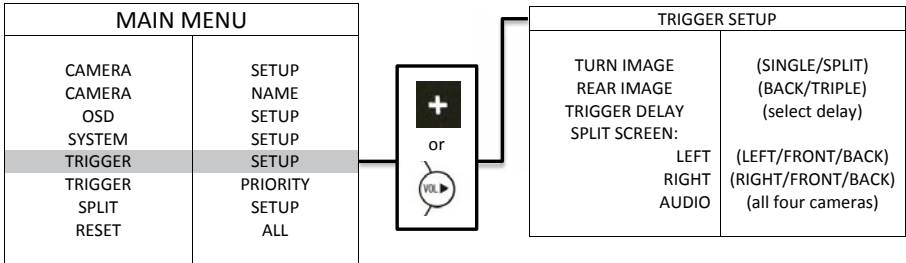
JUMP KEY: To set the shortcut display mode from the 13 modes to the left. It can be activated by jump key selector. Options: Left, Right, Front, Back, Quad, Dual, Dual2, Triple, Triple 2, Pip 1, Pip 2, Pip 3, H-Split, Trefoil and Y-Split.

P-ON MODE: To set the default display model from the 13 modes to the left or STANDBY mode. Options: Left, Right, Front, Back, Quad, Dual, Dual2, Triple, Triple 2, Pip 1, Pip 2, Pip 3, H-Split, Trefoil and Y-Split.

**BEEP:** To turn on/off the warning tone. Default setting is ON and there will be a beeping sound when menu is being operated.

**SYSTEM:** To set TV system: PAL/NTSC.

**DIMMER:** To set backlighting brightness level of screen. Five levels and AUTO option are available; the higher the level, the brighter. When set as AUTO, backlighting automatically adjusts in accordance with the outer brightness.

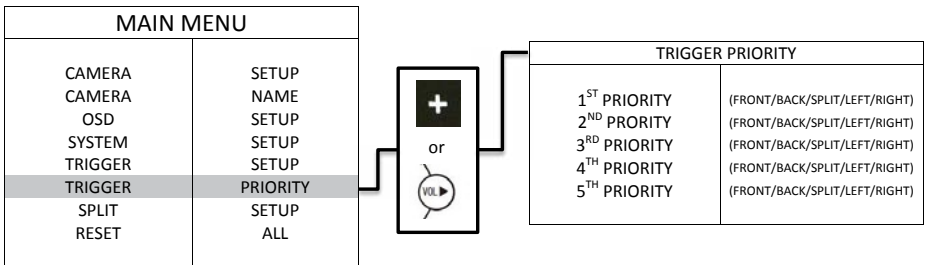


**TURN IMAGE:** To set the camera input(s) to be displayed when left-side camera (camera 1)/right side camera (camera 2) is activated. When set as SINGLE, correspond camera input will be displayed when either camera is activated. When set as SPLIT, split image of left-side and rear view camera will be displayed when left-side camera is activated; split image of right side and rear view camera will be displayed when right side camera is activated.

**REAR IMAGE:** To set the camera input(s) to be displayed when rear view camera is activated. When set as BACK, the rear view camera will be displayed when activated. When set as TRIPLE, left-side, right-side and rear view camera will be displayed.

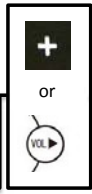
**TRIGGER DELAY:** To set the delaying time of video display when trigger signals goes off. Delaying time frame: 0-30 seconds.

**SPLIT SCREEN:** To set camera input(s) to be displayed when 'split' trigger wire is activated. LEFT/RIGHT is to set the camera input to be displayed on the left/right side of monitor screen. AUDIO is to set the audio output form any of the four cameras.



**TRIGGER PRIORITY:** To set camera trigger priority.

MAIN MENU	
CAMERA	SETUP
CAMERA	NAME
OSD	SETUP
SYSTEM	SETUP
TRIGGER	SETUP
TRIGGER	PRIORITY
<b>SPLIT</b>	<b>SETUP</b>
RESET	ALL



SPLIT SETUP	
SPLIT	SCREEN
SPLIT	SCREEN
TRIPLE	SCREEN
TRIPLE	SCREEN
QUAD	SCREEN
PIP	SCREEN
PIP	SCREEN
PIP	SCREEN
TGREFOIL	SCREEN
Y-SPLIT	SCREEN



LEFT	LEFT/RIGHT/FRONT/BACK
RIGHT	LEFT/RIGHT/FRONT/BACK
AUDIO	LEFT/RIGHT/FRONT/BACK

\*Click the menu button to go one screen back

SPLIT SETUP: To set up split screen view.

MAIN MENU	
CAMERA	SETUP
CAMERA	NAME
OSD	SETUP
SYSTEM	SETUP
TRIGGER	SETUP
TRIGGER	PRIORITY
SPLIT	SETUP
<b>RESET</b>	<b>ALL</b>

Click on Volume Up to reset to factory settings.

**Manufacturer Limited Warranty and Limitation of Liability:**

Manufacturer warrants that on the date of purchase, this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for twelve (12) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

**Exclusion of Other Warranties:**

MANUFACTURER MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

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MANUFACTURER'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST MANUFACTURER REGARDING THE PRODUCT AND ITS USE SHALL BE, AT MANUFACTURER'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL MANUFACTURER'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE MANUFACTURER'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF MANUFACTURER OR A MANUFACTURER'S REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

**Declaration of conformity:**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

