



## Single camera Observation System

### Users Guide



#### Warning

- Specification and users guide contents are subject to change without notification.
- Refer to this users guide before installing or operating the system. Keep the guide in a safe place.

Radio Engineering Industries, Inc.  
6534 L Street  
Omaha, Nebraska 68117  
1-800-228-9275



# REI LIMITED WARRANTY

## What Does This Warranty Cover?

This warranty only covers failures due to defects in materials or workmanship which occur during normal use.

## What Does This Warranty Not Cover?

This warranty does not cover damage which occurs in shipment or failures which are caused by products not supplied by REI or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, faulty installation, set-up adjustment, improper maintenance, alteration, improper antenna, inadequate signal pick-up, maladjustment of consumer controls, modification, line power surge, or damage that is attributable to acts of God, or service by anyone other than a REI Factory Service Center. This warranty does not include service or labor charges connected with the determination or replacement of defective parts or the operation of this equipment. REI is not responsible for any labor charges incurred by any person or company other than REI authorized repair centers.

### LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

REI SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING WITHOUT LIMITATION, DAMAGES TO TAPES OR DISCS. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH BELOW. 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 above exclusions or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

## What is the Period of Coverage?

REI will repair this product, free of charge, from the date of original purchase in the event of a defect in materials or workmanship as follows:

For ninety (90) days - microphones, speakers, antennas, housings, rechargeable batteries, remanufactured product and all non-warranty repairs (replaced parts and labor only).

For one (1) year - all other manufactured products.

For two (2) years - select manufactured motorcoach products.

For three (3) years - select BUS-WATCH® products purchased after April 1, 2009.

REI may have contractual agreements which provide REI motorcoach and BUS-WATCH® products with additional coverage. Call 877-726-4617 for details.

Any product supplied by REI, but not manufactured by REI, will include the original manufacturers warranty only.

## What Will REI Do to Correct Problems?

Once the product is deemed by REI to be a warrantable defect, REI will, at its own discretion, repair or replace the product with new or reconditioned product. All warranty repairs and/or product replacements will include the remaining warranty from the original purchase date.

## How Do You Get Service?

For assistance in obtaining service for REI products call toll free 877-726-4617 (Continental United States and Canada only) or 402-339-2200 (outside Continental United States and Canada) between the hours of 7:00A.M. - 5:00P.M. CST Monday thru Friday (excluding Holidays).

Prior to calling REI, customers must have the part number, serial number, VIN number (if it's a motorcoach product) and detailed description of the problem ready to provide to the REI service representative. After providing the proper information to REI, customers will be issued a return authorization number. When the REI service representative provides the return authorization number, they will also give instructions for returning the item. Any discrepancies in following this procedure may cause shipments to be refused or warranty claims to be rejected.

**IMPORTANT!** REI does not accept product returns for repair or replacement without first issuing a return authorization number. All returns must be sent freight prepaid and insured by the customer. REI will not accept COD shipments.

**IMPORTANT!** REI does not accept responsibility for lost shipments. It is the customer's responsibility to provide REI with the part number, serial number, return authorization number and shipper tracking number in the event REI does not have record of receiving product for repair or replacement.

Once warranty service has been performed on your product, REI will ship the item freight prepaid to any business address in the Continental United States or Canada. Customers located outside the Continental United States and Canada are responsible for all freight charges. Any duties or fees, if any, are the customer's responsibility.

Any repair deemed non-warranty by REI will be subject to all freight charges, and in some cases inspection fees, to be paid by the customer. These fees may exist regardless of whether the product is repaired. If a customer requires help in trouble shooting a problem, contact REI and request technical assistance before requesting a return authorization number.

## What Must You Do To Keep This Warranty in Effect?

KEEP YOUR ORIGINAL PROOF OF PURCHASE AS IT MAY BE REQUIRED IN ORDER TO RECEIVE WARRANTY SERVICE.

Make sure the serial number is not removed, altered or defaced.

Do not attempt to have your product repaired by anyone other than a REI Factory Service Center.

Also, see "What Does This Warranty Not Cover".

### REI AUTHORIZED REPAIR FACILITIES:

REI  
6534 L Street  
Omaha, Nebraska 68117  
Phone: 877-726-4617

REI  
1376 Bennett Drive, Unit 126  
Longwood, Florida 32750

## What if your Product is a Non-Warranty Repair?

All Products sent to REI for repair which are determined, at REI's discretion, to be non-warrantable repair may incur inspection fees regardless of actual repair being performed or will incur repair fees if the product is repaired. All non-warranty repairs include a 90 day warranty for any components that are replaced, if any, and labor performed. Inspection fees apply regardless of whether a product is determined to be non-warrantable prior to shipping to REI. All freight charges, duties or fees associated with non-warranty repair are the customer's responsibility.

## Features

- ★Seven inch high resolution color TFT LCD.
- ★Wide operating voltage Range: 11~32V.
- ★Single camera input.
- ★Normal/ mirror image setup.
- ★Automatic/manual selection.
- ★Independent camera trigger with optional off delay.
- ★The camera is powered independently and will remain off until selected. This will decrease systems power consumption and increase the cameras life.
- ★Equipped with Five pin din connectors that are compatible with a wide selection of cameras.
- ★Button backlighting with automatic day/night sensor activation .
- ★Can be controlled from front buttons or with included remote control.
- ★Constructed from ABS material to resist against shock and high/low temperatures.
- ★Bicolor power LED (Red/Green) to distinguish between sleep mode (standby) and On.

## Notes

- ★Please refer to this users guide before using the system.
- ★Please verify cable connections before applying power; improper power configurations may damage the monitor.
- ★The monitor is not water proof, please do not place the monitor outdoors.
- ★In order to avoid damaging the system, please disconnect the power if the vehicle is to have any work that will involve welding.
- ★Please make sure that all the cables are connected securely to avoid any system inconsistencies.
- ★Do not attempt to open the cameras housing, doing so will break the cameras seal and will void the systems warranty.
- ★Please do not place the cables or system components next to object with moving parts or that generate high temperatures.
- ★Please do not cover monitors vent holes to allow for proper heat ventilation.
- ★High voltages are present inside the monitor, do not take the monitor apart. Have all repairs done by a professional technician.
- ★Do not use with DVD players or similar devices while driving.
- ★Never use benzine, thinner, or other solvent to clean the camera and monitor.

### Warning

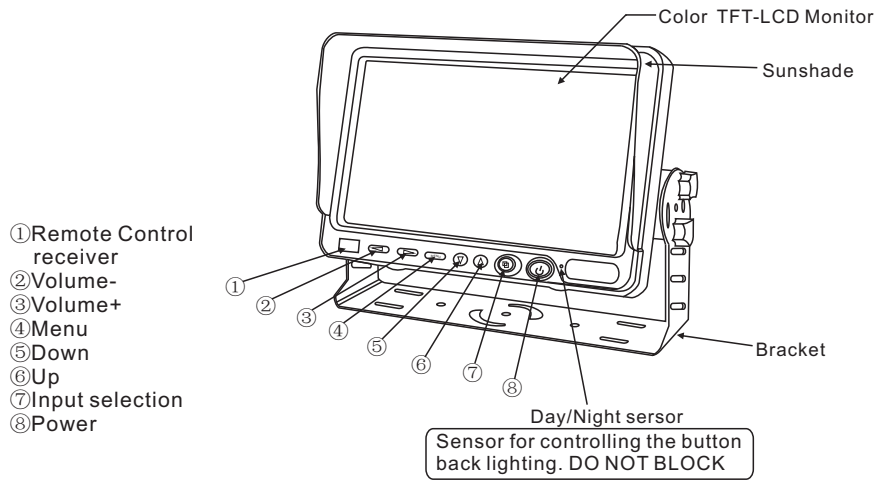
There are no serviceable parts within the monitor or camera. To prevent shock from high voltage, please do not attempt to open or repair any item. All repairs are to be made by a professional service technician.

### Notice

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# MONITOR

## I. Monitor and Accessory Details



## II. Technical Specifications

Display Device	Color TFT-LCD
Size	7"W
Interface	Digital TTL
Resolution	800×RGB×480
Active Area	6.05IN X 3.41 IN (153.60mm×86.64mm)
View Angle (LR/UD)	140 / 110
Contrast Ratio	500:1
Luminance (nits)	300
Response Time (ms)	25
Speaker output	16Ω/1W
Power Supply	Operated with a wide range of voltage: 11V-32V DC
Power Consumption	5W Max
Outer Dimension (W X H X D)	7.28 IN X 4.84 IN X 1.97 IN(185mm×123mm×50mm)
Weight	380g

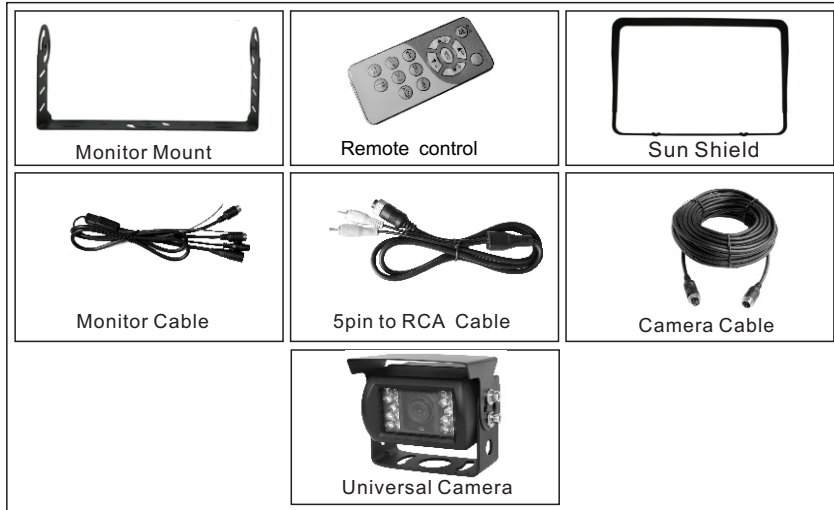
# Troubleshooting Guide

The symptoms described below do not necessarily mean there is failure within the monitor or camera. Please check the following items before contacting technical support.

Symptom	Possible Causes / Solution
No picture, no sound	Check for proper voltage supply and correct cable connections. Ensure that the monitor is in the on position and that no camera trigger is active.
No picture	Check for proper cable connections.
No sound	Check for proper cable connections. Verify that the monitors volume is not set to minimum position.
Dark picture	Verify that the monitors brightness and contrast are set correctly. Consider environmental conditions.
No color	Verify monitors color adjustments.
mirrored or inverted picture	Check monitors menu Horizontal and vertical image adjustments.
No camera trigger activation	Check for proper cable connections. Ensure that desired trigger wire has a positive voltage.
Does not respond to Remote Control	No power to remote control; replace battery (Model:CR2025,3V)
	Improper battery installation. See battery installation guide.
	The remote control is not aimed in the direction of the monitors IR receiver; Aim the controller in the direction of the monitors receiving sensor.
	The sensors distance or angle have been exceeded: The optimal distance between the remote controller and the receiving sensor is 7meters and the angle is ±30°.
	Verify that no obstacles are between the remote and monitor.

## Accessories

### Included Accessories



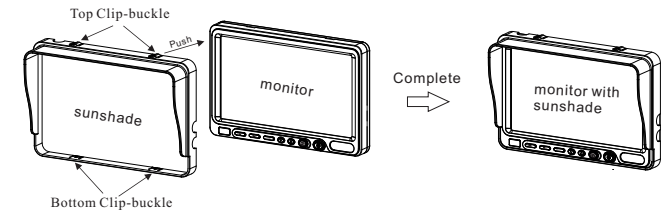
### Optional Accessories



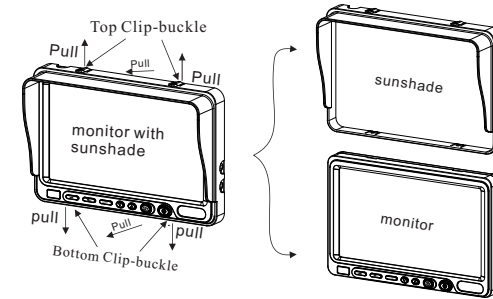
## MONITOR

### III. Sun Visor Installation and Removal

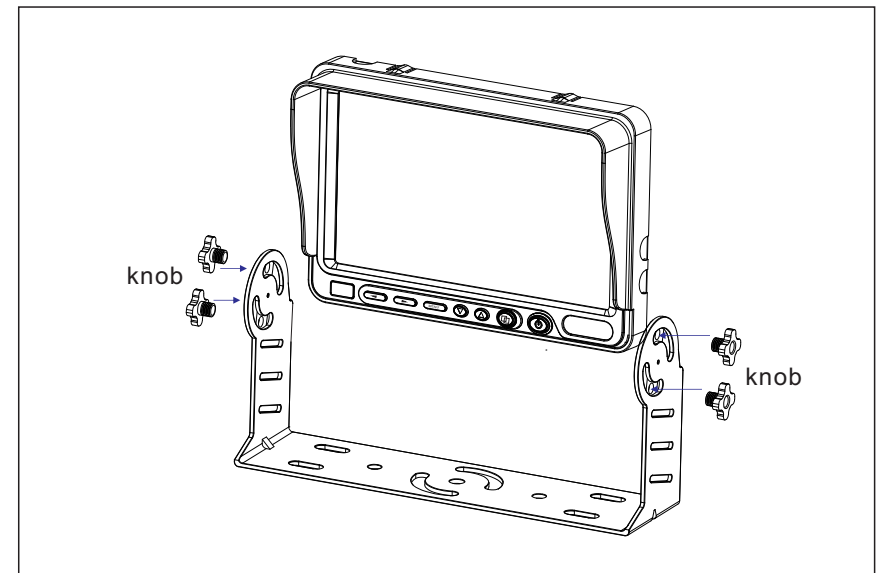
#### Installation



#### Removal



### IV. Monitor Mounting Bracket



# MONITOR

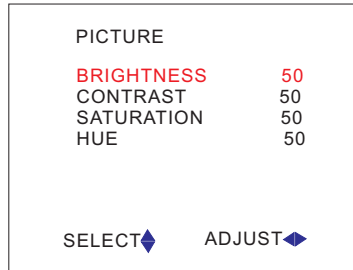
## V. MENU OPERATION

Press "MENU" key to display the following options (press "MENU" again for next options):

PICTURE CHANNEL OPTION TRIG DELAY SYSTEM

### 1. PICTURE

Allows for "BRIGHTNESS", "CONTRAST", "SATURATION" and "HUE" image adjustments as displayed below:

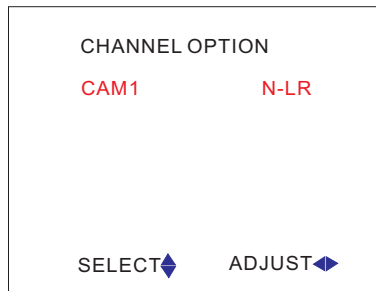


To adjust press the Down or Up keys to select the desired adjustment, press the Left or Right keys to adjust (from 0 to 100).

Note: "Hue" will only appear in the Picture Menu when a valid NTSC signal is actively displayed.

### 2. CHANNEL OPTION

Allows for "CAM1" vertical and horizontal adjustments as display below:

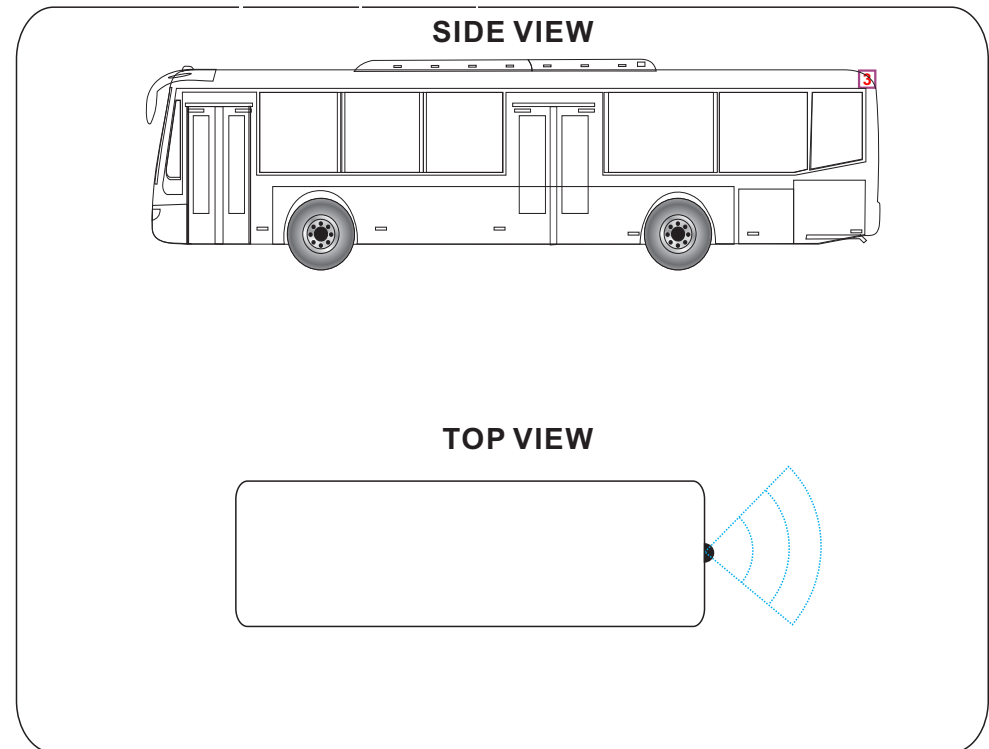
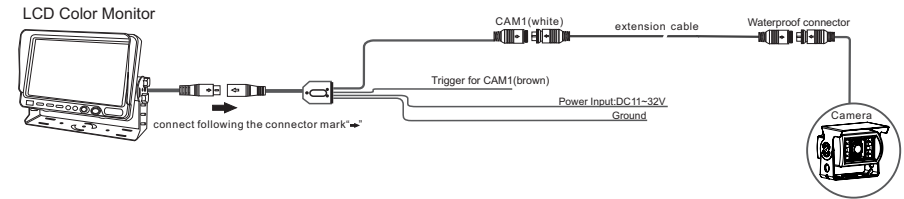


To adjust press the DOWN or UP keys to select desired camera, press the LEFT or RIGHT keys to change orientation. The following modes are available:

- N-LR - Normal or default state.
- M-LR - Mirrored from left to right
- N-UD - Normal left to right but flipped vertically
- M-UD - Mirrored from left to right and flipped vertically

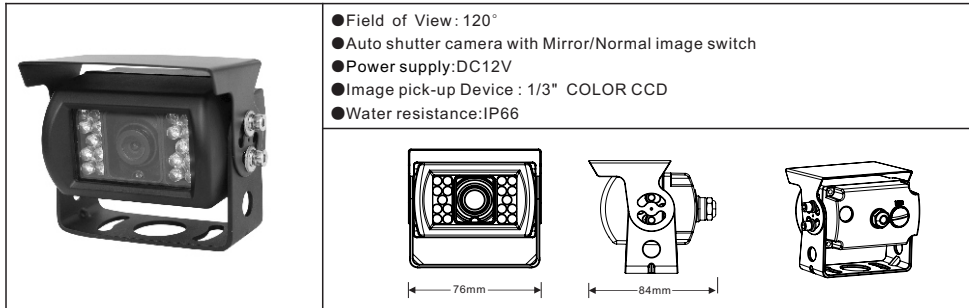
# SYSTEM CONNECTION

## I. System Connection Diagram

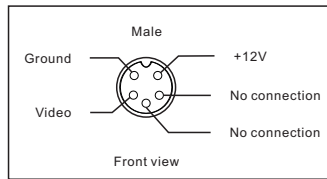


## CAMERA

### I. Camera Details and Dimensions



### II. Camera 5-pin Connector Details



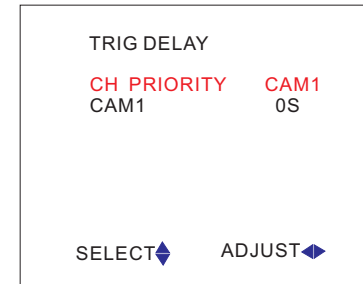
### III. Camera Specifications

CAMERA	COLOR CCD CAMERA	
Image Pick-up Device	1/3" SONY COLOR CCD	
TV System	PAL	NTSC
Picture Elements	500(H)×582(V)	510(H)X492(V)
Scanning Frequency	Horizontal:15.625KHz Vertical: 50Hz	
Horizontal Resolution	420 TV Lines	
Minimum illumination	1.0Lux(F:2.0) / 0 Lux At Night ( with Infrared LEDs on)	
Lens size	2.9mm	
Electronic Shutter Time	1/50(1/60)-1/10,000(sec)	
Gain control	Automatic	
S/N Ratio	More than 48db	
Sync system	Internal synchronization	
White Balance	Automatic(2500K to 9500K)	
γ characteristics	0.45	
Electronic Shutter Control	Automatic	
Video Out	1.0Vp-p 75 Ω	

## MONITOR

### 3. TRIG DELAY

Allows for camera priority selection and independent camera trigger off delay as displayed below:



Details:

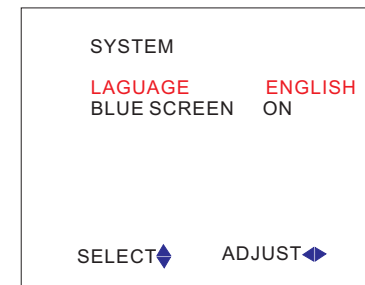
CH PRIORITY will always default to CAM1 on single camera input systems. Off delay allows for the camera to remain on for the selected amount of time after the camera's trigger has been removed. This can be of great benefit with intermittent triggers such as vehicle blinkers.

To adjust press the DOWN or UP keys to select desired item, press LEFT or RIGHT to adjust (off delay can be adjusted from 0 to 10 seconds).

Notes: Please note that the above mentioned adjustments will only function in conjunction with camera triggers. They will not apply if camera triggers are left unused.

### 4. SYSTEM

Allows for LANGUAGE and BLUE SCREEN adjustments as displayed below:



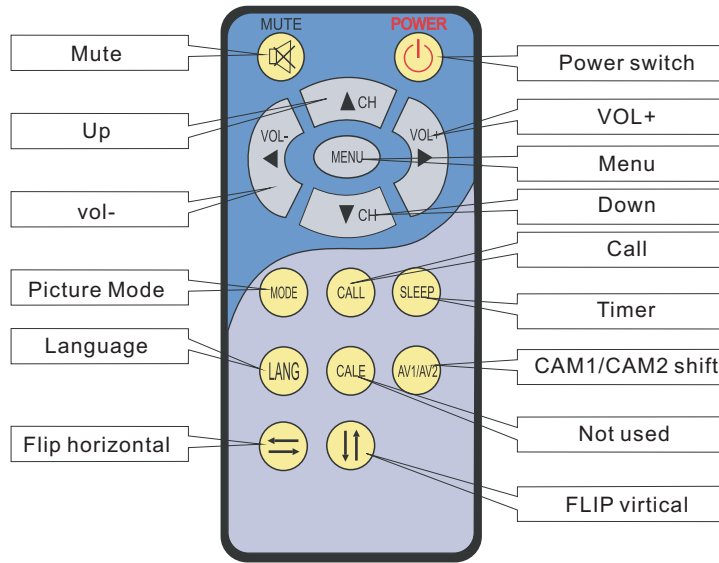
To adjust press the DOWN or UP keys to select desired item, press LEFT or RIGHT to adjust.

### ⚠ Special Notice

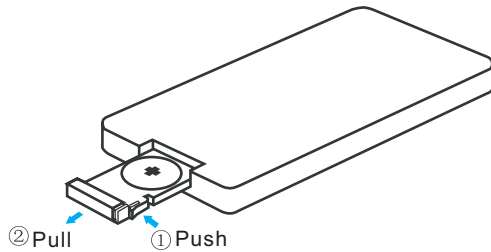
Occasionally, a few highlights or dark spots may occur on the LCD screen. This is a very common occurrence in active matrix displays, and does not necessarily indicate a defect or fault. Never try to repair this device. In case of problems, please turn the unit off and notify a professional service technician. The monitor is a complex device with delicate electronic components. Any disassembly or modification may lead to damage and will void the unit's warranty.

## REMOTE CONTROL

### I . Remote Control Details



### II. Battery Installation



Push on side tab and pull holder out to replace battery (CR2025)

## MONITOR REMOTE CONTROL

### III. Remote Control Button Details

#### MUTE :

Press this button to mute the audio, press it again or VOL+ / VOL- to un mute and resume to the previous audio level.

#### POWER :

Press this button is to turn the monitor off and on.

#### CH button(UP/DOWN):

Use these buttons to navigate and select monitor sub menus.

#### VOL - / +:

Use these buttons to adjust the monitor audio volume.

#### Menu

Use this button to access the monitors MENU settings.

#### MODE:

Press this button to select between different preset monitor adjustments. Available presets are; Standard, Soft, Light and Vivid.

#### CALL:

Used to display or hide the current camera selection and orientation.

#### TIMER:

Used to configure the monitors sleep timer (will power off the monitor after selected number of minutes). Available options are; 0, 30, 60, 90 and 120 minutes.

#### Language(C/E/P):

Press this button to select monitors language. Available options include: English, German and French.

#### Av1 / AV2:

Used to switch or toggle between camera inputs.



Press this button to flip the picture horizontally.



Press this button to flip the picture vertically.