



# PANORAMIC VIEW MONITOR (PVM)

## OWNERS MANUAL



Please read this manual for proper operation and keep it for future reference.



# TABLE OF CONTENTS

## PANORAMIC VIEW MONITOR (PVM)

| Section | Title                          | Page |
|---------|--------------------------------|------|
| 1.0     | Product Features               | 3    |
| 2.0     | About the system               | 4    |
| 3.0     | Performance parameter          | 5    |
| 4.0     | Display interface introduction | 6    |
| 5.0     | Logical switching              | 7    |
| 5.1     | PVM Entry/Exit                 | 7    |
| 5.2     | R Gear                         | 8    |
| 5.3     | Screen switching               | 8    |
| 5.4     | 3D model selection             | 10   |
| 5.5     | 3D color selection             | 11   |
| 6.0     | Attention                      | 12   |

Please read this manual for proper operation and keep it for future reference.



# SECTION 1.0

## Product Features

### 1.0 Product Features

- Bird view +3D view from all directions.
- Front and rear view full screen display, reverse view display.
- Clicking the icon on the HU screen, click to switch different viewing angles, or you may switch the reverse view by hanging the R gear.
- There are warning lines in front of the model car to warn the driver of the danger of a collision.
- The reversing view has three color warning lines, with different colors representing different distances from the car.
- High-performance fisheye cameras and waterproof capabilities are designed to provide a better customer experience.
- The forward viewing Angle occlusion design prevents the driver from dangerously over-relying on the PVM.



## SECTION 2.0

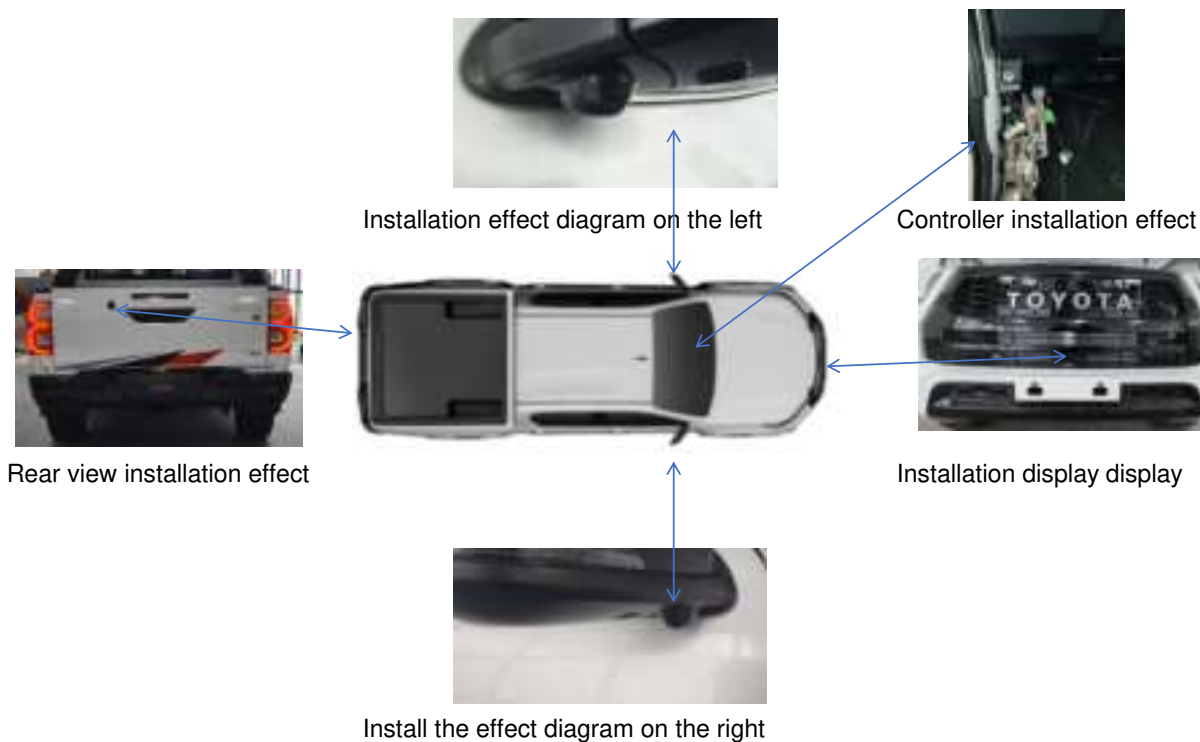
### About the system

#### 2.0 About the system

The PVM contains 4 pieces of cameras which are installed in front, back, left and right sides of the car. The camera images indicated on head unit displays in panoramic view and show the blind area of the vehicle through different angles.



display screen





## SECTION 3.0

### Performance parameter

#### 3.0 Performance parameter

The following table lists the technical specifications of the ECU.

| No. | Item                               | Technical parameter            |
|-----|------------------------------------|--------------------------------|
| 1   | Operating voltage                  | DC +12V                        |
| 2   | Operating voltage range            | 9~16V                          |
| 3   | Operating temperature              | -40~85℃                        |
| 4   | Storage temperature                | -40~95℃                        |
| 5   | Dark current                       | <0.3mA                         |
| 6   | Working current                    | 0.9A以下(+B=12V Camera included) |
| 7   | Shell material                     | ADC-12(cast aluminium)         |
| 8   | Video input                        | AHD/1280*720                   |
| 9   | Video output                       | CVBS/720*480、1.0Vp-p@75Ω       |
| 10  | System startup time (cold startup) | ≤6s                            |

The following table lists the technical specifications of the camera.

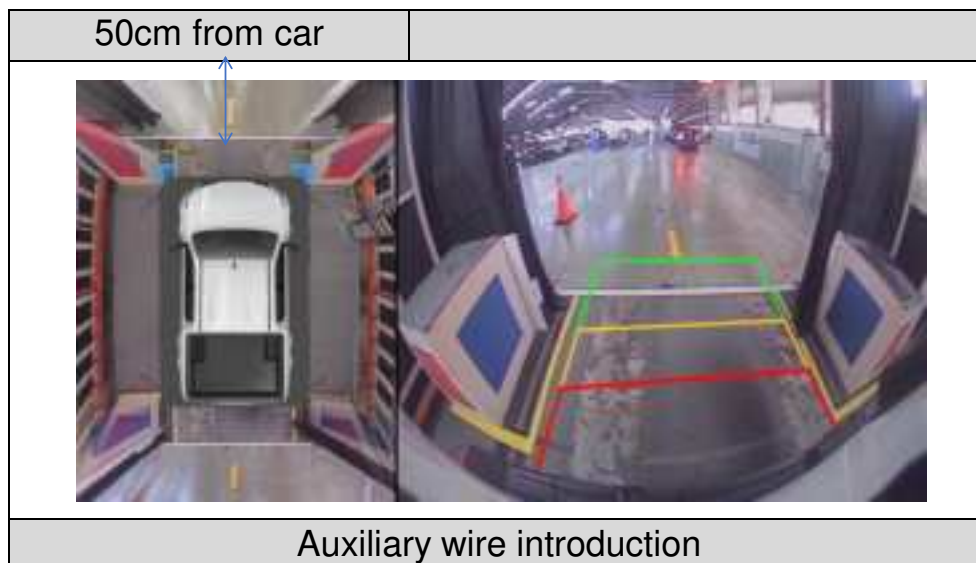
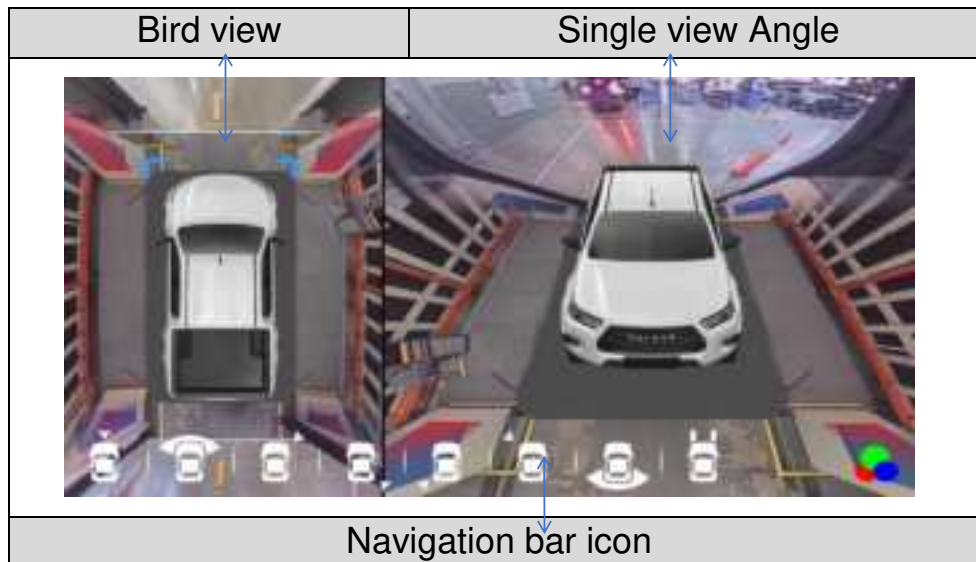
| No. | Item                  | Technical parameter   |
|-----|-----------------------|-----------------------|
| 1   | Pixel resolution      | 1280(H) X 720(V)      |
| 2   | Frame rate            | 25fps                 |
| 3   | Transmission mode     | AHD                   |
| 4   | FOV                   | H.FOV=200° V.FOV=130° |
| 5   | Lens aperture         | F2.0                  |
| 6   | Minimum illumination  | 0.1lux                |
| 7   | Optical axis accuracy | ≤2°                   |
| 8   | Exposure              | AUTO(AE)              |
| 9   | White balance         | AUTO(AWB)             |
| 10  | Operating voltage     | DC 6.5V-7.5V          |
| 11  | Working current       | 110 – 130mA           |
| 12  | Operating temperature | -40~85℃               |
| 13  | Storage temperature   | -40~95℃               |
| 14  | Shell material        | ADC-12(cast aluminum) |
| 15  | Waterproof class      | IP67                  |

## SECTION 4.0

### Display interface introduction

#### 4.0 Display interface introduction

The interface presented on the display is divided into three parts: bird's eye view, single view Angle, navigation bar icon.



| zone             | distance | Color  |
|------------------|----------|--------|
| Exclusion zone   | ≈50CM    | Red    |
| Slow-moving zone | ≈100CM   | Yellow |
| Warning area     | ≈200CM   | Green  |

Please read this manual for proper operation and keep it for future reference.

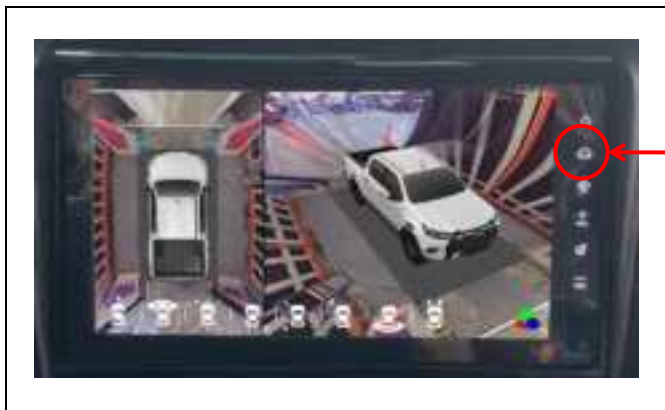
6/14

## Logical switching

### 5.1 PVM Entry/Exit



Click PVM on Head unit



Click PVM on Head unit  
Exit PVM , inter HU  
screen

When the vehicle is in non-R gear and the speed is less than 20km/h, click the HU PVM ICON to enter the PVM . Start 3D model rotation 10s and stop, PVM is displayed.

## 5.2 R Gear



Apabila fail R hilang, PVM keluar ke skrin HU. When the R file disappears, the PVM exits to the HU screen.

## 5.3 Screen switching

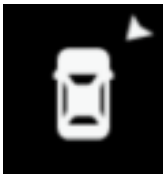


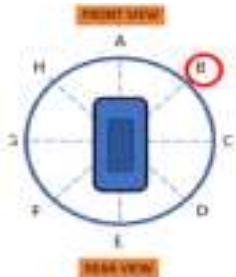




# SECTION 5.0

## Logical switching



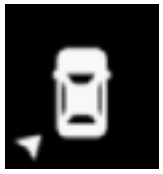



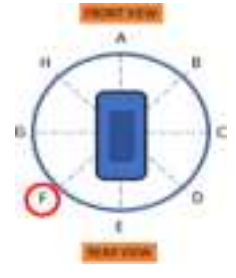
Click the icon





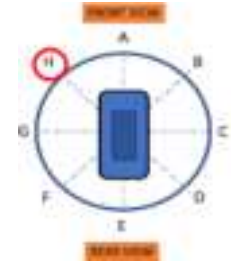

Click the icon



Click the icon



Click the icon



## SECTION 5.0

### Logical switching



Click the icon



Click the icon



#### 5.4 3D model selection

Click the zone  
Click once to switch  
models once





## SECTION 5.0

### Logical switching

#### 5.5 3D color selection



Click the zone  
Click once to switch color  
once



2.8 GR



2.7 & 2.4



## SECTION 6.0

### Attention

#### Instructions for use

PVM is used at low speed and reversing, during the driving process, please pay attention to observe the surrounding situation of the vehicle, otherwise, it may cause a collision, please pay attention to the use of this system:



#### Danger

- PVM is a convenient feature but it is not a substitute for proper vehicle operation because it has blind area where objects cannot be viewed. Always look out the windows and check mirrors to be sure that it is safe to move. The driver is always responsible for safety during parking and other maneuvers.
- Be careful when driving. Please reverse slowly and control the speed.
- The instructions provided in this article are for reference only. The Angle of turning the steering wheel when parking should refer to the change of traffic conditions and road conditions. You must know this before using this system.
- Do not use PVM with the outside mirror in the folding position, and make sure that the trunk lid securely closed when operating the vehicle using PVM.
- The image display on the screen is limited. It is normal for the image to be distorted at a distance from the vehicle body.



#### Warning

##### Do not use PVM in the following situations:

- In rain, snow, fog, wind and sand weather
- When the suitcase is not fully closed
- When on uneven, steep, winding roads
- If the tire specifications <sup>Driver Alert (DA)</sup> change, the splice on the screen and the reverse guide line may be deviated
- PVM uses a special fisheye lens, and the distance between the object and the pedestrian displayed in the picture may be different from the actual distance, please note



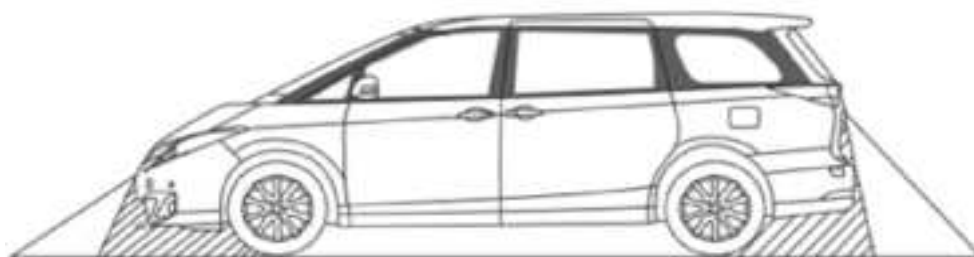
## SECTION 6.0

### Attention



#### Attention please

- PVM may not work in the following situations
- If the vehicle is hit, the installation position of the camera changes
- Do not remove or modify the camera. Otherwise, the camera may not work
- Do not paste organic solution, car wax, window cleaner on the camera, if it happens, please wipe it clean as soon as possible
- When washing the car, do not spray water at high pressure on the camera, otherwise the camera will fail
- The difference between the picture and the actual display
- Even if the PVM splicing screen looks parallel to the parking space line, it may not be parallel, please check by the driver
- incomplete or even double shadow, which is a normal situation, please be sure to use the rearview mirror to assist observation.
- The lower part of the camera's vision will be blocked by the car body, and there will be an invisible blind area on the ground (the shadow in the figure below). Please be sure to drive carefully to prevent collision.







## SECTION 6.0

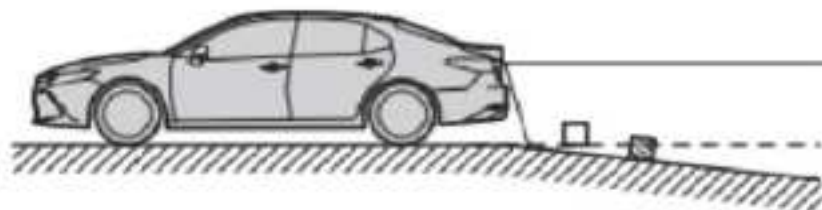
### Attention

PVM can only ensure accurate guidance on a flat road surface, in any of the following cases, there will be a certain error between the image perception on the screen and the actual distance

- When the road slope rises before and after the vehicle



- When the slope of the road before and after the vehicle drops



- The vehicle is fully loaded

PVM is calibrated in the no-load splicing, if the car is fully loaded, the car body will fall, resulting in the picture of splicing dislocation.

The object shown in the picture is closer than the reality, please watch carefully.

