



Panoramic View Monitor

OWNERS MANUAL

Panoramic View Monitor

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



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



SECTION 1.0

Panoramic View Monitor

1.1 Using the Panoramic View Monitor

Driving Precautions

The panoramic view monitor plays a subsidiary device in order to help driver checking surroundings around the vehicle. Please be sure that before driving, the visual check vehicle surroundings with mirrors before ready to go is necessary.

Please pay attention to the following notices and instructions when using the panoramic view monitor.

CAUTION

- Drivers shall not depend on the panoramic view monitor only. There have some different tolerance from the image and the actual object.
- Be sure to check vehicle surroundings visually before driving.
- When use panoramic view monitor, not only focus on monitor, but please also use vehicle mirrors to check actual conditions.
- The position of guide line displayed on the monitor may differ from actual condition. Please check surround actual condition.
- When the tire size changed, the guide line position displayed on the screen will also be different.

Notice

- Do not use high-pressurized water column to wash panoramic view monitor to avoid damage.
- The distances between the vehicle and objects may differ from the actual distance.
- There are blind spots around the vehicle so will not be displayed in panoramic view monitor.
- The light condition around each camera is different, so light displayed on the image may differ.
- The images from four cameras are combined. The border of the four image clarity may decline which is normal.
- The car display image may differ from actual car, purpose is to simulate car's surrounding.



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1.2 What is PVM

Background / Introduction

Panoramic View Monitor (PVM) System has 4 cameras installed at front / rear and left / right side mirror of the car, where its 360-degree bird' s eye view is displayed on the Display Audio for guidance of blind spot areas against the car.

Information

The screen illustrations used in this manual are examples, and may differ from the image of actual car displayed on unit.

1.3 PVM Features

- Assist blind spot area visibility by seamless image with front, back or left and right view.
- PVM guide line design, seizing distance between periphery obstacles and vehicle itself.
- Front/rear guideline refers to car width which design to assist low speed reversing or driving.
- Due to safety concerns, there will be a black mask area on top of the front view.
- When speed is over 12 ± 5 km/h, the PVM will deactivate and enter in AVX mode.
- Motion object detection mode activated when speed is around 0 km/h.
- Turn signal mode activated when user turn on LH/RH signal below 12 ± 5 km/h.

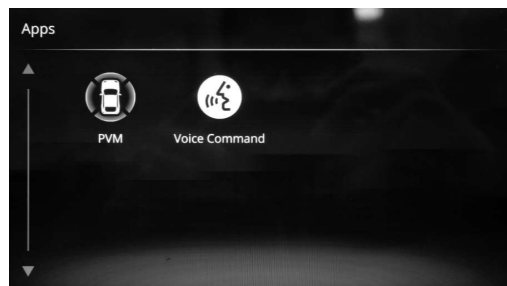
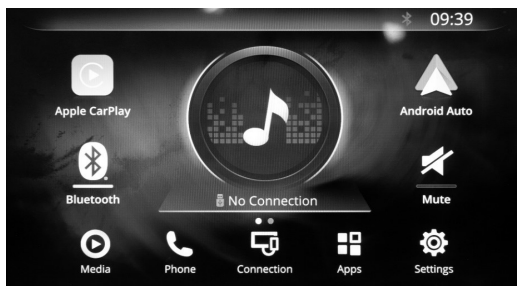


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1.4 PVM Operation

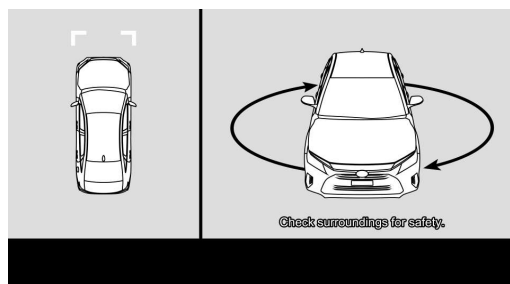
Press Apps icon to enter Apps mode, and press PVM icon to enter PVM mode.



360° Rotation Shortly

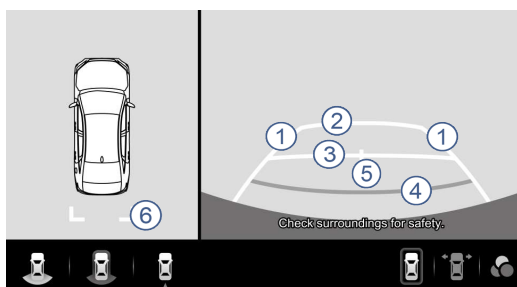
When press PVM icon to enter PVM mode, car model will display 360° rotation shortly and it is able to skip 360° preview by one-click.

* If the light signal is trigger to be on/off during the rotation, the car model will show the light after rotation is complete.



Gear: Reverse Mode (R)

When Reverse Gear is engaged, the Display Audio will display panoramic image specified for reversing mode in 2-3 seconds automatically (please refer to the image below).








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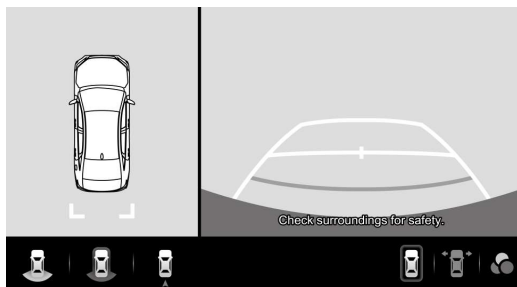
Panoramic View Monitor

No	Display	Function
①	Vehicle width guideline	The width of guide line is wider than the vehicle width.
②	Distance guideline	The distance around 6.5 ft (2m) from the edge of the bumper.
③	Distance guideline	The distance around 3 ft (1m) from the edge of the bumper.
④	Distance guideline	The distance around 1.5 ft (0.5m) from the edge of the bumper.
⑤	Vehicle width guideline	The center of the vehicle.
⑥	Distance guideline	The distance around 3 ft (1m) from the edge of the bumper.

- The image show surrounding bird view and rear view to assist driver.
- Please be aware the distance with periphery obstacle.
- The panoramic image is a simulated aerial view. When the obstacle is close to the car, please stop the car and confirm actual secure distance before you go.

In Reverse mode, you may press the view switch to choose rear view  or 360° view + rear view  or back view of the car model 

360° view + rear view

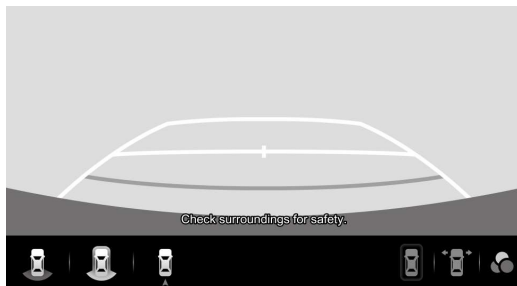




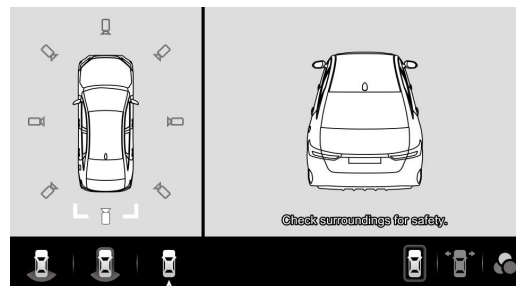
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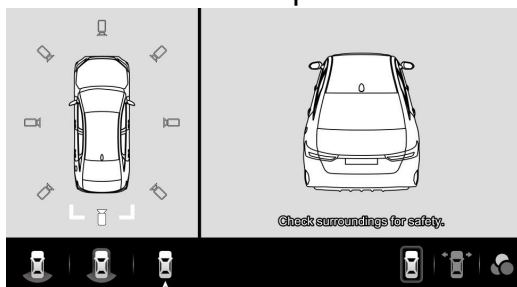
Rear view



Back view of the car model



360° view + rear top view

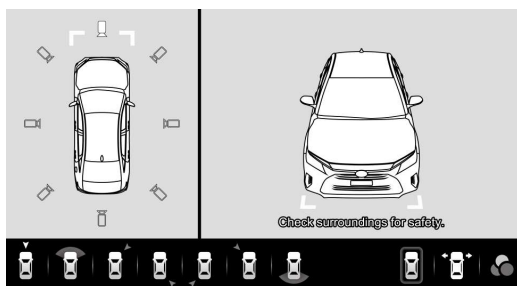


Note

Please carefully check the surrounding as some blind spot zone will not be captured by the camera.

Gear: Parking / Neutral / Drive Mode (P/N/D)

The car will keep displaying the PVM-ahead image mode if the shift lever at P/N/D and the speed under 12 ± 5 km/h.



Note

Image show is to aid in identifying periphery obstacle during low-speed driving.

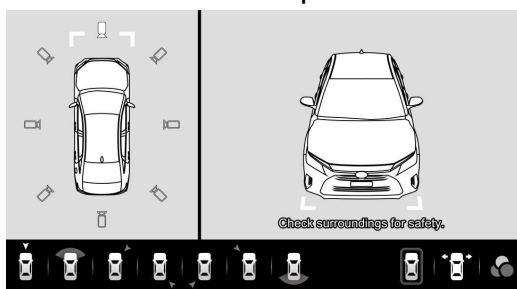


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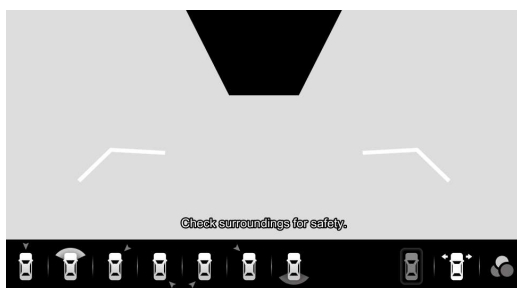
Panoramic View Monitor

- Due to safety concerns, the front view will not show the whole image. There will be a black mask area on top of the front view.
- The front guide line has blue lines. Please pay more attention to the distance with periphery obstacles when you drive. The front guide line is about 3 ft. (1m) from the edge of the bumper.
- When you reverse, please use left/right side mirror to check surrounding area. Press icons to switch to different view.

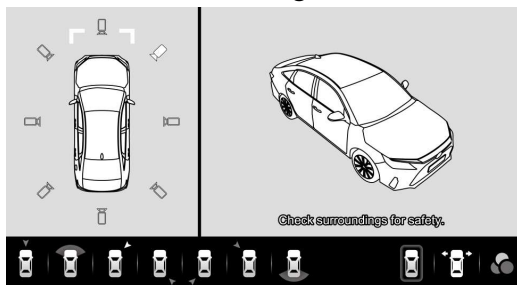
360° view + front top view



Front view



360° view + front right view

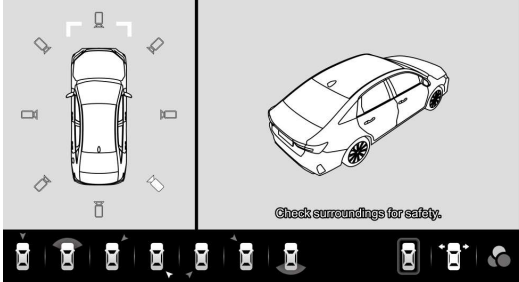




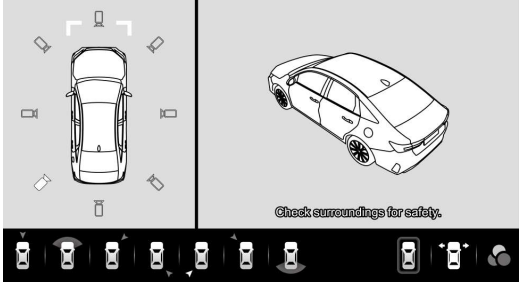
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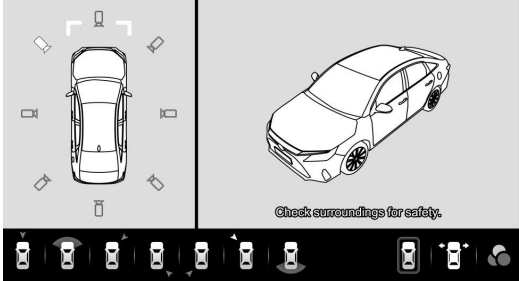
360° view + rear right view



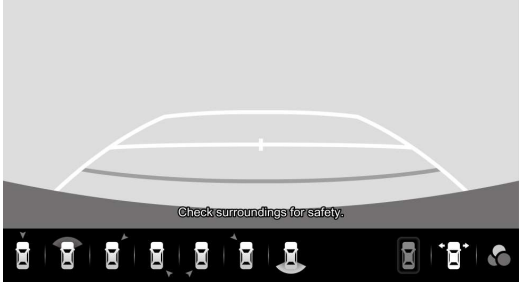
360° view + rear left view



360° view + front left view



Rear view





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Note

PVM only available for car speed is under 12 ± 5 km/h (P/N/D mode).
 PVM view will go to audio system when the car speed is higher than 12 ± 5 km/h.
 The wheel of the car model will be rotated once the vehicle is moving.

Turn Signal Mode

When the driver turn the left or right signal on and the speed is under 12 ± 5 km/h, The side view will be triggered.

At the P/N/D gear:

If Turn signal icon is on:

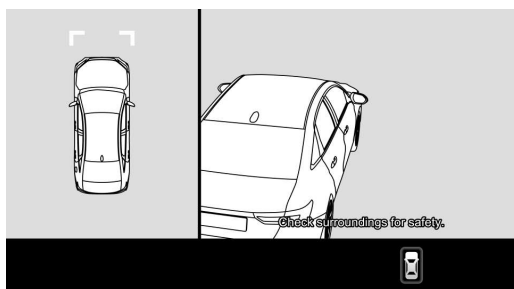
- If head unit is at the home page or not in the PVM operating system. The head unit will show left or right image when user shift the turn signal lever.
- If in the PVM operating system, the head unit will show left or right image when user shift the turn signal lever.

If Turn signal icon is off:

- If head unit is at the home page or not in the PVM operating system. The head unit will not show left or right image when user shift the turn signal lever.
- If in the PVM operating system, the head unit will not show left or right image when user shift the turn signal lever.

* The default setting of the turn mode function is Off, please turn it on if want to have this function.

360° view + 3D RH side view

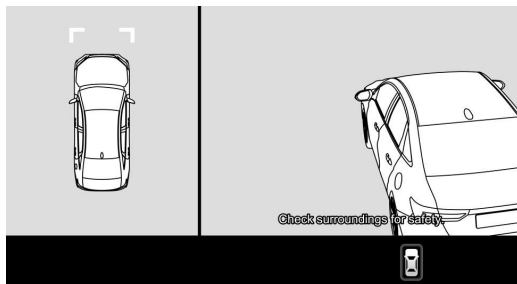




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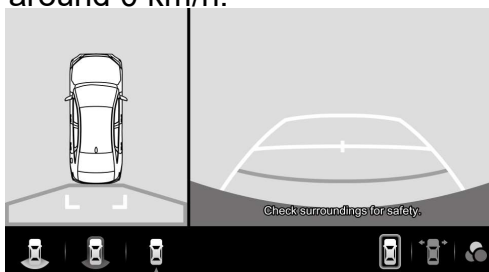
360° view + 3D LH side view




MOD Mode

The PVM detects moving object and shows the direction of object coming from with yellow alarm.


Please be noted that the MOD is available only when the speed is around 0 km/h.

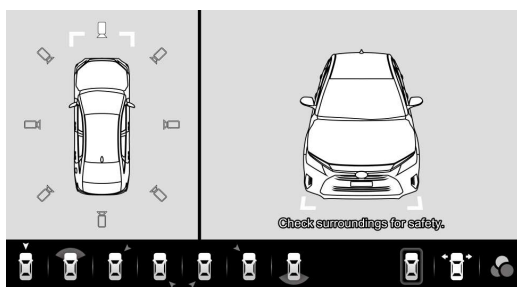


User can press MOD icon  to activate and close MOD function.

* The default setting of the MOD function is On, please turn it off if want to disabled this function.

Car model color change

In P/N/D/R mode, press  “color change icon” can switch color of car model.





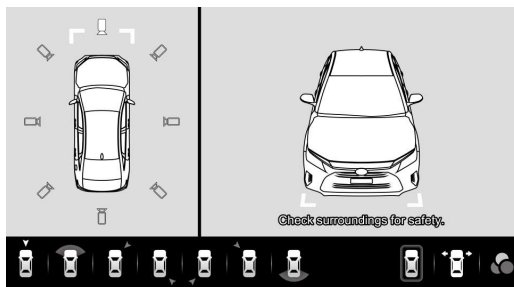
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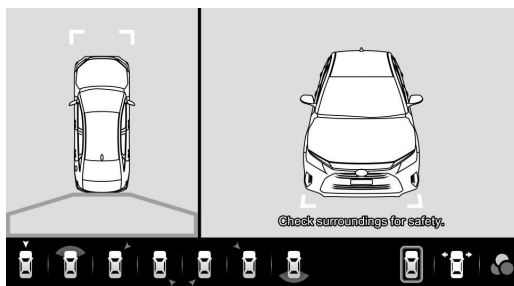
Touch on the swing view

Click the button in the top view, the Vehicle icon will rotate to the specified viewing angle in a dynamic way.

During the rotation of the Vehicle icon, click other buttons of the top view, the Vehicle icon will stay at the current angle, and then rotate to the specified viewing angle.



When the SMOD warning line appears, the button will temporarily disappear. Display button when SMOD warning line disappears. The SMOD warning appears during the rotation of the vehicle icon, the vehicle icon continue to rotate to the specified angle.





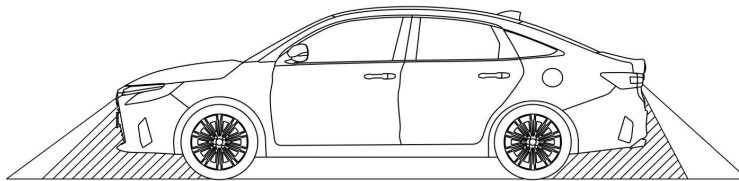
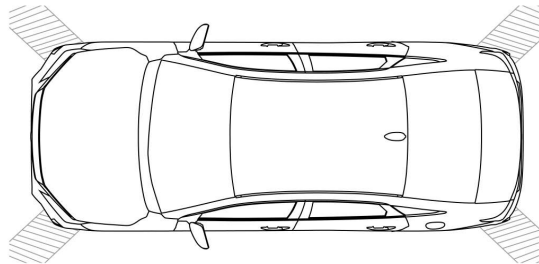
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1.5 Caution

Blind spot

The aerial panoramic image comes from the use of optical principle, where intersection parts of four cameras are for image clipping process to build panoramic effect, hence, four connection parts of images listed below would cause image to temporarily disappear and drivers are requested to pay special attention.



Objects may not be detected from some angles. The objects underneath the bumper or on the ground may not be detected when they are displayed at front or rear viewing angle (Grey parts in oblique lines).

- The images from four cameras are in color difference under versified light source due to light incoming angle discrepancies, which is normal.
- The guide lines in the front left/right side of car mode are aligned due to shooting position/angle difference from left/right rear mirrors; however, mild staggered position of doors is normal.
- PVM display area is constricted, where the further part from the car body will present image deformation, which is normal.
- PVM camera are precision device. Do not hit camera, which might cause abnormal situations like failure or damage.



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- PVM is to aid and reinforce display of periphery blind areas against the car body. When you drive, you still must make use of the left/right side mirrors and rear view mirrors.
- When you reverse, some conditions (Ex.: weather, light) might constrict image. Do not drive your car only by the display.
- PVM image might be affected or incorrect with the change of tire size; hence, we do not suggest you to change tire size.
- Heavy impact or displacement from collision might cause PVM image to diverge right or left, worsening image connection. To resume normal operations, image calibration and part replacement may be required.



SECTION 2.0

Troubleshooting

2.1 If You Notice Any Symptoms

Troubleshooting will help you to simply identify the most likely cause and restore the process to working status. Whenever you have a problem with the PVM, here are some basic troubleshooting techniques that can help you to fix issues.

Please identify the following symptoms and most likely cause to find the solutions. If the symptom is not resolved by the following solutions, please have the car to be checked by your nearest TOYOTA dealer.

Symptom	Likely cause	Solution
Difficult to see the image	<ul style="list-style-type: none"> • The vehicle is in a dark area. • The temperature around the lens is either high or low. • The outside temperature is low. 	Please move car away from the uneven light or direct sunlight.
	<ul style="list-style-type: none"> • There are water droplets on the camera. • The surroundings is raining or humid. 	Please move the car to the room temperature.
	<ul style="list-style-type: none"> • External factor (mud etc.) is adhering to the camera. • Sunlight or headlights is shining directly into the camera. • The vehicle is under fluorescent lights, sodium lights, and mercury lights etc. 	Please clean the camera with water and soft cloth.



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Troubleshooting

The image is blurry	Dirt or external factors (like water droplets, snow, and mud etc.) attached to the camera.	Clean the camera with water and soft cloth.
The image is out of alignment	The camera or surrounding area got a strong impact.	Please have your dealer to check the vehicle.
The guide lines are out of alignment	The camera position is out of alignment.	Please have your dealer to check the vehicle.
	<ul style="list-style-type: none"> • The vehicle is tilted. (Heavy load, tire puncture, etc.) • The vehicle is in a slope status. 	This is not malfunction. Please check surroundings visually when reversing the car.