

# PR1512 user manual

PR1512 is a mobile detection radar developed by Aisheng Technology Co., Ltd. that operates in the 5.8G frequency band. Its function is to sense whether there are objects moving outside. The following is the user manual for PR1512:

As shown in the figure below, PR1512 has four pin interfaces: VGOV, suitable with 2.0&2.54mm pin header. Each pin interface is defined as: V (positive pole of the power supply, supply 5-12V input), G (negative pole of the power supply), O (output, when the radar detects the movement of an object, it outputs a high level), suitable for use in a series of electrical products such as hallway lights and kick lights. PR1512 will burn the relevant programs before leaving the factory, and users only need to power up the radar module to use it without the need for other configurations.



## Notes:

1. When installing, the front of the antenna should avoid having a metal shell or component to shield the signal. Plastic or glass obstructions are allowed, but the obstructions should not be tightly attached to the front of the antenna;
2. Try to avoid pointing the radar antenna directly towards large metal equipment or pipelines, etc;
3. Random channels can avoid interference between multiple radar modules, but there is still a small possibility of generating the same channel. The antenna installation direction should be kept parallel to each other as much as possible, which can effectively avoid mutual interference or restart the power supply to obtain a new channel setting;
4. Radar sensors should avoid facing the AC drive power supply directly and try to stay away from the rectifier bridge of the drive power supply as much as possible to avoid power frequency interference with radar signals;
5. It is recommended that the power supply driving capacity of the radar module should not be less than 25mA, otherwise it may cause sensor operation. The ripple voltage of the power supply must be controlled within 50mV;
6. During installation, it is important to ensure that the sensor is securely and stably installed, as the shaking of the radar itself can have a significant impact on signal processing;
7. During installation, ensure that there is no object movement or vibration on the back of the radar. Due to the penetrability of radar radio frequency waves, the signal on the back of the antenna will also pass through the radar board. If there is object movement on the back, it will also be collected by the antenna, affecting the judgment effect. Antenna covers or backboards can be used to reduce the impact of objects on the back of the radar;
8. During installation, try to ensure that the radar antenna is directly facing the area to be detected, and that the antenna is open and unobstructed around it;

## **FCC**

### **OEM/Integrators Installation Manual**

#### **Important Notice to OEM integrators**

1. This module is limited to OEM installation ONLY.
2. This module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).
3. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations
4. For FCC Part 15.31 (h) and (k): The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are complaint with the transmitter(s) rule(s).

The Grantee will provide guidance to the host manufacturer for Part 15 B requirements if needed.

#### **Important Note**

notice that any deviation(s) from the defined parameters of the antenna trace, as described by the

instructions, require that the host product manufacturer must notify to Pollux that they wish to change

the antenna trace design. In this case, a Class II permissive change application is required to be filed

by the USI, or the host manufacturer can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

#### **End Product Labeling**

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: 2BDXTPR1512"

The FCC ID can be used only when all FCC compliance requirements are met.

## Antenna Installation

- (1) The antenna must be installed such that 20 cm is maintained between the antenna and users,
- (2) The transmitter module may not be co-located with any other transmitter or antenna.
- (3) Only antennas of the same type and with equal or less gains as shown below may be used with this module. Other types of antennas and/or higher gain antennas may require additional authorization for operation.

Antenna type	5.8GHz Radar Peak Gain (dBi)
Patch Antenna	4

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

## Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

## Federal Communication Commission Interference Statement

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### **List of applicable FCC rules**

This module has been tested and found to comply with part 15 requirements for Modular Approval.

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to

any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also

contains unintentional-radiator digital circuitry), then the grantee shall provide a notice stating that

the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

### **This device is intended only for OEM integrators under the following conditions: (For module device use)**

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

### **Radiation Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

## **Additional Testing and Grantee Evaluation for Host Product.**

The module is a limited module and complies with the requirement of FCC Part 15.245. According to FCC Part 15 Subpart C section 15.212, the radio elements must have the radio frequency circuitry shielded.

However, due to there is no shield for this module, this module is granted as a Limited Modular Approval. A C2PC is required for new host application. Only Grantees are permitted to make permissive changes. Please contact us for further process with Pollux technologies, Inc, contact: Richard, E-mail: richard.lin@polluxtek.com

The OEM integrators should follow the following C2PC test plan, Base on Module RF report “FR3D0106” under FCC ID: 2BDXTPR1512.

For the host product installed this module exactly according to this guide, and did not make any hardware or software modifications to the module or modified the software but does not affect the radio characteristics, the host product will need to evaluate according to FCC Part 15 Subpart C § 15.245:

Field Strength of Fundamental Emissions and Radiated Spurious Emissions on channel 5788.55MHz /5800.71MHz/5812.59MHz

For the host product installed this module exactly according to this guide, and did not make any hardware or software modifications to the module, but it was co-located with other transmitters, the host product will need to evaluate according to FCC Part 15 Subpart C § 15.245:

Field Strength of Fundamental Emissions and Radiated Spurious Emissions on channel 5788.55MHz /5800.71MHz/5812.59MHz

1. with the other co- located transmitters.
  - a. RF Exposure evaluation for the simultaneous transmission of the co-located transmitters.

The host product shall be evaluated for ensuring the continuous compliance for the FCC rules that apply to the host product. Additional guidance for testing host products is provided in KDB Publication 996369 D02 and D04.

This module was tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The host will still need to be reassessed for compliance to this portion of rule requirements.

For the host product is not installed according to this guide, the module certification will be invalid and a new grant certification will be required for the host product.