

User manual for SWR-A002



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FCC Notice

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.

FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

The FCC ID for this radar is "2A8U2SWR-A002".

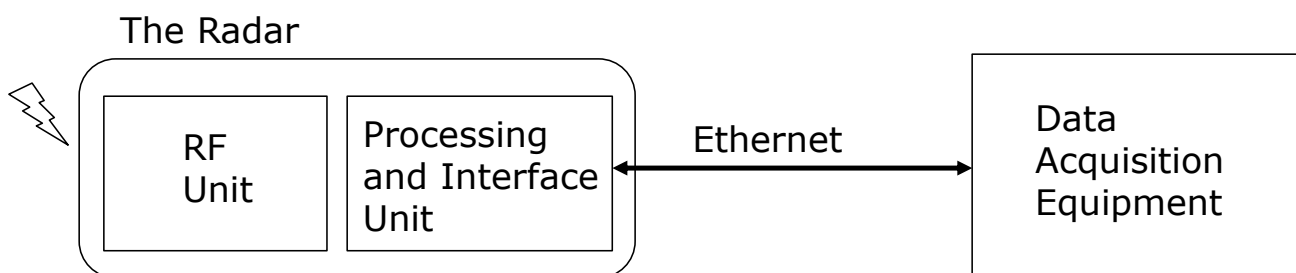
NOTE

This equipment should be installed to a pole or other infrastructure at a height of more than 2.8 meters for keeping the radiator some distance from person's body.

It is recommended that the radar be installed at a height of 3.0m to 5m to ensure full performance.

1.Introduction

60GHz Radar SWR-A002 is installed on the roadside and detects pedestrians based on reflected radio waves. The radar communicates with the data acquisition equipment via Ethernet and outputs detection results every 100ms.



Figurer 1. System configuration

Table1.Detection performance

No	ITEM	DESCRIPTION
1	Detection Area	Max. 60m x 30m (Under installation conditions with no obstructions, etc)
2	Installation Height	3 to 5m
3	Required Setbacks	1.5m or more (when the height is 3m)
4	Max. Number of Detections	Up to 40 objects
5	Output Data	Position, velocity, direction
6	Data Output Cycle	100ms typ

2.Specification

Table 2 shows general specifications.

Table2. General specifications

No	ITEM	DESCRIPTION
1	Power Supply	DC12V
2	Power Consumption	Less than 10W
3	Temperature	-40 to +75°C
4	Humidity	Up to 95% Relative Humidity
5	Waterproofing	IP65
6	Dimensions	H:132mm x W:132mm x D:46mm
7	Weight	Less than 1kg
8	Radar Frequency	61.0 to 61.5GHz
9	Interfaces	Ethernet 100BASE-T

3. Installation method

3.1 Installation requirement

To ensure the best performance of the radar, it should be installed at a height between 3m and 5m.

Also, since it is difficult to detect the area directly below the radar, it should be installed 1.5m behind the pedestrian crossing (when installed at 3m height).

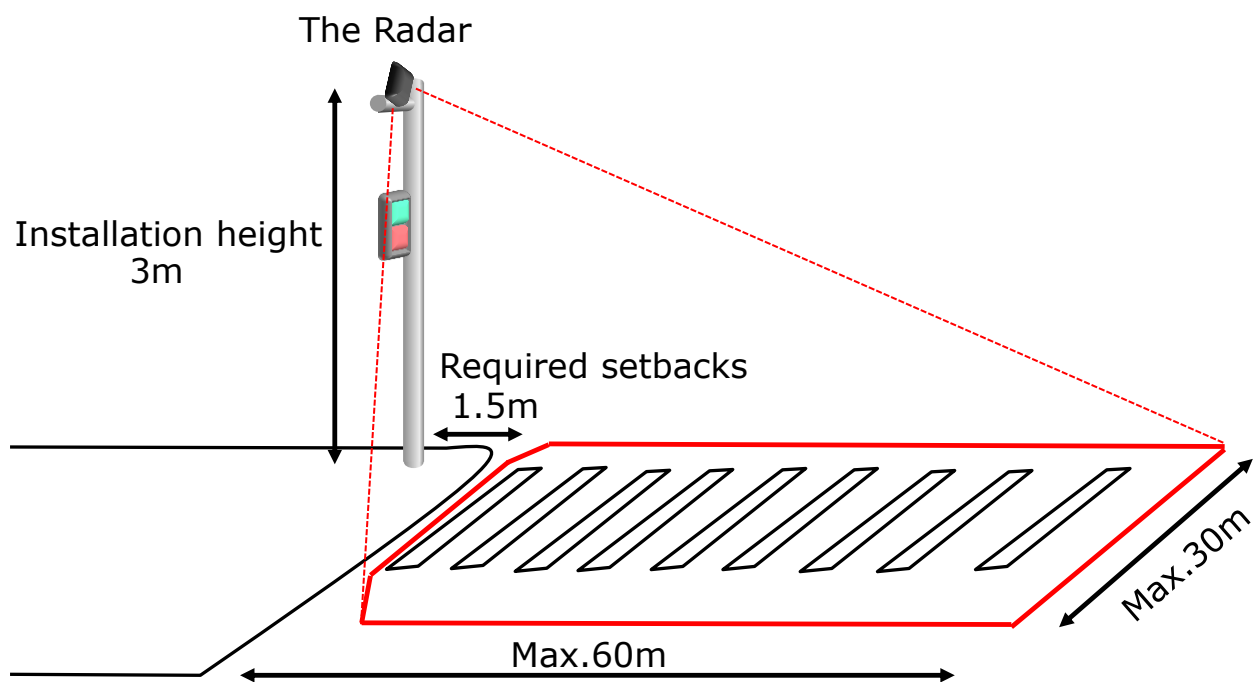


Figure 2. Installation requirements (at 3m height)

3.2 Installation of equipment

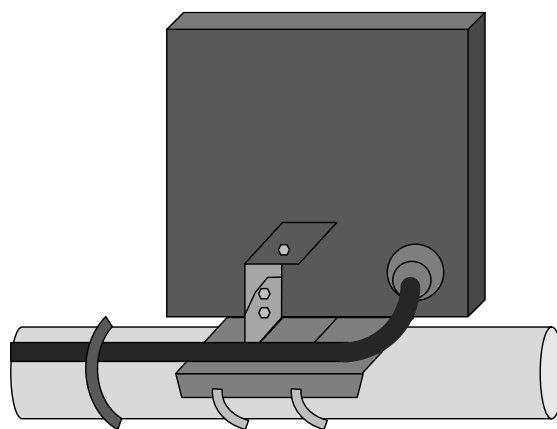


Figure 3. Installation requirement

Attach the radar to the mounting bracket and fix the cable to the arm.

3.3 Horizontal adjustment

Adjust the horizontal angle so that the radar is facing the middle of the crosswalk on the other side.

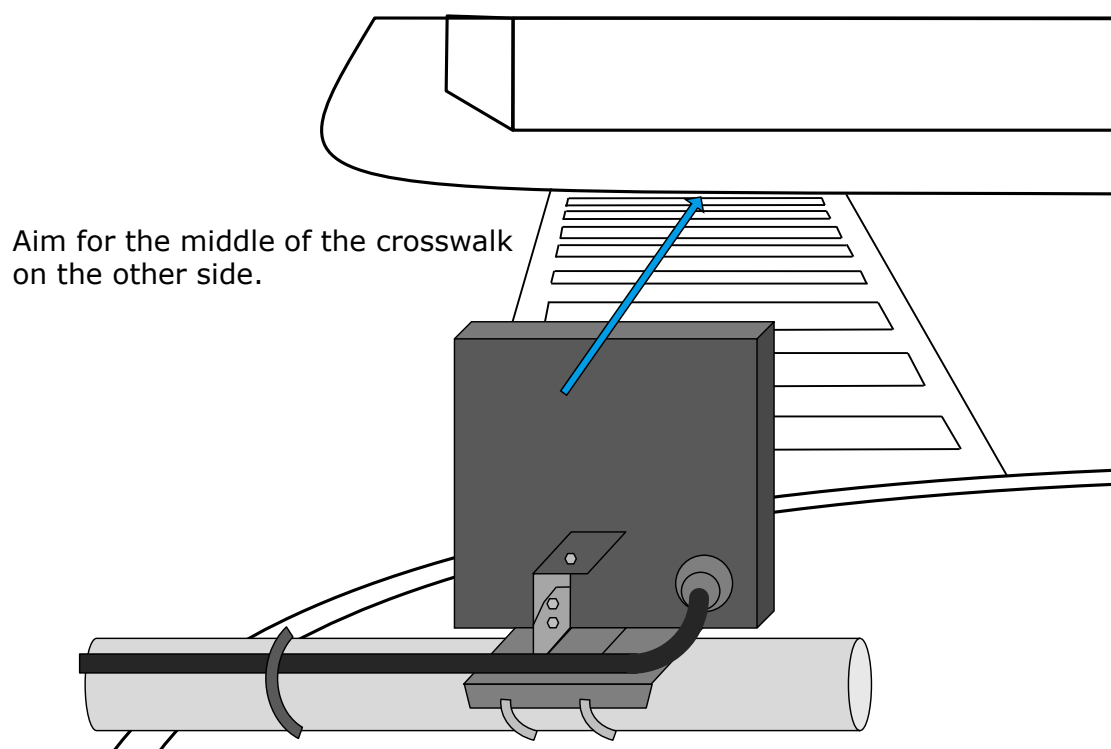


Figure 4. Horizontal adjustment

3.4 Vertical adjustment

Attach the radar to horizontal arm using the mounting bracket. Adjust the elevation angle according to the detection area using an angle meter or similar device.

The radar will be installed to the horizontal arm via a wire and a bracket.

Adjust the angle according to the detection area.
(Using an angle meter)

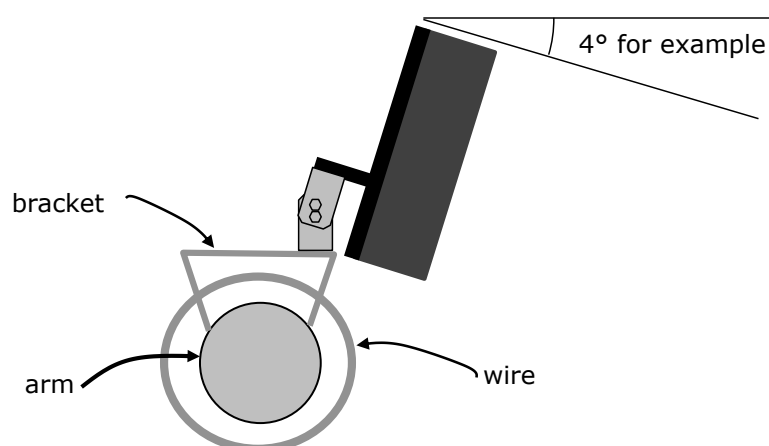


Figure 5. Vertical adjustment

4. Equipment Connection

The Radar has an external connector and supports passive PoE.

Use CAT 5e cables. The Radar starts up when the power supply is connected.

Table 3. External connector pin assignments

Pin No.	FUNCTION
1	Ethernet TX+
2	Ethernet TX-
3	Ethernet RX+
4	DC+12V
5	DC+12V
6	Ethernet RX-
7	0V
8	0V

5.Tool Operation Procedure

- (1)Start the detection result drawing tool “AreaConfigCreator.exe”.
- (2)Once the tool is activated, click “Receive Start” at the lower left of the screen.

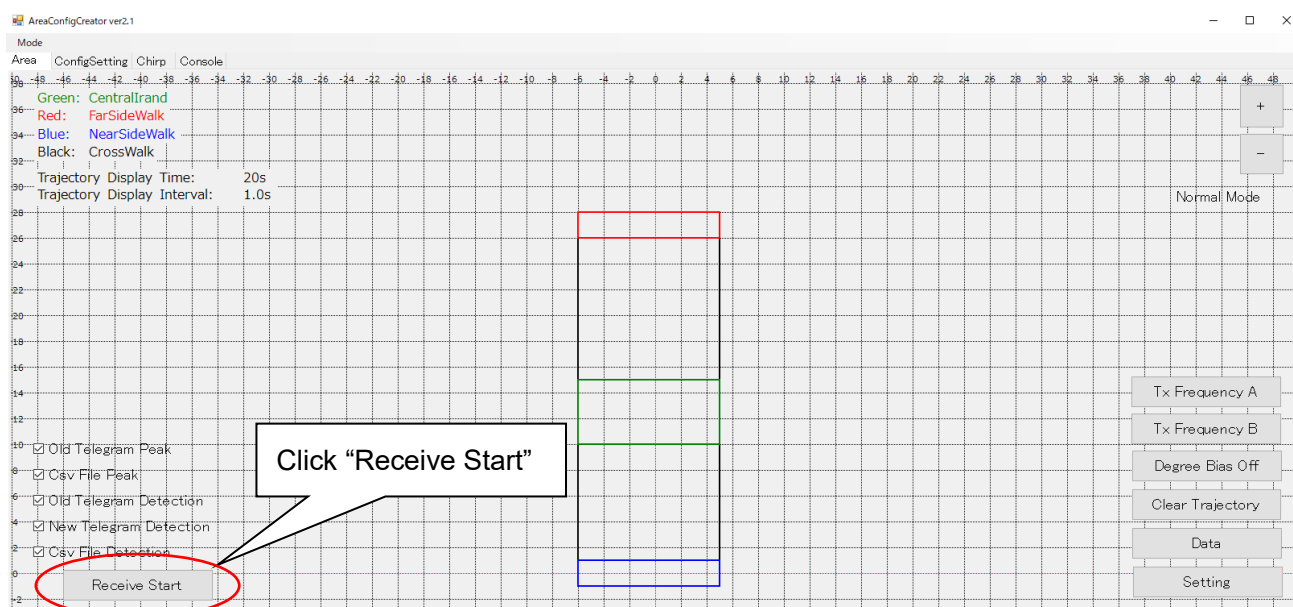


Figure 6. Detection result drawing tool

- (3)When data is received, the detection result is displayed on the screen.

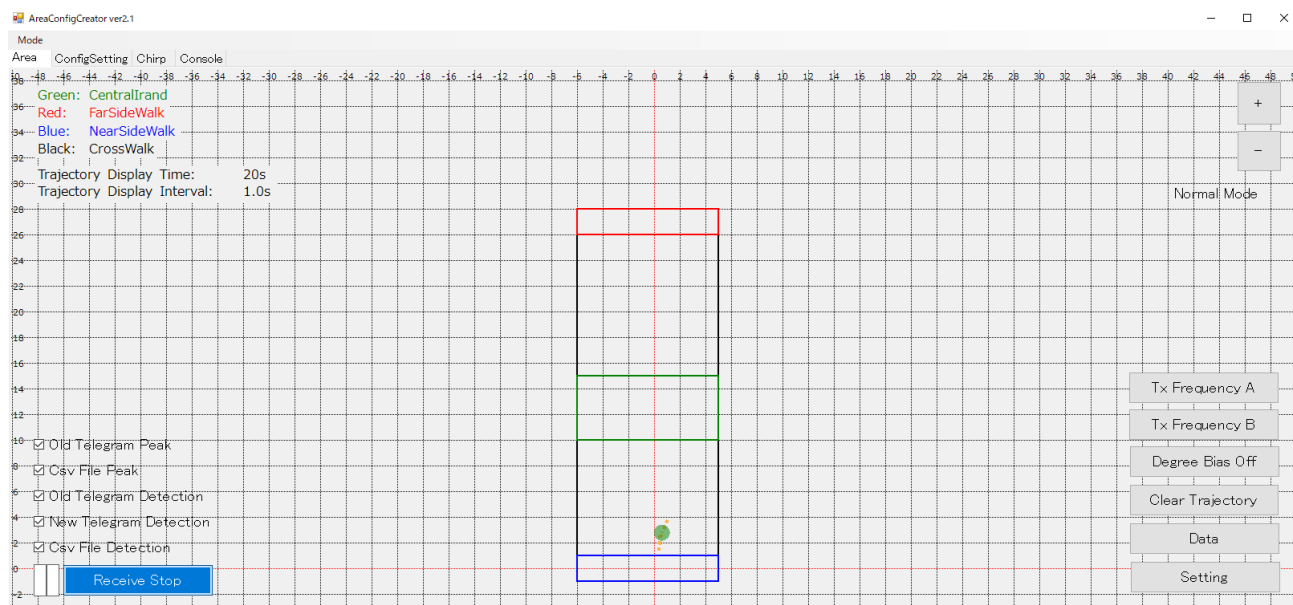


Figure 7. The results of detection