

User manual for SWR-A001



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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-A001".

NOTE

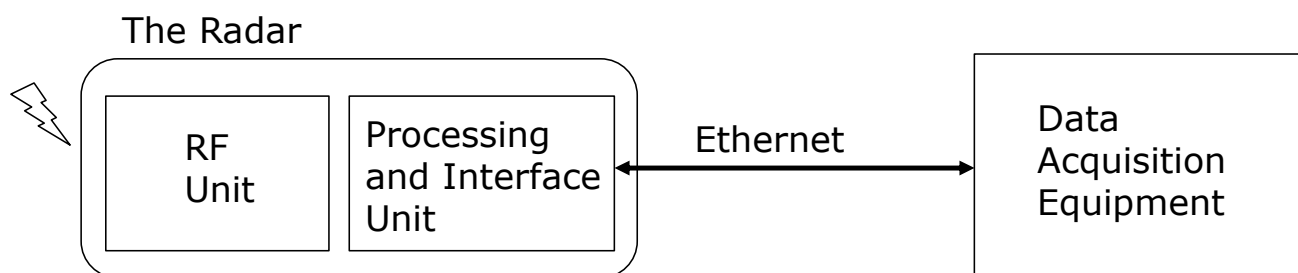
This equipment should be installed to a pole or other infrastructure at a height of more than 2.8 meters for keeping the radiator some distance from person's body.

It is recommended that the radar be installed at a height of 3.5m to 5m to ensure full performance.



1.Introduction

60GHz Radar SWR-A001 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
2	Installation Height	3.5 to 5m (typ)
3	Required Setbacks	3m
4	Max. Number of Detections	40 people
5	Output Data	Classification*, position, velocity, direction
6	Data Output Cycle	100ms

*Pedestrian/Bicycle



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	25 to 98%
5	Waterproofing	IP67
6	Dimensions	H:120mm x W:130mm x D:36mm
7	Weight	Less than 2kg
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 3.5m and 5m.

Also, since it is difficult to detect the area directly below the radar, it should be installed 3m behind the pedestrian crossing.

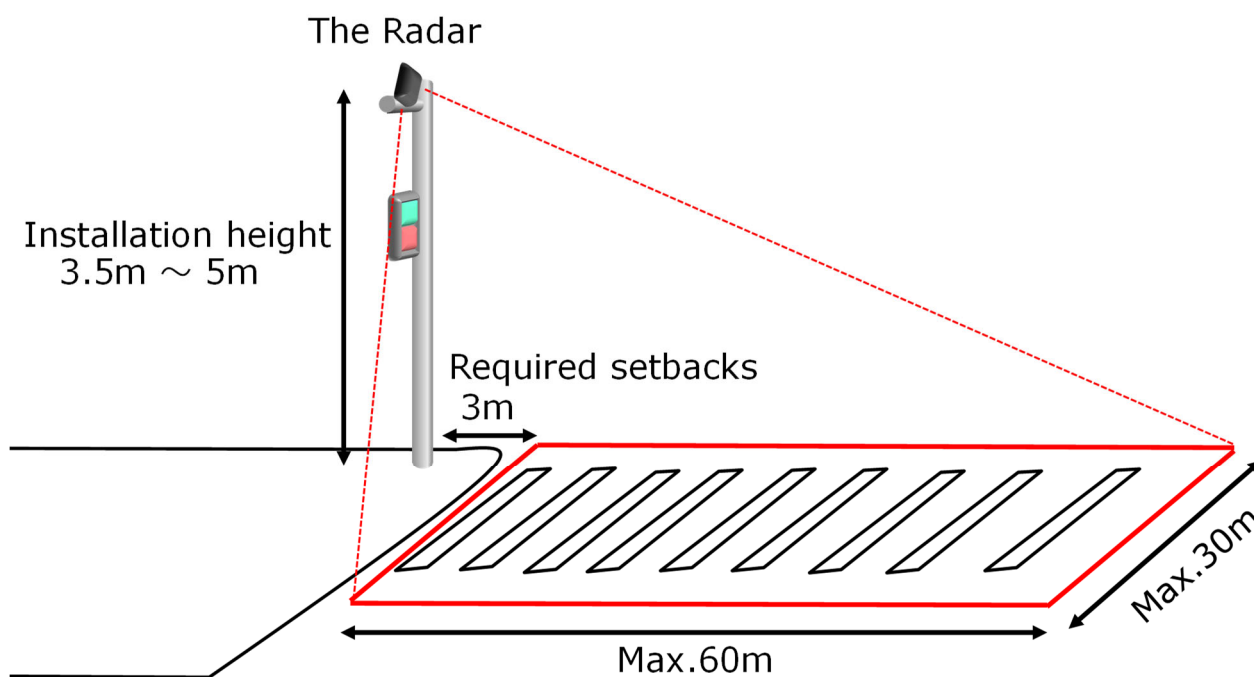


Figure 2. Installation requirement



3.2 Horizontal adjustment

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

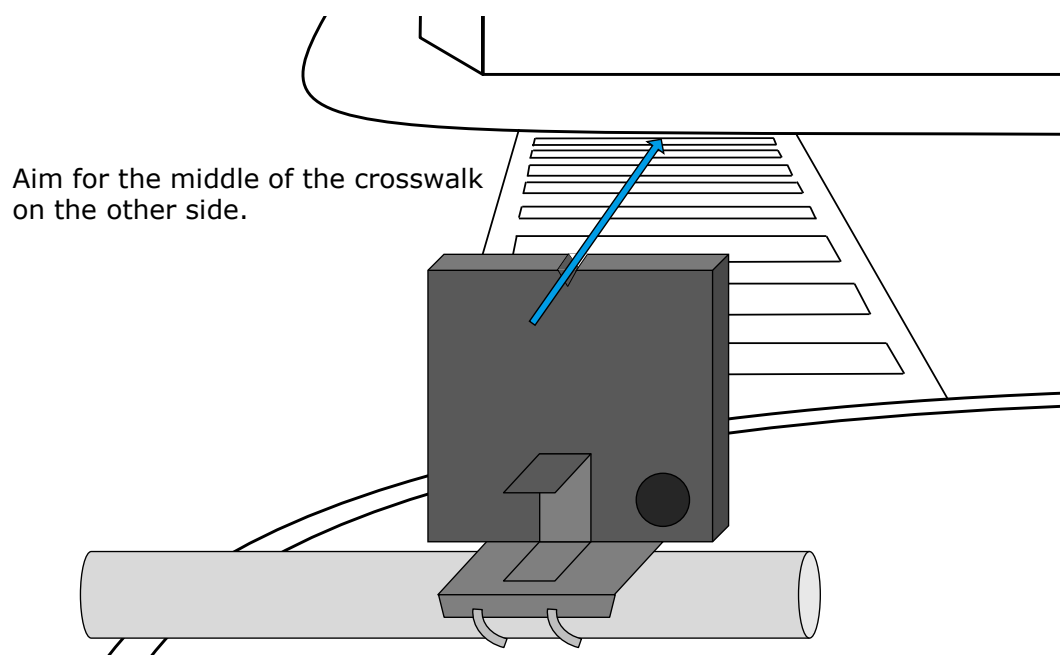


Figure 3. Horizontal adjustment

3.3 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)

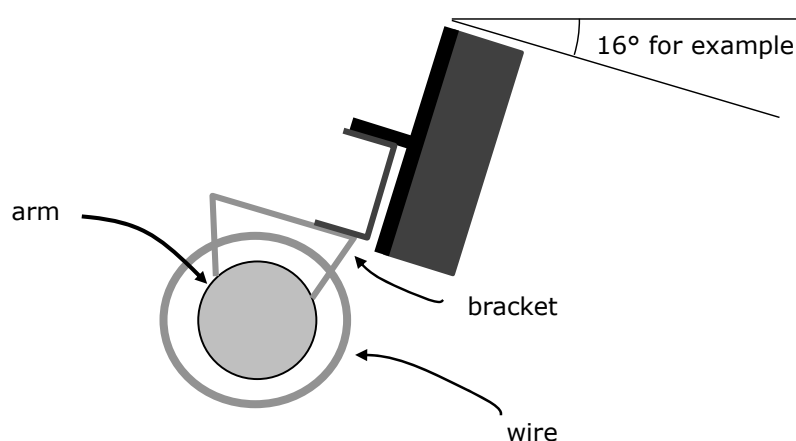


Figure 4. Vertical adjustment

4. Equipment Connection

The Radar has a RJ-45(jack) connector and supports passive PoE.

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

Table 3. RJ-45 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.

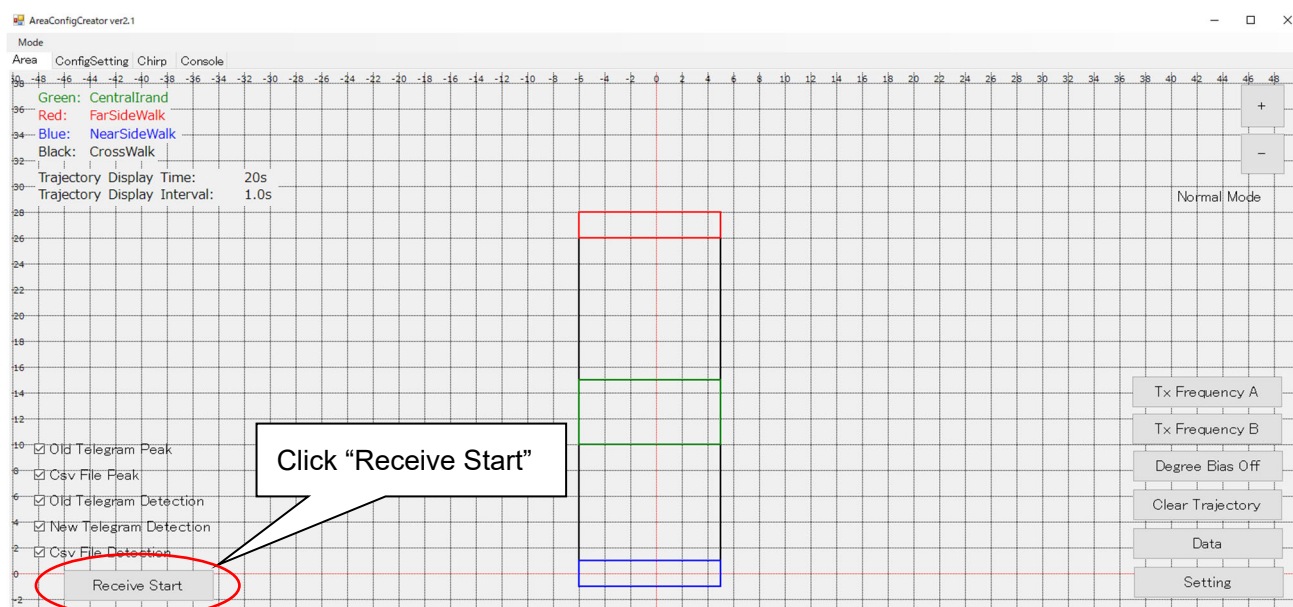


Figure 5. Detection result drawing tool

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

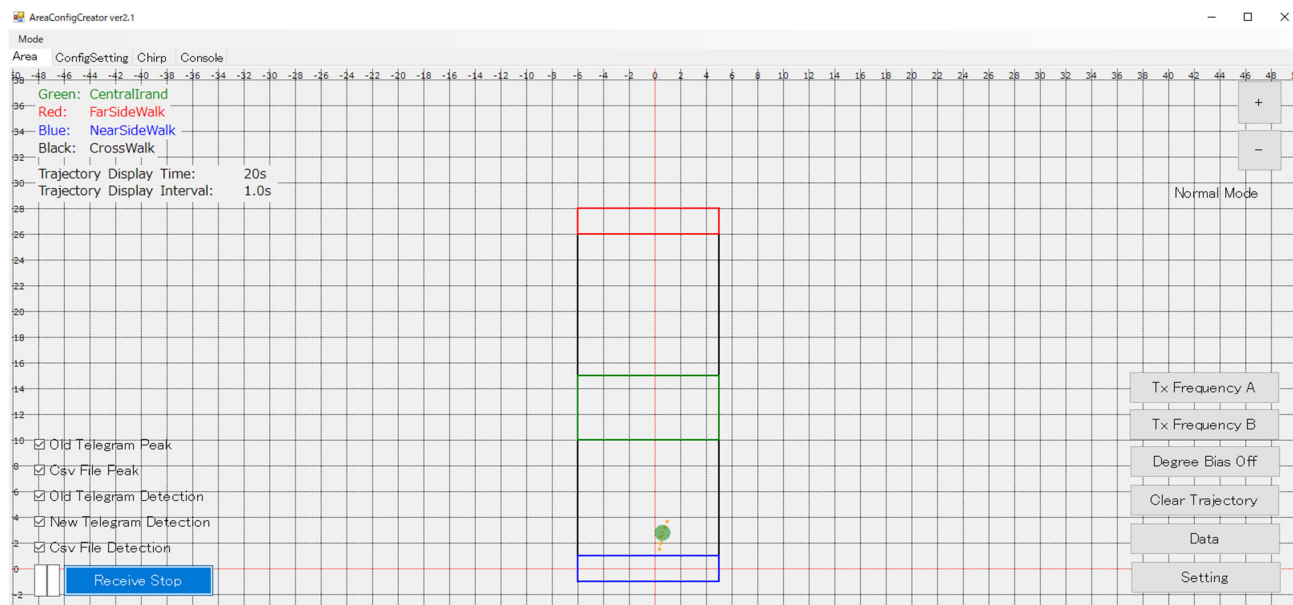


Figure 6. The results of detection