NSR300W MMW Regional Intrusion Detection Radar
User Manual
Disclaimers

Thanks for purchasing this product. The user manual is subject to change without notice. Please read this manual carefully before using this product. Once used, it is deemed to have recognized and accepted the content of this manual. Please strictly follow the manual to install and use the product. Any improper usage may cause damage or injury, and Nanoradar would not bear the corresponding loss and liability. Product copyright is reserved by Nanoradar. Reproduction in any form shall not be accepted without permission.

Version history

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<th>Date</th>
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1 Brief introduction about NSR300W

NSR300W Wide Area Perimeter Intrusion Detection Radar, which is a k-band radar sensor developed by Hunan Nanoradar Science and Technology Co., Ltd., aims at the application of outdoor active perimeter intrusion alarm security. And it is one of the NSR series of high-end products.

NSR300W utilizes single pulse technology and low-power FMCW modulation technology, with high-precision angular resolution, very low-speed measurement capabilities and precise ranging capability. It can realize the volumetric protection and alarm report in an area with the length of 300 meters and it can follow the same time 32 targets, and can avoid the interference of small animals like cats and dogs by signal processing and pattern recognition. Therefore it has been highly intelligent perimeter alarm security equipment.

2 Matters of attention in use

Much attention should be paid to the "matters of attention".

(1) NSR300W needs to be installed in a stable bracket;

(2) When installing NSR300W, the direction of connection cable lines should be toward down, vertical to the ground;

(3) There should be no existing obstacle with regular movement within the detection range.

Any problem in installation, please feel free to contact Nanoradar.
3 Shipping list

The shipping list includes: NSR300W sensor 1x, as photo below:

![Figure 2 NSR300W Radar Sensor](image)

4 Quick-to-setup steps

4.1 Installation instruction

The radar is mounted directly in front of the perimeter area and the radar antenna plane is faced up to the right center of the perimeter zone.

![Figure 3 Sketch diagram of NSR300W installation direction](image)

In order to ensure the accuracy of radar detection, radar detection plane is generally perpendicular to the perimeter region for the installation, and requires a certain installation height of 1~3m (recommended installation height).
4.2 Test and use

NSR300W sensor performance data can be acquired and parsed by the "MMW Radar General Management Tool "testing software, which is used to visually display the observation results. The tool is helpful in the use of NSR300W sensor.

First, "millimeter-wave radar general management tool "(PC test software), user manual shall be provided by Nanoradar. According to the manual, install and configure PC test software.

Test procedures are as following:

(1) Test tools and software are as the following table:

<table>
<thead>
<tr>
<th>No.</th>
<th>Device name</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NSR300W radar</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>PC</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>12V DC power supply</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>PC test software</td>
<td>1</td>
</tr>
</tbody>
</table>

(2) Connect PC and NSR300W radar as the following.

Note:

There will be a buzzing sound when NSR300W is powered up, and will emit two beeps after 30
seconds. Then NSR300W begins to operate.

(3) Start to test

Connect NSR300W network cable to the PC correctly; turn on 12V DC power supply, and open test software of millimeter-wave radar universal management system. Please refer to the millimeter-wave radar general management system instruction manual for the IP address configuration. After the configuration is correct, click the right side button “connect”, and the following test interface appears.

As per following display, in the red frame, it is for the model, IP configuration interface (IP address is related to the PC itself assigned IP address), the green frame is for the settings of the scanned area, and the value can be adjusted according to the actual distance of test target. Click the button “Save” to save the Settings. It would take effect immediately. In the figure, the radial distance of the target is 15.9 meters, and the angle is 15.1 degrees (positive). And in the purple frame, it shows the x direction distance of target is 4.1 meters, the y direction distance is 15.4 meters. And radar ID is 1.

Note:

Select " data to local check box ". Save in the top right corner of the test interface. The target data captured by the radar will be stored in the Data folder in the path folder of the MMW Radar Universal Management Tool in text format.

5 Frequently asked questions (FAQ)

1) Q: Why there is no response when the radar sensor is powered up?

A: There will be two buzzer beeps when the radar is powered up. If you do not hear the
sound, check whether the power cord is connected well, and whether the polarity of power cord is correct. The radar power supply voltage should be 12V DC and the operating current should be about 400mA.

2) Q: Why it could normally detect targets even if the radar is correctly powered up?

A: Please check whether the radar installation direction is correct. Kindly refer to "The definition of structure direction" to check. And with a special FMCW simulator to check whether the radar output is normal.

3) Q: Why there is target signal output when there is actually no target?

A: Please check whether the radar installation is aimed at the target area, and whether there is vibration for the radar installation pole. Check whether the ground connection is reasonable.