

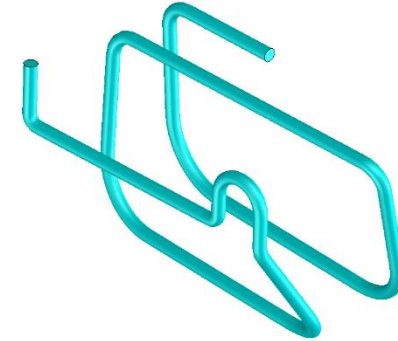
# Door Window Sensor Antenna Report

WNC SAS  
2026/05/15

**WNC**

# Summary

- In the SGC version, the antenna efficiency dropped to 35% due to the reduced clearance between the antenna and the ground.



**Antenna 3D**

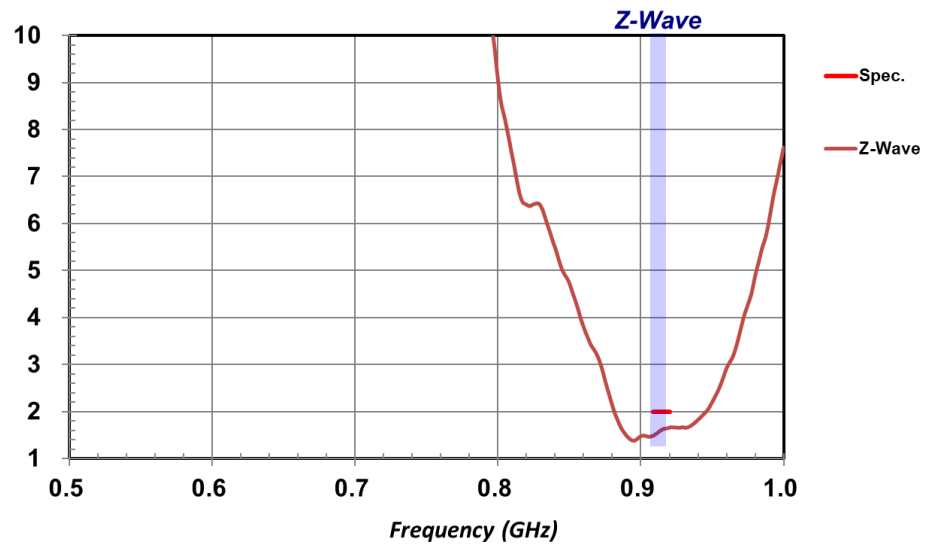
\*

|                | 908MHz                                                                     | 920MHz |
|----------------|----------------------------------------------------------------------------|--------|
| Insertion Loss | Since no cable is used to connect the antenna, there is no insertion loss. |        |

# VSWR – Z-Wave

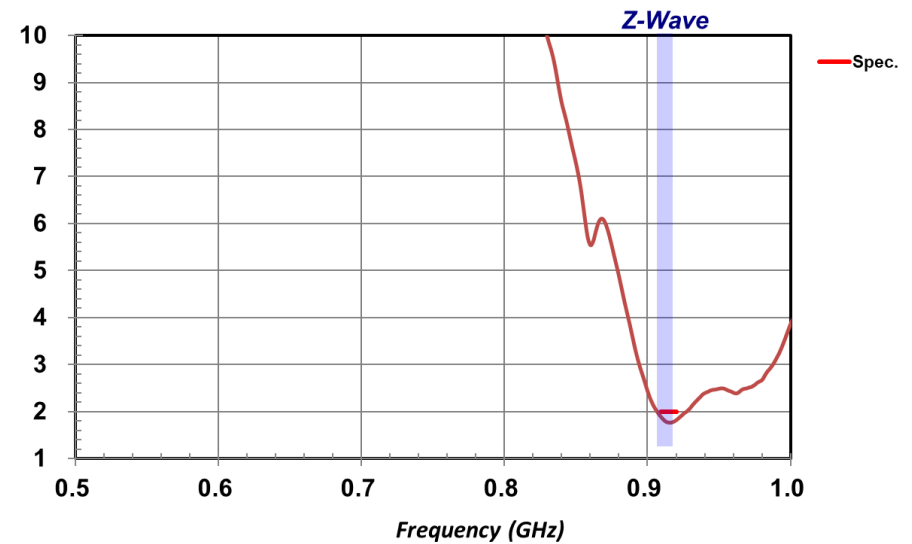
**SGB**

**VSWR**



**SGC**

**VSWR**



# Antenna Performance Table

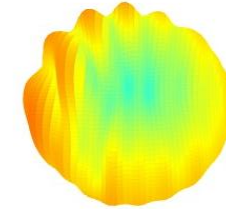
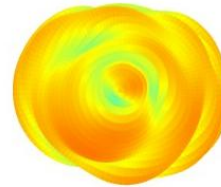
## SGB

|        | Fre.(MHz)      | 908   | 912   | 916   | 920   |
|--------|----------------|-------|-------|-------|-------|
| Z-Wave | Efficiency(%)  | 39%   | 40%   | 40%   | 39%   |
|        | Avg. Gain(dB)  | -4.02 | -3.93 | -3.95 | -4.07 |
|        | Peak Gain(dBi) | -0.16 | 0.35  | -0.27 | 0.06  |

## SGC

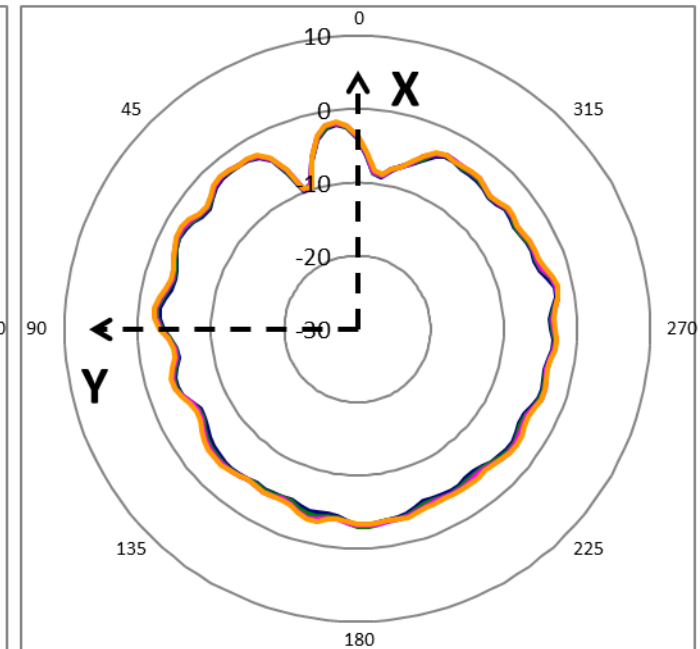
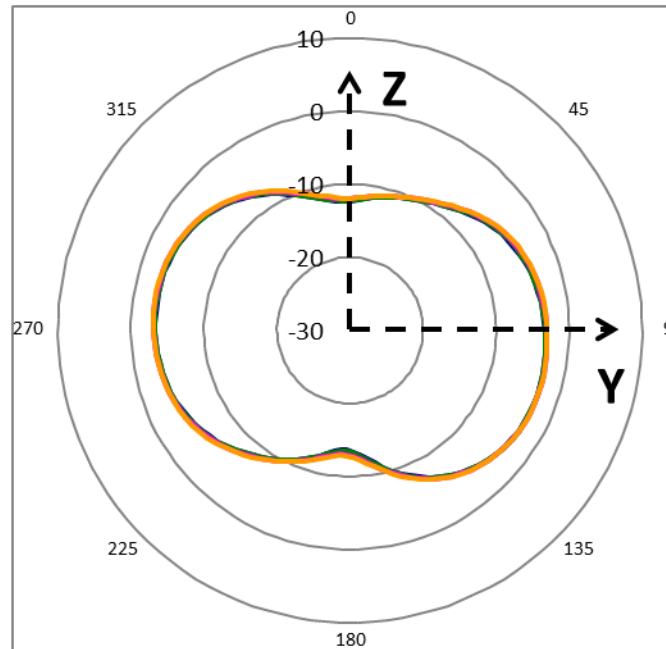
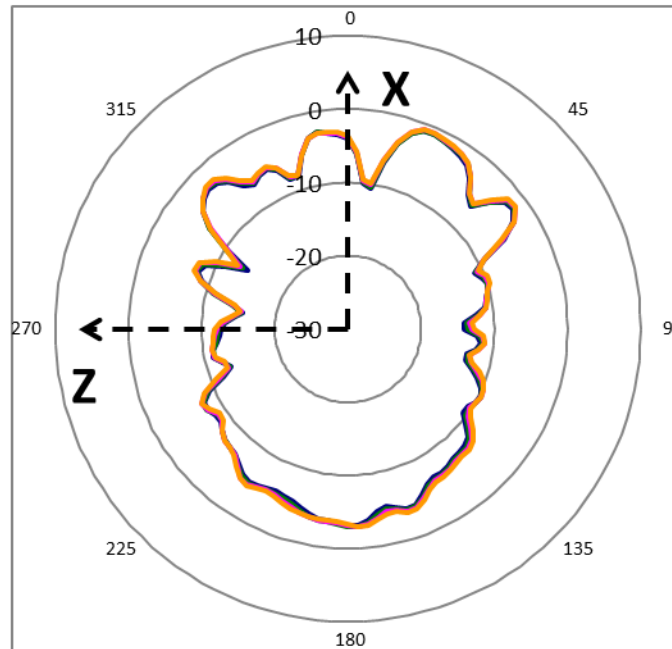
|        | Fre.(MHz)      | 908   | 912   | 916   | 920   |
|--------|----------------|-------|-------|-------|-------|
| Z-Wave | Efficiency(%)  | 35%   | 35%   | 35%   | 35%   |
|        | Avg. Gain(dB)  | -4.57 | -4.5  | -4.48 | -4.59 |
|        | Peak Gain(dBi) | -0.27 | -0.13 | -0.09 | -0.24 |

# Antenna Radiation Pattern



**SGC\_Z-Wave  
Radiation Pattern**

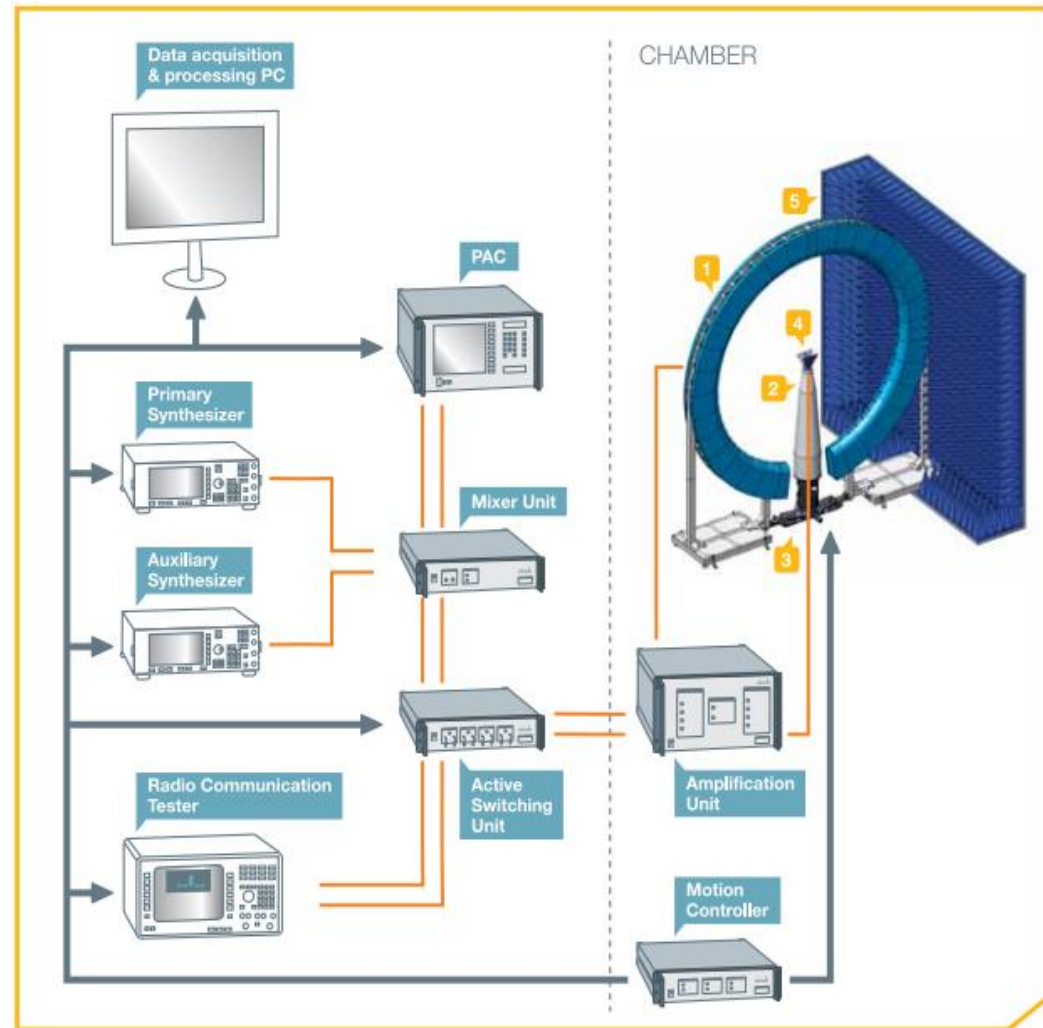
— 908MHz  
— 912MHz  
— 916MHz  
— 920MHz



# Appendix – Measured site information

- Antenna site: WNC Corporation.
- Address: 20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
- Measure Method: Antenna passive measurement using a multi-probe near-field-to-far-field measurement system (Satimo)
- Person in Measurement: Wade Chen, Wade.HT.Chen@wnc.com.tw
- Measure Date: 2026/05/15
- Measurement Image:

# Appendix – Passive test chamber



# Appendix - Measurement Methods

- **Test Software:** NPAC Spherical Measurement
- **Conversion Software:** SatEnv
- **Measurement Procedure:**
  - 1. Mount the Device Under Test (DUT).
  - 2. Open the NPAC Spherical Measurement software, confirm and select the required frequency points for testing, and click Start to execute the measurement.
  - 3. Open the SatEnv conversion software and create a new file. Once created, move the cursor to the Folder directory.
  - 4. A message box will appear upon completion of the measurement. Click Export to output the measurement data to the Folder directory in the SatEnv software.
  - 5. In the SatEnv software, right-click on the data item in the Folder and select post processing to execute the data conversion.
  - 6. After the conversion is complete, right-click the second item from the bottom in the expanded list, NF to FF transform Efficiency, and select Export to obtain the efficiency values.

## Appendix – Passive test chamber

| MVG SG64 Measurement System |                               |               |                    |                 |           |              |
|-----------------------------|-------------------------------|---------------|--------------------|-----------------|-----------|--------------|
| Item                        | Device                        | Type/Model    | Serial#            | Manufacturer    | Cal.Date  | Cal.Due Date |
| 1                           | SG64 Chamber                  | Standard      | SG64               | MVG             | 2025/8/15 | 2026/8/15    |
| 2                           | Turn Table                    | Customization | -                  | Machinery Dept. | N/A       | N/A          |
| 3                           | New Probe Array Controller    | N/A           | 1102341-4535       | MVG             | N/A       | N/A          |
| 4                           | Power Supply Unit             | N/A           | 1103211-13204      | MVG             | N/A       | N/A          |
| 5                           | Active Switching Unit         | N/A           | 1102347-7214       | MVG             | N/A       | N/A          |
| 6                           | TX Amplification Unit         | N/A           | 1102527-5909       | MVG             | N/A       | N/A          |
| 7                           | RX Amplification Unit         | N/A           | 1102536-3823       | MVG             | N/A       | N/A          |
| 8                           | Transfer Switching Unit       | N/A           | 1102183-3351       | MVG             | N/A       | N/A          |
| 9                           | Mixer Unit                    | N/A           | 1102545-7208       | MVG             | N/A       | N/A          |
| 10                          | Power And Control Unit        | N/A           | 1102706-7209       | MVG             | N/A       | N/A          |
| 11                          | Cable 13.7m - 400MHz to 18GHz | SS402         | 00100A1F5A1XX<br>S | Woken           | 2025/6/15 | 2026/6/15    |
| 12                          | Temperature & Humidity Meter  | HTC-01        | -                  | MetraVi         | N/A       | N/A          |

The logo for WNC, featuring the letters 'WNC' in a bold, blue, italicized sans-serif font.

**WNC**

***Wistron NeWeb Corp.***

**Thank You!**

