

## Report No. 25121-RP

### Antenna gain and pattern measurement report

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#### Customer:

|                     |                       |
|---------------------|-----------------------|
| Applicant's Name    | Resideo LLC.          |
| Applicant's Address | 2 Corporate Center Dr |
| City, ZIP, Country  | Melville, NY 11747    |

#### Equipment Under Test:

|                     |                                  |
|---------------------|----------------------------------|
| Product             | Door/Window Sensor               |
| Manufacturer's Name | Resideo                          |
| Model               | 5800MINIV                        |
| FCC/IC ID:          | CFS8DL5800MINIV / 573F-5800MINIV |

#### Test Information:

|               |            |
|---------------|------------|
| Date of test  | 11/21/2025 |
| Date of issue | 11/25/2025 |

#### Environmental Conditions:

|                      |                   |
|----------------------|-------------------|
| Ambient temperature  | +15 °C to + 35 °C |
| Relative humidity    | 20 % to 75 %      |
| Atmospheric Pressure | 86 kPa – 106 kPa  |

#### Approval:

|                       |                             |                                                                                                                                                                       |
|-----------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Created and tested by | Josef Grygar, Test Engineer | <br>Digitálně podepsal<br>Josef Grygar                                           |
| Approved by           | Libor Palíšek, Head of TL   | <br>Digitally signed<br>by Libor Palíšek<br>Date: 2026.01.20<br>13:33:20 +01'00' |

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## General information

This device has been tested by Ademco CZ s.r.o. testing laboratory on address: Tuřanka 1460/106a, Brno, 627 00, Czech Republic.

Ademco CZ s.r.o. testing laboratory is accredited by CAI according to ČSN EN ISO/IEC 17025:2018.

Laboratory number: 1695

Ademco CZ s.r.o. testing laboratory is FCC recognized to perform compliance testing.

Designation Number: CZ0004

Registration Number: 860869

Scope: FCC Part15, Subpart B; FCC Part15, Subpart C

Test results are applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of Ademco CZ s.r.o. testing laboratory

## Measurement Uncertainty and Test Equipment

The measurement uncertainty was calculated according to EN 55016-4-2, ETSI TR 100 028-1, ETSI TR 100 028-2.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k = 2$  such that the coverage probability corresponds to approximately 95 %.

Measurement Uncertainties were not taken into account and are published for informational purposes only.

| Test                             | Standard Uncertainty   |
|----------------------------------|------------------------|
| Radio frequency                  | $\pm 1 \times 10^{-7}$ |
| RF power - conducted             | $\pm 0.75$ dB          |
| Effective radiated power         | $\pm 3.5$ dB           |
| Radiated emissions               | $\pm 5.6$ dB           |
| Radiated emissions- Substitution | $\pm 4.3$ dB           |
| Conducted Spurious emissions     | $\pm 3.3$ dB           |
| Occupied Bandwidth               | $\pm 0.006$ %          |
| Temperature                      | $\pm 0.6$ °C           |
| Humidity                         | $\pm 3$ %              |

The measuring equipment utilized to perform the tests documented in this report have been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

| Asset No. | Manufacturer    | Model    | Description         | Cal. date | Cal. Due date |
|-----------|-----------------|----------|---------------------|-----------|---------------|
| 950775    | Rohde & Schwarz | ESR7     | Receiver            | 6/2025    | 6/2027        |
| 950777    | ETS Lindgren    | 7000-010 | EMCenter 1          | N/A       | N/A           |
| 950778    | ETS Lindgren    | 7000-010 | EMCenter 2          | N/A       | N/A           |
| 950783    | ETS Lindgren    | 3142E    | Antenna (Biconilog) | 2/2024    | 2/2027        |

## Equipment Under Test

|                                    |                                        |
|------------------------------------|----------------------------------------|
| Product Name                       | Antenna of Wireless Door/Window Sensor |
| Test Model                         | 5800MINIV                              |
| Serial number                      | MEL-1192                               |
| HW, SW                             | -                                      |
| Power supply                       | 1X CR2450 battery                      |
| Continuous radiation power setting | 344.94 MHz                             |

### EUT antennas

|           | Antenna type    | Frequency (MHz) |
|-----------|-----------------|-----------------|
| Antenna A | Meander Antenna | 344.94 MHz      |



Figure 1 EUT – Front side



Figure 2 EUT- back side



Figure 3 EUT inside

## Test facility and methodology

### Test facility:

Total EIRP value was measured in the FAR chamber as a summary of EIRP for both horizontal and vertical measurement polarization. FAR chamber is equipped with turntable, which rotates the EUT by 360° in azimuth with increment of 30°. EUT was also manually rotated in elevation with increment of 30°. Measurement distance is 3m.

### Chamber (SAR/FAR)

- 9 kHz – 40 GHz
- Shielding effectiveness: 80 – 100 dB
- 9 m x 7 m x 6 m (3 m measurement distance)
- NSA / VSWR compliant (Accredited test site validation performed by Seibersdorf Laboratories (Last validation: 23.02.2024))



Figure 4 SAR/FAR chamber

### Test Methodology:

Antenna gain is measured in active way. EUT has a test FW, which is capable of continuous transmission. Antenna gain is obtained as the result of subtraction of Total Effective radiated power (EIRP) and conducted power on antenna input. For conducted power measurement was EUT connected with signal analyzer and antenna input power was recorded. Cable attenuation was taken into account.

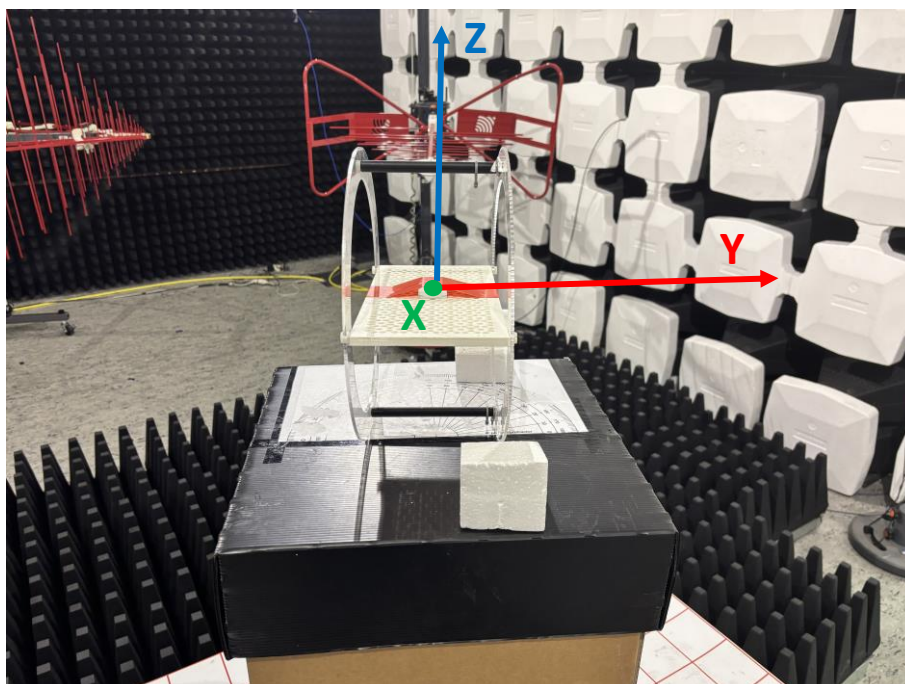


Figure 5 EUT zero position and orientation

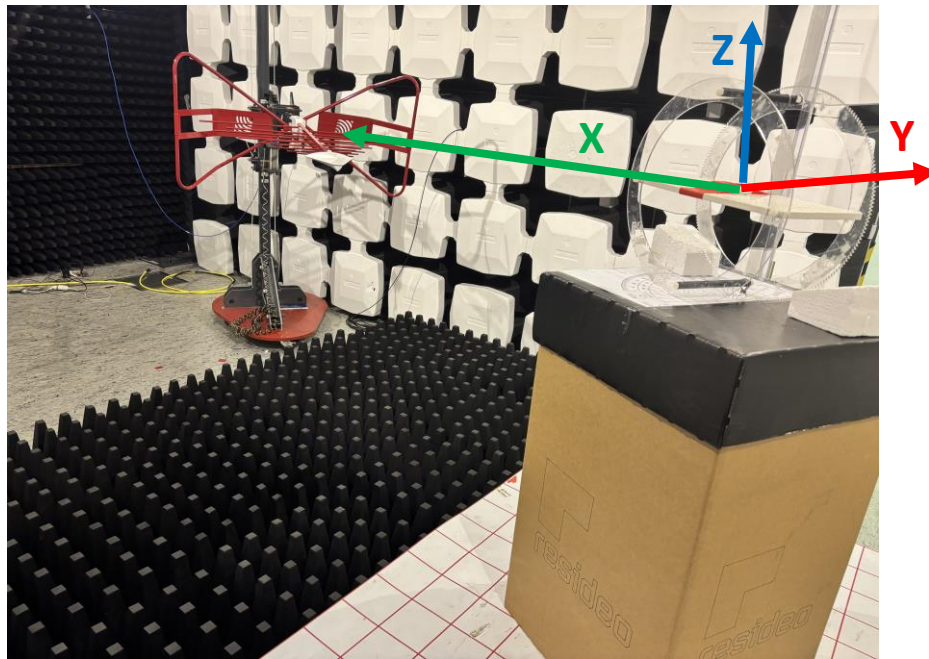


Figure 6 EUT zero position and orientation

## Test results

### ANTENNA A

| Frequency<br>[MHz] | Conducted Power to antenna<br>[dBm] | Total EIRP<br>[dBm] | Ant. Gain<br>[dBi] |
|--------------------|-------------------------------------|---------------------|--------------------|
| 344.94             | 11.3                                | -8.9                | -20.2              |

Ant. Gain (dBi) = Total EIRP (dBm) – Conducted power to antenna (dBm)

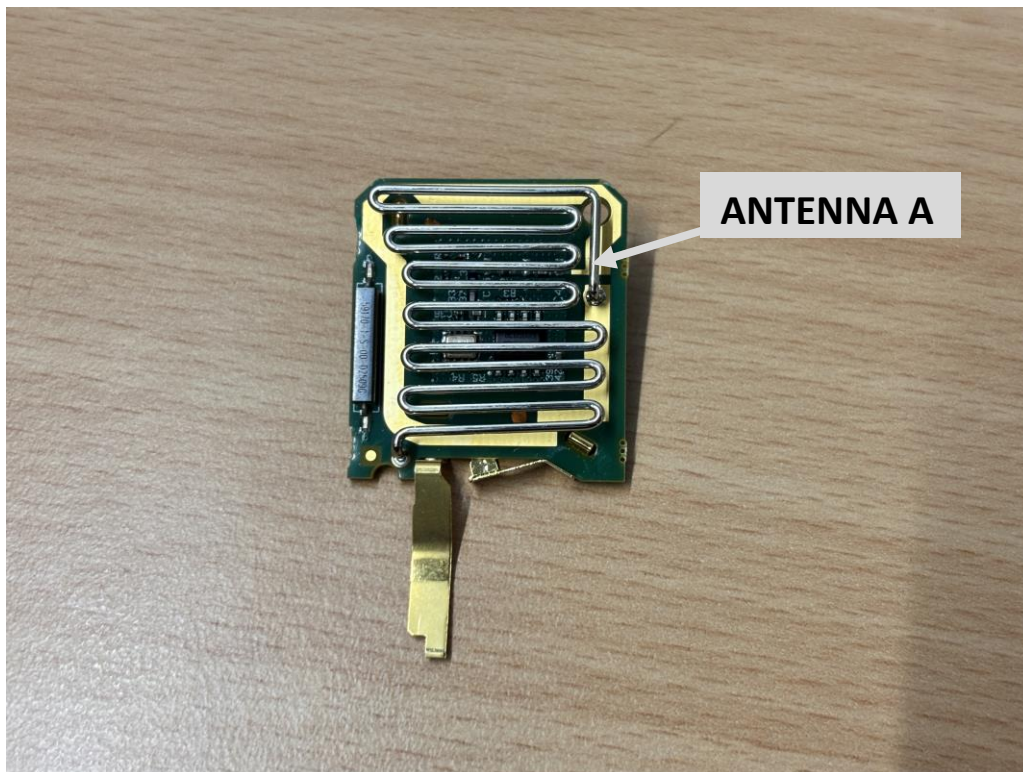
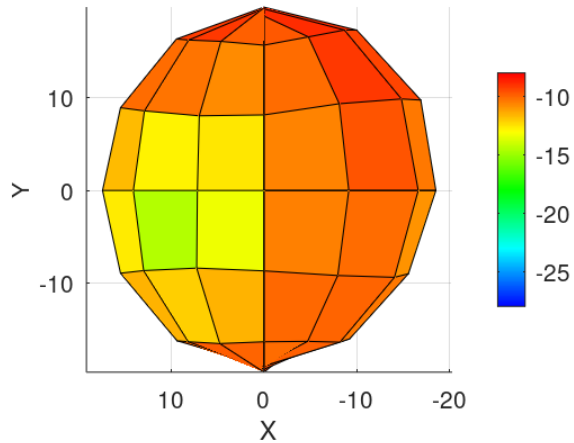


Figure 7 EUT Antennas

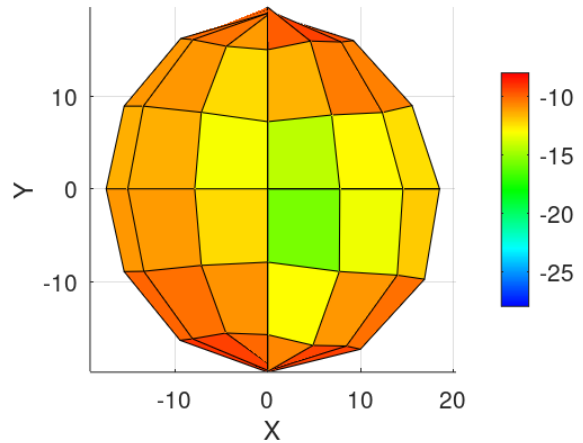
## 3D PLOTS

### ANTENNA A

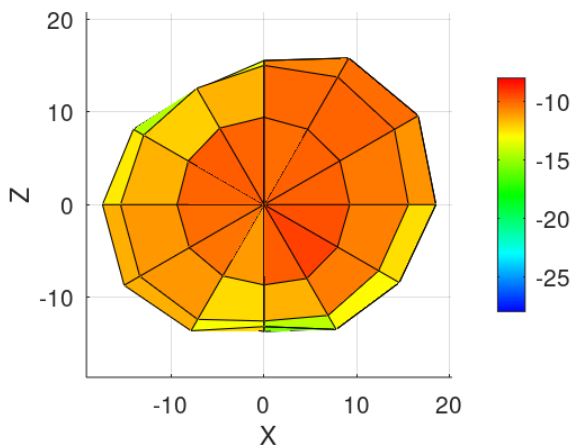
**Total EIRP [dBm], Top View**  
**Azimuth = 0°, elevation = 0°**



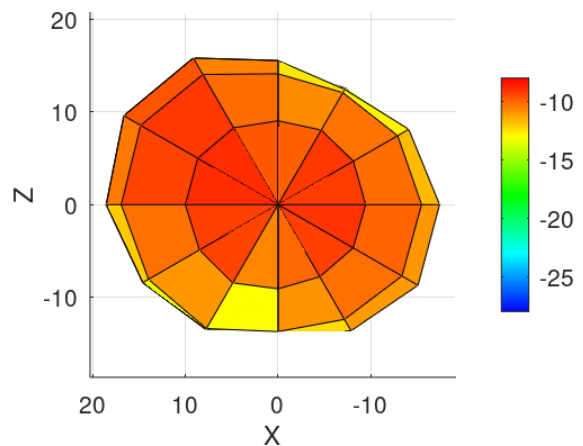
**Total EIRP [dBm], Bottom View**  
**Azimuth = 0°, elevation = 180°**



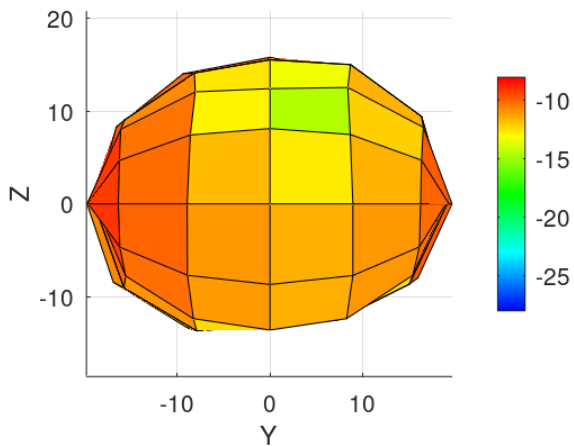
**Total EIRP [dBm], Left Side View**  
**Azimuth = 0°, elevation = 90°**



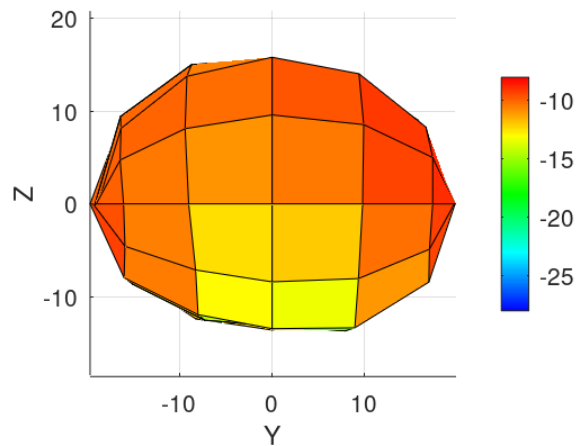
**Total EIRP [dBm], Right Side View**  
**Azimuth = 0°, elevation = -90°**



**Total EIRP [dBm], Front Face View**  
**Azimuth = 90°, elevation = 0°**



**Total EIRP [dBm], Back Face View**  
**Azimuth = -90°, elevation = 0°**



## Horizontal polarization

| 344940000 | 0.0   | 30.0  | 60.0  | 90.0  | 120.0 | 150.0 | 180.0 | 210.0 | 240.0 | 270.0 | 300.0 | 330.0 | 360.0 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -90.0     | -27.1 | -19.9 | -17.3 | -17.1 | -19.2 | -24.7 | -27.1 | -19.5 | -16.6 | -16.9 | -19.2 | -29.9 | -27.1 |
| -60.0     | -14.3 | -12.1 | -10.8 | -10.7 | -11.7 | -13.7 | -15.2 | -13.5 | -11.5 | -11.1 | -12.4 | -14.7 | -14.4 |
| -30.0     | -12.2 | -10.4 | -9.5  | -9.5  | -10.4 | -11.9 | -12.9 | -12.1 | -10.6 | -10.1 | -11.0 | -12.7 | -12.2 |
| 0.0       | -11.5 | -10.3 | -9.7  | -9.9  | -10.9 | -12.1 | -12.6 | -12.1 | -11.1 | -10.9 | -11.5 | -12.2 | -11.5 |
| 30.0      | -12.5 | -11.8 | -11.7 | -12.2 | -13.2 | -13.9 | -14.1 | -13.7 | -13.2 | -13.2 | -13.4 | -13.4 | -12.5 |
| 60.0      | -16.5 | -16.5 | -17.2 | -18.1 | -18.7 | -19.1 | -19.2 | -19.1 | -18.9 | -18.5 | -17.7 | -17.1 | -16.5 |
| 90.0      | -27.5 | -25.5 | -18.9 | -16.9 | -16.9 | -19.1 | -24.1 | -25.8 | -19.5 | -16.7 | -16.6 | -19.4 | -27.5 |
| --        |       |       |       |       |       |       |       |       |       |       |       |       |       |

## Vertical polarization

| 344940000 | 0.0   | 30.0  | 60.0  | 90.0  | 120.0 | 150.0 | 180.0 | 210.0 | 240.0 | 270.0 | 300.0 | 330.0 | 360.0 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -90.0     | -13.9 | -12.6 | -11.1 | -10.6 | -11.7 | -14.1 | -15.8 | -14.1 | -12.1 | -11.1 | -11.4 | -12.9 | -13.9 |
| -60.0     | -20.3 | -17.7 | -14.9 | -14.4 | -15.9 | -19.9 | -22.9 | -17.8 | -14.7 | -13.9 | -14.9 | -17.7 | -20.3 |
| -30.0     | -26.6 | -25.2 | -22.6 | -21.5 | -22.4 | -25.2 | -24.7 | -21.1 | -19.1 | -19.1 | -20.9 | -24.2 | -26.6 |
| 0.0       | -16.7 | -16.5 | -16.6 | -16.8 | -17.3 | -17.6 | -17.9 | -17.6 | -17.2 | -16.9 | -16.9 | -16.8 | -16.7 |
| 30.0      | -12.9 | -12.5 | -12.1 | -12.4 | -13.2 | -14.3 | -14.9 | -14.4 | -13.4 | -12.7 | -12.6 | -12.9 | -12.9 |
| 60.0      | -11.9 | -11.3 | -10.6 | -10.8 | -11.7 | -13.4 | -14.4 | -13.4 | -11.9 | -10.8 | -10.9 | -11.6 | -11.6 |
| 90.0      | -13.5 | -12.8 | -11.5 | -10.9 | -11.9 | -14.3 | -16.4 | -14.7 | -12.3 | -10.8 | -11.1 | -12.3 | -13.5 |
| --        |       |       |       |       |       |       |       |       |       |       |       |       |       |

## End of Report