



# Wireless Device Over the Air Performance Data Summary

REPORT NO. : OQ1D0806  
EQUIPMENT : ESP-ANT S-H  
BRAND NAME : ESPRESSIF  
MODEL NAME : ESP32-S3-MINI-1  
DEVICE RECEIVING DATE : Nov. 16, 2021  
TEST DATE(S) : Nov. 16, 2021 ~ Nov. 16, 2021

Reviewed by:

*Feynman Liu*

Feynman Liu / Vice Manager

Approved by:

*Kevin Chu*

Kevin Chu / Manager

***Sporton International (Kunshan) Inc.***

***No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China***



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**Revision History**

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| OQ1D0806   | 1.0     | Initial issue of report | Dec. 14, 2021 |
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## 1. Administration Data

### 1.1 Testing Laboratory

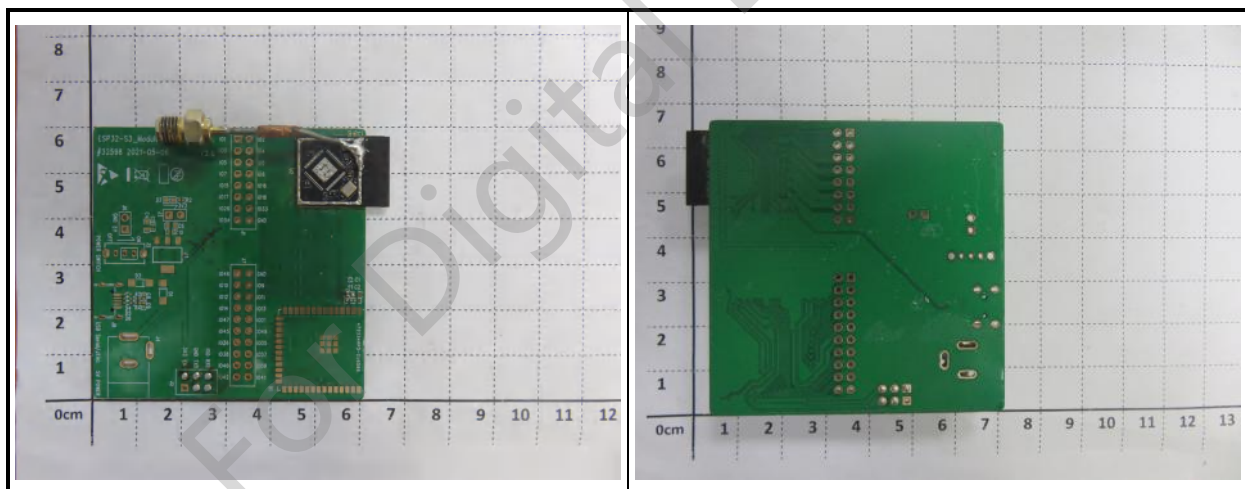
|                           |                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Site</b>          | Sporton International (Kunshan) Inc.                                                                                                                                                  |
| <b>Test Site Location</b> | No. 1098, Pengxi North Road, Kunshan Economic Development Zone<br>Jiangsu Province 215300 People's Republic of China<br>TEL: +86-0512-5790-0158<br>FAX: +86-0512-5790-0958            |
| <b>Chamber</b>            | <input type="checkbox"/> OTA01-KS <input type="checkbox"/> OTA02- KS <input type="checkbox"/> OTA03-KS <input type="checkbox"/> OTA04-KS <input checked="" type="checkbox"/> OTA05-KS |

■: Indicates the chamber(s) used in this test report.

### 1.2 Applicant

|                     |                                                                              |
|---------------------|------------------------------------------------------------------------------|
| <b>Company Name</b> | ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD                                        |
| <b>Address</b>      | Suite 204, Block 2, 690 Bibo Road, Zhang Jiang Hi-Tech Park, Shanghai, China |

## 2. Product Photo

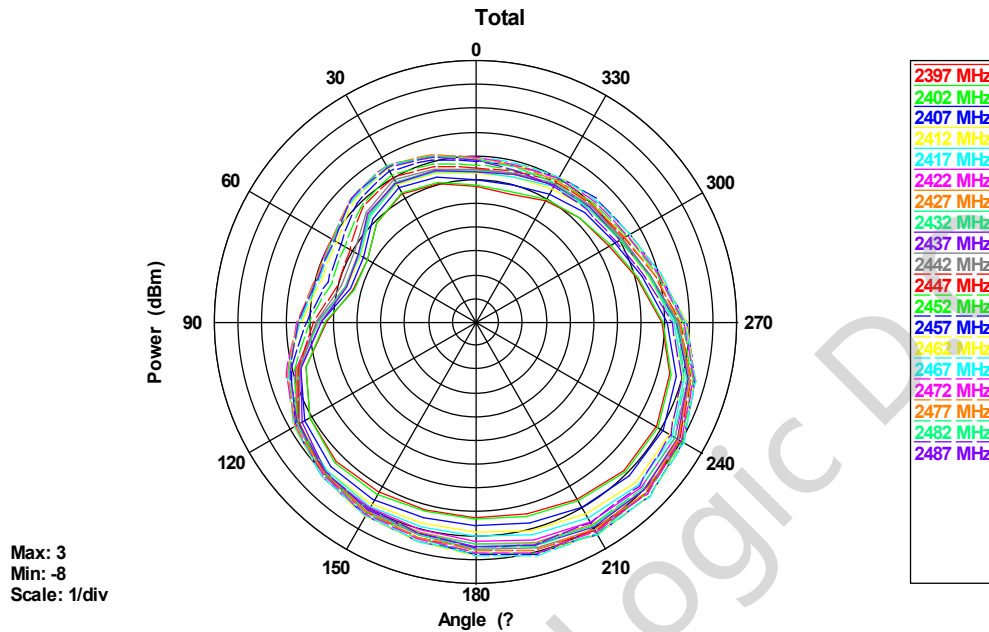


### 3. Summary of Test Results

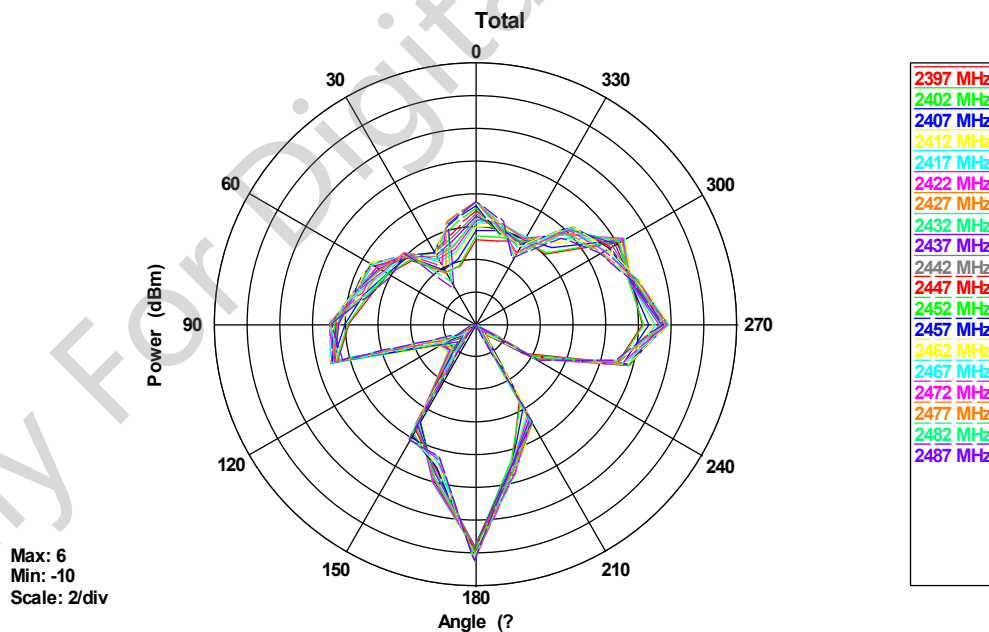
| Test / Position | Frequency<br>(MHz) | Avg Gain<br>(dBi) | Peak Gain<br>(dBi) | Directivity<br>(dBi) | Efficiency<br>(dB) | Efficiency<br>(%) |
|-----------------|--------------------|-------------------|--------------------|----------------------|--------------------|-------------------|
| Free Space      | 2397               | -1.79             | 3.72               | 5.51                 | -1.79              | 66.15             |
|                 | 2402               | -1.74             | 3.69               | 5.43                 | -1.74              | 66.94             |
|                 | 2407               | -1.53             | 3.86               | 5.39                 | -1.53              | 70.28             |
|                 | 2412               | -1.32             | 3.99               | 5.31                 | -1.32              | 73.85             |
|                 | 2417               | -1.25             | 3.99               | 5.24                 | -1.25              | 75.07             |
|                 | 2422               | -1.17             | 4.00               | 5.17                 | -1.17              | 76.35             |
|                 | 2427               | -1.15             | 3.94               | 5.09                 | -1.15              | 76.67             |
|                 | 2432               | -1.18             | 3.87               | 5.05                 | -1.18              | 76.21             |
|                 | 2437               | -1.22             | 3.79               | 5.01                 | -1.22              | 75.58             |
|                 | 2442               | -1.15             | 3.92               | 5.06                 | -1.15              | 76.82             |
|                 | 2447               | -1.07             | 3.99               | 5.06                 | -1.07              | 78.12             |
|                 | 2452               | -0.99             | 4.17               | 5.16                 | -0.99              | 79.65             |
|                 | 2457               | -0.88             | 4.31               | 5.19                 | -0.88              | 81.71             |
|                 | 2462               | -0.82             | 4.43               | 5.25                 | -0.82              | 82.72             |
|                 | 2467               | -0.82             | 4.49               | 5.31                 | -0.82              | 82.81             |
|                 | 2472               | -0.86             | 4.54               | 5.40                 | -0.86              | 82.07             |
|                 | 2477               | -0.95             | 4.47               | 5.42                 | -0.95              | 80.40             |
|                 | 2482               | -1.04             | 4.42               | 5.45                 | -1.04              | 78.77             |
|                 | 2487               | -1.12             | 4.40               | 5.51                 | -1.12              | 77.31             |

## 4. FS Pattern

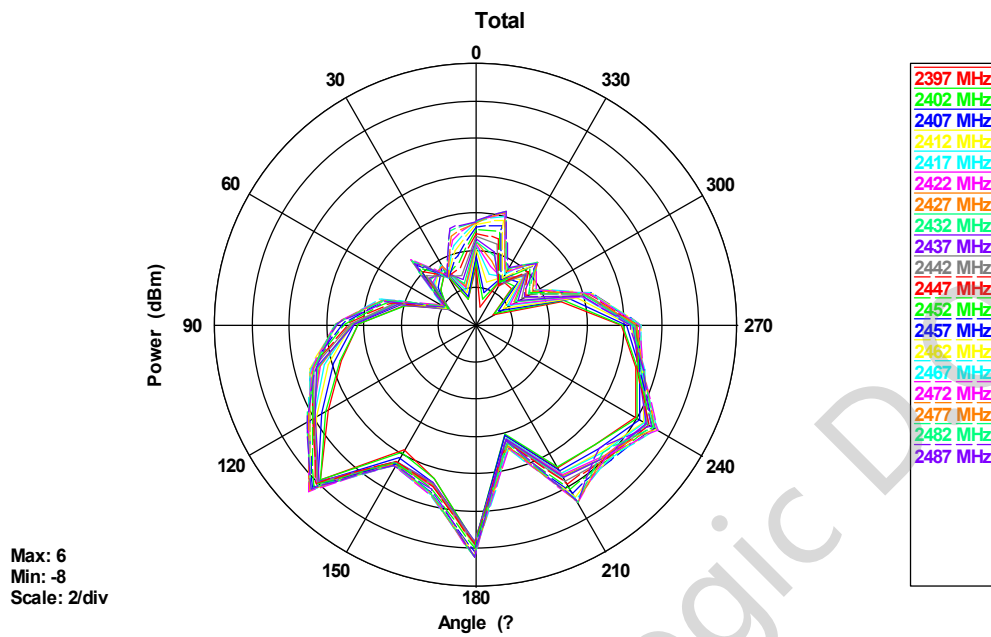
Cut1



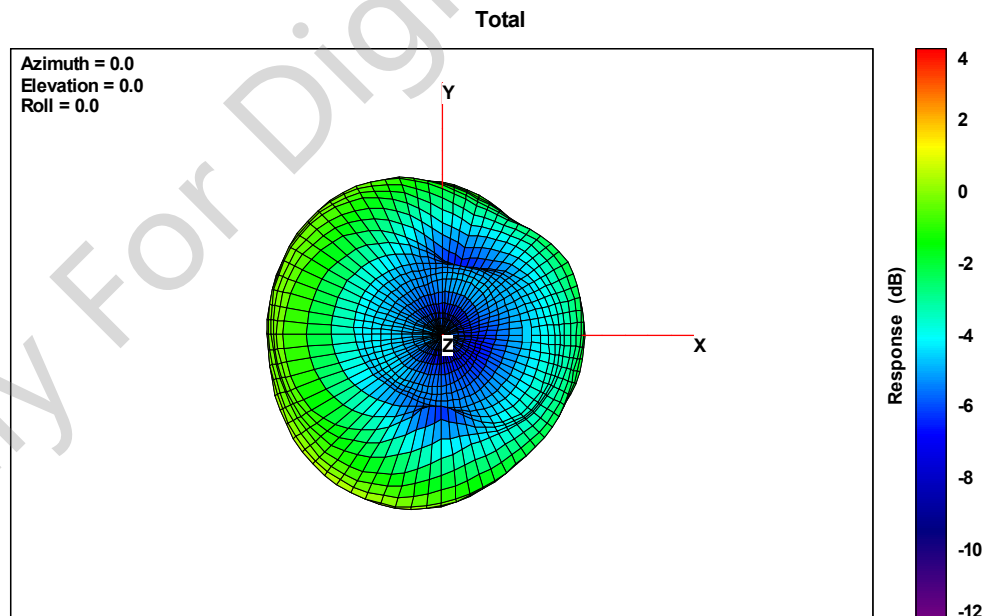
Cut2



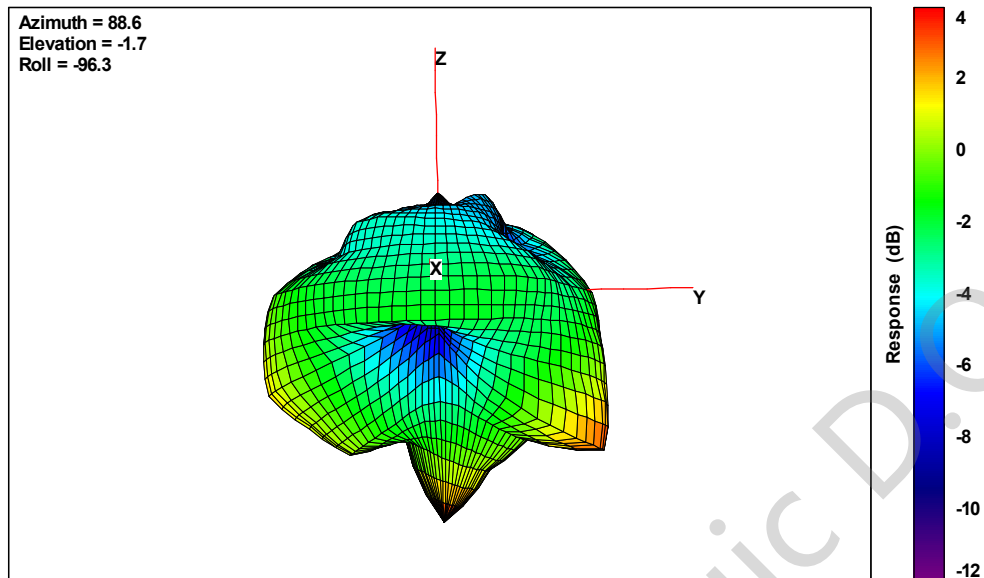
Cut3



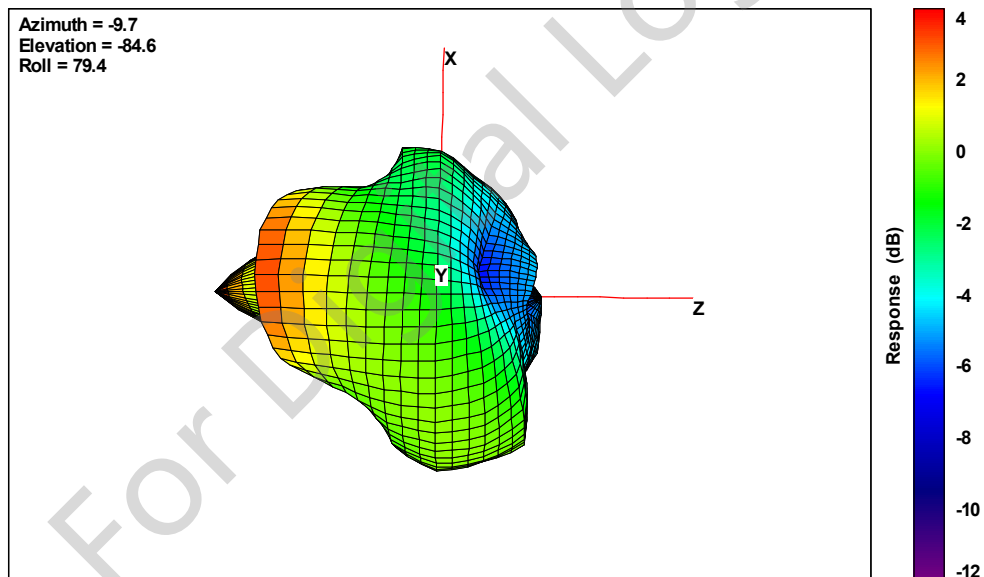
Free Space Gain Pattern



Total



Total



Free Space Gain Pattern

## 5. Description for EUT Testing Position

Placed and fixed with tape shown as below.

Initial Position:



Fig. 5-1 Free Space



Fig. 5-2 Free Space

Testing Position:

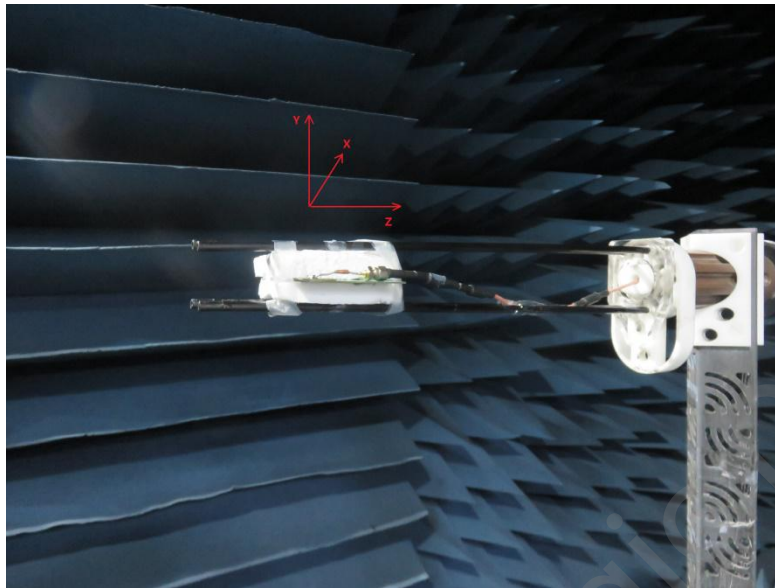


Fig. 5-3 Free Space

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