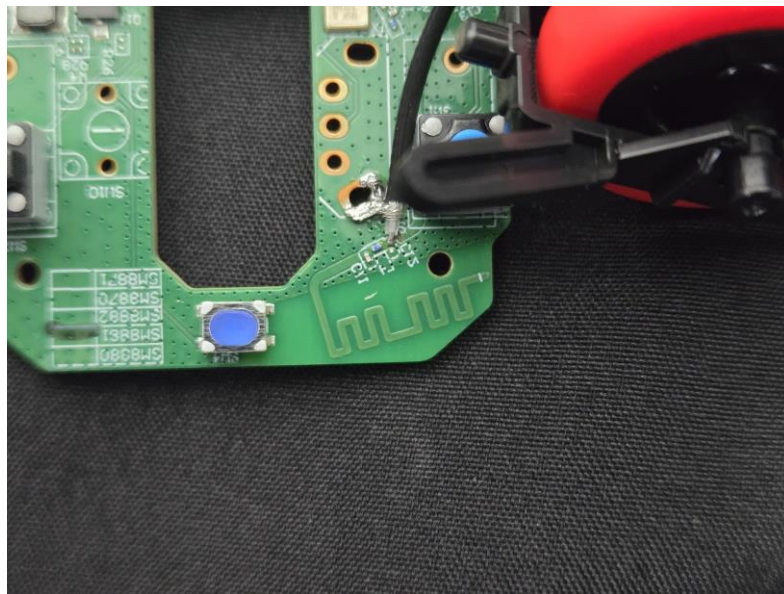


# ANT Test Report

Antenna Type: PCB Printing

EUT Photo



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**Project No.** : 2504T063  
**Product Type** : PCB Printing  
**Brand Name** : LITE-ON Technology Corp  
**Test Model** : SM8881  
**Date of Receipt** : 2024-04-15  
**Date of Test** : 2025-04-25  
**Issued Date** : 2025-04-25  
**Report Version** : R00  
**Test Sample** : PCB Printing  
**Standard(s)** : NSI IEEE Std 149  
**Applicant** : LITEON Technology Corporation  
**Address** : No. 392, Ruiguang Road, Neihu District, Taipei City 114  
**Manufacturer** : LITEON Technology Corporation  
**Address** : No. 392, Ruiguang Road, Neihu District, Taipei City 114

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



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**Prepared by :**  
**Alan Guo, Engineer**



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**Approved by :**  
**Adam Fang, Manager**

## Table of Contents

<b>REPORT ISSUED HISTORY .....</b>	<b>4</b>
<b>1 . PHYSICAL LAYOUT AND SITE DESCRIPTION .....</b>	<b>6</b>
1.1 WIRELESS MOBILE DEVICE TEST LABORATORY .....	6
1.2 ANECHOIC CHAMBER .....	6
1.3 QUIET ZONE .....	7
1.4 TEST EQUIPMENT .....	7
1.5 AMS32 SOFTWARE.....	7
<b>TEMPERATURE, HUMIDITY .....</b>	<b>7</b>
<b>2 . TEST EQUIPMENT LIST.....</b>	<b>11</b>
2.1 TEST EQUIPMENT USED FOR MEASURING.....	11
<b>3 . PHOTOGRAPH .....</b>	<b>13</b>
3.1 EUT SETUP PHOTO .....	13

### REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-ANT-2504T063	R00	Original Report.	2025-04-25	Valid

### TEST FACILITY & Contact Information

Test Lab.	Address
BTL. Inc	No. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any other agency.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

**BTL's** laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

## 1. PHYSICAL LAYOUT AND SITE DESCRIPTION

### 1.1 WIRELESS MOBILE DEVICE TEST LABORATORY

All tests were performed in BTL Inc. state-of-the-art Wireless Mobile Device Test Laboratory consisting of a rectangular anechoic chamber equipped with a Conical cut positioning system for WPTC-L chambers. A base station simulator is used to establish communication with the EUT and place it in the proper mode, and a spectrum analyzer and RF switch combination is used for measuring the signal from the EUT at each position and polarization. BTL Inc.'s AMS32 System Software and Contest Sequencer Software are used for data acquisition, post-processing, and generation of the required output.

### 1.2 ANECHOIC CHAMBER

The anechoic chamber is a rectangular anechoic chamber designed and built by Rohde & Schwarz with the following nominal dimensions

Length:	5.4 m
Width:	4.5 m
Height:	4.2 m

The anechoic chamber consists of a shielded enclosure constructed of rigid, steel-clad, wood core modular panels with steel framing. The chamber is treated with Rohde & Schwarz microwave absorber, utilizing both pyramidal and wedge shaped absorber. Lighting in the chamber is RF-filtered and consists of two (2) incandescent lamps mounted in recessed waveguide vents in the Rohde & Schwarz chamber ceiling. The chamber is forced air ventilated to maintain it at the same ambient as the surrounding facility. A single leaf swing type shielded door is provided for equipment and personnel access into the chamber. The Anechoic Chamber is capable of meeting RF attenuation levels of over 100 dB throughout the frequency range of 30 MHz to 18 GHz, so that testing performed within the chamber does not interfere with other testing activities at the facility, and vice-versa. Power is supplied on separate circuits to the chamber and control area. All power filters provide a minimum of 100 dB attenuation over a frequency range of 150 kHz to 40 GHz when tested per MIL STD 220A

### **1.3 QUIET ZONE**

A 50 centimeter diameter by 50 centimeter tall cylindrical quiet zone volume was qualified for each axis of the MAPS and polarization of the receive antenna per an internal test plan that encompasses the requirements of the Cellular Telecommunications & Internet Association (CTIA) Method of Measurement for CTIA Test Plan for Wireless Device Over-the-Air Performance, Revision 6.0

### **1.4 TEST EQUIPMENT**

The test was performed using the following additional test equipment:

2.7.1. ROHDE & SCHWARZ ZNB 8

### **1.5 AMS32 SOFTWARE**

BTL Inc.'s AMS32 pattern measurement software is used to automate the data acquisition process and provides all post-processing calculations and data output required by the CTIA. Its parameterized test configuration system and conscientiously validated design helps to insure repeatable and correct results. Safeguards prevent data tampering and insure that the original "raw" measured data is always available for review.

#### **TEMPERATURE, HUMIDITY**

Temperature: 15 °C and 35 °C

Humidity: 25% to 75%

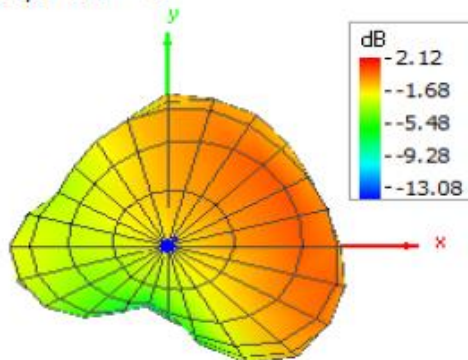
## 2.4G/BT Gain &amp; Pattern

Frequency MHz	Efficiency dB	Efficiency %	Peak Gain dB
2402.00	-2.54	55.75	2.12
2404.00	-2.51	56.06	2.18
2406.00	-2.45	56.92	2.28
2408.00	-2.37	57.91	2.35
2410.00	-2.36	58.10	2.24
2412.00	-2.32	58.63	2.15
2414.00	-2.29	59.04	2.34
2416.00	-2.25	59.51	2.35
2418.00	-2.24	59.76	2.35
2420.00	-2.22	60.01	2.19
2422.00	-2.19	60.33	2.22
2424.00	-2.18	60.60	2.33
2426.00	-2.18	60.59	2.20
2428.00	-2.16	60.83	2.18
2430.00	-2.16	60.77	2.26
2432.00	-2.19	60.46	2.23
2434.00	-2.18	60.60	2.16
2436.00	-2.21	60.11	2.24
2438.00	-2.26	59.48	2.25
2440.00	-2.30	58.90	2.15
2442.00	-2.33	58.42	2.10
2444.00	-2.38	57.85	2.09
2446.00	-2.44	57.07	2.08
2448.00	-2.49	56.41	2.04
2450.00	-2.48	56.53	2.05
2452.00	-2.56	55.48	2.00
2454.00	-2.56	55.52	2.06
2456.00	-2.58	55.23	2.00
2458.00	-2.58	55.18	2.03
2460.00	-2.59	55.07	2.08
2462.00	-2.62	54.76	2.02
2464.00	-2.60	54.91	1.92
2466.00	-2.64	54.46	1.82
2468.00	-2.72	53.47	1.71
2470.00	-2.77	52.90	1.66
2472.00	-2.83	52.12	1.54
2474.00	-2.94	50.77	1.36
2476.00	-3.02	49.87	1.31
2478.00	-3.05	49.58	1.34
2480.00	-3.09	49.05	1.26

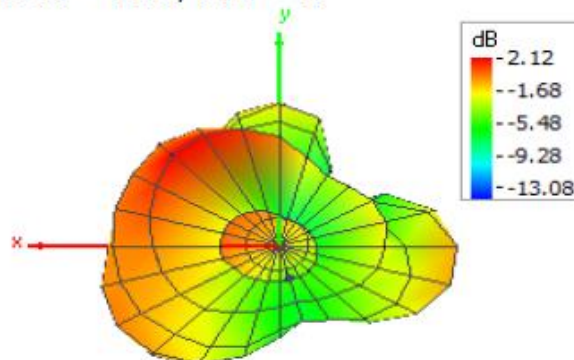


## 3D Pattern:

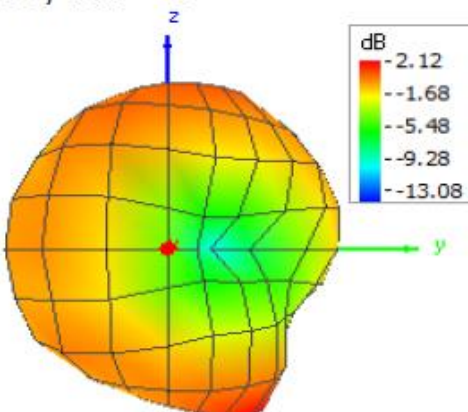
Theta = 0, Phi = 0



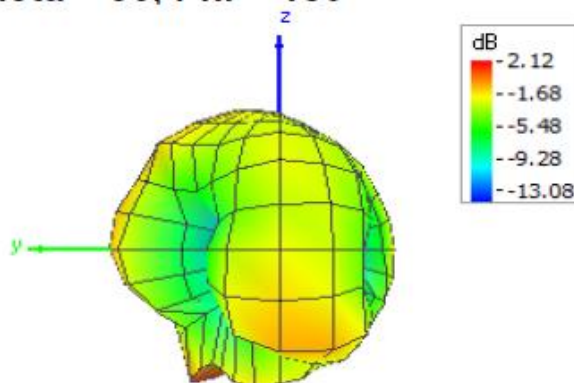
Theta = 180, Phi = 0



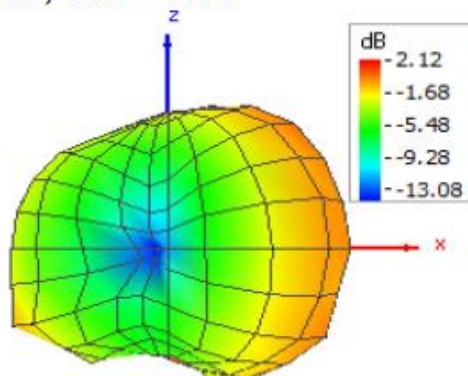
Theta = 90, Phi = 0



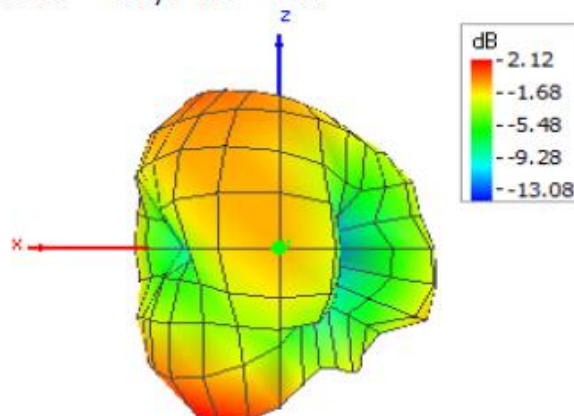
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90



**Measurement Uncertainty**

The expanded measurement uncertainties ( $k = 2$ ) for the results reported above have been determined to be as follows

Passive Measurement (dB)		
Test Configuration	2400-2500MHZ	5000-6000MHZ
Free Space	1.17	1.04

## 2. TEST EQUIPMENT LIST

### 2.1 TEST EQUIPMENT USED FOR MEASURING

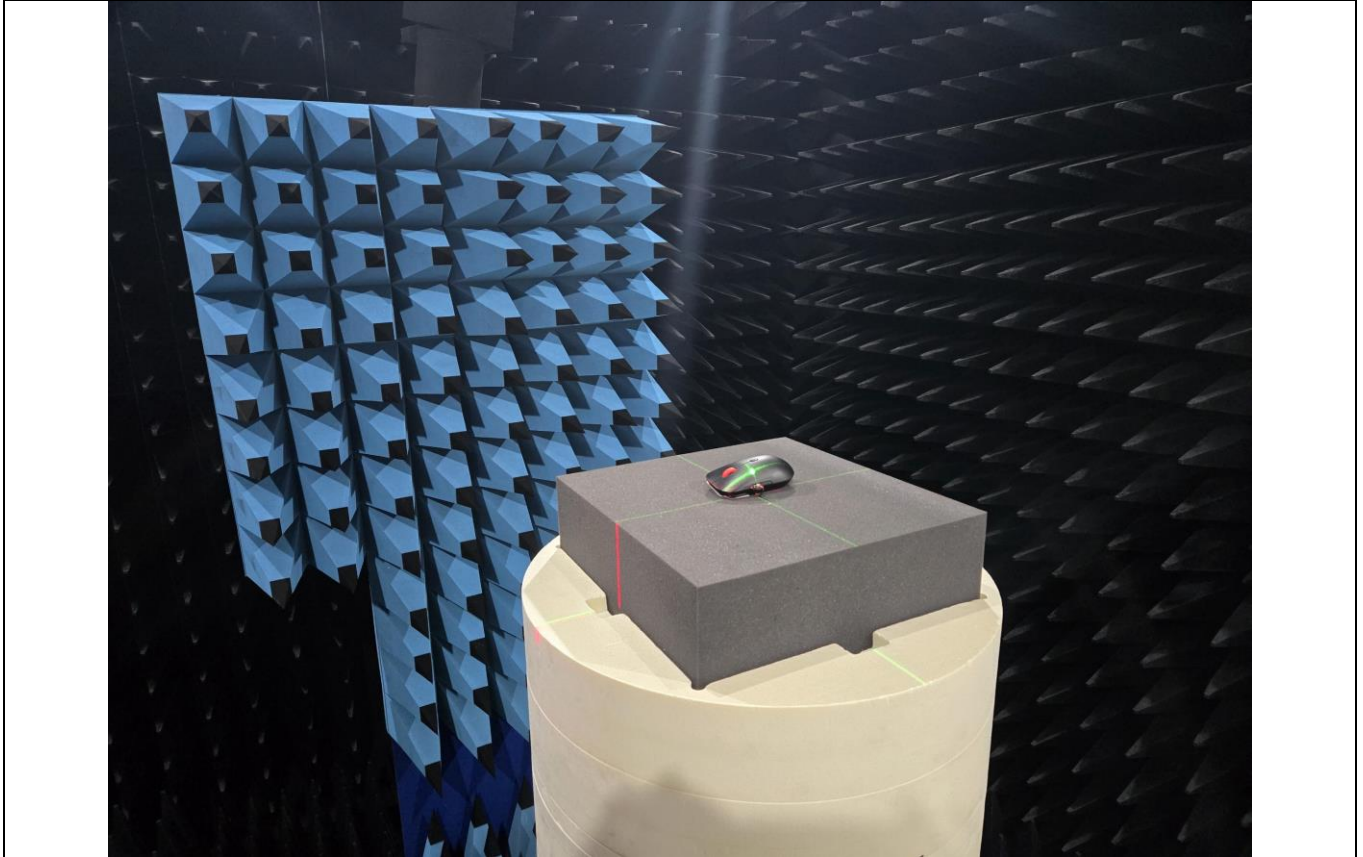
DESCRIPTION	MANUF.	MODEL NO.	SERIAL NO.	Calibrated Date	Calibrated until
Vector Network Analyzer	ROHDE & SCHWARZ	ZNB 8	101899	2024/10/4	2025/10/3

**ANTENNA STRUCTURE**

length of the antenna	10 mm
antenna material	PCB

### 3. PHOTOGRAPH

#### 3.1 EUT SETUP PHOTO



Free Space \_ Front Face

**End of Test Report**