Antenna Specification

FEM11-F09

V1.0.0, 2026/1/10

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複製禁止

Revision History

Rev	Date	Description of Changes	Author
1.0.0	2026/1/10	Original release	Virkin Lin

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1. EUT Antenna Information

The FEM11-F09 patch antenna is as below.

There is one transmitting patch.

The Antenna patch length is 15.76mm and the width is 11.25mm.

1) Antenna Material： PCB on board

2) Antenna Type： Patch antenna

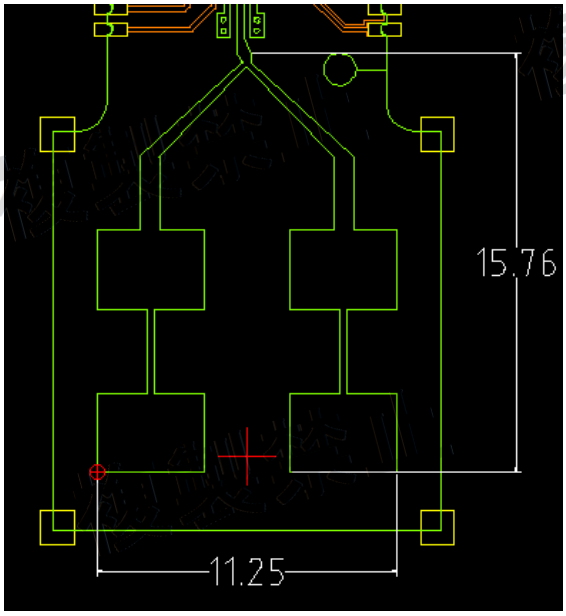
3) Antenna Dimension: 15.76 x 11.25 mm

3) Operating Frequency： 24.05 GHz ~ 24.25 GHz

4) Peak Gain : 10.8dBi

5) Return Loss : 10dBm

6) Polarization : One-way



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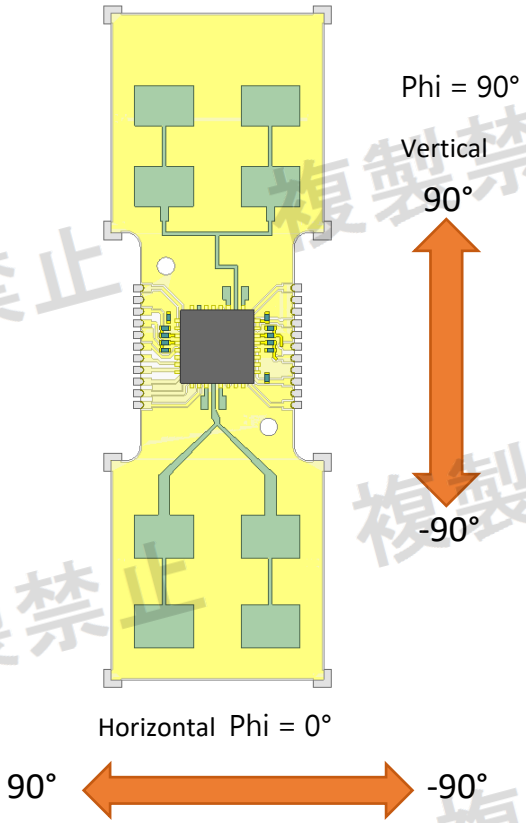
2. Antenna gain and Simulation data

The picture below is the physical diagram of FEM11-F09.

The [Horizontal] and [Vertical] angle show as below:



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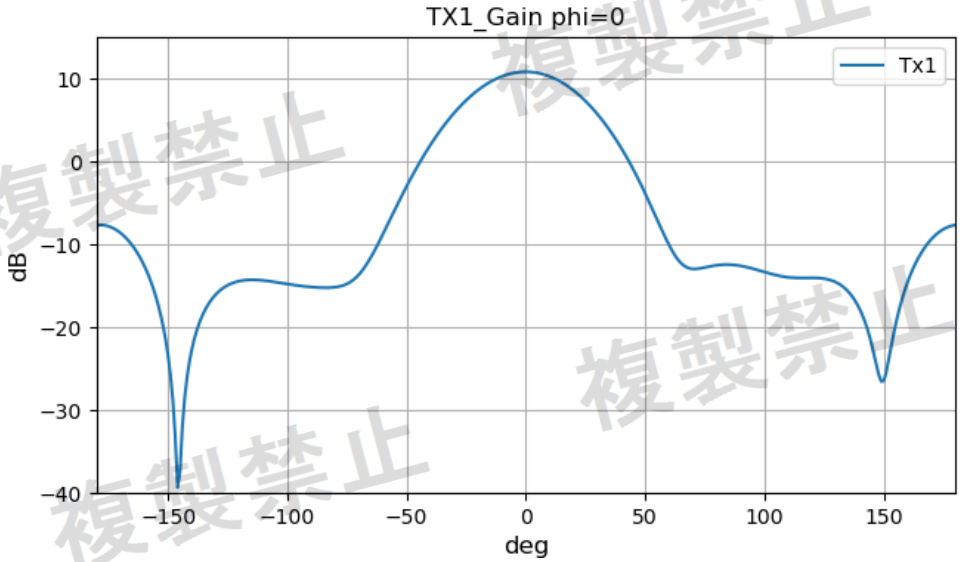
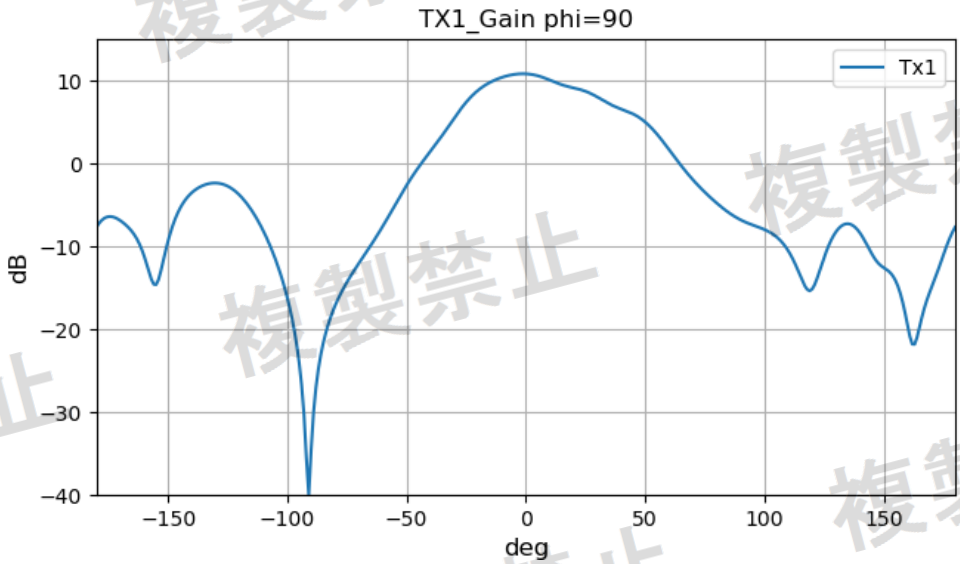
The Antenna Gain of [Horizontal] show as below:



The Antenna Gain of [Vertical] show as below:



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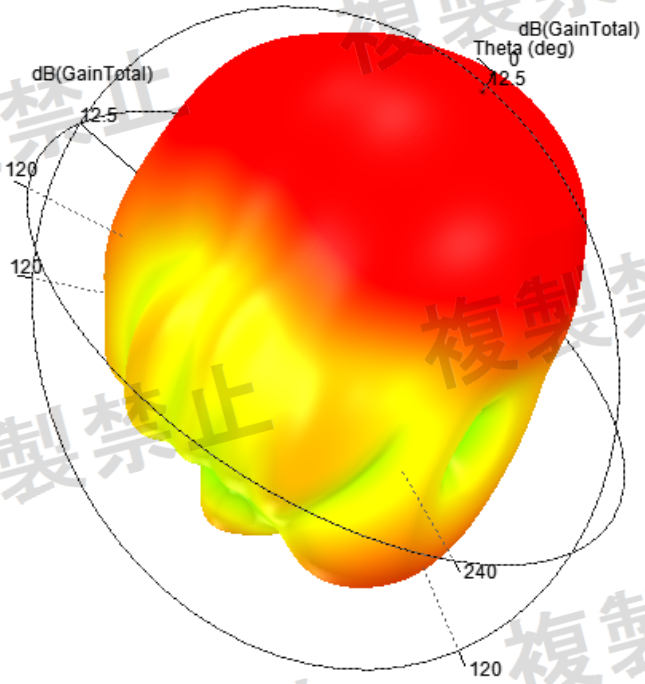
The Antenna 3D emission diagram show as below:



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3. Pre-Test Report

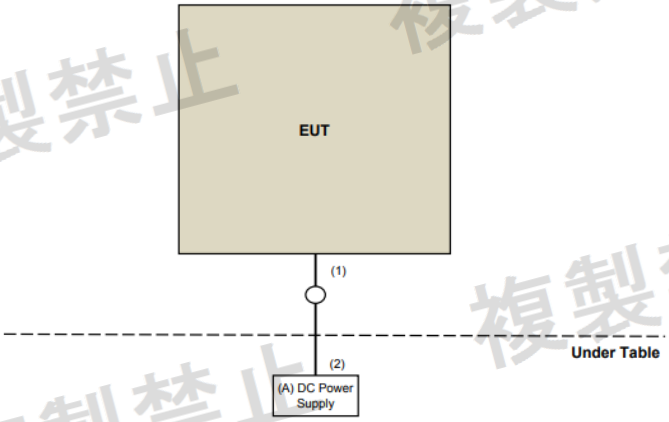
3.1 Test Environment

3.1.1 Equipment Under Test (EUT):

Product Name	FEM11-F09
DC Power Voltage	5 Vdc
Frequency Modulation	FMCW mode
Testing Frequency	24.05~24.15Ghz
RFIC Gain Setting	TX Level : 10, RX Level : 8

3.1.2 EUT Setting

EUT FEM11-F09 is independently powered and put on the turntable:



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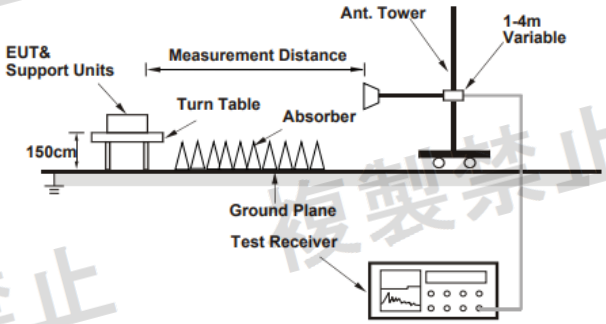
3.1.3 Test Environment

EUT FEM11-F09 of distance between measurement antenna is 1M:

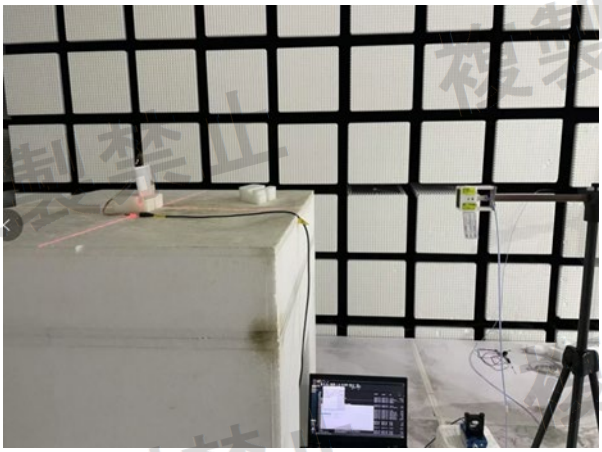
< Frequency Range 1GHz ~ 50GHz >



3.1.4 Test Picture

The test in the fully chamber laboratory,

The distance between the EUT PH12 and the Receiving antenna was 1M



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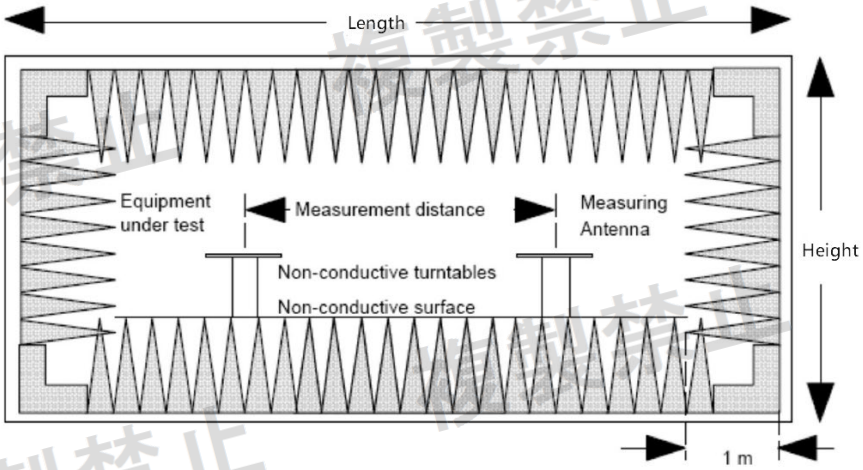
3.1.5 Environmental parameters



Environmental Parameters	Specification	Last Calibration
Chamber Length	9.10M	2023/11/12
Chamber Width	6.10M	2023/11/12
Chamber Height	6.40M	2023/11/12
Sectrum Aalyzer	Keysight N9030A	2024/2/29
Testing Cable	EMC101G-KM-KM-5000	2024/1/15
Measuring Antenna	BBHA 9170	2024/11/10

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3.2 Test Procedure

i. Calibrate the spectrum analyzer and setting “1M” test parameters.

ii. Fasten the EUT in the center of the turntable, and supply independent power.

iii.Setting the EUT continuously transmitting power, FMCW mode.

iv.Setting the EUT maximum transmit power, Tx Level = 10.

v. Read the power level on the spectrum analyzer and record in the following test data.

vi.Rotated the turntable and moved the receiving antenna to find the maximum radiation power. - Verticalc Power.

vii. Rotating measuring antenna to change polarization direction.

viii. vi.Rotated the turntable and moved the receiving antenna to find the maximum radiation power. - Horizontal Power.

The spectrum analyzer has set 1M test parameters, and the reading is the Tx emission intensity, no need conversion.

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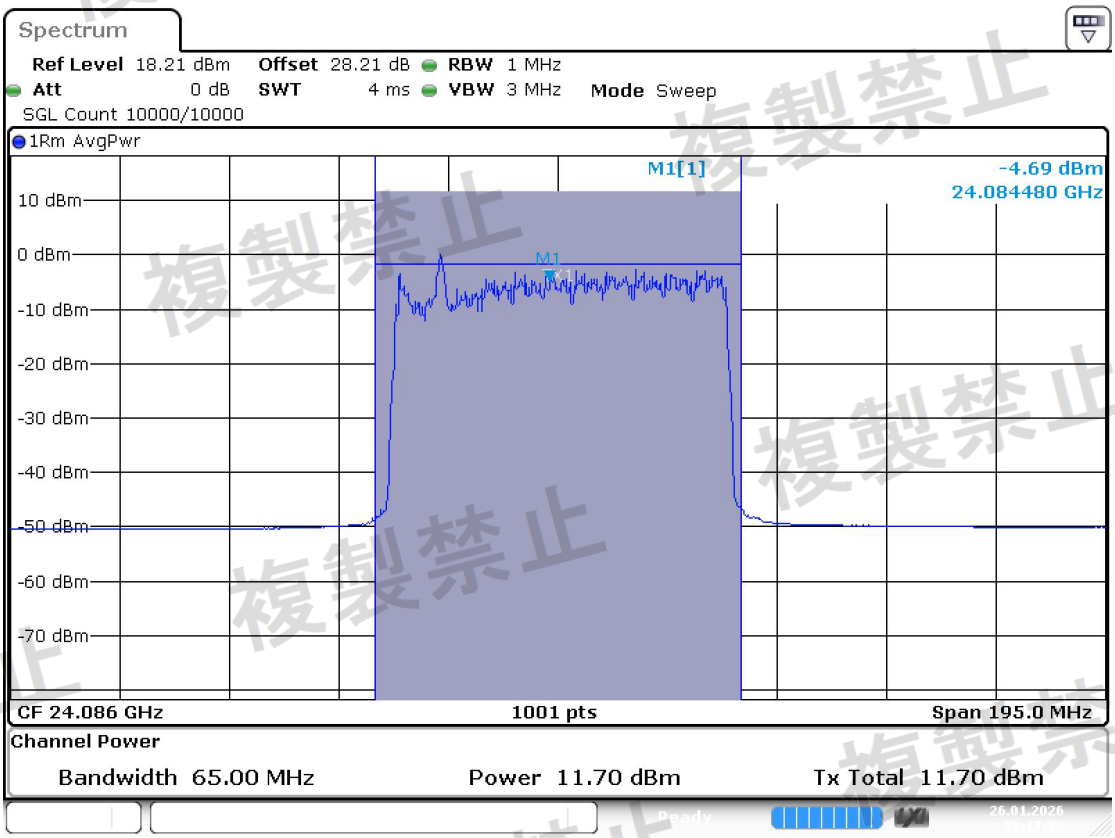
3.3 Test data

Operation Mode	Emission	Modulation	FMCW
Frequency	24.05~24.15Ghz	Power Level	Tx Level 10 (Max)
Temperature	25°C	Humidity	68%

Vertical	11.7dBm
Horizontal	4.07dBm

Vertical :



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