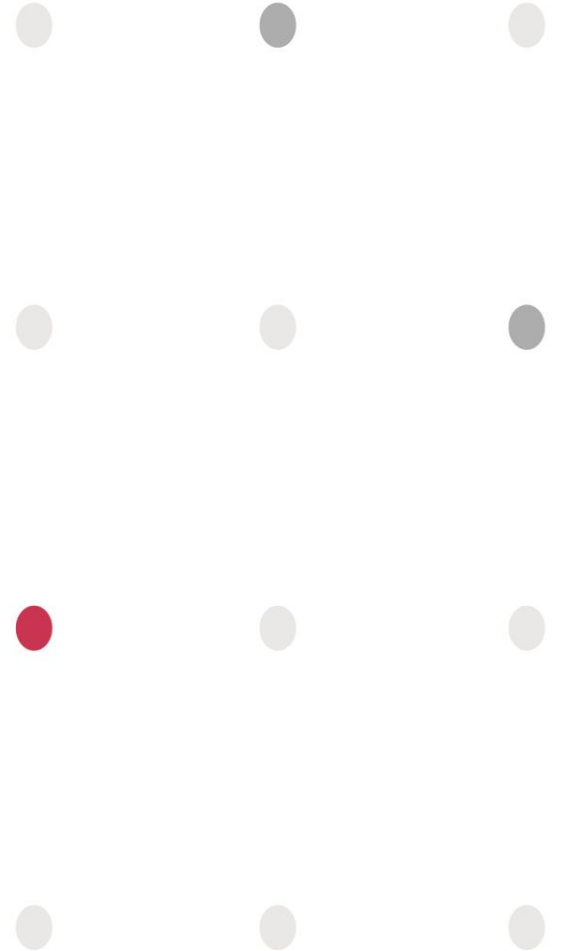


PSA



PASSIVE SYSTEM ALLIANCE
WALSIN TECHNOLOGY CORPORATION

Primax_Clementine

Presented by

Kerry Wu

Walsin Technology Corporation

2023/ 02/ 20

Version	Date	Description	Author
V01	2022/04/13	New Release	Ethan
V02	2022/04/20	增加兩隻WIFI天線	Ethan
V03	2022/04/28	優化ANT-R效率與隔離度	Ethan
V04	2022/05/06	優化 BLE ANT尺寸為22*9.5mm	Ethan
V05	2022/07/15	新機構	Kerry
V5.1	2022/07/19	增加走線方式	Kerry
V6	2022/08/12	ANT2偏移焊接點	Kerry
V7	2022/10/26	新機構	Kerry
V7.1	2022/12/02	增加FCC資料	Kerry
V7.2	2023/02/20	增加FCC資料	Kerry

OUTLINE

1. Measurement Information

1.1 Experimental Setup

1.2 Antenna Solution Detail

2. Antenna Characteristics

2.1 Return Loss & Isolation

2.2 Antenna Efficiency and Peak Gain

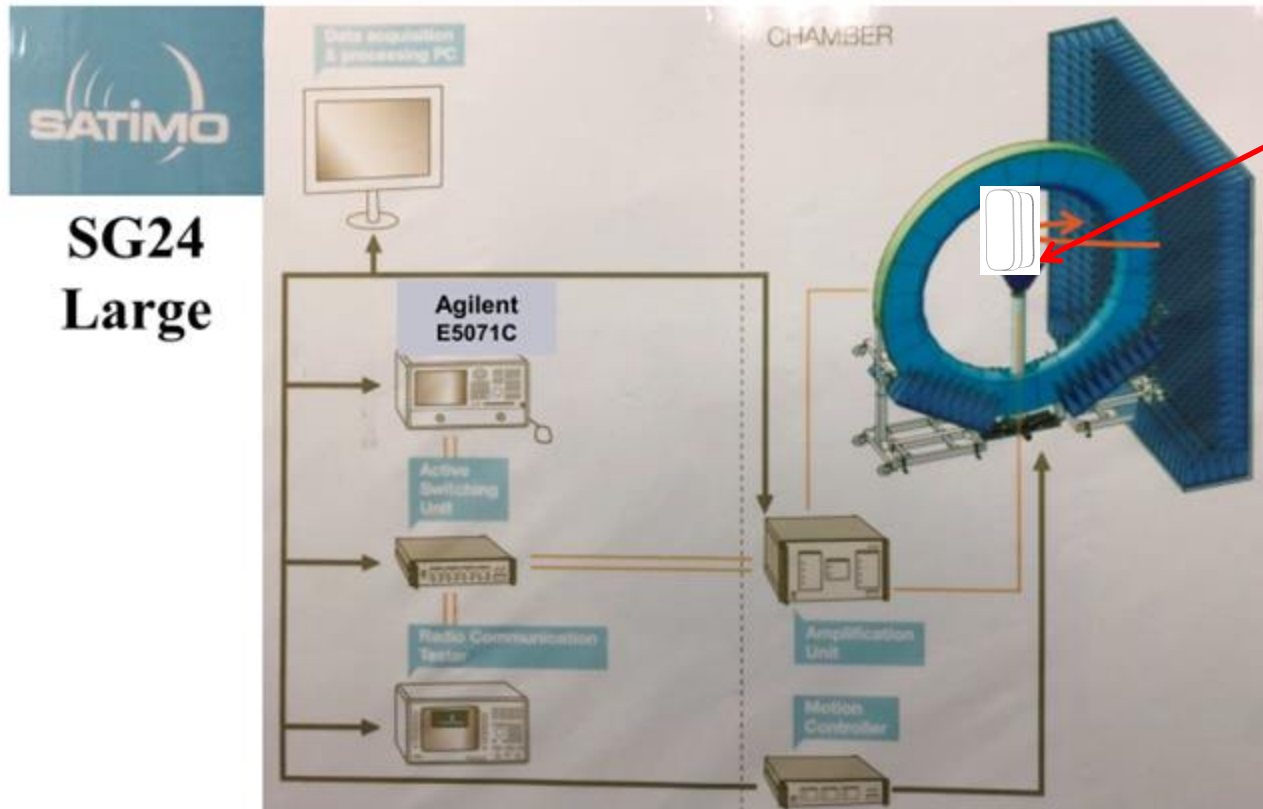
3. Summary

1. Measurement Information

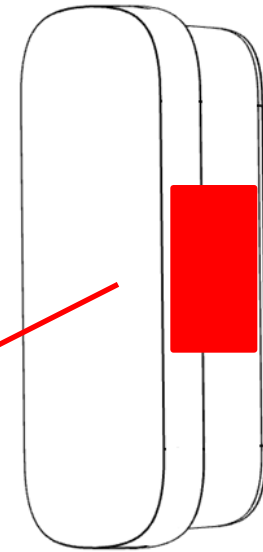
1.1 Experimental Setup

Test Equipment:

- **Network Analyzer: Agilent E5071C**
- **3D Antenna Chamber: SATIMO SG24 (Large)**
 - Test Program: SPM V15



DUT



Antenna location

(DUT photo Please refer to file “20230220 setup photo for Clementine”, Page 3.)

1. Measurement Information

1.1 Experimental Setup

Antenna gain of the antenna model:

-Antenna 1 : 1.5 dBi@2.4~2.5GHz ; 4.27 dBi@.15~5.85GHz

-Antenna 2 : 2.22dBi@2.4~2.5GHz ; 4.37 dBi@.15~5.85GHz

Test equipment calibration information:

Equipment	Model No.	Calibrated Date	Calibrated Until
Satimo	SG24	2021/11/29	2022/11/29
Agilent	E5071C	2020/3/3	2023/3/3

1. Measurement Information

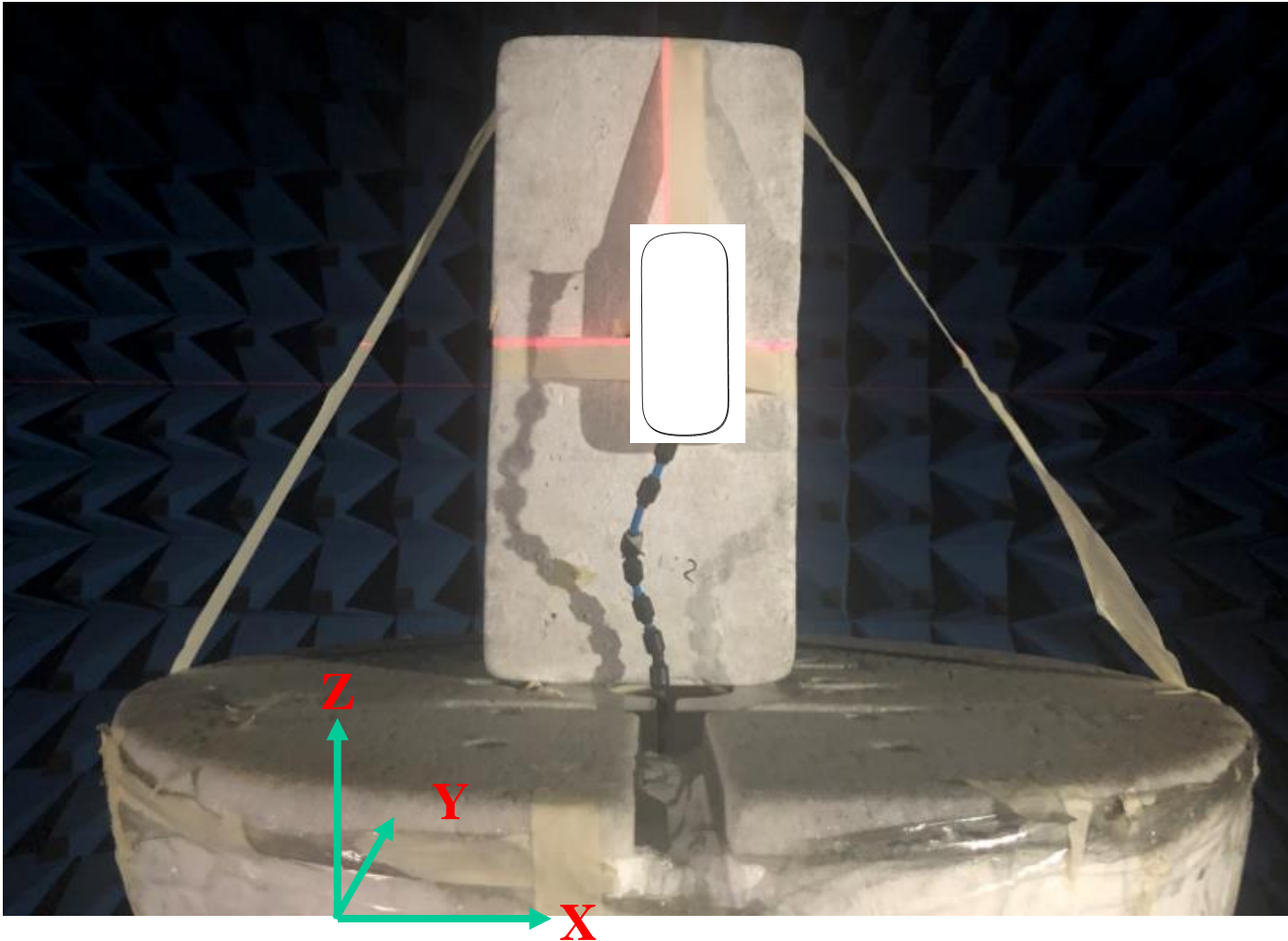
1.1 Experimental Setup

Operating instructions:

1. Place the DUT at the center of the turntable,
2. Connecting the test cable to the DUT, and use the SPM software for passive measurement.
3. During the measured process, SATIMO SG24 will conduct radiation testing with the DUT through 23 probes by a vertical 360- degree; then the turntable will rotate a horizontal 180- degree.
4. After, a complete measurement of spherical 3D is completed.

1. Measurement Information

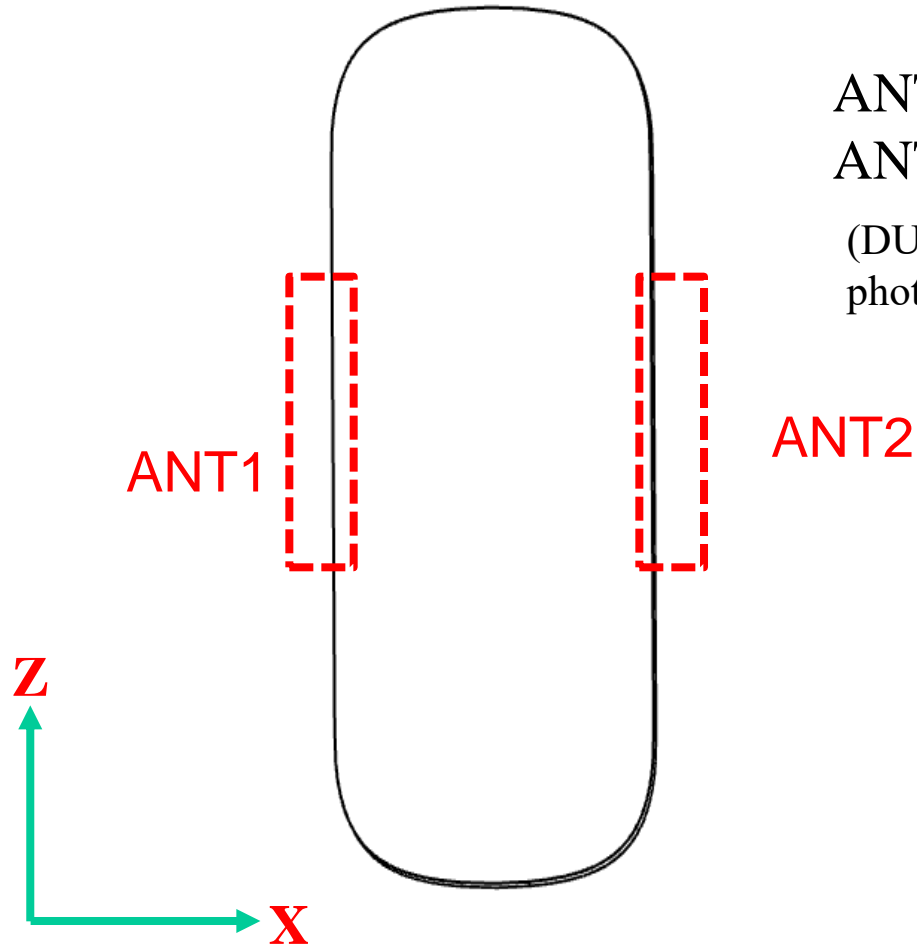
1.1 Experimental Setup



(DUT photo please refer to file “20230220 setup photo for Clementine”, Page 4.)

1. Measurement Information

1.2 Antenna Solution Detail



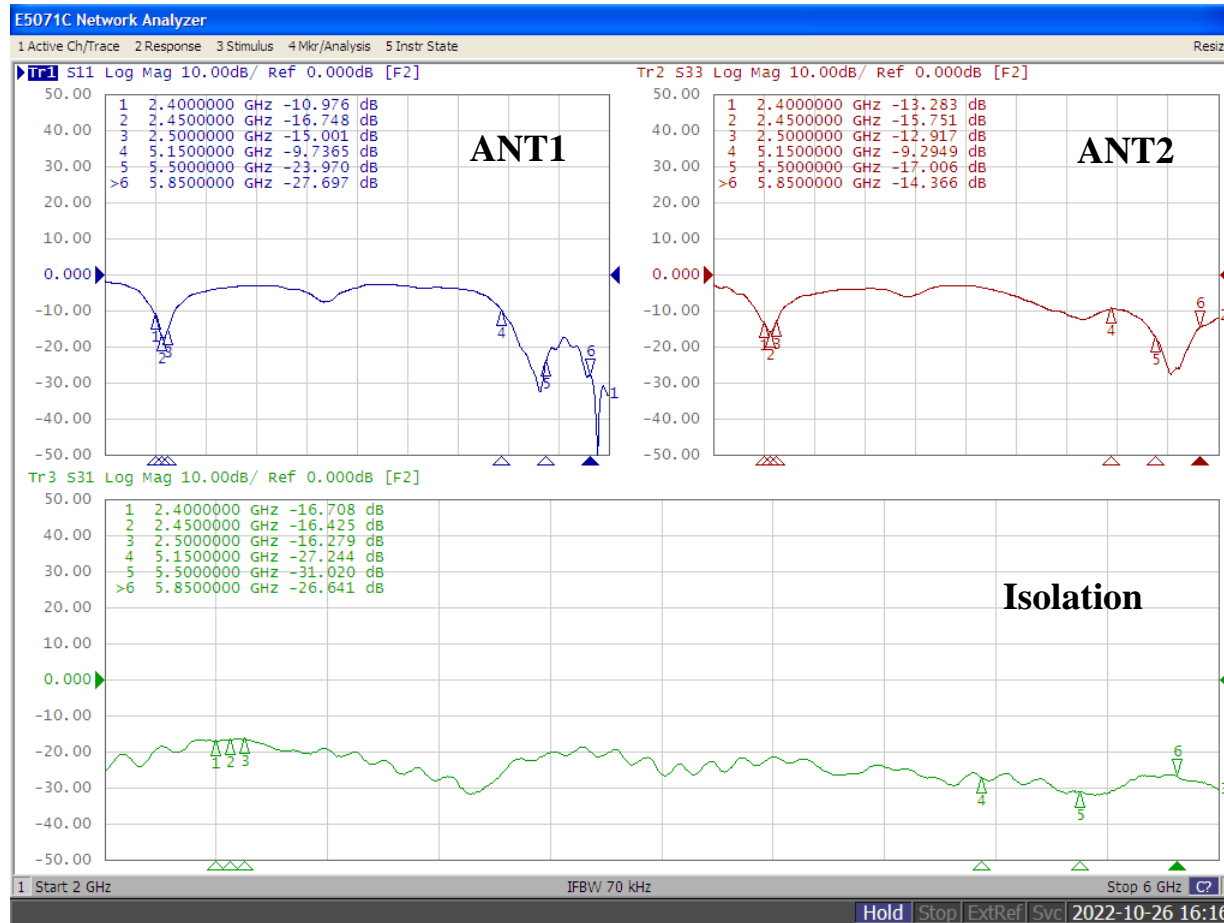
ANT 1 part no.: RFFPA221508IMLB301

ANT 2 part no.: RFFPA301614IMLB301

(DUT photo please refer to file “ 20230220 setup photo for Clementine”, Page 5)

2. Antenna Characteristics

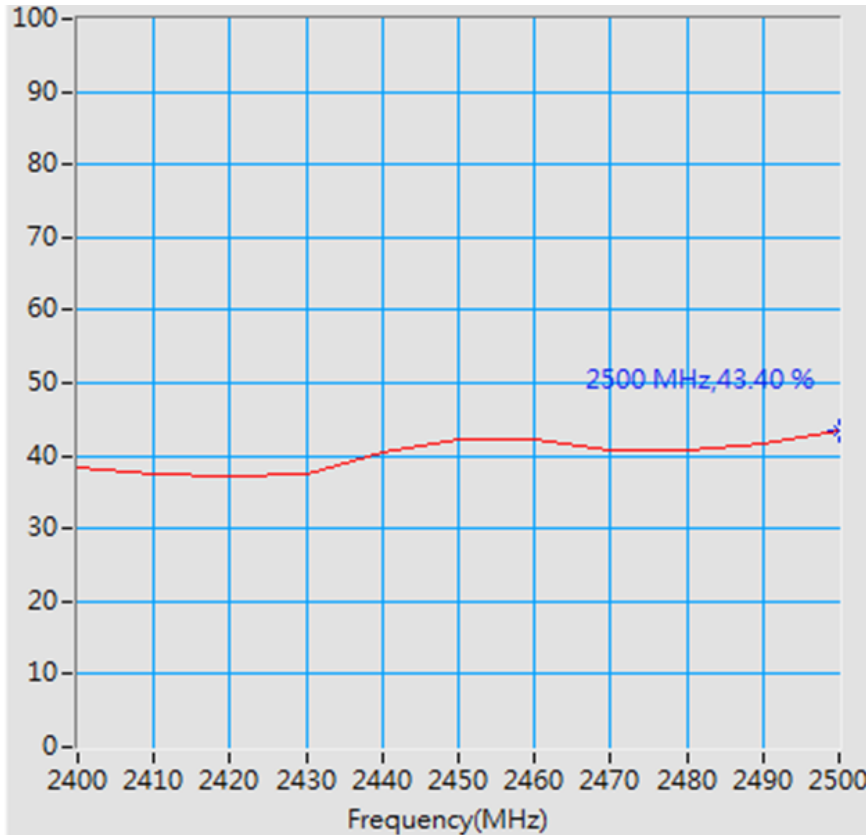
2.1 Return Loss & Isolation



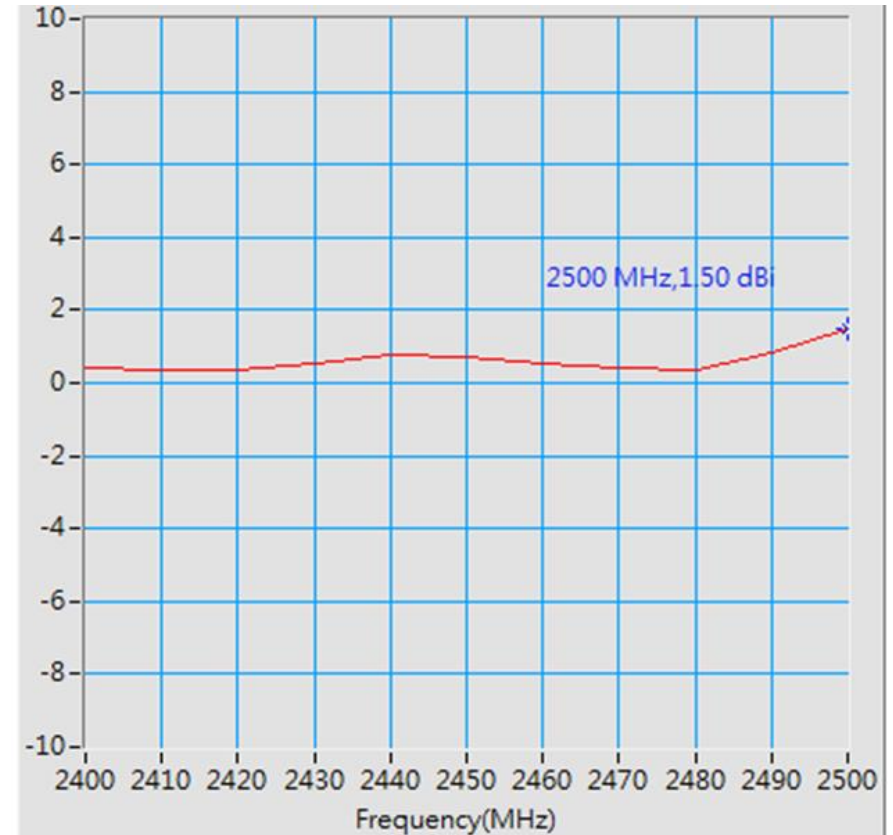
2. Antenna Characteristics

ANT1@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2500MHz : 43.40%

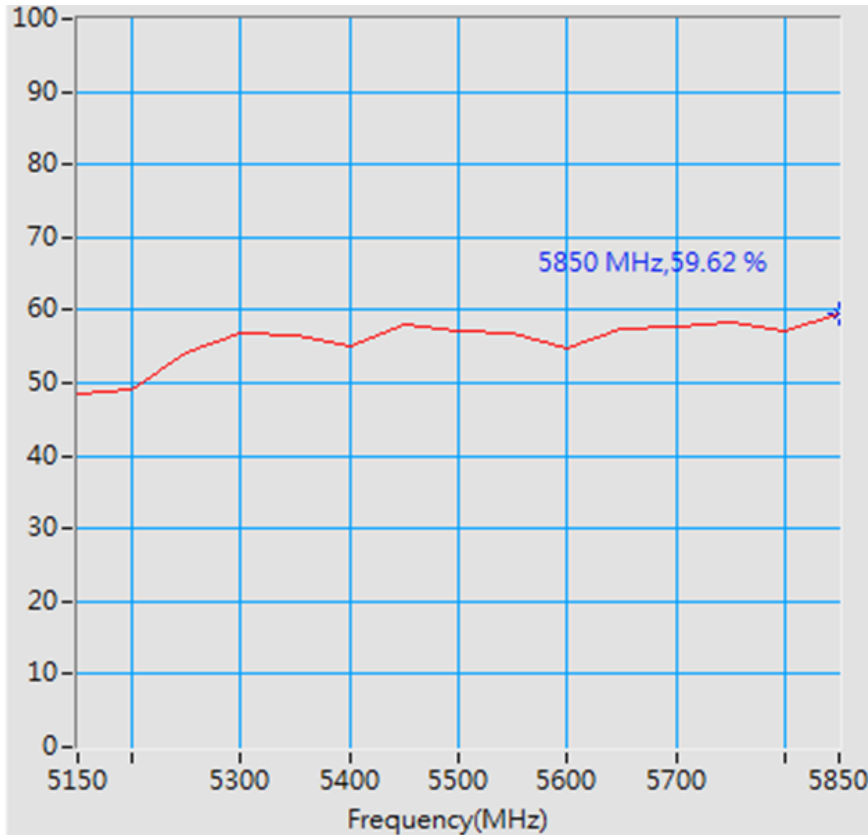


Maximum Peak Gain at 2500MHz : 1.50dBi

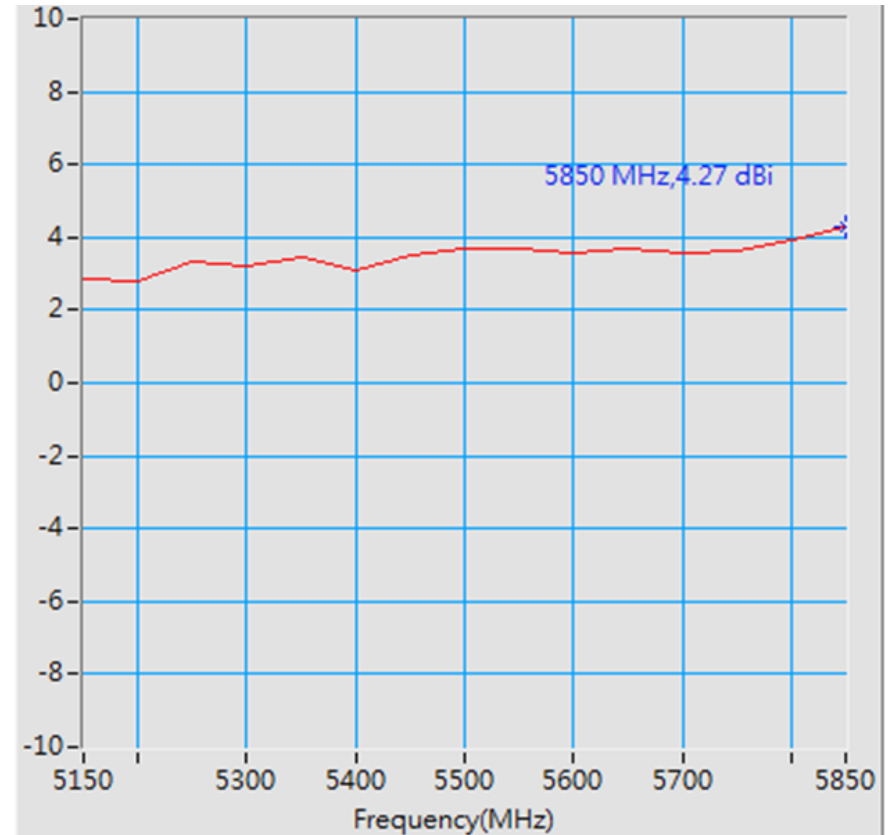
2. Antenna Characteristics

ANT1@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5850MHz : 59.62%

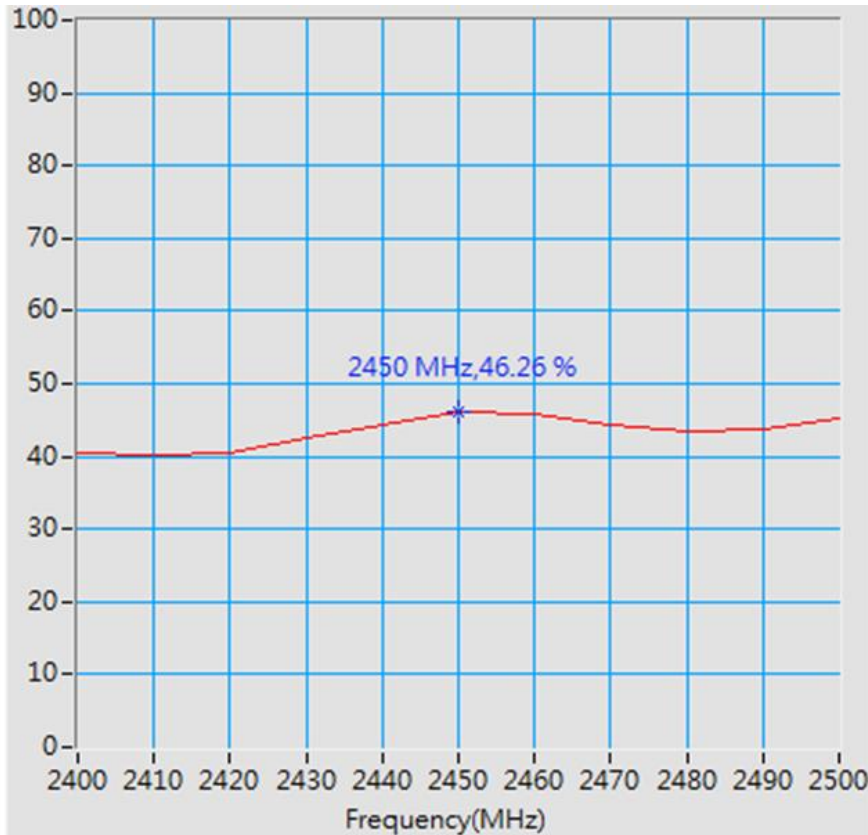


Maximum Peak Gain at 5850MHz : 4.27dBi

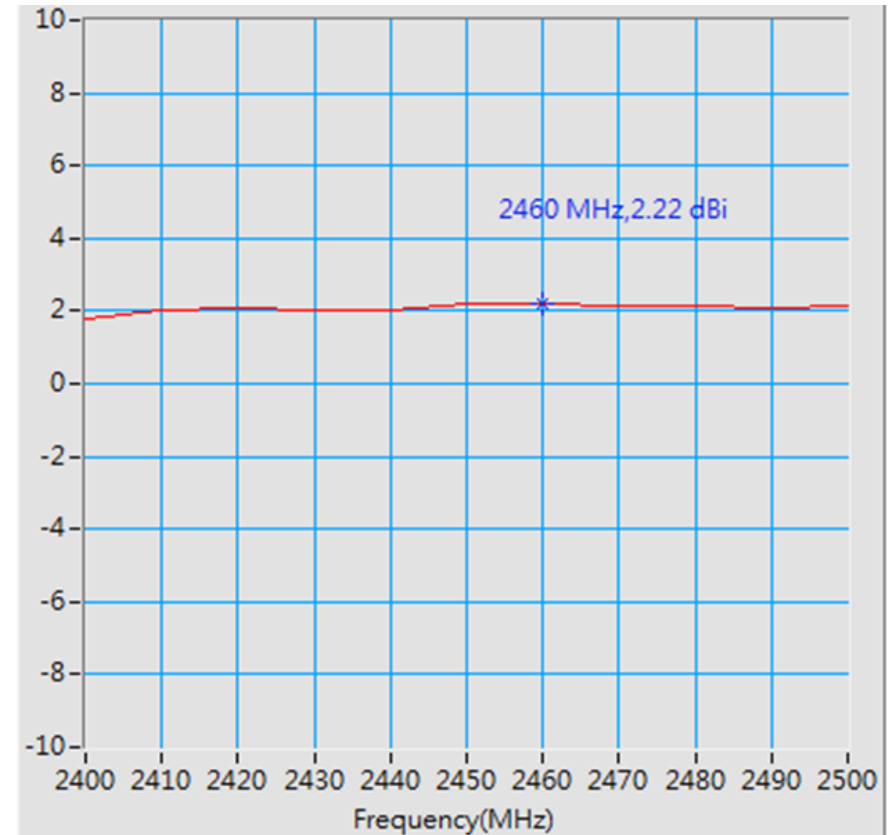
2. Antenna Characteristics

ANT2@2G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 2450MHz : 46.26%

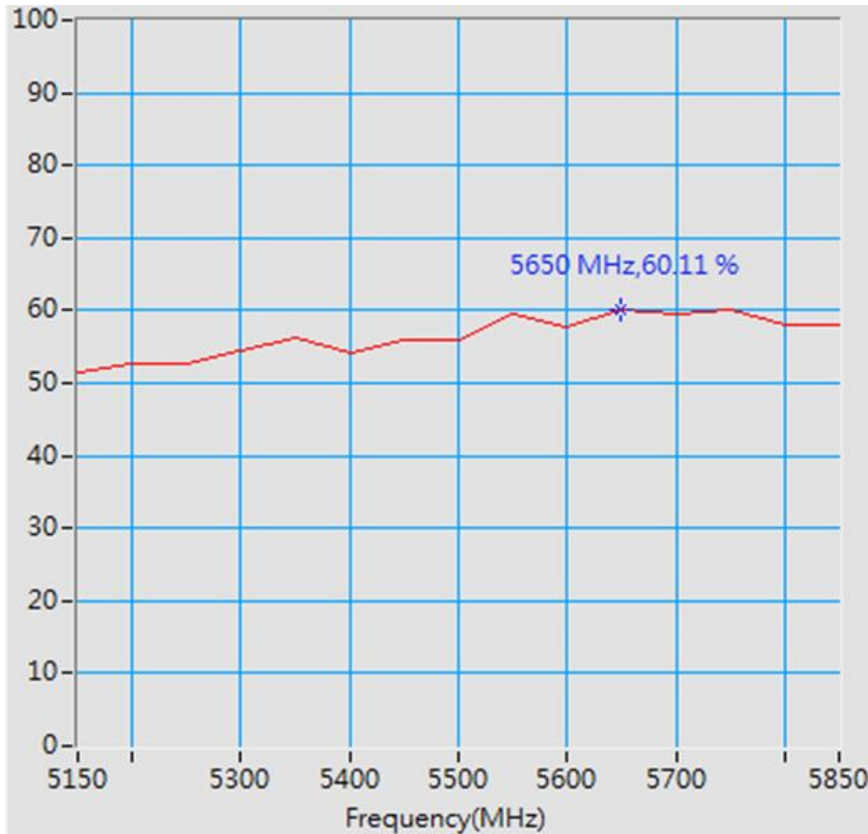


Maximum Peak Gain at 2460MHz : 2.22dBi

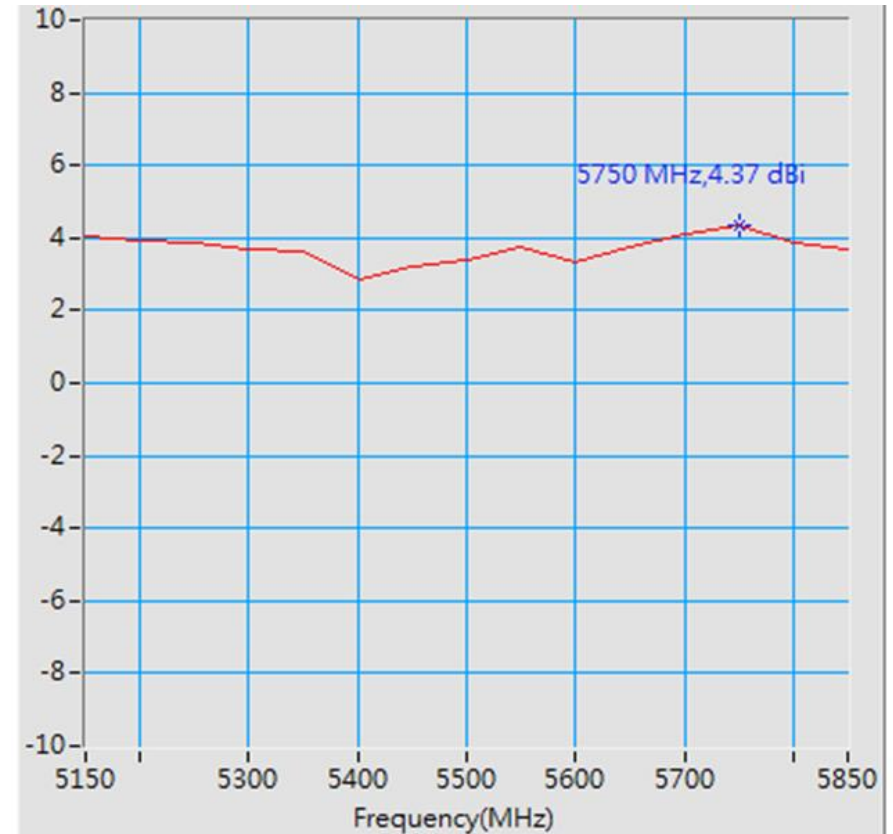
2. Antenna Characteristics

ANT2@5G

2.2 Antenna Efficiency and Peak Gain



Maximum Efficiency at 5650MHz : 60.11%



Maximum Peak Gain at 5750MHz : 4.37dBi

2. Antenna Characteristics

2.2 Antenna Efficiency and Peak Gain

	ANT_1		ANT_2	
Frequency (MHz)	Efficiency (%)	Peak gain (dBi)	Efficiency (%)	Peak gain (dBi)
2400	38.38	0.44	40.34	1.81
2450	42.21	0.70	46.26 (max.)	2.21
2460	42.21	0.70	45.91	2.22 (max.)
2500	43.40 (max.)	1.50 (max.)	45.17	2.17
5150	48.45	2.84	51.54	4.07
5500	57.16	3.69	56.10	3.37
5650	57.40	3.70	60.11 (max.)	3.76
5750	58.39	3.61	60.04	4.37 (max.)
5850	59.62 (max.)	4.27 (max.)	58.13	3.67

3. Summary

- The performance of antennas is shown in table

	ANT1		ANT2	
	2G	5G	2G	5G
Maximum Efficiency (%)	43.4	59.62	46.26	60.11
Maximum Gain (dBi)	1.5	4.27	2.22	4.37

4. Supplier Information

- Supplier: Walsin Technology Corp.
- Address: No. 566-1, Kao-Shih Rd., Yang-Mei Dist., Tao-Yuan City, Taiwan R.O.C.
- Contact telephone No.: (03) 475-8711

Thank you

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