



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

JAPAN MIC

TEST REPORT

Applicant: TAG Sports and Outdoor LLC

Address: 1421 Research Park Drive Suite 2A, Lawrence, KS, United States

Product Name: TAG One Sports Radar

Model Number: TAG One

Type of Equipment: Certification Ordinance Article 2 paragraph 1 item 8

Test Method(s): MIC Notice No.88 of 2004, Annex 22-16

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: 2503W23532E-RF-07B

Date Of Issue: 2025/10/23

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Calvin Chen

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the Room 101&201, Building 2, 256 Pingdong Road, Dalang Town, Dongguan City, Guangdong, China.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Each test item follows the test standard(s) without deviation.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2503W23532E-RF-07B	Original Report	2025/10/23

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	TAG One Sports Radar
EUT Model:	TAG One
Frequency Range:	24.05GHz~24.25GHz
Nominal RF Output Power:	4.6mW
Number of TX Chain(s)	1
Number of RX Chain(s)	1
Antenna Gain[▲]:	14 dBi
Modulation Type:	CW
Rated Input Voltage:	3.8Vdc from Battery or 5Vdc from USB Port
Sample Number:	38MF-2
EUT Received Date:	2025/9/12
EUT Received Status:	Good

Operation Frequency Detail[▲]

The device built in a Radar module, which operates in the frequency range: 24080-24170MHz.
The below center frequency[▲] was performed the test as below:

Test Frequency	Frequency (MHz)
Lowest Channel	24080
Middle Channel	24130
Highest Channel	24170

1.2 Accessory Information

Accessory Description	Manufacturer	Model	Parameters
USB Cable	/	/	Unshielded without ferrite core, 1.0m

1.3 Objective

The objective of this current document is to demonstrate the EUT, as equipment type in Certification Ordinance Article 2-1-8 of Specified Law Power Radio Equipment in Article 38-2-2 Paragraph 1 Item 1 of the Radio Law, compliant with Article 49-20 of Radio equipment regulations.

1.4 Test Methodology

All measurements contained in this report were conducted with technical regulations of MIC Notice No.88 of 2004, Annex 22-16.

1.5 Description of Test Configuration

1.5.1 EUT Operation Condition

EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer.
Equipment Modifications:	No
EUT Exercise Software:	serial_rcv_1.0.18.exe
The software was provided by manufacturer [▲] . The maximum power was configured default setting.	

1.5.2 EUT Extremity Condition

Environment Element	Range	Declared Voltage Value	Measured Voltage	Unit	Voltage Variation (%)
Voltage Fluctuation:	NV	3.80	3.30	Vdc	/
	LV	3.42	3.31	Vdc	0.30
	HV	4.18	3.30	Vdc	0.00

Note:

1. Voltage Variation (%) = (Measured Voltage at High or Low Declared Voltage Value - Measured Voltage at Normal Declared Voltage Value)/ Measured Voltage at Normal Declared Voltage Value *100

2. The Measured Voltage for the Radio Part fluctuation is verified at the power input PIN of the RF circuit.

The EUT be operated at $\pm 10\%$ from the normal supply voltage which was provided by manufacturer, the supply voltage of RF part was varied within $\pm 1\%$. All test cases were done under the **Normal Voltage (NV)** only.

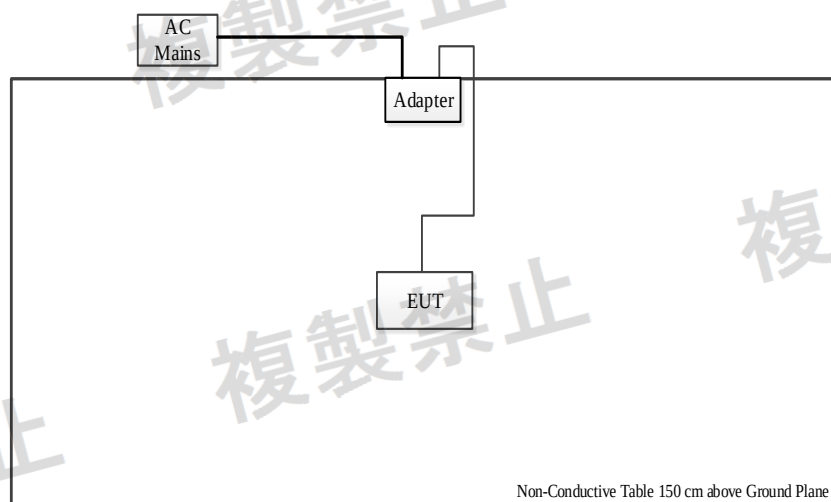
1.5.3 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
SZTY	Adapter	TPA-23A050200UU01	AD220930003

1.5.4 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	No	No	1	Laptop	EUT

1.5.5 Block Diagram of Test Setup



1.6 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Frequency Error	$\pm 0,5$ ppm
Occupied Channel Bandwidth	± 5 %
Unwanted Emissions, Radiated	9k~30MHz: 4.12dB, 30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB, 40~60G: 4.83dB
Temperature	± 1 °C
Humidity	± 5 %
DC and Low Frequency Voltages	$\pm 0,4$ %
Duty Cycle	1 %

2. SUMMARY OF TEST RESULTS

Article 2, Paragraph 1, Item 8	Description of Test	Result
1	Frequency Tolerance	Compliance
2	Occupied Bandwidth	Compliance
3	Output Power and Output Power Tolerance and Antenna Gain	Compliance
4	Unwanted Emission Strength	Compliance
5	Secondary Radiated Emission Strength	Not Applicable
6	Housing Requirements	Compliance
7	Interference Prevention Function	Compliance

Note:

Not Applicable: The device has no only receiving mode.

3. REQUIREMENTS AND TEST PROCEDURES

3.1 Frequency Tolerance

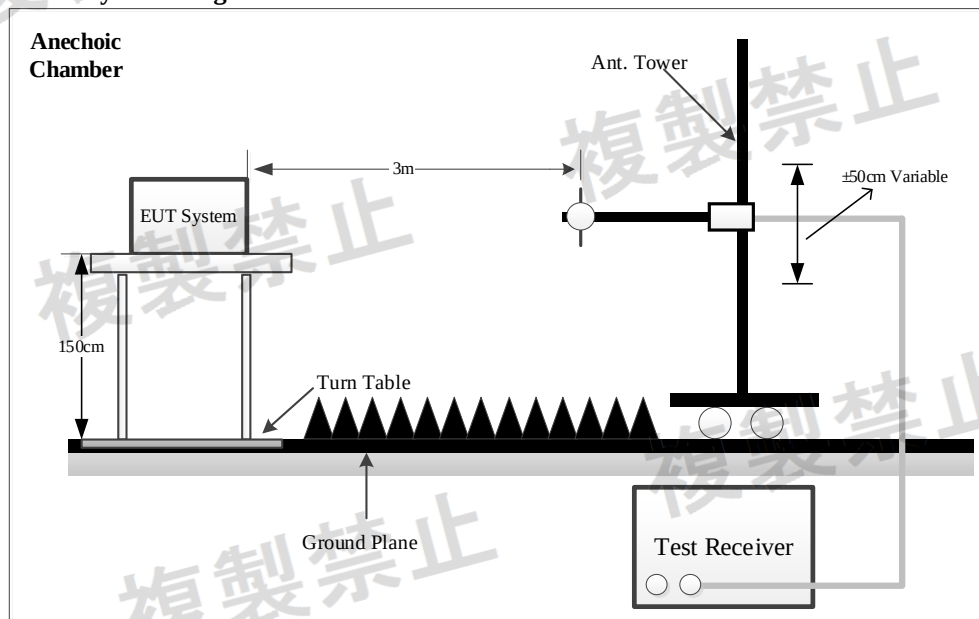
3.1.1 Requirement

Within the designated frequency band: 24.05~24.25GHz.

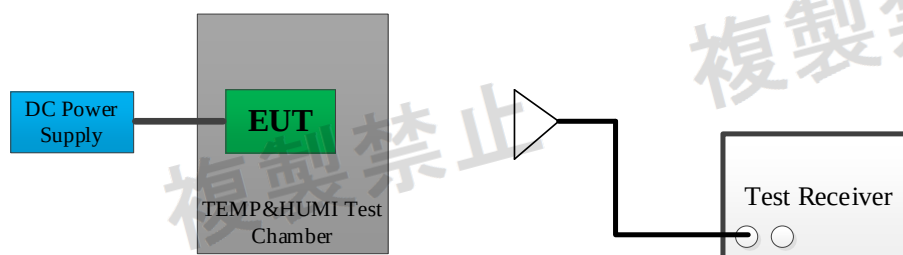
3.1.2 Test Procedure

❖ Measurement System Diagram

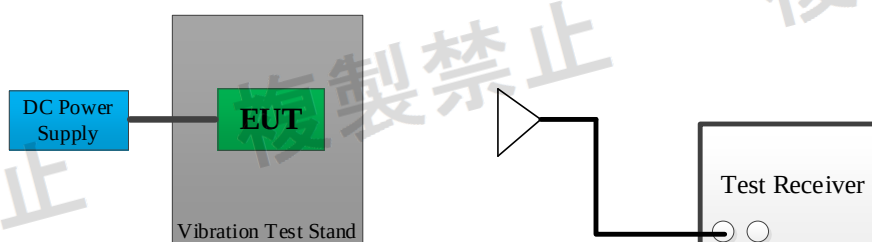
a. Measurement System Diagram:



b. Measurement System Diagram (Extreme Temperature & Humidity Test Condition):



c. Measurement System Diagram (Vibration Test Condition):



❖ Vibration Test Condition:

Set the vibration test system as MIC Notice No.88 Annex 22-16 Section 9.

During vibration excitation by the vibration test system, the test equipment should be in a non-operational state (Power OFF).

After the completion of vibration excitation, operate the EUT by applying the specified power supply voltage. Confirm that the EUT operates without any issues.

Test the frequency tolerance, record the test result.

❖ Temperature Test Condition:

Place the device to be tested in the temperature and humidity tester in the non-operation state and set the temperature of the temperature and humidity tester to a low temperature while in this condition.

The low temperature is 0°C, -10°C and -20°C, use the minimum value within the range of the specification of the device to be tested.

The high temperature is 40°C, 50°C and 60°C, use the highest value within the range of the specification of the device to be tested.

Leave it in this condition for 1 hour.

Apply the prescribed power supply voltage to operate to device to be tested in the temperature and humidity tester.

Test the frequency tolerance, record the test result.

❖ Humidity Test Condition:

Place the device to be tested in the temperature and humidity tester in the non-operating state. While this condition remains, set the temperature to 35°C and the relative humidity to 95% or the maximum or the maximum humidity in the specification of the device to be tested in the temperature and humidity tester.

Leave it in this condition for 4 hours.

After this time, the setting of the temperature and humidity tester is changed back to the normal temperature and normal humidity and, after confirming that there is no condensation, operate the device to be tested by applying the prescribed power supply voltage.

Test the frequency tolerance, record the test result.

❖ Voltage Fluctuation Test Condition:

Refer to section 1.4.2 for voltage fluctuation test results to set the test voltage. Test the frequency tolerance, Measure and record the frequency tolerance.

❖ Spectrum Analyzer Conditions

1. Set the UUT as transmitting the maximum modulation signal.

2. The spectrum analyzer should be set as follows:

- Center Frequency: The center frequency of the channel under test
- Span: 2~3.5 times of occupied bandwidth allocation.

- RBW: Approximately 1% of the occupied frequency bandwidth
- VBW: Same as RBW
- Sweep time: Minimum time for which measurement accuracy is guaranteed. However, in the case of burst waves, at least one burst per sample must be entered.
- Sweep Mode: Single Sweep
- Detect Mode: Positive Peak
- Trace Mode: Max Hold

3. SA set to 99% of occupied bandwidth to measure occupied bandwidth.

4. Find the lowest and highest frequency in which the mean power emitted below the lower and above the upper frequency limits are respectively equal to 0.5% of the total mean power of a given emission. This lowest and highest frequency shall be recorded.

3.2 Occupied Bandwidth

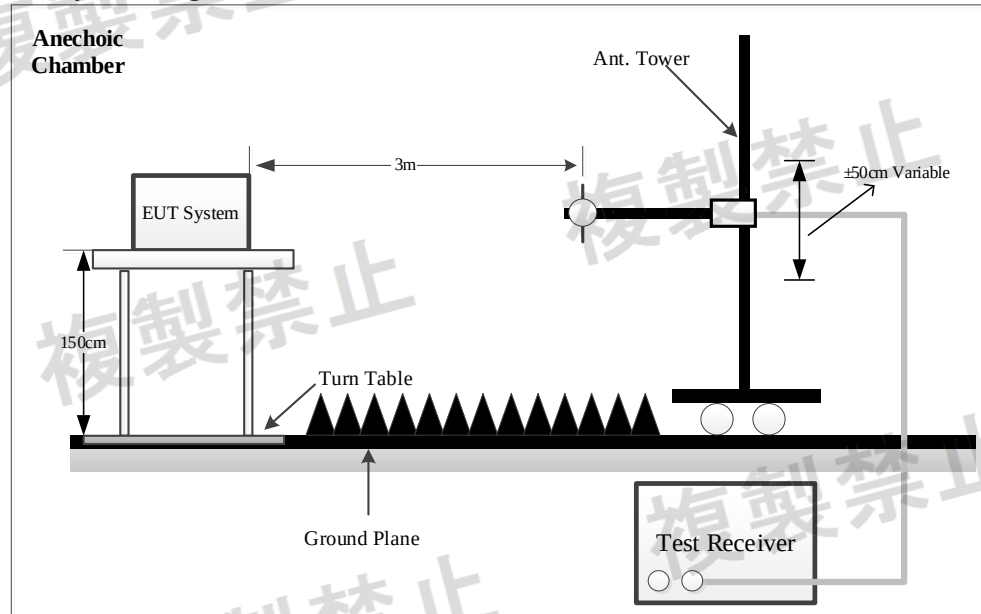
3.2.1 Requirement

Occupied Bandwidth: 200MHz

3.2.2 Test Procedure

❖ Measurement System Diagram

Measurement System Diagram:



❖ Spectrum Analyzer Conditions

1. Set the UUT as transmitting the maximum modulation signal.
2. The spectrum analyzer should be set as follows:
 - Center Frequency: The center frequency of the channel under test
 - Span: 2~3.5 times of occupied bandwidth allocation.
 - RBW: Approximately 1% of the occupied frequency bandwidth
 - VBW: Same as RBW
 - Sweep time: Minimum time for which measurement accuracy is guaranteed. However, in the case of burst waves, at least one burst per sample must be entered.
 - Sweep Mode: Single Sweep
 - Detect Mode: Positive Peak
 - Trace Mode: Max Hold
3. SA set to 99% of occupied bandwidth to measure occupied bandwidth.
4. Find the lowest and highest frequency in which the mean power emitted below the lower and above the upper frequency limits are respectively equal to 0.5% of the total mean power of a given emission. This lowest and highest frequency shall be recorded.

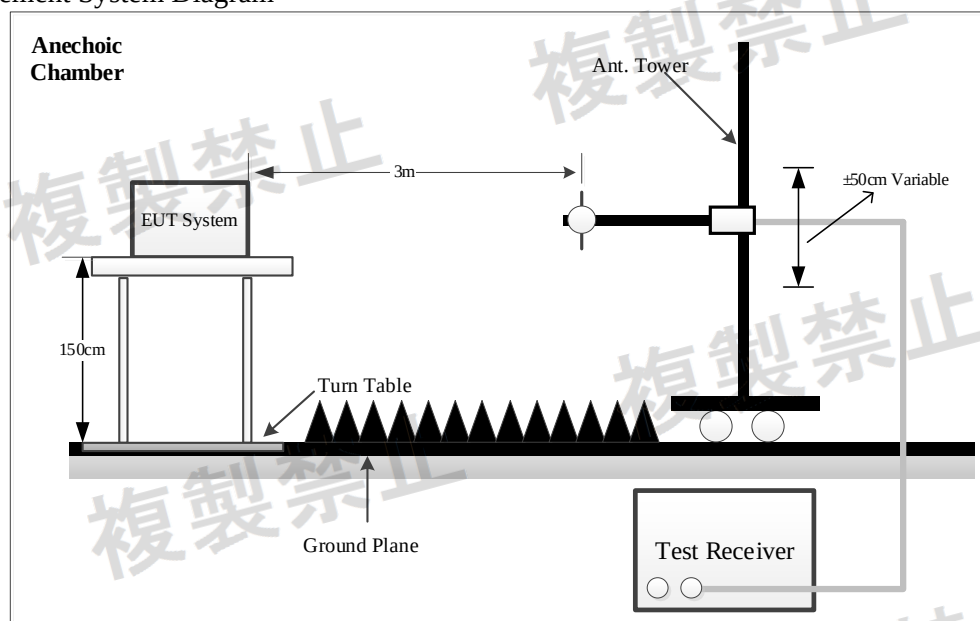
3.3 Output Power and Output Power Tolerance and Antenna Gain

3.3.1 Requirement

Item	Requirement
Output Power	0.02W or less
Output Power Tolerance	within +50%, -50%
Transmitter Antenna Gain	24dBi or less (When an EIRP is less than a limit, the shortage shall be compensated for by the gain of the transmitting antenna.)

3.3.2 Test Procedure

❖ Measurement System Diagram



❖ Spectrum Analyzer Conditions

1. Set the UUT as transmitting the maximum modulation signal.

2. The setting of the spectrum analyzer when providing frequency search for the maximum power should be set as follows:

- Center Frequency: The center frequency of the channel under test
- Span: Approximately 30% of the specified frequency bandwidth
- RBW: 1MHz
- VBW: Same as RBW
- Y-axis Scale: 10 dB/Div
- Reference level: Enough level for maximum dynamic range
- Sweep time: Minimum time for which measurement accuracy is guaranteed. However, in the case of burst waves, at least one burst per sample must be entered.
- Data Points: 691points (400 points or more)
- Sweep Mode: Continuous Sweep
- Detect Mode: Positive Peak
- Trace Mode: Max Hold

3. The settings of the spectrum analyser when measuring power shall be as follows:

- Center Frequency: Searched frequency for the maximum power in step 2.
- Span: 0 Hz
- RBW: 3MHz and above
- VBW: Same as RBW
- Y-axis Scale: 10 dB/Div
- Sweep time: Minimum time for which measurement accuracy is guaranteed.
- Sweep Mode: Single Sweep
- Detect Mode: Sample

3.4 Unwanted Emission Strength

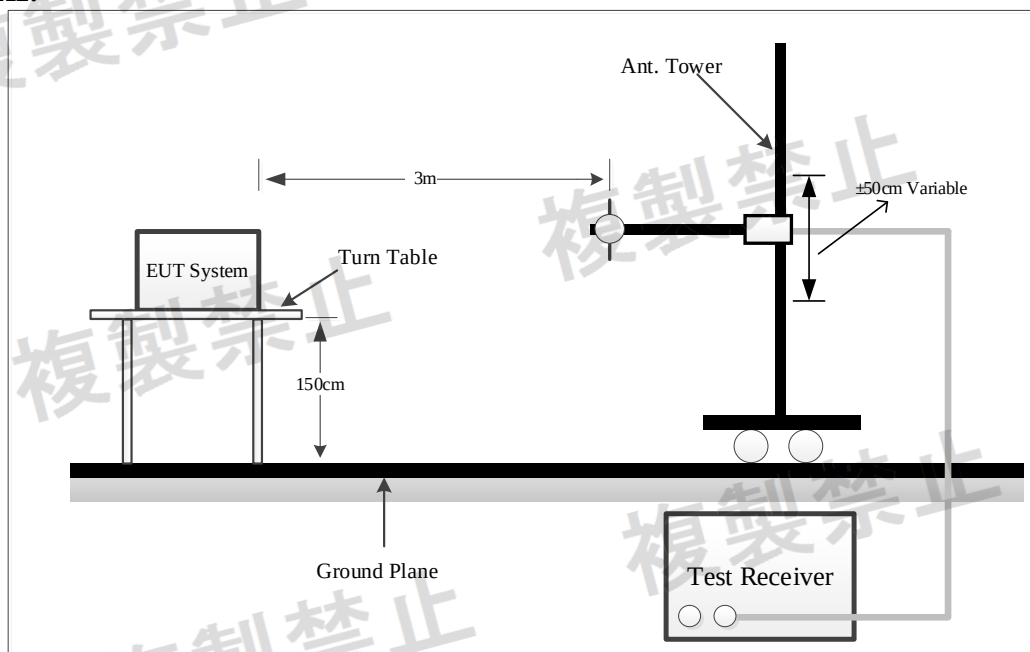
3.4.1 Requirement

Unwanted emission strength should less than $2.5\mu\text{W}$ (-26dBm).

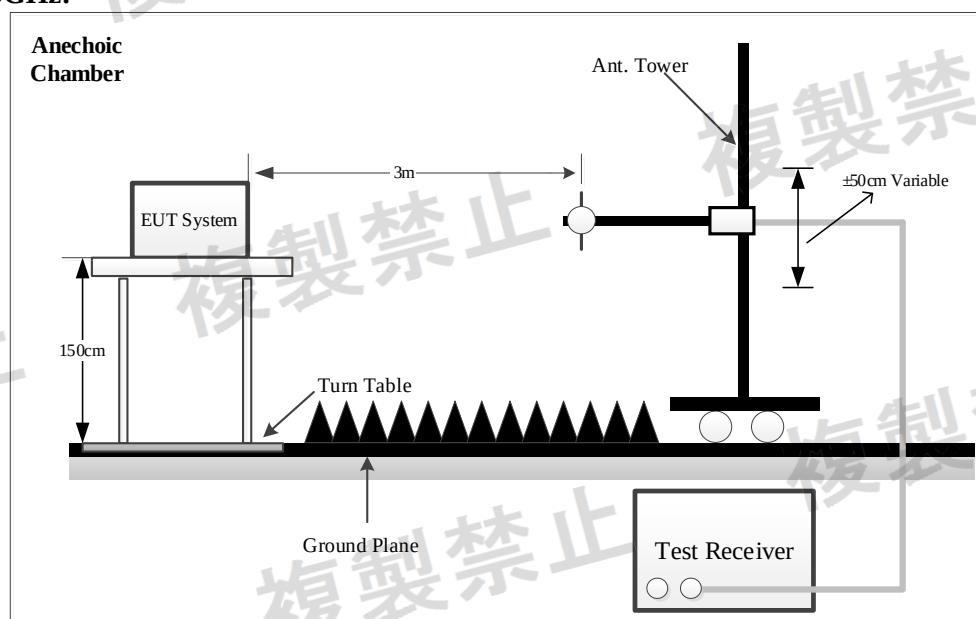
3.4.2 Test Procedure

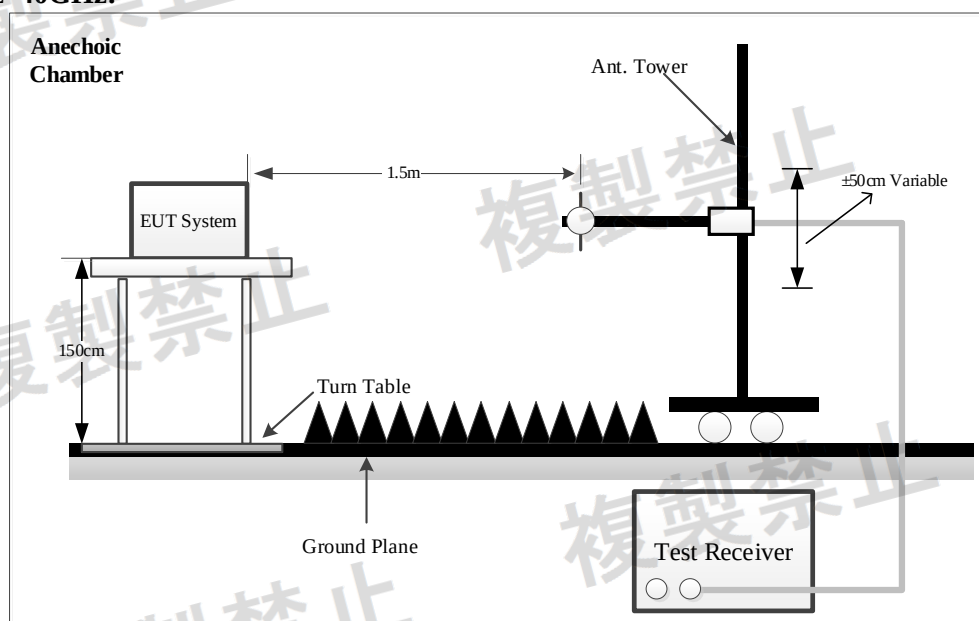
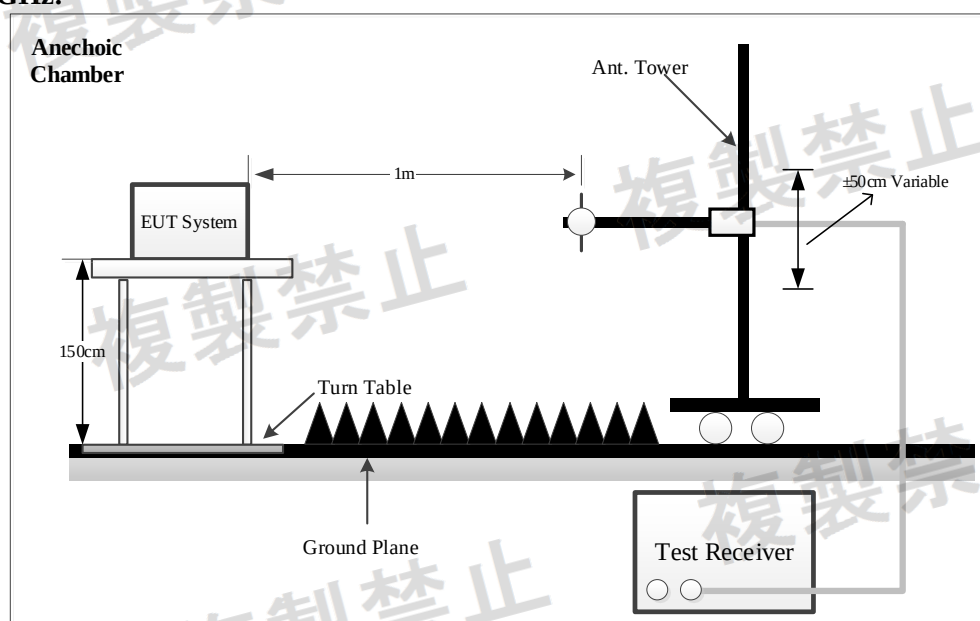
❖ Measurement System Diagram

Below 1GHz:



1GHz~26.5GHz:



26.5GHz~40GHz:**40GHz~60GHz:****❖ Spectrum Analyzer Conditions**

Sweep the spectrum analyser (or equivalent equipment) over a frequency range and measure the power of spurious emission.

3.5 Secondary Radiated Emission Strength

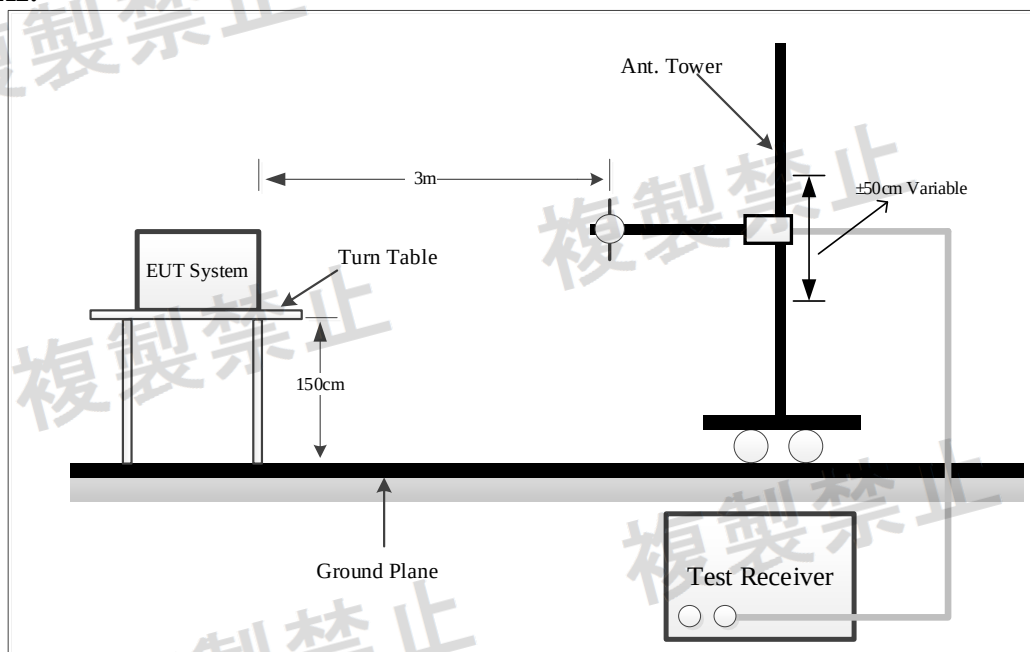
3.5.1 Requirement

The secondary radiated emission strength should less than $2.5\mu\text{W}$ (-26dBm).

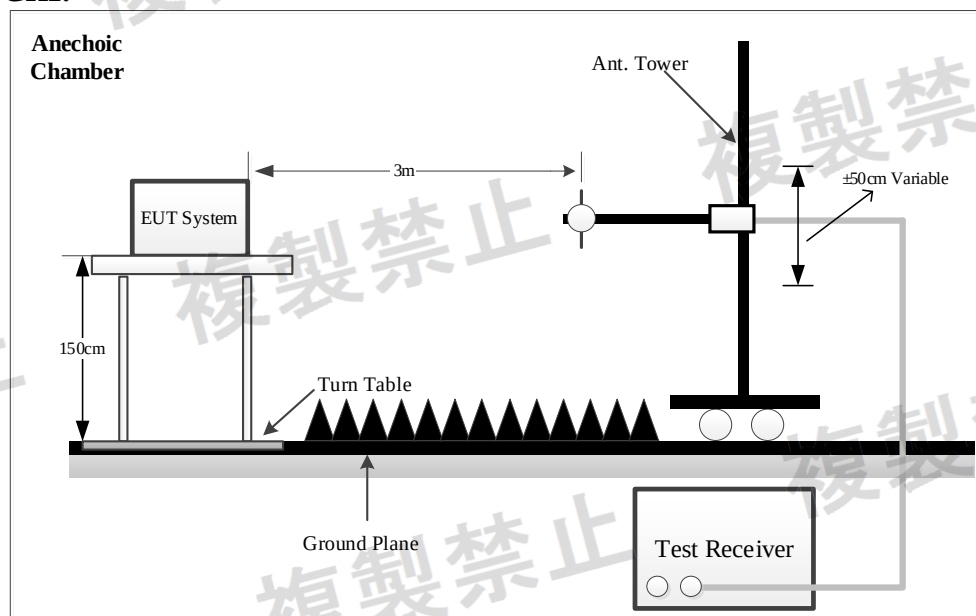
3.5.2 Test Procedure

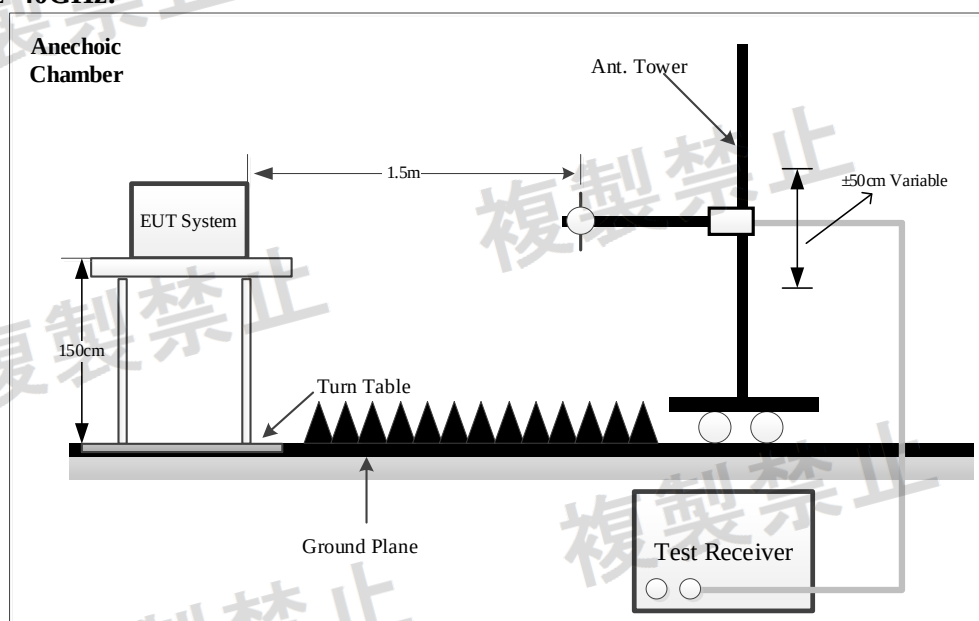
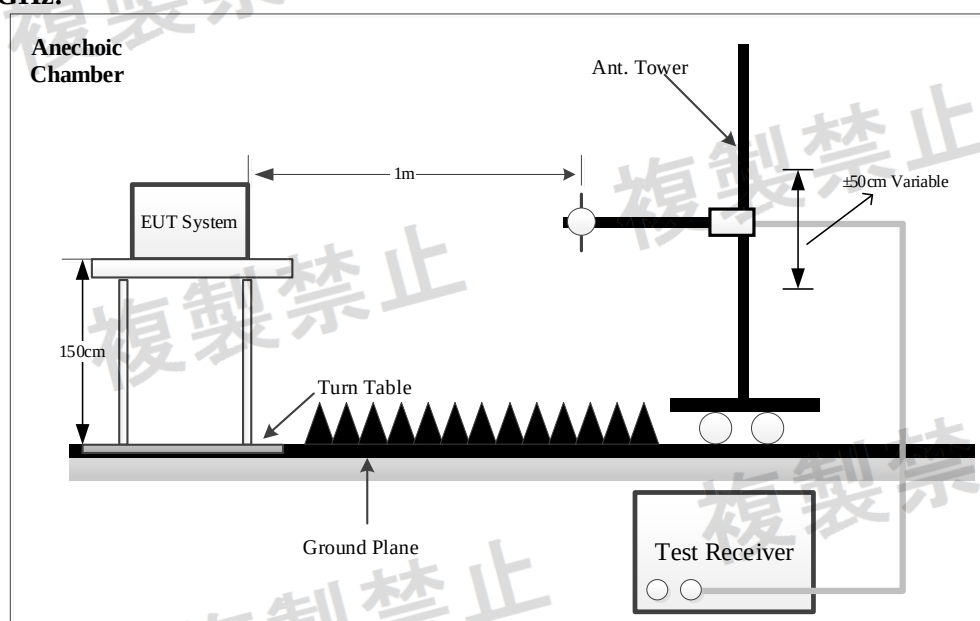
❖ Measurement System Diagram

Below 1GHz:



1GHz~26.5GHz:



26.5GHz~40GHz:**40GHz~60GHz:****❖ Spectrum Analyzer Conditions**

Sweep the spectrum analyser (or equivalent equipment) over a frequency range and measure the power of spurious emission.

3.6 Interference Prevention Function

3.6.1 Requirement

Need to meet either of three functions:

Article 6-2-3:

Chiefly, the one automatically to transmit and to receive identification code with the wireless equipment off the wireless station used in the same premises.

Article 6-2-4:

Radio Equipment of Specified Low-power Radio Stations (The thing only which do not connect to telecommunications line) switch of frequency by user, or the thing which can perform a stop of the discharge of the radio wave easily.

Article 6-2-5:

By identifying the characteristics of the modulation scheme of the received radio waves and other, shall be able to identify the reflected wave of the radio waves which local station transmitted and the radio waves transmitted by other radio stations.

3.7 Construction Protection Confirmation

3.7.1 Requirement

The radio equipment shall be housed in a single cabinet, and the cabinet shall not be capable of being opened easily (except for the antenna system).

4. TEST DATA AND RESULTS

4.1 Test Environmental Conditions & Test Equipment List and Details

Test Date:			2025/10/9-2025/10/29		
Tester:			Peter Rong		
Environmental Conditions:					
Temperature: (℃)	22.4~25.4	Relative Humidity: (%)	50~59	ATM Pressure: (kPa)	100.7~101.8

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	Calibration Body	Calibration Method ^{Note}
Radiated Emissions Below 1GHz							
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30	NIM	C
R&S	EMI Test Receiver	ESR3	102724	2025/2/14	2026/2/13	BACL Cal	C
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0100-03	2024/12/3	2025/12/2	BACL Cal	C
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0370-01	2024/12/3	2025/12/2	BACL Cal	C
XQY	Coaxial Cable	XQY-CMR400UF-NJ-NJ-7M	24056379	2025/6/4	2026/6/3	BACL Cal	C
Sonoma	Amplifier	310N	186165	2024/12/3	2025/12/2	BACL Cal	C
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2025/7/14	2026/7/13	BACL Cal	C
Agilent	Signal Generator	E8247C	MY43321352	2025/1/9	2026/1/8	BACL Cal	C
Radiated Emissions Above 1GHz							
ETS-Lindgren	Horn Antenna	3115	9912-5985	2023/12/6	2026/12/5	NIM	C
R&S	Spectrum Analyzer	FSV40	101591	2025/3/31	2026/3/30	BACL Cal	C
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2025/1/10	2026/1/9	BACL Cal	C
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2025/1/10	2026/1/9	BACL Cal	C
A.H	Pre-amplifier	PAM-0118P	628	2025/5/23	2026/5/22	BACL Cal	C
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2023/2/22	2026/2/21	CASIC203	C
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2025/7/14	2026/7/13	CCICT	D
Agilent	Signal Generator	E8247C	MY43321352	2025/1/9	2026/1/8	CASIC203	C
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2024/2/4	2027/2/3	NIM	C
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2024/2/4	2027/2/3	NIM	C
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2025/1/6	2026/1/5	BACL Cal	C
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2025/1/6	2026/1/5	BACL Cal	C
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2024/2/4	2027/2/3	NIM	C
PASTERNAK	Horn Antenna	PE9850/2F-20	072002	2024/2/4	2027/2/3	NIM	C
OML	Harmonic Mixer	WR19/M19HWD	U60314-1	2023/2/16	2026/2/15	CASIC203	C
OML	Horn Antenna	M19RH	11648-03	2023/2/27	2026/2/26	CASIC203	C
Flann Microwave	Horn Antenna	24245-AB	28	2023/2/27	2026/2/26	CASIC203	C

Agilent	mm-Wave Source Modules	83556A	3138A00549	2023/2/16	2026/2/15	CASIC203	C
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*** Statement of Traceability:** China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Note:

A. Calibration conducted by the National Institute of Information and Communications Technology (NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1).

B. Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992).

C. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

D. Calibration conducted by using measuring instruments and other equipment which shall have been given any of calibration, etc. listed above from a) to c)

4.2 Frequency Tolerance

Test Result: Compliant. Please refers to following table and plots.

Test Mode: Transmitting

Environment Condition:

Voltage Fluctuation Test	TC1	Temp: 25 °C	LV
	TC2		NV
	TC3		HV
Environment Test	TC4	Voltage: NV	Low Temp: -10°C
	TC5		High Temp: 50 °C
	TC6	Voltage: NV; Temp: 35 °C	Humidity: 95%
Vibration Test	TC7	Voltage: NV; Temp: 25 °C	Amplitude: 3mm
	TC8		Amplitude: 1mm

Note: Extreme test temperature is -10 °C to +50 °C which declared by manufacturer.

Lowest Channel:

Test Condition	Low Frequency (GHz)	High Frequency (GHz)	f _L Limit (GHz)	f _H Limit (GHz)	Verdict
TC1	/	/	24.05	24.25	/
TC2	24.079999548	24.080000272	24.05	24.25	Good
TC3	/	/	24.05	24.25	/
TC4	24.079999536	24.080000267	24.05	24.25	Good
TC5	24.079999538	24.080000269	24.05	24.25	Good
TC6	24.079999547	24.080000271	24.05	24.25	Good
TC7	24.079999545	24.080000269	24.05	24.25	Good
TC8	24.079999546	24.080000270	24.05	24.25	Good

Middle Channel:

Test Condition	Low Frequency (GHz)	High Frequency (GHz)	f _L Limit (GHz)	f _H Limit (GHz)	Verdict
TC1	/	/	24.050	24.250	/
TC2	24.129999600	24.1300003210	24.050	24.250	Good
TC3	/	/	24.050	24.250	/
TC4	24.129999587	24.1300003196	24.050	24.250	Good
TC5	24.129999697	24.1300003204	24.050	24.250	Good
TC6	24.129999592	24.1300003202	24.050	24.250	Good
TC7	24.129999602	24.1300003215	24.050	24.250	Good
TC8	24.129999605	24.1300003216	24.050	24.250	Good

Highest Channel:

Test Condition	Low Frequency (GHz)	High Frequency (GHz)	f _L Limit (GHz)	f _H Limit (GHz)	Verdict
TC1	/	/	24.050	24.250	/
TC2	24.169999556	24.170000284	24.050	24.250	Good
TC3	/	/	24.050	24.250	/
TC4	24.169999539	24.170000276	24.050	24.250	Good
TC5	24.169999550	24.170000278	24.050	24.250	Good
TC6	24.169999559	24.170000286	24.050	24.250	Good
TC7	24.169999557	24.170000285	24.050	24.250	Good
TC8	24.169999549	24.170000279	24.050	24.250	Good

4.3 Occupied Bandwidth

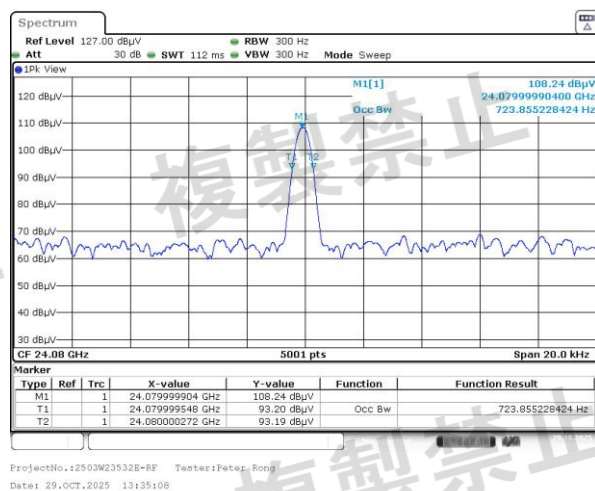
Test Result: Compliant. Please refers to following table and plots.

Test Mode: Transmitting

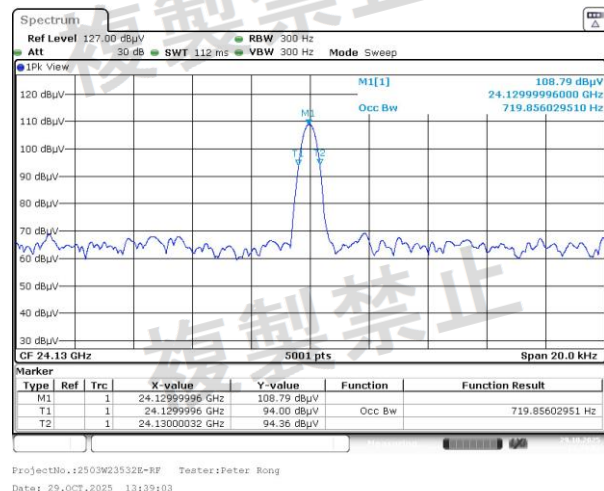
Test Condition	Test Frequency (GHz)	Occupied Bandwidth (MHz)	Limit (MHz)
NV	24.08	0.723	≤200
	24.13	0.719	≤200
	24.17	0.728	≤200

The test plots as following:

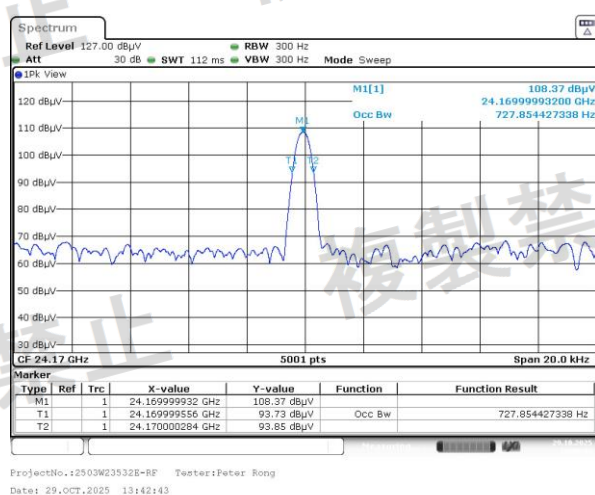
Low



Middle



High



4.4 Output Power and Output Power Tolerance and Antenna Gain

Test Result: Compliant. Please refers to following tables.

Test Mode: Transmitting

Test Condition: NV

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	
Test Frequency: 24.08GHz						
24079.99	H	88.01	-19.04	20.00	1.46	-0.50
24079.97	V	108.70	2.01	20.00	1.46	20.55
Test Frequency: 24.13GHz						
24129.93	H	87.26	-19.88	20.00	1.46	-1.34
24130.03	V	108.34	1.59	20.00	1.46	20.13
Test Frequency: 24.17GHz						
24170.00	H	86.98	-20.24	20.00	1.45	-1.69
24170.01	V	108.33	1.54	20.00	1.45	20.09

Declared Power (mW)		4.6	Antenna Gain (dBi)		14		
Test Condition	Frequency (MHz)	Conducted power (dBm)	Antenna Output Power (mW)		Antenna Output Tolerance (%)		EIRP (dBm)
			Result	Limit	Result	Limit	
NV	24079.97	6.55	4.52	≤20	-1.74	-50 ~ +50	20.55
NV	24130.03	6.13	4.10	≤20	-10.87	-50 ~ +50	20.13
NV	24170.01	6.09	4.06	≤20	-11.74	-50 ~ +50	20.09

Note:

Conducted Power = EIRP - Antenna Gain

Antenna Output Power (mW) = $10^{(\text{Conducted Power (dBm)} / 10)}$

Antenna Output Power Tolerance = $(\text{Antenna Output power} - \text{Declared Power}) / \text{Declared Power} * 100\%$

4.5 Unwanted Emission Strength

Test Result: Compliant
Test Mode: Transmitting
Test Condition: NV

30MHz-40 GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level		Limit (μW)	Verdict
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	(dBm)	(μW)		
Test Frequency: 24.08GHz									
80.56	H	44.89	-65.07	0.00	0.16	-65.23	0.00030	2.5	Pass
103.13	V	42.36	-64.47	0.00	0.19	-64.66	0.00034	2.5	Pass
19596.90	H	46.97	-59.39	20.00	1.24	-40.63	0.086	2.5	Pass
19596.90	V	45.84	-59.29	20.00	1.24	-40.53	0.089	2.5	Pass
18140.40	H	47.04	-58.61	20.00	1.25	-39.86	0.103	2.5	Pass
18140.40	V	45.80	-58.34	20.00	1.25	-39.59	0.110	2.5	Pass
Test Frequency: 24.13GHz									
80.79	H	45.01	-65.03	0.00	0.16	-65.19	0.00030	2.5	Pass
102.87	V	42.45	-64.39	0.00	0.19	-64.58	0.00035	2.5	Pass
18114.00	H	45.42	-60.23	20.00	1.25	-41.48	0.071	2.5	Pass
18114.00	V	47.23	-56.94	20.00	1.25	-38.19	0.152	2.5	Pass
1578.30	H	46.23	-58.04	8.59	0.81	-50.26	0.009	2.5	Pass
1578.30	V	47.87	-56.44	8.59	0.81	-48.66	0.014	2.5	Pass
Test Frequency: 24.17GHz									
80.93	H	45.08	-65.00	0.00	0.16	-65.16	0.00030	2.5	Pass
103.08	V	42.51	-64.32	0.00	0.19	-64.51	0.00035	2.5	Pass
19400.20	H	47.15	-58.38	20.00	1.26	-39.64	0.109	2.5	Pass
19400.20	V	45.99	-58.35	20.00	1.26	-39.61	0.109	2.5	Pass
1978.63	H	46.57	-55.63	9.07	0.87	-47.43	0.018	2.5	Pass
1978.63	V	45.78	-55.85	9.07	0.87	-47.65	0.017	2.5	Pass

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.

Note 2: Absolute Level = Substituted Level - Cable loss + Antenna Gain

40GHz-50 GHz:

Frequency (GHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method		Absolute Level		Limit (μW)	Verdict
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	(dBm)	(μW)		
Test Frequency: 24.08GHz								
48.16	H	36.15	-52.59	24.00	-28.59	1.384	2.5	Pass
48.16	V	36.22	-52.52	24.00	-28.52	1.406	2.5	Pass
Test Frequency: 24.13GHz								
47.62	H	35.78	-52.59	24.00	-28.59	1.384	2.5	Pass
47.62	V	36.18	-52.52	24.00	-28.52	1.406	2.5	Pass
Test Frequency: 24.17GHz								
45.28	H	35.91	-52.59	24.00	-28.59	1.384	2.5	Pass
45.28	V	36.02	-52.52	24.00	-28.52	1.406	2.5	Pass

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.

Note 2: Absolute Level = Substituted Level + Antenna Gain

4.6 Interference Prevention Function

Result: Compliance with Article 6-2-5. Please refer to the following information provided by the manufacturer.

CW radar may encounter interference from various sources operating within the same frequency band, environmental reflections, or other radio transmitters. To differentiate true reflections from these interferences, CW radar systems employ several techniques:

1. RF-Level Interference Mitigation Mechanism:

From a radio frequency (RF) perspective, the 24GHz CW radar used in this system operates by continuously transmitting a continuous wave signal at a fixed single frequency within the 24GHz band. Since a CW radar only responds to echo signals that are highly matched to its own transmission frequency, any external random interference signals within the 24GHz band—whose frequencies differ from the radar's operating frequency—fall outside the radar's receiver passband in the frequency domain. As a result, these signals cannot be effectively demodulated and therefore do not interfere with the radar system. This spectral isolation characteristic provides the system with inherent frequency-selective immunity to interference.

2. System Timing and Target Detection-Level Interference Mitigation Mechanism:

At the system timing and target detection level, the CW radar relies on the coherence and strict temporal synchronization between the transmitted signal and the reflected echo. The radar receiver processes the returning echo-originating from its own transmitted signal reflected by a target—in real time. Only echoes received and mixed within an extremely short time window (on the order of nanoseconds to microseconds) can generate a valid Doppler beat signal, which is then used to determine the target's velocity and motion status.

External incoherent 24GHz random signals lack both a fixed phase relationship with the radar's transmitted signal and any temporal synchronization with its transmission timing, thus failing to meet the essential conditions for coherent detection. Consequently, even if such signals happen to be close in frequency to the radar's operating point, they cannot produce a usable intermediate frequency (IF) signal after mixing. As a result, they are naturally suppressed at the system level.

4.7 Construction Protection Confirmation

Result: Compliant. please see the below table.

☐	Sealed with screws.
☐	Plastic chassis is being welded using ultrasonic waves.
☒	Cover is glued using a special adhesive.
☐	Metal covers are spot-fused.
☒	Cover is specially interlocked.
☐	RF and Modulation components are covered with shielding case and this shielding case is interlocked.
☐	Other
If 'Other', describe the method here. Then delete this text.	

Photographs



5. EUT PHOTOGRAPHS

Please refer to the attachment 2503W23532E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2503W23532E-RF-INP EUT INTERNAL PHOTOGRAPHS.

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2503W23532E-RF-07B-TSP TEST SETUP PHOTOGRAPHS.

***** END OF REPORT *****