



RF MEASUREMENT REPORT

FCC ID: 2AU4M-SRMINI

Applicant: Wuhan Qiwu Technology Co.,Ltd.

Product: Smart Radar Taillight

Model No.: SR mini

Serial/Family Model: SR mini L, SR mini P, SR mini S, SR mini C

Brand Name: iGPSPORT

FCC Classification: Part 15 Low Power Communication Device Transmitter (DXX)

FCC Rule Part(s): Part 15.249

Result: Complies

Received Date: 2025-02-20

Test Date: 2025-02-28 ~ 2025-03-05

Reviewed By:

Denise Zhou

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date	Note
R25S1051026-U201	V01	Initial Report	2025-03-12	Valid

CONTENTS

Description	Page
1. General Information	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Testing Facility	5
1.4. Product Information	6
1.5. Radio Specification	6
2. Test Configuration	7
2.1. Test Mode	7
2.2. Test System Connection Diagram	7
2.3. Applied Standards	8
2.4. Test Environment Condition	8
3. Antenna Requirements	9
4. Measuring Instrument.....	10
5. Decision Rules and Measurement Uncertainty.....	11
5.1. Decision Rules	11
5.2. Measurement Uncertainty.....	11
6. Test Result	12
6.1. Summary.....	12
6.2. AC Conducted Emissions Measurement.....	13
6.2.1. Test Limit.....	13
6.2.2. Test Setup	13
6.2.3. Test Result	13
6.3. Radiated Emission	14
6.3.1. Test Limit.....	14
6.3.2. Test Procedure.....	15
6.3.3. Test Setting	15
6.3.4. Test Setup	18
6.3.5. Test Result	20
6.4. Radiated Restricted Band Edge Measurement	21
6.4.1. Test Limit.....	21
6.4.2. Test Procedure.....	22
6.4.3. Test Setting	22
6.4.4. Test Setup	23
6.4.5. Test Result	23
6.5. 20dB Spectrum Bandwidth Measurement	24
6.5.1. Test Limit.....	24
6.5.2. Test Procedure.....	24

6.5.3.	Test Setting	24
6.5.4.	Test Setup	25
6.5.5.	Test Result	25
Appendix A - Test Result.....		26
A.1	Fundamental & Radiated Emission Test Result	26
A.2	Radiated Restricted Band Edge Test Result	30
A.3	20dB Bandwidth Test Result.....	34
Appendix B - Test Setup Photograph		35
Appendix C - EUT Photograph		36

1. General Information

1.1. Applicant

Wuhan Qiwu Technology Co.,Ltd.

3 / F, Creative workshop, No.04, District D, Creative world, No.16 Yezhihu West Road, Hongshan District, Wuhan City, Hubei Province, China.

1.2. Manufacturer

Wuhan Qiwu Technology Co.,Ltd.

3 / F, Creative workshop, No.04, District D, Creative world, No.16 Yezhihu West Road, Hongshan District, Wuhan City, Hubei Province, China.

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China Laboratory Location (Suzhou - Wujiang) Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: ☐ R-20025 ☐ G-20034 ☐ C-20020 ☐ T-20020 ☐ R-20141 ☐ G-20134 ☐ C-20103 ☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China Laboratory Accreditations A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Laboratory Accreditations TAF: 3261 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product	Smart Radar Taillight
Model No.	SR mini
Serial/Family Model	SR mini L, SR mini P, SR mini S, SR mini C
EUT Identification No.	20250220Sample#07
Wireless Specification	24.00~24.25GHz
Antenna Information	Refer to section 1.5
Power Type	DC 5V
Notes: 1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. 2. The difference between the model SR mini and all serial models is different model name and different appearances and others are identical, which does not affect the test.	

1.5. Radio Specification

Working Frequency Range	24.00~24.25GHz
Modulation type	FMCW
Antenna Type	Patch Antenna
Antenna Gain	10.8 dBi

2. Test Configuration

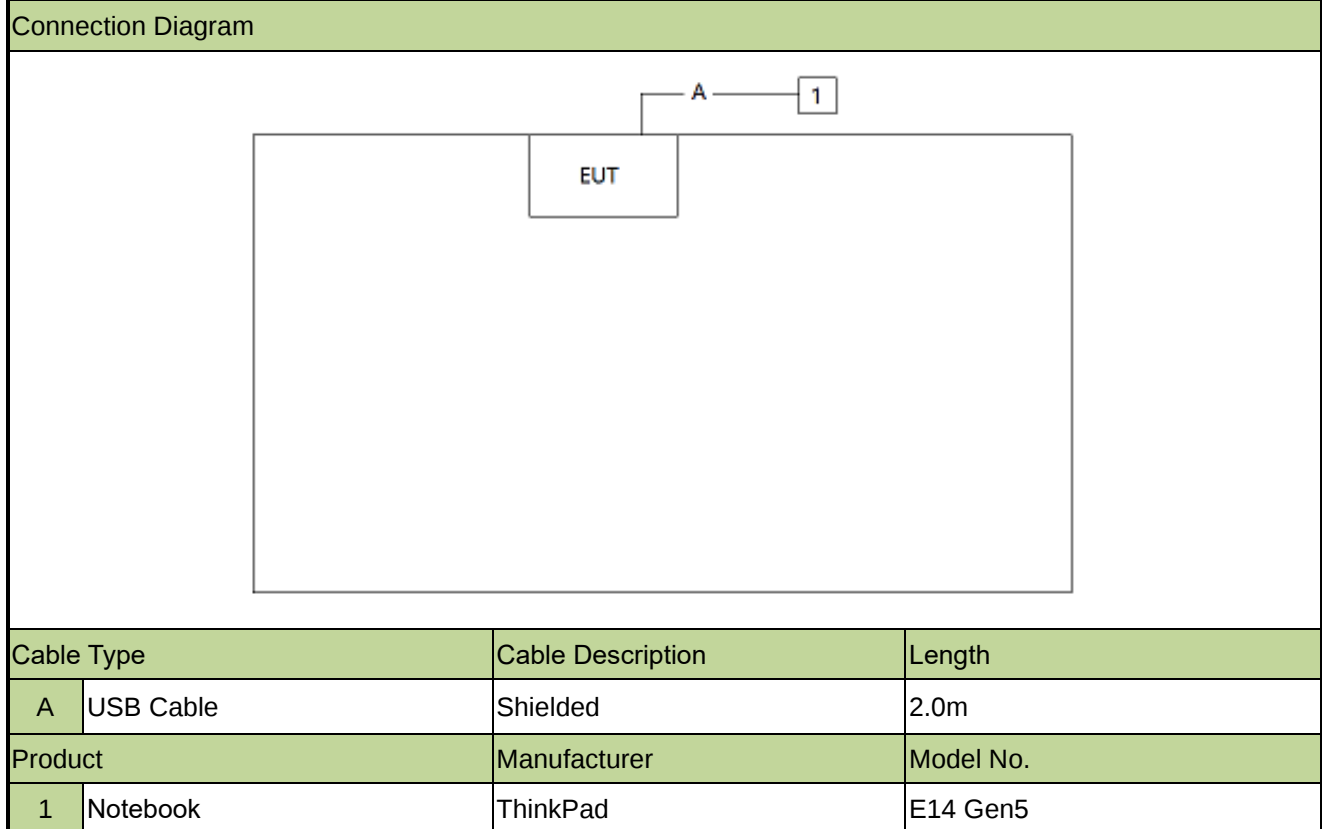
2.1. Test Mode

Mode 1: Transmitter (Tx) and Receiver (Rx) Work Simultaneously at 24GHz

Note: The test sample was provided by the manufacturer, which was configured into Collocated Tx/Rx mode after power on.

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing.



2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.249
- ANSI C63.10-2013

2.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

This unit complies with the requirement of §15.203.

4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2025-12-05	SIP-AC3
Active Loop Antenna	Schwarzbeck	FMZB 1519-60 D	MRTSUE07075	1 year	2025-11-19	SIP-AC3
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2025-05-08	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2025-09-08	SIP-AC3
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2025-10-08	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2025-07-07	SIP-AC3
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2025-10-13	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2025-10-16	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2026-01-05	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2025-12-19	SIP-AC3
Waveguide Harmonic Mixer	Keysight	M1970V	MRTSUE06271	3 years	2025-09-22	SIP-TR2
Waveguide Harmonic Mixer	Keysight	M1970W	MRTSUE06272	3 years	2025-09-29	SIP-TR2
mmWave Antenna	MI-WWAVE	261U-25/383	MRTSUE06273	N/A	N/A	SIP-TR2
mmWave Antenna	A-INFO	LB-15-25-A	MRTSUE06409	N/A	N/A	SIP-TR2
mmWave Antenna	A-INFO	LB-10-25-A	MRTSUE06410	N/A	N/A	SIP-TR2
Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2025-06-21	SIP-TR2/SIP-AC3

Note: Standard gain horns need not be periodically calibrated. Antenna appearance and connector were checked and no damage.

Software	Version	Function
e3	230711	EMI Test Software
Controller_MF 7802BS	1.02	RE Antenna & turntable
MotorContor	V 2	mmw

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

AC Conducted Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
9kHz~150kHz: 3.58dB	
150kHz~30MHz: 3.20dB	
Radiated Emission Measurement	
Measurement Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):	
Coaxial:	9kHz~30MHz: 2.61dB
Coplanar:	9kHz~30MHz: 2.62dB
Horizontal:	30MHz~200MHz: 3.79dB
	200MHz~1GHz: 3.91dB
	1GHz~40GHz: 4.99dB
	40GHz~50GHz: 3.96dB
	50GHz~75GHz: 4.01dB
	75GHz~110GHz: 3.99dB
Vertical:	30MHz~200MHz: 4.06dB
	200MHz~1GHz: 5.21dB
	1GHz~40GHz: 4.90dB
	40GHz~50GHz: 3.86dB
	50GHz~75GHz: 3.89dB
	75GHz~110GHz: 3.87dB

6. Test Result

6.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Verdict
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	N/A
15.209 15.249	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Radiated	Pass
15.215(c)	20dB Spectrum Bandwidth	Radiated	Pass

Notes:

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. "N/A" means that this item is not applicable, and the detail information refer to relevant section.

6.2. AC Conducted Emissions Measurement

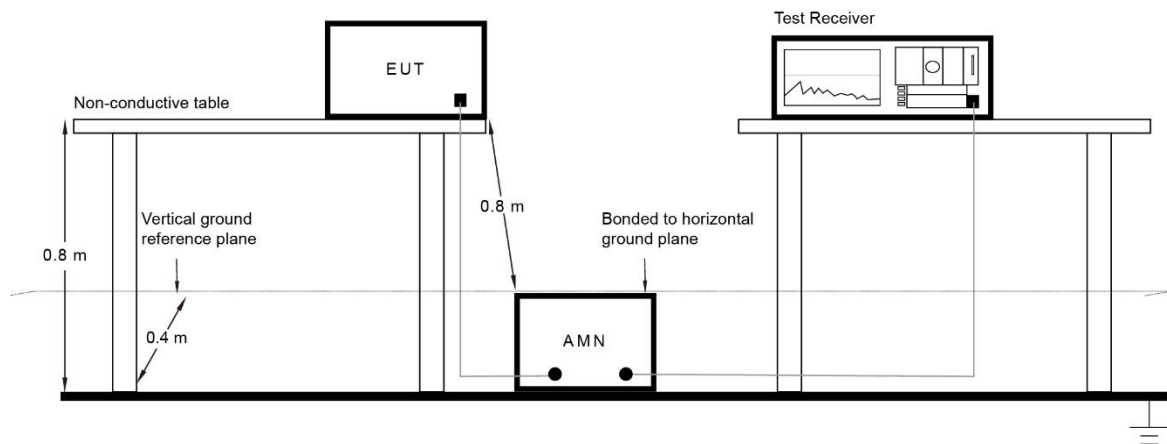
6.2.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.2.2. Test Setup



6.2.3. Test Result

The product is powered by DC supply, so this item is not applicable.

6.3. Radiated Emission

6.3.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.249		
Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (μV/m)
902 ~ 928	50	500
2400 ~ 2483.5	50	500
5725 ~ 5875	50	500
24000 ~ 24250	250	2500
Note: FCC Part 15.249 (d), Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.		

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3
Note 1: The lower limit shall apply at the transition frequency.		
Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.		
Note 3: E field strength (dBμV/m) = 20 log E field strength (μV/m).		

6.3.2. Test Procedure

ANSI C63.10-2013 Section 6.3

ANSI C63.10-2013 Section 6.4

ANSI C63.10-2013 Section 6.5

ANSI C63.10-2013 Section 6.6

ANSI C63.10-2013 Section 9.12

Note: Far-field boundary calculation as below.

According to ANSI C63.10-2013, Clause 9, All measurements shall be made in the far-field of the measurement antenna. The far-field boundary for mm-wave antennas is $2D^2/\lambda$.

- For spurious and harmonic emissions testing, D is the largest antenna dimension of the measurement antenna in m;

For fundamental or out-of-band emissions, D is the largest antenna dimension of the EUT antenna or measurement antenna, whichever is largest.
- λ is the wavelength in m.

Far-field boundary calculation			
Frequency Range (GHz)	λ (m)	D (m)	$R_{(\text{Far Field})}$ (m)
24.00 ~ 24.25	0.012	0.096	1.536
40.00 ~ 50.00	0.006	0.046	0.705
50.00 ~ 75.00	0.004	0.036	0.648
75.00 ~ 100.00	0.0027	0.026	0.501

For 24.00 ~ 24.25GHz, The measurement is performed at a minimum distance of 3.0m > $R_{(\text{Far Field})}$.

For 40.00 ~ 50.00GHz, The measurement is performed at a minimum distance of 1.0m > $R_{(\text{Far Field})}$.

For 50.00 ~ 100.00GHz, The measurement is performed at a minimum distance of 0.7m > $R_{(\text{Far Field})}$.

6.3.3. Test Setting

Measurement of harmonic and spurious emissions above 40 GHz

1. Connect the test antenna covering the appropriate frequency range to a spectrum analyzer via an external mixer.
2. Set spectrum analyzer RBW = 1MHz, VBW = 3MHz, peak & average detector.
3. Maximize all observed emissions. Note the maximum power indicated on the spectrum analyzer. Adjust this reading, if necessary, by the conversion loss of the external mixer used at the frequency under investigation and the external mixer IF cable loss.

4. Calculate the maximum field strength of the emission at the measurement distance.
5. Calculate the power density at the distance specified by the limit from the field strength at the distance specified by the limit.
6. Repeat the preceding sequence for every emission observed in the frequency band under investigation.

Measurement of harmonic and spurious emissions below 40 GHz

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3 x RBW
4. Detector = Peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

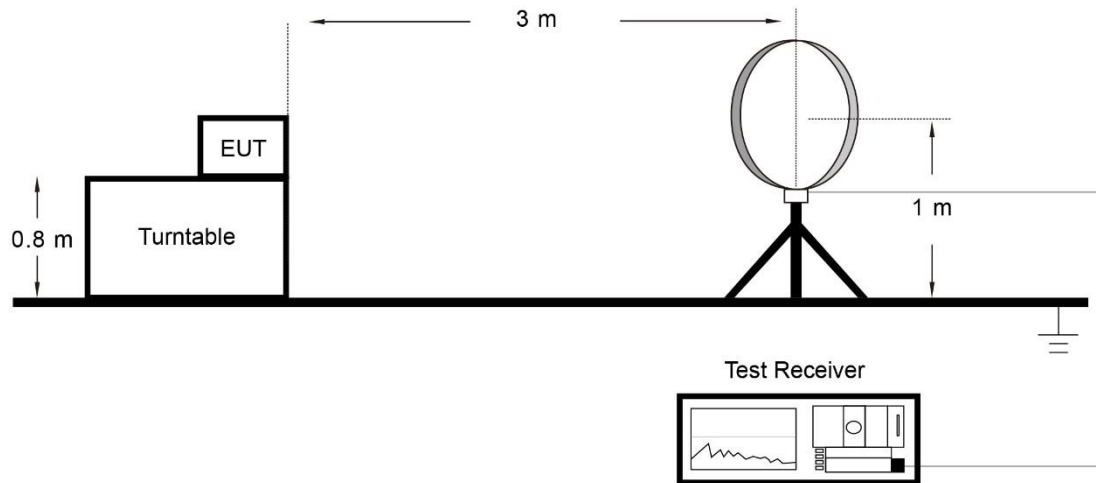
Frequency	RBW
9 ~ 150 kHz	200 Hz
0.15 ~ 30 MHz	9 kHz
30 ~ 1000 MHz	120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

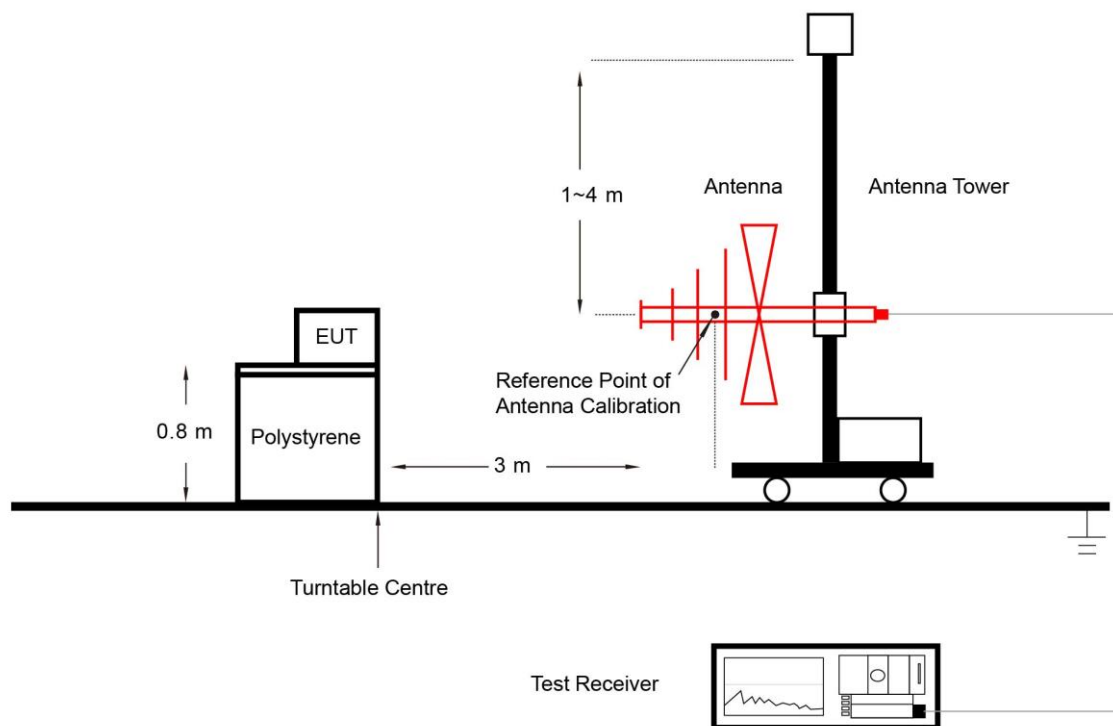
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. Set the VBW $\geq 3 \times$ RBW
4. Detector function = Average
5. Sweep time = auto couple
6. Trace mode = Max Hold
7. Allow max hold to run for suitable traces until the trace tend to stabilize.

6.3.4. Test Setup

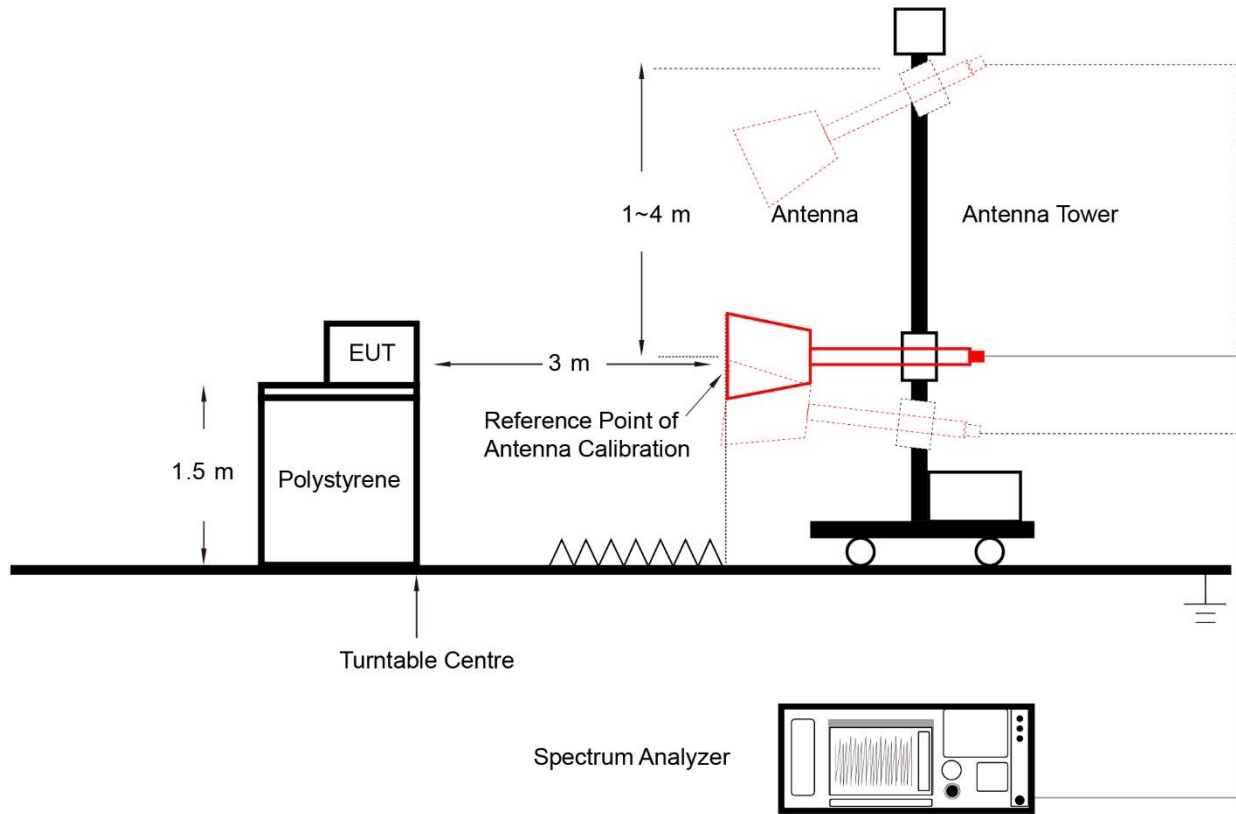
Below 30MHz Test Setup:



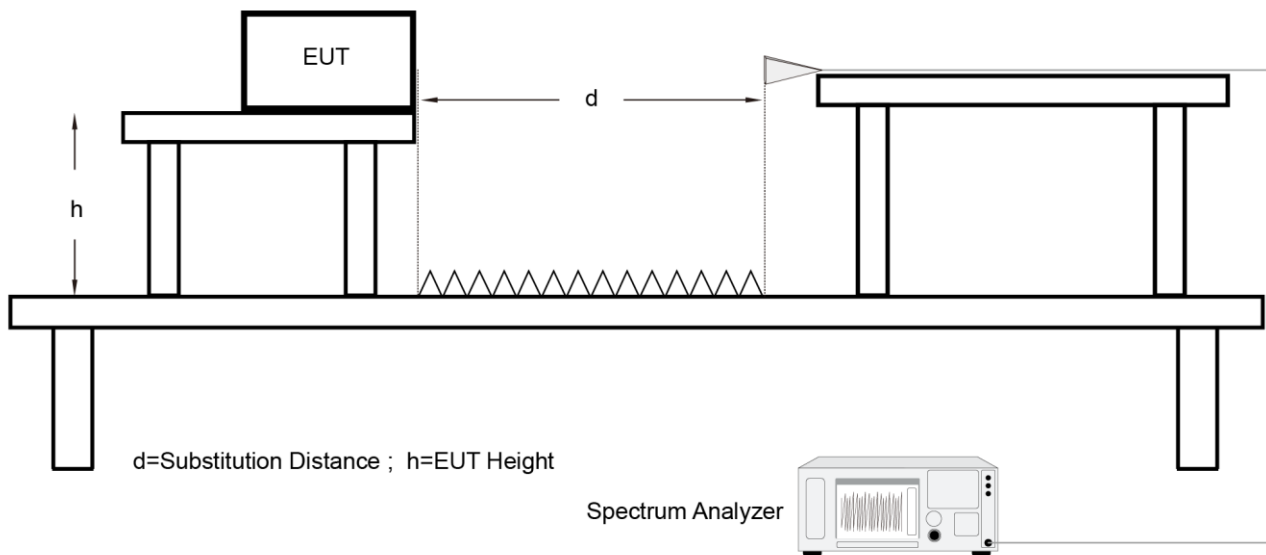
Below 1GHz Test Setup:



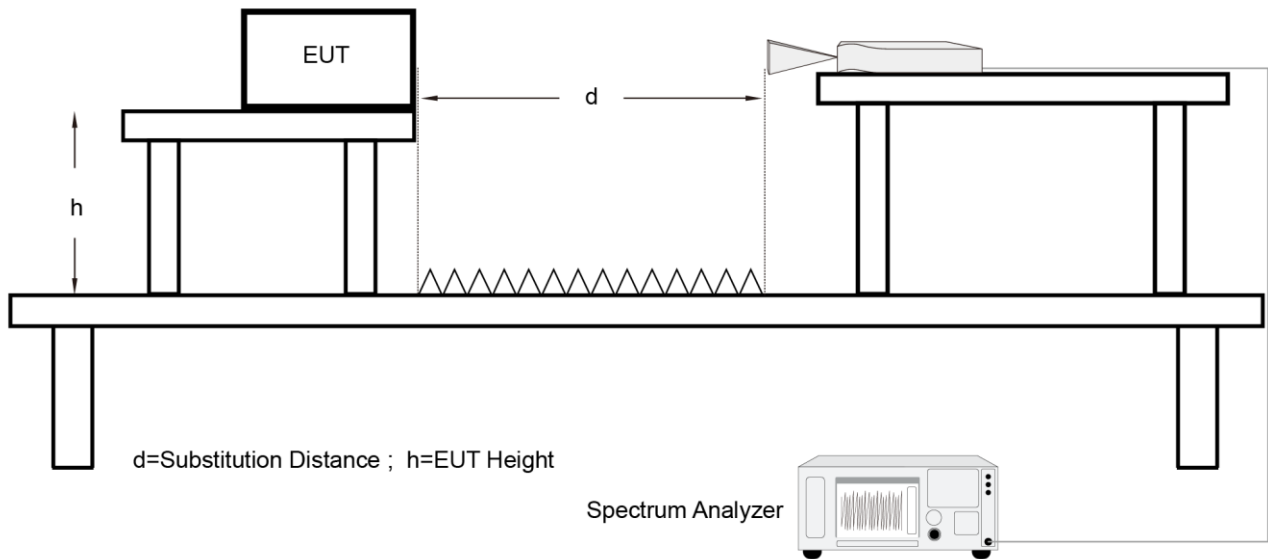
1GHz ~ 40GHz Test Setup:



40GHz ~ 50GHz Test Setup:



Above 50GHz Test Setup:



6.3.5. Test Result

Refer to Appendix A.1.

6.4. Radiated Restricted Band Edge Measurement

6.4.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

¹ Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.

² Above 38.6

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [$\mu\text{V}/\text{m}$]	Measured Distance [Meter]
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

6.4.2. Test Procedure

ANSI C63.10-2013 Section 6.3

ANSI C63.10-2013 Section 6.6

ANSI C63.10-2013 Section 6.10

6.4.3. Test Setting

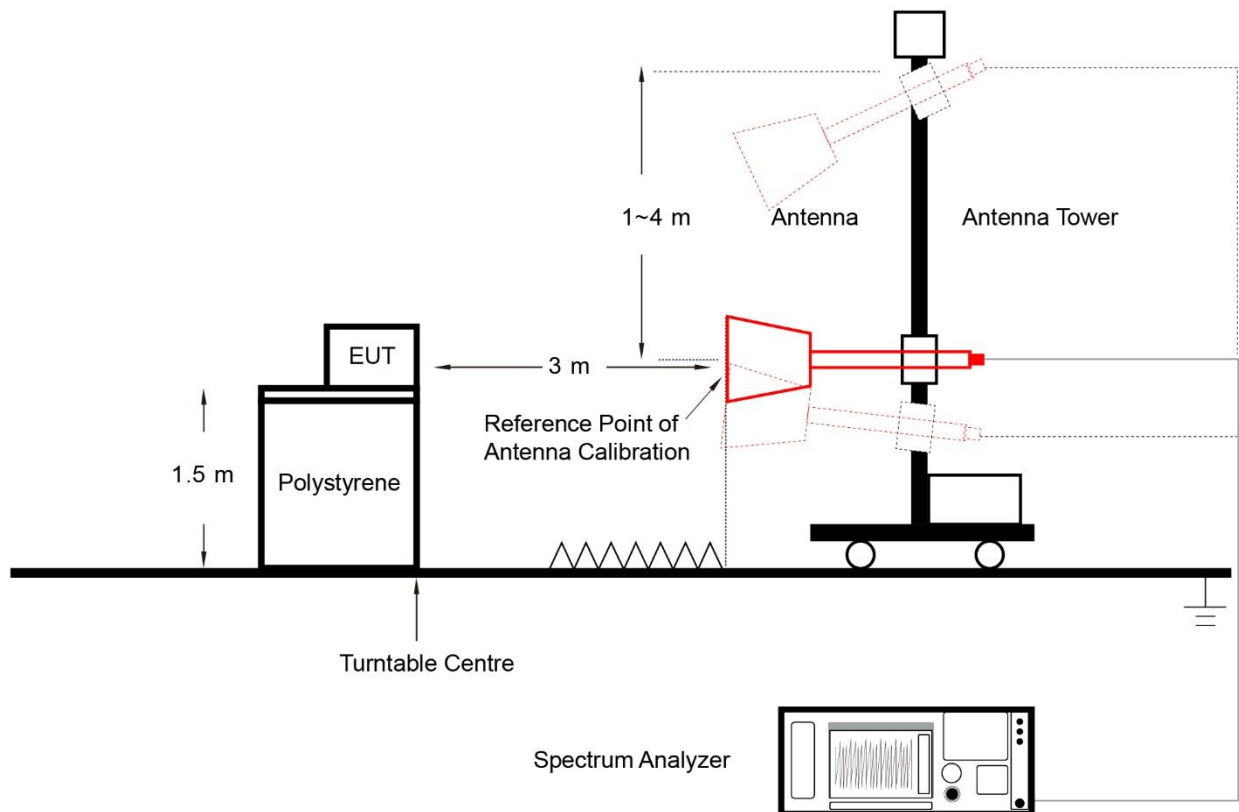
Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. Set the VBW $\geq 3 \times$ RBW
4. Detector function = Average
5. Sweep time $\geq$ (number of points in sweep) $\times$ (transmission symbol period).
6. Trace mode = Average
7. Allow max hold to run for suitable traces until the trace tend to stabilize.

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.2.

6.5. 20dB Spectrum Bandwidth Measurement

6.5.1. Test Limit

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emission in the specific band.

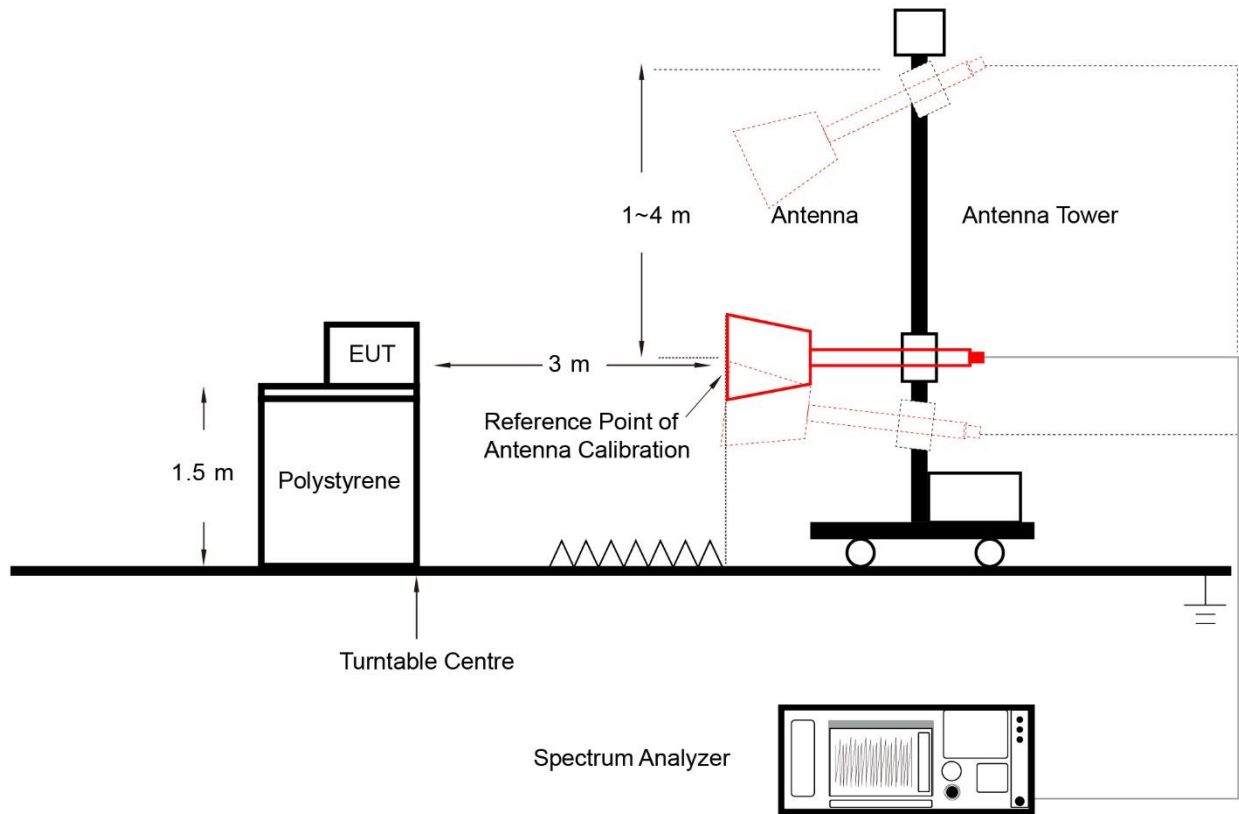
6.5.2. Test Procedure

ANSI C63.10-2013 Clause 6.9.2

6.5.3. Test Setting

1. Set the spectrum span range to overlap the nominal center frequency
2. Set RBW = 1% ~ 5% of the OBW
3. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize and marker the highest level
8. Use Occupied BW function to determine two frequencies, one at the lowest frequency and the other at the highest frequency

6.5.4. Test Setup



6.5.5. Test Result

Refer to Appendix A.3.

Appendix A - Test Result

A.1 Fundamental & Radiated Emission Test Result

Test Site	SIP-AC3	Test Date	2025-02-28
Test Engineer	Fusco Pan		

Test Mode	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level@3m (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Result
Fundamental Radiated Emission (Horizontal)								
Mode 1	24209.600	104.110	-8.660	95.450	127.960	-32.510	Peak	Pass
	24178.000	57.530	-8.700	48.830	107.960	-59.130	Average	Pass
Fundamental Radiated Emission (Vertical)								
Mode 1	24125.600	124.410	-8.500	115.910	127.960	-12.050	Peak	Pass
	24065.600	89.000	-8.590	80.420	107.960	-27.540	Average	Pass

Note:

Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	SIP-AC3	Test Engineer	Fusco Pan
Test Date	2025-02-28	Test Frequency Range	Below 1GHz

Test Mode	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Mode 1	192.014	21.200	15.440	36.640	43.500	-6.860	Quasi-Peak	Horizontal
	260.053	21.550	17.250	38.800	46.000	-7.200	Quasi-Peak	Horizontal
	269.996	23.200	17.800	41.000	46.000	-5.000	Quasi-Peak	Horizontal
	280.024	24.000	18.280	42.280	46.000	-3.720	Quasi-Peak	Horizontal
	300.052	21.800	18.700	40.500	46.000	-5.500	Quasi-Peak	Horizontal
	306.969	20.400	18.910	39.310	46.000	-6.690	Quasi-Peak	Horizontal
	60.006	14.700	18.060	32.760	40.000	-7.240	Quasi-Peak	Vertical
	131.989	14.600	17.260	31.860	43.500	-11.640	Quasi-Peak	Vertical
	143.981	22.200	18.160	40.360	43.500	-3.140	Quasi-Peak	Vertical
	192.014	20.800	15.440	36.240	43.500	-7.260	Quasi-Peak	Vertical
	269.996	18.600	17.800	36.400	46.000	-9.600	Quasi-Peak	Vertical
	280.024	19.400	18.280	37.680	46.000	-8.320	Quasi-Peak	Vertical

Notes:

- Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)
- The amplitude of radiated emissions (frequency range from 9KHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Test Site	SIP-AC3	Test Engineer	Fusco Pan
Test Date	2025-02-28	Test Frequency Range	1 ~ 40 GHz

Test Mode	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Mode 1	7205.000	56.820	-3.390	53.430	74.000	-20.570	Peak	Horizontal
	7205.000	38.500	-3.390	35.110	54.000	-18.890	Average	Horizontal
	17136.400	45.240	9.930	55.170	74.000	-18.830	Peak	Horizontal
	17136.400	33.120	9.930	43.050	54.000	-10.950	Average	Horizontal
	18000.000	42.170	10.900	53.070	74.000	-20.930	Peak	Horizontal
	18000.000	31.200	10.900	42.100	54.000	-11.900	Average	Horizontal
	15866.500	45.430	7.290	52.720	74.000	-21.280	Peak	Vertical
	15866.500	33.470	7.290	40.760	54.000	-13.240	Average	Vertical
	17144.900	43.890	9.860	53.750	74.000	-20.250	Peak	Vertical
	17144.900	32.250	9.860	42.110	54.000	-11.890	Average	Vertical
	17877.600	43.060	11.070	54.130	74.000	-19.870	Peak	Vertical
	17877.600	31.110	11.070	42.180	54.000	-11.820	Average	Vertical
	30397.000	57.490	-8.540	48.950	74.000	-25.050	Peak	Horizontal
	30397.000	46.330	-8.540	37.790	54.000	-16.210	Average	Horizontal
	38068.400	54.920	-2.900	52.020	74.000	-21.980	Peak	Horizontal
	38068.400	41.250	-2.900	38.350	54.000	-15.650	Average	Horizontal
	39311.400	53.200	-0.060	53.140	74.000	-20.860	Peak	Horizontal
	39311.400	41.100	-0.060	41.040	54.000	-12.960	Average	Horizontal
	30665.400	57.580	-8.700	48.880	74.000	-25.120	Peak	Vertical
	30665.400	45.560	-8.700	36.860	54.000	-17.140	Average	Vertical
	33780.600	58.860	-8.570	50.290	74.000	-23.710	Peak	Vertical
	33780.600	46.500	-8.570	37.930	54.000	-16.070	Average	Vertical
	39274.000	52.040	0.170	52.210	74.000	-21.790	Peak	Vertical
	39274.000	41.800	0.170	41.970	54.000	-12.030	Average	Vertical

Notes:

- Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)
- Average measurement was not performed when the peak level lower than average limit

Test Site	SIP-TR2	Test Engineer	Fusco Pan
Test Date	2025-03-02 ~ 2025-03-05	Test Frequency Range	Above 40 GHz

Test Mode	Frequency (GHz)	Reading Level@ 0.7m (dBμV)	Factor (dB/m)	Measure Level@ 0.7m (dBμV/m)	Measure Level@3m (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Mode 1	48.438	33.460	45.590	79.050	66.410	88.000	-21.590	Peak	Horizontal
	48.371	4.321	45.590	49.911	37.271	68.000	-30.729	Average	Horizontal
	48.250	38.530	46.040	84.570	71.930	88.000	-16.070	Peak	Vertical
	48.251	12.930	46.040	58.970	46.330	68.000	-21.670	Average	Vertical
	72.197	42.300	42.410	84.710	72.070	88.000	-15.930	Peak	Horizontal
	72.377	23.774	42.410	66.184	53.544	68.000	-14.456	Average	Horizontal
	72.377	38.380	42.410	80.790	68.150	88.000	-19.850	Peak	Vertical
	72.394	23.315	42.410	65.725	53.085	68.000	-14.915	Average	Vertical
	96.500	32.680	44.500	77.180	64.540	88.000	-23.460	Peak	Horizontal
	96.500	23.945	44.500	68.445	55.805	68.000	-12.195	Average	Horizontal
	96.500	32.770	44.500	77.270	64.630	88.000	-23.370	Peak	Vertical
	96.500	24.281	44.500	68.781	56.141	68.000	-11.859	Average	Vertical

Notes:

1. For Emission between 40GHz and 100GHz:

Measure Level @0.7m (dBμV/m) = Reading Level @0.7m (dBμV) + Factor (dB/m)

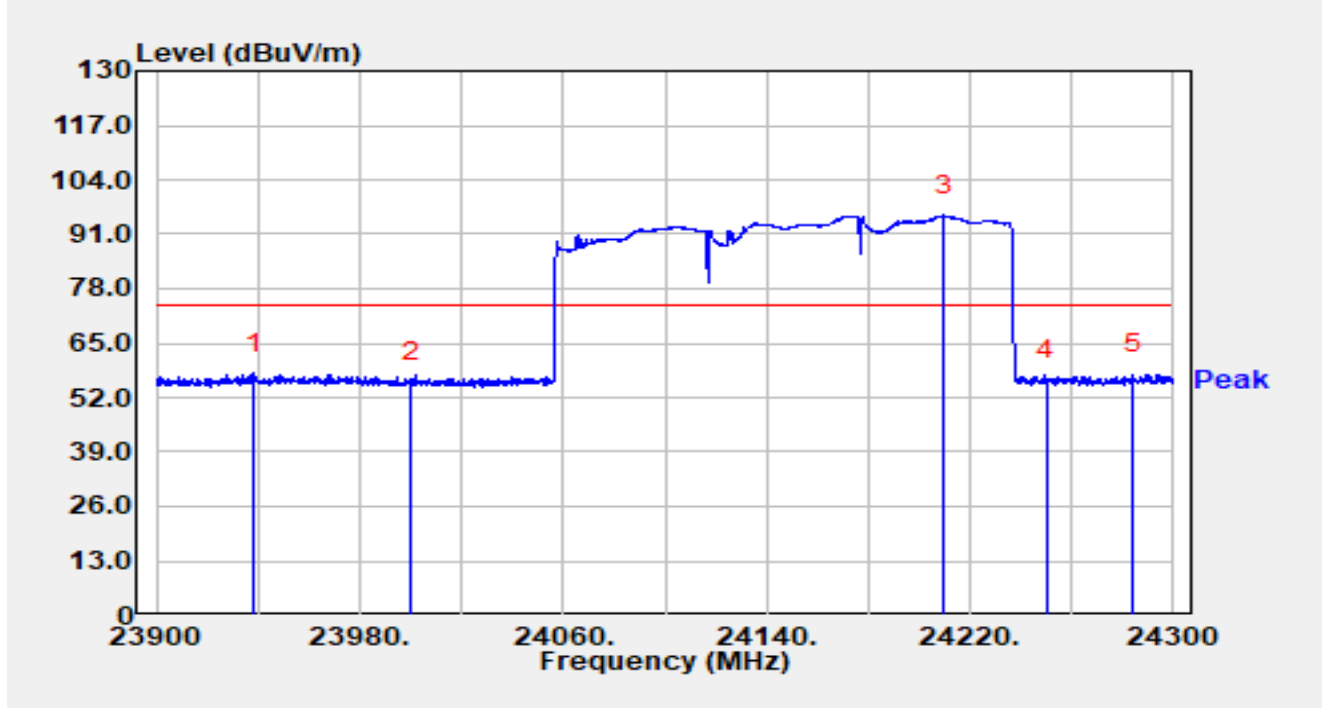
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

2. For Emission between 40GHz and 100GHz:

Measure Level @3m = Measure Level @0.7m + 20 * log(0.7m / 3m)

A.2 Radiated Restricted Band Edge Test Result

Site	SIP-AC3	Test Date	2025-02-28
Temperature	15.7 °C	Humidity	55.2 %
Limit	FCC_Part15.209_RE(3m)_PK	Test Engineer	Fusco Pan
Factor	BBHA 9170_00934	Polarity	Horizontal
EUT	Smart Radar Taillight	Test Voltage	By DC 5V
Test Mode	Mode 1		

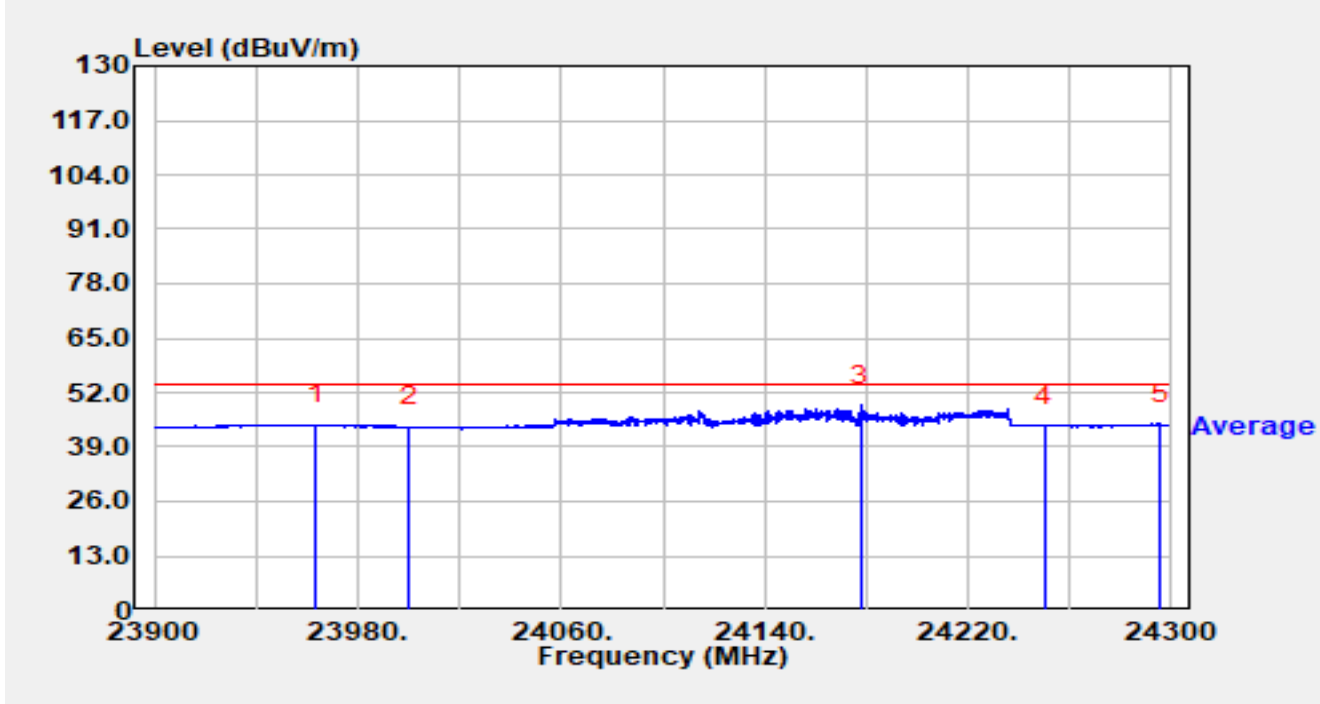


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	23938.200	66.11	-8.29	57.81	-16.19	74.00	Peak
2		24000.000	64.38	-8.69	55.69	-18.31	74.00	Peak
3		24209.600	104.11	-8.66	95.45	N/A	N/A	Peak
4		24250.000	64.72	-8.40	56.32	-17.68	74.00	Peak
5		24284.000	65.76	-8.34	57.42	-16.58	74.00	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Attenuation (dB) - AMP (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2025-02-28
Temperature	15.7 °C	Humidity	55.2 %
Limit	FCC_Part15.209_RE(3m)_AV	Test Engineer	Fusco Pan
Factor	BBHA 9170_00934	Polarity	Horizontal
EUT	Smart Radar Taillight	Test Voltage	By DC 5V
Test Mode	Mode 1		

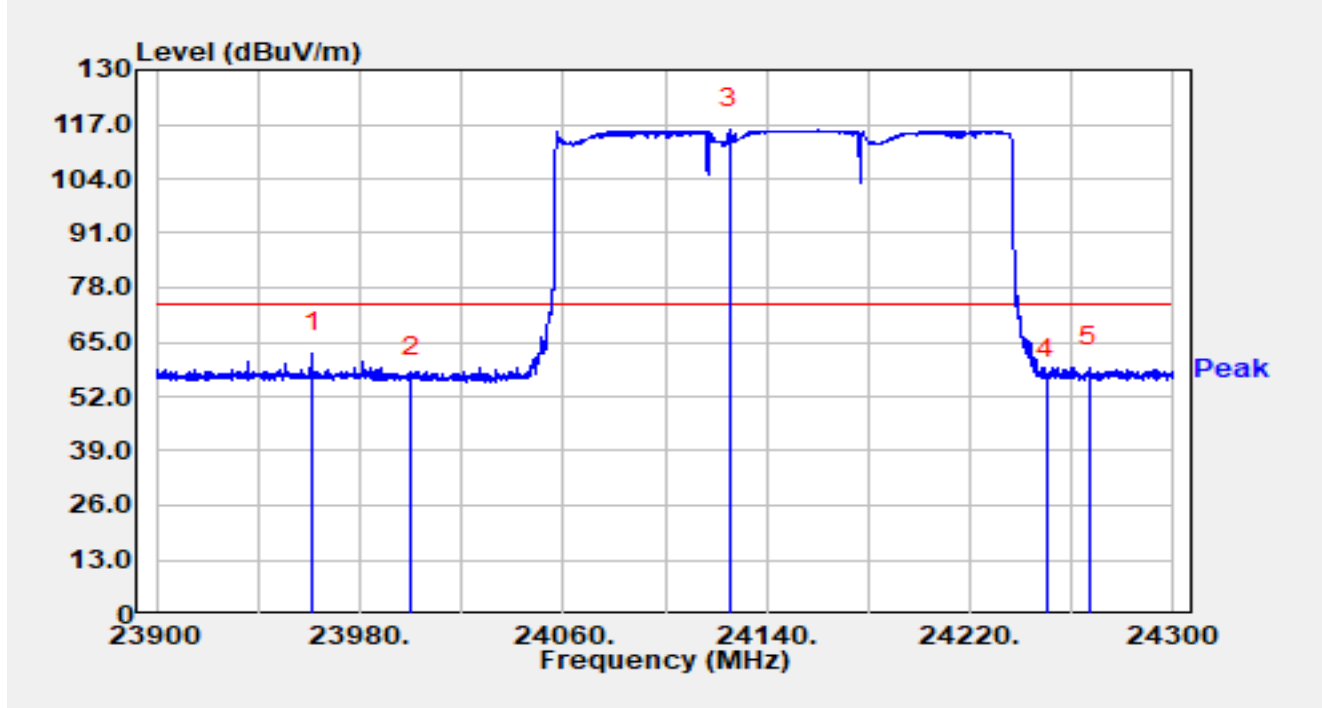


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		23963.400	52.62	-8.32	44.30	-9.70	54.00	Average
2		24000.000	52.54	-8.69	43.85	-10.15	54.00	Average
3		24178.000	57.53	-8.70	48.83	N/A	N/A	Average
4		24250.000	52.53	-8.40	44.13	-9.87	54.00	Average
5	*	24295.800	52.67	-8.23	44.45	-9.55	54.00	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Attenuation (dB) - AMP (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2025-02-28
Temperature	15.7 °C	Humidity	55.2 %
Limit	FCC_Part15.209_RE(3m)_PK	Test Engineer	Fusco Pan
Factor	BBHA 9170_00934	Polarity	Vertical
EUT	Smart Radar Taillight	Test Voltage	By DC 5V
Test Mode	Mode 1		

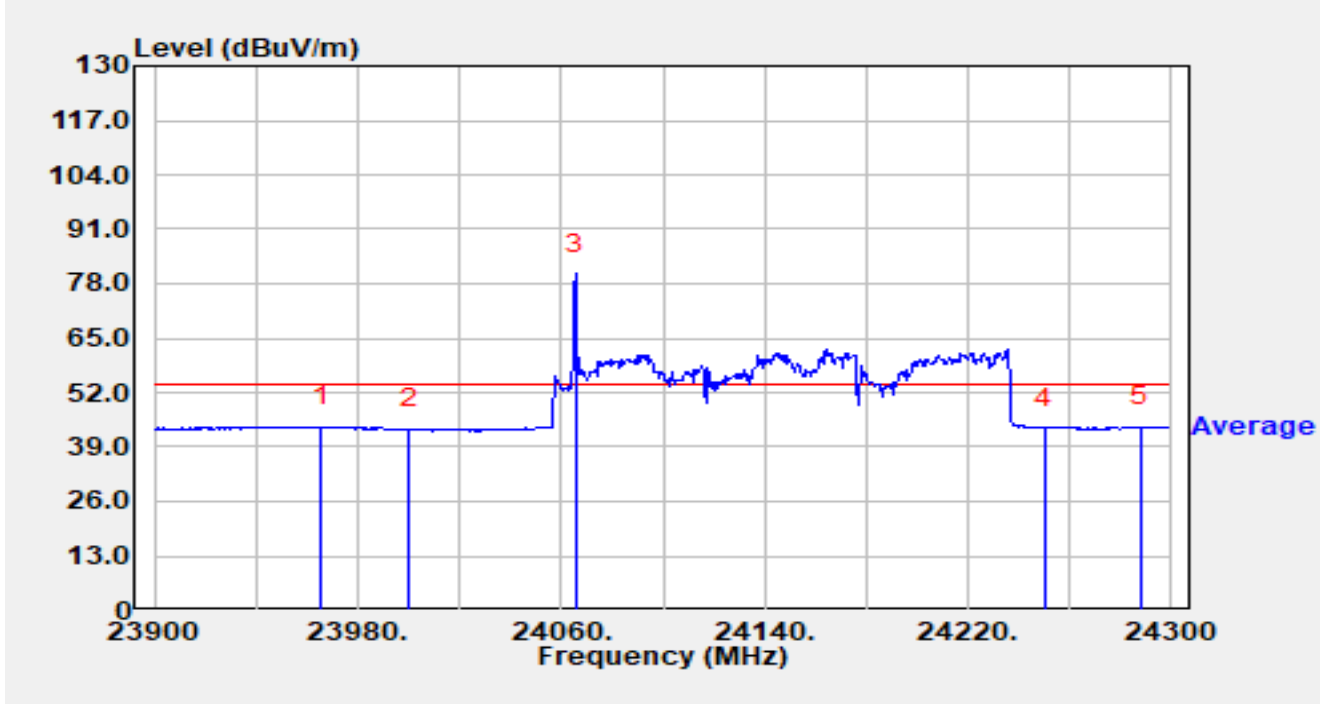


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	23961.400	70.72	-8.30	62.41	-11.59	74.00	Peak
2		24000.000	65.25	-8.69	56.56	-17.44	74.00	Peak
3		24125.600	124.41	-8.50	115.91	N/A	N/A	Peak
4		24250.000	64.79	-8.40	56.38	-17.62	74.00	Peak
5		24267.000	67.55	-8.54	59.01	-14.99	74.00	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Attenuation (dB) - AMP (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2025-02-28
Temperature	15.7 °C	Humidity	55.2 %
Limit	FCC_Part15.209_RE(3m)_AV	Test Engineer	Fusco Pan
Factor	BBHA 9170_00934	Polarity	Vertical
EUT	Smart Radar Taillight	Test Voltage	By DC 5V
Test Mode	Mode 1		



No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	23965.600	52.13	-8.34	43.79	-10.21	54.00	Average
2		24000.000	52.01	-8.69	43.33	-10.67	54.00	Average
3		24065.600	89.00	-8.59	80.42	N/A	N/A	Average
4		24250.000	51.99	-8.40	43.59	-10.41	54.00	Average
5		24288.000	51.97	-8.28	43.69	-10.31	54.00	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + Attenuation (dB) - AMP (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

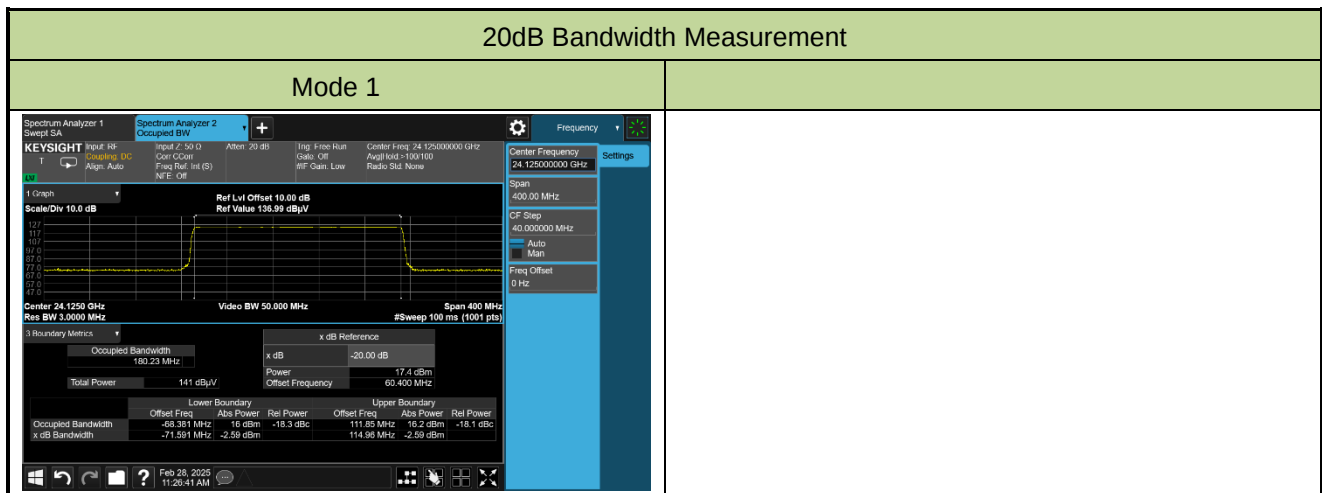
A.3 20dB Bandwidth Test Result

Test Site	SIP-AC3	Test Date	2025-02-28
Test Engineer	Fusco Pan		

Test Mode	20dB Bandwidth (MHz)	F_L (MHz)	F_L Limit (MHz)	F_H (MHz)	F_H Limit (MHz)	Result
Mode 1	186.551	24053.409	≥ 24000	24239.96	≤ 24250	Pass

Note: Low Frequency (F_L) = Center Frequency + Lower Boundary;

High Frequency (F_H) = Center Frequency + Upper Boundary.



Appendix B - Test Setup Photograph

Refer to "R25S1051026-UT" file.

Appendix C - EUT Photograph

Refer to "R25S1051026-UE" file.