

FCC Test Report

Report No.: 2405A110957EB
Applicant: Shenzhen Retevis Technology Co., Ltd.
Address: 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen, China
Product Name: Two Way Radio
Product Model: Ailunce HA1UV
Multiple Models: Ailunce HA2, Ailunce H1
Trade Mark: RETEVIS
FCC ID: 2ASNSHA1UV
Standards: FCC CFR Title 47 Part 15B

Test Date: 2025-01-15 to 2025-01-21
Test Result: Complied
Report Date: 2025-01-22
Reviewed by:

Frank Yin

Approved by:

Jacob Kong

Frank Yin
Project Engineer

Jacob Kong
Manager

Prepared by:

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China



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4. The information marked “#” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

Revision History

Version No.	Issued Date	Description
00	2025-01-22	Original

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1 General Information

1.1 Client Information

Applicant:	Shenzhen Retevis Technology Co., Ltd.
Address:	7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Retevis Technology Co., Ltd.
Address:	7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen, China

1.2 Product Description of EUT

The EUT is Two Way Radio that contains amateur radio, FM/NOAA receiver and scanning receiver, this report covers the full testing of the scanning receiver.

Sample Serial Number	2W43-1 for RE test (assigned by WATC)
Sample Received Date	2024-12-17
Sample Status	Good Condition
Operating Frequency Range [#]	Scanning Receiver: 136-174MHz, 400-480MHz
Power Supply	Radio: DC 7.4V from battery or DC 8.4V from Charger or DC 5.0V for charging battery Charger: DC 5V from AC Adapter
Charger Information	Model: CB01 Input: 5V, 1A Output: 8.4V/500mA
Modification	Sample No Modification by the test lab

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s)

Note: For the FM/NOAA receiver was approval pursuant to the SDoC procedures.

For the amateur transmitter used for amateur radio service per Part 97 is exempt from FCC certification as stated at one of the FCC Wireless Telecommunications Bureau (WTB) websites for Part 97, the FCC (OET) equipment authorization program does not generally apply to amateur radio service station transmitters.

1.4 Measurement Uncertainty

Parameter		Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
AC Power Lines Conducted Emissions		±3.14dB
Radiated emission	Below 1GHz	±4.84dB
	Above 1GHz	±5.44dB
Note 1: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. Note 2: The Decision Rule is based on simple acceptance with ISO Guide 98-4:2012 Clause 8.2 (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)		

1.5 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: ga@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

1.6 Test Methodology

FCC CFR 47 Part 15

ANSI C63.4-2014

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method

2 Description of Measurement

2.1 Test Configuration

The system was configured for testing in Typical Use Mode, which was provided by the manufacturer.

Test Mode:	
Mode 1:	Scanning(136-174MHz&400-480MHz)
Mode 2:	Receiving at 136MHz
Mode 3:	Receiving at 155MHz
Mode 4:	Receiving at 174MHz
Mode 5:	Receiving at 400MHz
Mode 6:	Receiving at 440MHz
Mode 7:	Receiving at 480MHz

2.2 Test Auxiliary Equipment

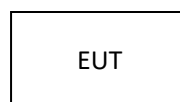
Manufacturer	Description	Model	Serial Number
ROHDE& SCHWARZ	Vector Signal Generator	SMBV100A	256300
XIAOMI	AC Adaptor	MDY-08-ES	unknown

2.3 Interconnecting Cables

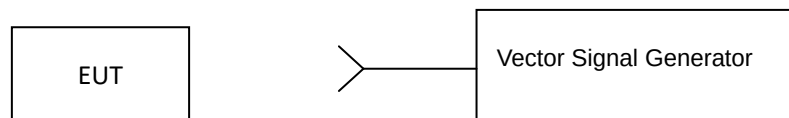
Manufacturer	Description	Length(m)	From	To
Unknown	USB Cable	1.0	Adapter	Base/EUT

2.4 Block Diagram of Connection between EUT and AE

Mode 1:



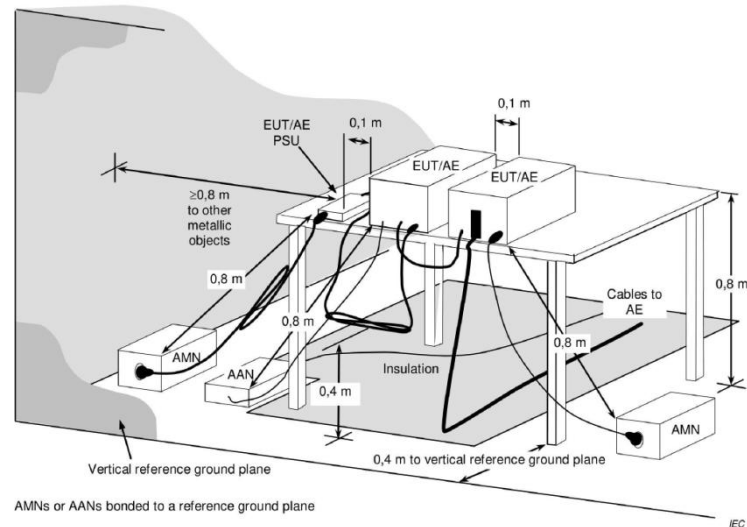
Mode 2~7:



Note: for reference only, the actual connection setup used for testing please refer to the test photos.

2.5 Test Setup

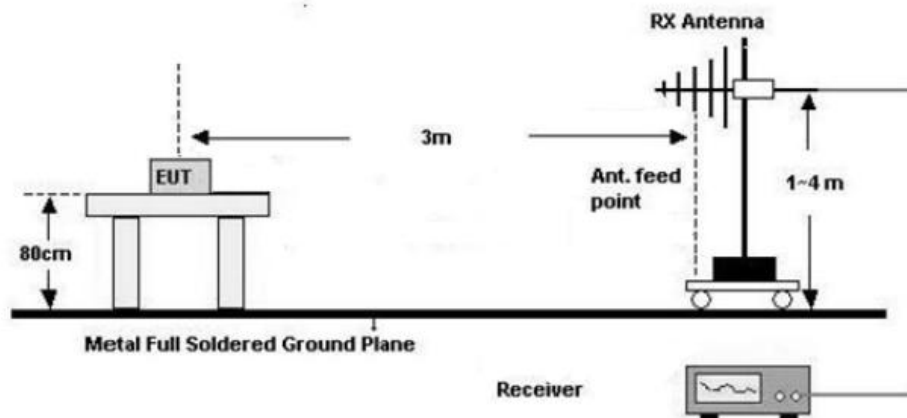
1) Conducted emission measurement:



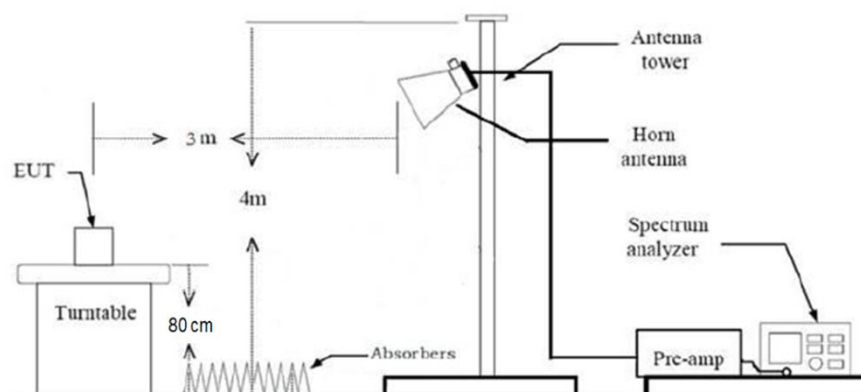
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

30MHz-1GHz (3m SAC)



Above 1GHz(3m FAC)



2.6 Test Procedure

Conducted emission:

1. The E.U.T is placed on a non-conducting table 40cm from the vertical ground plane and 80cm above the horizontal ground plane (Please refer to the block diagram of the test setup and photographs).
2. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.
3. Line conducted data is recorded for both Line and Neutral

Radiated Emission Procedure:

a) For 30MHz-1GHz:

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.

b) For above 1GHz:

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.

2.7 Measurement Method

Description of Test	Measurement Method
AC Line Conducted Emissions	ANSI C63.4-2014 Section 7
Radiated emission	ANSI C63.4-2014 Section 8

2.8 Measurement Equipment

Manufacturer	Description	Model	Management No.	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI test receiver	ESR3	102758	2024/6/4	2025/6/3
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40-N	101608	2024/6/4	2025/6/3
SONOMA INSTRUMENT	Low frequency amplifier	310	186014	2024/6/4	2025/6/3
A.H. Systems	PREAMPLIFIER	PAM-0118P	531	2024/6/4	2025/6/3
SCHWARZBECK	Log - periodic wideband antenna	VULB 9163	9163-872	2023/7/7	2026/7/6
Astro Antenna Ltd	Horn antenna	AHA-118S	3015	2023/7/6	2026/7/5
N/A	Coaxial Cable	NO.9	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.15	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.16	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.17	N/A	2024/6/4	2025/6/3
Audix	Test Software	E3	191218 V9	/	/
Scanning receivers and frequency converters used with scanning receivers					
ROHDE& SCHWARZ	Vector Signal Generator	SMBV100A	256300	2024/6/4	2025/6/3
HP	RF Communication Test Set	HP8920A	T-01-EM163	2024/11/7	2025/11/6

Note: All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or International standards.

3 Test Results

3.1 Test Summary

FCC Rules	Description of Test	Result
FCC §15.107	AC Line Conducted Emissions	N/A
FCC §15.109	Radiated emission	Compliance
FCC §15.121(b)	Scanning receivers and frequency converters used with scanning receivers	Compliance

3.2 Limit

Test items	Limit																																											
AC Line Conducted Emissions	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBµV)</th><th colspan="2">Class B Limit (dBµV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>79</td><td>66</td><td>66 to 56 ^{Note 1}</td><td>56 to 46 ^{Note 1}</td></tr><tr><td>0.5 – 5</td><td>73</td><td>60</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>73</td><td>60</td><td>60</td><td>50</td></tr></table> Note 1: The limit level in dBµV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.	Frequency (MHz)	Class A Limit (dBµV)		Class B Limit (dBµV)		Quasi-Peak	Average	Quasi-Peak	Average	0.15 – 0.5	79	66	66 to 56 ^{Note 1}	56 to 46 ^{Note 1}	0.5 – 5	73	60	56	46	5 – 30	73	60	60	50																			
Frequency (MHz)	Class A Limit (dBµV)		Class B Limit (dBµV)																																									
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5 – 30	73	60	60	50																																								
Radiated emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBµV/m)</th><th colspan="2">Class B Limit (dBµV/m)</th></tr><tr><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th></tr><tr><td>30 – 88</td><td>49.0</td><td>39.0</td><td>40.0</td><td>30.0</td></tr><tr><td>88 – 216</td><td>53.5</td><td>43.5</td><td>43.5</td><td>33.5</td></tr><tr><td>216 – 960</td><td>56.0</td><td>46.0</td><td>46.0</td><td>36.0</td></tr><tr><td>960 – 1000</td><td>60.0</td><td>50.0</td><td>54.0</td><td>44.0</td></tr></table> Note: The more stringent limit applies at transition frequencies. <table><tr><th rowspan="2">Frequency</th><th colspan="2">Class A Limit (dBµV/m) @ 3m</th><th colspan="2">Class B Limit (dBµV/m) @ 3m</th></tr><tr><th>Average</th><th>Peake</th><th>Average</th><th>Peake</th></tr><tr><td>Above 1 GHz</td><td>60.0</td><td>80.0</td><td>54.0</td><td>74.0</td></tr></table> Note: The measurement bandwidth shall be 1 MHz or greater.	Frequency (MHz)	Class A Limit (dBµV/m)		Class B Limit (dBµV/m)		Quasi-Peak @ 3m	Quasi-Peak @ 10m	Quasi-Peak @ 3m	Quasi-Peak @ 10m	30 – 88	49.0	39.0	40.0	30.0	88 – 216	53.5	43.5	43.5	33.5	216 – 960	56.0	46.0	46.0	36.0	960 – 1000	60.0	50.0	54.0	44.0	Frequency	Class A Limit (dBµV/m) @ 3m		Class B Limit (dBµV/m) @ 3m		Average	Peake	Average	Peake	Above 1 GHz	60.0	80.0	54.0	74.0
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960 – 1000	60.0	50.0	54.0	44.0																																								
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	Average	Peake	Average	Peake																																								
Above 1 GHz	60.0	80.0	54.0	74.0																																								
Scanning receivers and frequency converters used with scanning receivers	Except as provided in paragraph (c) of this section, scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present.																																											

3.3 AC Line Conducted Emissions Test Data

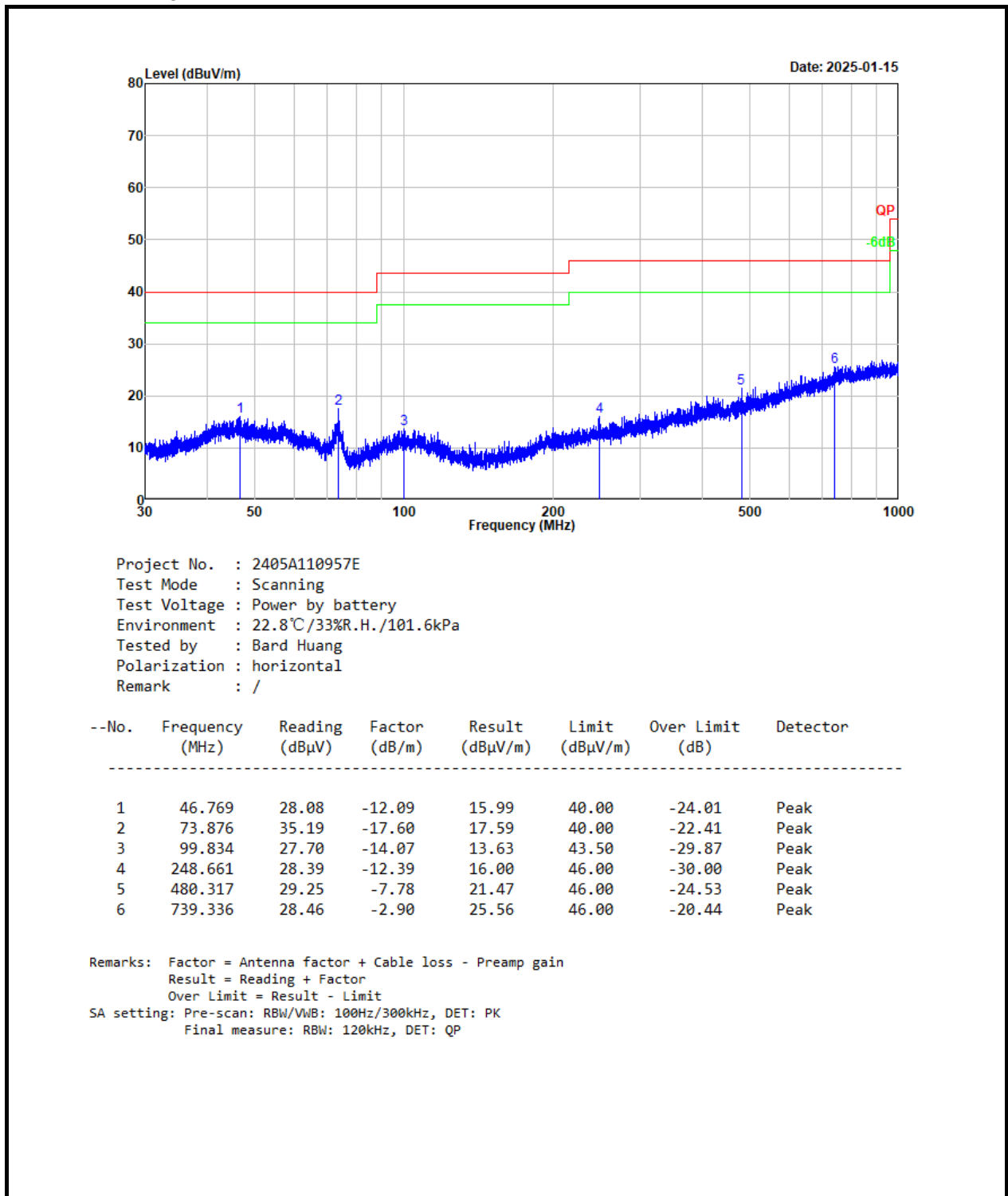
Not applicable, the device was powered by battery while operating.

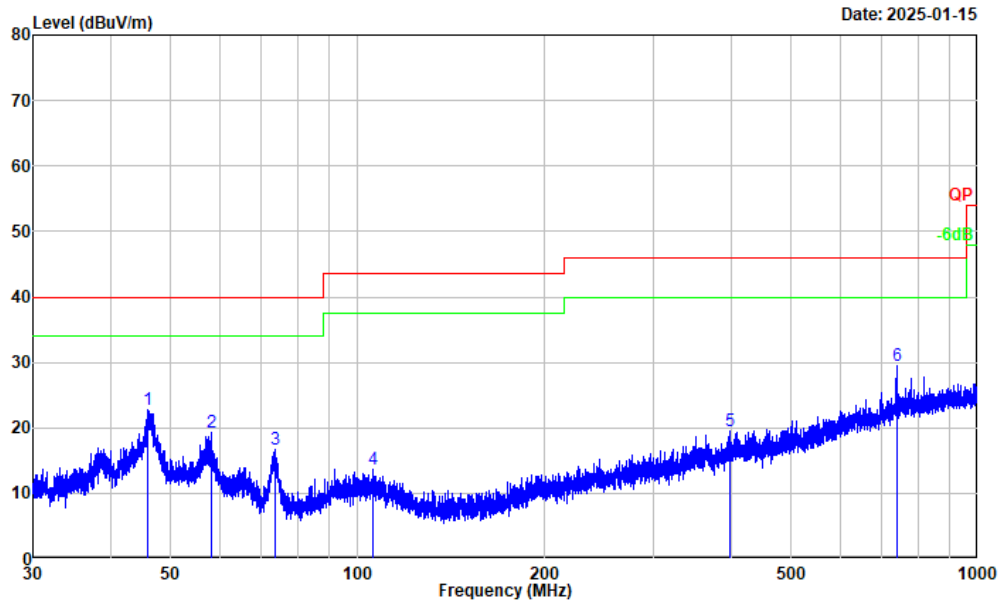
3.4 Radiated emission Test Data

30MHz-1GHz:

Test Date:	2025-01-15~2025-01-21	Test By:	Bard Huang
Environment condition:	Temperature: 22.5~22.8°C; Relative Humidity:33~41%; ATM Pressure: 101.1~101.6kPa		

Mode 1: Scanning





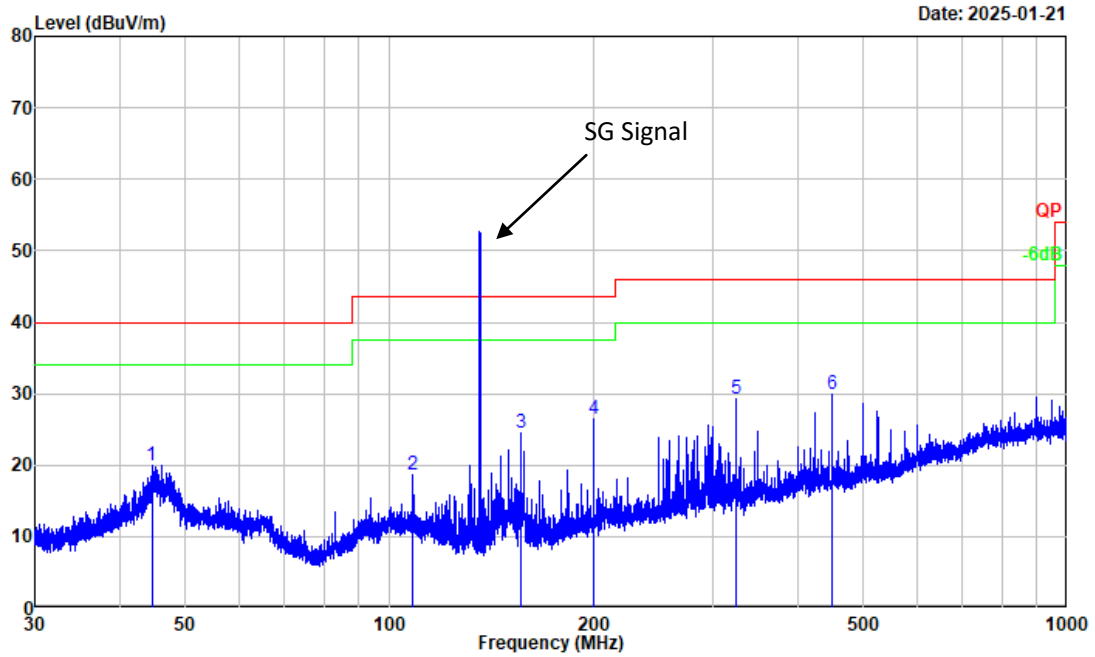
Project No. : 2405A110957E
Test Mode : Scanning
Test Voltage : Power by battery
Environment : 22.8°C/33%R.H./101.6kPa
Tested by : Bard Huang
Polarization : vertical
Remark : /

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector

1	45.976	34.93	-12.09	22.84	40.00	-17.16	Peak
2	58.050	32.60	-13.30	19.30	40.00	-20.70	Peak
3	73.843	34.28	-17.59	16.69	40.00	-23.31	Peak
4	106.059	27.55	-13.82	13.73	43.50	-29.77	Peak
5	397.633	28.23	-8.62	19.61	46.00	-26.39	Peak
6	739.336	32.32	-2.90	29.42	46.00	-16.58	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

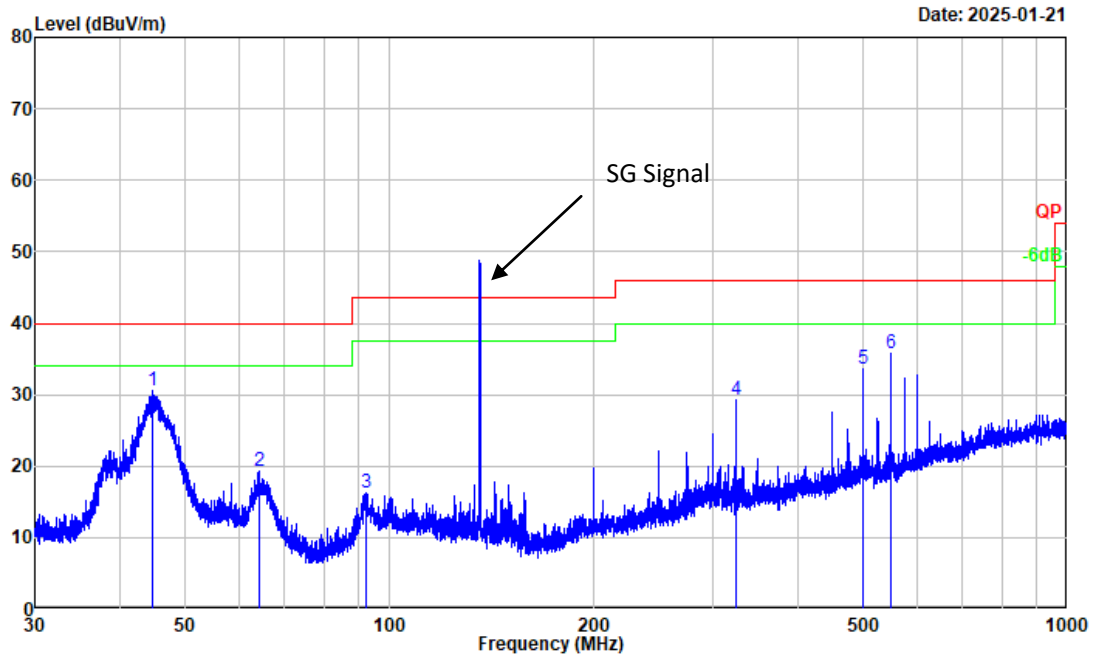
Mode 2: Receiving at 136MHz



Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : horizontal
 Remark : 136MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	44.626	32.07	-12.14	19.93	40.00	-20.07	Peak
2	108.314	32.66	-13.93	18.73	43.50	-24.77	Peak
3	156.595	41.44	-16.93	24.51	43.50	-18.99	Peak
4	199.986	40.12	-13.72	26.40	43.50	-17.10	Peak
5	325.026	39.97	-10.60	29.37	46.00	-16.63	Peak
6	450.147	38.23	-8.27	29.96	46.00	-16.04	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

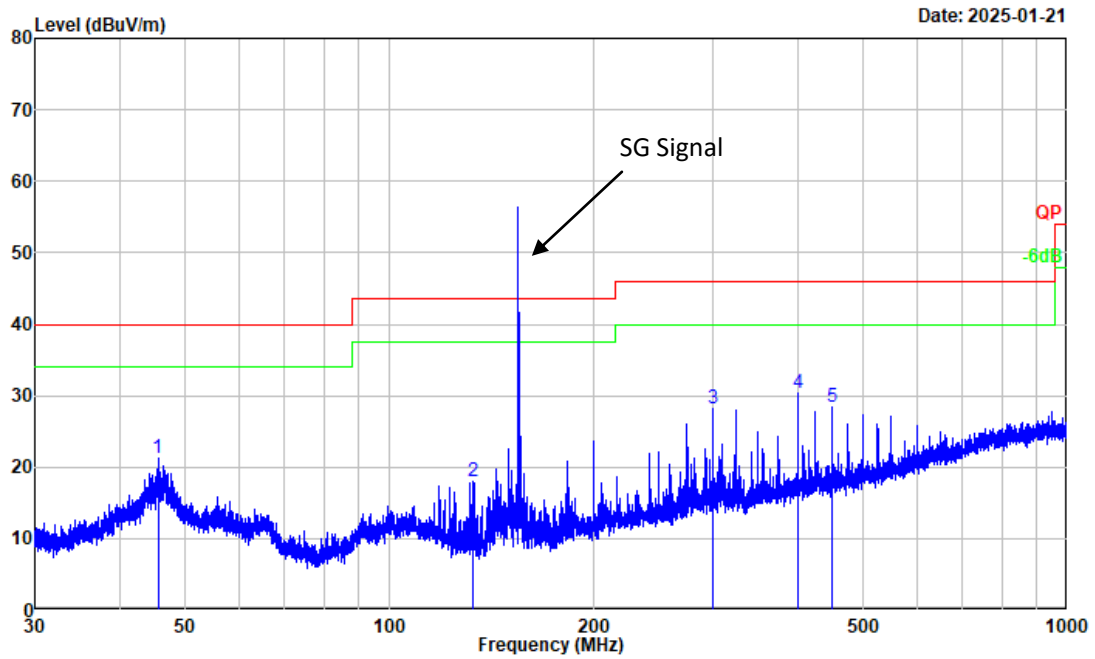


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/41%R.H./101.1kPa
Tested by : Bard Huang
Polarization : vertical
Remark : 136MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	44.842	42.68	-12.12	30.56	40.00	-9.44	Peak
2	64.264	33.60	-14.22	19.38	40.00	-20.62	Peak
3	92.220	31.34	-15.13	16.21	43.50	-27.29	Peak
4	325.026	39.97	-10.60	29.37	46.00	-16.63	Peak
5	500.082	40.81	-7.23	33.58	46.00	-12.42	Peak
6	549.983	42.22	-6.40	35.82	46.00	-10.18	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VnB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

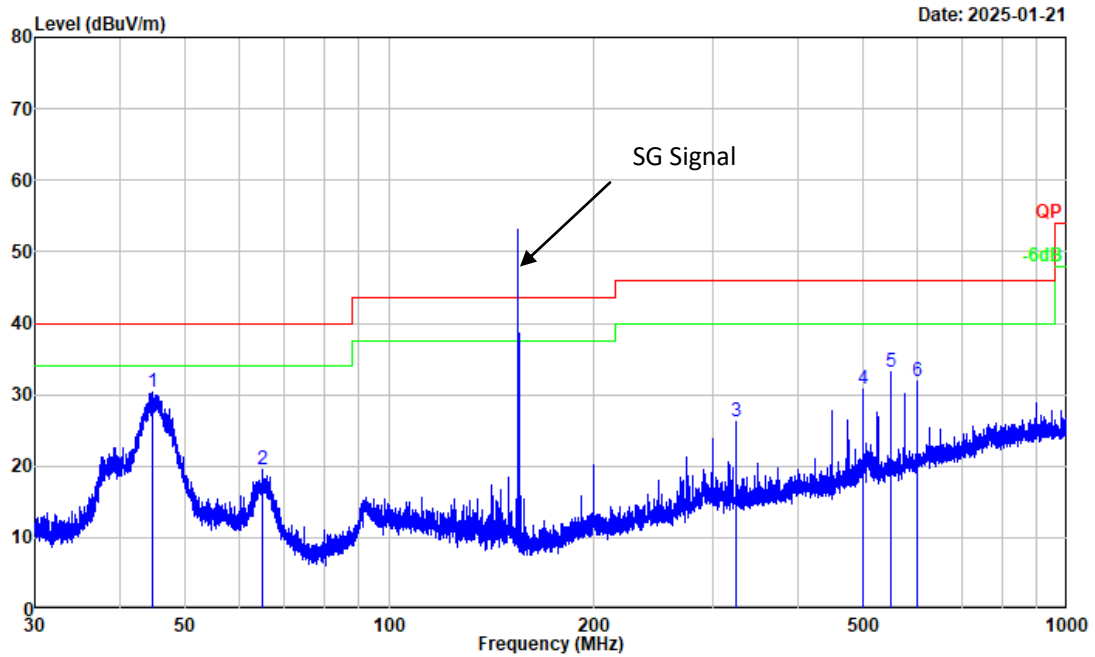
Mode 3: Receiving at 155MHz



Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : horizontal
 Remark : 155MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	45.575	33.42	-12.09	21.33	40.00	-18.67	Peak
2	132.569	35.24	-17.31	17.93	43.50	-25.57	Peak
3	299.973	39.51	-11.28	28.23	46.00	-17.77	Peak
4	400.081	38.79	-8.51	30.28	46.00	-15.72	Peak
5	450.147	36.69	-8.27	28.42	46.00	-17.58	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

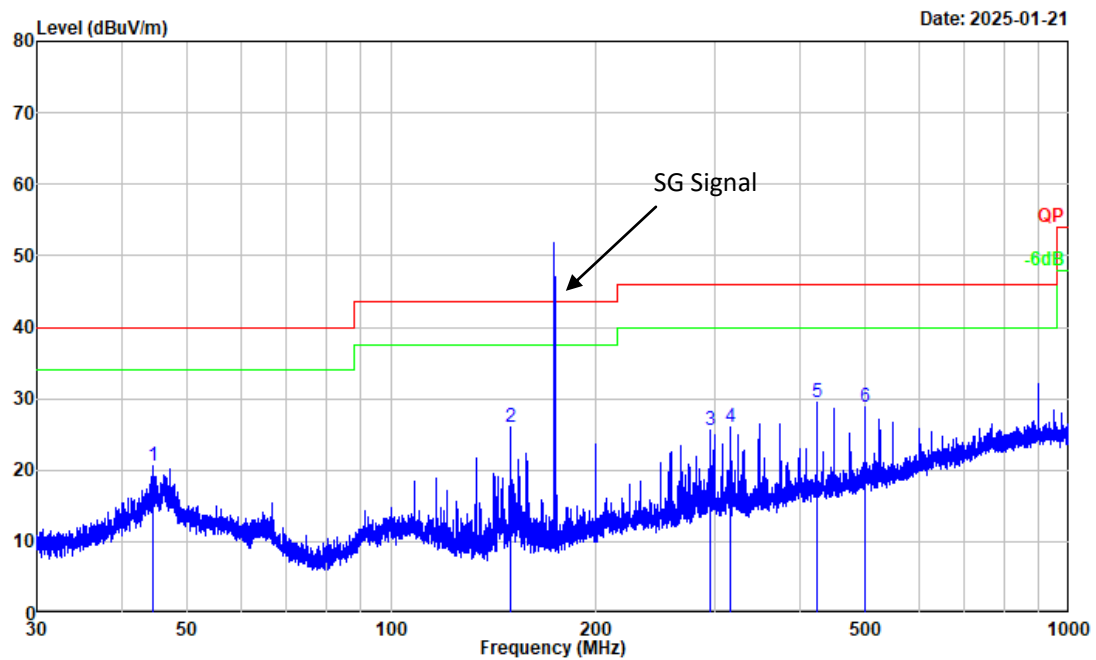


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/41%R.H./101.1kPa
Tested by : Bard Huang
Polarization : vertical
Remark : 155MHz

--No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
1	44.802	42.37	-12.12	30.25	40.00	-9.75	Peak
2	65.057	33.85	-14.37	19.48	40.00	-20.52	Peak
3	325.026	36.74	-10.60	26.14	46.00	-19.86	Peak
4	500.082	38.07	-7.23	30.84	46.00	-15.16	Peak
5	550.224	39.60	-6.40	33.20	46.00	-12.80	Peak
6	600.110	36.98	-5.12	31.86	46.00	-14.14	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VNB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

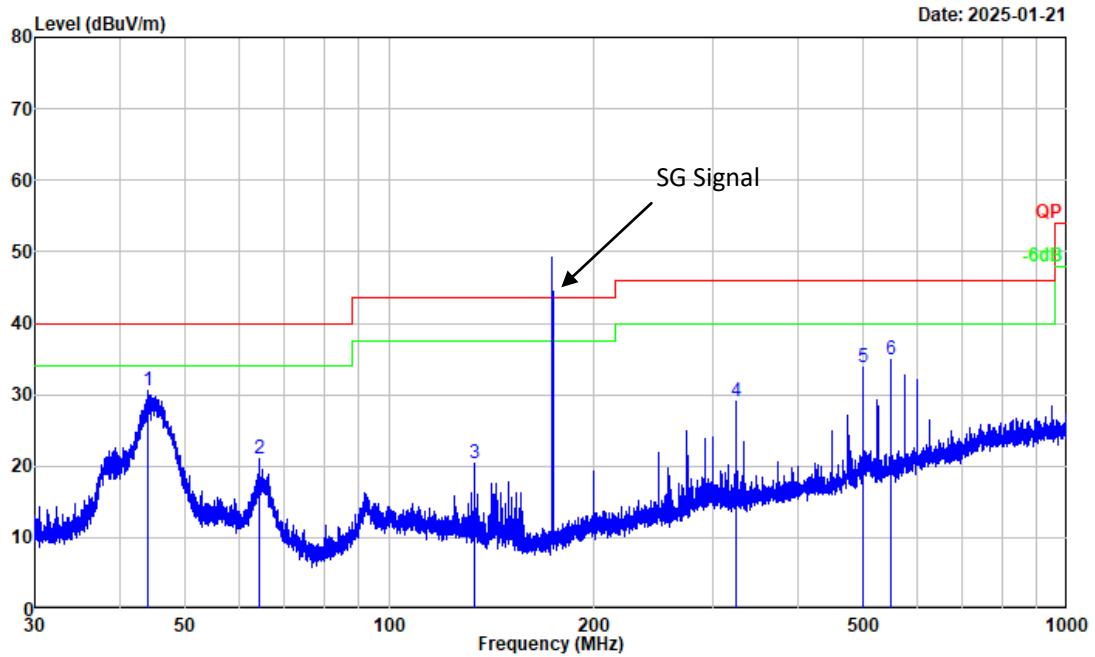
Mode 4: Receiving at 174MHz



Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : horizontal
 Remark : 174MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	44.567	32.71	-12.14	20.57	40.00	-19.43	Peak
2	150.011	43.42	-17.33	26.09	43.50	-17.41	Peak
3	295.924	36.90	-11.37	25.53	46.00	-20.47	Peak
4	316.728	37.01	-10.90	26.11	46.00	-19.89	Peak
5	425.028	37.77	-8.27	29.50	46.00	-16.50	Peak
6	500.082	36.05	-7.23	28.82	46.00	-17.18	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

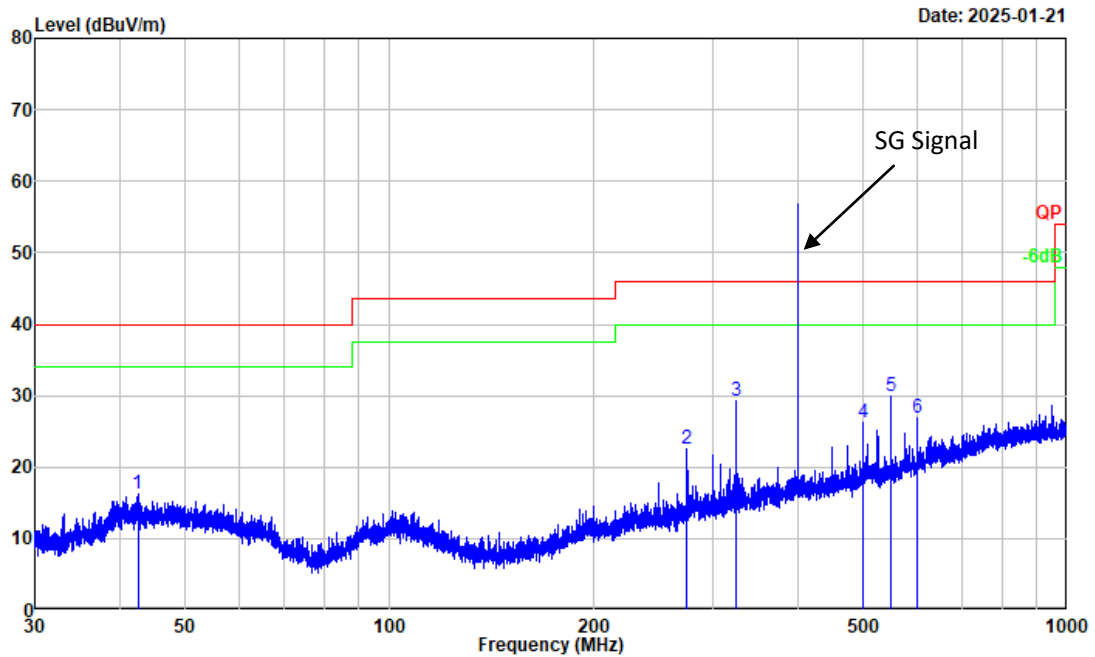


Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : vertical
 Remark : 174MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	43.966	42.66	-12.20	30.46	40.00	-9.54	Peak
2	64.433	35.25	-14.26	20.99	40.00	-19.01	Peak
3	133.326	37.74	-17.35	20.39	43.50	-23.11	Peak
4	325.026	39.71	-10.60	29.11	46.00	-16.89	Peak
5	500.082	40.98	-7.23	33.75	46.00	-12.25	Peak
6	550.224	41.35	-6.40	34.95	46.00	-11.05	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VnB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

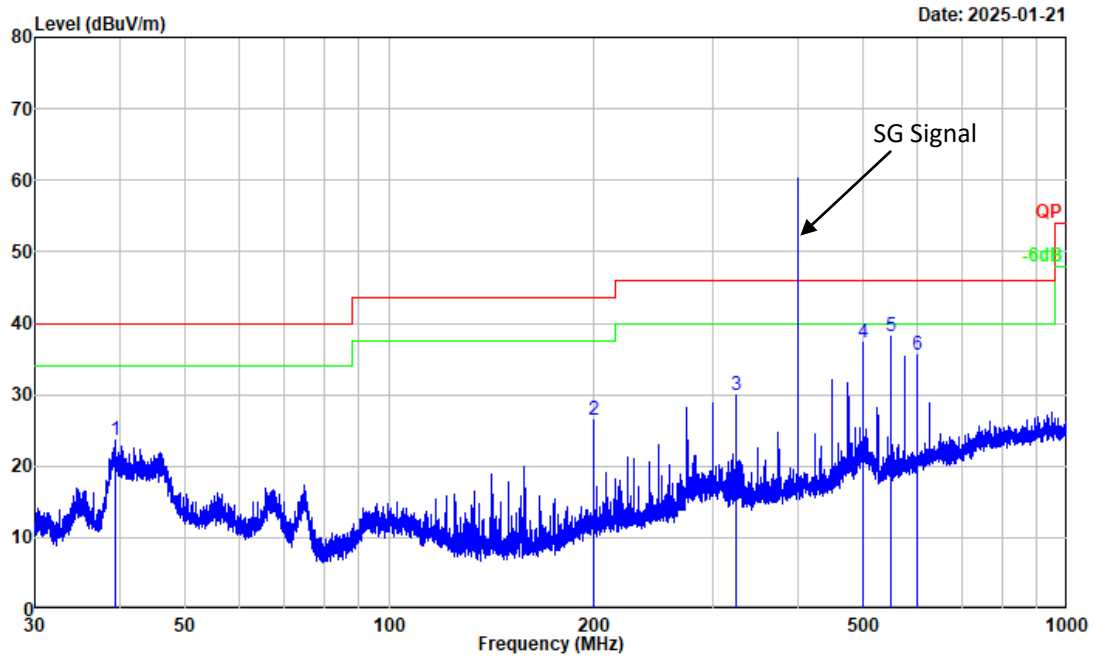
Mode 5: Receiving at 400MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/41%R.H./101.1kPa
Tested by : Bard Huang
Polarization : horizontal
Remark : 400MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	42.563	28.61	-12.35	16.26	40.00	-23.74	Peak
2	275.037	34.32	-11.83	22.49	46.00	-23.51	Peak
3	325.026	39.82	-10.60	29.22	46.00	-16.78	Peak
4	500.082	33.46	-7.23	26.23	46.00	-19.77	Peak
5	549.983	36.26	-6.40	29.86	46.00	-16.14	Peak
6	600.110	31.92	-5.12	26.80	46.00	-19.20	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

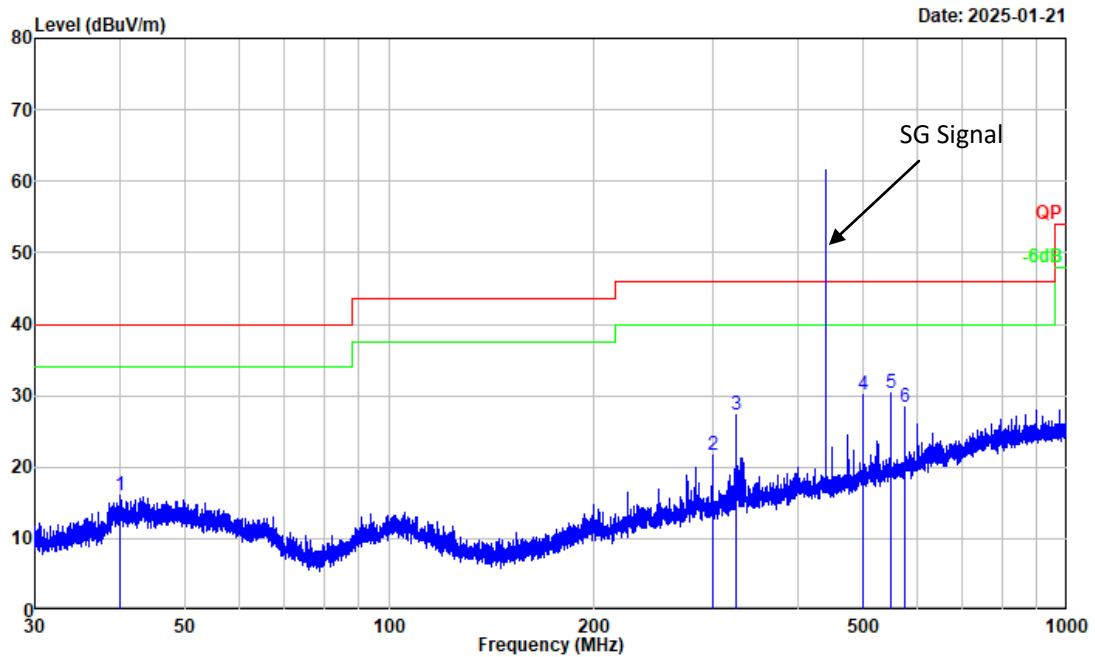


Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : vertical
 Remark : 400MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	39.506	36.71	-13.16	23.55	40.00	-16.45	Peak
2	199.986	40.24	-13.72	26.52	43.50	-16.98	Peak
3	325.026	40.58	-10.60	29.98	46.00	-16.02	Peak
4	500.082	44.50	-7.23	37.27	46.00	-8.73	Peak
5	549.983	44.66	-6.40	38.26	46.00	-7.74	Peak
6	600.110	40.76	-5.12	35.64	46.00	-10.36	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VnB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

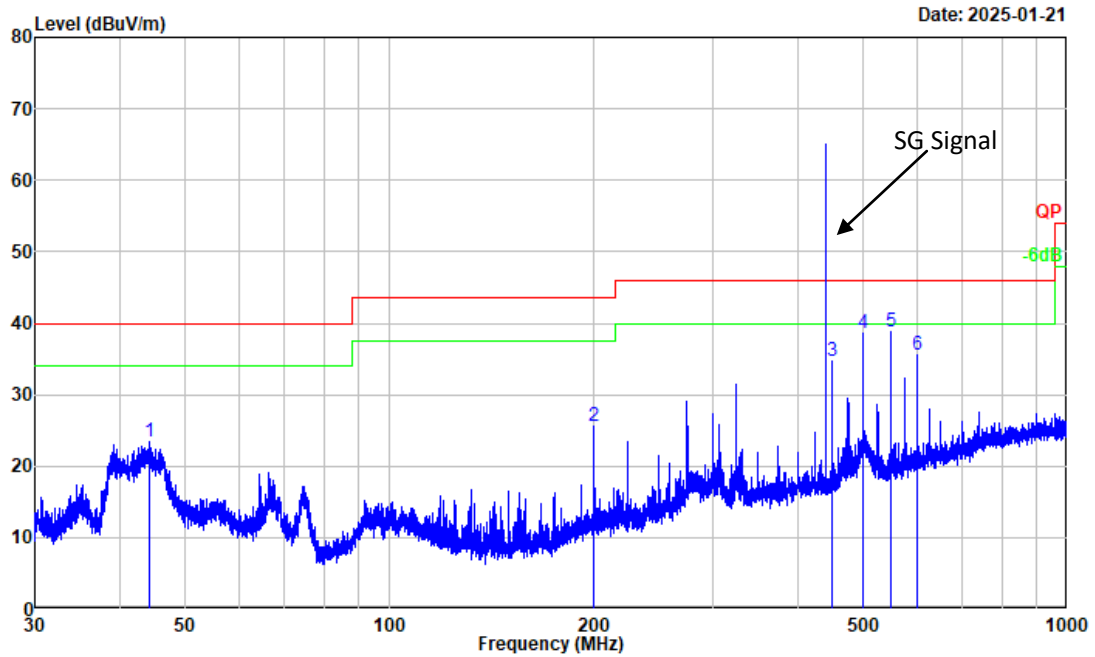
Mode 6: Receiving at 440MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/41%R.H./101.1kPa
Tested by : Bard Huang
Polarization : horizontal
Remark : 440MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	40.064	29.06	-12.99	16.07	40.00	-23.93	Peak
2	299.973	32.87	-11.28	21.59	46.00	-24.41	Peak
3	325.026	37.97	-10.60	27.37	46.00	-18.63	Peak
4	500.082	37.36	-7.23	30.13	46.00	-15.87	Peak
5	549.983	36.73	-6.40	30.33	46.00	-15.67	Peak
6	575.130	34.21	-5.87	28.34	46.00	-17.66	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

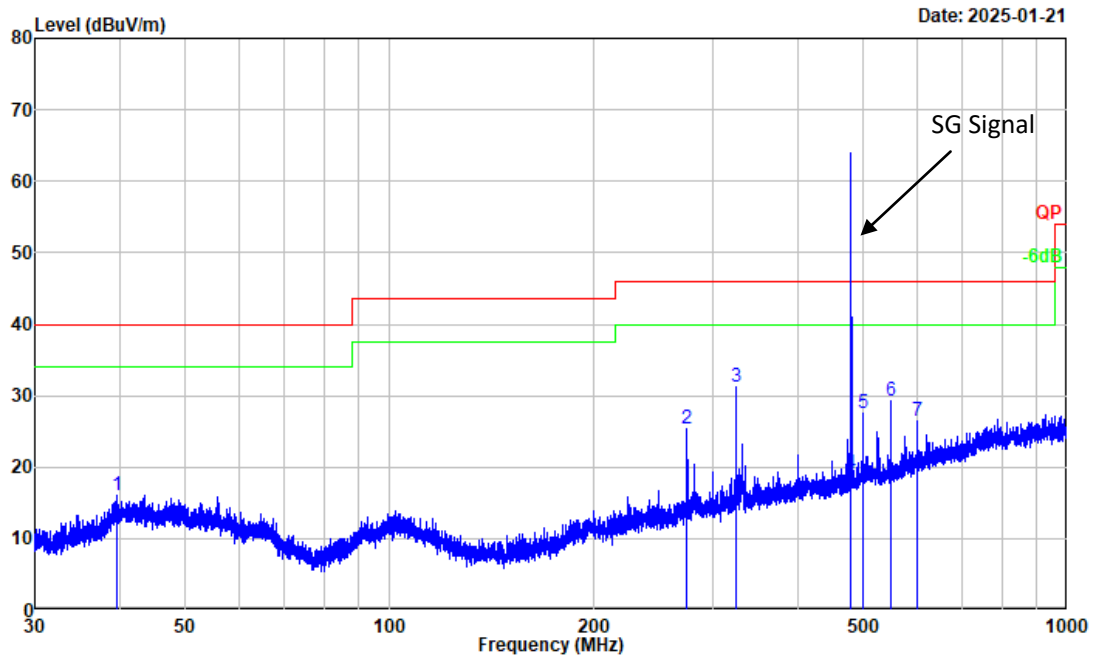


Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : vertical
 Remark : 440MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	44.295	35.66	-12.17	23.49	40.00	-16.51	Peak
2	199.986	39.36	-13.72	25.64	43.50	-17.86	Peak
3	450.147	43.01	-8.27	34.74	46.00	-11.26	Peak
4	500.082	45.81	-7.23	38.58	46.00	-7.42	Peak
5	549.983	45.22	-6.40	38.82	46.00	-7.18	Peak
6	600.110	40.60	-5.12	35.48	46.00	-10.52	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VNB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

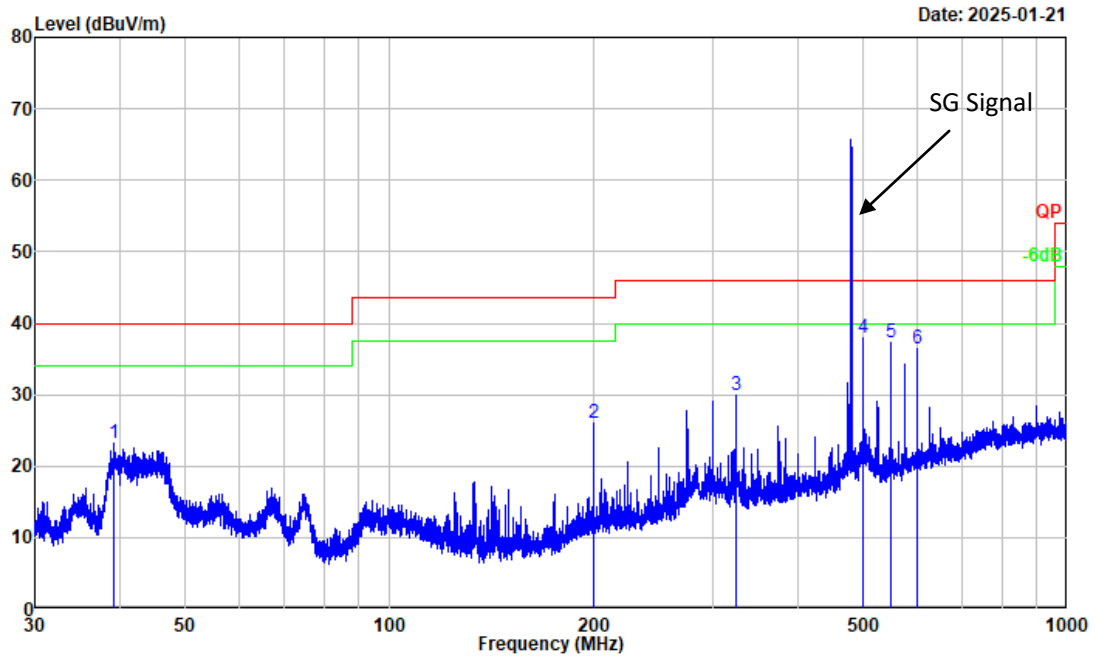
Mode 7: Receiving at 480MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/41%R.H./101.1kPa
Tested by : Bard Huang
Polarization : horizontal
Remark : 480MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	39.663	29.23	-13.11	16.12	40.00	-23.88	Peak
2	275.037	37.30	-11.83	25.47	46.00	-20.53	Peak
3	325.026	41.74	-10.60	31.14	46.00	-14.86	Peak
4	479.896	26.77	-7.79	18.98	46.00	-27.02	Peak
5	500.082	34.83	-7.23	27.60	46.00	-18.40	Peak
6	550.224	35.68	-6.40	29.28	46.00	-16.72	Peak
7	600.110	31.58	-5.12	26.46	46.00	-19.54	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VNB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP



Project No. : 2405A110957E
 Test Mode : Receiving
 Test Voltage : Power by battery
 Environment : 22.5°C/41%R.H./101.1kPa
 Tested by : Bard Huang
 Polarization : vertical
 Remark : 480MHz

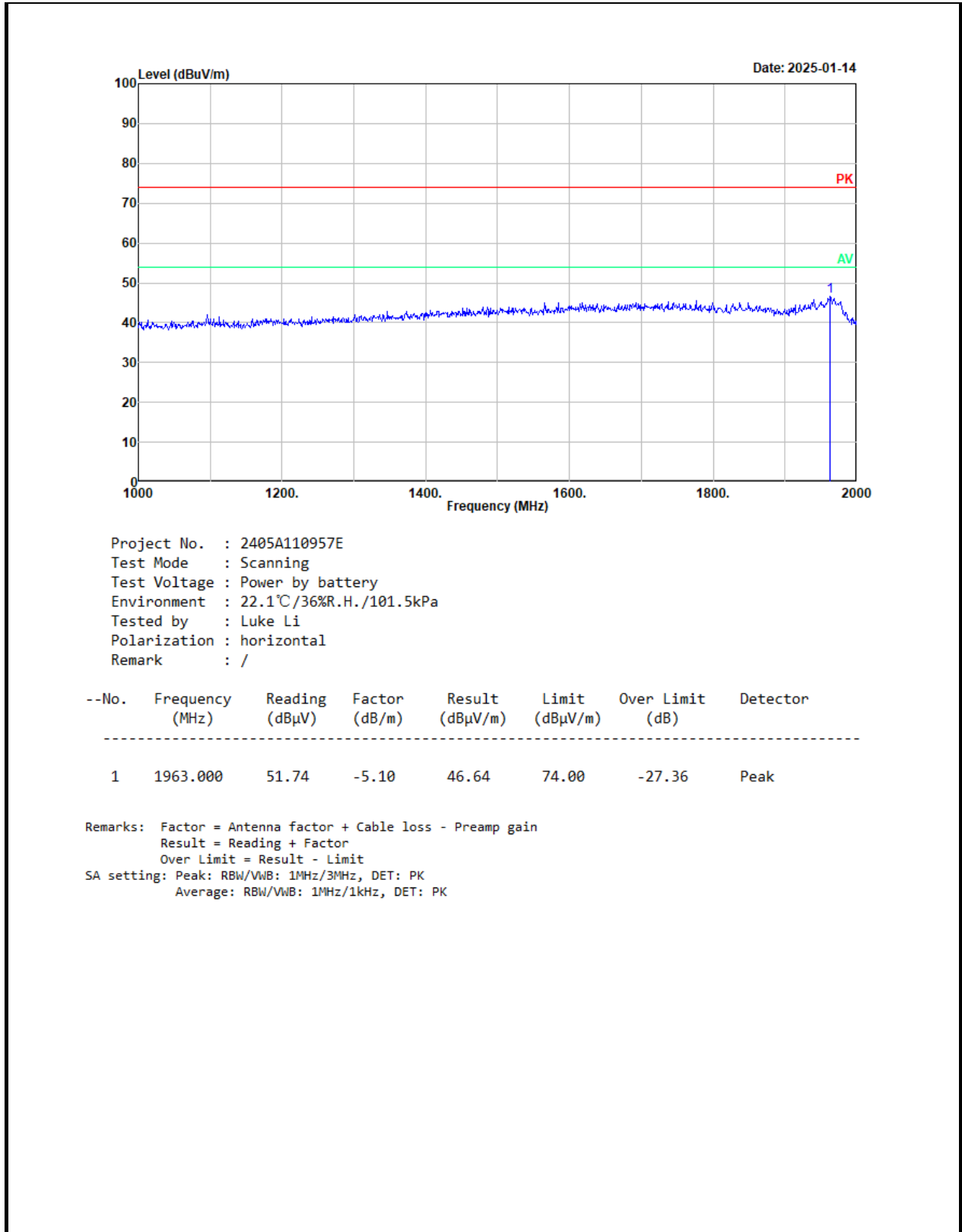
--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	39.316	36.33	-13.22	23.11	40.00	-16.89	Peak
2	199.986	39.82	-13.72	26.10	43.50	-17.40	Peak
3	325.026	40.56	-10.60	29.96	46.00	-16.04	Peak
4	500.082	45.09	-7.23	37.86	46.00	-8.14	Peak
5	549.983	43.75	-6.40	37.35	46.00	-8.65	Peak
6	600.110	41.48	-5.12	36.36	46.00	-9.64	Peak

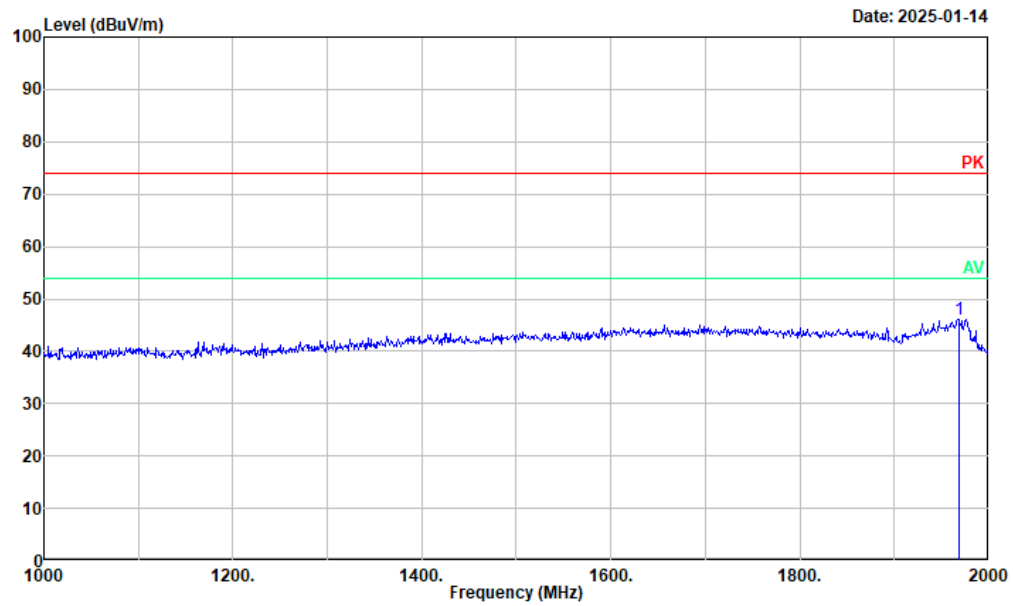
Remarks: Factor = Antenna factor + Cable loss - Preamp gain
 Result = Reading + Factor
 Over Limit = Result - Limit
 SA setting: Pre-scan: RBW/VnB: 100Hz/300kHz, DET: PK
 Final measure: RBW: 120kHz, DET: QP

Above 1GHz:

Test Date:	2025-01-14~2025-01-18	Test By:	Luke Li
Environment condition:	Temperature: 22.1~22.5°C; Relative Humidity:32~36%; ATM Pressure: 101.3~101.5kPa		

Mode 1: Scanning



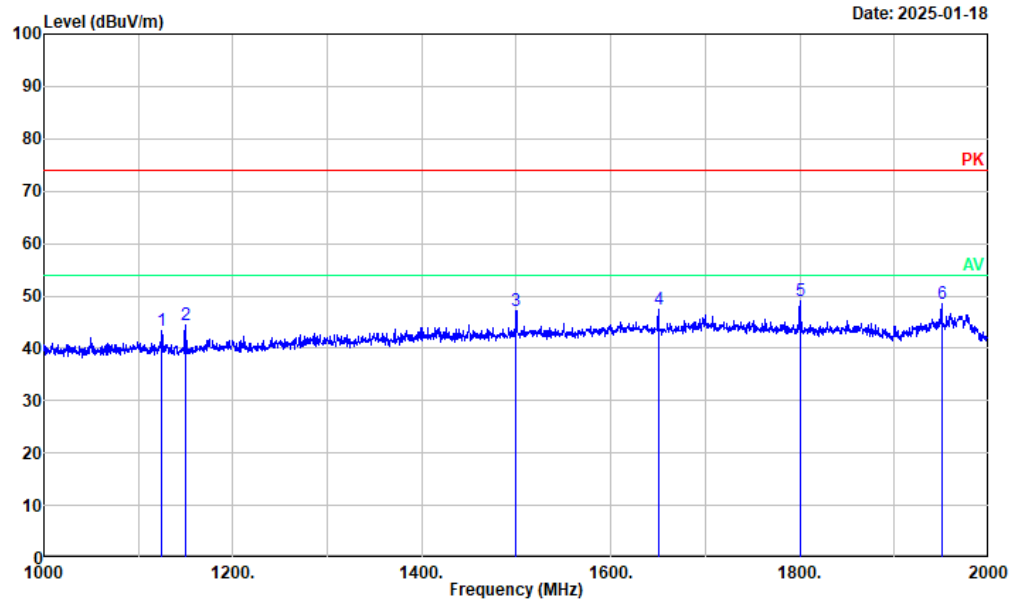


Project No. : 2405A110957E
Test Mode : Scanning
Test Voltage : Power by battery
Environment : 22.1°C/36%R.H./101.5kPa
Tested by : Luke Li
Polarization : vertical
Remark : /

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1968.000	51.30	-5.18	46.12	74.00	-27.88	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VNB: 1MHz/3MHz, DET: PK
Average: RBW/VNB: 1MHz/1kHz, DET: PK

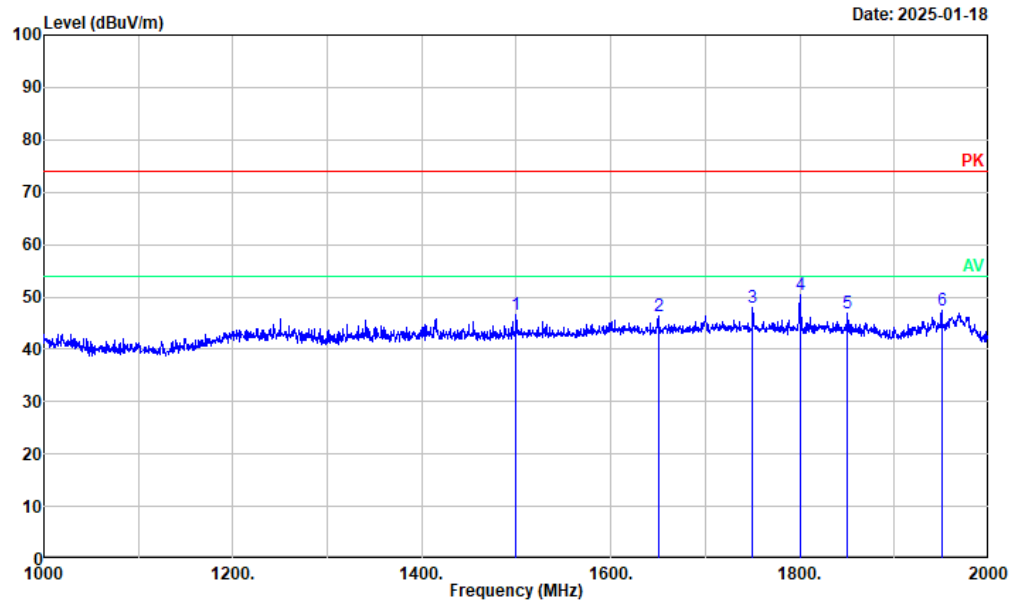
Mode 2: Receiving at 136MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 136MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1125.000	50.83	-7.53	43.30	74.00	-30.70	Peak
2	1149.500	51.72	-7.40	44.32	74.00	-29.68	Peak
3	1499.500	52.02	-4.86	47.16	74.00	-26.84	Peak
4	1650.000	51.18	-3.85	47.33	74.00	-26.67	Peak
5	1800.000	52.74	-3.74	49.00	74.00	-25.00	Peak
6	1950.500	53.34	-4.91	48.43	74.00	-25.57	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK



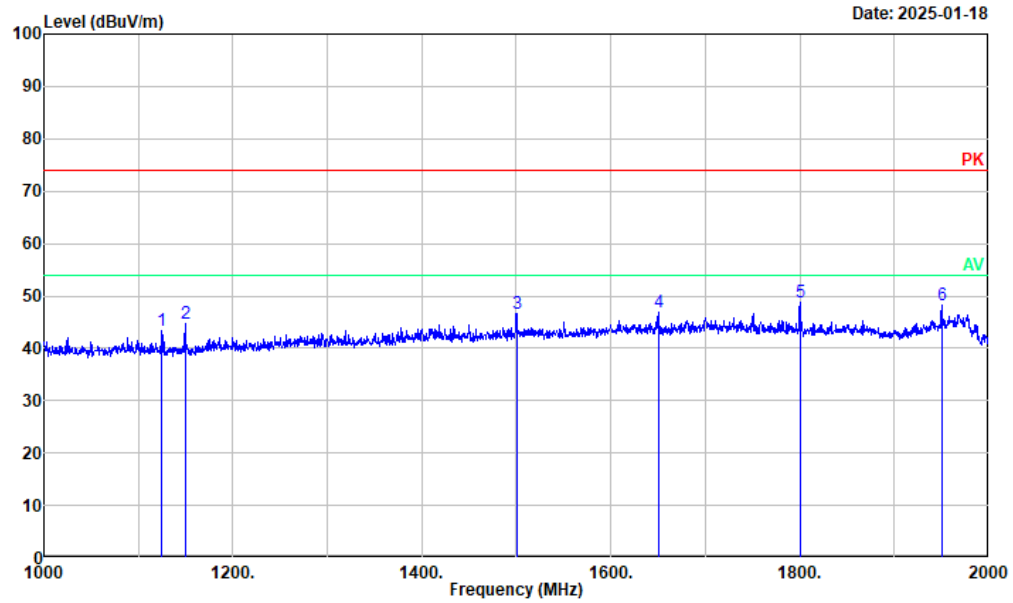
Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 136MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector

1	1500.000	51.40	-4.86	46.54	74.00	-27.46	Peak
2	1650.000	50.09	-3.85	46.24	74.00	-27.76	Peak
3	1750.000	51.51	-3.68	47.83	74.00	-26.17	Peak
4	1800.000	54.15	-3.74	50.41	74.00	-23.59	Peak
5	1850.000	50.90	-3.89	47.01	74.00	-26.99	Peak
6	1950.000	52.45	-4.90	47.55	74.00	-26.45	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

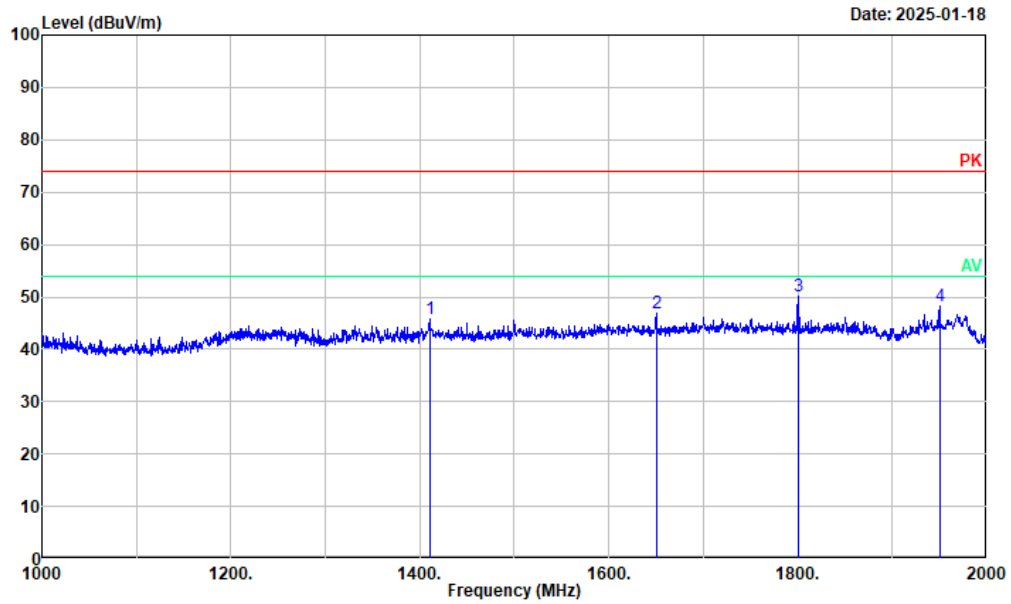
Mode 3: Receiving at 155MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 155MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1125.000	50.87	-7.53	43.34	74.00	-30.66	Peak
2	1149.500	52.13	-7.40	44.73	74.00	-29.27	Peak
3	1500.500	51.52	-4.86	46.66	74.00	-27.34	Peak
4	1650.000	50.79	-3.85	46.94	74.00	-27.06	Peak
5	1800.000	52.64	-3.74	48.90	74.00	-25.10	Peak
6	1950.000	53.20	-4.90	48.30	74.00	-25.70	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

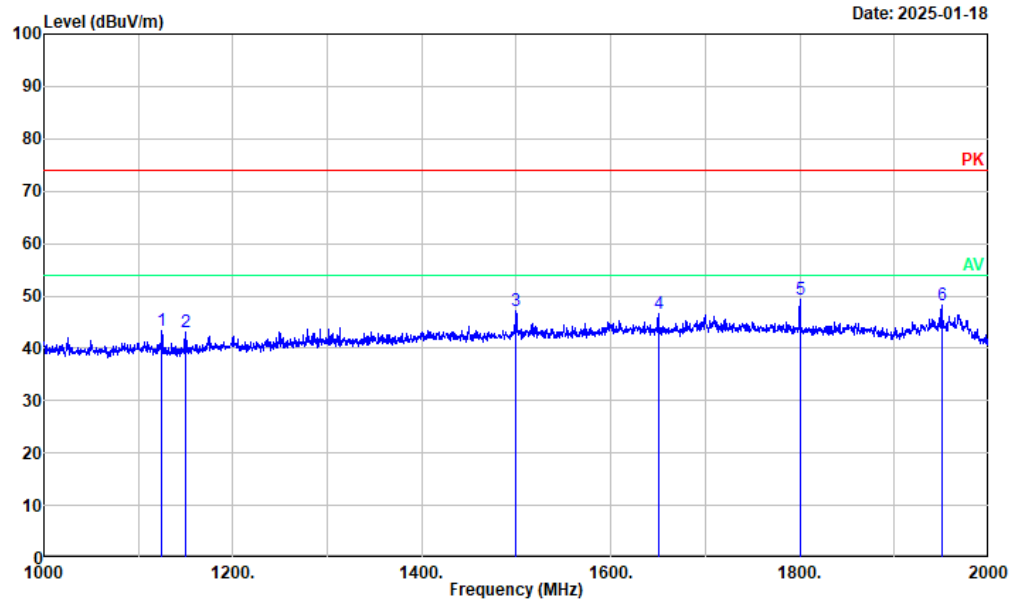


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 155MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1410.500	51.04	-5.37	45.67	74.00	-28.33	Peak
2	1650.000	50.79	-3.85	46.94	74.00	-27.06	Peak
3	1800.500	53.87	-3.74	50.13	74.00	-23.87	Peak
4	1950.000	53.02	-4.90	48.12	74.00	-25.88	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

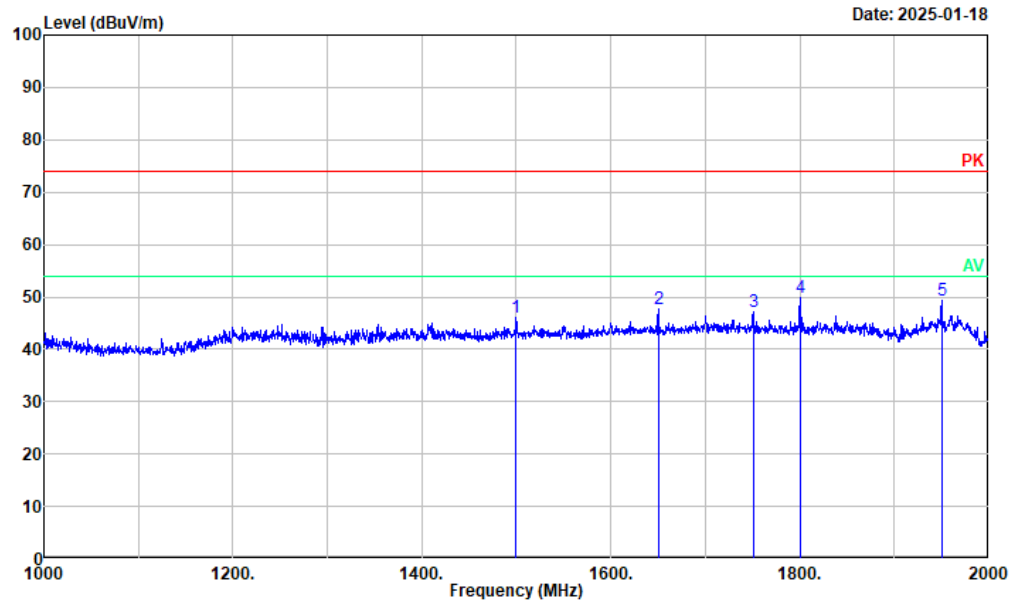
Mode 4: Receiving at 174MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 174MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1125.000	51.02	-7.53	43.49	74.00	-30.51	Peak
2	1149.500	50.59	-7.40	43.19	74.00	-30.81	Peak
3	1500.000	51.95	-4.86	47.09	74.00	-26.91	Peak
4	1650.500	50.52	-3.85	46.67	74.00	-27.33	Peak
5	1800.000	52.98	-3.74	49.24	74.00	-24.76	Peak
6	1950.000	53.19	-4.90	48.29	74.00	-25.71	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

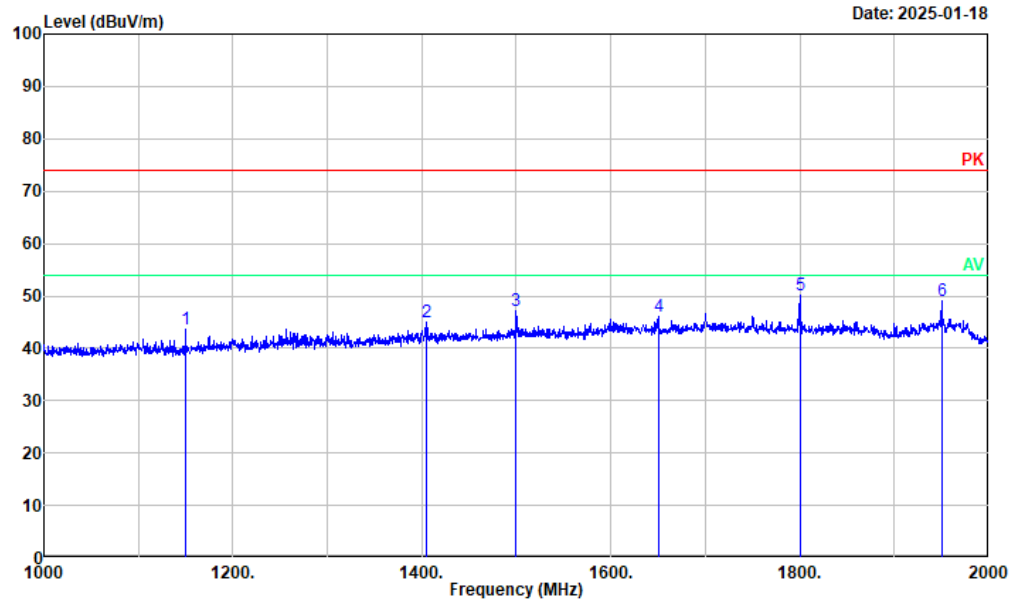


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 174MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1500.000	50.80	-4.86	45.94	74.00	-28.06	Peak
2	1650.000	51.50	-3.85	47.65	74.00	-26.35	Peak
3	1750.500	50.71	-3.67	47.04	74.00	-26.96	Peak
4	1800.500	53.59	-3.74	49.85	74.00	-24.15	Peak
5	1950.000	54.35	-4.90	49.45	74.00	-24.55	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VNB: 1MHz/3MHz, DET: PK
Average: RBW/VNB: 1MHz/1kHz, DET: PK

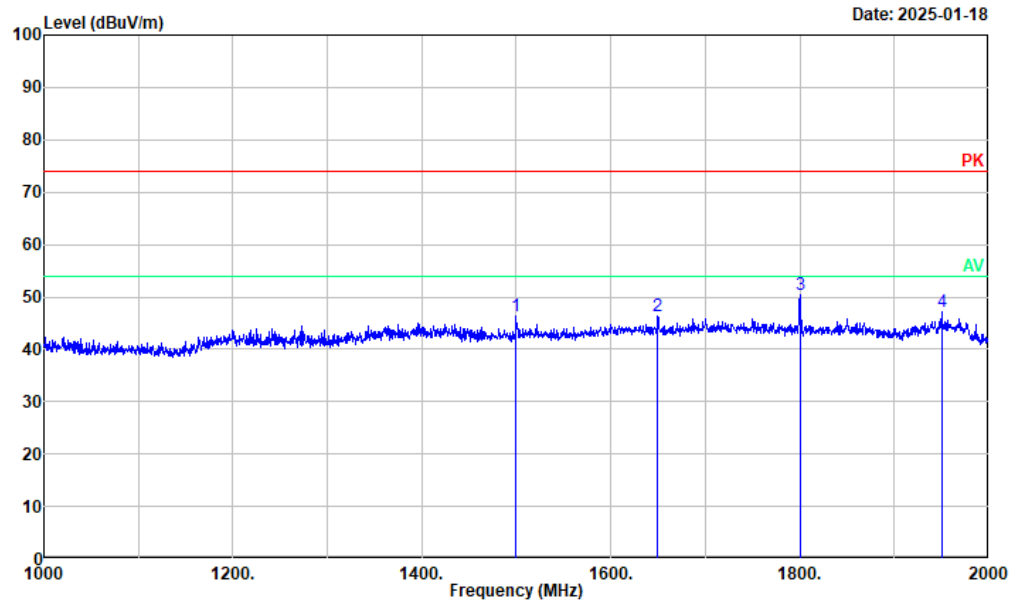
Mode 5: Receiving at 400MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 400MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1150.000	51.11	-7.40	43.71	74.00	-30.29	Peak
2	1405.500	50.45	-5.40	45.05	74.00	-28.95	Peak
3	1499.500	51.91	-4.86	47.05	74.00	-26.95	Peak
4	1650.000	50.03	-3.85	46.18	74.00	-27.82	Peak
5	1800.500	53.95	-3.74	50.21	74.00	-23.79	Peak
6	1950.500	53.87	-4.91	48.96	74.00	-25.04	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

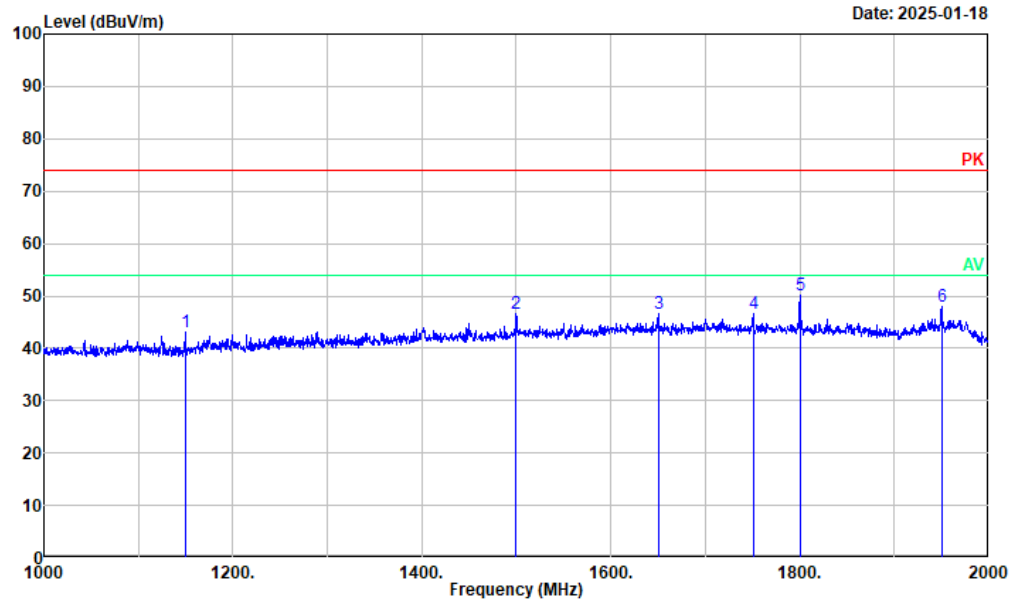


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 400MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1500.000	51.31	-4.86	46.45	74.00	-27.55	Peak
2	1649.500	50.21	-3.86	46.35	74.00	-27.65	Peak
3	1800.000	54.05	-3.74	50.31	74.00	-23.69	Peak
4	1950.500	52.01	-4.91	47.10	74.00	-26.90	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

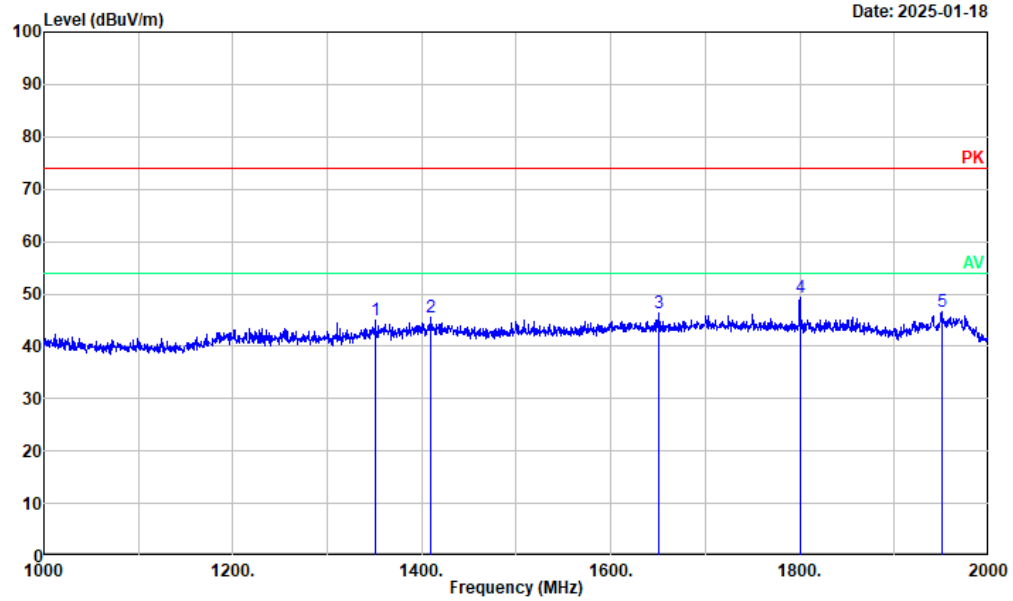
Mode 6: Receiving at 440MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 440MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1150.000	50.57	-7.40	43.17	74.00	-30.83	Peak
2	1500.000	51.60	-4.86	46.74	74.00	-27.26	Peak
3	1650.000	50.33	-3.85	46.48	74.00	-27.52	Peak
4	1750.500	50.30	-3.67	46.63	74.00	-27.37	Peak
5	1800.000	53.85	-3.74	50.11	74.00	-23.89	Peak
6	1950.000	52.84	-4.90	47.94	74.00	-26.06	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

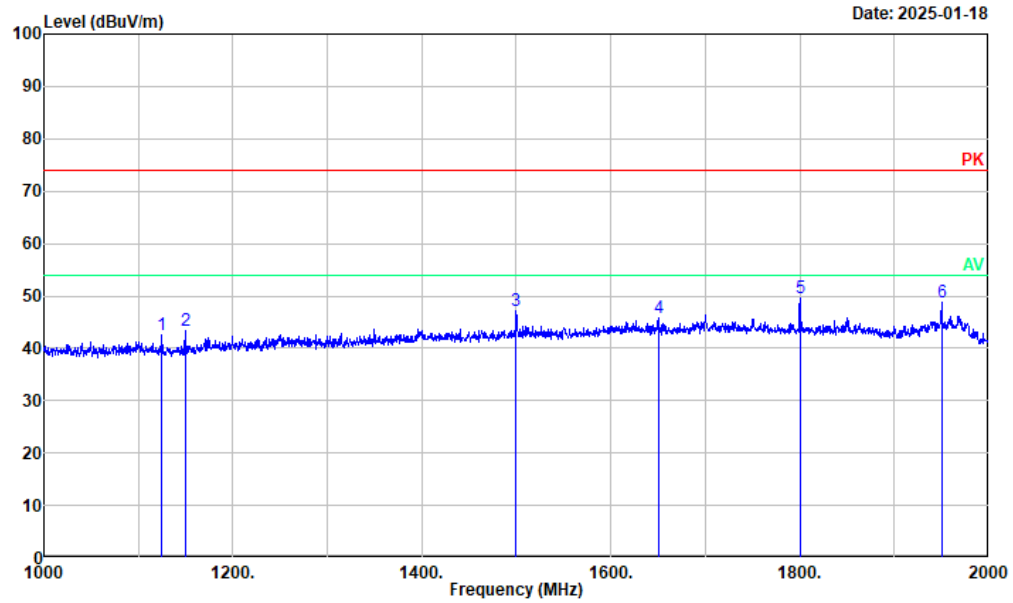


Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 440MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1351.000	50.86	-5.96	44.90	74.00	-29.10	Peak
2	1410.000	50.87	-5.37	45.50	74.00	-28.50	Peak
3	1650.000	50.06	-3.85	46.21	74.00	-27.79	Peak
4	1800.000	53.19	-3.74	49.45	74.00	-24.55	Peak
5	1950.000	51.61	-4.90	46.71	74.00	-27.29	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VNB: 1MHz/3MHz, DET: PK
Average: RBW/VNB: 1MHz/1kHz, DET: PK

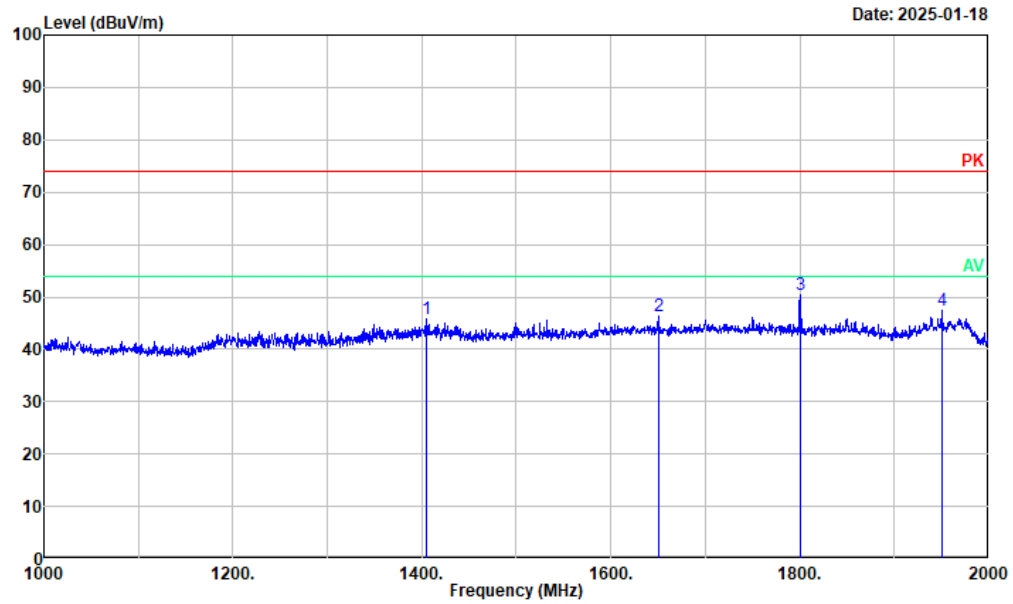
Mode 7: Receiving at 480MHz



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 480MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1124.500	50.05	-7.54	42.51	74.00	-31.49	Peak
2	1149.500	50.70	-7.40	43.30	74.00	-30.70	Peak
3	1500.000	52.14	-4.86	47.28	74.00	-26.72	Peak
4	1650.000	49.59	-3.85	45.74	74.00	-28.26	Peak
5	1800.000	53.43	-3.74	49.69	74.00	-24.31	Peak
6	1950.000	53.55	-4.90	48.65	74.00	-25.35	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK



Project No. : 2405A110957E
Test Mode : Receiving
Test Voltage : Power by battery
Environment : 22.5°C/32%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 480MHz

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1405.000	51.27	-5.40	45.87	74.00	-28.13	Peak
2	1650.500	50.09	-3.85	46.24	74.00	-27.76	Peak
3	1800.000	54.11	-3.74	50.37	74.00	-23.63	Peak
4	1950.500	52.34	-4.91	47.43	74.00	-26.57	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VnB: 1MHz/3MHz, DET: PK
Average: RBW/VnB: 1MHz/1kHz, DET: PK

3.5 Scanning receivers and frequency converters used with scanning receivers

● Test Procedure

1. Connected the EUT as below block diagram:



2. Apply a signal to the EUT antenna port at lowest, middle, highest channel frequencies of the operating band.

3. Adjust the audio output level of the EUT to it's rated value with the distortion less than 10%.

4. Adjust the Signal Generator output power to produce 12dB SINAD Without the audio output power dropping by more than 3dB; These output level of the Signal Generator at each channel frequency is the sensitivity of the EUT.

5. Select the lowest or worst case sensitivity level for all of the bands as the reference sensitivity.

6. Adjust the Signal Generator output to a level of +60 dB above the reference sensitivity obtained in step 5 and its frequency to the frequency point in the Cellular Band.

7. Set the EUT squelch to threshold, the signal required to open the squelch must be lower than the reference sensitivity level.

8. Set the EUT in a scanning mode and allow it to scan through it's complete receiving range.

9. If the EUT un-squelched or stopped on any frequency, receiving at this frequency, then adjust the signal generator output level until 12 dB SINAD is produced, this level is the spurious value and the difference between the reference sensitivity and the spurious value is the rejection ratio and must be at least 38 dB:

10. Repeat above procedure at the frequencies 824, 836 and 849MHz for the mobile band, and 869, 881.5 and 894MHz for the cellular base band.

● Test Data

Test Date:	2025-01-21	Test By:	Ryan Zhang
Environment condition:	Temperature: 23.2°C; Relative Humidity:41%; ATM Pressure: 101.0kPa		

Scanning Frequency Range (MHz)	Test Frequency Range (MHz)	Measurement Result (Worst Case)(dB)	Limit(dB)
136-174/400-480	824, 836, 849, 869, 881.5, 894	42	>38

4 Test Setup Photo

Please refer to the attachment 2405A110957EB Test Setup photo.

5 E.U.T Photo

Please refer to the attachment 2405A110957E External photo and 2405A110957E Internal photo.

---End of Report---