



Test Report No.:
GJW2023-0754-RF4

TEST REPORT

IC	:	24728-SKIWB921AU1
Applicant	:	Guangzhou Shikun Electronics Co., Ltd
Product Name	:	Module
Mode No.	:	SKI.WB921AU.1

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Applicant		Name: Guangzhou Shikun Electronics Co., Ltd Address: NO.6 Liankun Road,Huangpu District,Guangzhou,China	
Manufacturer		Name: Guangzhou Shikun Electronics Co., Ltd Address: NO.6 Liankun Road,Huangpu District,Guangzhou,China	
Equipment Under Test		Product Name : Module Model No. : SKI.WB921AU.1 Trade mark : / Serial no. : B4ADA3CE77D8 Sampling : —	
Date of Receipt.	2023.03.10	Date of Testing	2023.03.10~2023.03.13
Test Specification		Test Result	
RSS-247 Issue 2 RSS-Gen Issue 5 ANSI C63.10 (2013)		PASS	
Evaluation of Test Result		The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC Issue Date: 2023.06.07	
Tested by: Lu Wei Ji Lu Wei Ji		Reviewed by: Xu Zhenfei Xu Zhenfei	Approved by: Chen Hua Wen Chen Hua Wen
Other Aspects: NONE.			
Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC .			

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1. General Product Information

1.1 General information

Product Name	Module				
Model No.	SKI.WB921AU.1				
Power Supply	DC 3.3V				
Serial Number(SN)	B4ADA3CE77D8				
Power Supply	Adapter	/			
	Battery	/			
Antenna Type	External Antenna				
Antenna Connector	A detachable antenna				
Antenna Gain	3.5 dBi (provided by client)				
Frequency Range	2402MHz~2480MHz				
Bluetooth Version:	BT5.2				
Channel Number	79				
Type of Modulation	GFSK, π/4DQPSK, 8DPSK				
Hopping Channel Type:	Adaptive Frequency Hopping systems				
Max. Conducted Power	16.47 dBm				
Operate Temp.Range	-40°C to +125°C				
Note:					
1. The information of the EUT is declared by the manufacturer.					
2. The laboratory is not responsible for the product technical specification provided by the client.					
3. Note: This module (the module number is SKI.WB921AU.1) has passed the certification. The module plans to add five models of antennas, as shown in the table below. In the report, only the radiated emission is tested, and the antenna used is A100-0062. Other test items and test data will refer to the report of the module (IC ID:24728-SKIWB921AU1)					
Antennas	AG-011320-0679	3D0504BK07-001	SLK-KG-B3DBS-SMA(P)	A100-0062	SH-230317-0001
Gain	3.0dBi	3.5dBi	3.5dBi	3.5dBi	3.08dBi

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2. Test Sites

2.1 Test Facilities

The tests and measurements refer to this report were performed by RF testing Lab. of CVC Testing Technology Co., Ltd.

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Telephone : +86-20-32293888

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FCC(Test firm designation number: CN1282)

IC(Test firm CAB identifier number: CN0103)

2.2 Description of Non-standard Method and Deviations

The testing and measurement methods used in this report are applied by all standard methods. Not any non-standard method or deviation from the used standards was used.

2.3 List of Test and Measurement Instruments

Refer to **Appendix E**.

3. Test Configuration

3.1 Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Test Mode	Antenna Delivery	Test Channel
DH5/2DH5/3DH5	2TX / 2RX	0,39,78

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate and channel. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Test Antennas	Test Modes	Test Channels
Radiated Emissions	Antenna 1	3DH5	78
Radiated Emissions(Band Edge)	Antenna 1	3DH5	0,78
Peak Power Output -Conducted	Antenna 1 Antenna 2	DH5/2DH5/3DH5	0,39,78

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4. Summary of measurement results

Summary of measurements of results	Clause in IC rules	Verdict	Note
Radiated Emissions	RSS-Gen 8.9	PASS	/
Peak Power Output -Conducted	RSS-247-5.4(2)	PASS	/

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5. Measurement procedure

5.1 Radiated Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

The EUT was setup and tested according to ANSI C63.10, 2013.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from Antenna to the EUT was 3 meters.

The Antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the Antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn Antenna will be bended down a little (as horn

Antenna has the narrow beamwidth) in order to keeping the Antenna in the "cone of radiation" of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

Limits:

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) (see Section 15.205(c)).

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Level
88MHz-216MHz	43.5	Quasi-peak Level

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216MHz-960MHz	46.0	Quasi-peak Level
960MHz-1GHz	54.0	Quasi-peak Level
Above 1GHz	54.0	Average Level
	74.0	Peak Level

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
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.
12.57675-12.57725	322-335.4	3600-4400	/
13.36-13.41	/	/	/

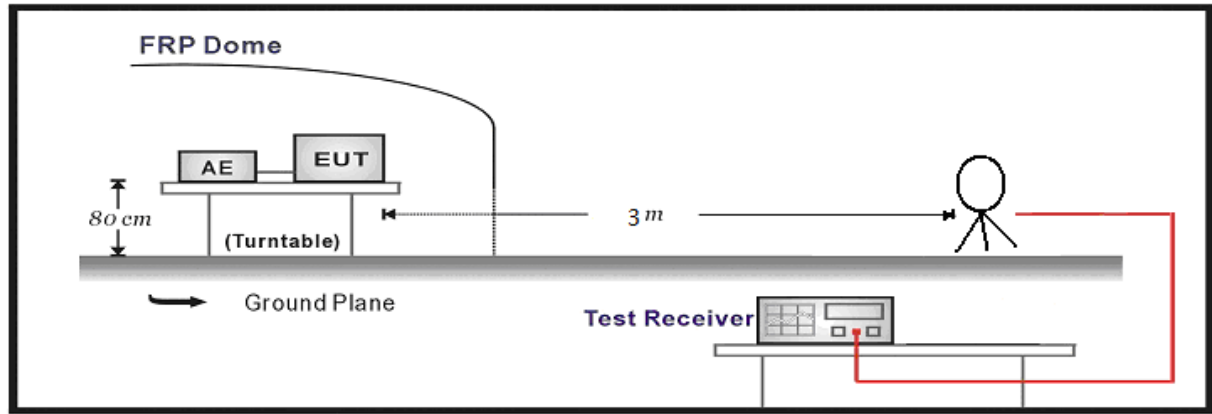
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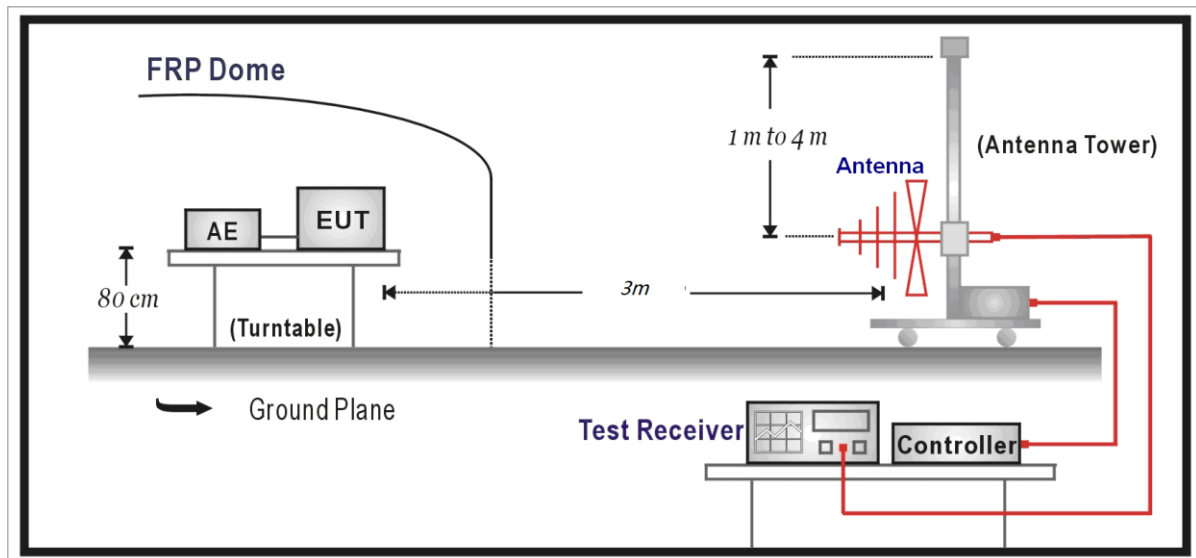
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Test Setup:

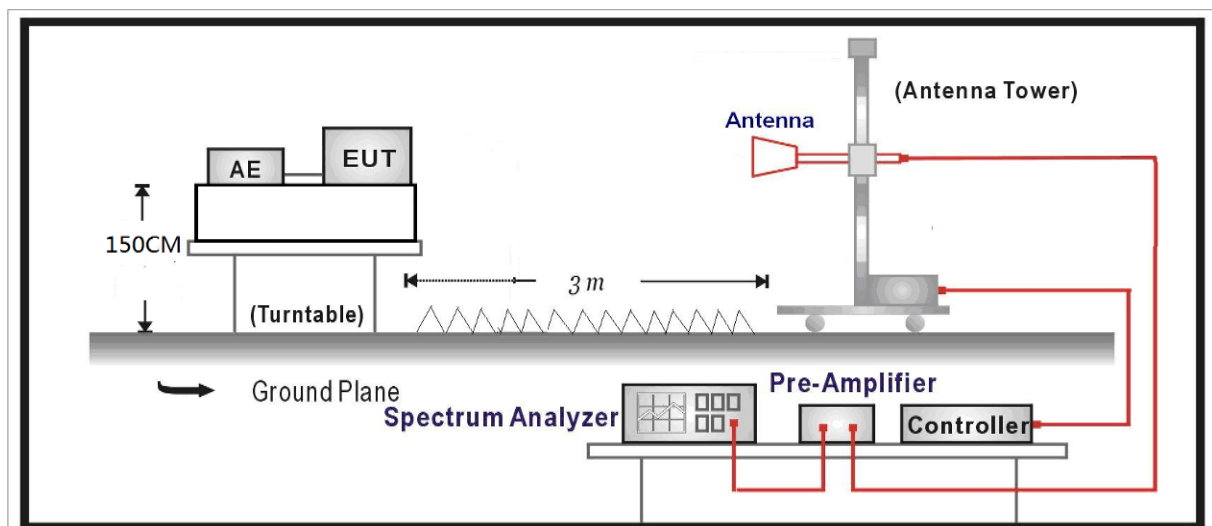
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



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Measurement Data:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Level = Reading - Factor

Factor = Preamplifier Factor – Antenna Factor–Cable Loss

Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

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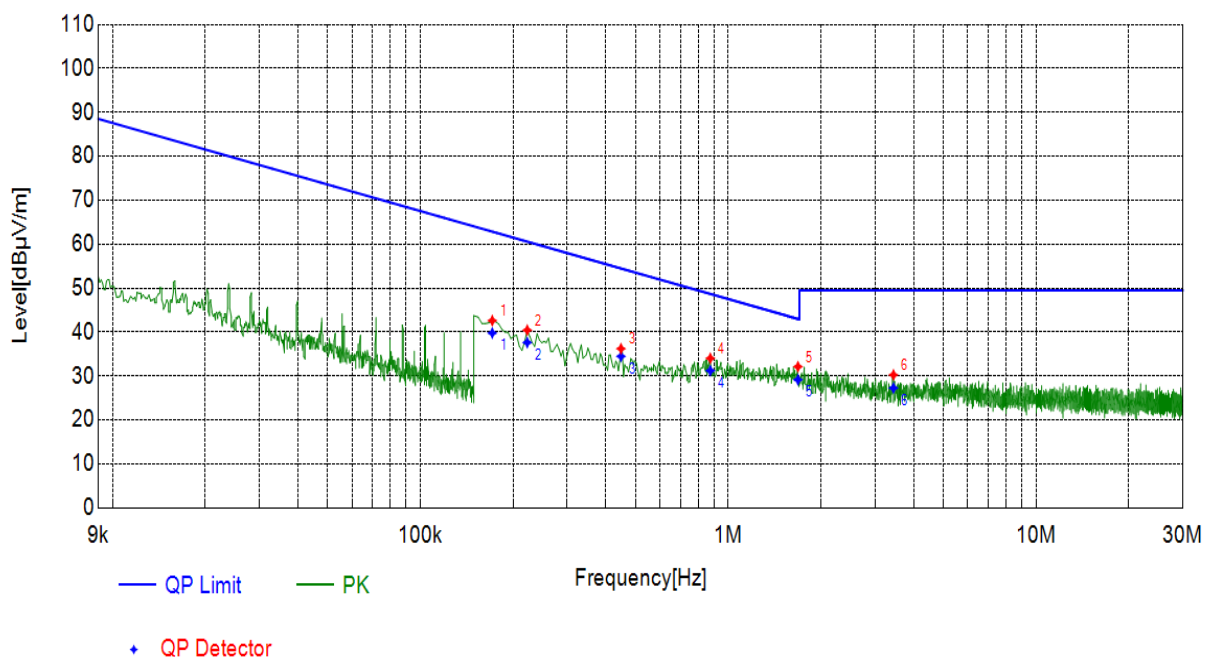
Test Results:

During the test, the Radiates Emission from 9KHz to 40GHz was performed in all modes with all channels, and all antenna, BT 8DPSK Channel 78, antenna 1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

SPURIOUS EMISSIONS:

Radiated Emission	9KHz-30MHz
Polarity	X axis
Test channel	Worst-Case

Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
0.1713	X axis	20.40	39.78	62.85	23.07	100	150	PASS
0.2225	X axis	20.37	37.61	60.57	22.96	100	90	PASS
0.4485	X axis	20.41	34.47	54.47	20.00	100	250	PASS
0.8750	X axis	20.59	31.21	48.68	17.47	100	320	PASS
1.6854	X axis	20.73	29.14	43.00	13.86	100	40	PASS
3.4425	X axis	20.99	27.26	49.50	22.24	100	0	PASS



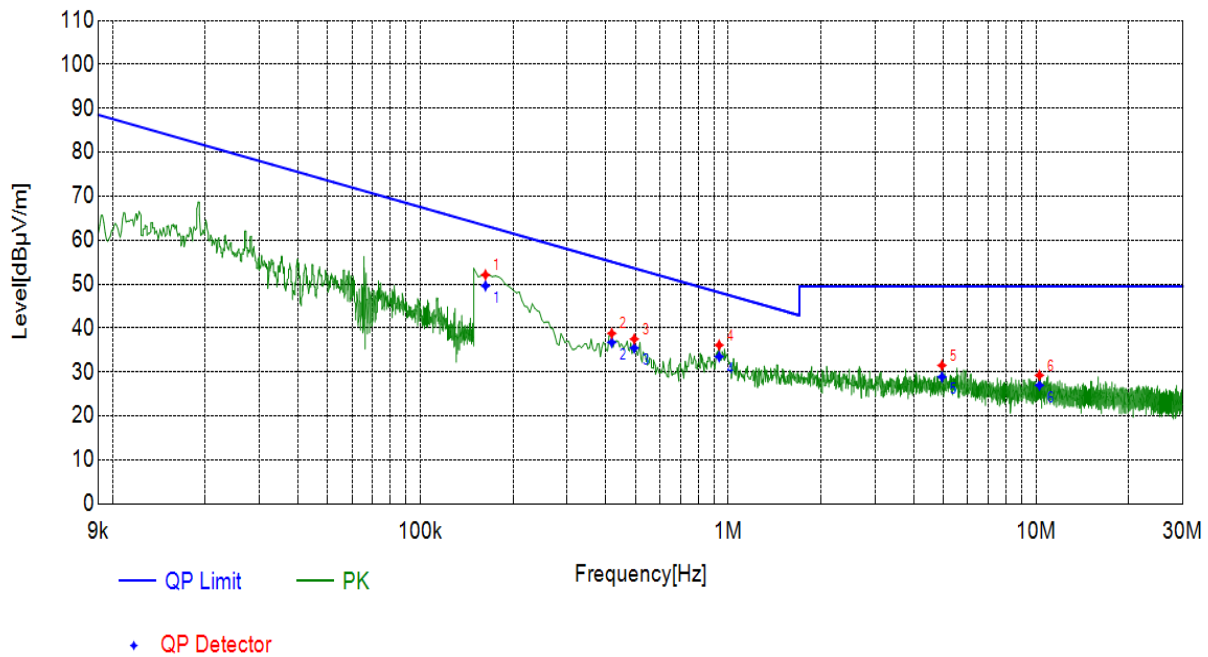
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Radiated Emission	9KHz-30MHz
Polarity	Y axis
Test channel	Worst-Case

Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dB μ V/m]	QP Limit [dB μ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
0.1628	Y axis	20.41	49.61	63.29	13.68	100	270	PASS
0.4187	Y axis	20.32	36.75	55.07	18.32	100	300	PASS
0.4955	Y axis	20.56	35.47	53.60	18.13	100	320	PASS
0.9347	Y axis	20.56	33.49	48.11	14.62	100	90	PASS
4.9480	Y axis	21.13	28.87	49.50	20.63	100	270	PASS
10.2578	Y axis	20.95	26.98	49.50	22.52	100	230	PASS



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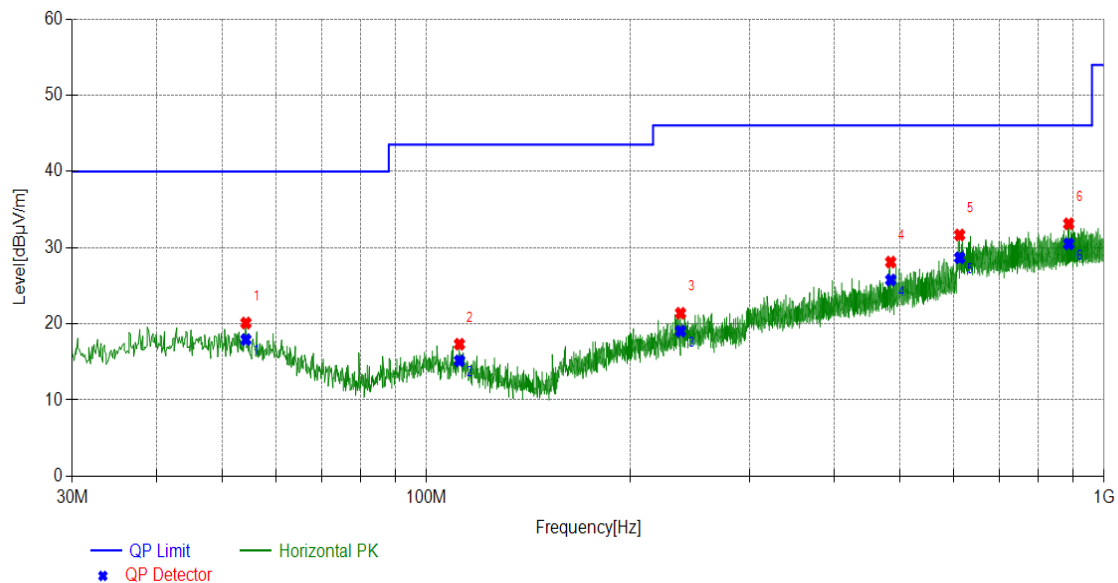
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Radiates Emission	30M~1G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/Fail
54.1554	Horizontal	14.03	6.08	20.11	40.00	19.89	PK	100	60	PASS
111.8762	Horizontal	12.25	5.08	17.33	43.52	26.19	PK	100	30	PASS
237.2127	Horizontal	14.32	7.07	21.39	46.02	24.63	PK	100	30	PASS
484.4904	Horizontal	18.90	9.20	28.10	46.02	17.92	PK	100	70	PASS
612.3492	Horizontal	21.21	10.45	31.66	46.02	14.36	PK	100	20	PASS
887.1777	Horizontal	24.39	8.74	33.13	46.02	12.89	PK	100	40	PASS

Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
54.1554	Horizontal	14.03	17.93	40.00	22.07	102	60	PASS
111.8762	Horizontal	12.25	15.15	43.52	28.37	130	30	PASS
237.2127	Horizontal	14.32	19.04	46.02	26.98	160	30	PASS
484.4904	Horizontal	18.90	25.75	46.02	20.27	230	70	PASS
612.3492	Horizontal	21.21	28.67	46.02	17.35	140	20	PASS
887.1777	Horizontal	24.39	30.50	46.02	15.52	302	40	PASS



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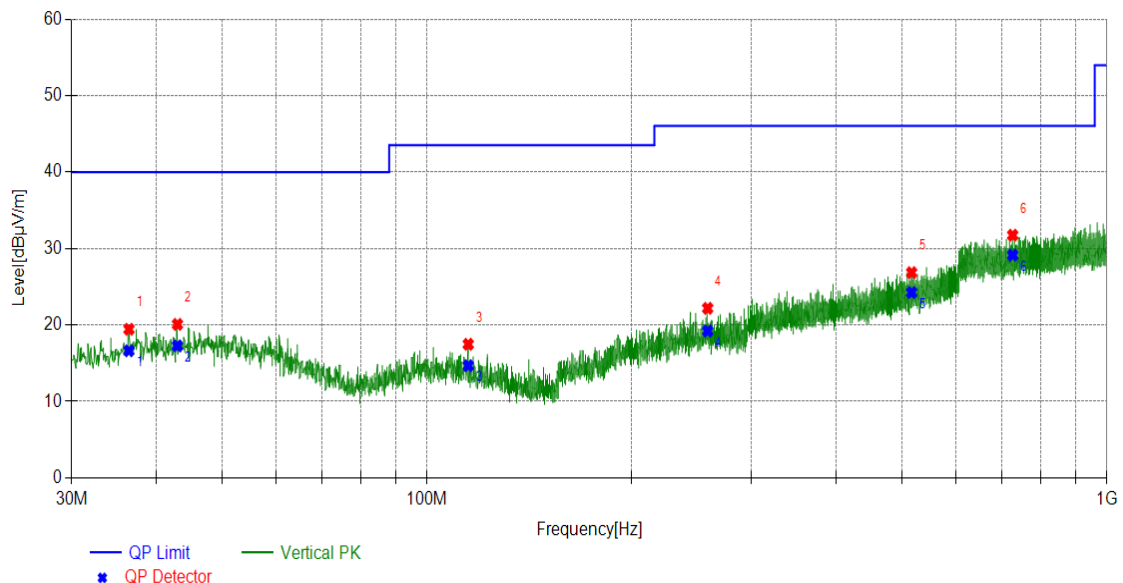
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Radiates Emission	30M~1G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Angle deg	Pass/Fail
36.4480	Vertical	13.18	6.26	19.44	40.00	20.56	PK	100	30	PASS
42.9531	Vertical	14.13	5.95	20.08	40.00	19.92	PK	100	30	PASS
115.0226	Vertical	11.94	5.54	17.48	43.52	26.04	PK	100	40	PASS
258.7623	Vertical	15.00	7.18	22.18	46.02	23.84	PK	100	30	PASS
516.3980	Vertical	19.48	7.37	26.85	46.02	19.17	PK	100	40	PASS
727.1857	Vertical	22.56	9.18	31.74	46.02	14.28	PK	100	30	PASS

Final Data List								
Frequency [MHz]	Polarity	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
36.4480	Vertical	13.18	16.63	40.00	23.37	110	30	PASS
42.9531	Vertical	14.13	17.27	40.00	22.73	146	30	PASS
115.0226	Vertical	11.94	14.67	43.52	28.85	182	40	PASS
258.7623	Vertical	15.00	19.21	46.02	26.81	204	30	PASS
516.3980	Vertical	19.48	24.24	46.02	21.78	256	40	PASS
727.1857	Vertical	22.56	29.13	46.02	16.89	310	30	PASS



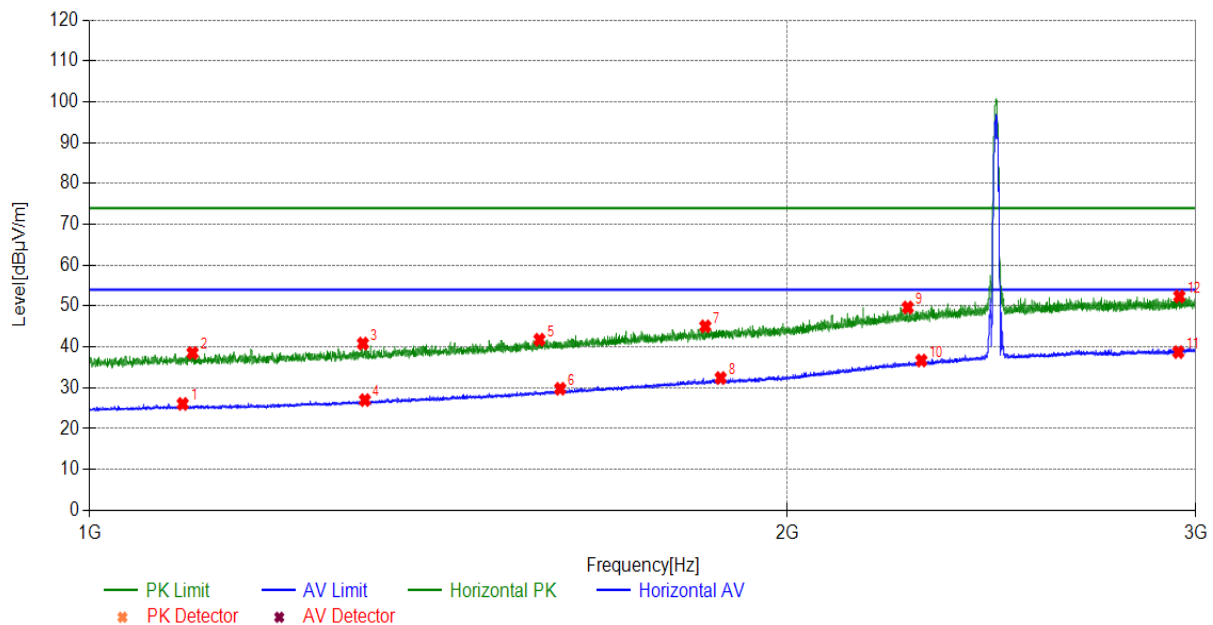
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Radiates Emission	1G~3G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dB μ V/m]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
2951.9952	Horizontal	37.80	14.56	52.36	74.00	21.64	PK	150	190	PASS
1312.0312	Horizontal	26.90	13.92	40.82	74.00	33.18	PK	150	180	PASS
1843.4843	Horizontal	31.15	13.88	45.03	74.00	28.97	PK	150	190	PASS
1107.8108	Horizontal	25.84	12.68	38.52	74.00	35.48	PK	150	40	PASS
2253.9254	Horizontal	34.70	14.96	49.66	74.00	24.34	PK	150	130	PASS
1563.4563	Horizontal	28.75	13.03	41.78	74.00	32.22	PK	150	40	PASS
1314.6315	Horizontal	26.91	0.08	26.99	54.00	27.01	AV	150	10	PASS
1596.0596	Horizontal	29.03	0.74	29.77	54.00	24.23	AV	150	10	PASS
2284.7285	Horizontal	34.95	1.72	36.67	54.00	17.33	AV	150	10	PASS
2948.9949	Horizontal	37.79	0.95	38.74	54.00	15.26	AV	150	180	PASS
1871.6872	Horizontal	31.30	1.10	32.40	54.00	21.60	AV	150	10	PASS
1097.0097	Horizontal	25.80	0.26	26.06	54.00	27.94	AV	150	10	PASS



Note: The signal beyond the limit is carrier

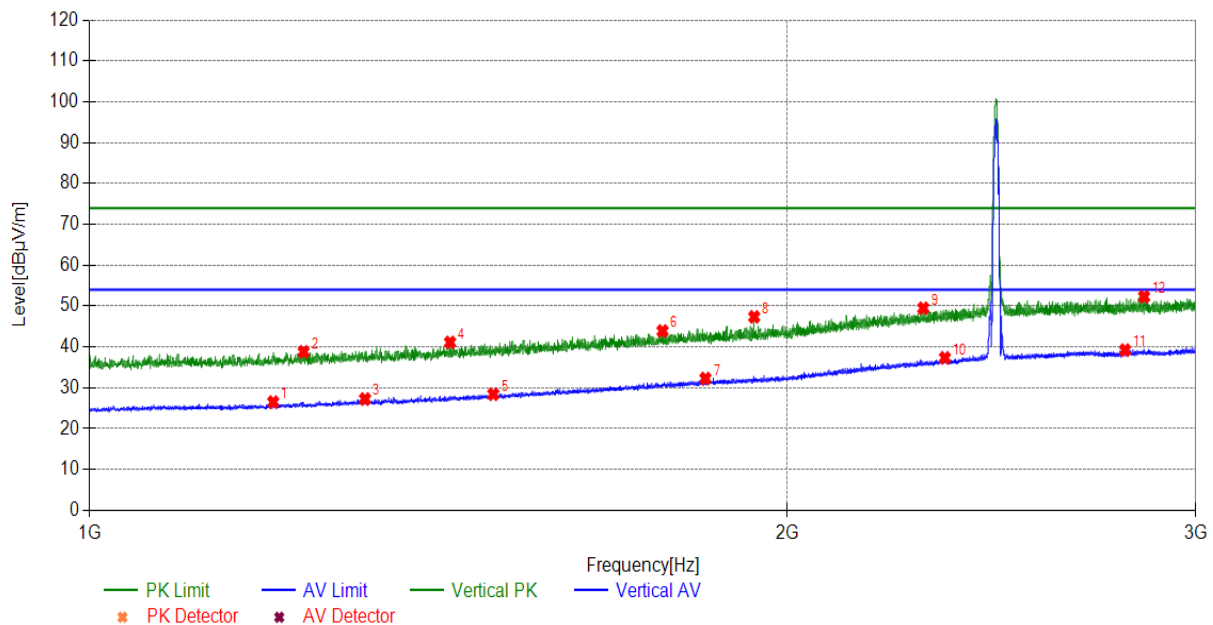
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Radiates Emission	1G~3G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dB μ V/m]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
2850.3850	Vertical	37.48	14.80	52.28	74.00	21.72	PK	150	10	PASS
1237.0237	Vertical	26.44	12.37	38.81	74.00	35.19	PK	150	20	PASS
1766.8767	Vertical	30.61	13.29	43.90	74.00	30.10	PK	150	30	PASS
1935.0935	Vertical	31.63	15.73	47.36	74.00	26.64	PK	150	70	PASS
2289.1289	Vertical	34.98	14.48	49.46	74.00	24.54	PK	150	60	PASS
1430.6431	Vertical	27.66	13.45	41.11	74.00	32.89	PK	150	40	PASS
2796.9797	Vertical	37.31	1.92	39.23	54.00	14.77	AV	150	10	PASS
1493.4493	Vertical	28.14	0.28	28.42	54.00	25.58	AV	150	10	PASS
1314.8315	Vertical	26.91	0.35	27.26	54.00	26.74	AV	150	10	PASS
1843.6844	Vertical	31.15	1.12	32.27	54.00	21.73	AV	150	10	PASS
2338.7339	Vertical	35.38	1.95	37.33	54.00	16.67	AV	150	10	PASS
1200.2200	Vertical	26.22	0.28	26.50	54.00	27.50	AV	150	10	PASS



Note: The signal beyond the limit is carrier

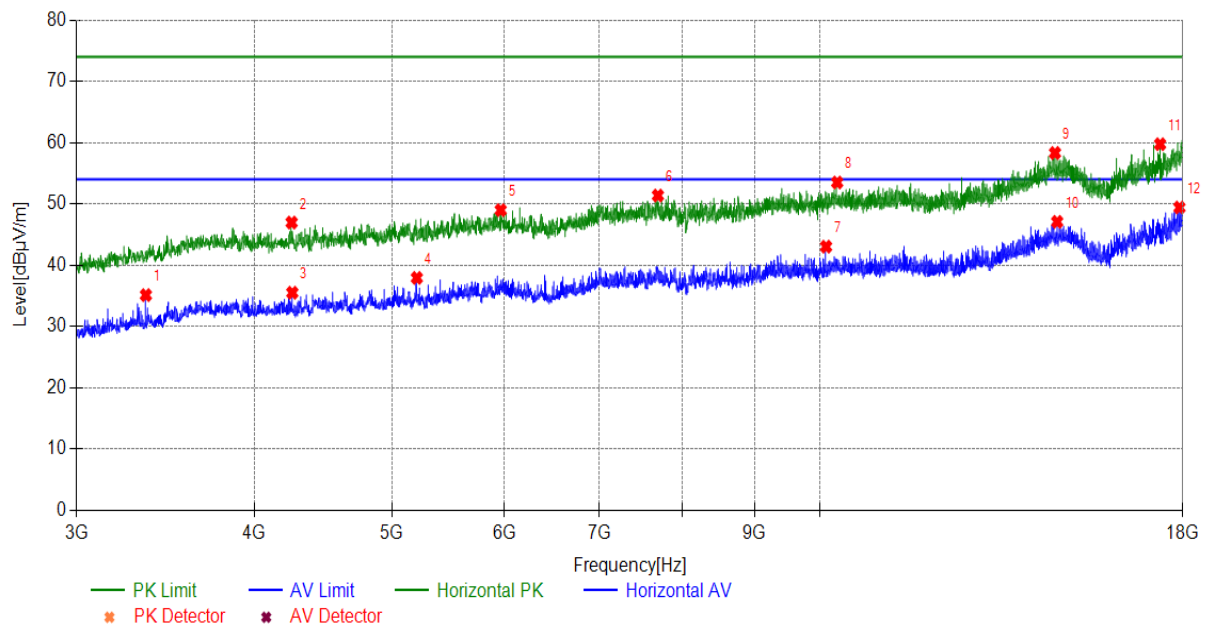
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Radiates Emission	3G~18G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dB μ V/m]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7693.9694	Horizontal	-0.26	51.63	51.37	74.00	22.63	PK	150	350	PASS
14638.1638	Horizontal	8.62	49.69	58.31	74.00	15.69	PK	150	40	PASS
17354.9355	Horizontal	12.07	47.67	59.74	74.00	14.26	PK	150	190	PASS
10286.2286	Horizontal	4.29	49.21	53.50	74.00	20.50	PK	150	260	PASS
4251.1251	Horizontal	-6.36	53.32	46.96	74.00	27.04	PK	150	330	PASS
5964.2964	Horizontal	-4.14	53.12	48.98	74.00	25.02	PK	150	320	PASS
5206.7207	Horizontal	-5.60	43.53	37.93	54.00	16.07	AV	150	10	PASS
17908.4908	Horizontal	14.97	34.44	49.41	54.00	4.59	AV	150	10	PASS
4255.6256	Horizontal	-6.36	41.87	35.51	54.00	18.49	AV	150	10	PASS
10103.2103	Horizontal	3.84	39.19	43.03	54.00	10.97	AV	150	10	PASS
14690.6691	Horizontal	8.62	38.46	47.08	54.00	6.92	AV	150	10	PASS
3357.0357	Horizontal	-8.26	43.39	35.13	54.00	18.87	AV	150	10	PASS



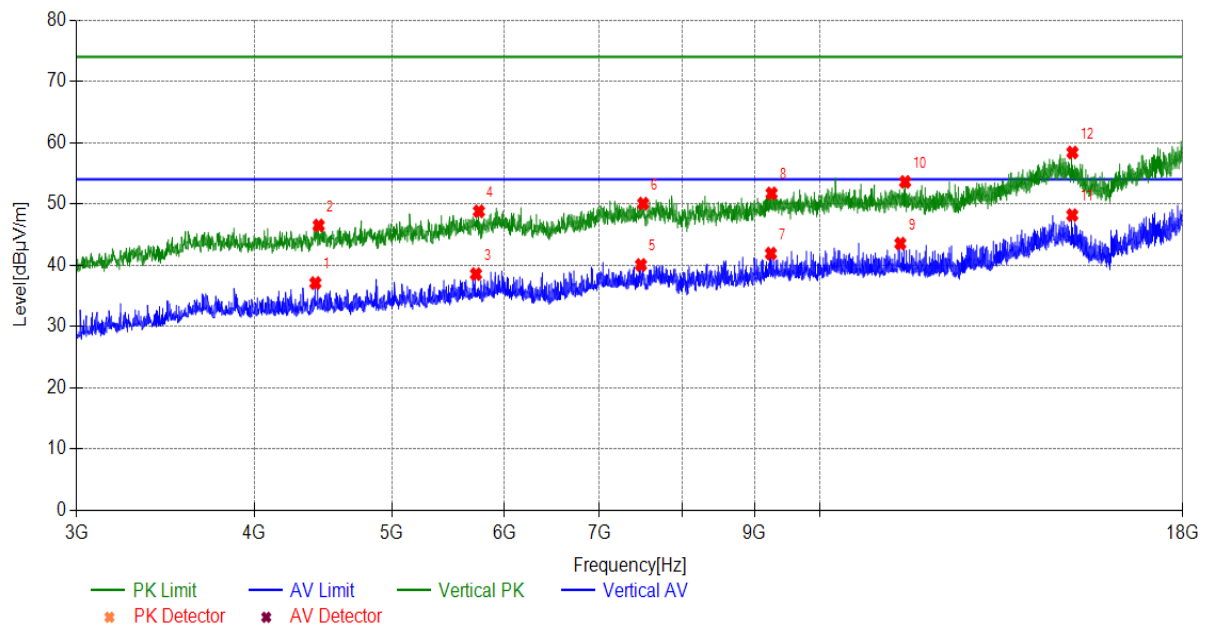
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Radiates Emission	3G~18G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
15058.2058	Vertical	8.47	49.92	58.39	74.00	15.61	PK	150	220	PASS
11483.3483	Vertical	5.03	48.56	53.59	74.00	20.41	PK	150	180	PASS
7512.4512	Vertical	-0.32	50.37	50.05	74.00	23.95	PK	150	210	PASS
9249.6250	Vertical	2.10	49.62	51.72	74.00	22.28	PK	150	320	PASS
4441.6442	Vertical	-6.22	52.70	46.48	74.00	27.52	PK	150	170	PASS
5757.2757	Vertical	-4.81	53.60	48.79	74.00	25.21	PK	150	120	PASS
15053.7054	Vertical	8.48	39.69	48.17	54.00	5.83	AV	150	10	PASS
7485.4485	Vertical	-0.35	40.40	40.05	54.00	13.95	AV	150	10	PASS
5730.2730	Vertical	-4.90	43.45	38.55	54.00	15.45	AV	150	10	PASS
9239.1239	Vertical	2.08	39.82	41.90	54.00	12.10	AV	150	10	PASS
11394.8395	Vertical	5.07	38.46	43.53	54.00	10.47	AV	150	10	PASS
4417.6418	Vertical	-6.24	43.33	37.09	54.00	16.91	AV	150	10	PASS



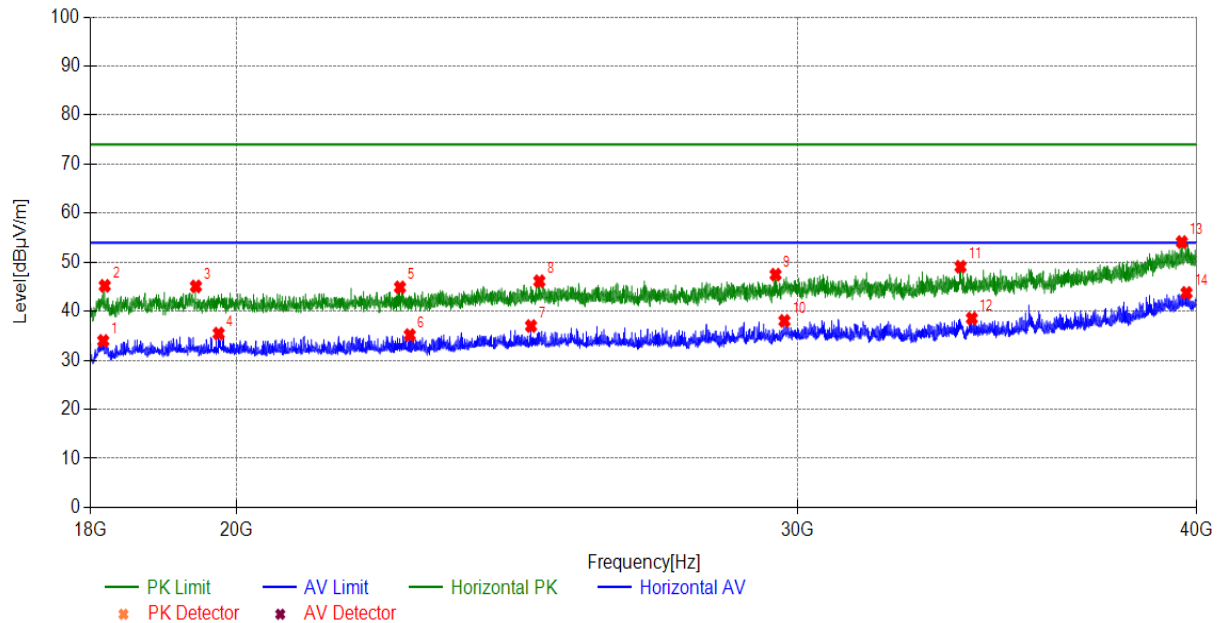
CVC Testing Technology Co., Ltd.

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Radiates Emission	18G~40G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dB μ V/m]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
19423.5424	Horizontal	1.33	43.74	45.07	74.00	28.93	PK	150	100	PASS
24888.8889	Horizontal	4.06	42.06	46.12	74.00	27.88	PK	150	60	PASS
39575.3575	Horizontal	10.78	43.33	54.11	74.00	19.89	PK	150	150	PASS
18187.0187	Horizontal	1.15	44.03	45.18	74.00	28.82	PK	150	60	PASS
33731.5732	Horizontal	6.52	42.56	49.08	74.00	24.92	PK	150	180	PASS
22506.0506	Horizontal	2.41	42.47	44.88	74.00	29.12	PK	150	90	PASS
29515.9516	Horizontal	6.36	41.10	47.46	74.00	26.54	PK	150	170	PASS
19744.7745	Horizontal	1.31	34.14	35.45	54.00	18.55	AV	150	10	PASS
22666.6667	Horizontal	2.57	32.56	35.13	54.00	18.87	AV	150	10	PASS
24739.2739	Horizontal	4.00	32.99	36.99	54.00	17.01	AV	150	10	PASS
39709.5710	Horizontal	10.79	32.95	43.74	54.00	10.26	AV	150	10	PASS
29705.1705	Horizontal	6.49	31.53	38.02	54.00	15.98	AV	150	10	PASS
34008.8009	Horizontal	6.60	31.94	38.54	54.00	15.46	AV	150	10	PASS
18167.2167	Horizontal	1.14	32.82	33.96	54.00	20.04	AV	150	10	PASS



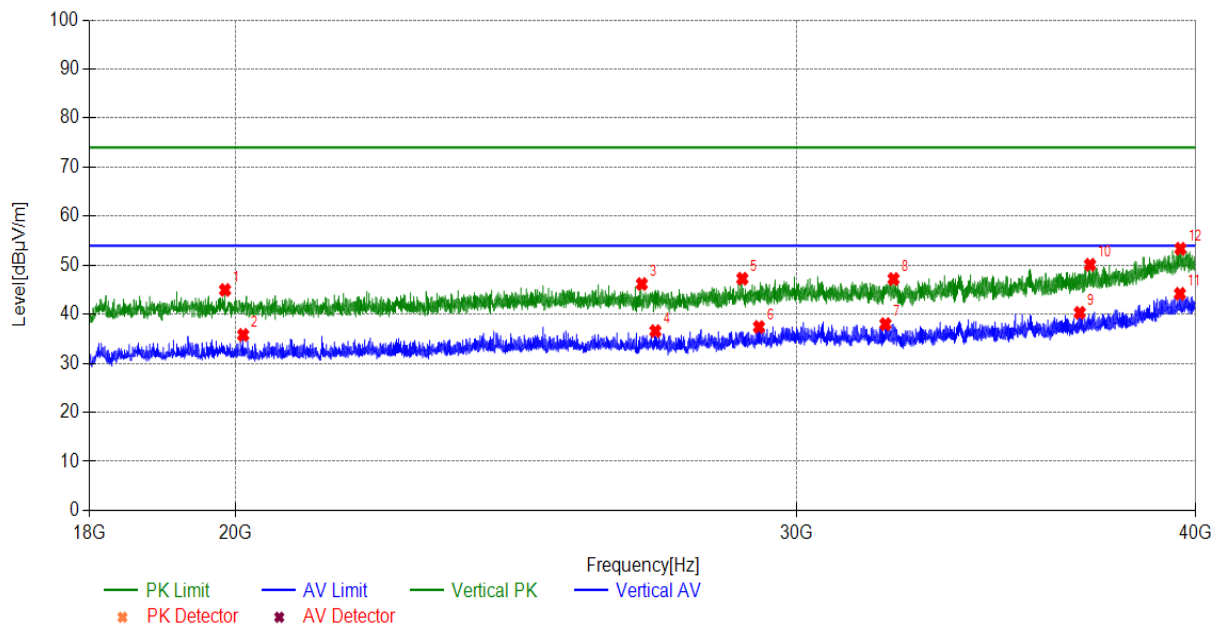
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Radiates Emission	18G~40G
Test channel	Worst-Case

Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dB μ V/m]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
39564.3564	Vertical	10.78	42.57	53.35	74.00	20.65	PK	150	50	PASS
37064.9065	Vertical	7.93	42.16	50.09	74.00	23.91	PK	150	120	PASS
19850.3850	Vertical	1.31	43.64	44.95	74.00	29.05	PK	150	120	PASS
32162.8163	Vertical	5.97	41.22	47.19	74.00	26.81	PK	150	20	PASS
28838.2838	Vertical	5.90	41.35	47.25	74.00	26.75	PK	150	70	PASS
26818.4818	Vertical	4.83	41.34	46.17	74.00	27.83	PK	150	70	PASS
39548.9549	Vertical	10.78	33.39	44.17	54.00	9.83	AV	150	10	PASS
20112.2112	Vertical	1.34	34.44	35.78	54.00	18.22	AV	150	10	PASS
27082.5083	Vertical	4.94	31.62	36.56	54.00	17.44	AV	150	10	PASS
36789.8790	Vertical	7.72	32.59	40.31	54.00	13.69	AV	150	10	PASS
31975.7976	Vertical	5.91	32.08	37.99	54.00	16.01	AV	150	10	PASS
29185.9186	Vertical	6.13	31.27	37.40	54.00	16.60	AV	150	10	PASS



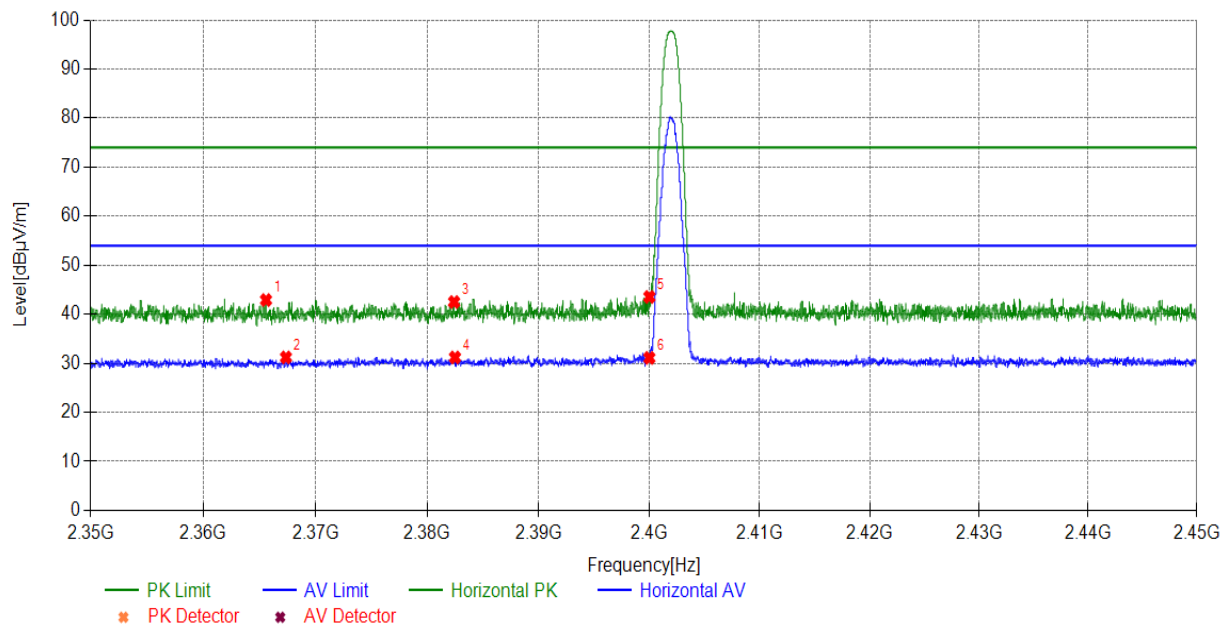
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Band Edge:

Test mode		3DH5								
Test channel		LOW channel								
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
2365.5916	Horizontal	29.58	13.32	42.90	74.00	31.10	PK	150	10	PASS
2382.4132	Horizontal	29.62	12.88	42.50	74.00	31.50	PK	150	20	PASS
2400.0050	Horizontal	29.67	13.86	43.53	74.00	30.47	PK	150	20	PASS
2367.3717	Horizontal	29.58	1.62	31.20	54.00	22.80	AV	150	10	PASS
2382.4932	Horizontal	29.62	1.57	31.19	54.00	22.81	AV	150	10	PASS
2400.0050	Horizontal	29.67	1.43	31.10	54.00	22.90	AV	150	20	PASS

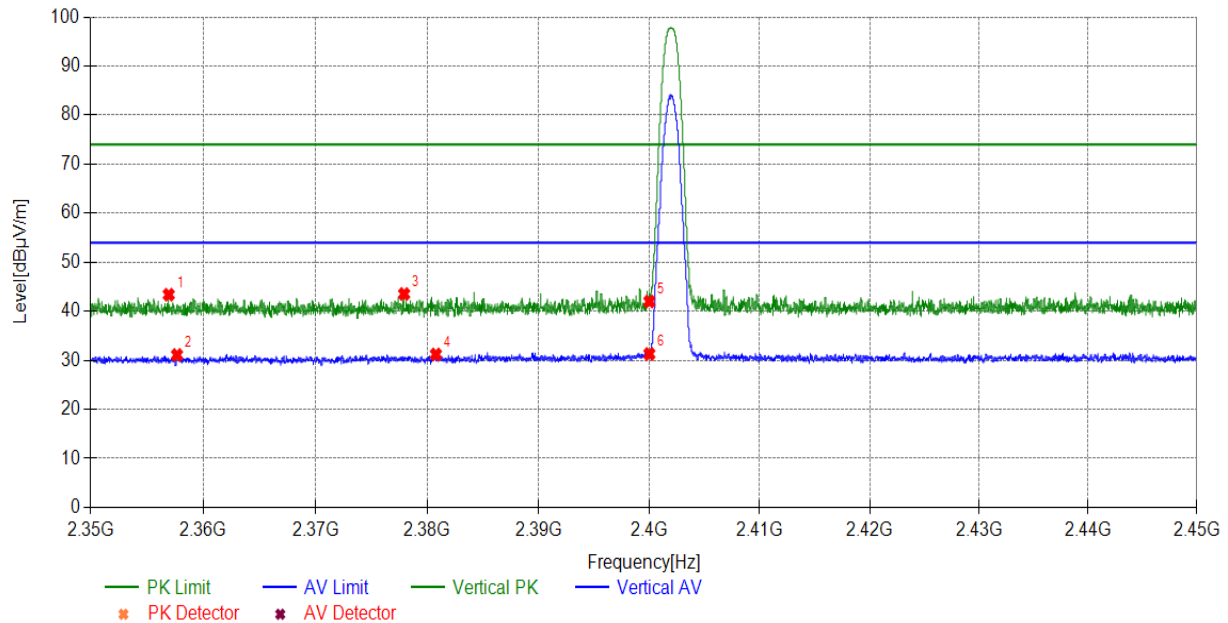


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Test mode			3DH5							
Test channel			LOW channel							
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
2356.9407	Vertical	29.55	13.83	43.38	74.00	30.62	PK	150	30	PASS
2377.9328	Vertical	29.61	13.91	43.52	74.00	30.48	PK	150	20	PASS
2400.0050	Vertical	29.67	12.32	41.99	74.00	32.01	PK	150	20	PASS
2357.6808	Vertical	29.55	1.54	31.09	54.00	22.91	AV	150	20	PASS
2380.7831	Vertical	29.62	1.58	31.20	54.00	22.80	AV	150	20	PASS
2400.0050	Vertical	29.67	1.62	31.29	54.00	22.71	AV	150	20	PASS

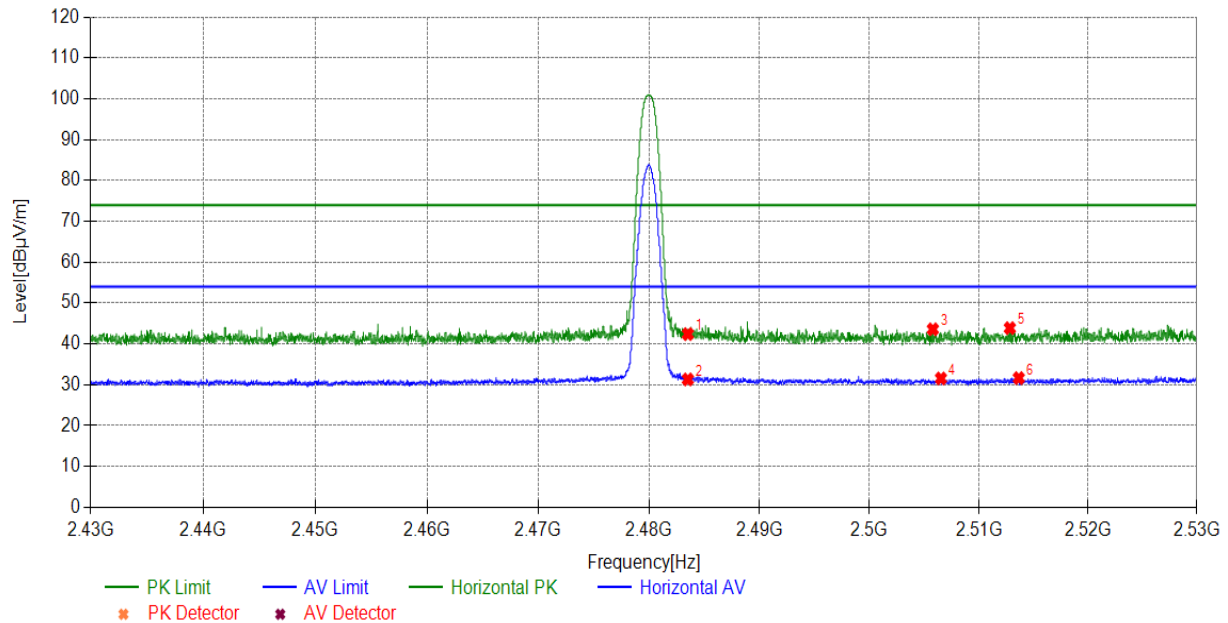


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Test mode		3DH5								
Test channel		HIGH channel								
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
2483.5054	Horizontal	29.91	12.50	42.41	74.00	31.59	PK	150	30	PASS
2505.7876	Horizontal	29.98	13.60	43.58	74.00	30.42	PK	150	50	PASS
2512.8283	Horizontal	30.01	13.86	43.87	74.00	30.13	PK	150	20	PASS
2483.5054	Horizontal	29.91	1.41	31.32	54.00	22.68	AV	150	40	PASS
2506.5277	Horizontal	29.99	1.57	31.56	54.00	22.44	AV	150	30	PASS
2513.6484	Horizontal	30.02	1.63	31.65	54.00	22.35	AV	150	20	PASS

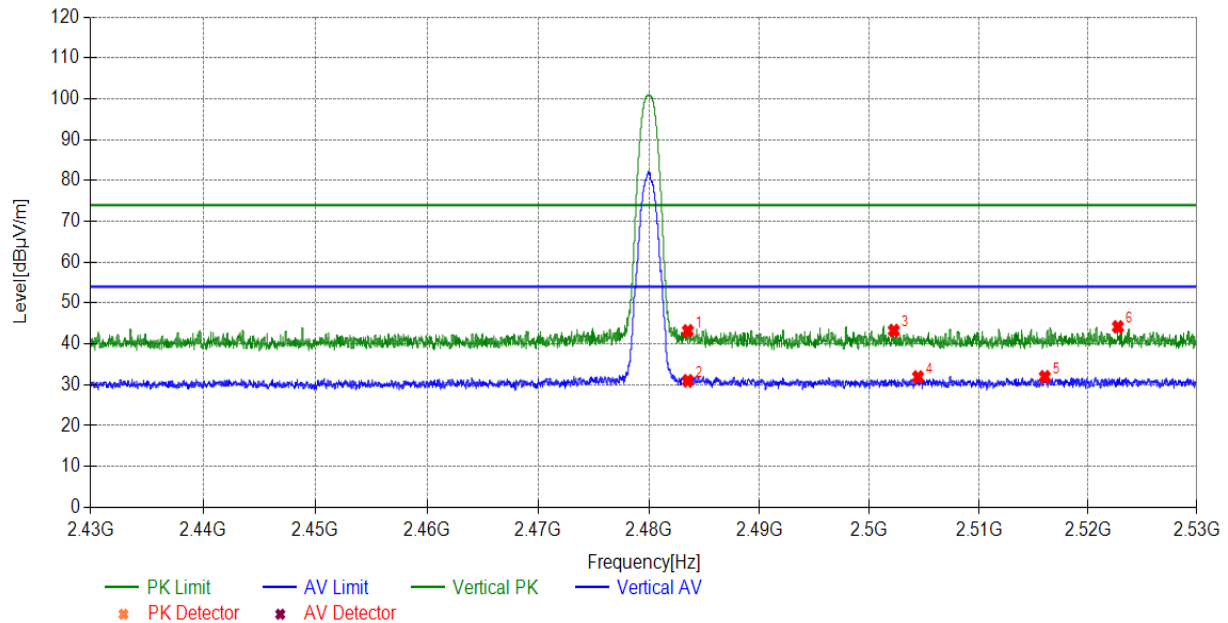


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Test mode			3DH5							
Test channel			HIGH channel							
Suspected List										
Frequency [MHz]	Polarity	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Dete ctor	Height [cm]	Angle deg	Pass/ Fail
2522.7493	Vertical	30.05	14.14	44.19	74.00	29.81	PK	150	20	PASS
2483.5054	Vertical	29.91	13.28	43.19	74.00	30.81	PK	150	20	PASS
2502.2272	Vertical	29.97	13.30	43.27	74.00	30.73	PK	150	20	PASS
2504.4374	Vertical	29.98	1.93	31.91	54.00	22.09	AV	150	10	PASS
2516.0386	Vertical	30.03	1.93	31.96	54.00	22.04	AV	150	10	PASS
2483.5054	Vertical	29.91	1.08	30.99	54.00	23.01	AV	150	10	PASS



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5.2 Peak Power Output -Conducted

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement:

During the process of the testing, The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The EUT is controlled by the Bluetooth test set to ensure max power transmission with proper modulation. The peak detector is used.

Limits:

Rule Part 15.247 (b) (1) specifies that " For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts."

Peak Output Power	$\leq 0.125\text{W}$ (21dBm)
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Test Setup:



Measurement Uncertainty:

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

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Test Results:

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	16.31	<=30	PASS
	Ant2	2402	16.08	<=30	PASS
	Ant1	2441	16.47	<=30	PASS
	Ant2	2441	15.17	<=30	PASS
	Ant1	2480	15.05	<=30	PASS
	Ant2	2480	15.12	<=30	PASS
2DH5	Ant1	2402	15.11	<=20.97	PASS
	Ant2	2402	14.84	<=20.97	PASS
	Ant1	2441	16.32	<=20.97	PASS
	Ant2	2441	14.99	<=20.97	PASS
	Ant1	2480	14.92	<=20.97	PASS
	Ant2	2480	13.96	<=20.97	PASS
3DH5	Ant1	2402	15.39	<=20.97	PASS
	Ant2	2402	14.09	<=20.97	PASS
	Ant1	2441	15.76	<=20.97	PASS
	Ant2	2441	13.16	<=20.97	PASS
	Ant1	2480	15.03	<=20.97	PASS
	Ant2	2480	14.06	<=20.97	PASS

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6. Appendix E

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
3m Semi-Anechoic Chamber	FACT-4	ST08035	WKNA-0024	ETS	2024-12-12
Semi-Anechoic Chamber(5m)	SAC-5	SAC-5-2.0	EM-000557	COMTEST	2024-11-02
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2024-02-22
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2024-02-22
EMI Test Receiver	ESR7	102235	VG DY-0956	R&S	2024-02-22
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2023-06-26
Waveguide Horn Antenna	HF906	360306/008	WKNA-0024-8	R&S	2024-02-25
Waveguide Horn Antenna	BBHA9170	00949	EM-000383	SCHWARZBECK	2023-07-31
Loop Antenna	HLA 6121	540046	EM-000546	TESEQ	2024-06-06
Loop Antenna	FMZB1513	1513-170	EM-000384	SCHWARZBECK	2024-02-22
Broadband Antenna(5m)	VULB 9163	9163-676	EM-000382	SCHWARZBECK	2024-05-05
Bandstop Filters	SW-BSF-2400-100 -7-A1	/	EM-000495	/	2023-09-04
5G Bandstop Filters	WRCJV12-4900-5 100-5900-6100-5 OEE	1	DZ-000186	WI	2023-12-06
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2024-06-04
RF Radio Frequency Switch	JS0806-2	19H9080187	/	Tonscend	2024-06-06

The End