Test Report No.:
FCC2025-0004-RF1

TEST REPORT

FCC ID		2AZPC-BGC
Applicant	:	Butlr Technologies inc.
Product Name	:	Hive
Model No.	:	GWDSRSCL2

CVC Testing Technology Co., Ltd.

Applicant	**Name:** Butlr Technologies Inc. **Address:** Suite 510,800 Airport Blvd. Burlingame CA 94010,USA
Manufacturer	**Name:** Butlr Technologies Inc. **Address:** Suite 510,800 Airport Blvd. Burlingame CA 94010,USA
Producer	**Name:** Shenzhen Saidaxin Technology Co.,Ltd. **Address:** 6/F, Building I, Saitu Digital Technology Park, Bulan Road, Jihua Street, LonggangShenzhen, Guangdong/ Production
Equipment Under Test	**Product Name :** Hive **Model No. :** GWDSRSCL2 **Trade mark :** butlr **Serial no. :** 000000003d1d1c36 **Sampling :** 1-1

Date of Receipt.	2025.2.19	**Date of Testing**	2025.3.6

Test Specification	**Test Result**
FCC CFR47 Part 15C Radio Frequency Devices ANSI C63.10-2020/Cor1-2023 KDB 558074 D01 15.247 Meas Guidance v05r02	PASS

Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. **Seal of CVC** **Date of issue:2025.03.26**

Approved by:	Reviewed by:	Tested by:
Chen Huawen	**Xu Zhenfei**	**Lu Weiji**

Other Aspects: NONE.

Abbreviations: Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested

Note1: 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	Hive
Model No.	GWDSRSCL2
Additional model	N/A
Power Supply	DC 5.0V
Serial Number(SN)	000000003d1d1c36
HW-Release NO	DVT
SW-Release NO	H1_3.0.4.img
specific power settings	802.15.4 Mesh Networking Radio: Default IEEE 802.11b/g/n(HT20): 12
Antenna Type	802.15.4 Mesh Networking Radio: External Antenna IEEE 802.11b/g/n(HT20): PCB Antenna
Antenna Gain	802.15.4 Mesh Networking Radio: 2.9dBi (provided by client) IEEE 802.11b/g/n(HT20): 3.4dBi (provided by client)
Beamforming gain	Unsupported (provided by client)
Frequency Range	802.15.4 Mesh Networking Radio: 2405~2475MHz IEEE 802.11b/g/n(HT20): 2412MHz~2462MHz
Channel Number	802.15.4 Mesh Networking Radio: 15 Channels IEEE 802.11b/g/n(HT20): 12 Channels
Type of Modulation	802.15.4 Mesh Networking Radio: QPSK IEEE 802.11b/g/n: DSSS(CCK,DQPSK,DBSK);OFDM(64QAM,16QAM,QPSK,BPSK)
Operate Temp.Range	0℃~40℃

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. Product photo reference report:FCC2025-0004-EUT.

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.

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou,Guangdong,510663, People's Republic of China

Telephone : +86-20-32293888

Fax : +86-20-32293889

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 X**.

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
802.15.4 Mesh Networking Radio	1TX / 1RX	0,7,14
IEEE 802.11b/g/n(HT20)	1TX / 1RX	1,6,11

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 different channels. Preliminary tests have been done on all the configurations for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates and channels are shown as following table.

Test Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.15.4 Mesh Networking Radio	250kbit/s	/	/
IEEE 802.11b	1Mbit/s	/	/
IEEE 802.11g	6Mbit/s	/	/
IEEE 802.11n(HT20)	MCS0	/	/

Test Items	Test Antennas	Test Modes	Test Channels
Conducted Emissions	Antenna 1	IEEE 802.11n(HT20)	1
Radiated Emissions	Antenna 1	802.15.4 Mesh Networking Radio	0,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,11
Radiated Emissions (Band Edge)	Antenna 1	802.15.4 Mesh Networking Radio	0,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,11
Maximum conducted output power	Antenna 1	802.15.4 Mesh Networking Radio	0,7,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,6,11
Minimum 6 dB bandwidth	Antenna 1	802.15.4 Mesh Networking Radio	0,7,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,6,11
Occupied Channel Bandwidth	Antenna 1	802.15.4 Mesh Networking Radio	0,7,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,6,11
Band Edge Measurement	Antenna 1	802.15.4 Mesh Networking Radio	0,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,11
Maximum Power spectral density	Antenna 1	802.15.4 Mesh Networking Radio	0,7,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,6,11
Spurious RF Conducted Emissions	Antenna 1	802.15.4 Mesh Networking Radio	0,7,14
	Antenna 1	IEEE 802.11b/g/n(HT20)	1,6,11

3.2 Duty cycle

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	0.00	0.00	100.00	---	---
		2440	0.00	0.00	100.00	---	---
		2475	0.00	0.00	100.00	---	---
IEEE 802.11b	Ant1	2412	8.61	8.71	98.85	---	---
		2437	8.61	8.70	98.97	---	---
		2462	8.60	8.70	98.85	---	---
IEEE 802.11g	Ant1	2412	1.43	1.54	92.86	---	---
		2437	1.43	1.53	93.46	---	---
		2462	1.42	1.53	92.81	---	---
IEEE 802.11n20	Ant1	2412	1.33	1.43	93.01	---	---
		2437	1.34	1.44	93.06	---	---
		2462	1.33	1.44	92.36	---	---

4. Summary of measurement results

Summary of measurements of results	Clause in FCC rules	Verdict	Note
Conducted Emissions	15.207	PASS	/
Radiated Emissions	15.247(d),15.205,15.209	PASS	/
Maximum conducted output power	15.247(b)(3)	PASS	Appendix C of 802.15.4 Mesh Networking Radio_ diagram and Appendix C of IEEE 802.11b/g/n_diagram
Minimum 6 dB bandwidth	15.247(a)(2)	PASS	Appendix A of 802.15.4 Mesh Networking Radio_ diagram and Appendix A of IEEE 802.11b/g/n_diagram
Occupied Channel Bandwidth	15.247(a)(2)	PASS	Appendix B of 802.15.4 Mesh Networking Radio_ diagram and Appendix B of IEEE 802.11b/g/n_diagram
Band Edge Measurement	15.247(d)	PASS	Appendix E of 802.15.4 Mesh Networking Radio_ diagram and Appendix E of IEEE 802.11b/g/n_diagram
Maximum Power spectral density	15.247(e)	PASS	Appendix D of 802.15.4 Mesh Networking Radio_ diagram and Appendix D of IEEE 802.11b/g/n_diagram
Spurious RF Conducted Emissions	15.247(d)	PASS	Appendix F of 802.15.4 Mesh Networking Radio_ diagram and Appendix F of IEEE 802.11b/g/n_diagram
Antenna Requirement	15.203	PASS	See note 1

Note 1: According to 15.203, it is considered sufficient to comply with the provisions of this section.

5. Measurement procedure

5.1 Conducted Emission

Ambient condition:

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

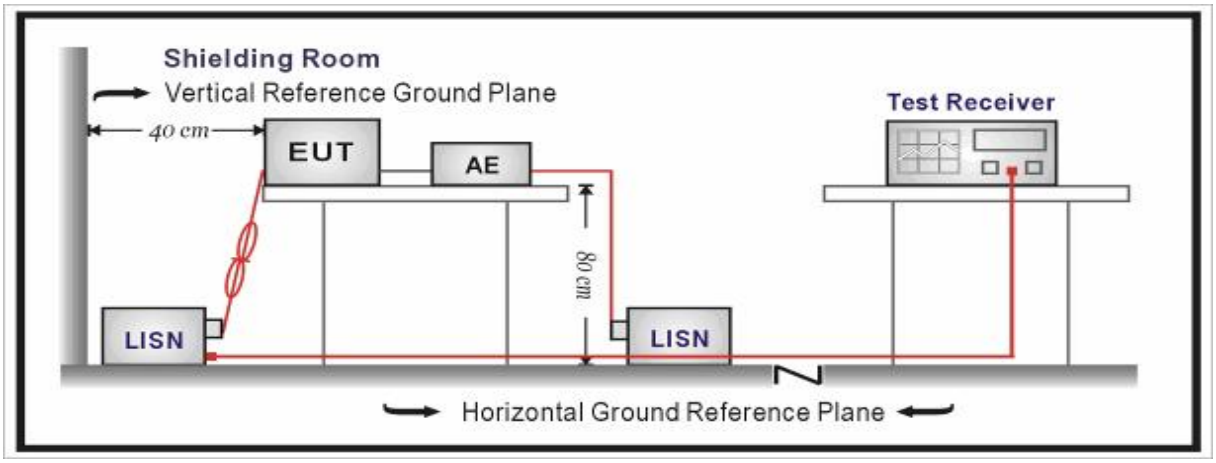
Method of Measurement:

The EUT was setup according to ANSI C63.10-2020/Cor1-2023 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

Limits:

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 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 0.15 MHz to 0.5 MHz.		

Test Setup:



Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Notes:

1. *The following Quasi-Peak and Average measurements were performed on the EUT:*
2. *Final Level = Reading + Factor.*

Measurement Uncertainty：

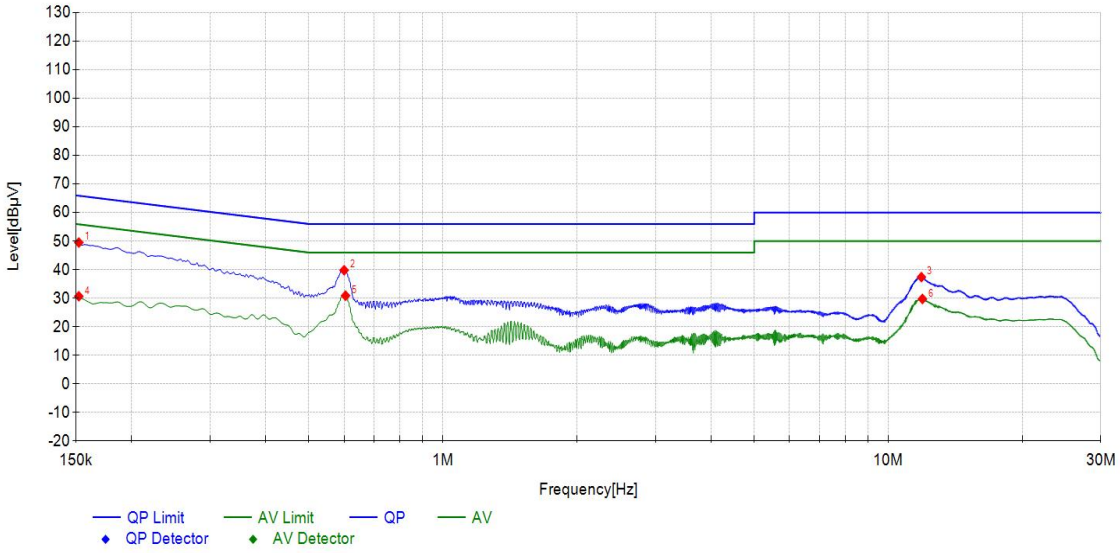
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96. U= 3.12 dB.

Test Results:

During the test, the Conducted Emission from 150kHz to 30MHz was performed in all modes with all channels, and all antenna. IEEE 802.11n20, Channel 1, Antenna1 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

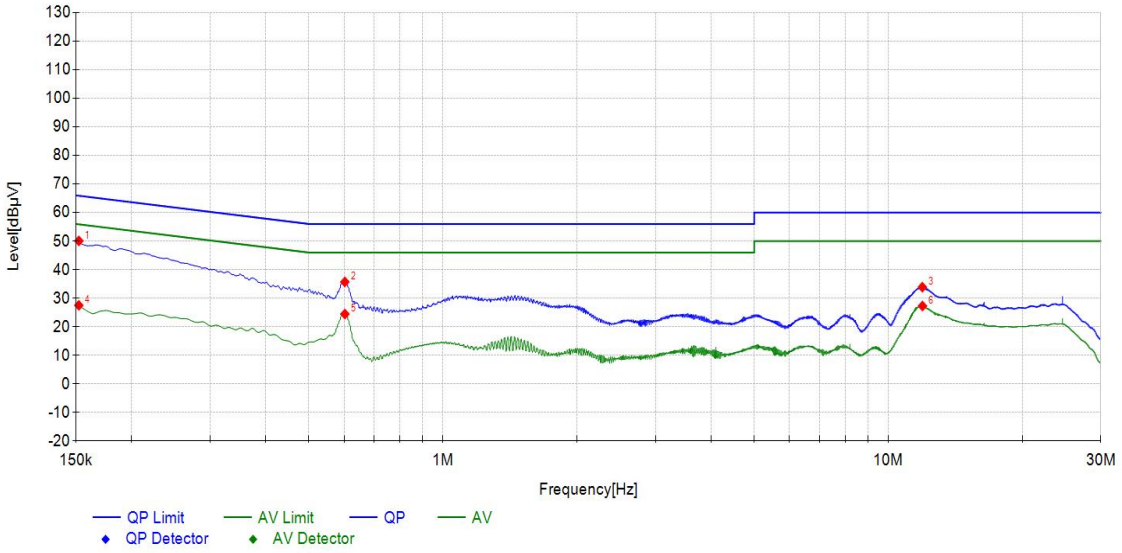
Power Line	L
Test channel	Worst-Case

Suspected List								
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV]	Limit [dBµV]	Margin [dB]	Detector	Pass/Fail
1	0.1522	10.29	39.21	49.50	65.88	16.38	QP	PASS
2	0.6000	10.30	29.52	39.82	56.00	16.18	QP	PASS
3	11.8702	10.99	26.42	37.41	60.00	22.59	QP	PASS
4	0.1522	10.29	20.41	30.70	55.88	25.18	AV	PASS
5	0.6045	10.30	20.60	30.90	46.00	15.10	AV	PASS
6	11.9332	10.99	18.78	29.77	50.00	20.23	AV	PASS



Power Line	N
Test channel	Worst-Case

Suspected List								
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV]	Limit [dBµV]	Margin [dB]	Detector	Pass/Fail
1	0.1522	10.28	39.80	50.08	65.88	15.80	QP	PASS
2	0.6022	10.30	25.41	35.71	56.00	20.29	QP	PASS
3	11.9288	10.96	22.93	33.89	60.00	26.11	QP	PASS
4	0.1522	10.28	17.25	27.53	55.88	28.35	AV	PASS
5	0.6022	10.30	14.17	24.47	46.00	21.53	AV	PASS
6	11.9355	10.96	16.32	27.28	50.00	22.72	AV	PASS



5.2 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 C63.10-2020/Cor1-2023.

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 C63.10-2020/Cor1-2023 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)).

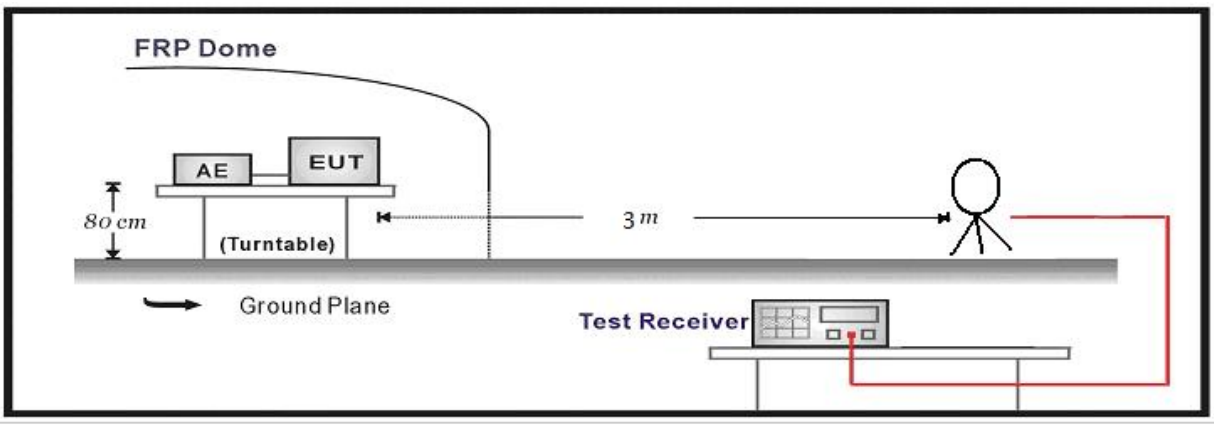
Frequency	Limit (μV/m)	Limit (dBμV/m @3m)	Remark
0.009MHz-0.490MHz	2400/F(kHz)@300m	20lg(24000000/F(kHz))	Quasi-peak Level
0.490MHz~1.705MHz	24000/F(kHz)@30m	20lg(2400000/F(kHz))	Quasi-peak Level
1.705MHz~30.0MHz	30@30m	49.54	Quasi-peak Level
30MHz-88MHz	100@3m	40.0	Quasi-peak Level
88MHz-216MHz	150@3m	43.5	Quasi-peak Level
216MHz-960MHz	200@3m	46.0	Quasi-peak Level
960MHz-1GHz	500@3m	54.0	Quasi-peak Level
Above 1GHz	500@3m	54.0	Average Level
	5000@3m	74.0	Peak Level

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

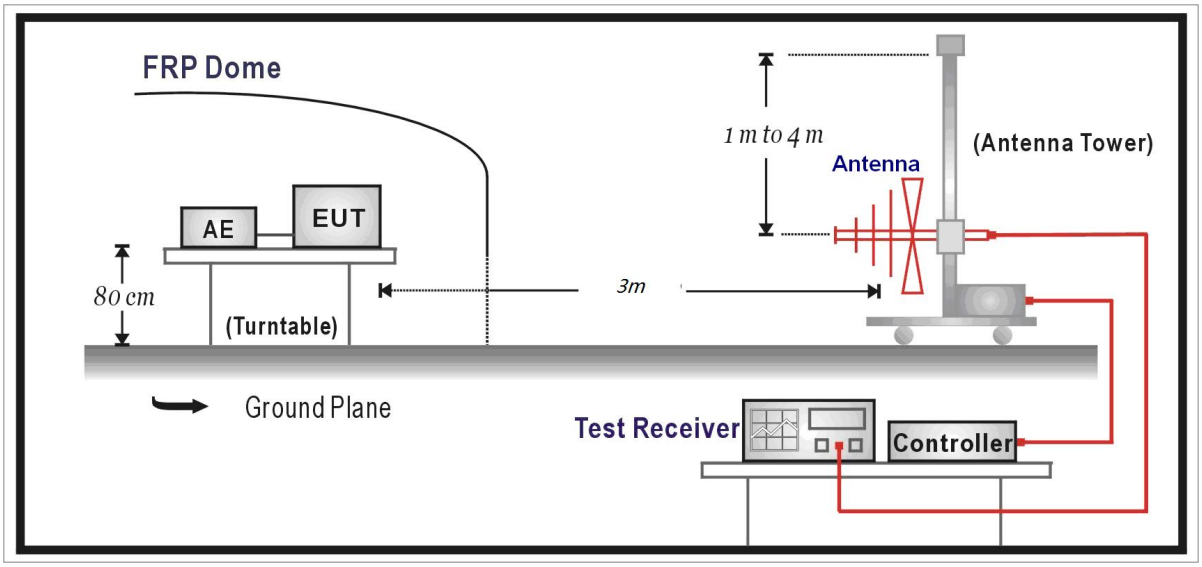
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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	/	/	/

Test Setup:

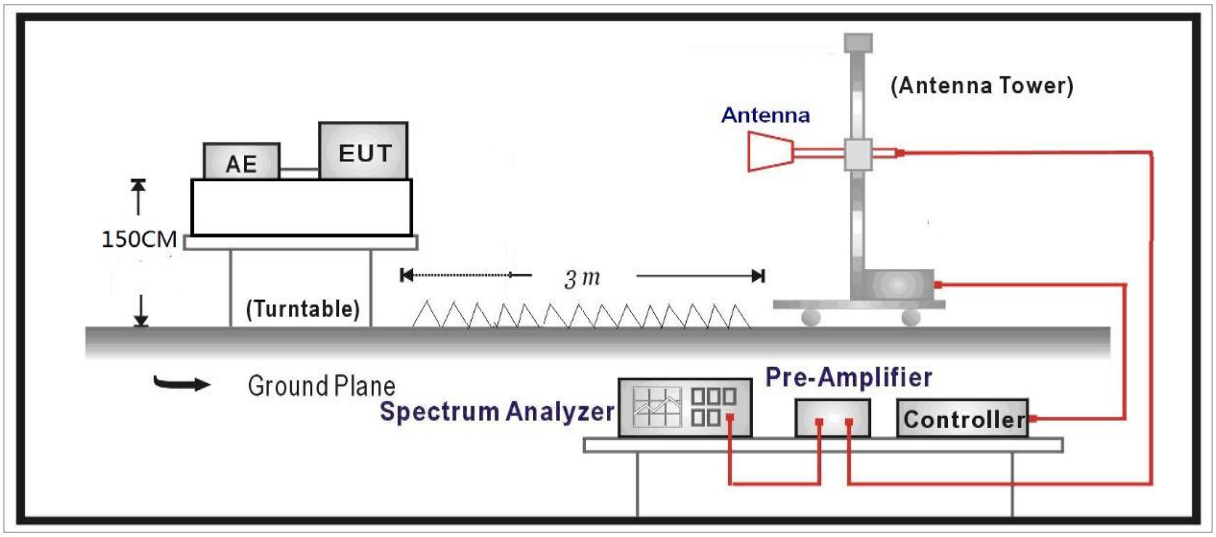
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



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

Test Results:

SPURIOUS EMISSIONS：

During the test, the Radiates Emission from 9kHz to 40GHz was performed in 802.15.4 Mesh Networking Radio. 2405MHz, antenna 1 are selected as the worst condition in 9kHz to 1GHz. Highest and lowest channels, antenna 1 are selected as the worst condition in 1GHz to 40GHz. The test data of the worst-case condition was recorded in this report.

Radiates Emission	9kHz~1GHz
Test channel	Worst-Case
Polarity	Horizontal

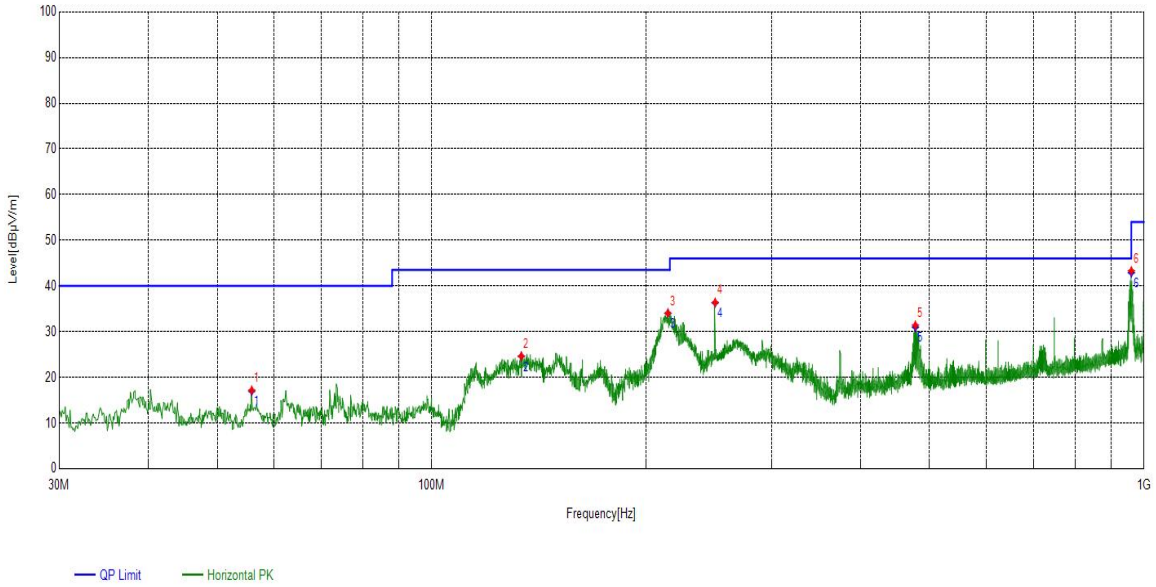
Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
55.9016	12.56	4.59	17.15	—	—	PK	100	0	—
133.6064	9.62	14.99	24.61	—	—	PK	100	281	—
214.6095	13.28	20.76	34.04	—	—	PK	100	176	—
250.0180	14.24	22.14	36.38	—	—	PK	100	254	—
477.6028	19.29	12.09	31.38	—	—	PK	100	254	—
960.0320	26.42	16.89	43.31	—	—	PK	100	254	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List

Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
55.9016	12.56	16.94	40.00	23.06	390	0	PASS
133.6064	9.62	24.58	43.50	18.92	220	281	PASS
214.6095	13.28	34.01	43.50	9.49	280	176	PASS
250.0180	14.24	36.27	46.00	9.73	270	254	PASS
477.6028	19.29	30.95	46.00	15.05	210	254	PASS
960.0320	26.42	42.88	54.00	11.12	330	254	PASS


100
90
80
70
60
50
40
30
20
10
0
Level[dBµV/m]
30M
100M
1G
Frequency[Hz]
QP Limit
Horizontal PK

Radiates Emission	9kHz~1GHz
Test channel	Worst-Case
Polarity	Vertical

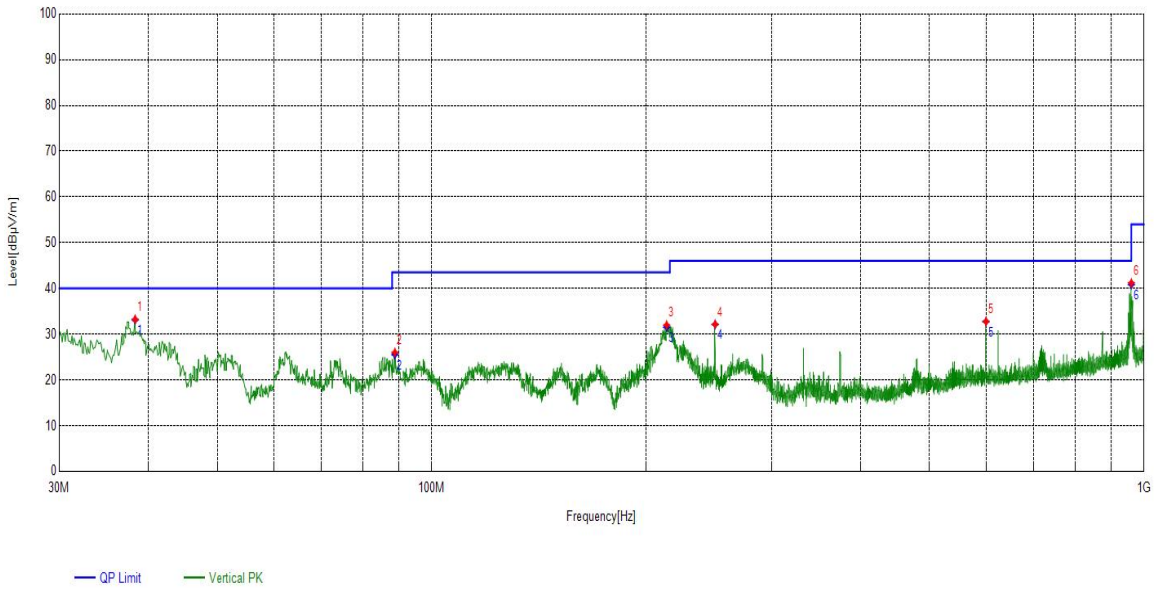
Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
38.3428	11.79	21.43	33.22	—	—	PK	100	250	—
88.7879	9.75	16.22	25.97	—	—	PK	100	289	—
213.7364	13.25	18.73	31.98	—	—	PK	100	309	—
250.0180	14.24	17.90	32.14	—	—	PK	100	14	—
600.0290	22.13	10.64	32.77	—	—	PK	100	283	—
960.0320	26.42	14.77	41.19	—	—	PK	100	158	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List

Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
38.3428	11.79	33.08	40.00	6.92	390	250	PASS
88.7879	9.75	25.51	43.50	17.99	220	289	PASS
213.7364	13.25	31.52	43.50	11.98	280	309	PASS
250.0180	14.24	32.10	46.00	13.90	270	14	PASS
600.0290	22.13	32.73	46.00	13.27	210	283	PASS
960.0320	26.42	40.83	54.00	13.17	330	158	PASS



Radiates Emission	Above 1G
Test channel	2405
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
5250.2250	2.91	36.73	39.64	74.00	34.36	PK	150	PASS
8460.5461	9.93	34.27	44.20	74.00	29.80	PK	150	PASS
14681.6682	18.04	32.95	50.99	74.00	23.01	PK	150	PASS
5166.2166	2.68	25.57	28.25	54.00	25.75	AV	150	PASS
8502.5503	10.00	22.91	32.91	54.00	21.09	AV	150	PASS
14504.6505	18.36	21.54	39.90	54.00	14.10	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2405
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4798.6799	1.24	39.02	40.26	74.00	33.74	PK	150	PASS
8966.0970	10.36	35.31	45.67	74.00	28.33	PK	150	PASS
14582.6583	18.09	32.88	50.97	74.00	23.03	PK	150	PASS
4845.1845	1.43	26.68	28.11	54.00	25.89	AV	150	PASS
9200.1200	11.07	22.01	33.08	54.00	20.92	AV	150	PASS
14467.1467	18.23	21.77	40.00	54.00	14.00	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2475
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4774.6775	1.13	37.98	39.11	74.00	34.89	PK	150	PASS
7720.9721	9.18	35.01	44.19	74.00	29.81	PK	150	PASS
14476.1476	18.28	33.43	51.71	74.00	22.29	PK	150	PASS
4938.1938	1.83	26.30	28.13	54.00	25.87	AV	150	PASS
7746.4746	9.19	24.06	33.25	54.00	20.75	AV	150	PASS
14450.6451	18.17	21.81	39.98	54.00	14.02	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2475
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4948.6949	1.88	41.11	42.99	74.00	31.01	PK	150	PASS
8592.5593	10.11	33.94	44.05	74.00	29.95	PK	150	PASS
14681.6682	18.04	33.78	51.82	74.00	22.18	PK	150	PASS
4951.6952	1.88	30.26	32.14	54.00	21.86	AV	150	PASS
8588.0588	10.09	22.95	33.04	54.00	20.96	AV	150	PASS
14464.1464	18.23	22.00	40.23	54.00	13.77	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

During the test, the Radiates Emission from 9kHz to 40GHz was performed in IEEE 802.11b/g/n. IEEE 802.11n(HT20), 2412MHz, antenna 1 are selected as the worst condition in 9kHz to 1GHz. IEEE 802.11n(HT20), highest and lowest channels, antenna 1 are selected as the worst condition in 1GHz to 40GHz. The test data of the worst-case condition was recorded in this report.The test data of the worst-case condition was recorded in this report.

Radiates Emission	9kHz~1GHz
Test channel	Worst-Case
Polarity	Vertical

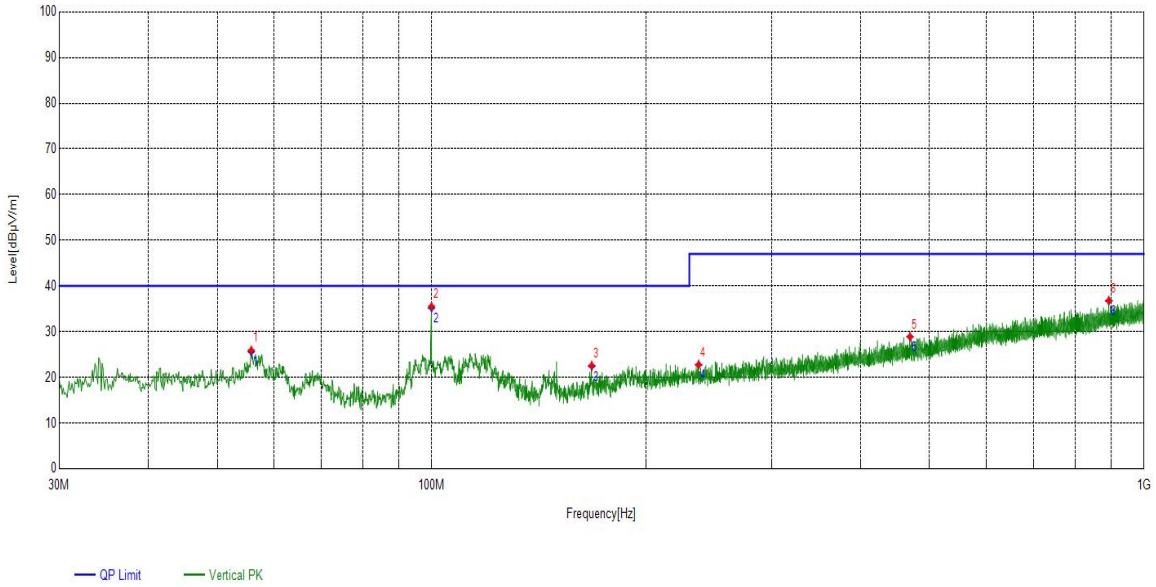
Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
55.8046	12.56	13.36	25.92	—	—	PK	100	200	—
99.9440	11.84	23.70	35.54	—	—	PK	100	230	—
167.7538	10.66	11.92	22.58	—	—	PK	100	150	—
237.0187	13.88	8.85	22.73	—	—	PK	100	200	—
469.3569	19.14	9.72	28.86	—	—	PK	100	60	—
892.5133	25.67	11.12	36.79	—	—	PK	100	70	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List

Frequency [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
55.8046	12.56	25.56	40.00	14.44	390	200	PASS
99.9440	11.84	35.18	40.00	4.82	220	230	PASS
167.7538	10.66	22.40	40.00	17.60	280	150	PASS
237.0187	13.88	22.73	47.00	24.27	270	200	PASS
469.3569	19.14	28.86	47.00	18.14	210	60	PASS
892.5133	25.67	36.71	47.00	10.29	330	70	PASS


100
90
80
70
60
50
40
30
20
10
0
Level[dBµV/m]
30M
100M
1G
Frequency[Hz]
QP Limit
Vertical PK

Radiates Emission	9kHz~1GHz
Test channel	Worst-Case
Polarity	Horizontal

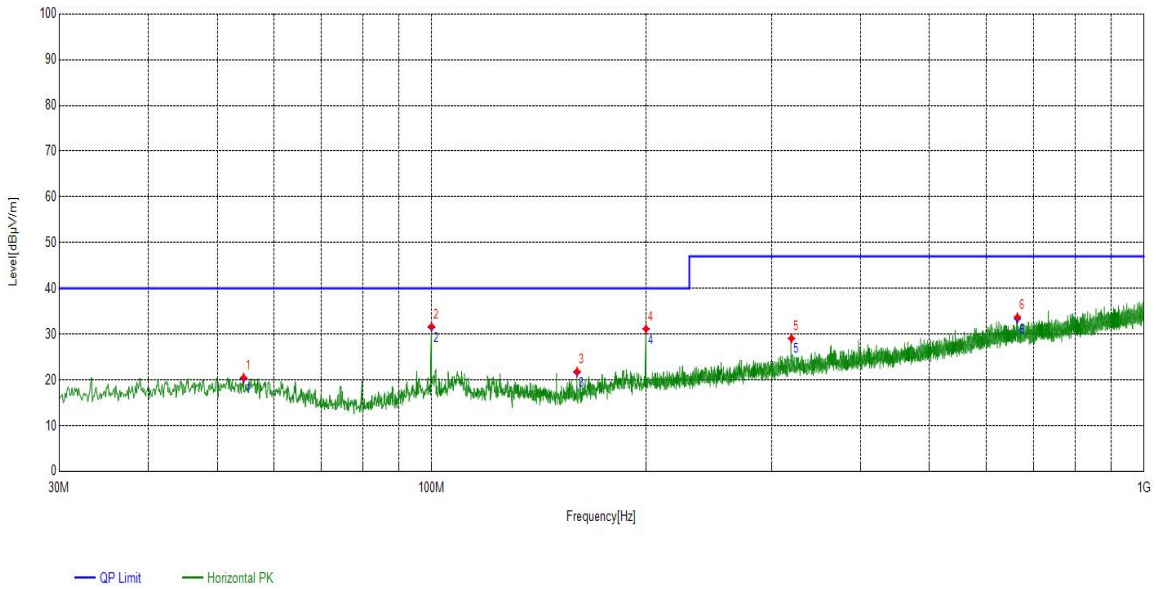
Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
54.4464	12.70	7.79	20.49	—	—	PK	100	120	—
99.9440	11.84	19.85	31.69	—	—	PK	100	330	—
159.9930	10.02	11.83	21.85	—	—	PK	100	270	—
199.9610	12.88	18.27	31.15	—	—	PK	100	30	—
319.9620	15.99	13.08	29.07	—	—	PK	100	280	—
664.1524	22.83	10.91	33.74	—	—	PK	100	90	—

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List

Frequency [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
54.4464	12.70	20.27	40.00	19.73	390	120	PASS
99.9440	11.84	31.47	40.00	8.53	220	330	PASS
159.9930	10.02	21.63	40.00	18.37	280	270	PASS
199.9610	12.88	31.11	40.00	8.89	270	30	PASS
319.9620	15.99	29.03	47.00	17.97	210	280	PASS
664.1524	22.83	33.38	47.00	13.62	330	90	PASS



Radiates Emission	Above 1G
Test channel	2412
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4194.1194	0.45	37.72	38.17	74.00	35.83	PK	150	PASS
7324.9325	8.99	34.83	43.82	74.00	30.18	PK	150	PASS
14482.1482	18.30	32.73	51.03	74.00	22.97	PK	150	PASS
4066.6067	0.50	28.11	28.61	54.00	25.39	AV	150	PASS
7326.4326	9.00	23.59	32.59	54.00	21.41	AV	150	PASS
14713.1713	18.05	23.44	41.49	54.00	12.51	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2412
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4128.1128	0.48	38.25	38.73	74.00	35.27	PK	150	PASS
8498.0498	9.99	33.40	43.39	74.00	30.61	PK	150	PASS
14464.1464	18.23	32.64	50.87	74.00	23.13	PK	150	PASS
4026.1026	0.53	28.48	29.01	54.00	24.99	AV	150	PASS
8591.0591	10.10	24.43	34.53	54.00	19.47	AV	150	PASS
14458.1458	18.21	23.24	41.45	54.00	12.55	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2462
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
4861.6862	1.50	37.46	38.96	74.00	35.04	PK	150	PASS
9323.1323	11.58	32.25	43.83	74.00	30.17	PK	150	PASS
14800.1800	18.05	32.82	50.87	74.00	23.13	PK	150	PASS
4950.1950	1.88	26.81	28.69	54.00	25.31	AV	150	PASS
9465.6466	12.19	22.22	34.41	54.00	19.59	AV	150	PASS
14807.6808	18.04	22.87	40.91	54.00	13.09	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1G
Test channel	2462
polarization	Horizont

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
5041.7042	2.23	36.91	39.14	74.00	34.86	PK	150	PASS
8168.0168	9.47	34.48	43.95	74.00	30.05	PK	150	PASS
14443.1443	18.14	33.67	51.81	74.00	22.19	PK	150	PASS
5164.7165	2.68	25.84	28.52	54.00	25.48	AV	150	PASS
7887.4887	9.24	23.95	33.19	54.00	20.81	AV	150	PASS
14384.6385	17.87	22.94	40.81	54.00	13.19	AV	150	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Band Edge：

During the test, the Band Edge was performed in 802.15.4 Mesh Networking Radio. Antenna 1, Highest and lowest channels are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission	802.15.4 Mesh Networking Radio
Test channel	Lowest channel
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Pass/ Fail
2145.7146	34.88	14.34	49.22	74.00	24.78	PK	150	PASS
2390.1390	37.24	14.39	51.63	74.00	22.37	PK	150	PASS
2404.5405	37.35	65.90	103.25	---	---	PK	150	---
2145.7146	34.88	1.60	36.48	54.00	17.52	AV	150	PASS
2390.1390	37.24	2.37	39.61	54.00	14.39	AV	150	PASS
2404.9405	37.35	54.53	91.88	---	---	AV	150	---

Radiates Emission	802.15.4 Mesh Networking Radio
Test channel	Lowest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Pass/ Fail
2040.1040	33.59	14.05	47.64	74.00	26.36	PK	150	PASS
2390.1390	37.24	12.49	49.73	74.00	24.27	PK	150	PASS
2404.3404	37.35	56.23	93.58	---	---	PK	150	---
2040.1040	33.59	1.47	35.06	54.00	18.94	AV	150	PASS
2390.1390	37.24	2.45	39.69	54.00	14.31	AV	150	PASS
2404.9405	37.35	47.66	85.01	---	---	AV	150	---

Radiates Emission	802.15.4 Mesh Networking Radio
Test channel	Highest channel
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2474.3474	37.68	59.95	97.63	---	---	PK	150	---
2483.5484	37.72	14.31	52.03	74.00	21.97	PK	150	PASS
2865.1865	39.00	15.19	54.19	74.00	19.81	PK	150	PASS
2474.9475	37.68	54.28	91.96	---	---	AV	150	---
2483.5484	37.72	4.29	42.01	54.00	11.99	AV	150	PASS
2865.1865	39.00	2.42	41.42	54.00	12.58	AV	150	PASS

Radiates Emission	802.15.4 Mesh Networking Radio
Test channel	Highest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2474.5475	37.68	53.66	91.34	---	---	PK	150	---
2483.5484	37.72	13.15	50.87	74.00	23.13	PK	150	PASS
2517.3517	37.86	20.25	58.11	74.00	15.89	PK	150	PASS
2474.9475	37.68	49.12	86.80	---	---	AV	150	---
2483.5484	37.72	3.84	41.56	54.00	12.44	AV	150	PASS
2517.3517	37.86	2.60	40.46	54.00	13.54	AV	150	PASS

During the test, the Band Edge was performed in IEEE 802.11b/g/n. Antenna 1, IEEE 802.11n(HT20), Highest and lowest channels are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission	IEEE 802.11n(HT20)
Test channel	Lowest channel
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Height [cm]	Pass/ Fail
2173.3173	-5.69	53.19	47.50	74.00	26.50	PK	150	PASS
2390.1390	-5.04	54.11	49.07	74.00	24.93	PK	150	PASS
2411.7422	-4.96	91.99	87.03	—	—	PK	150	—
2146.1146	-5.78	41.41	35.63	54.00	18.37	AV	150	PASS
2390.1390	-5.04	42.67	37.63	54.00	16.37	AV	150	PASS
2411.7422	-4.96	83.67	78.71	—	—	AV	150	—

Radiates Emission	IEEE 802.11n(HT20)
Test channel	Lowest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Height [cm]	Pass/ Fail
2149.1149	-5.77	52.43	46.66	74.00	27.34	PK	150	PASS
2390.1390	-5.04	55.49	50.45	74.00	23.55	PK	150	PASS
2413.1423	-4.94	101.42	96.48	—	—	PK	150	—
2151.3151	-5.77	41.45	35.68	54.00	18.32	AV	150	PASS
2390.1390	-5.04	43.89	38.85	54.00	15.15	AV	150	PASS
2413.1423	-4.94	92.28	87.34	—	—	AV	150	—

Radiates Emission	IEEE 802.11n(HT20)
Test channel	Highest channel
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2463.1463	-4.84	87.63	82.79	—	—	PK	150	—
2483.5484	-4.79	52.17	47.38	74.00	26.62	PK	150	PASS
2777.7778	-3.74	54.08	50.34	74.00	23.66	PK	150	PASS
2463.1463	-4.84	79.35	74.51	—	—	AV	150	—
2483.5484	-4.79	41.35	36.56	54.00	17.44	AV	150	PASS
2787.9788	-3.70	42.54	38.84	54.00	15.16	AV	150	PASS

Radiates Emission	IEEE 802.11n(HT20)
Test channel	Highest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect or	Height [cm]	Pass/ Fail
2463.3463	-4.84	104.57	99.73	—	—	PK	150	—
2483.5484	-4.79	65.57	60.78	74.00	13.22	PK	150	PASS
2818.9819	-3.58	55.16	51.58	74.00	22.42	PK	150	PASS
2463.3463	-4.84	95.52	90.68	—	—	AV	150	—
2483.5484	-4.79	53.14	48.35	54.00	5.65	AV	150	PASS
2811.3811	-3.62	42.59	38.97	54.00	15.03	AV	150	PASS

5.3 Maximum conducted output power

Ambient condition:

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

Method of Measurement:

The EUT was tested according to DTS test procedure of ANSI C63.10 for compliance to FCC 47CFR 15.247 requirements. The maximum conducted output power using ANSI C63.10 section 11.9.2.3 AVGPM Average power meter method.

1. Power meter and sensor's minimum video bandwidth is 50MHz, larger than 802.11n(40MHz) bandwidth;
2. Fast responding diode sensors respond immediately to changes in power level to reduce total test time.
3. Use average detector to test.

During the process of the testing, The EUT was connected to Spectrum Analyzer with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Maximum Average Conducted Output Power Level Method AVGSA-2 in KDB 558074 D01 /KDB662911 D01 for this test.

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

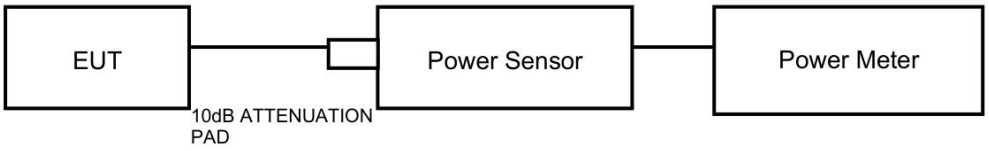
Limits:

Average Output Power	≤ 1W (30dBm)

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated Levels above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

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.

Test Results:

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	7.79	≤30	PASS
	Ant1	2440	7.62	≤30	PASS
	Ant1	2475	7.54	≤30	PASS
IEEE 802.11b	Ant1	2412	19.84	≤30	PASS
	Ant1	2437	20.28	≤30	PASS
	Ant1	2462	20.32	≤30	PASS
IEEE 802.11g	Ant1	2412	22.35	≤30	PASS
	Ant1	2437	22.44	≤30	PASS
	Ant1	2462	22.06	≤30	PASS
IEEE 802.11n20	Ant1	2412	22.08	≤30	PASS
	Ant1	2437	22.24	≤30	PASS
	Ant1	2462	22.18	≤30	PASS

5.4 Minimum 6 dB Bandwidth

Ambient condition:

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

Method of Measurement:

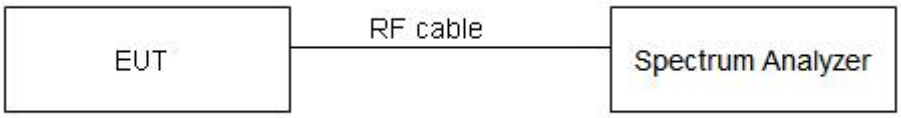
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.
Detector=Peak, Trace mode=Max hold.

Limits:

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

Minimum 6dB Bandwidth	≥ 500 kHz

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= 936 Hz.

Test Results:

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	1.430	2404.240	2405.670	≥0.5	PASS
	Ant1	2440	1.570	2439.260	2440.830	≥0.5	PASS
	Ant1	2475	1.490	2474.320	2475.810	≥0.5	PASS
IEEE 802.11b	Ant1	2412	8.360	2407.800	2416.160	≥0.5	PASS
	Ant1	2437	8.320	2432.800	2441.120	≥0.5	PASS
	Ant1	2462	8.720	2457.800	2466.520	≥0.5	PASS
IEEE 802.11g	Ant1	2412	15.880	2404.000	2419.880	≥0.5	PASS
	Ant1	2437	15.960	2428.960	2444.920	≥0.5	PASS
	Ant1	2462	11.640	2457.080	2468.720	≥0.5	PASS
IEEE 802.11n20	Ant1	2412	17.400	2403.240	2420.640	≥0.5	PASS
	Ant1	2437	17.200	2428.440	2445.640	≥0.5	PASS
	Ant1	2462	15.200	2454.280	2469.480	≥0.5	PASS

5.5 Occupied Channel Bandwidth

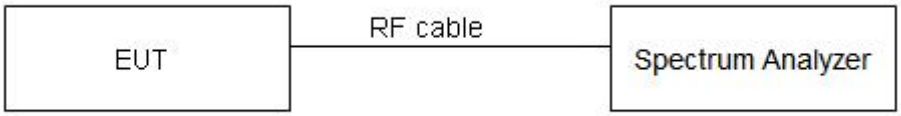
Ambient condition:

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

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 50 kHz; VBW is set to 200 kHz on spectrum analyzer.
Detector=Peak, Trace mode=Max hold.

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= 936 Hz.

Test Results:

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	2.3800	2403.8375	2406.2175	---	---
	Ant1	2440	2.3977	2438.8322	2441.2299	---	---
	Ant1	2475	2.4359	2473.8110	2476.2469	---	---
IEEE 802.11b	Ant1	2412	11.584	2406.1907	2417.7747	---	---
	Ant1	2437	11.497	2431.2527	2442.7497	---	---
	Ant1	2462	11.785	2456.1102	2467.8952	---	---
IEEE 802.11g	Ant1	2412	17.132	2403.3903	2420.5223	---	---
	Ant1	2437	17.196	2428.3516	2445.5476	---	---
	Ant1	2462	16.766	2453.5800	2470.3460	---	---
IEEE 802.11n20	Ant1	2412	18.151	2402.8976	2421.0486	---	---
	Ant1	2437	18.119	2427.9086	2446.0276	---	---
	Ant1	2462	17.712	2453.1389	2470.8509	---	---

5.6 Band Edge Measurement

Ambient condition:

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

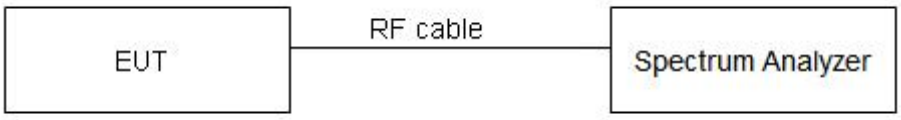
Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer.

Limits:

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U= 936 Hz, 2 GHz-3 GHz = 1.407 dB.

Test Results:

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
802.15.4 Mesh Networking Radio	Ant1	Low	2405	3.76	-37.08	≤-16.25	PASS
	Ant1	High	2475	3.44	-45.37	≤-16.57	PASS
IEEE 802.11b	Ant1	Low	2412	8.86	-39.44	≤-11.14	PASS
	Ant1	High	2462	9.11	-44.55	≤-10.89	PASS
IEEE 802.11g	Ant1	Low	2412	6.68	-34.97	≤-13.32	PASS
	Ant1	High	2462	7.28	-41.75	≤-12.72	PASS
IEEE 802.11n20	Ant1	Low	2412	3.49	-39.9	≤-16.51	PASS
	Ant1	High	2462	4.14	-44.73	≤-15.86	PASS

5.7 Maximum Power Spectral Density

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 Spectrum Analyzer with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Method AVGPSD-2 in KDB 558074 D01 for this test.

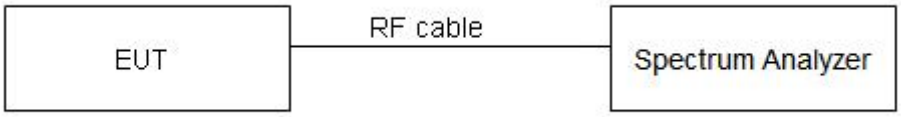
The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Limits:

Rule Part 15.247(e) specifies that" For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Maximum Power Spectral Density	≤ 8 dBm / 3kHz

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= 0.75dB.

Test Results:

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	-4.53	≤8	PASS
	Ant1	2440	-5.07	≤8	PASS
	Ant1	2475	-4.79	≤8	PASS
IEEE 802.11b	Ant1	2412	-4.50	≤8	PASS
	Ant1	2437	-3.63	≤8	PASS
	Ant1	2462	-3.75	≤8	PASS
IEEE 802.11g	Ant1	2412	-4.89	≤8	PASS
	Ant1	2437	-4.81	≤8	PASS
	Ant1	2462	-3.65	≤8	PASS
IEEE 802.11n20	Ant1	2412	-9.03	≤8	PASS
	Ant1	2437	-7.99	≤8	PASS
	Ant1	2462	-7.21	≤8	PASS

5.8 Spurious RF Conducted Emissions

Ambient condition:

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

Method of Measurement:

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW to100kHz and VBW to 300 kHz, Sweep is set to AUTO .The test is in transmitting mode.

Limits:

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Test Setup:

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
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
802.15.4 Mesh Networking Radio	Ant1	2405	Reference	3.38	3.38	---	PASS
			30~1000	3.38	-50.15	≤-16.62	PASS
			1000~26500	3.38	-33.53	≤-16.62	PASS
	Ant1	2440	Reference	3.06	3.06	---	PASS
			30~1000	3.06	-49.54	≤-16.94	PASS
			1000~26500	3.06	-32.45	≤-16.94	PASS
	Ant1	2475	Reference	2.50	2.50	---	PASS
			30~1000	2.50	-49.68	≤-17.5	PASS
			1000~26500	2.50	-32.99	≤-17.5	PASS
IEEE 802.11b	Ant1	2412	Reference	7.26	7.26	---	PASS
			30~1000	7.26	-56.49	≤-12.74	PASS
			1000~26500	7.26	-43.94	≤-12.74	PASS
	Ant1	2437	Reference	7.09	7.09	---	PASS
			30~1000	7.09	-56.49	≤-12.91	PASS
			1000~26500	7.09	-44.34	≤-12.91	PASS
	Ant1	2462	Reference	7.07	7.07	---	PASS
			30~1000	7.07	-56.54	≤-12.93	PASS
			1000~26500	7.07	-43.34	≤-12.93	PASS
IEEE 802.11g	Ant1	2412	Reference	4.40	4.40	---	PASS
			30~1000	4.40	-55.93	≤-15.6	PASS
			1000~26500	4.40	-43.39	≤-15.6	PASS
	Ant1	2437	Reference	5.51	5.51	---	PASS
			30~1000	5.51	-56.34	≤-14.49	PASS
			1000~26500	5.51	-43.61	≤-14.49	PASS
	Ant1	2462	Reference	5.98	5.98	---	PASS
			30~1000	5.98	-56.22	≤-14.02	PASS
			1000~26500	5.98	-44.72	≤-14.02	PASS
IEEE 802.11n20	Ant1	2412	Reference	3.52	3.52	---	PASS
			30~1000	3.52	-59.31	≤-16.48	PASS
			1000~26500	3.52	-47.08	≤-16.48	PASS
	Ant1	2437	Reference	1.09	1.09	---	PASS
			30~1000	1.09	-59.51	≤-18.91	PASS
			1000~26500	1.09	-46.51	≤-18.91	PASS
	Ant1	2462	Reference	2.67	2.67	---	PASS
			30~1000	2.67	-59.22	≤-17.33	PASS
			1000~26500	2.67	-46.62	≤-17.33	PASS

6. Appendix X

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2025/04/22
RF Radio Frequency Switch	JS0806-2	19H9080187	DZ-000241	Tonscend	2025/04/27
5m Semi-Anechoic Chamber	SAC-5	SAC-5-2.0	EM-000557	COMTEST	2027/02/01
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2026/01/01
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2025/12/26
EMI Test Receiver	ESR7	102235	EM-000574	R&S	2026/01/05
loop antenna	HLA 6121	540046	EM-000546	TESEQ	2025/06/02
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2025/06/07
Waveguide Horn Antenna	HF906	360306/008	EM-000093	R&S	2025/12/26
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	2025/08/03
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2025/06/02
Bandstop Filters	SW-BSF-2400-100-7-A1	/	EM-000495	/	2025/08/29
5G Bandstop Filters	WRCJV12-4900-5100-5900-6100-50EE	1	DZ-000186	WI	2025/12/02
Temperature and humidity meter	UT330THC	C231446122	DZ-000249-2	UNI-T	2025/07/28

Dynacomm	Software Release	Software Developer
TS1120-3 Test System(Conduction test)	3.3.38	Tonscend
TS+（5m,Radiation test）	JS32-RE 5.0.0	Tonscend

The End

Important

1. The test report is invalid without the official stamp of CVC;
2. Any part photocopies of the test report are forbidden without the written permission from CVC;
3. The test report is invalid without the signatures of Author and Reviewer;
4. The test report is invalid if altered;
5. Objections to the test report must be submitted to CVC within 15 days;
6. Generally, commission test is responsible for the tested samples only;
7. As for the test result, "—" or " N/A" means "not applicable", " / "means "not testing", "P" means "pass" and "F" means "fail".

Address: No.3,Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, China (Test location)
Post Code：510663 Tel：020-32293888
FAX：020 32293889 E-mail：office@cvc.org.cn