



经续检验

SLG-CPC Testlaboratory



TEST REPORT	
Report Number.....:	90789-25-72-25-PP003
Date of issue	2025-12-09
Prepared by (+signature)	Pale
Approved by (+signature)	Jason
Testing Laboratory name	SLG-CPC Testlaboratory Co., Ltd.
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Applicant's name	MOKO TECHNOLOGY LIMITED
Address	Factory 201, 107 Pinshun Rd Guixiang community, Guanlan Street, Longhua, Shenzhen, China 518110
Manufacturer's name	MOKO TECHNOLOGY LIMITED
Address	Factory 201, 107 Pinshun Rd Guixiang community, Guanlan Street, Longhua, Shenzhen, China 518110
Factory's name	MOKO TECHNOLOGY LIMITED
Address	Factory 201, 107 Pinshun Rd Guixiang community, Guanlan Street, Longhua, Shenzhen, China 518110
Standard(s)	FCC 47 CFR Part 15, Subpart C
EUT.....:	Smart Tracker
Trade Mark.....:	MOKO SMART
Model/Type reference	LW001-BG PRO-B-C
FCC ID	2AO94-LW001BGPRO
Date of receipt of test item	2025.08.20
Date (s) of performance of test:	2025.08.20-2025.09.09
Summary of Test Results	Pass
The Summary of Test Results based on a technical opinion belongs to the standard(s).	
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Modified Information

Report No.	Revision Data	Summary
90789-25-72-25-PP003	2025-12-09	Original Version

1 EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product:	Smart Tracker
Model Number:	LW001-BG PRO-B-C
IEEE 802.11 WLAN Mode Supported :	☒ 802.11b ☒ 802.11g ☒ 802.11n(20MHz channel bandwidth)
Modulation :	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Operating Frequency Range :	☒ 2412-2462MHz for 802.11b/g/n(HT20);
Number of Channels :	☒ 11 channels for 802.11b/g/n(HT20);
Antenna Type :	PCB Antenna
Antenna Gain :	3.77dBi
Power Supply:	☒ DC 3.7V From Battery or DC 5V From Charging
	☐ Adapter supply:

Note: for more details, please refer to the User's manual of the EUT.

2 SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark
15.247(a)(2)	DTS (6dB) Bandwidth	N/A	
15.247(b)(3)	Maximum Peak Conducted Output Power	N/A	
15.247(e)	Maximum Power Spectral Density Level	N/A	
15.247(d)	Unwanted Emission Into Non-Restricted Frequency Bands	N/A	
15.247(d) 15.209	Radiated Spurious Emission	PASS	
15.207	Conducted Emission Test	PASS	
15.247(b)	Antenna Application	N/A	
	NOTE1: N/A (Not Applicable) NOTE2: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits. NOTE3: The product only adds a charging version, with no modifications made to the RF module, antenna, or transmission power.		

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2AO94-LW001BGPRO filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

3 TEST METHODOLOGY

3.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2, Subpart J

FCC 47 CFR Part 15, Subpart C

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

3.2 MEASUREMENT EQUIPMENT USED

Equipment	Model	Manufacturer	S/N	Last Cal.	DUE Cal.
RF Connected Test					
Vector Signal Generater	Rohde & Schwarz	SMBV100B(6G)	101166	2025/04/16	1 year
Analog Signal Generator	Rohde & Schwarz	SMB100A(40G)	181333	2025/07/24	1 year
Signal Analyzer	Rohde & Schwarz	FSV40	101527	2025/03/26	1 year
Power Analyzer	Rohde & Schwarz	OSP-B157W8	N/A	2025/04/16	1 year
Wideband Radio Communication Tester	R&S	CMW270	101985	2025/04/18	1 year
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	166898	2025/04/14	1 year
Spectrum Analyzer	Agilent	E4408B	MY44211139	2025/11/04	1 year
Temperature&Humidity test chamber	ESPEC	VC 4018	/	2025/03/26	1 year
Radiated Emission Test					
EMI Test Receiver	KEYSIGHT	N9010A	MY56070465	2024/12/03	1 year
EMI Test Receiver	Rohde & Schwarz	FSV40	101511	2025/01/10	1 year
Bilog Antenna	Schwarzbeck	VULB 9163	01335	2023/04/21	3 year
Power Amplifier	EMEC	EM330	060676	2022/12/07	3 year
Cable	Tuyue	F4309	L-400-NmNm-12000	2025/12/02	1 year
Horn Antenna	Schwarzbeck	BBHA9120D	1779	2025/03/28	3 year
Horn Antenna	Schwarzbeck	BBHA9170	00954	2022/09/13	3 year
Power Amplifier	Rohde & Schwarz	SCU08F2	08400019	2025/03/24	3 year
Power Amplifier	Rohde & Schwarz	SCU-18F	180118	2025/03/24	3 year
Power Amplifier	Rohde & Schwarz	SCU40A	100499	2023/06/21	3 year
Active Loop Antenna	ETS LINDGREN	6512	41623	2025/03/19	3 year
Test Software	Farad	EZ-EMC	Ver.CPC-3A1	/	/
Conducted Emission Test					
LISN	Schwarzbeck	NSLK 8127	8127-892	2025/03/17	1 year
LISN	Schwarzbeck	NSLK 8127	8127-437	2025/03/17	1 year
EMI Test Receiver	R&S	ESR3	102124	2025/12/02	1 year
Pulse Limiter	R&S	ESH3-Z2	357.8810.52	2025/12/02	1 year
Test Software	Farad	EZ-EMC	Ver.CPC-3A1	/	/

3.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (BLE :1Mbps) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

☒ Frequency and Channel list for 802.11b/g/n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442		
3	2422	8	2447		
4	2427	9	2452		
5	2432	10	2457		

☒ Test Frequency and Channel for 802.11b/g/n (HT20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462

4 FACILITIES AND ACCREDITATIONS

4.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

No. 11, Wu Song Road, Dongcheng District Dongguan, Guangdong Province, 523117, People's Republic of China

The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.10 and CISPR Publication 32.

4.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: Accredited by ISED, October 31 2023
CAB identifier: CN0126
Company Number: 27767

Accredited by A2LA, October 31 2023
The Certificate Registration Number is 6325.01

Accredited by FCC
Designation Number: CN1287
Test Firm Registration Number: 394054

Name of Firm

: SLG-CPC Testlaboratory Co., Ltd.

Site Location

: No. 11, Wu Song Road, Dongcheng District Dongguan, Guangdong Province, 523117, People's Republic of China

5 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
Maximum Peak Output Power Test	$\pm 1.0\%$
Conducted Emissions Test	3.68dB
Radiated Emission Test	4.80dB (below 1G) 3.28dB (above 1GHz)
Power Density	$\pm 0.9\%$
Occupied Bandwidth Test	$\pm 2.3\%$
Band Edge Test	$\pm 1.2\%$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 3.2\%$
Humidity	$\pm 2.5\%$

Measurement Uncertainty for a level of Confidence of 95%

6 SETUP OF EQUIPMENT UNDER TEST

6.1 RADIO FREQUENCY TEST SETUP 1

The BLE component's antenna port(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.

EUT

6.2 RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the the specified distance from the EUT.

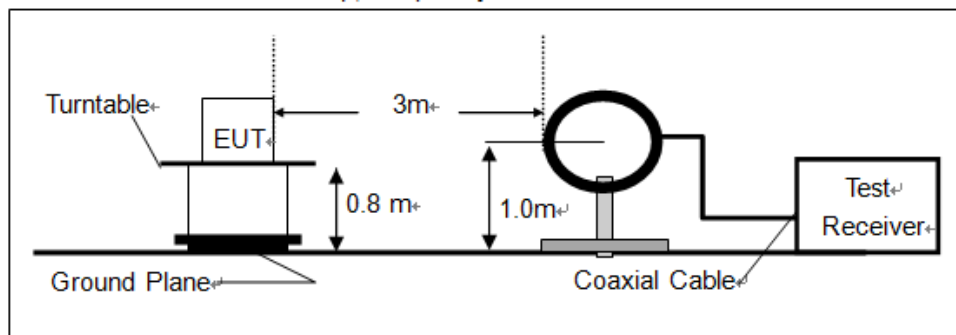
30MHz-1GHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

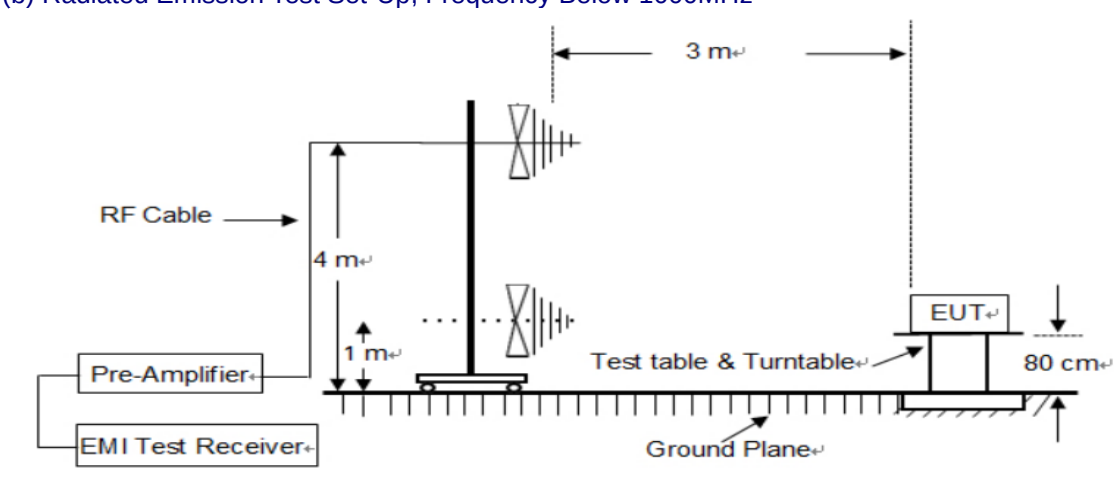
Above 1GHz:

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

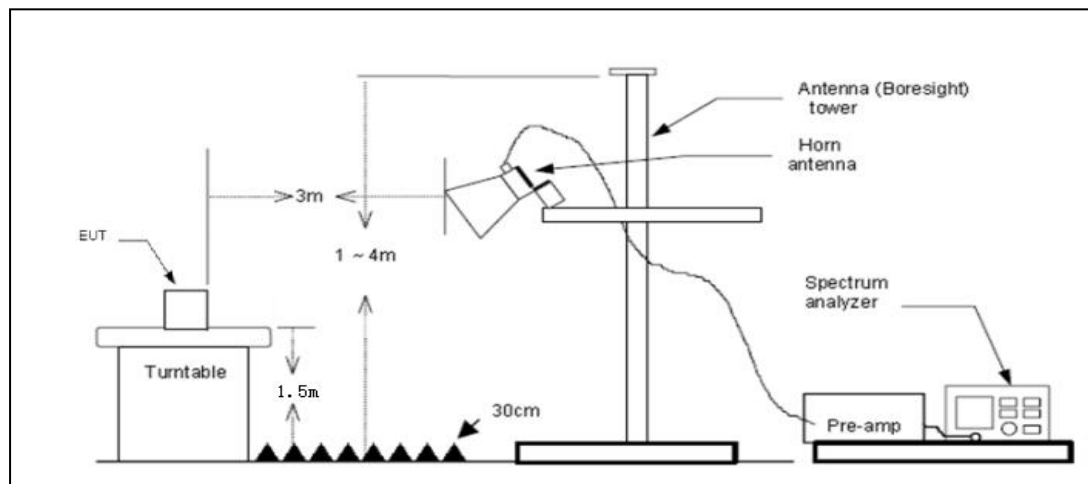
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz



7 TEST REQUIREMENTS

7.1 RADIATED SPURIOUS EMISSION

7.1.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and KDB 558074 D01 15.247 Meas Guidance v05r02

7.1.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
 According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

According to FCC Part 15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	2400/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

7.1.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 2

7.1.4 Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz (1GHz to 25GHz), 100 kHz for $f < 1$ GHz (30MHz to 1GHz)

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.10-2020 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting

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the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

7.1.5 Test Results

Temperature:	23° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

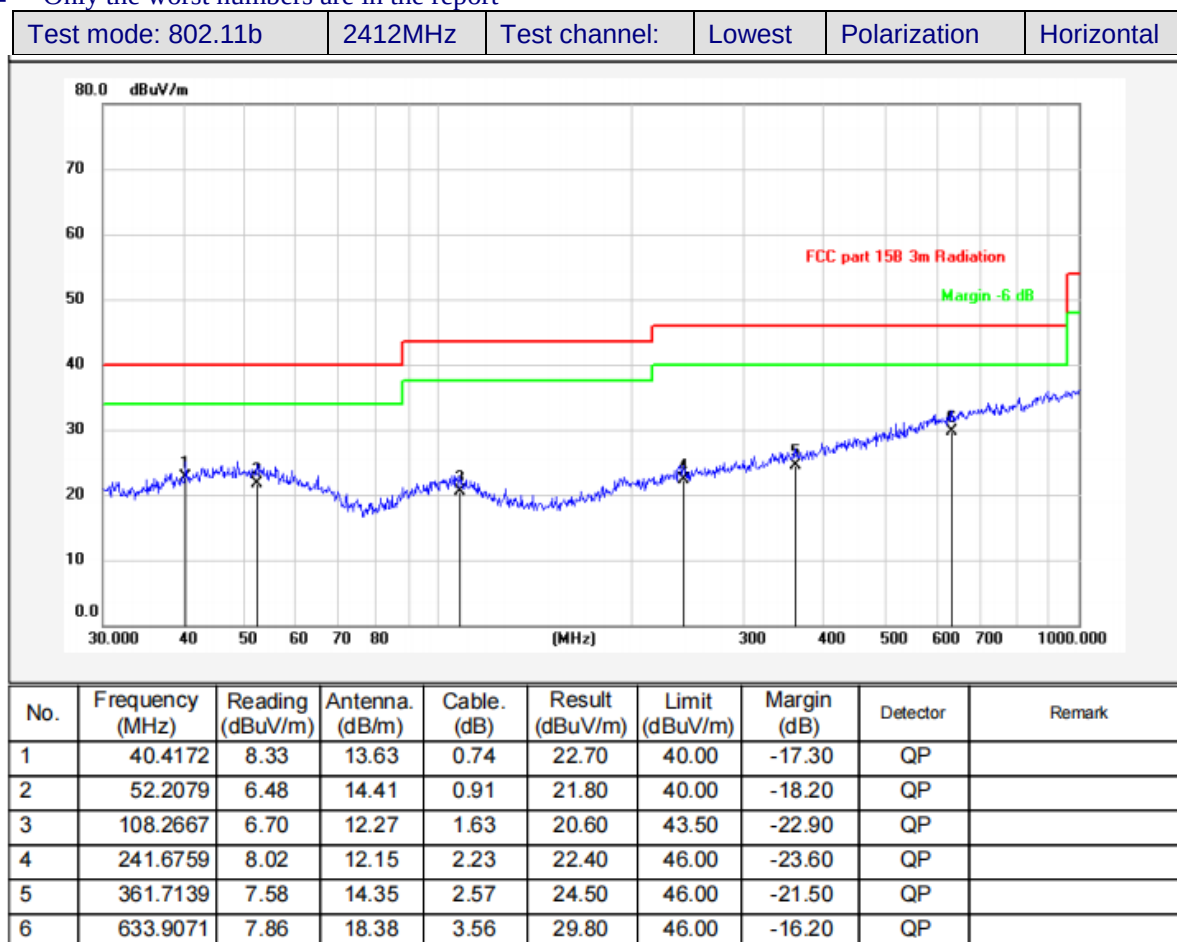
■ Spurious Emission below 30MHz (9KHz to 30MHz)

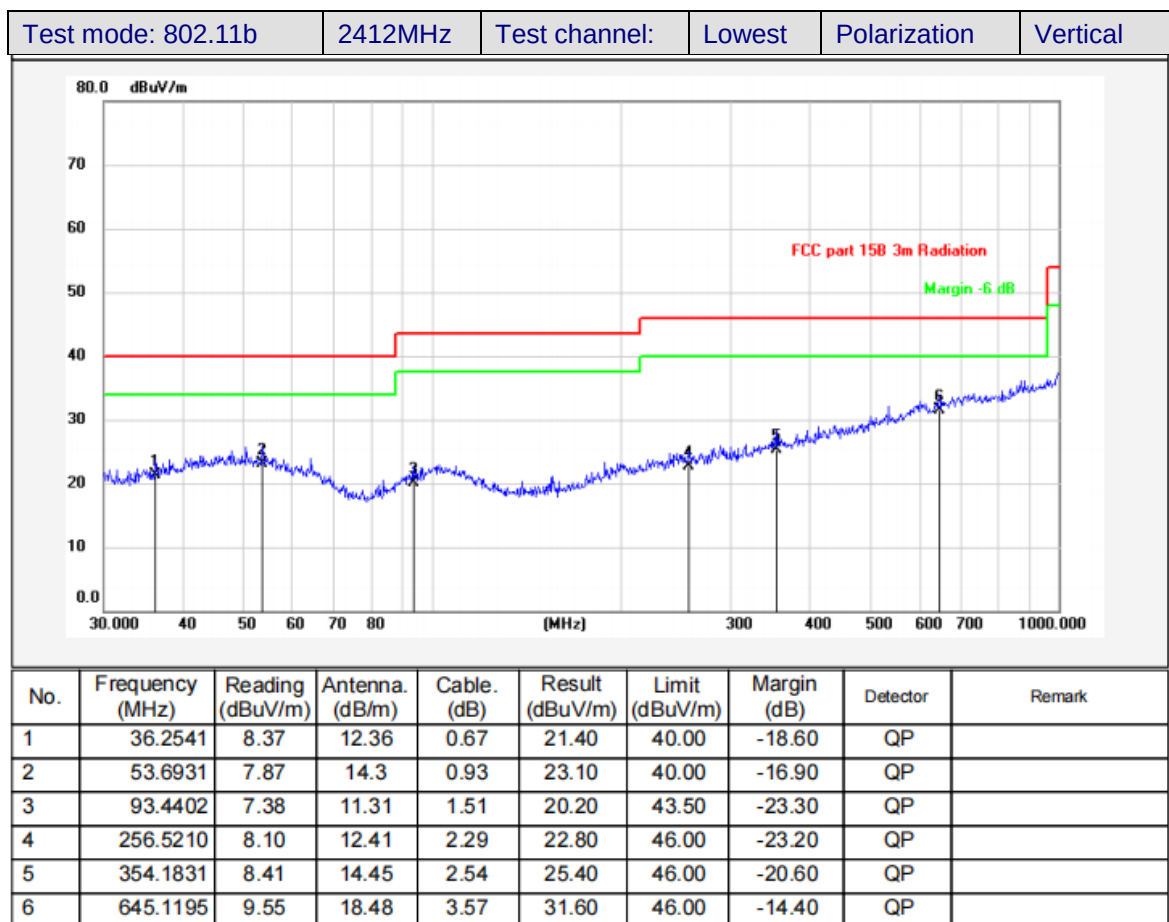
Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance}/ \text{test distance})$ (dB);

Limit line = Specific limits(dBuV) + distance extrapolation factor

- Spurious Emission below 1GHz (30MHz to 1GHz)
- Only the worst numbers are in the report





7.2 CONDUCTED EMISSION TEST

7.2.1 Applicable Standard

According to FCC Part 15.207(a)

7.2.2 Conformance Limit

Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50
Note: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.		

7.2.3 Test Configuration

Test according to clause 6.3 conducted emission test setup

7.2.4 Test Procedure

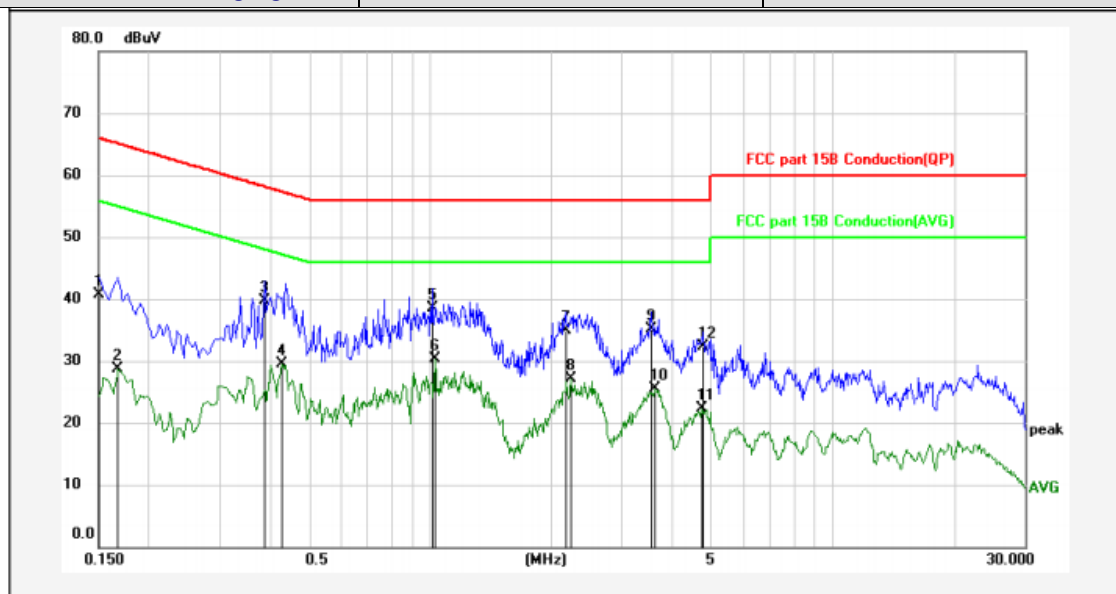
The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

7.2.5 Test Results

Pass

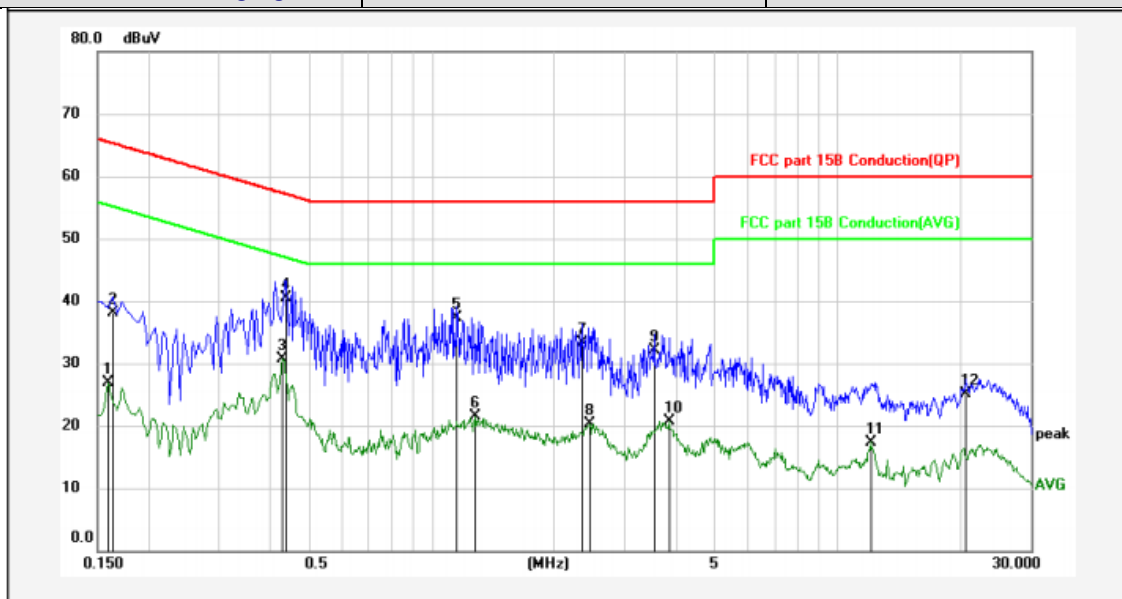
The 120V voltage have been tested, and the worst result recorded was report as below:

Test mode:	Charging	L
DC 5V From Charging	M/N: LW001-BG PRO-B-C	



No.	Frequency (MHz)	Reading (dBuV)	Lisn/Isn (dB)	Cab_L (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	30.08	10.5	0.22	40.80	66.00	-25.20	QP	
2	0.1675	17.93	10.5	0.22	28.65	55.08	-26.43	AVG	
3	0.3870	28.90	10.56	0.24	39.70	58.13	-18.43	QP	
4	0.4282	18.65	10.58	0.24	29.47	47.29	-17.82	AVG	
5	1.0100	27.67	10.7	0.23	38.60	56.00	-17.40	QP	
6	1.0262	19.45	10.7	0.23	30.38	46.00	-15.62	AVG	
7	2.1667	23.99	10.71	0.2	34.90	56.00	-21.10	QP	
8	2.2366	16.17	10.71	0.2	27.08	46.00	-18.92	AVG	
9	3.5278	24.21	10.78	0.21	35.20	56.00	-20.80	QP	
10	3.6225	14.59	10.78	0.21	25.58	46.00	-20.42	AVG	
11	4.7213	11.29	10.8	0.21	22.30	46.00	-23.70	AVG	
12	4.7716	21.39	10.8	0.21	32.40	56.00	-23.60	QP	

Test mode:	Charging	N
DC 5V From Charging	M/N: LW001-BG PRO-B-C	



No.	Frequency (MHz)	Reading (dBuV)	Lisn/Isn (dB)	Cab_L (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1590	16.10	10.5	0.22	26.82	55.52	-28.70	AVG	
2	0.1633	27.38	10.5	0.22	38.10	65.29	-27.19	QP	
3	0.4282	19.90	10.58	0.24	30.72	47.29	-16.57	AVG	
4	0.4374	29.68	10.58	0.24	40.50	57.11	-16.61	QP	
5	1.1532	26.37	10.7	0.23	37.30	56.00	-18.70	QP	
6	1.2822	10.64	10.7	0.22	21.56	46.00	-24.44	AVG	
7	2.3460	22.38	10.72	0.2	33.30	56.00	-22.70	QP	
8	2.4474	9.45	10.72	0.2	20.37	46.00	-25.63	AVG	
9	3.5278	21.21	10.78	0.21	32.20	56.00	-23.80	QP	
10	3.8400	9.65	10.79	0.21	20.65	46.00	-25.35	AVG	
11	12.0600	6.42	10.76	0.22	17.40	50.00	-32.60	AVG	
12	20.7038	14.32	10.58	0.2	25.10	60.00	-34.90	QP	

----- END OF REPORT -----

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The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, SLG-CPC shall not assume any responsibility.

6. 对本检测报告若有异议, 请于收到报告之日起 20 日内提出;

Objections shall be raised within 20 days from the date receiving the report.