



EMC TEST REPORT

Product Name: Smart Pos Payment Terminal

Model Name: SP60

FCC ID: SS4SP60W1

Issued For : Bluebird Inc.

3F, 115, Irwon ro, Gangnam gu, Seoul, Republic of Korea
(06355)

Issued By : Shenzhen LGT Test Service Co., Ltd.

Room 205, Building 13, Zone B, Zhenxiong Industrial Park,
No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan
District, Shenzhen, Guangdong, China

Report Number: LGT24L009EM01

Sample Received Date: Dec. 05, 2024

Date of Test: Dec. 05, 2024 ~ Jan. 15, 2025

Date of Issue: Jan. 15, 2025

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TEST REPORT CERTIFICATION

Applicant: Bluebird Inc.
Address: 3F, 115, Irwon ro, Gangnam gu, Seoul, Republic of Korea (06355)
Manufacturer: Bluebird Inc.
Address: 3F, 115, Irwon ro, Gangnam gu, Seoul, Republic of Korea (06355)
Factory 1: Mobiwire Mobiles (NingBo) Co.,Ltd.
Address: No. 518, Changting East Road, Yuelin Street, Fenghua District, Ningbo City, Zhejiang Province, China
Factory 2: Bluebird Inc.
Address: SSang-young IT Twin tower-B 7~8F), 531, Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Factory 3: DSGLOBAL VINA CO.,LTD
Address: Lot XN3-1E, Dai An expansion Industrial Zone, Lai Cach town Cam Giang district, HaiDuong province, Vietnam
Product Name: Smart Pos Payment Terminal
Trademark: Bluebird
Model Name: SP60
Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR Part 15 Subpart B ANSI C63.4-2014	PASS

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Engineer

Approved by:

Vita Li

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Technical Director





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Revision History

Rev.	Issue Date	Revisions
00	Jan. 15, 2025	Initial Issue



1. TEST SUMMARY

EMC Emission				
Standard	Test Item	Limit	Judgement	Remark
FCC 47 CFR Part 15 Subpart B ANSI C63.4-2014	Conducted Emissions	Class B	PASS	
	Radiated Emissions Below 1GHz	Class B	PASS	
	Radiated Emissions Above 1GHz	Class B	PASS	Note 2

Note:

- 1 "N/A" denotes test is not applicable in this Test Report
- 2 If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.
- 3 According to the electrical construction of the EUT, there is no AC terminal incorporated and DC terminal which no dedicated AC/DC adaptor. Therefore this test is not applicable for this EUT.



1.1 TEST LABORATORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate	A2LA Certificate No.: 6727.01
	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

Test Item	Measurement Frequency Range MHz	Uncertainty dB
Conducted Emissions at AC mains power port	0.009 ~ 30	2.80
Radiated Emissions	0.009 ~ 30	2.16
Radiated Emissions	30 ~ 1000	4.40
Radiated Emissions	1000 ~ 6000	5.10
Radiated Emissions	6000 ~ 18000	5.49
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. The measurement uncertainty is not included in the test result.		



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	Smart Pos Payment Terminal
Model Name:	SP60
Maximum operating frequency:	>108MHz
Adapter:	Input: 100-240V 50/60Hz 0.6A Output: 5.0V 3.0A 15.0W
Battery:	BAT-202001 Rated Voltage: 7.7V Capacity: 2000mAh BAT-342001 Rated Voltage: 7.7V Capacity: 3420mAh
Test voltage:	AC 120V/60Hz for adapter Battery: 7.7V
Hardware Version:	V1.0
Software Version:	R1.01
Connecting I/O Port(s):	Please refer to the Note 1.

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Model	Battery capacity	Print head	charging stand
SP60 (Configuration 1)	3420mAh	Yes	High configuration: USB1 Output: 5Vdc, 1.0A USB2 Output: 5Vdc, 0.5A
	3420mAh	Yes	Low configuration: No
SP60 (Configuration 2)	2000mAh	No	High configuration: USB1 Output: 5Vdc, 1.0A USB2 Output: 5Vdc, 0.5A
	2000mAh	No	Low configuration: No

No mean not support, Yes means support



2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operating mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Charging+BT+Wi-Fi+GPS+NFC+Camera recording
Mode 2	Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN
Mode 3	USB Data Transmission
Mode 4	Charging+Working

Conducted Emission Test	
Final Test Mode	Description
Mode 1	Charging+BT+Wi-Fi+GPS+NFC+Camera recording
Mode 2	Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN
Mode 3	USB Data Transmission
Mode 4	Charging+Working

For Radiated Emission	
Final Test Mode	Description
Mode 1	Charging+BT+Wi-Fi+GPS+NFC+Camera recording
Mode 2	Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN
Mode 3	USB Data Transmission
Mode 4	Charging+Working

Note:

1 Test mode 2 and 3 was the worst case and only this mode was presented in this report.

2 Both Configuration SP60-MANLB and SP60-ANLB have been test in report.



2.3 DESCRIPTION OF THE SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating
Adapter	Shenzhen Yingyuan Electronics Co., LTD	ICP20-050-300 0B	N/A	Input: 100-240V ~ 50/60Hz 0.6A Output: 5V, 3A
USB-A to USB-C Cable	N/A	N/A	N/A	1m
Charging Base	N/A	N/A	N/A	N/A

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	HKF-16	N/A	N/A
Keyboard	Lenovo	EKB-536A	N/A	N/A
Mouse	Lenovo	EMS-537A	N/A	N/A
RJ45 Cable	UGREEN	NW153	N/A	1m, shielded, without ferrite core

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.4 MEASUREMENT INSTRUMENTS LIST

Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2024.03.09	2025.03.08
LISN	COM-POWER	LI-115	02032	2024.03.09	2025.03.08
LISN	SCHWARZBECK	NNLK 8122	00160	2024.03.09	2025.03.08
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2024.03.09	2025.03.08
Temperature & Humidity	KTJ	TA218B	N.A	2024.03.09	2025.03.08
Testing Software	EMC-I_V1.4.0.3_SKET				
Radiated Emission					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
EMI Test Receiver	R&S	ESU8	100372	2024.03.09	2025.03.08
Spectrum Analyzer	Keysight	N9020A	MY50530994	2024.03.09	2025.03.08
Spectrum Analyzer	Keysight	N9010B	MY60242508	2024.08.05	2025.08.04
Active loop Antenna	ETS	6502	00049544	2023.10.13	2025.10.12
Bilog Antenna	SCHWARZBECK	VULB 9168	01447	2022.12.12	2025.12.11
Horn Antenna	SCHWARZBECK	3115	10SL0060	2022.06.02	2025.06.01
Pre-amplifier (9kHz-1GHz)	EMtrace	RP01A	02017	2024.03.09	2025.03.08
Pre-amplifier (1-26.5G)	Agilent	8449B	3008A4722	2024.03.09	2025.03.08
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2024.03.11	2025.03.10
Testing Software	EMC-I_V1.4.0.3_SKET				



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS

FREQUENCY (MHz)	Conducted Emission Limits (dBuV)			
	Class A		Class B	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.5 ~ 5	73.00	60.00	56.00	46.00
5 ~ 30	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor
Margin Level = Measurement Value - Limit Value

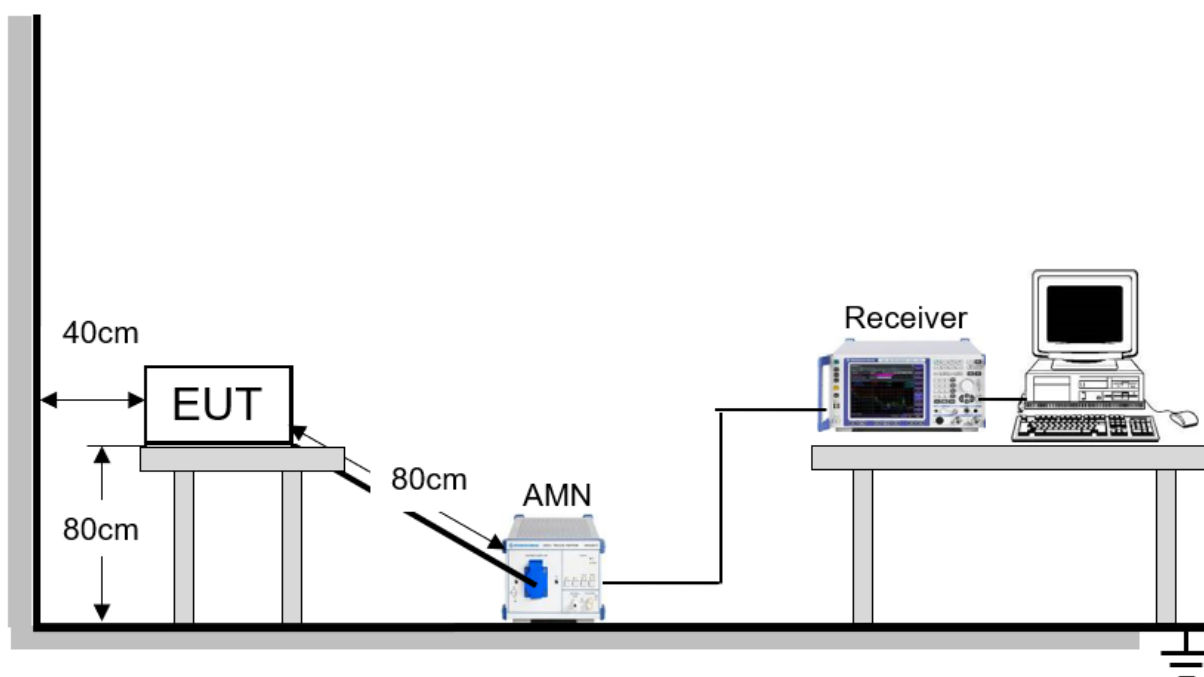
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item - EUT Test Photos.

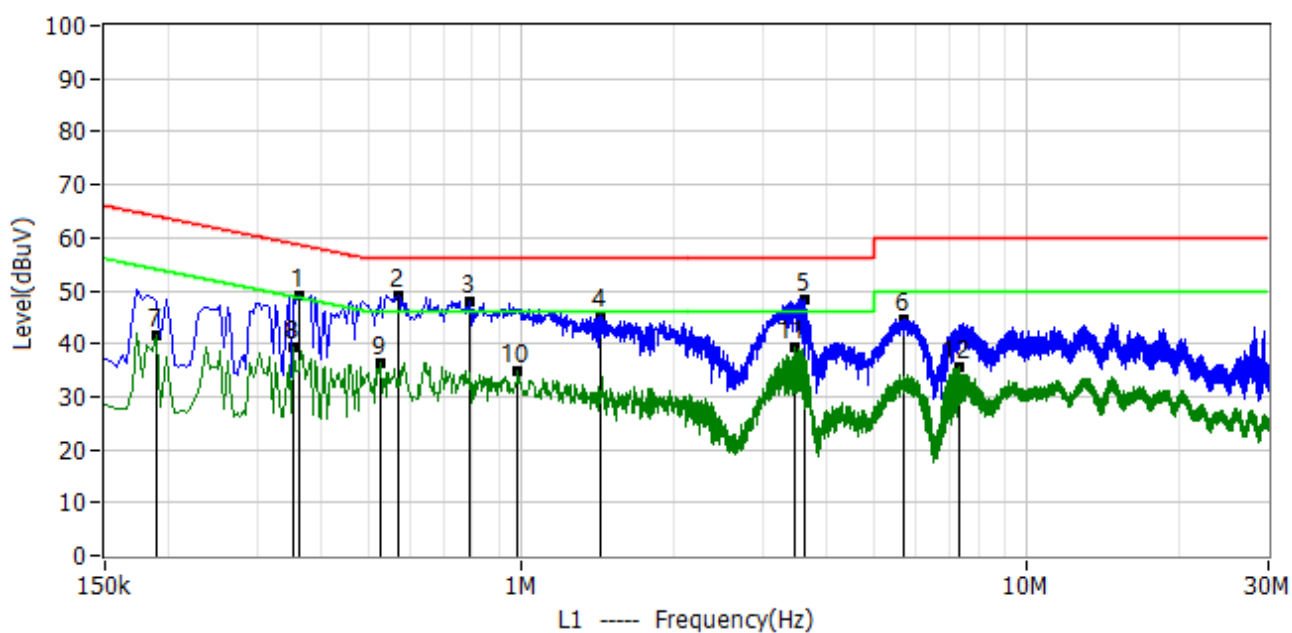
3.1.3 TEST SETUP





3.1.4 TEST RESULTS

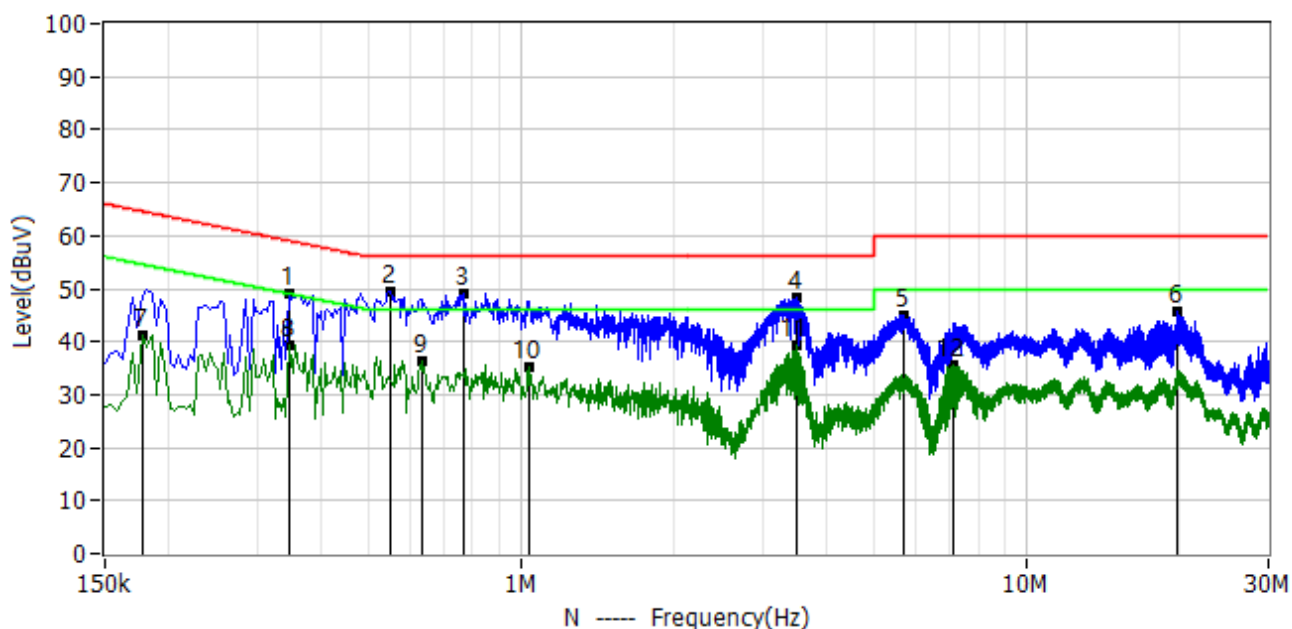
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-12
Test Mode: Charging+BT+Wi-Fi+GPS+NFC+Camera recording	
Note: Configuration 1	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.362	38.61	10.57	49.18	58.68	-9.50	QP	L1
2*	0.570	38.35	10.57	48.92	56.00	-7.08	QP	L1
3*	0.790	37.30	10.60	47.90	56.00	-8.10	QP	L1
4*	1.434	34.53	10.82	45.35	56.00	-10.65	QP	L1
5*	3.614	37.16	11.16	48.32	56.00	-7.68	QP	L1
6*	5.694	33.47	11.05	44.52	60.00	-15.48	QP	L1
7*	0.190	30.95	10.61	41.56	54.04	-12.47	AV	L1
8*	0.354	28.90	10.57	39.47	48.87	-9.40	AV	L1
9*	0.526	25.84	10.57	36.41	46.00	-9.59	AV	L1
10*	0.982	24.30	10.68	34.98	46.00	-11.02	AV	L1
11*	3.462	28.31	11.17	39.48	46.00	-6.52	AV	L1
12*	7.334	24.70	11.00	35.70	50.00	-14.30	AV	L1



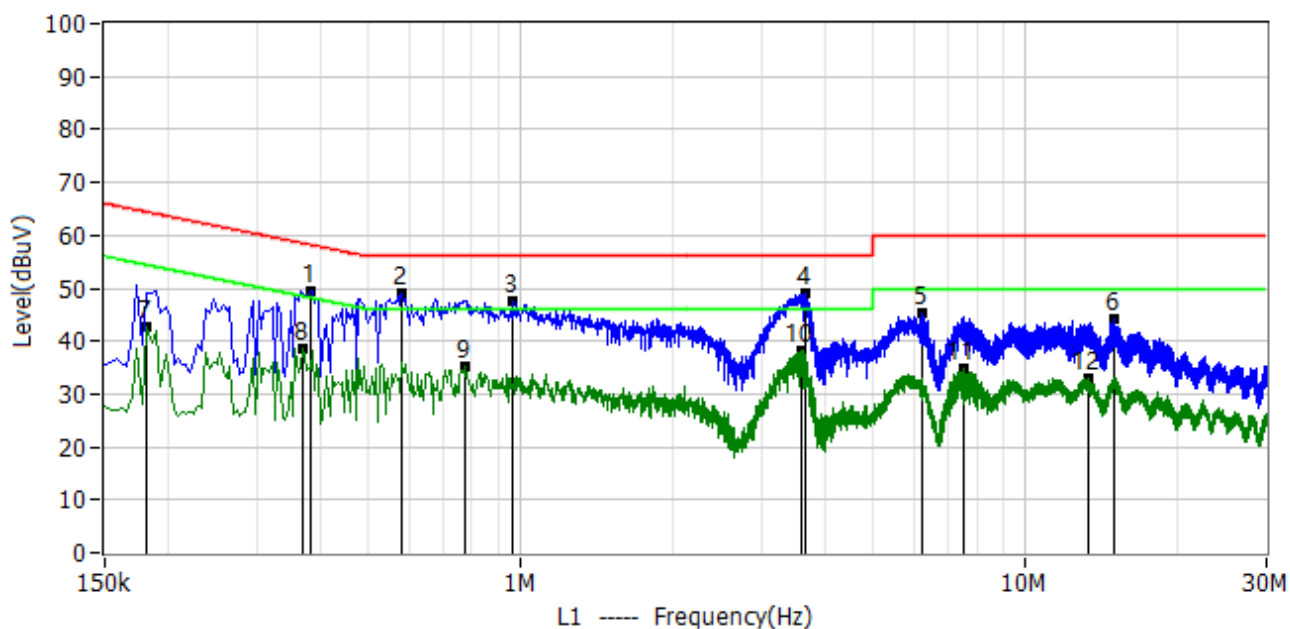
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-12
Test Mode: Charging+BT+Wi-Fi+GPS+NFC+Camera recording	
Note: Configuration 1	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.346	38.61	10.59	49.20	59.06	-9.85	QP	N
2*	0.550	38.86	10.55	49.41	56.00	-6.59	QP	N
3*	0.766	38.51	10.56	49.07	56.00	-6.93	QP	N
4*	3.514	37.44	10.80	48.24	56.00	-7.76	QP	N
5*	5.722	34.22	10.83	45.05	60.00	-14.95	QP	N
6*	19.878	34.17	11.62	45.79	60.00	-14.21	QP	N
7*	0.178	30.76	10.56	41.32	54.58	-13.26	AV	N
8*	0.346	28.70	10.59	39.29	49.06	-9.77	AV	N
9*	0.638	25.67	10.56	36.23	46.00	-9.77	AV	N
10*	1.038	24.83	10.55	35.38	46.00	-10.62	AV	N
11*	3.514	28.57	10.80	39.37	46.00	-6.63	AV	N
12*	7.150	24.92	10.82	35.74	50.00	-14.26	AV	N



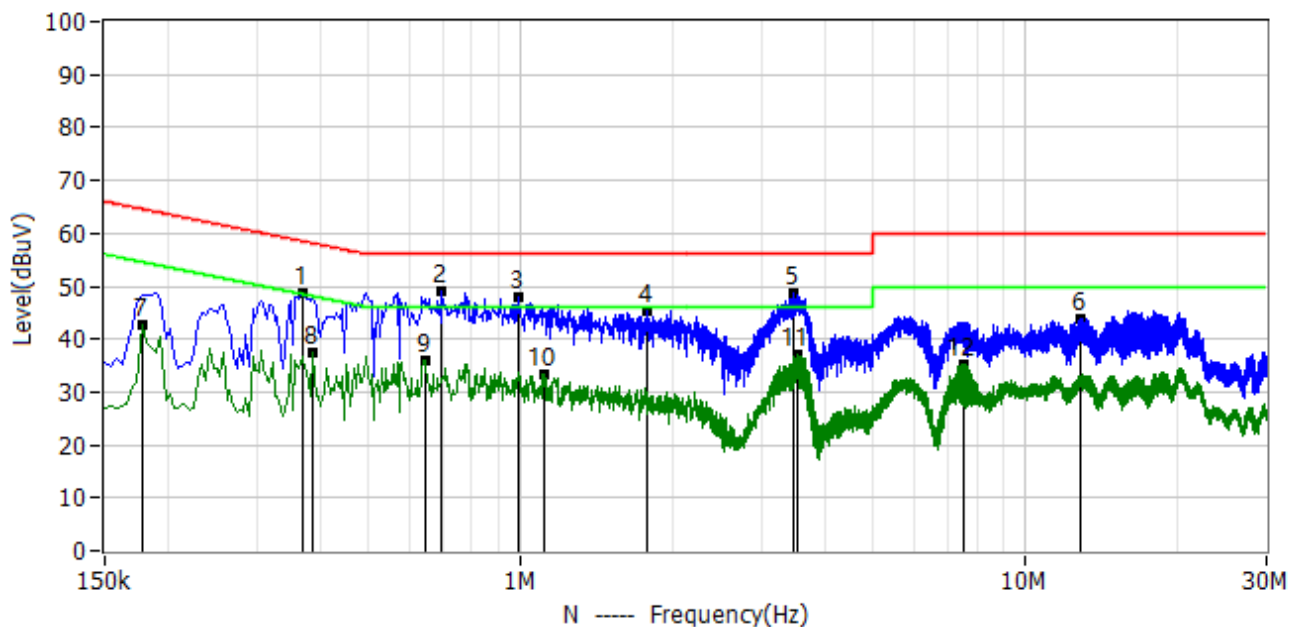
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-17
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 1	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.382	38.86	10.57	49.43	58.24	-8.81	QP	L1
2*	0.582	38.58	10.57	49.15	56.00	-6.85	QP	L1
3*	0.962	37.04	10.67	47.71	56.00	-8.29	QP	L1
4*	3.646	38.06	11.16	49.22	56.00	-6.78	QP	L1
5*	6.210	34.42	11.03	45.45	60.00	-14.55	QP	L1
6*	14.930	32.70	11.38	44.08	60.00	-15.92	QP	L1
7*	0.182	32.27	10.61	42.88	54.39	-11.51	AV	L1
8*	0.370	28.03	10.57	38.60	48.50	-9.90	AV	L1
9*	0.778	24.42	10.60	35.02	46.00	-10.98	AV	L1
10*	3.582	27.12	11.16	38.28	46.00	-7.72	AV	L1
11*	7.542	23.85	11.00	34.85	50.00	-15.15	AV	L1
12*	13.274	21.80	11.26	33.06	50.00	-16.94	AV	L1



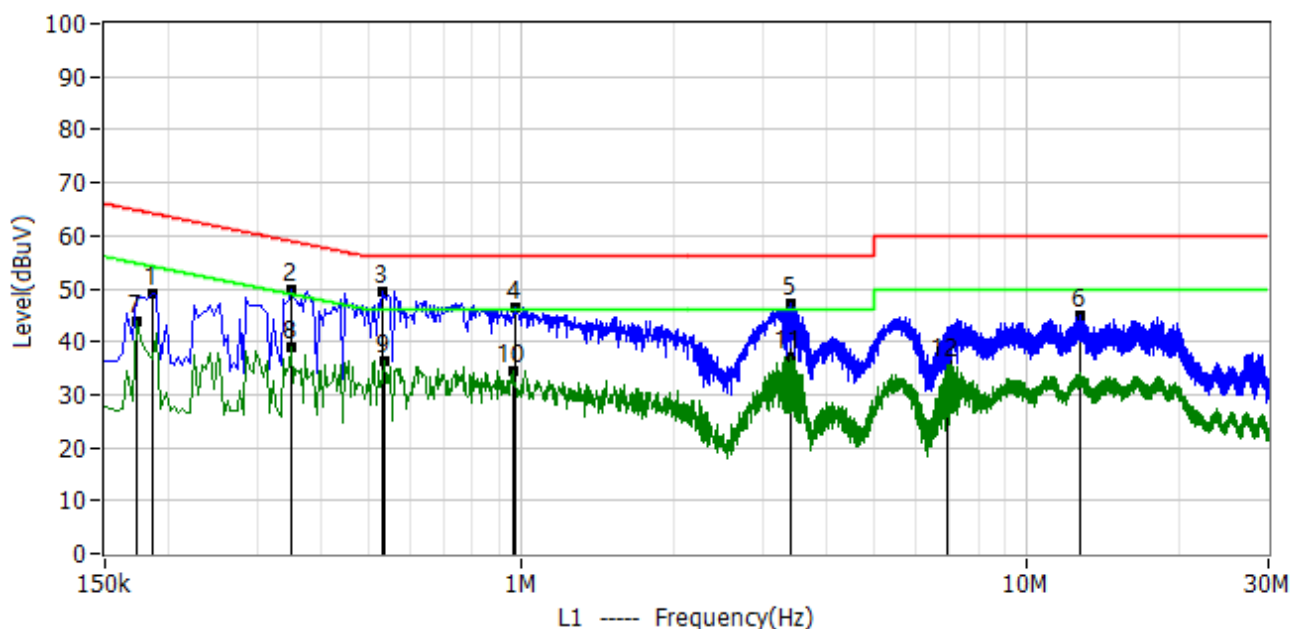
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-17
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 1	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.370	38.24	10.59	48.83	58.50	-9.68	QP	N
2*	0.698	38.47	10.57	49.04	56.00	-6.96	QP	N
3*	0.986	37.52	10.54	48.06	56.00	-7.94	QP	N
4*	1.782	34.73	10.71	45.44	56.00	-10.56	QP	N
5*	3.478	37.73	10.80	48.53	56.00	-7.47	QP	N
6*	12.802	32.73	11.20	43.93	60.00	-16.07	QP	N
7*	0.178	32.21	10.56	42.77	54.58	-11.81	AV	N
8*	0.386	26.81	10.59	37.40	48.15	-10.75	AV	N
9*	0.646	25.29	10.56	35.85	46.00	-10.15	AV	N
10*	1.110	22.83	10.56	33.39	46.00	-12.61	AV	N
11*	3.546	26.45	10.80	37.25	46.00	-8.75	AV	N
12*	7.542	24.27	10.84	35.11	50.00	-14.89	AV	N



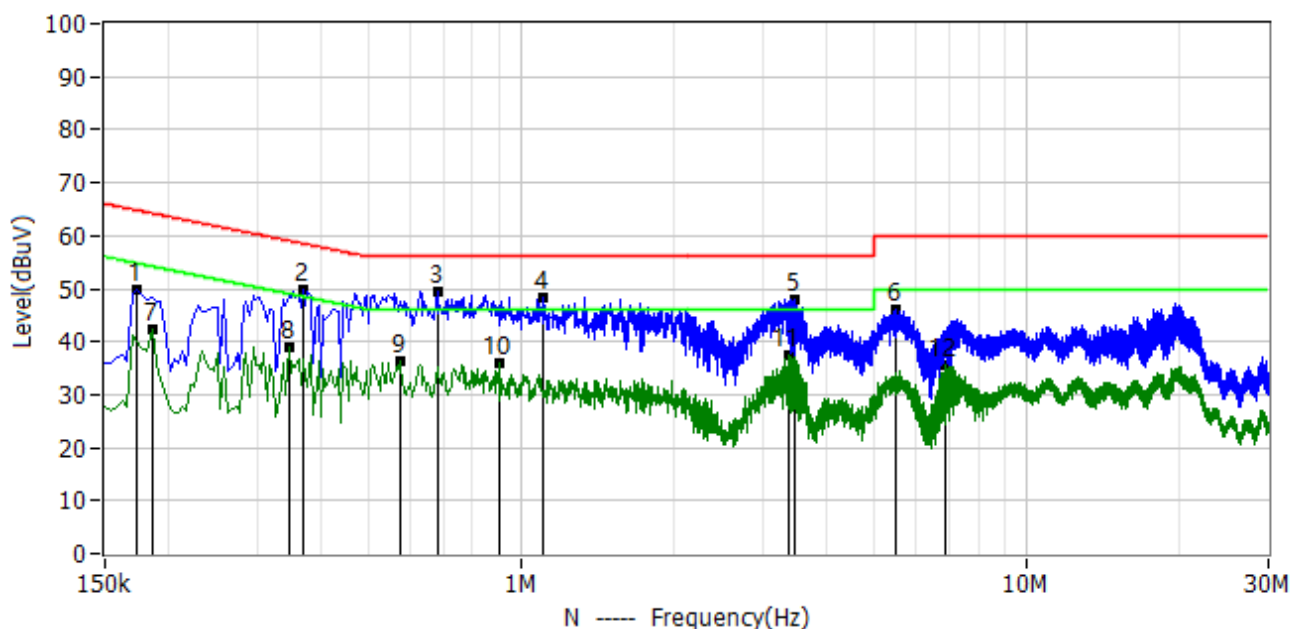
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-12
Test Mode: Charging+BT+Wi-Fi+GPS+NFC+Camera recording	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.186	38.54	10.61	49.15	64.21	-15.07	QP	L1
2*	0.350	39.11	10.57	49.68	58.96	-9.29	QP	L1
3*	0.530	38.83	10.57	49.40	56.00	-6.60	QP	L1
4*	0.970	35.76	10.68	46.44	56.00	-9.56	QP	L1
5*	3.402	35.91	11.17	47.08	56.00	-8.92	QP	L1
6*	12.774	33.64	11.23	44.87	60.00	-15.13	QP	L1
7*	0.174	33.19	10.60	43.79	54.77	-10.98	AV	L1
8*	0.350	28.29	10.57	38.86	48.96	-10.10	AV	L1
9*	0.534	25.86	10.57	36.43	46.00	-9.57	AV	L1
10*	0.962	23.71	10.67	34.38	46.00	-11.62	AV	L1
11*	3.402	25.97	11.17	37.14	46.00	-8.86	AV	L1
12*	6.926	24.63	11.00	35.63	50.00	-14.37	AV	L1



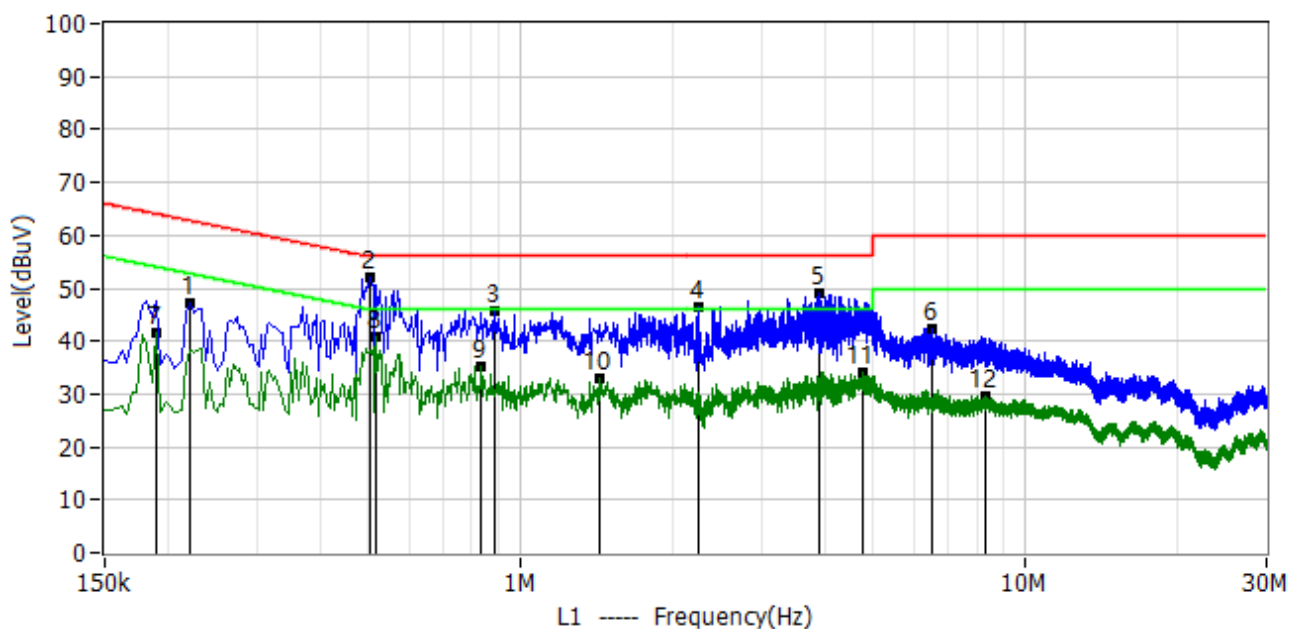
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-12
Test Mode: Charging+BT+Wi-Fi+GPS+NFC+Camera recording	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.174	39.26	10.56	49.82	64.77	-14.95	QP	N
2*	0.370	39.15	10.59	49.74	58.50	-8.76	QP	N
3*	0.682	38.94	10.56	49.50	56.00	-6.50	QP	N
4*	1.102	37.82	10.56	48.38	56.00	-7.62	QP	N
5*	3.466	37.20	10.80	48.00	56.00	-8.00	QP	N
6*	5.502	35.15	10.83	45.98	60.00	-14.02	QP	N
7*	0.186	31.75	10.56	42.31	54.21	-11.90	AV	N
8*	0.346	28.54	10.59	39.13	49.06	-9.93	AV	N
9*	0.574	25.91	10.55	36.46	46.00	-9.54	AV	N
10*	0.902	25.35	10.55	35.90	46.00	-10.10	AV	N
11*	3.374	26.74	10.79	37.53	46.00	-8.47	AV	N
12*	6.870	24.71	10.81	35.52	50.00	-14.48	AV	N



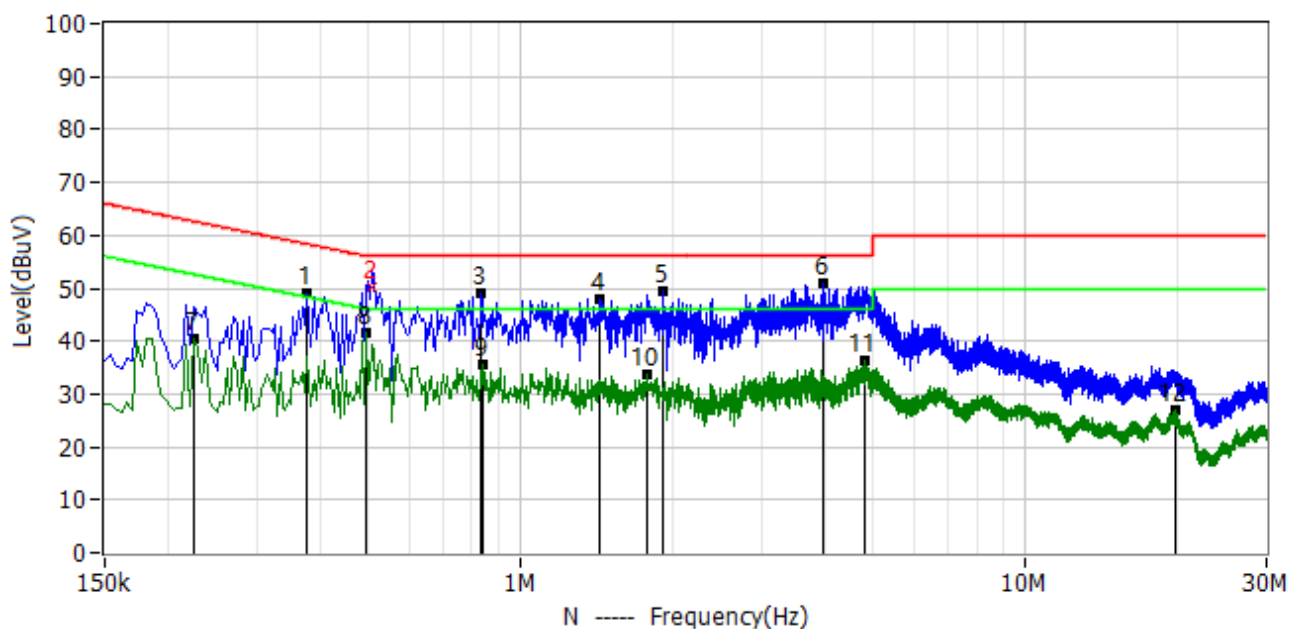
Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-17
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.222	36.67	10.61	47.28	62.74	-15.46	QP	L1
2*	0.502	41.65	10.57	52.22	56.00	-3.78	QP	L1
3*	0.890	34.94	10.64	45.58	56.00	-10.42	QP	L1
4*	2.250	35.44	11.04	46.48	56.00	-9.52	QP	L1
5*	3.898	37.87	11.14	49.01	56.00	-6.99	QP	L1
6*	6.506	31.42	11.01	42.43	60.00	-17.57	QP	L1
7*	0.190	30.93	10.61	41.54	54.04	-12.50	AV	L1
8*	0.518	30.21	10.57	40.78	46.00	-5.22	AV	L1
9*	0.834	24.75	10.62	35.37	46.00	-10.63	AV	L1
10*	1.430	22.22	10.82	33.04	46.00	-12.96	AV	L1
11*	4.742	23.04	11.09	34.13	46.00	-11.87	AV	L1
12*	8.334	18.53	11.00	29.53	50.00	-20.47	AV	L1



Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 24°C
M/N: SP60	Humidity: 53%RH
Test Voltage: AC 120V/60Hz	Test Data: 2024-12-17
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.378	38.38	10.59	48.97	58.32	-9.36	QP	N
2	0.506	39.86	10.50	50.36	56.00	-5.64	QP	N
3*	0.834	38.62	10.55	49.17	56.00	-6.83	QP	N
4*	1.434	37.45	10.64	48.09	56.00	-7.91	QP	N
5*	1.910	38.86	10.74	49.60	56.00	-6.40	QP	N
6*	3.958	40.19	10.81	51.00	56.00	-5.00	QP	N
7*	0.226	29.87	10.57	40.44	52.60	-12.16	AV	N
8*	0.494	31.14	10.54	41.68	46.10	-4.42	AV	N
9*	0.838	24.97	10.55	35.52	46.00	-10.48	AV	N
10*	1.778	22.92	10.71	33.63	46.00	-12.37	AV	N
11*	4.822	25.64	10.83	36.47	46.00	-9.53	AV	N
12*	19.770	15.47	11.62	27.09	50.00	-22.91	AV	N



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS

Below 1 GHz

Frequency (MHz)	Class A	Class B
	Field strength (dBuV/m) (at 3m)	Field strength (dBuV/m) (at 3m)
30 - 88	49.5	40
88 - 216	53.9	43.5
216 - 960	56.9	46
Above 960	60	54

Above 1 GHz

Frequency (MHz)	Class A		Class B	
	Field strength (dBuV/m) (at 3m)		Field strength (dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000	80	60	74	54

Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Note:

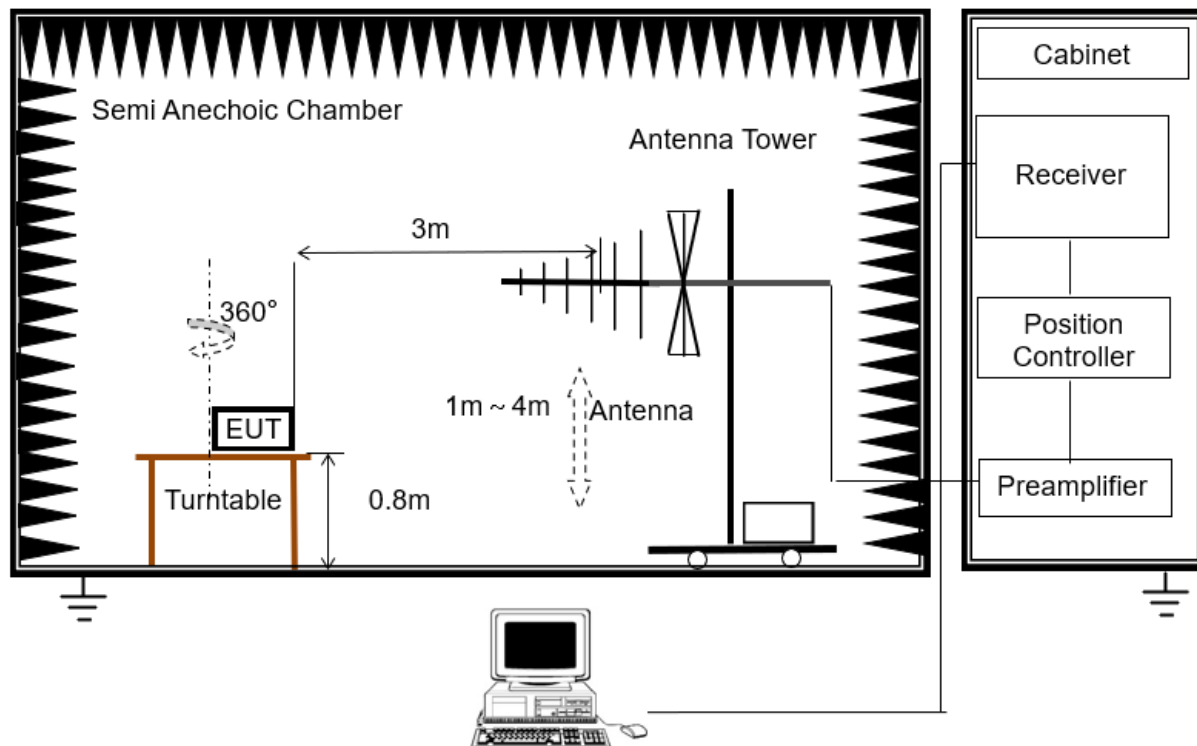
- (1) The limit for radiated test was performed according to FCC Part 15, Subpart B;
- (2) The tighter limit applies at the band edges;
- (3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor,
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use),
Margin Level = Measurement Value - Limit Value.

3.2.2 TEST PROCEDURE

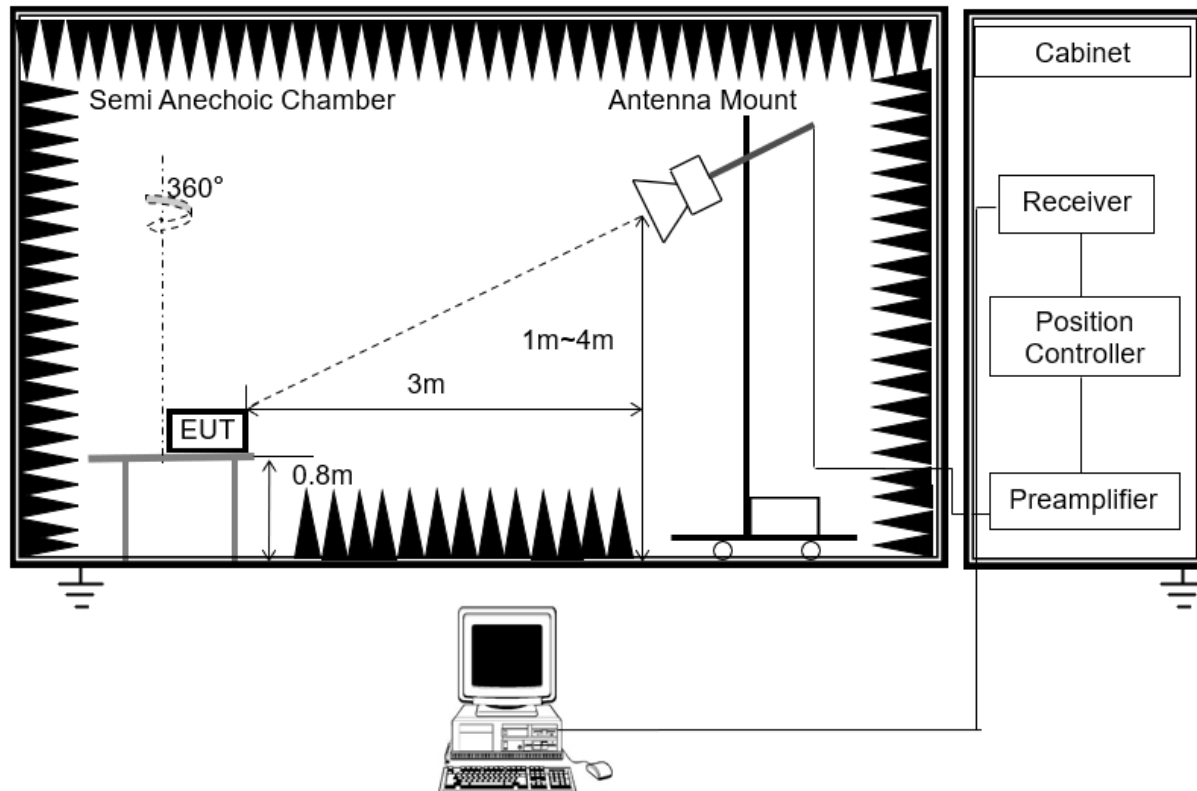
- a. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. EUT as the center to the edge of the auxiliary device, the distance from the maximum edge to the center of the antenna is 3 meter.
- c. The height of antenna is varied from 1 meter to 4 meter above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meter and the rotatable table was turned from 0 degrees to 360 degree to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



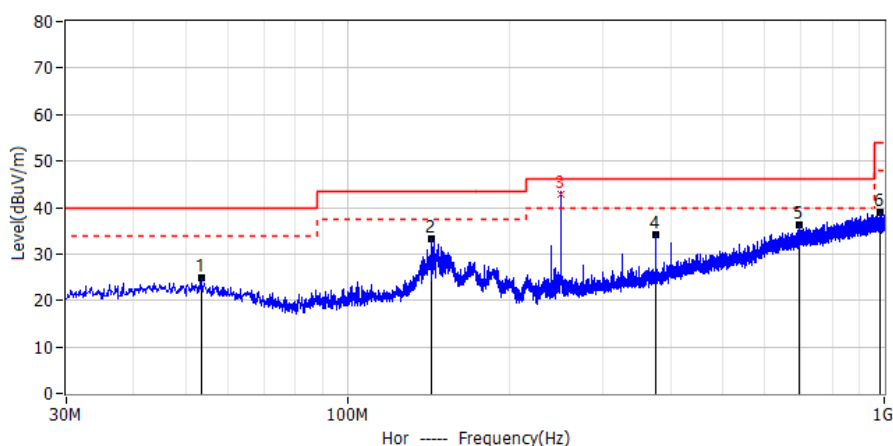
For the actual test configuration, please refer to Appendix I: Photographs of the Test Configuration



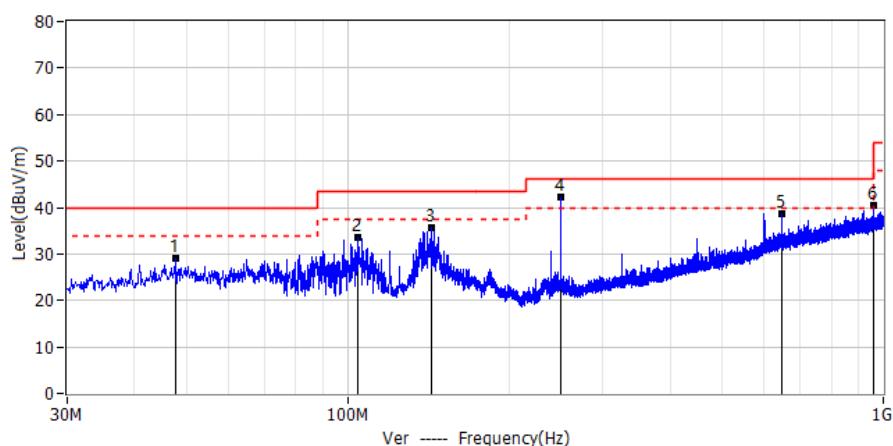
3.2.4 TEST RESULTS

Below 1 GHz

Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 25.1°C
M/N: SP60	Humidity: 45.6%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-01-10
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 1	



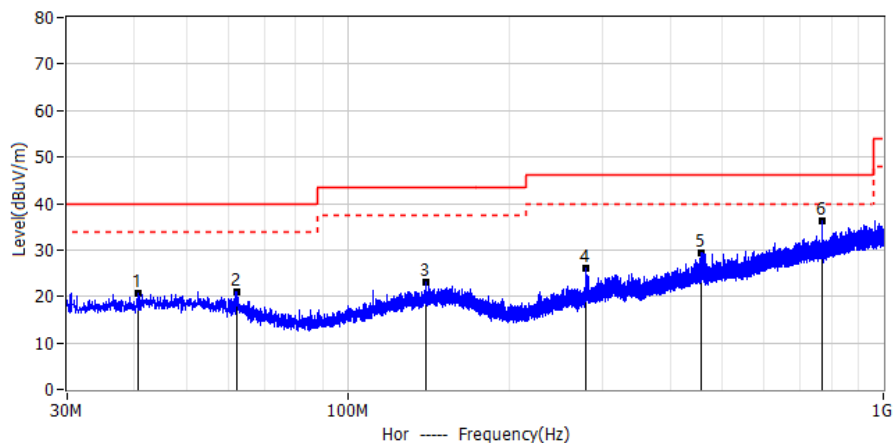
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	53.401	4.28	20.53	24.81	40.00	-15.19	QP	Hor
2*	143.248	11.91	21.34	33.25	43.50	-10.25	QP	Hor
3	249.994	23.32	19.50	42.82	46.00	-3.18	QP	Hor
4*	374.956	10.31	23.77	34.08	46.00	-11.92	QP	Hor
5*	696.026	5.83	30.33	36.16	46.00	-9.84	QP	Hor
6*	984.116	4.87	34.19	39.06	54.00	-14.94	QP	Hor



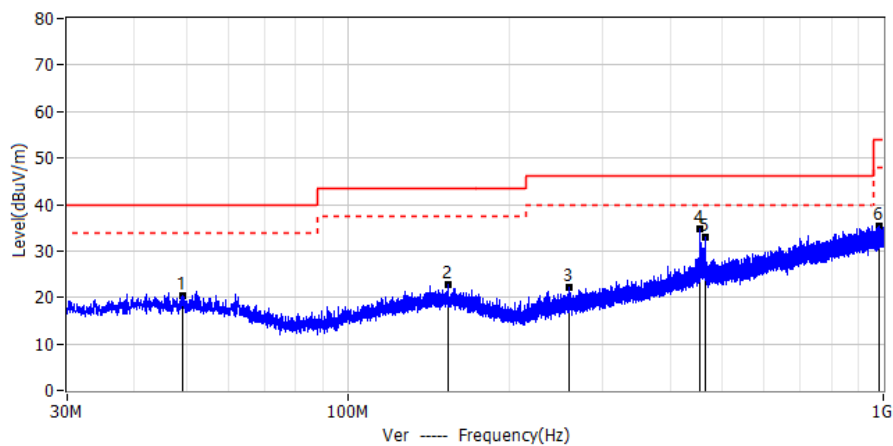
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	47.703	8.72	20.30	29.02	40.00	-10.98	QP	Ver
2*	104.690	15.95	17.56	33.51	43.50	-9.99	QP	Ver
3*	143.248	14.29	21.34	35.63	43.50	-7.87	QP	Ver
4*	249.948	22.63	19.53	42.16	46.00	-3.84	QP	Ver
5*	648.011	9.17	29.60	38.77	46.00	-7.23	QP	Ver
6*	960.109	7.01	33.40	40.41	54.00	-13.59	QP	Ver



Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 27°C
M/N: SP60	Humidity: 51%RH
Test Voltage: Battery	Test Data: 2024-12-11
Test Mode: USB Data Transmission	
Note: Configuration 1	



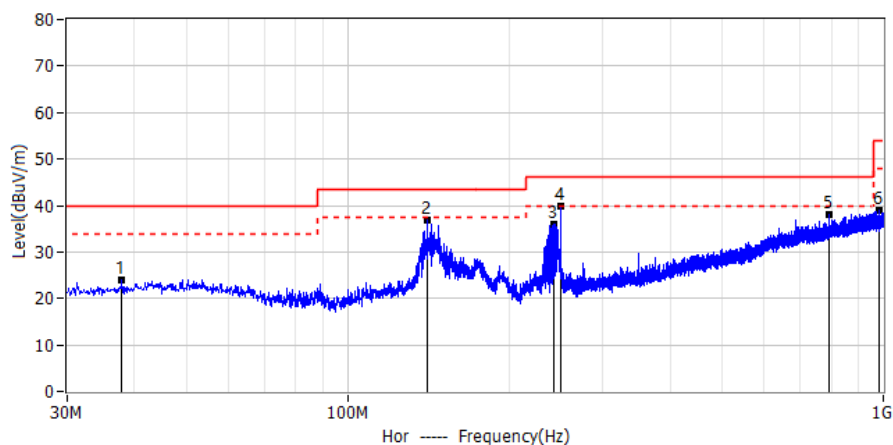
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	40.719	36.70	-15.95	20.75	40.00	-19.25	QP	Hor
2*	62.059	38.13	-17.06	21.07	40.00	-18.93	QP	Hor
3*	140.435	36.59	-13.49	23.10	43.50	-20.40	QP	Hor
4*	277.787	41.11	-15.10	26.01	46.00	-19.99	QP	Hor
5*	456.558	39.20	-9.87	29.33	46.00	-16.67	QP	Hor
6*	768.025	39.83	-3.50	36.33	46.00	-9.67	QP	Hor



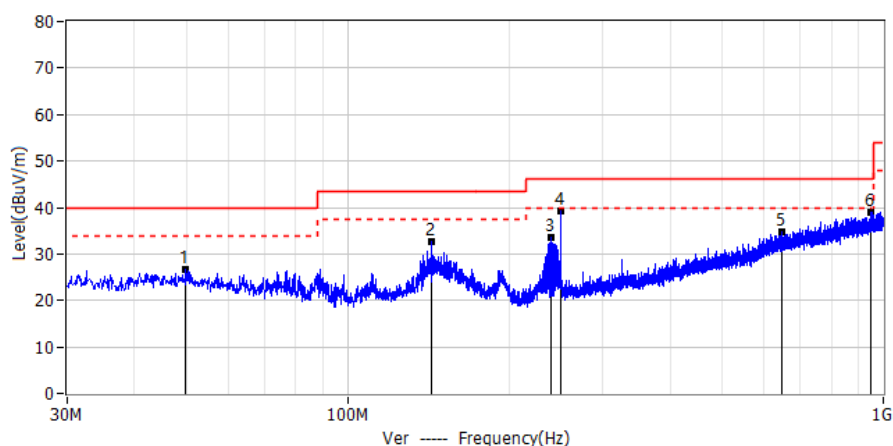
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	49.303	36.04	-15.57	20.47	40.00	-19.53	QP	Ver
2*	154.160	36.01	-13.17	22.84	43.50	-20.66	QP	Ver
3*	258.872	37.50	-15.41	22.09	46.00	-23.91	QP	Ver
4*	455.491	44.59	-9.88	34.71	46.00	-11.29	QP	Ver
5*	464.706	42.67	-9.64	33.03	46.00	-12.97	QP	Ver
6*	980.552	35.23	0.23	35.46	54.00	-18.54	QP	Ver



Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 25.1°C
M/N: SP60	Humidity: 45.6%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-01-10
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 2	



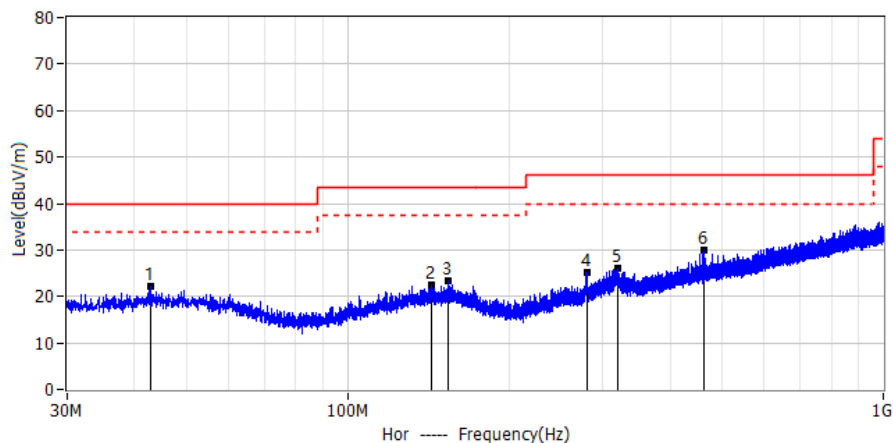
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	37.881	4.34	19.77	24.11	40.00	-15.89	QP	Hor
2*	141.186	15.72	21.20	36.92	43.50	-6.58	QP	Hor
3*	242.430	16.89	19.19	36.08	46.00	-9.92	QP	Hor
4*	249.948	20.21	19.53	39.74	46.00	-6.26	QP	Hor
5*	792.056	6.47	31.54	38.01	46.00	-7.99	QP	Hor
6*	981.813	4.99	34.01	39.00	54.00	-15.00	QP	Hor



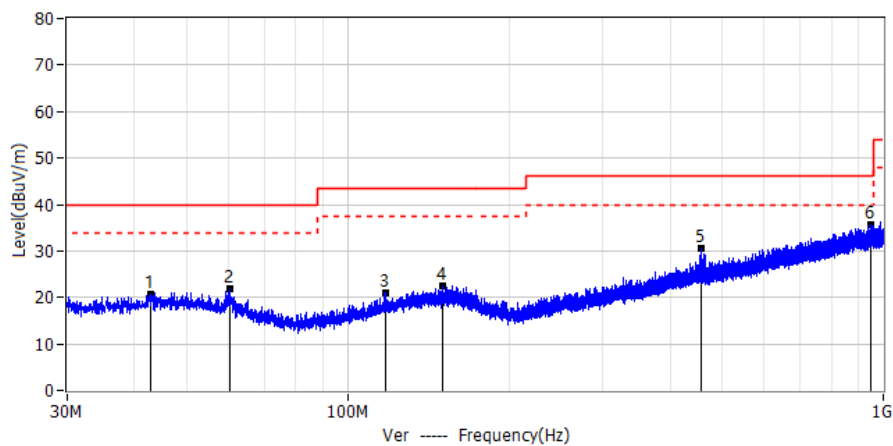
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	49.885	6.30	20.41	26.71	40.00	-13.29	QP	Ver
2*	143.248	11.38	21.34	32.72	43.50	-10.78	QP	Ver
3*	240.005	14.75	18.80	33.55	46.00	-12.45	QP	Ver
4*	249.948	19.61	19.53	39.14	46.00	-6.86	QP	Ver
5*	648.011	5.20	29.60	34.80	46.00	-11.20	QP	Ver
6*	946.044	5.39	33.64	39.03	46.00	-6.97	QP	Ver



Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 27°C
M/N: SP60	Humidity: 51%RH
Test Voltage: Battery	Test Data: 2024-12-11
Test Mode: USB Data Transmission	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	42.853	37.55	-15.46	22.09	40.00	-17.91	QP	Hor
2*	143.684	35.68	-13.35	22.33	43.50	-21.17	QP	Hor
3*	153.869	36.43	-13.11	23.32	43.50	-20.18	QP	Hor
4*	280.260	39.98	-14.81	25.17	46.00	-20.83	QP	Hor
5*	319.836	39.57	-13.48	26.09	46.00	-19.91	QP	Hor
6*	463.542	39.51	-9.69	29.82	46.00	-16.18	QP	Hor

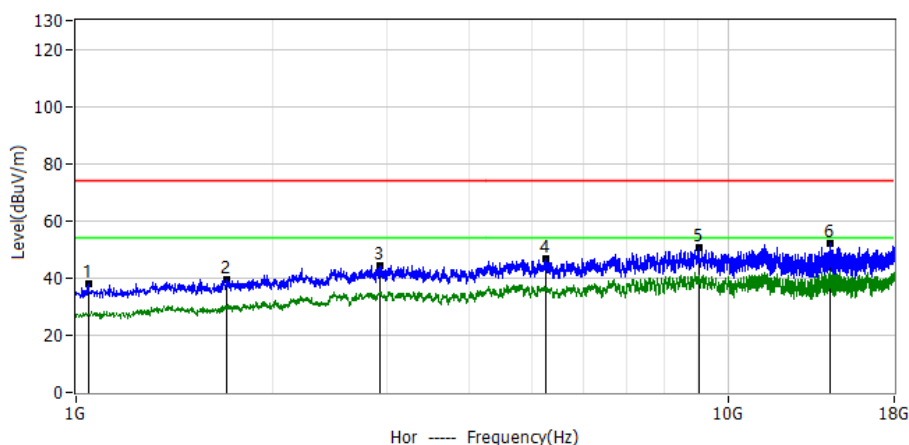


No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	42.950	36.12	-15.43	20.69	40.00	-19.31	QP	Ver
2*	60.361	38.47	-16.65	21.82	40.00	-18.18	QP	Ver
3*	117.494	36.31	-15.41	20.90	43.50	-22.60	QP	Ver
4*	150.474	35.67	-13.26	22.41	43.50	-21.09	QP	Ver
5*	456.024	40.58	-9.87	30.71	46.00	-15.29	QP	Ver
6*	949.512	35.92	-0.15	35.77	46.00	-10.23	QP	Ver

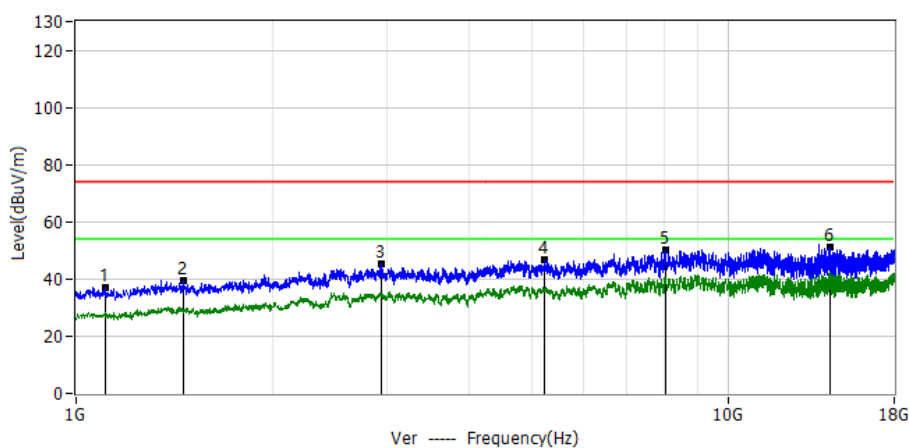


Above 1GHz

Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 25.1°C
M/N: SP60	Humidity: 45.6%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-01-10
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 1	



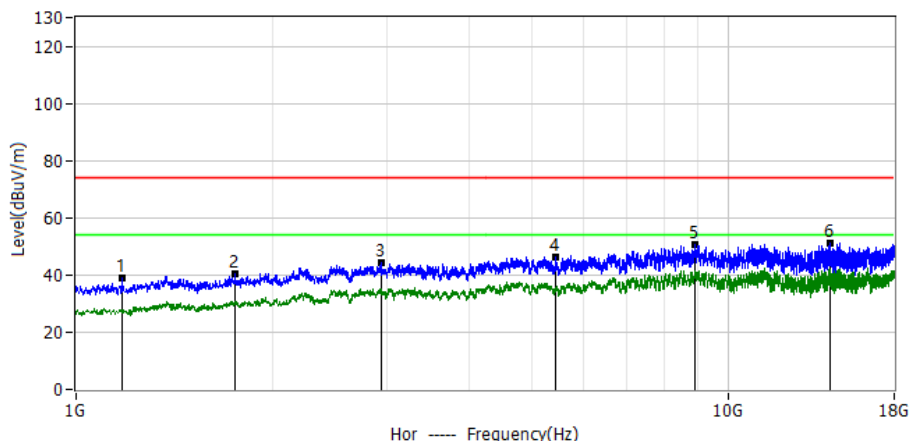
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1044.6000	62.20	-24.36	37.84	74.00	-36.16	PK	Hor
2*	1701.2000	58.85	-19.35	39.50	74.00	-34.50	PK	Hor
3*	2925.2000	53.30	-9.15	44.15	74.00	-29.85	PK	Hor
4*	5262.7000	54.44	-7.89	46.55	74.00	-27.45	PK	Hor
5*	9028.2000	54.08	-3.68	50.40	74.00	-23.60	PK	Hor
6*	14381.1000	51.37	0.71	52.08	74.00	-21.92	PK	Hor



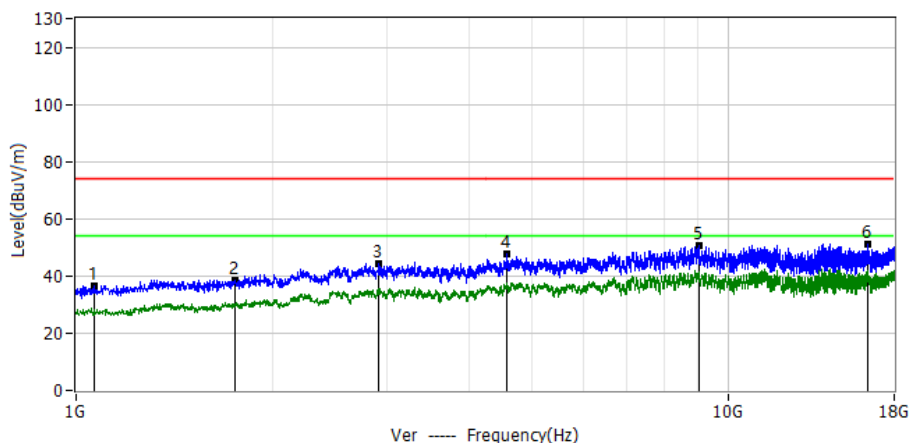
No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1110.5000	60.87	-23.79	37.08	74.00	-36.92	PK	Ver
2*	1463.2000	60.41	-21.14	39.27	74.00	-34.73	PK	Ver
3*	2938.0000	54.21	-9.08	45.13	74.00	-28.87	PK	Ver
4*	5222.4000	54.57	-7.76	46.81	74.00	-27.19	PK	Ver
5*	8010.4000	55.82	-5.48	50.34	74.00	-23.66	PK	Ver
6*	14374.7000	50.33	0.72	51.05	74.00	-22.95	PK	Ver



Project: LGT24L009	Test Engineer: LiuH
EUT: Smart Pos Payment Terminal	Temperature: 25.1°C
M/N: SP60	Humidity: 45.6%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-01-10
Test Mode: Dock charging+BT+Wi-Fi+GPS+NFC+Camera recording+USB+LAN	
Note: Configuration 2	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1174.2000	62.24	-23.23	39.01	74.00	-34.99	PK	Hor
2*	1754.4000	59.35	-18.85	40.50	74.00	-33.50	PK	Hor
3*	2938.0000	53.61	-9.08	44.53	74.00	-29.47	PK	Hor
4*	5447.6000	54.72	-8.53	46.19	74.00	-27.81	PK	Hor
5*	8896.5000	54.28	-3.86	50.42	74.00	-23.58	PK	Hor
6*	14372.6000	50.21	0.72	50.93	74.00	-23.07	PK	Hor



No.	Frequency MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	1063.7000	60.95	-24.20	36.75	74.00	-37.25	PK	Ver
2*	1756.5000	57.45	-18.83	38.62	74.00	-35.38	PK	Ver
3*	2916.7000	53.60	-9.19	44.41	74.00	-29.59	PK	Ver
4*	4578.5000	54.35	-6.58	47.77	74.00	-26.23	PK	Ver
5*	9024.0000	54.24	-3.68	50.56	74.00	-23.44	PK	Ver
6*	16380.7000	50.33	0.76	51.09	74.00	-22.91	PK	Ver



APPENDIX I - TEST SETUP

Set-up for Conducted Emission on AC Mains (CE)



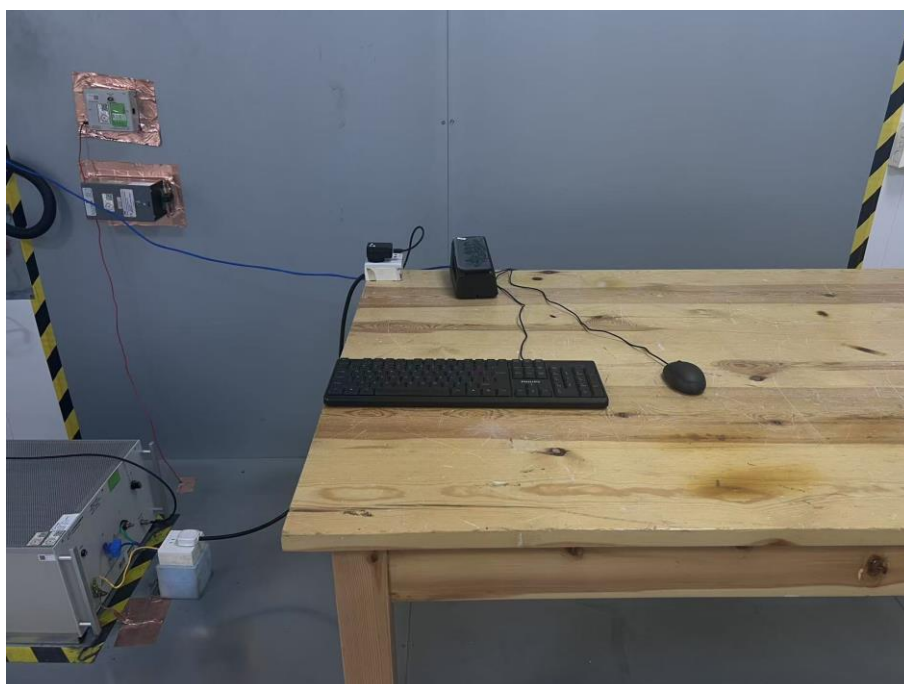
Set-up for Radiated Emission (RE), Below 1GHz



Set-up for Radiated Emission (RE), Above 1GHz



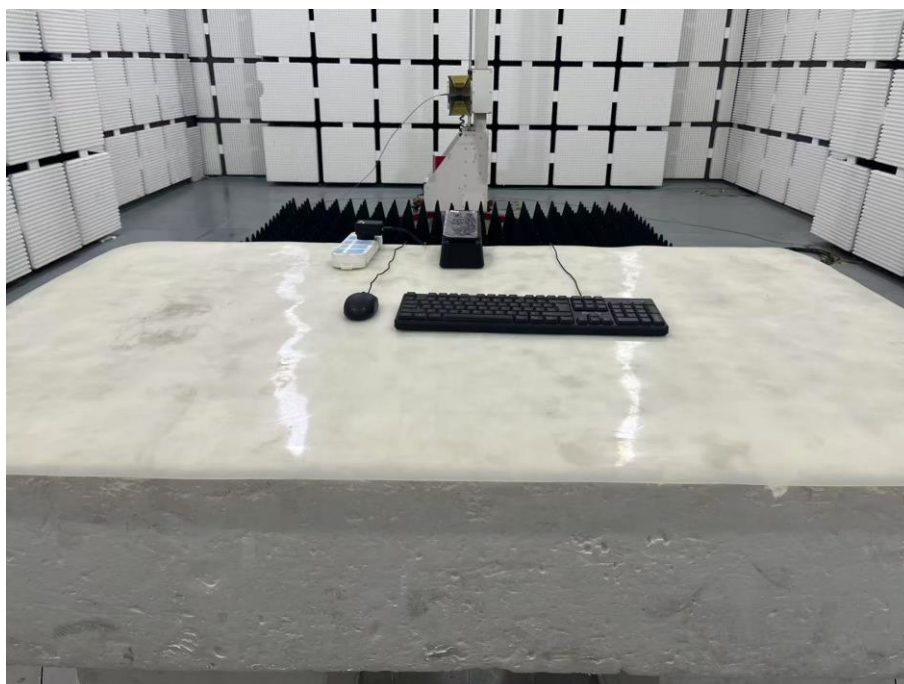
Set-up for Conducted Emission on AC Mains (CE)



Set-up for Radiated Emission (RE), Below 1GHz



Set-up for Radiated Emission (RE), Above 1GHz



※※※※※END OF THE REPORT※※※※※