Test Report

Date : 2023-09-20
No. : HMD23080007

Applicant	:	SIEPER GMBH Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany
Supplier / Manufacturer	:	SIEPER GMBH Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany
Description of Sample(s)	:	Submitted sample(s) said to be Product: Remote control Brand Name: N/A Model No.: 10689900000 FCC ID: 2BCOX-6899
Date Samples Received	:	2023-08-31
Date Tested	:	2023-08-31 to 2023-09-06
Investigation Requested	:	Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.10: 2013 for FCC Certification.
Conclusions	:	The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.
Remarks	:	2.4GHz wireless (2FSK)
Test by		Susu

Dr.CHAN Kwok Hung, Brian
Authorized Signatory

The Hong Kong Standards and Testing Centre Limited
Head Office: 10 Dai Wang Street, Taipo Industrial Estate, Tai Po, N.T., Hong Kong
Unit B, 10/F, Block 1, Tai Ping Industrial Centre, No. 57 Ting Kok Road, Tai Po, N.T., Hong Kong
Tel: +852 2666 1888 Fax: +852 2664 4353 Email: hkstc@stc.group Website: www.stc.group
This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Test Report

CONTENT:

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
10 Dai Wang Street, Taipo Industrial Estate, New Territories, Hong Kong
Telephone: 852 2666 1888
Fax: 852 2664 4353

1.2 Equipment Under Test [EUT]

Description of Sample(s)

Product:	Remote control
Manufacturer:	SIEPER GMBH Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany
Brand Name:	N/A
Model Number:	10689900000
Rating:	Remote control: 3.0Vd.c.("AAA" battery *2)

1.3 Description of EUT Operation

The Equipment Under Test (EUT) is a Remote control. It is a transceiver operating at 2408 MHz~2470MHz and the RF signal was modulated by IC.

RF modulation: 2FSK
Antenna gain:3.38

1.4 Date of Order

2023-08-16

1.5 Submitted Sample(s):

1 Sample

1.6 Test Duration

2023-08-31 to 2023-09-06

1.7 Country of Origin

Poland

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to "Conditions of Issuance of Test Reports" section or Website.

2.0 Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 Regulations and ANSI C63.10: 2013 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary						
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Failed	N/A
Field Strength of Fundamental & Harmonics Emissions	FCC 47CFR 15.249	ANSI C63.10: 2013	N/A	☒	☐	☐
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	☒	☐	☐
AC Mains Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10: 2013	N/A	☐	☐	☒
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	☒	☐	☐
20dB Emission bandwith	FCC 47CFR 15.215(c)	ANSI C63.10: 2013	N/A	☒	☐	☐

Note: N/A - Not Applicable

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions

Ambient temperature 25°C Relative humidity 57%

Test Requirement:	FCC 47CFR 15.249 & FCC 47CFR 15.209
Test Method:	ANSI C63.10:2013
Test Date:	2023-08-31
Mode of Operation:	Tx mode

Test Method:

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

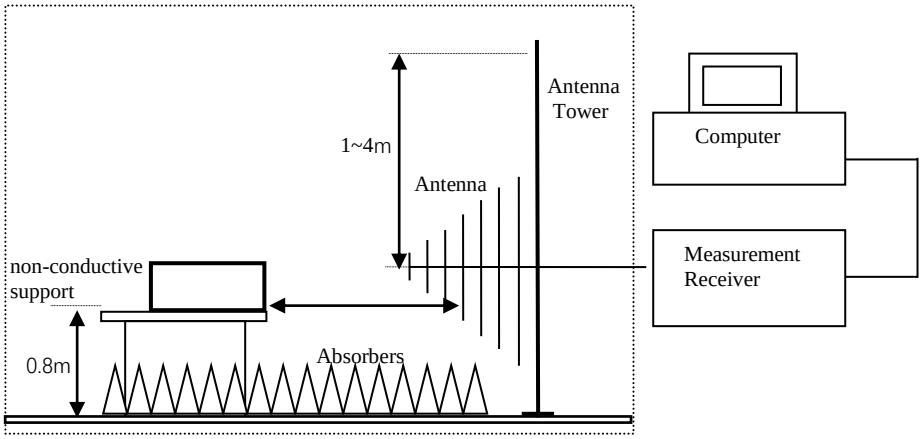
* Semi-Anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with Registration Number: HK0001
Test Firm Registration Number: 367672

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Spectrum Analyzer Setting:

9KHz – 30MHz (Pk & Av)	RBW:	10kHz
	VBW:	30kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
30MHz – 1GHz (QP)	RBW:	120kHz
	VBW:	120kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
Above 1GHz (Pk)	RBW:	1MHz
	VBW:	1MHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
Above 1GHz (Av)	RBW:	1MHz
	VBW:	10Hz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold

Test Setup:



Ground Plane

- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used.

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Quasi-Peak]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

Remarks:
No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB
(30MHz -1GHz): 4.9dB
(1GHz -6GHz): 4.02dB
(6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Results of Tx mode (Lowest Frequency Channel-2408 MHz): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2408.00	92.6	-4.8	87.8	24,603.7	500,000	Vertical
2408.00	98.7	-4.7	94.0	50,118.7	500,000	Horizontal

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2408.00	68.0	-4.8	63.2	1,438.8	50,000	Vertical
2408.00	80.9	-4.7	76.2	6,434.3	50,000	Horizontal

Field Strength of Harmonics Emission Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4816.0	58.6	0.8	59.5	938.6	5,000	Vertical
4816.0	57.2	0.5	57.7	768.2	5,000	Horizontal
7224.0	49.6	7.0	56.6	678.4	5,000	Vertical
7224.0	50.0	6.5	56.5	669.1	5,000	Horizontal
9632.0	46.3	8.5	54.8	549.5	5,000	Vertical
9632.0	45.9	8.3	54.2	512.9	5,000	Horizontal
12040.0	44.1	10.9	55.0	562.3	5,000	Vertical
12040.0	44.0	10.8	54.8	549.5	5,000	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Field Strength of Harmonics Emission Average Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4816.0	45.6	0.8	46.5	210.1	500	Vertical
4816.0	44.1	0.5	44.6	168.8	500	Horizontal
7224.0	37.6	7.0	44.6	169.0	500	Vertical
7224.0	38.6	6.5	45.1	179.3	500	Horizontal
9632.0	32.8	8.5	41.3	116.1	500	Vertical
9632.0	32.7	8.3	41.0	112.2	500	Horizontal
12040.0	30.5	10.9	41.4	117.5	500	Vertical
12040.0	30.4	10.8	41.2	114.8	500	Horizontal

Results of Tx mode (Middle Frequency Channel- 2440MHz): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2440.00	91.5	-4.8	86.7	21,627.2	500,000	Vertical
2440.00	98.2	-4.7	93.5	47,315.1	500,000	Horizontal

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2440.00	71.6	-4.8	66.8	2,187.8	50,000	Vertical
2440.00	78.3	-4.7	73.6	4,786.3	50,000	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Field Strength of Harmonics Emission Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4880.0	58.7	0.8	59.5	940.8	5,000	Vertical
4880.0	57.2	0.5	57.7	770.9	5,000	Horizontal
7320.0	50.1	7.0	57.1	717.0	5,000	Vertical
7320.0	49.7	6.5	56.2	644.2	5,000	Horizontal
9760.0	46.8	8.5	55.3	582.1	5,000	Vertical
9760.0	47.2	8.3	55.5	595.7	5,000	Horizontal
12200.0	45.0	10.9	55.9	623.7	5,000	Vertical
12200.0	44.8	10.8	55.6	602.6	5,000	Horizontal

Field Strength of Harmonics Emission Avarage Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4880.0	44.6	0.8	45.5	187.3	500	Vertical
4880.0	43.7	0.5	44.2	162.0	500	Horizontal
7320.0	37.2	7.0	44.2	161.4	500	Vertical
7320.0	37.0	6.5	43.5	148.8	500	Horizontal
9760.0	32.1	8.5	40.6	107.2	500	Vertical
9760.0	32.7	8.3	41.0	112.2	500	Horizontal
12200.0	31.0	10.9	41.9	124.5	500	Vertical
12200.0	30.5	10.8	41.3	116.1	500	Horizontal

Results of Tx mode (Highest Frequency Channel – 2470MHz): Pass

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2470.00	90.3	-4.8	85.5	18,836.5	500,000	Vertical
2470.00	98.1	-4.7	93.4	46,773.5	500,000	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Field Strength of Fundamental Emissions Average Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
2470.00	70.5	-4.8	65.7	1,927.5	50,000	Vertical
2470.00	78.3	-4.7	73.6	4,786.3	50,000	Horizontal

Field Strength of Harmonics Emission Peak Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4940.0	58.6	0.8	59.5	938.6	5,000	Vertical
4940.0	57.9	0.5	58.4	835.2	5,000	Horizontal
7410.0	50.3	7.0	57.3	730.3	5,000	Vertical
7410.0	49.6	6.5	56.1	639.0	5,000	Horizontal
9880.0	46.4	8.5	54.9	555.9	5,000	Vertical
9880.0	45.9	8.3	54.2	512.9	5,000	Horizontal
12350.0	44.5	10.9	55.4	588.8	5,000	Vertical
12350.0	44.3	10.8	55.1	568.9	5,000	Horizontal

Field Strength of Harmonics Emission Avarage Value						
Frequency MHz	Measured Level @3m dBμV/m	Correction Factor dBμV/m	Field Strength dBμV/m	Field Strength μV/m	Limit @3m μV/m	E-Field Polarity
4940.0	44.2	0.8	45.0	178.4	500	Vertical
4940.0	43.7	0.5	44.2	162.0	500	Horizontal
7410.0	37.6	7.0	44.6	169.4	500	Vertical
7410.0	36.8	6.5	43.3	146.6	500	Horizontal
9880.0	32.4	8.5	40.9	110.9	500	Vertical
9880.0	32.2	8.3	40.5	105.9	500	Horizontal
12350.0	30.1	10.9	41.0	112.2	500	Vertical
12350.0	30.3	10.8	41.1	113.5	500	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Radiated Emissions Measurement:

Limit：

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).

Result： RF Radiated Emissions (1GHz-26GHz) (Lowest)

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2400.0	69.8	-4.7	65.1	74.0	8.9	Horizontal

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2400.0	54.9	-4.7	50.2	54.0	3.8	Horizontal

Result： RF Radiated Emissions (1GHz-26GHz) (Highest)

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2483.5	59.7	-4.7	55.0	74.0	19.0	Horizontal

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2483.5	47.1	-4.7	42.4	54.0	11.6	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2400.0	60.8	-4.8	56.0	74.0	18.0	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2400.0	47.3	-4.8	42.5	54.0	11.5	Vertical

Result： RF Radiated Emissions (1GHz-26GHz) (Highest)

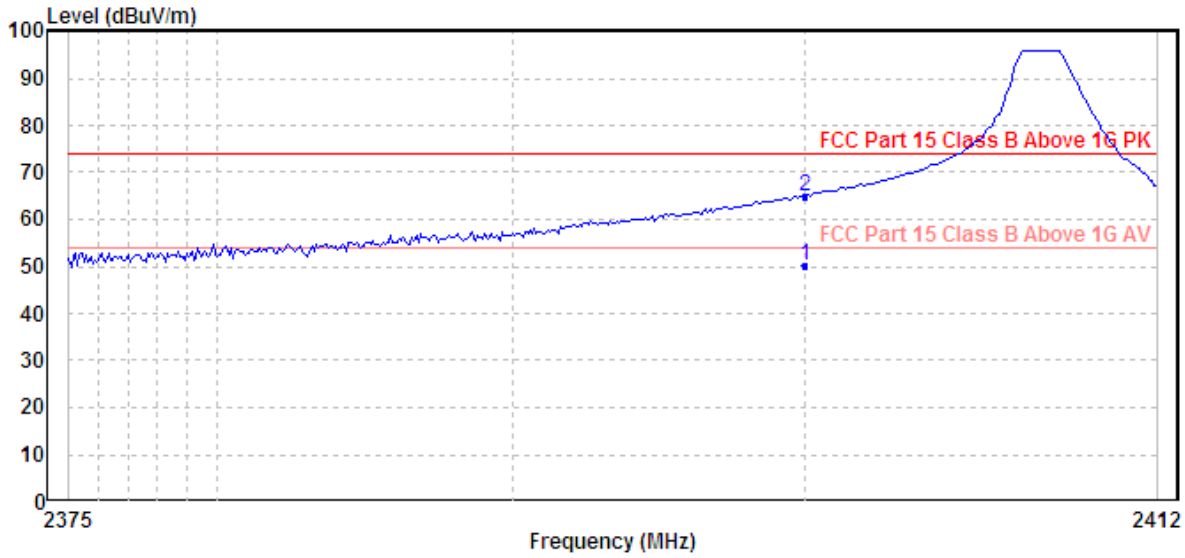
Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2483.5	53.2	-4.8	48.4	74.0	25.6	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
2483.5	44.1	-4.8	39.3	54.0	14.7	Vertical

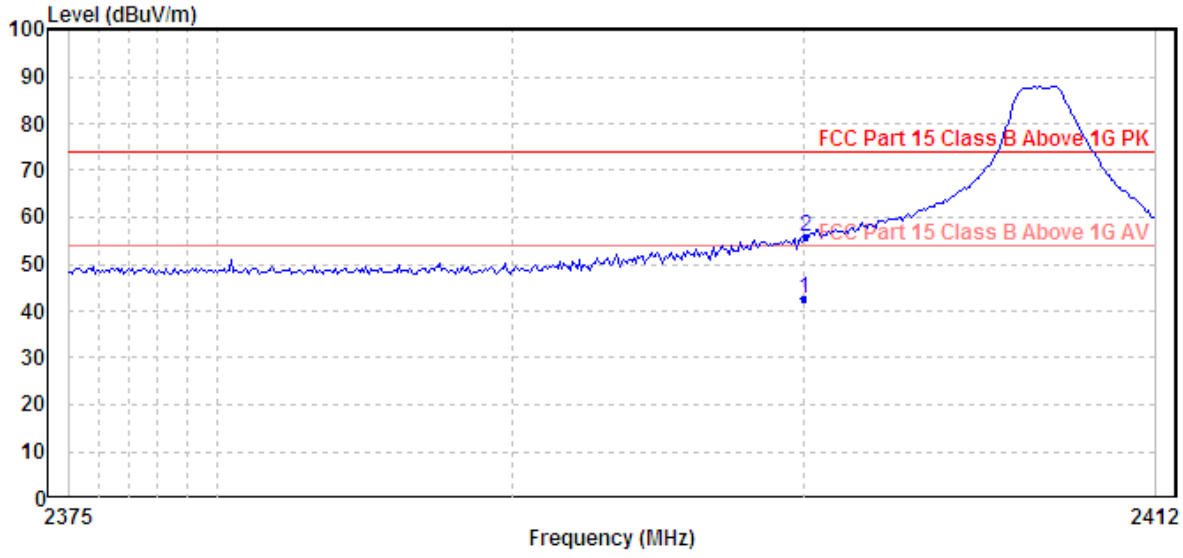
This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Emissions radiated outside of the specified frequency bands (Lowest)

Horizontal



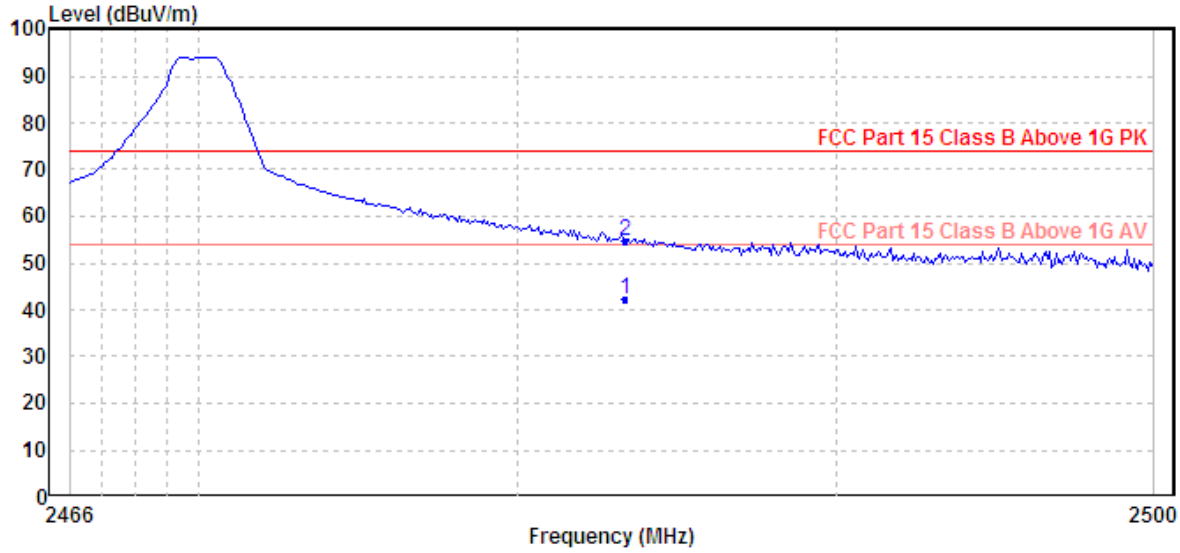
Vertical



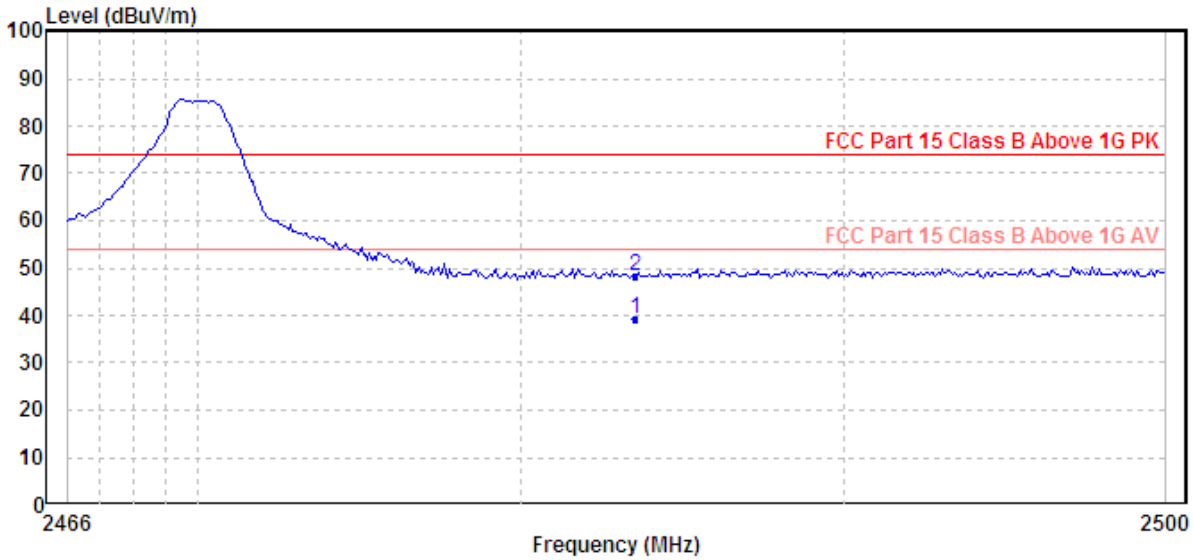
This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Emissions radiated outside of the specified frequency bands (Highest)

Horizontal



Vertical



This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

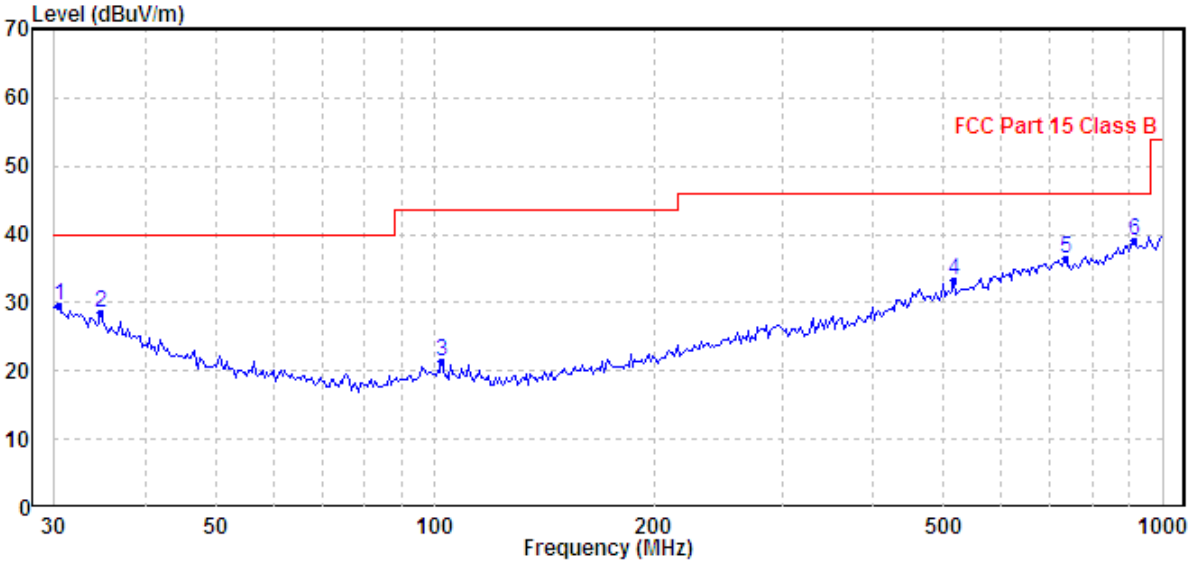
The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Remarks:
Calculated measurement uncertainty (9kHz-30MHz): 2.0dB /(30MHz – 1GHz): 4.9dB
Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

Results of TX mode (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the FCC Limits, not reported.

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Results of TX mode (30MHz – 1GHz)(2410MHz worst case): PASS
Horizontal

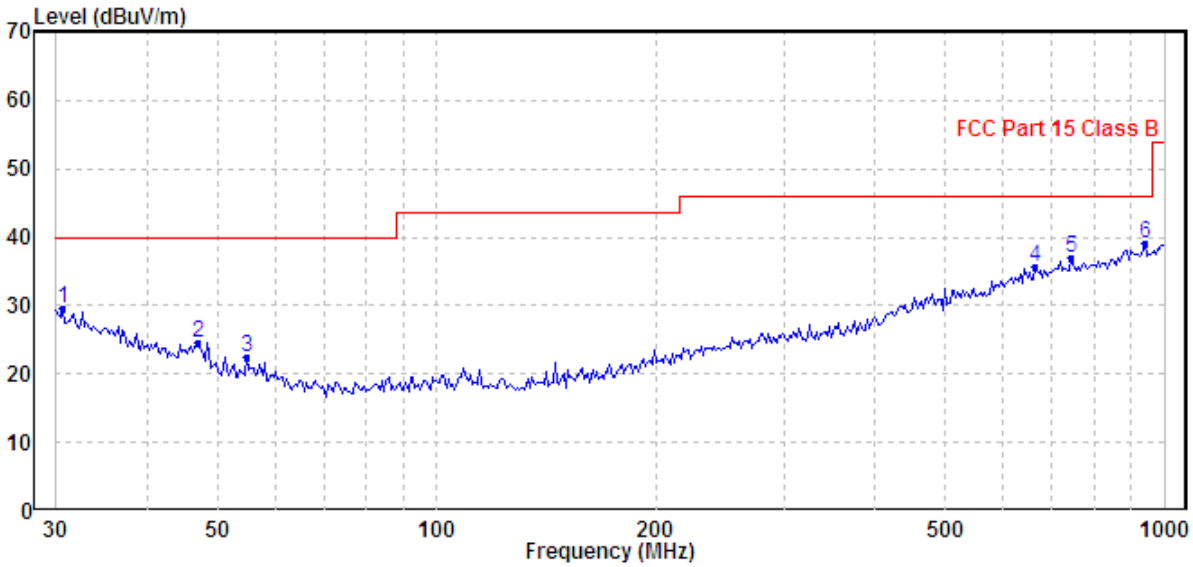


Ambient Temperature: 25C
Relative Humidity : 50%

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB		
1	30.424	29.53	40.00	-10.47	QP	Horizontal
2	34.760	28.51	40.00	-11.49	QP	Horizontal
3	102.360	21.45	43.50	-22.05	QP	Horizontal
4	517.248	33.26	46.00	-12.74	QP	Horizontal
5	734.491	36.36	46.00	-9.64	QP	Horizontal
6	912.862	39.09	46.00	-6.91	QP	Horizontal

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Results of TX mode (30MHz – 1GHz) (2410MHz worst case): PASS
Vertical



Ambient Temperature: 25C
Relative Humidity : 50%

	Freq	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB		
1	30.638	29.65	40.00	-10.35	QP	Vertical
2	46.995	24.65	40.00	-15.35	QP	Vertical
3	54.835	22.45	40.00	-17.55	QP	Vertical
4	665.804	35.64	46.00	-10.36	QP	Vertical
5	744.866	37.03	46.00	-8.97	QP	Vertical
6	938.833	39.22	46.00	-6.78	QP	Vertical

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

3.1.2 Antenna Requirement

Ambient temperature 25°C Relative humidity 57%

Test Requirements: § 15.203

Test Specification:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Results:

This is PCB antenna. There is no external antenna, the antenna gain =3.38dBi. User is unable to remove or changed the Antenna.

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

3.1.3 20dB Bandwidth of Fundamental Emission

Ambient temperature 25°C Relative humidity 57%

Test Requirement:	FCC 47 CFR 15.249
Test Method:	ANSI C63.10:2013
Test Date:	2023-09-04
Mode of Operation:	Tx mode

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Test Setup:

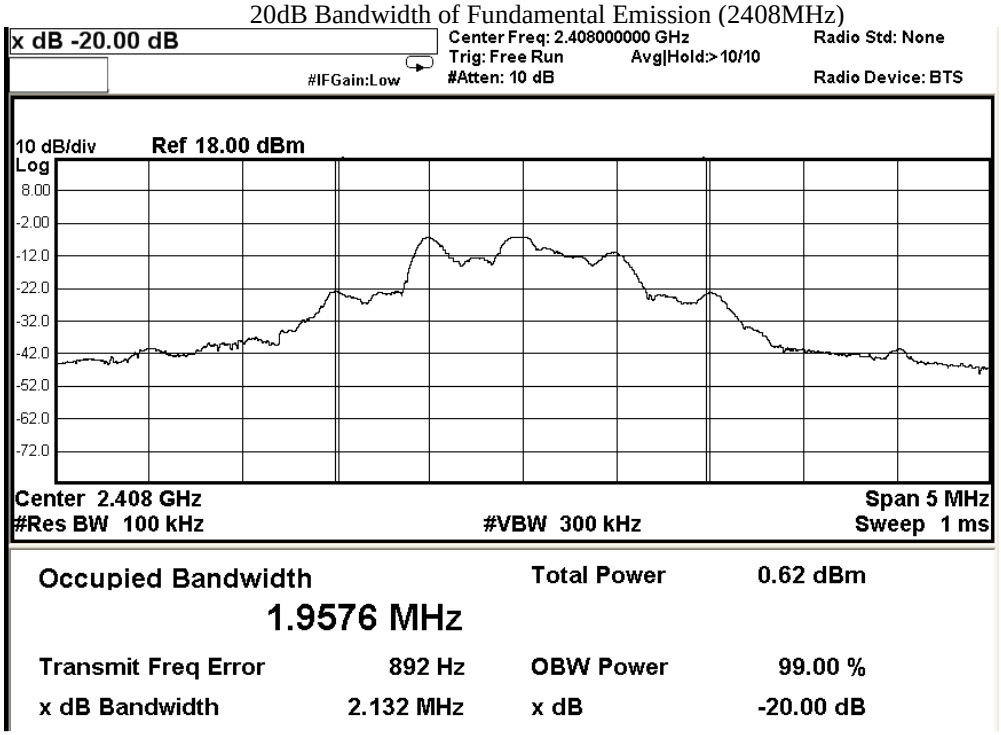
As Test Setup of clause 3.1.1 in this test report.

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Limits for 20dB Bandwidth of Fundamental Emission (Low Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2408.0	2.132

20dB Bandwidth of Fundamental Emission (2408MHz)

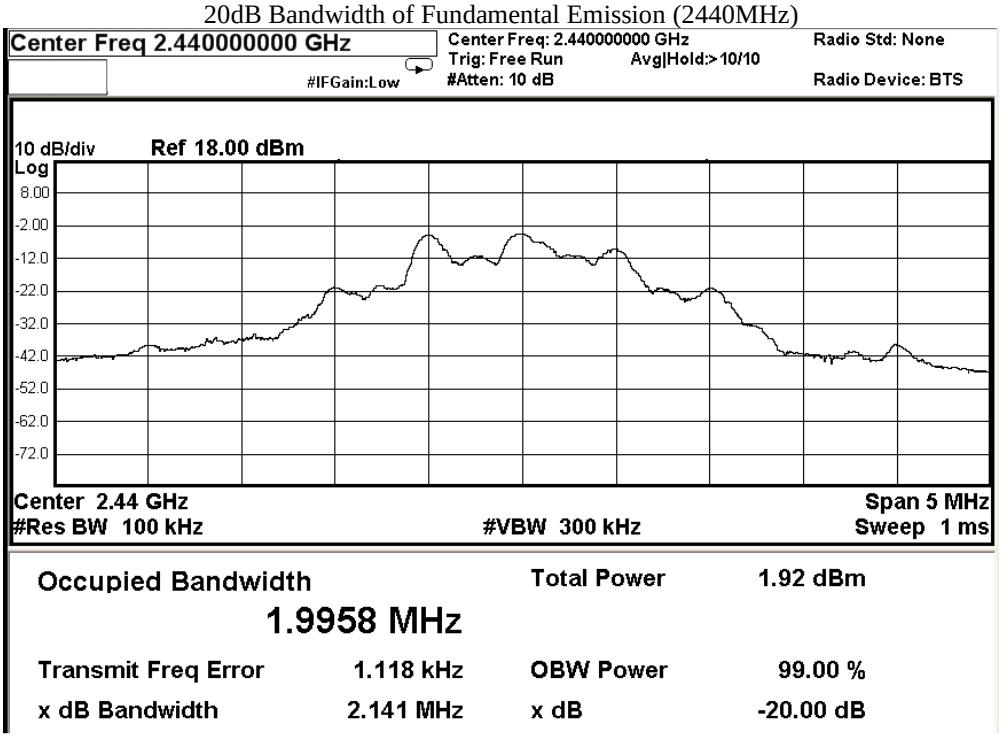


This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Limits for 20dB Bandwidth of Fundamental Emission (Middle Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2440.0	2.141

20dB Bandwidth of Fundamental Emission (2440MHz)

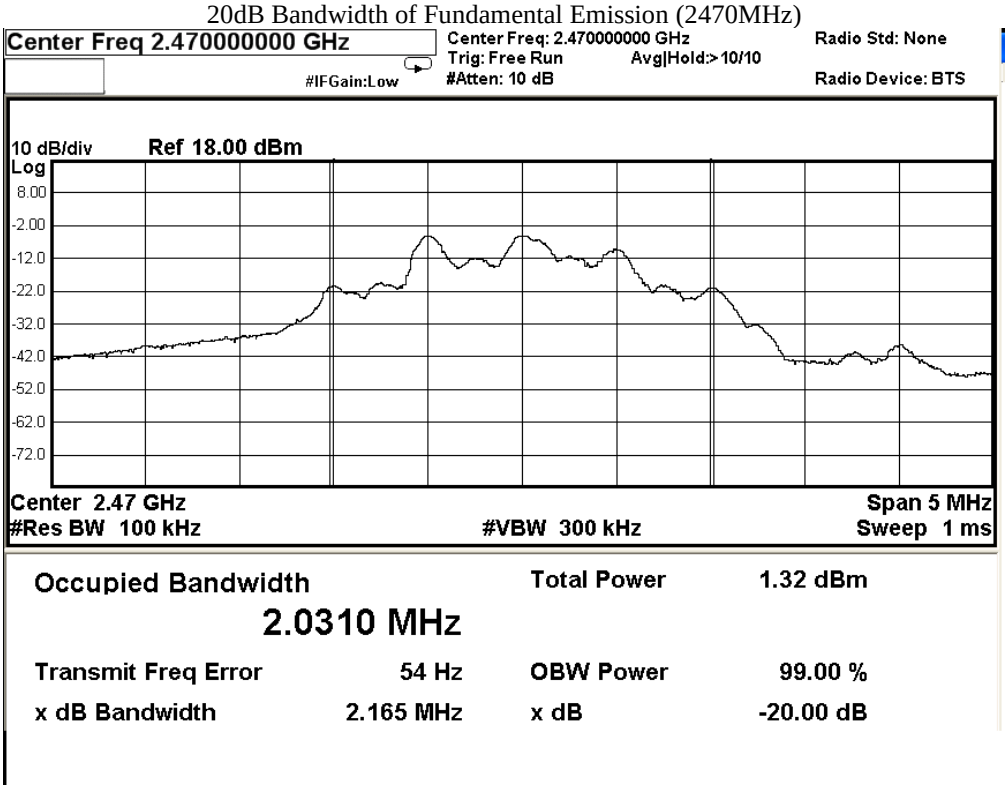


This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Limits for 20dB Bandwidth of Fundamental Emission (High Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2470.0	2.165

20dB Bandwidth of Fundamental Emission (2470MHz)



This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3	--	2019/04/16	2024/04/16
EM356	ANTENNA POSITIONING TOWER	ETS-LINDGREN	2171B	00150346	N/A	N/A
EM293	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	N9020A	MY50510152	2022/11/25	2024/11/25
EM299	BROADBAND HORN ANTENNA	ETS-LINDGREN	3115	00114120	2022/11/24	2024/11/24
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2022/11/25	2024/11/25
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2022/11/25	2024/11/25
EM353	LOOP ANTENNA	ETS_LINDGREN	6502	00206533	2022/06/10	2024/09/10
EM355	Biconilog Antenna	ETS-Lindgren	3143B	00094856	2022/06/17	2024/09/17
EM200	DUAL CHANNEL POWER METER	R & S	NRVD	100592	2022/10/11	2025/10/11
EM012	PRE-AMPLIFIER	HP	HP8448B	3008A00262	2022/11/08	2025/11/08
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A

Remarks:-

N/A Not Applicable or Not Available

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Appendix B
Photographs of EUT

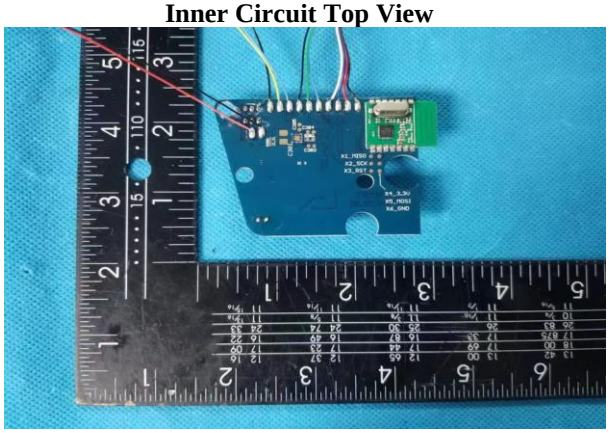
Front View of the product

Rear View of the product

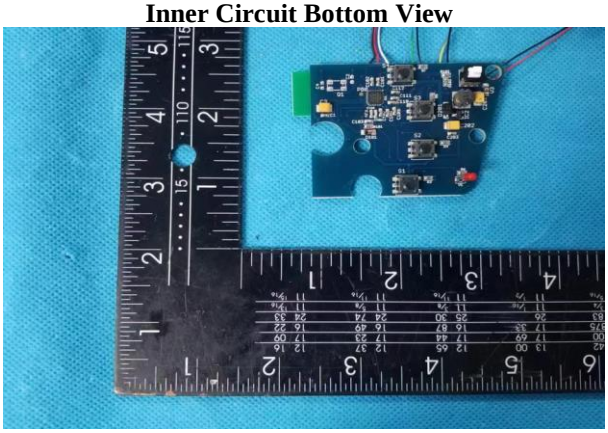
Inner Circuit Top View

Inner Circuit Bottom View

Inner Circuit Top View



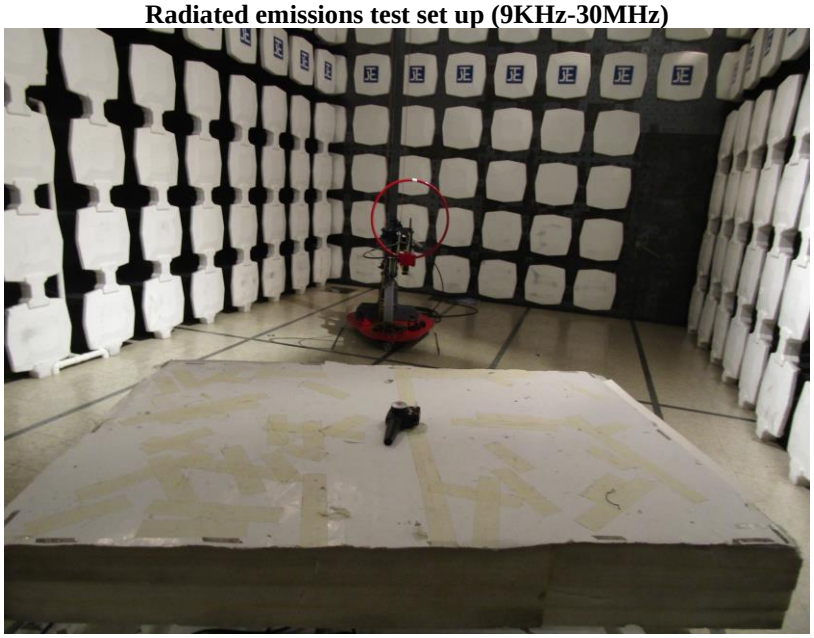
Inner Circuit Bottom View



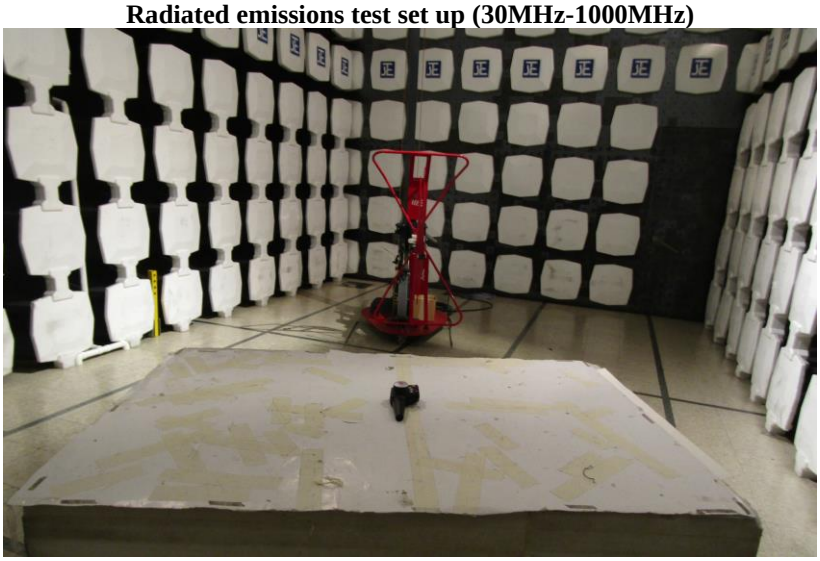
This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Photographs of EUT

Radiated emissions test set up (9KHz-30MHz)



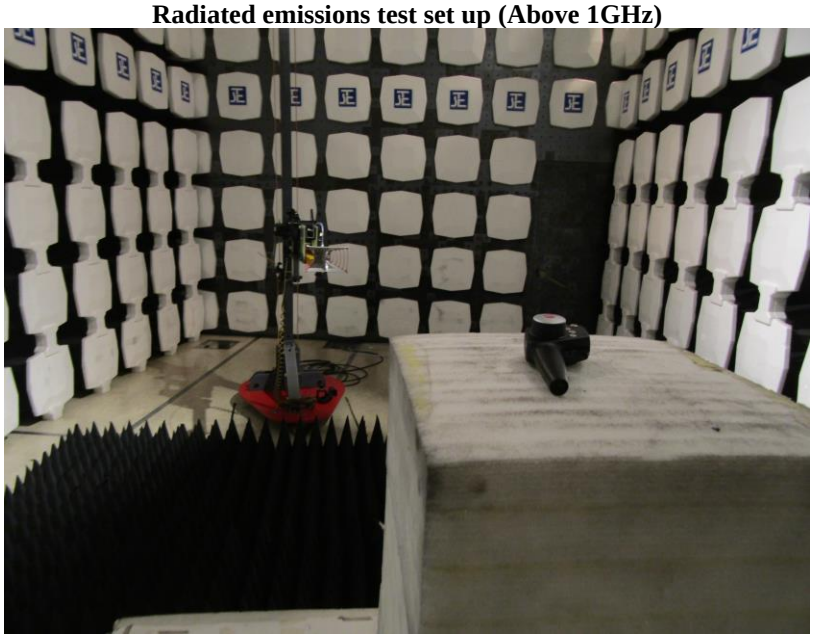
Radiated emissions test set up (30MHz-1000MHz)



This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Photographs of EUT

Radiated emissions test set up (Above 1GHz)



******* End of Test Report *******

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Limited.
For Conditions of Issuance of this test report, please refer to “Conditions of Issuance of Test Reports” section or Website.

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by The Hong Kong Standards & Testing Centre Limited (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The Company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by the Company as a result of this application for testing service (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to his customer, supplier or other persons directly concerned. Subject to clause 3, the Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3. The Company shall be at liberty to disclose the testing-related documents and/or files anytime to any third-party accreditation and/or recognition bodies for audit or other related purposes. No liabilities whatsoever shall attach to the Company's act of disclosure.

4. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

5. The results in Report apply only to the sample as received and do not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.

6. When a statement of conformity to a specification or standard is provided, the ILAC-G8 Guidance document (and/or IEC Guide 115 in the electrotechnical sector) will be adopted as a decision rule for the determination of conformity unless it is inherent in the requested specification or standard, or otherwise specified in the Report.

7. In the event of the improper use the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

8. Sample submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

9. The Company will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

10. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

11. Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of three years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

12. Issuance records of the Report are available on the internet at www.stc.group. Further enquiry of validity or verification of the Reports should be addressed to the Company.