

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/2

Report No.: SZCR251200555702

Page: 1 of 23

TEST REPORT

Application No.: SZCR2512005557AT
Applicant: INGENICO
Address of Applicant: 9 Avenue de la gare - Rovaltain TGV BP25156 26958 Valence Cedex 9, France
Manufacturer: INGENICO
Address of Manufacturer: 9 Avenue de la gare - Rovaltain TGV BP25156 26958 Valence Cedex 9, France
Equipment Under Test (EUT):
EUT Name: Mobile Payment Terminal
Model No.: MOBY EM5
Trade Mark: ingenico
FCC ID: XKB-MOBYEM5
Standard(s) : 47 CFR Part 15, Subpart C 15.225
Date of Receipt: 2025-12-16
Date of Test: 2026-01-12 to 2026-01-15
Date of Issue: 2026-01-26

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Kenx Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2026-01-26		Original

Authorized for issue by:				
		Calvin Weng		
		Calvin Weng/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



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2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Emission Mask	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2020) Section 6.4	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)	Pass
Radiated Emissions (9kHz-30MHz)		ANSI C63.10 (2020) Section 6.4	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.10 (2020) Section 6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass

Remark:

Model No.: MOBY EM5

This test report (Ref. No.: SZCR251200555702) is only valid with the original test report (Ref. No.: SZCR250300082203).

Review this report and original report, this report just deleted the information of factory.

According to the declaration from the applicant, the models in this report and models in original report were identical, with the difference difference on

- Optimized the resistor and capacitor design for the contactless module.
- Improved LED circuit.
- Enhanced EMC and ESD design.
- Added test points for battery.

Which will not affect other RF test result except NFC. Therefore in this report Emission Mask, Radiated Emissions (9kHz-30MHz) and Radiated Emissions (30MHz-1GHz) were fully retested on model and shown the data in this report, other tests please refer to original report SZCR250300082203.



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.85V by li-ion battery(430mAh) Battery M/N:M383329 Battery Manufacturer: Xinyu Ganfeng Electronics Co.,Ltd. Max recharged input: DC5V/2A
Cable(s):	USB cable:1m unshielded cable without ferrite core
Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type:	Loop antenna

Remark:The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	L480	REF. No.SEA18C01F
Mouse	Lenovo	M-U0025-O	REF. No.:SEA24A01
Adapter	Apple Inc.	A1357	-

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Emission Mask	$\pm 4.5\text{dB}$ (Below 1GHz)
Radiated Emissions (9kHz-30MHz)	$\pm 3.6\text{dB}$
Radiated Emissions (30MHz-1GHz)	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

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4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Emission Mask					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2025-03-21	2026-03-20
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2025-07-25	2026-07-24
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2025-08-29	2027-08-28
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2025-03-04	2026-03-03
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2025-11-17	2027-11-16
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2025-07-05	2026-07-04

Radiated Emissions (9kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2025-03-21	2026-03-20
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2025-07-25	2026-07-24
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2025-08-29	2027-08-28
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2025-03-04	2026-03-03
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2025-11-17	2027-11-16
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2025-07-05	2026-07-04

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2025-07-25	2026-07-24
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2025-08-29	2027-08-28
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2025-03-04	2026-03-03
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2025-07-05	2026-07-04



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General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2025-07-23	2026-07-22
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2025-07-23	2026-07-22
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2025-03-03	2026-03-02



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6 Radio Spectrum Matter Test Results

6.1 Emission Mask

Test Requirement 47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)
 Test Method: ANSI C63.10 (2020) Section 6.4
 Measurement Distance: 3m
 Test Engineer: Ted Wu

Limit:

The field strength of any emission shall not exceed the following limits:

- (a) 15.848 millivolts/m (84 dB μ V/m) at 30 m, within the band 13.553-13.567 MHz.
- (b) 334 microvolts/m (50.5 dB μ V/m) at 30 m, within the bands 13.410-13.553 MHz and 13.567-13.710 MHz.
- (c) 106 microvolts/m (40.5 dB μ V/m) at 30 m, within the bands 13.110-13.410 MHz and 13.710-14.010 MHz.
- (d) 30 microvolts/m (29.5 dB μ V/m) at 30 m, outside the band 13.110-14.010 MHz.

Below 30MHz

The limit at 3m test distance is below:

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

where

FS_{limit} is the calculation of field strength at the limit distance, expressed in dB μ V/m
 FS_{max} is the measured field strength, expressed in dB μ V/m
 d_{measure} is the distance of the measurement point from the EUT
 d_{limit} is the reference distance or the distance of the $\lambda/2\pi$ point

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 124dB μ V/m at 3 meters.

6.1.1 E.U.T. Operation

Operating Environment:

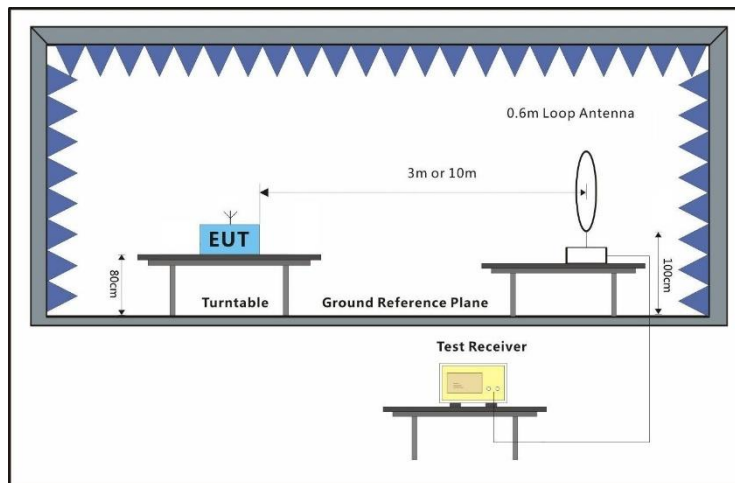
Temperature: 23.6 °C Humidity: 46.5 % RH Atmospheric Pressure: 1020 mbar



6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode with modulation

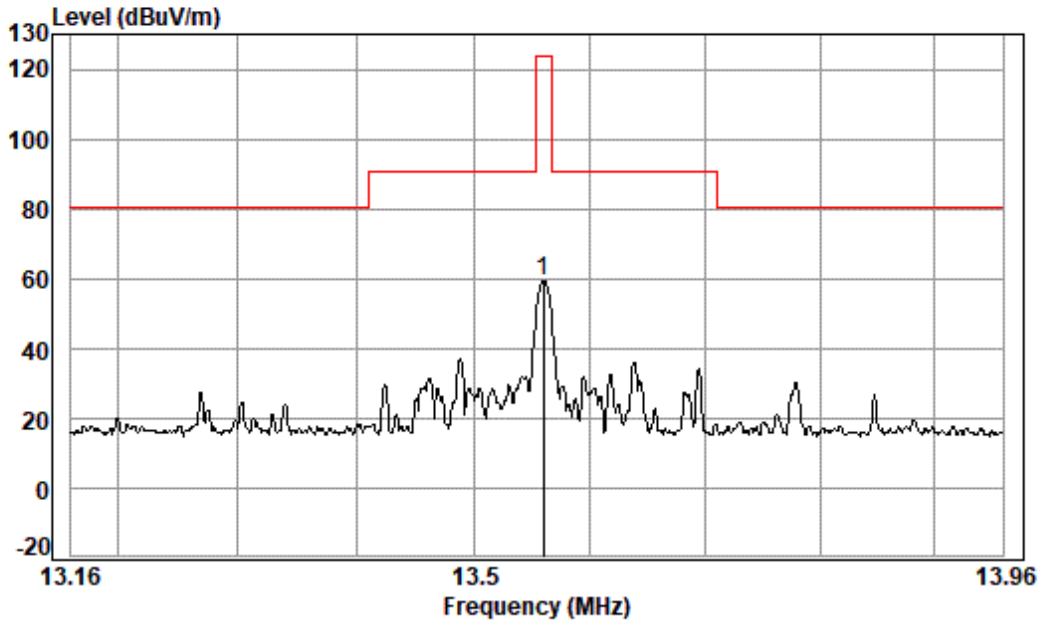
6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.





Condition: 3m

Job No. : 05557AT

Test Mode: 01

: coaxial

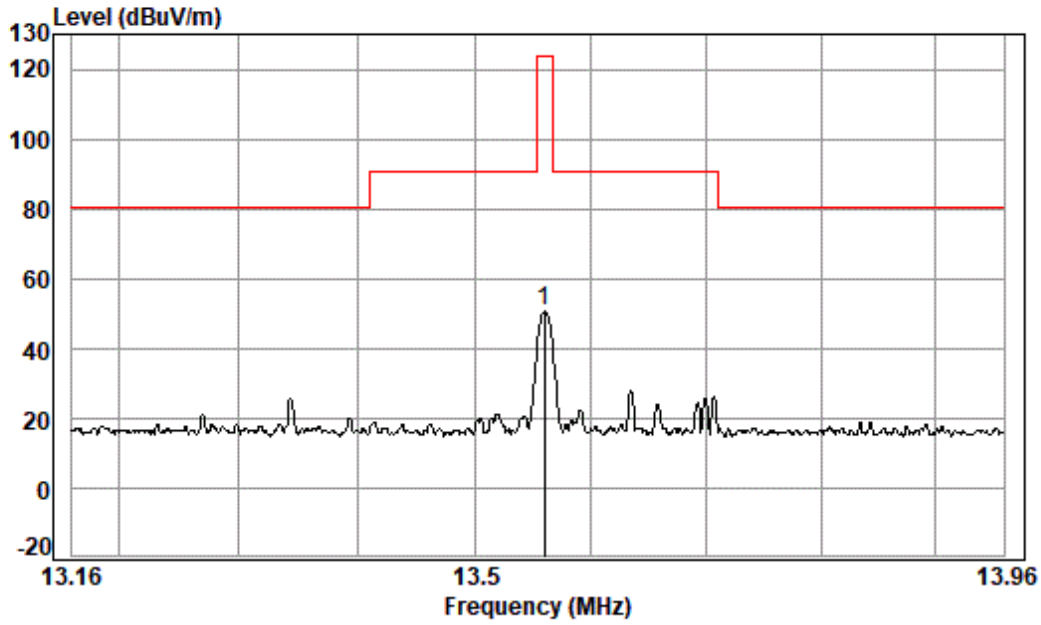
	Read	Ant	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 pp 13.560	82.16	8.65	1.00	32.46	59.35	124.00	-64.65	QP

Frequency (MHz)	Level (dBuV/m) @3m	Convert Factor (dB)	Level (dBuV/m) @ 30m	Limit (dBuV/m) @30m	Over limit (dB)
13.560	59.35	40.00	19.35	84.00	-64.65



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Condition: 3m

Job No. : 05557AT

Test Mode: 01

: coplanar

	Read	Ant	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 pp 13.560	73.36	8.65	1.00	32.46	50.55	124.00	-73.45	QP

Frequency (MHz)	Level (dBuV/m) @3m	Convert Factor (dB)	Level (dBuV/m) @ 30m	Limit (dBuV/m) @30m	Over limit (dB)
13.560	50.55	40.00	10.55	84.00	-73.45



6.2 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209
 Test Method: ANSI C63.10 (2020) Section 6.4
 Measurement Distance: 3m
 Test Engineer: Ted Wu

Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30

Note:

At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Remark:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

6.2.1 E.U.T. Operation

Operating Environment:

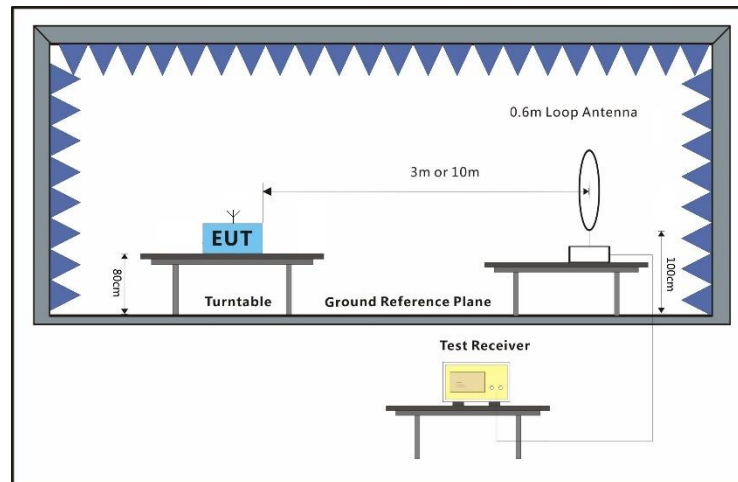
Temperature: 23.6 °C Humidity: 46.5 % RH Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode with modulation



6.2.3 Test Setup Diagram

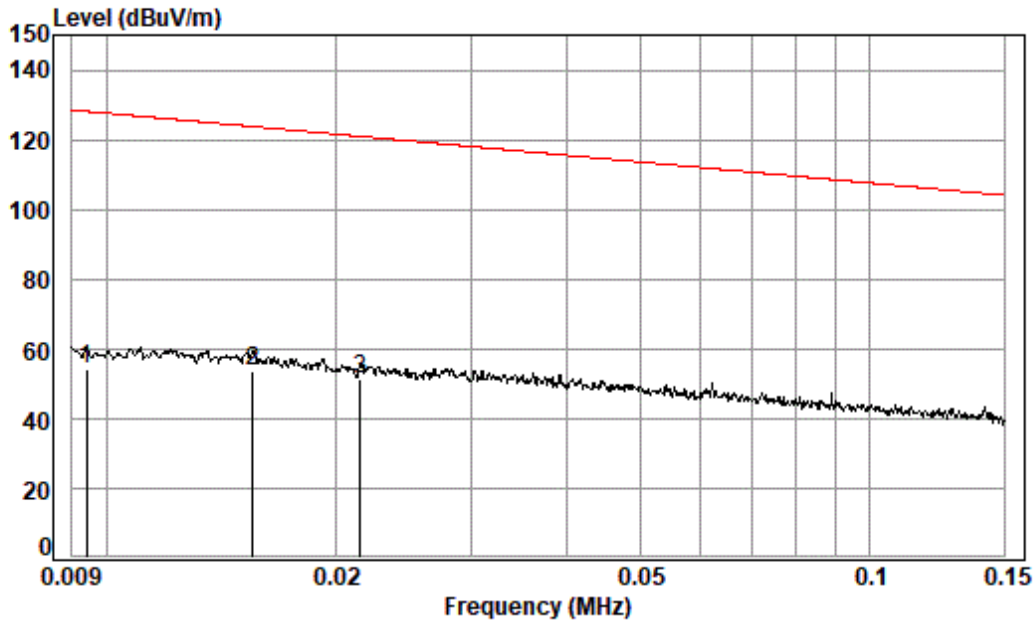


6.2.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



Test Mode: 01



Condition: 3m

Job No. : 05557AT

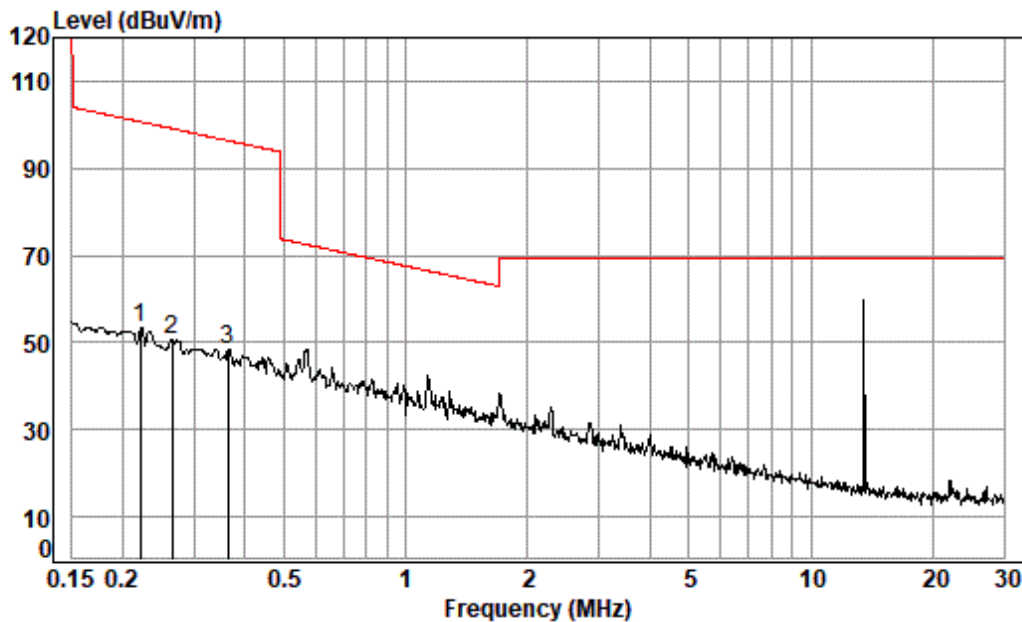
Test Mode: 01

: coaxial

		Read	Ant	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.009	66.51	18.73	0.10	31.13	54.21	128.11	-73.90	Average
2	0.016	68.97	15.74	0.11	31.48	53.34	123.76	-70.42	Average
3 pp	0.021	69.37	13.52	0.11	31.71	51.29	120.95	-69.66	Average



Test Mode: 01



Condition: 3m

Job No. : 05557AT

Test Mode: 01

: coaxial

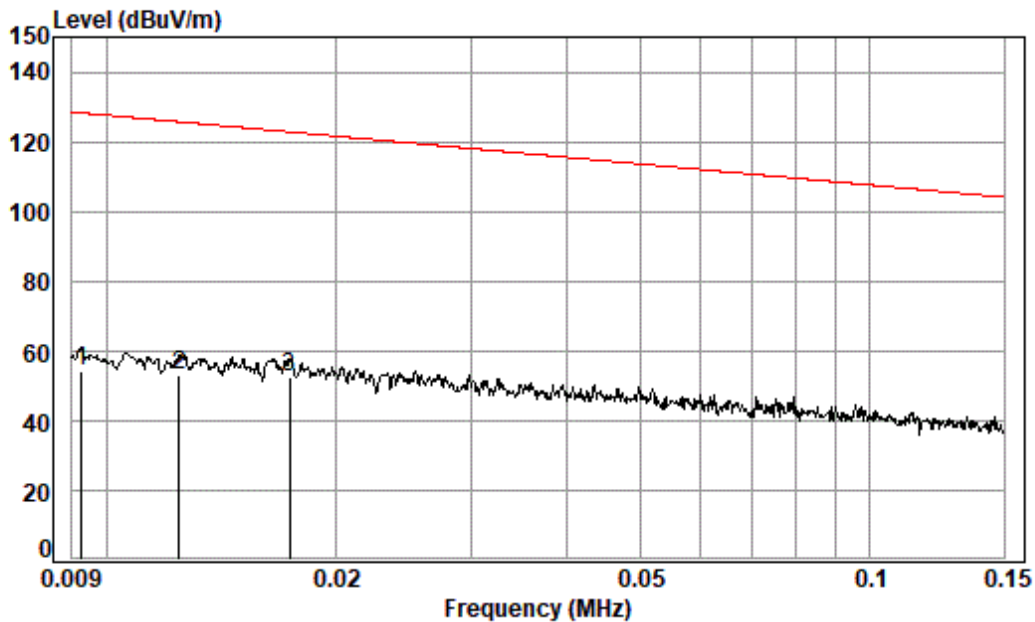
	Read	Ant	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 pp	0.221	75.19	10.36	0.18	32.40	53.33	100.72	-47.39
2	0.266	72.37	10.34	0.21	32.40	50.52	99.11	-48.59
3	0.363	70.42	10.32	0.24	32.44	48.54	96.40	-47.86

Frequency (MHz)	Level @ 3m (dBuV/m)	Factor (dB)	Level @ 300m (dBuV/m)	Level @ 30m (dBuV/m)	Limit @ 300m (dBuV/m)	Limit @ 30m (dBuV/m)	Margin (dB)
0.009	54.21	80.00	-25.79	-	48.52	-	-74.31
0.016	53.34	80.00	-26.66	-	43.52	-	-70.18
0.021	51.29	80.00	-28.71	-	41.16	-	-69.87
0.221	53.33	80.00	-26.67	-	20.72	-	-47.39
0.266	50.52	80.00	-29.48	-	19.11	-	-48.59
0.363	48.54	80.00	-31.46	-	16.41	-	-47.87

Remark: correction factor from dBuV/m to dBuA/m is -51.5dB.



Test Mode: 01



Condition: 3m

Job No. : 05557AT

Test Mode: 01

: coplanar

		Read	Ant	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.009	66.30	18.87	0.10	31.12	54.15	128.26	-74.11	Average
2	0.012	67.15	17.12	0.10	31.33	53.04	125.69	-72.65	Average
3 pp	0.017	68.76	14.91	0.11	31.56	52.22	122.78	-70.56	Average



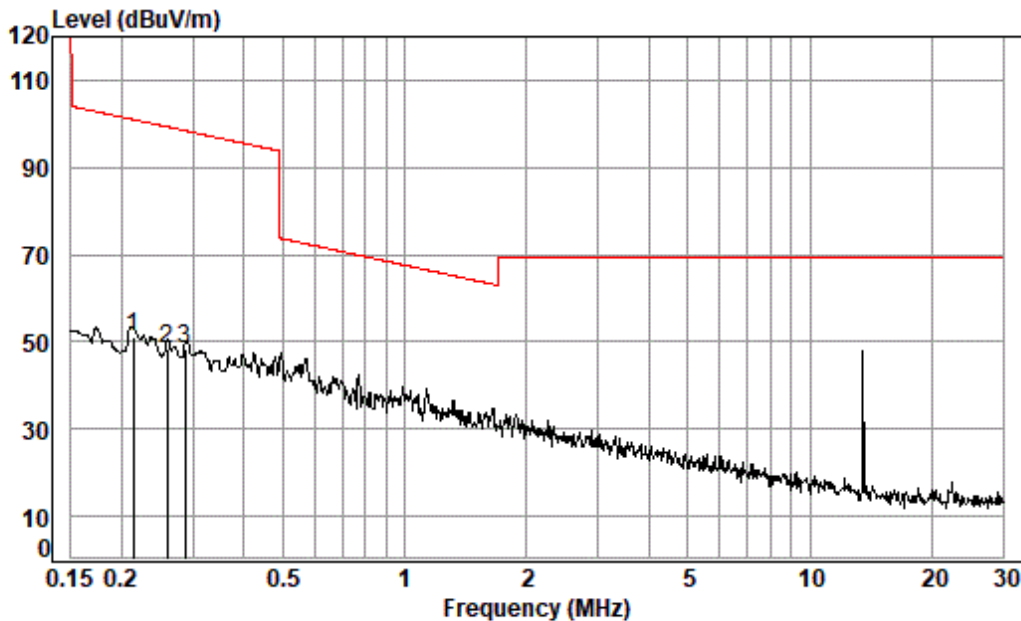
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No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Mode: 01



Condition: 3m

Job No. : 05557AT

Test Mode: 01

: coplanar

		Read	Ant	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1 pp	0.214	73.11	10.36	0.18	32.40	51.25	100.99	-49.74	Average
2	0.259	70.30	10.35	0.20	32.40	48.45	99.34	-50.89	Average
3	0.288	70.02	10.33	0.22	32.40	48.17	98.42	-50.25	Average

Frequency (MHz)	Level @ 3m (dBuV/m)	Factor (dB)	Level @ 300m (dBuV/m)	Level @ 30m (dBuV/m)	Limit @ 300m (dBuV/m)	Limit @ 30m (dBuV/m)	Margin (dB)
0.009	54.15	80.00	-25.85	-	48.52	-	-74.37
0.012	53.04	80.00	-26.96	-	46.02	-	-72.98
0.017	52.22	80.00	-27.78	-	43.00	-	-70.78
0.214	51.25	80.00	-28.75	-	21.00	-	-49.75
0.259	48.45	80.00	-31.55	-	19.34	-	-50.89
0.288	48.17	80.00	-31.83	-	18.42	-	-50.25

Remark: correction factor from dBuV/m to dBuA/m is -51.5dB.



6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209
 Test Method: ANSI C63.10 (2020) Section 6.5
 Measurement Distance: 3m
 Test Engineer: Mason Wu

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.3.1 E.U.T. Operation

Operating Environment:

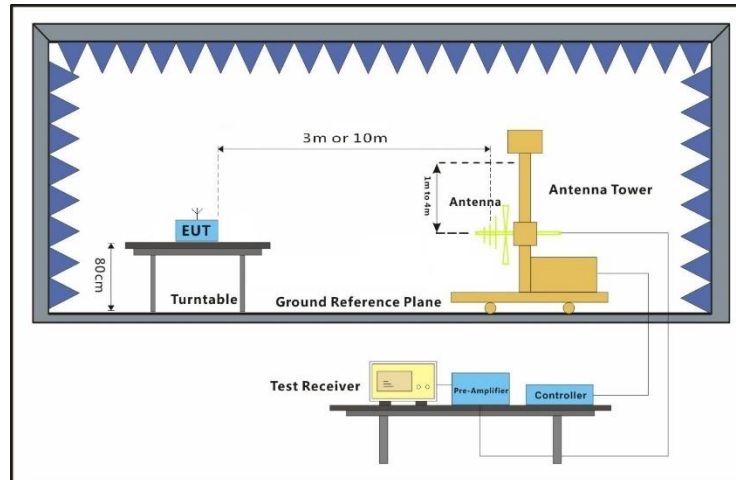
Temperature: 23.5 °C Humidity: 46.8 % RH Atmospheric Pressure: 1020 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode with modulation



6.3.3 Test Setup Diagram

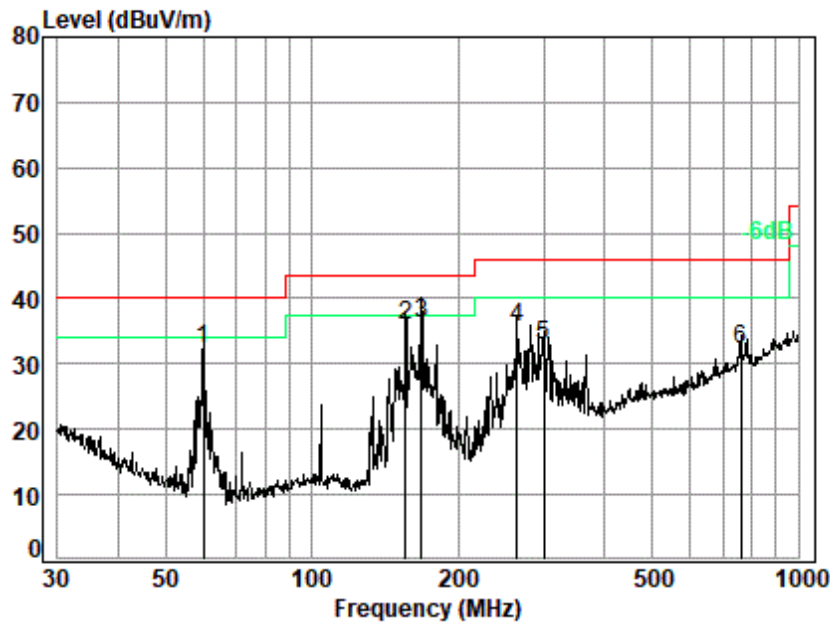


6.3.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters 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 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



Test Mode: 01; Polarity: Horizontal

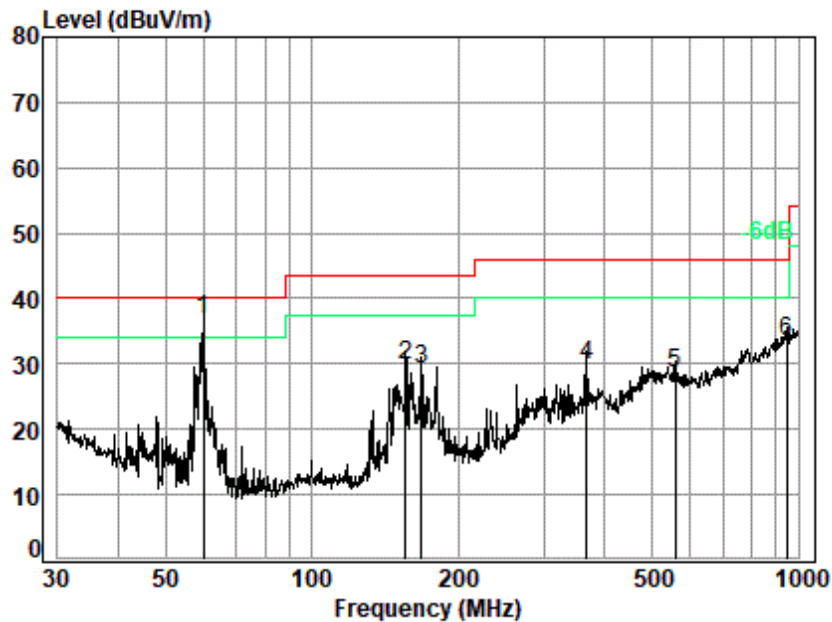


Site : chamber
Condition: 3m HORIZONTAL
Job No. : 05557AT/05558AT
Test Mode: 01

	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	59.859	11.35	0.92	27.62	47.54	32.19	40.00	-7.81 QP
2	155.910	13.96	1.53	27.73	47.99	35.75	43.50	-7.75 QP
3 q	167.824	13.89	1.58	27.75	48.37	36.09	43.50	-7.41 QP
4	263.819	17.07	1.98	27.60	44.05	35.50	46.00	-10.50 QP
5	299.316	17.69	2.11	27.50	40.62	32.92	46.00	-13.08 QP
6	763.376	27.07	3.59	27.68	29.32	32.30	46.00	-13.70 QP



Test Mode: 01; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : 05557AT/05558AT
Test Mode: 01

		Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	q	59.859	11.35	0.92	27.62	52.22	36.87	40.00	-3.13 QP
2		155.910	13.96	1.53	27.73	42.13	29.89	43.50	-13.61 QP
3		167.824	13.89	1.58	27.75	41.41	29.13	43.50	-14.37 QP
4		366.823	20.15	2.38	27.67	34.99	29.85	46.00	-16.15 QP
5		558.730	23.17	2.99	28.04	30.35	28.47	46.00	-17.53 QP
6		945.440	29.06	4.07	26.70	27.11	33.54	46.00	-12.46 QP



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No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

7 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2512005557AT

8 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2512005557AT

- End of the Report -



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中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com