

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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 1 of 34

TEST REPORT

Application No.: SZCR2410004032AT
Applicant: SZ DJI TECHNOLOGY CO., LTD.
Address of Applicant: Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, 518055 Shenzhen, China
Manufacturer: SZ DJI TECHNOLOGY CO., LTD.
Address of Manufacturer: Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, 518055 Shenzhen, China

Equipment Under Test (EUT):

EUT Name: Millimeter Wave Radar
Model No.: RD240804FB
Trade Mark: DJI
FCC ID: SS3-RDBF100
Standard(s) : 47 CFR Part 15, Subpart C 15.249
Date of Receipt: 2024-12-27
Date of Test: 2025-03-07 to 2025-03-28
Date of Issue: 2025-04-14

Test Result:	Pass*
---------------------	--------------

* In the configuration tested, the EUT complied with the standards specified above.



Keny Xu
EMC Laboratory Manager



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

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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.ssgsgroup.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

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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 2 of 34

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-04-14		Original

Authorized for issue by:				
		Darren Yuan		
		Darren Yuan/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing & Calibration Laboratory

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

2 Test Summary

Radio Spectrum Technical Requirement			
Item	FCC Requirement	Method	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.203	N/A	Pass

Radio Spectrum Matter Part			
Item	FCC Requirement	Method	Result
20dB bandwidth	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.9	Pass
Filed strength of fundamental	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.6	Pass
Radiation Spurious Emission	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.6	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.10	Pass



3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	4
4 General Information	5
4.1 Details of E.U.T.	5
4.2 Description of Support Units	5
4.3 Measurement Uncertainty	5
4.4 Test Location	6
4.5 Test Facility	6
4.6 Deviation from Standards	6
4.7 Abnormalities from Standard Conditions	6
5 Equipment List	7
6 Radio Spectrum Technical Requirement	9
6.1 Antenna Requirement	9
6.1.1 Test Requirement:	9
6.1.2 Conclusion	9
6.2 20dB Bandwidth	10
6.2.1 E.U.T. Operation	10
6.2.2 Test Mode Description	10
6.2.3 Test Setup Diagram	10
6.2.4 Measurement Procedure and Data	10
6.3 Filed Strength of Fundamental and Radiation Spurious Emission	13
6.3.1 E.U.T. Operation	14
6.3.2 Test Mode Description	14
6.3.3 Test Setup Diagram	15
6.3.4 Measurement Procedure and Data	16
6.4 Radiated Emissions which fall in the restricted bands	29
6.4.1 E.U.T. Operation	29
6.4.2 Test Mode Description	29
6.4.3 Test Setup Diagram	30
6.4.4 Measurement Procedure and Data	31
7 Test Setup Photo	34
8 EUT Constructional Details (EUT Photos)	34



4 General Information

4.1 Details of E.U.T.

Power supply:	12V DC
Operation Frequency:	24.05-24.25GHz
Modulation:	FMCW
Antenna Type:	Linear
Antenna Gain:	13dBi

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.
DC power supply	Chroma	62012P-80-60	REF. No.SEA27C00
Test board	DJI	PP004731.03	N/A

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
20dB Bandwidth	$\pm 3\%$
Filed Strength of Fundamental	$\pm 6.0\text{dB}$ (Below 1GHz); $\pm 4.6\text{dB}$ (Above 1GHz)
Radiated Emissions which fall in the restricted bands	$\pm 6.0\text{dB}$ (Below 1GHz); $\pm 4.6\text{dB}$ (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m
Radiated Spurious Emissions Above 1GHz	$\pm 4.6\text{dB}$ (1-18GHz); $\pm 4.8\text{dB}$ (Above 18GHz)

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.

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



5 Equipment List

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
				2025-03-13	2026-03-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	SEM004-20	2024-03-30	2025-03-29
Horn Antenna(800MHz-18GHz)	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier (0.5GHz-26.5GHz)	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Broad-Band Horn Antenna(15GHz-40GHz)	SCHWARZBECK	BBHA 9170	SEM003-15	2024-08-10	2025-08-09
Programmable Temperature Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18
				2025-03-18	2026-03-17
Pre-amplifier (26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2024-03-15	2025-03-14
				2025-03-14	2026-03-13
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05
Waveguide(40-60GHz)	REBES	SWG-19025-FB	06303-01	2025-02-18	2028-02-17
Waveguide(50-75GHz)	REBES	SWG-15025-FB	01525-09	2025-02-18	2028-02-17
Waveguide(75-110GHz)	REBES	SWG-10025-FB	01509-01	2025-02-18	2028-02-17
Waveguide Harmonic Mixer(40-60GHz)	REBES	STH-19SF-S1	06937-01	2025-02-18	2028-02-17
Waveguide Harmonic Mixer(50-75GHz)	KEYSIGHT	M1970V	MY51390966	2025-02-18	2028-02-17
Waveguide Harmonic Mixer(75-110GHz)	KEYSIGHT	M1970W	MY51430883	2025-02-18	2028-02-17



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 8 of 34

Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-14	2025-03-13
				2025-03-13	2026-03-12

General used equipment

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17
				2025-03-17	2026-03-16



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing & Calibration Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement:

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, 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.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 13dBi.

Antenna location: Refer to internal photos



6.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9

6.2.1 E.U.T. Operation

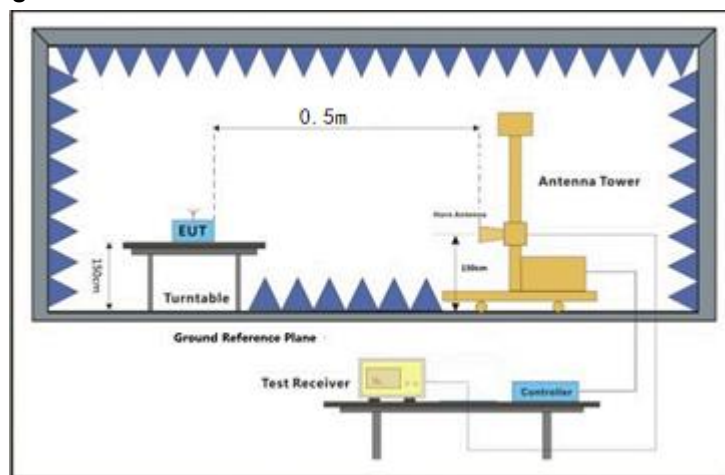
Operating Environment:

Temperature: 22 ± 5 °C Humidity: 49.7 % RH Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode _ Keep the EUT in continuously transmitting mode

6.2.3 Test Setup Diagram

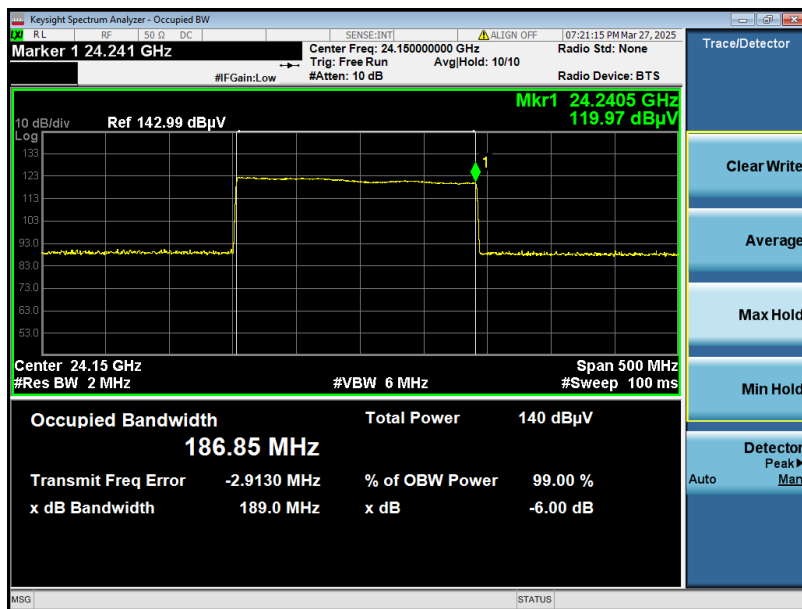
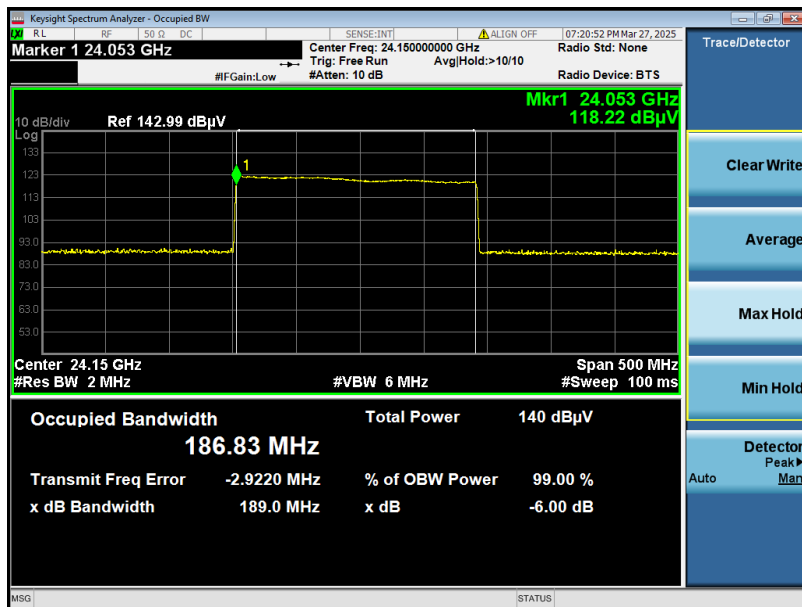


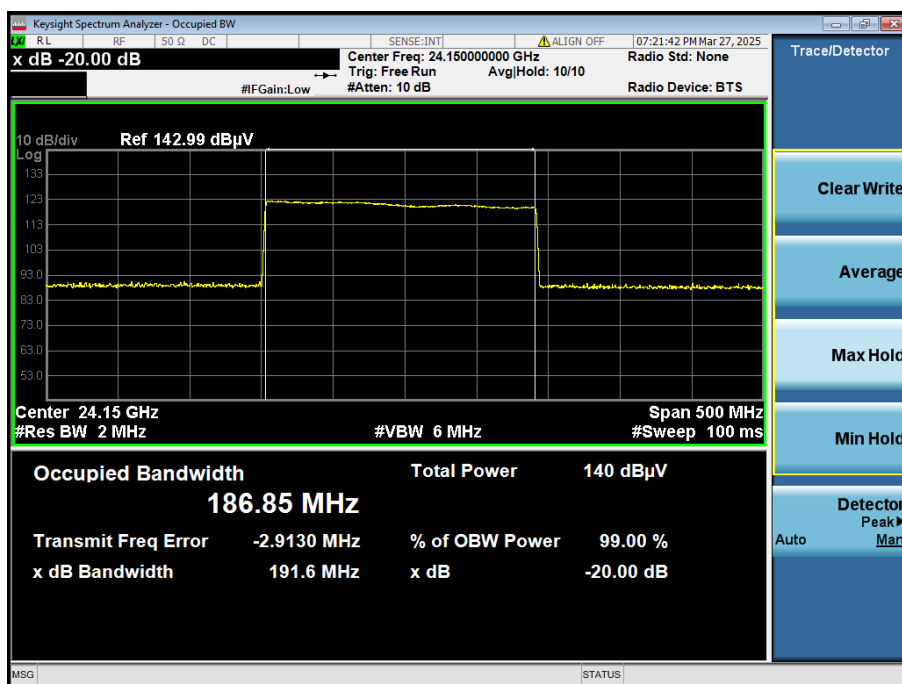
6.2.4 Measurement Procedure and Data

- 1) Place the EUT on the table and set it in the transmitting mode
- 2) SA set RBW=1%~5% OBW, VBW=3RBW and Detector=Peak
- 3) Measure and record the result of 20dB bandwidth



Test Data:





Low Frequency (GHz)	Limit (GHz)	High Frequency (GHz)	Limit (GHz)	20dB Bandwidth (MHz)	Result
24.053	≥ 24.00	24.2405	≤ 24.25	191.6	Pass



6.3 Filed Strength of Fundamental and Radiation Spurious Emission

Test Requirement 47 CFR Part 15, Subpart C 15.249(a)

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

- (1) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

* Field strength limits are specified at a distance of 3 meters.

Fundamental Limit Conversion			
Average (mV/m) at 3M	Average (dBuV/m) at 3M	Average (dBuV/m) at 0.5M	Peak (dBuV/m) at 0.5M
250	107.9588	123.52	143.52

*(Limit = 107.9588 + 20LOG(3/0.5) = 123.52 dBuV/m)

Harmonic Limit Conversion			
Average (uV/m) at 3M	Average (dBuV/m) at 3M	Average (dBuV/m) at 0.5M	Peak (dBuV/m) at 0.5M
2500	67.9588	83.52	103.52

*(Limit=67.9588+20LOG(3/0.5)=83.52 dBuV/m)

- (2) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits (follow the table), whichever is the lesser attenuation.

Below 30MHz

Frequency	Field Strength (μA/m)	Magnetic field strength (H-Field) (μA/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30



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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 14 of 34

Above 30MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (40dBuV/m)	100 (40dBuV/m)
88-216	150 (43.5dBuV/m)	150 (43.5dBuV/m)
216-960	200 (46dBuV/m)	200 (46dBuV/m)
Above 960	500 (54dBuV/m)	500 (54dBuV/m)

Frequency	Field Strength microvolts/m at specific distance	
	Peak	AVG
18-40GHz	83.54dBuV/m@1m	63.54dBuV/m@1m
Above 40GHz	103.52dBuV/m@0.5m	83.52dBuV/m@0.5m

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 . 5 °C Humidity: 49.7 % RH Atmospheric Pressure: 1020 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode _ Keep the EUT in continuously transmitting mode



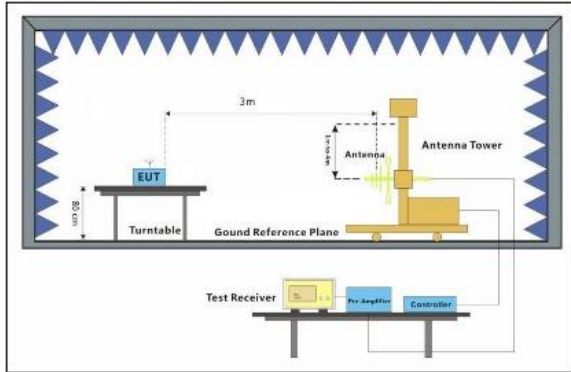
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing & Calibration Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

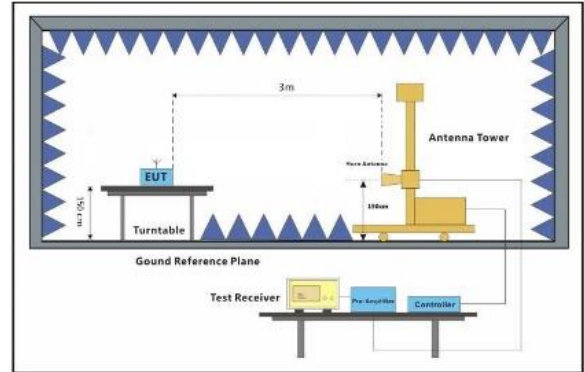
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

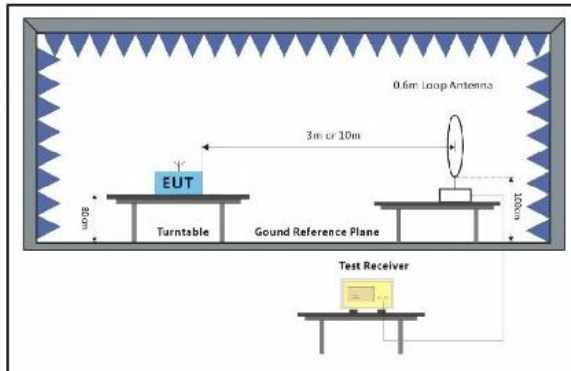
6.3.3 Test Setup Diagram



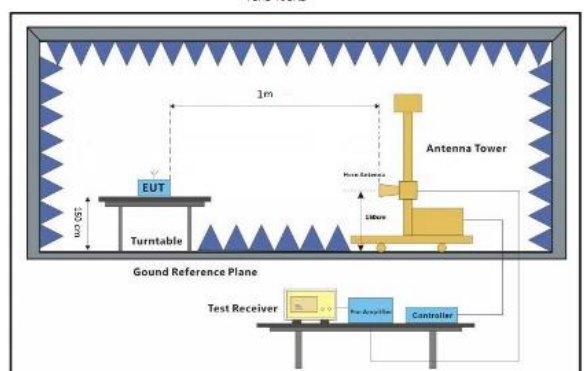
30MHz-1GHz



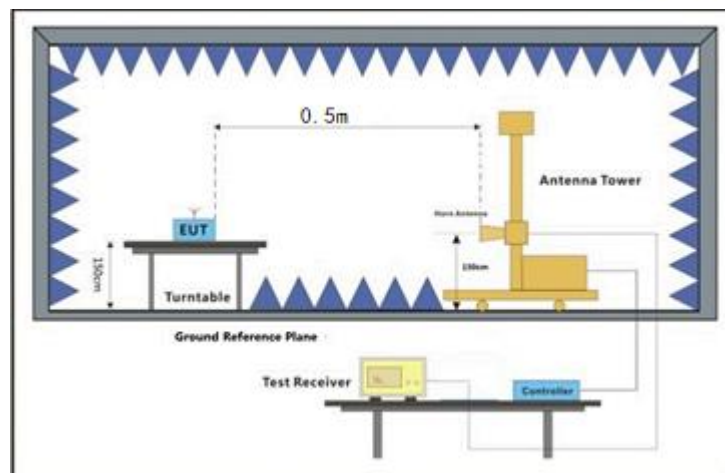
1GHz-18GHz



Below 30MHz



18GHz-40GHz



Above 40GHz



6.3.4 Measurement Procedure and Data

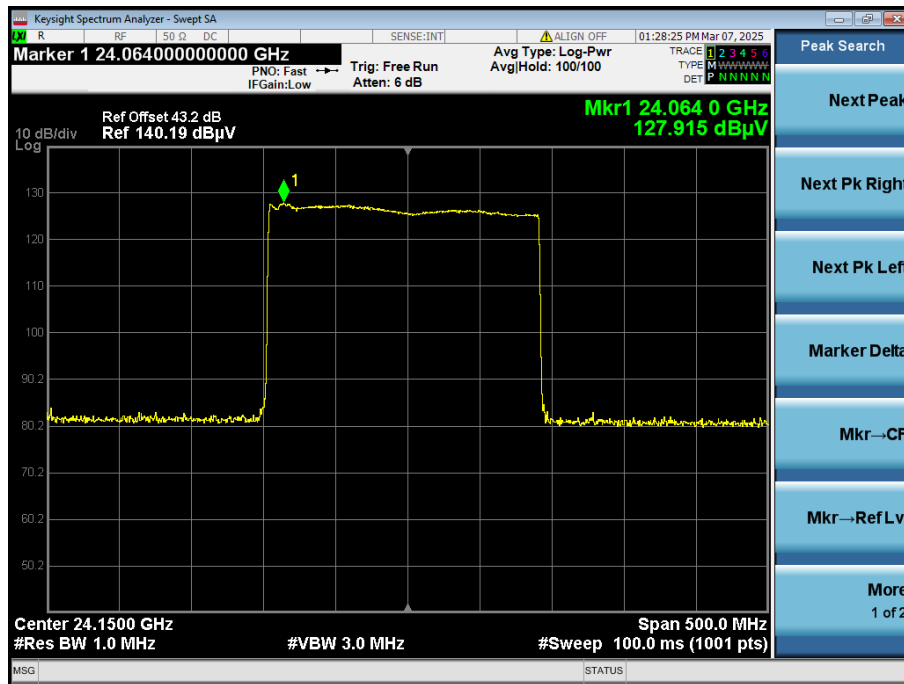
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For 1-18GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For 18-40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 1 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 0.5 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

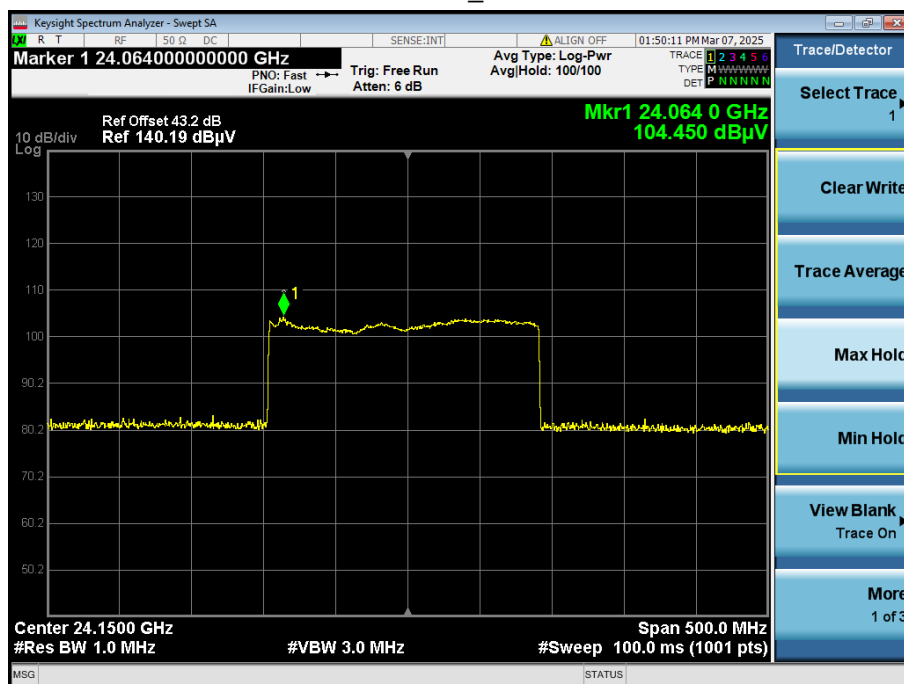
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Test Data for Filed Strength of Fundamental

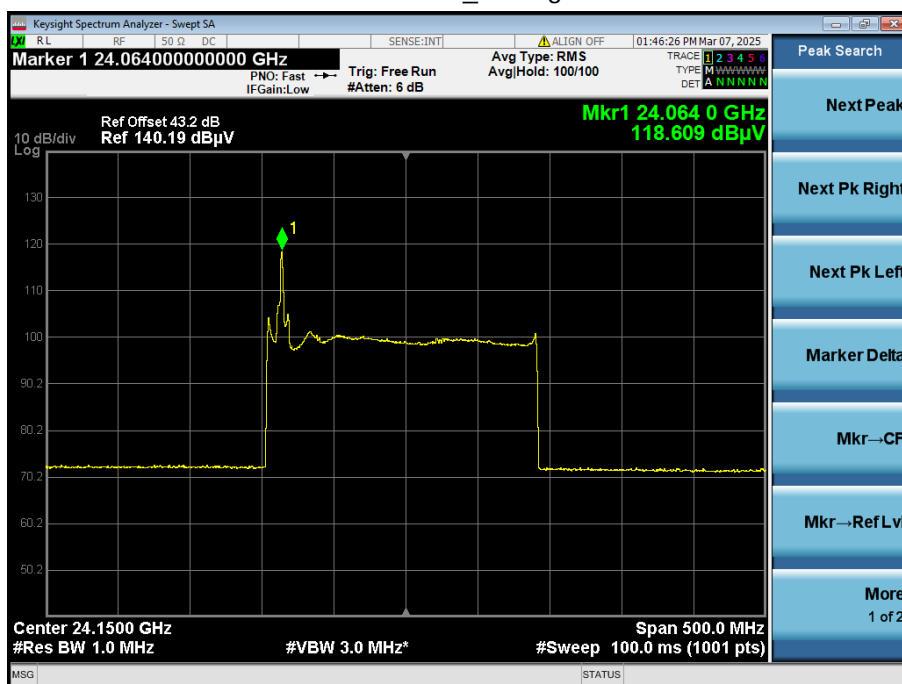
Horizontal_Peak



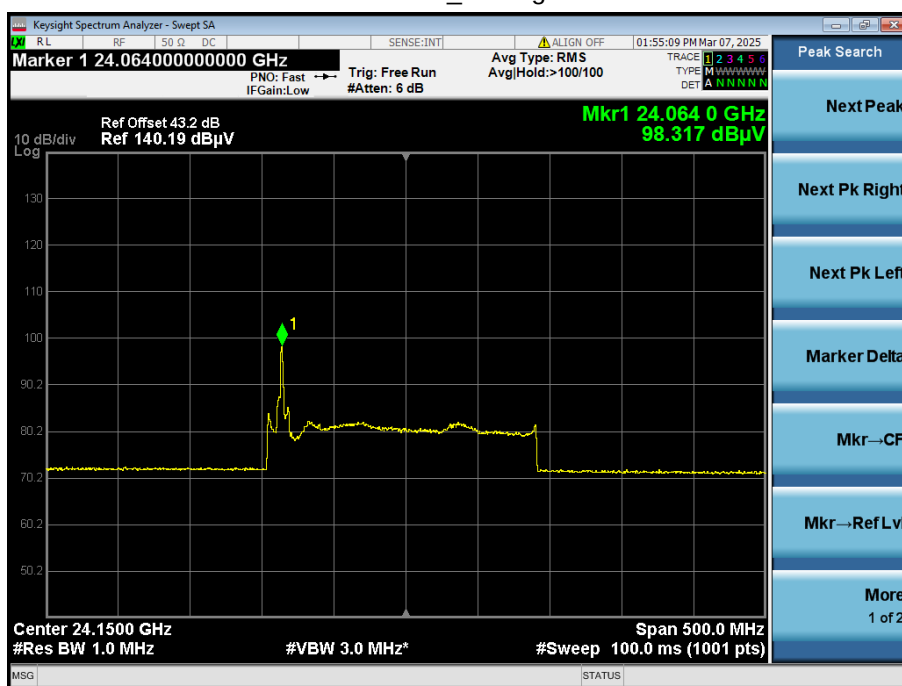
Vertical_Peak



Horizontal_Average



Vertical_Average



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

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

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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 19 of 34

Frequency (GHz)	Distance (m)	Polarity	Measured Filed strength dBuV/m	Desensitization Factor(dB)	Final Filed strength dBuV/m	Limit	Result	Remark
24.15	0.5	Horizontal	127.915	2.04	129.955	143.52	Pass	Peak
24.15	0.5	Horizontal	118.609	2.04	120.649	123.52	Pass	AVG
24.15	0.5	Vertical	104.450	2.04	106.490	143.52	Pass	Peak
24.15	0.5	Vertical	98.317	2.04	100.357	123.52	Pass	AVG

Note: Final Field strength [dBuV/m]=Mesured Field strength [dBuV/m]+ Desensitization Factor[dB]

The FMCW Desensitization factor

FMCW Witdh(MHz)	T _{chirp} (us)	RBW(MHz)	Desensitization Factor(lin)	Desensitization Factor(dB)
186.85	66	1	0.625	2.04

FMCW desensitization factor = -10*Log(α) = -10*Log(0.625) = 2.04dB

$$\alpha = \frac{1}{\sqrt{1 + \left(\frac{2 \ln(2)}{\pi} \right)^2 \left(\frac{BW_{\text{Chirp}}}{T_{\text{Chirp}} B^2} \right)^2}}$$

where

- α is the reduction in amplitude
- BW_{Chirp} is the FMCW Chirp Bandwidth
- T_{Chirp} is the FMCW Chirp Time
- B is the 3 dB IF Bandwidth = RBW



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing & Calibration Laboratory

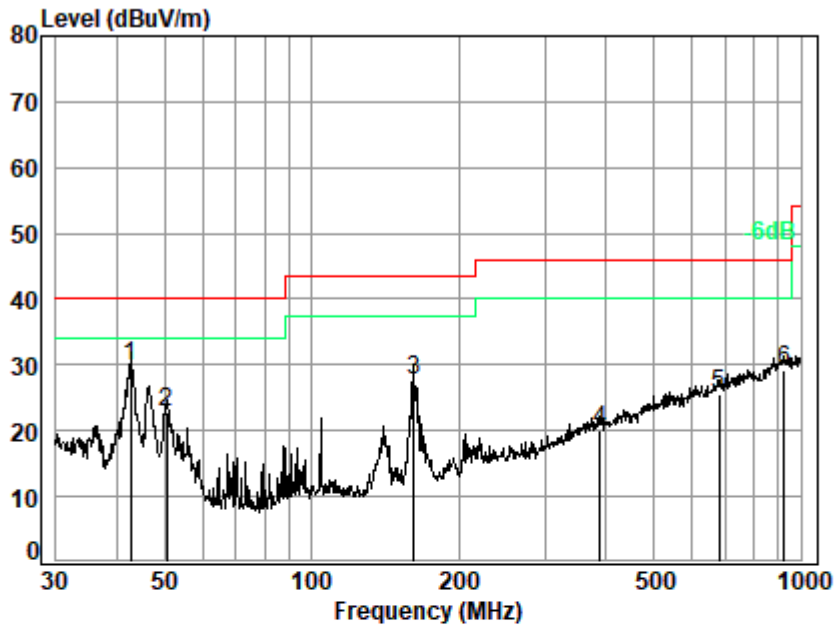
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

Radiated Spurious Emission

30MHz-1000MHz; Test Mode: 00; Polarity: Horizontal

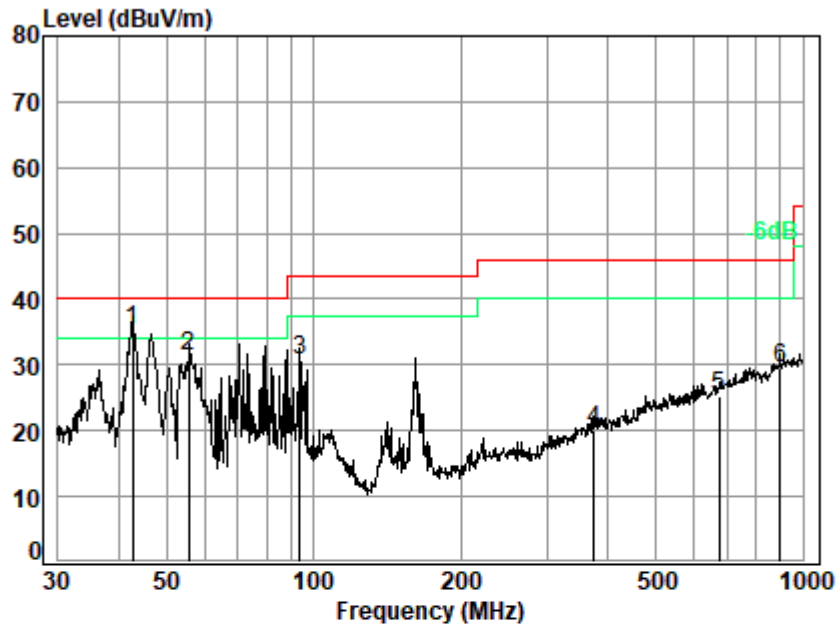


Site : chamber
Condition: 3m HORIZONTAL
Job No. : 04032AT/04035AT
Test Mode: 00

		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	42.600	15.13	0.80	27.76	41.70	29.87	40.00 -10.13 QP
2		50.409	12.69	0.86	27.73	36.97	22.79	40.00 -17.21 QP
3		161.474	13.48	1.59	27.33	39.97	27.71	43.50 -15.79 QP
4		387.992	20.82	2.54	27.11	23.88	20.13	46.00 -25.87 QP
5		679.960	25.86	3.48	27.77	24.00	25.57	46.00 -20.43 QP
6		925.756	28.18	4.19	26.58	23.42	29.21	46.00 -16.79 QP



30MHz-1000MHz; Test Mode: 00; Polarity: Vertical

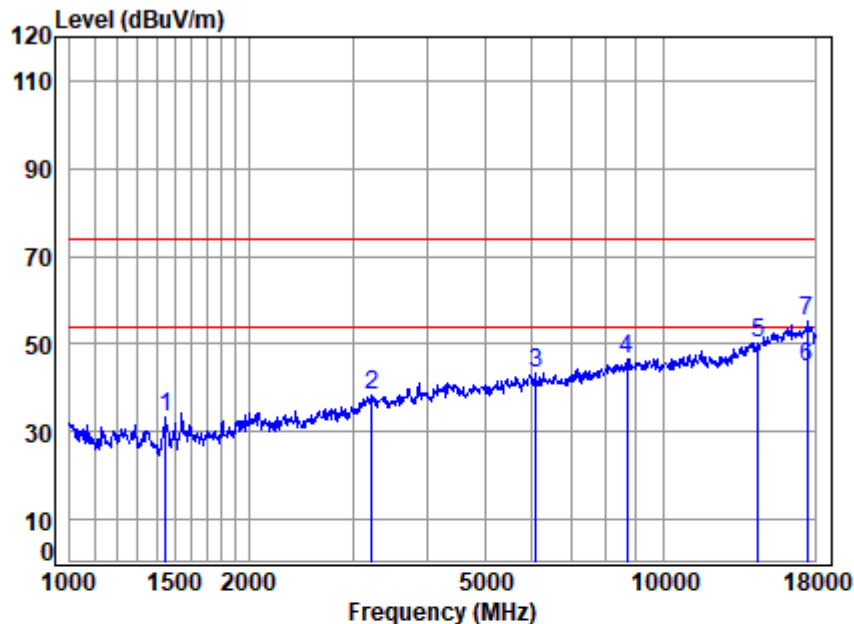


Site : chamber
Condition: 3m VERTICAL
Job No. : 04032AT/04035AT
Test Mode: 00

		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	42.600	15.13	0.80	27.76	47.25	35.42	40.00 -4.58 QP
2		55.609	11.89	0.91	27.72	46.22	31.30	40.00 -8.70 QP
3		93.768	12.03	1.18	27.61	45.01	30.61	43.50 -12.89 QP
4		374.623	20.68	2.49	27.05	23.98	20.10	46.00 -25.90 QP
5		675.208	25.71	3.47	27.79	23.90	25.29	46.00 -20.71 QP
6		896.997	27.93	4.11	26.79	24.41	29.66	46.00 -16.34 QP



1GHz-18GHz; Test Mode: 00; Polarity: Horizontal

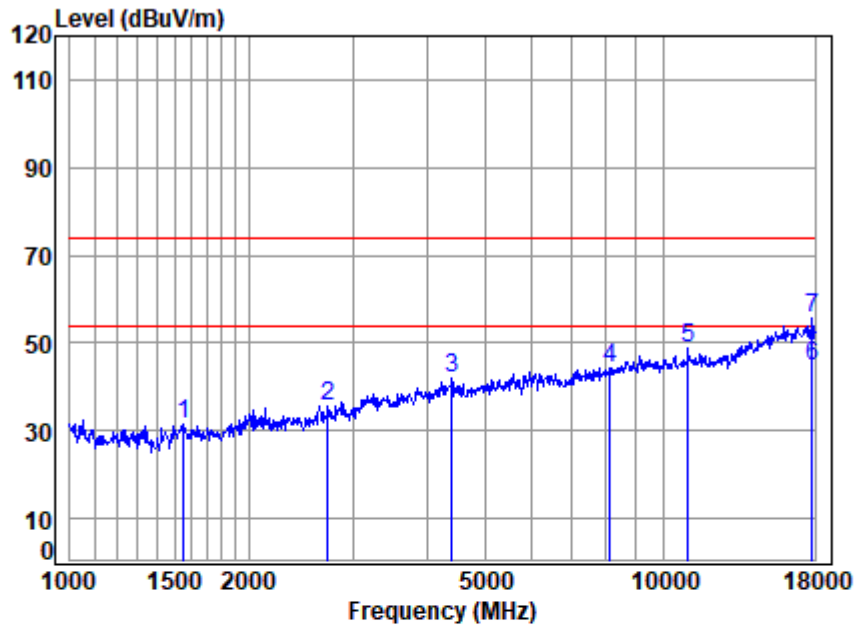


Site : chamber
Condition: 3m HORIZONTAL
Job No : 04032AT\04035AT
Mode : RSE TX

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1447.688	4.98	25.36	54.76	57.81	33.39	74.00	-40.61	Peak
2	3223.928	6.10	32.52	54.82	54.31	38.11	74.00	-35.89	Peak
3	6088.991	8.78	35.08	53.11	52.70	43.45	74.00	-30.55	Peak
4	8688.480	10.00	36.90	53.45	53.06	46.51	74.00	-27.49	Peak
5	14450.130	12.75	40.40	52.76	50.00	50.39	74.00	-23.61	Peak
6	q17487.180	14.64	43.40	52.65	39.22	44.61	54.00	-9.39	Average
7	p17487.180	14.64	43.40	52.65	49.89	55.28	74.00	-18.72	Peak



1GHz-18GHz; Test Mode: 00; Polarity: Vertical

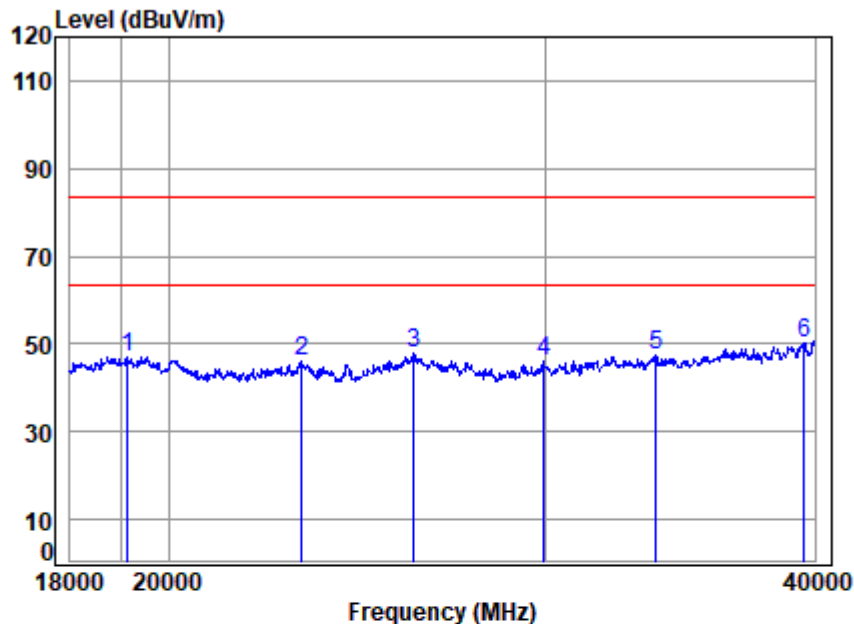


Site : chamber
Condition: 3m VERTICAL
Job No : 04032AT\04035AT
Mode : RSE TX

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1556.169	4.91	26.98	54.79	54.23	31.33	74.00	-42.67	Peak
2	2718.469	5.68	29.70	54.98	55.26	35.66	74.00	-38.34	Peak
3	4405.090	7.07	34.74	54.26	54.40	41.95	74.00	-32.05	Peak
4	8129.664	9.19	36.50	53.17	51.93	44.45	74.00	-29.55	Peak
5	11012.250	11.59	37.50	53.00	52.67	48.76	74.00	-25.24	Peak
6	q17844.590	14.75	43.90	52.48	38.56	44.73	54.00	-9.27	Average
7	p17844.590	14.75	43.90	52.48	49.40	55.57	74.00	-18.43	Peak



18GHz-40GHz; Test Mode: 00; Polarity: Horizontal

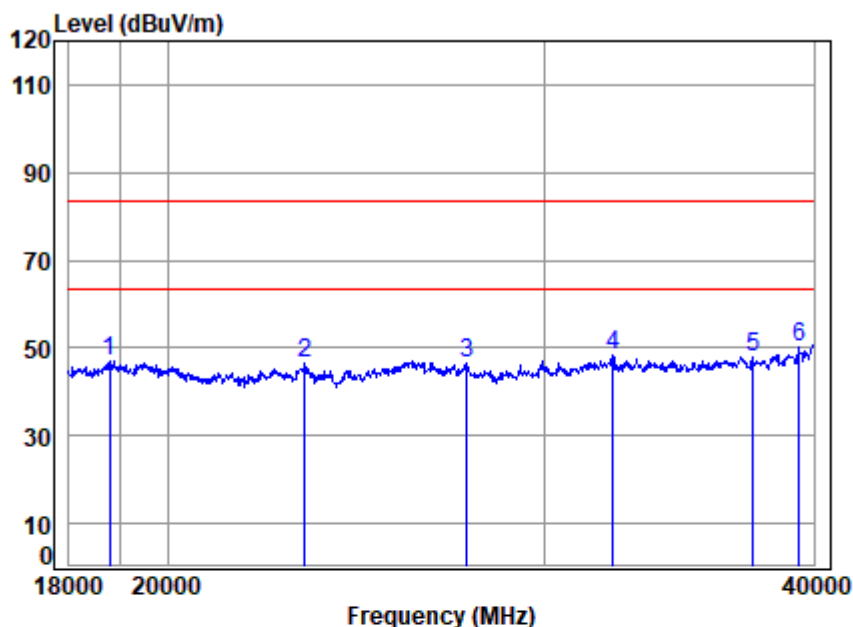


Site : chamber
Condition: 1m HORIZONTAL
Job No : 04032AT\04035AT
Mode : RSE TX
Note :

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	19126.190	6.08	36.90	54.88	59.11	47.21	83.54	-36.33 Peak
2	23055.610	6.59	36.87	52.56	54.96	45.86	83.54	-37.68 Peak
3	26030.850	7.48	39.06	52.11	53.46	47.89	83.54	-35.65 Peak
4	29910.890	7.35	39.68	53.04	52.02	46.01	83.54	-37.53 Peak
5	33689.970	7.84	40.32	52.05	51.37	47.48	83.54	-36.06 Peak
6	p39492.210	7.52	42.69	52.15	52.05	50.11	83.54	-33.43 Peak



18GHz-40GHz; Test Mode: 00; Polarity: Vertical

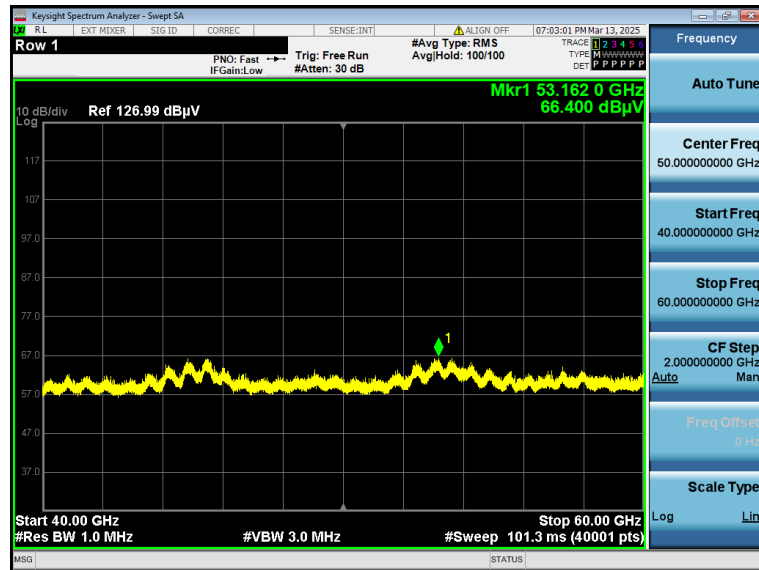


Site : chamber
Condition: 1m VERTICAL
Job No : 04032AT\04035AT
Mode : RSE TX
Note :

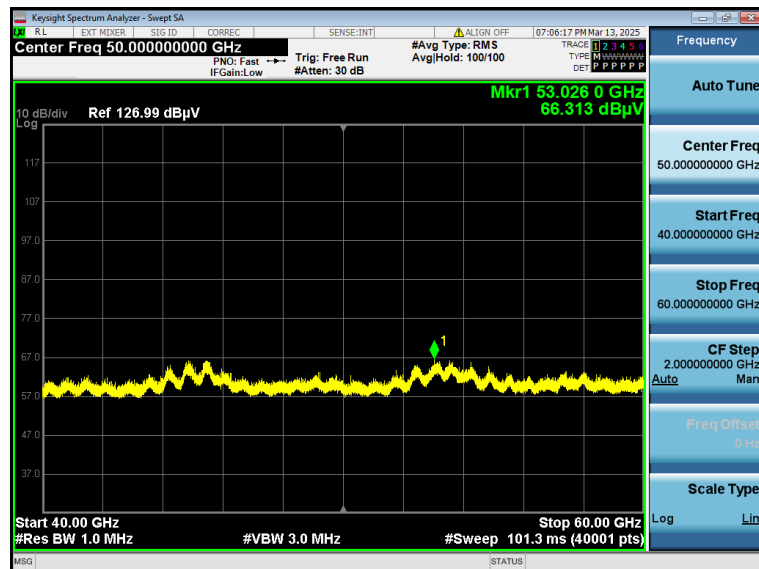
	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 18793.130	5.81	36.87	54.72	59.20	47.16	83.54	-36.38	Peak
2 23166.340	6.60	37.00	52.87	55.71	46.44	83.54	-37.10	Peak
3 27571.290	7.14	38.56	52.47	53.31	46.54	83.54	-37.00	Peak
4 32216.670	8.03	40.17	52.17	52.16	48.19	83.54	-35.35	Peak
5 37464.800	7.65	42.20	50.63	48.60	47.82	83.54	-35.72	Peak
6 p39366.270	7.46	42.54	52.24	52.65	50.41	83.54	-33.13	Peak



40GHz-60GHz; Test Mode: 00; Polarity: Horizontal



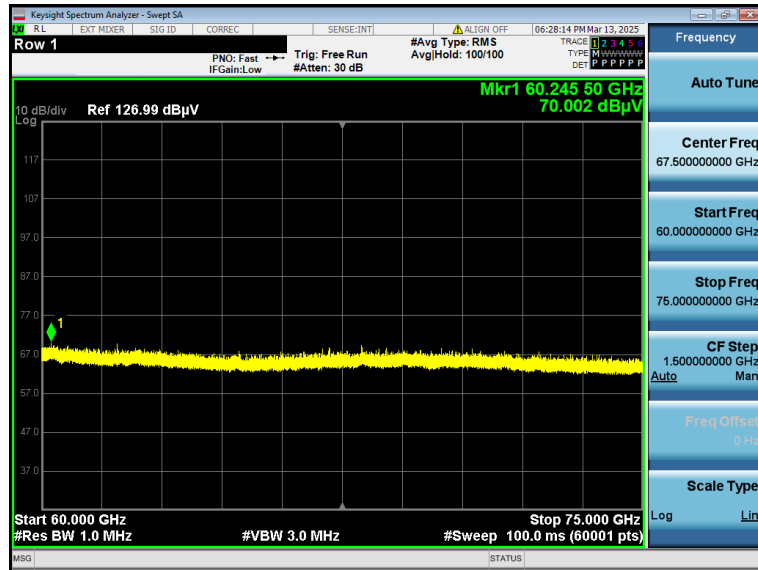
40GHz-60GHz; Test Mode: 00; Polarity: Vertical



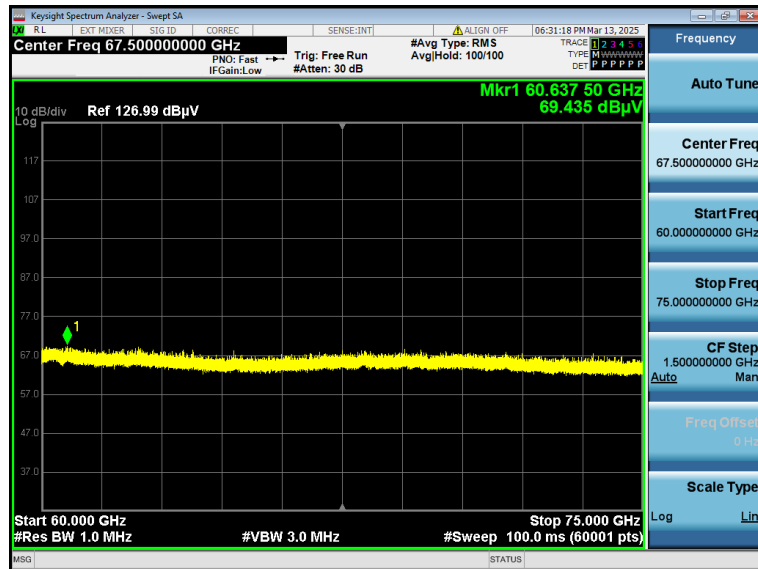
Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	AV Limit (dBuv/m)	Polarization	Result
53.162	0.5	66.400	83.52	H	PASS
53.026	0.5	66.313	83.52	V	PASS



60-75GHz Test Mode: 00; Polarity: Horizontal



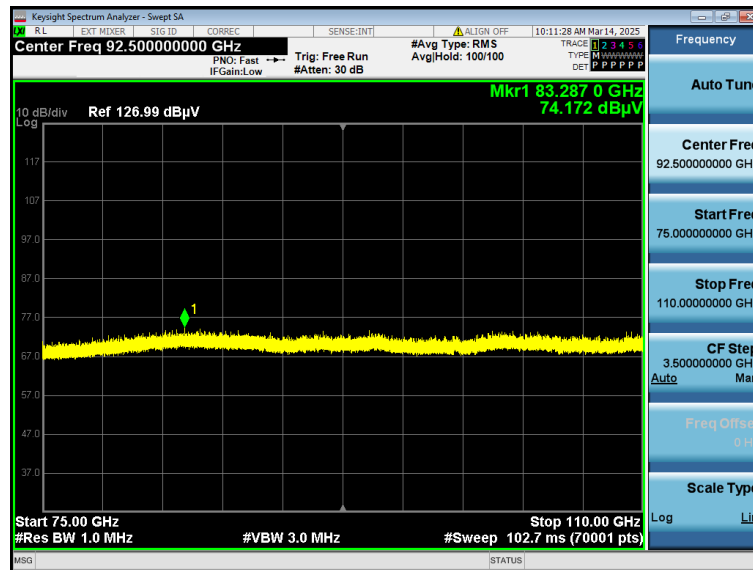
60-75 GHz Test Mode: 00; Polarity: Vertical



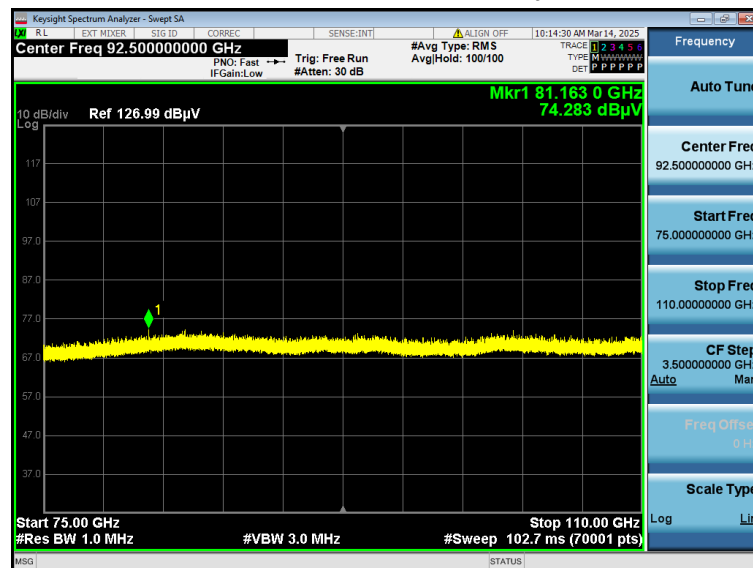
Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	AV Limit (dBuv/m)	Polarization	Result
60.245	0.5	70.002	83.52	H	PASS
60.637	0.5	69.435	83.52	V	PASS



75-110 GHz Test Mode: 00; Polarity: Horizontal



75-110 GHz Test Mode: 00; Polarity: Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	AV Limit (dBuv/m)	Polarization	Result
83.287	0.5	74.172	83.52	H	PASS
81.163	0.5	74.283	83.52	V	PASS



6.4 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
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 9-90kHz, 110-490kHz and 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.

Remark: For measurement distance 1m, the field strength doesn't exceed 63.52 dBuV/m

6.4.1 E.U.T. Operation

Operating Environment:

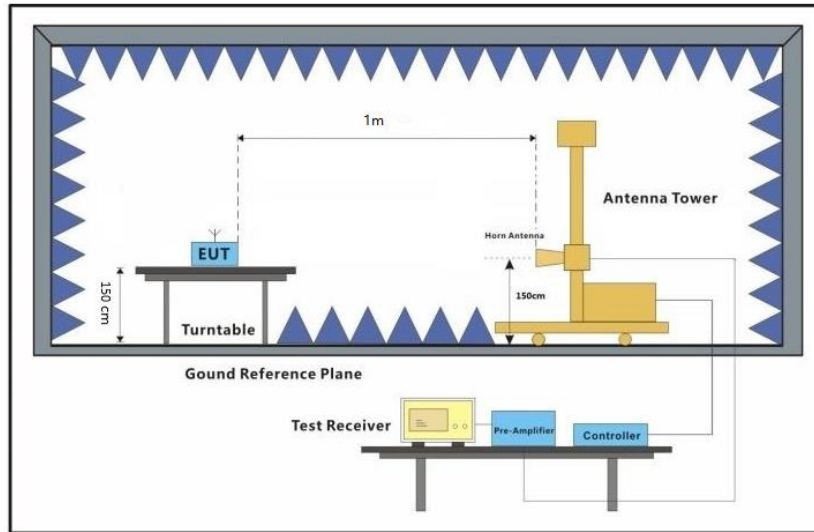
Temperature: 22 ± 5 °C Humidity: 49.7 % RH Atmospheric Pressure: 1020 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode _ Keep the EUT in continuously transmitting mode



6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

- 1) The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 1 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2) 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.
- 3) 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.
- 4) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 5) 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.
- 6) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- 7) Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, 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. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



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

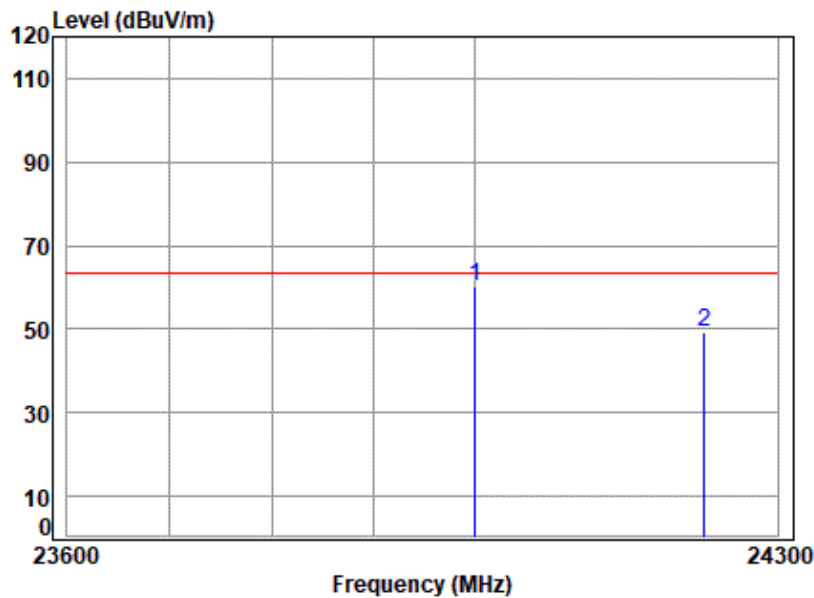
SZEMC-TRF-01 Rev. A/1

Report No.: SZCR241000403202

Page: 32 of 34

Test Data:

Test Mode: 00; Polarity: Horizontal



Site : chamber
Condition: 1m HORIZONTAL
Job No : 04032AT\04035AT
Mode : RSE TX
Note :

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 24000.000	6.64	37.90	55.20	71.02	60.36	63.54	-3.18 Peak
2 24225.760	6.68	38.08	54.60	59.32	49.48	63.54	-14.06 Peak



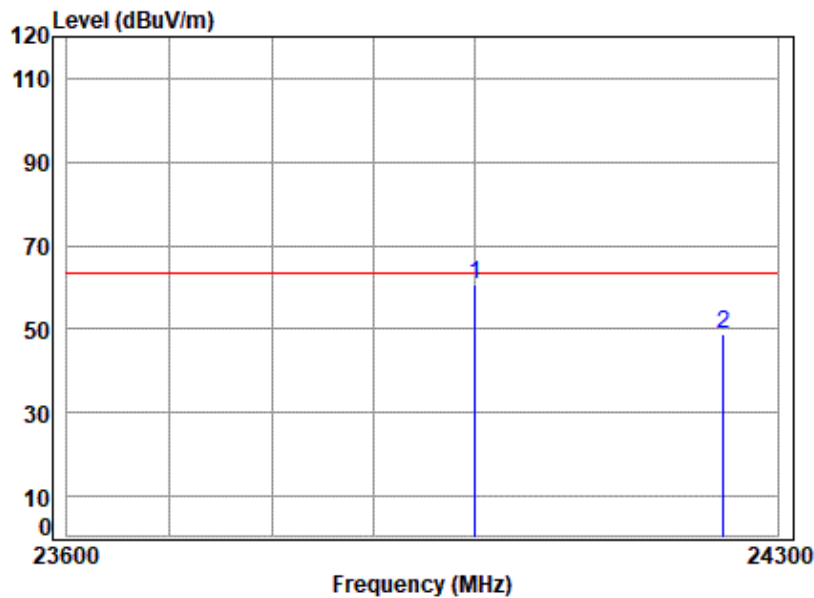
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing and Calibration Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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: 00; Polarity: Vertical



Site : chamber
Condition: 1m VERTICAL
Job No : 04032AT\04035AT
Mode : RSE TX
Note :

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 24000.000	6.64	37.90	55.20	71.13	60.47	63.54	-3.07 Peak
2 24245.120	6.69	38.10	54.55	58.52	48.76	63.54	-14.78 Peak



7 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2410004032AT

8 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2410004032AT

- End of the Report -

