



TEST REPORT

Application No.: SZEM1909018652CR
Applicant: Chongqing YEASN Science-Technology Co., Ltd.
Address of Applicant: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China
Manufacturer: Chongqing YEASN Science-Technology Co., Ltd.
Address of Manufacturer: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China
Factory: Chongqing YEASN Science-Technology Co., Ltd.
Address of Factory: No.5 Danlong Road, Nan'an District, Chongqing, 400060, P.R.China
Equipment Under Test (EUT):
EUT Name: Digital Refractor
Model No.: YPA-2100
Trade mark: YEASN
FCC ID: 2APEYYPA2100V1
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2019-09-19
Date of Test: 2019-09-19 to 2019-11-15
Date of Issue: 2019-11-18

Test Result:

Pass*

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

Keny Xu

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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.ssgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-11-18		Original

Authorized for issue by:			
			
		Edison Li /Project Engineer	
			
		Eric Fu /Reviewer	

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass



3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	6
4.1 DETAILS OF E.U.T.	6
4.2 DESCRIPTION OF SUPPORT UNITS	6
4.3 MEASUREMENT UNCERTAINTY	7
4.4 TEST LOCATION	8
4.5 TEST FACILITY	8
4.6 DEVIATION FROM STANDARDS	8
4.7 ABNORMALITIES FROM STANDARD CONDITIONS	8
5 EQUIPMENT LIST	9
6 RADIO SPECTRUM TECHNICAL REQUIREMENT	11
6.1 ANTENNA REQUIREMENT	11
6.1.1 Test Requirement:	11
6.1.2 Conclusion	11
7 RADIO SPECTRUM MATTER TEST RESULTS	12
7.1 CONDUCTED EMISSIONS AT AC POWER LINE (150kHz-30MHz)	12
7.1.1 E.U.T. Operation	12
7.1.2 Test Setup Diagram	12
7.1.3 Measurement Procedure and Data	13
7.2 MINIMUM 6DB BANDWIDTH	16
7.2.1 E.U.T. Operation	16
7.2.2 Test Setup Diagram	16
7.2.3 Measurement Procedure and Data	16
7.3 CONDUCTED PEAK OUTPUT POWER	17
7.3.1 E.U.T. Operation	17
7.3.2 Test Setup Diagram	17
7.3.3 Measurement Procedure and Data	18
7.4 POWER SPECTRUM DENSITY	19
7.4.1 E.U.T. Operation	19
7.4.2 Test Setup Diagram	19
7.4.3 Measurement Procedure and Data	19
7.5 CONDUCTED BAND EDGES MEASUREMENT	20
7.5.1 E.U.T. Operation	20
7.5.2 Test Setup Diagram	20
7.5.3 Measurement Procedure and Data	21
7.6 CONDUCTED SPURIOUS EMISSIONS	22
7.6.1 E.U.T. Operation	22
7.6.2 Test Setup Diagram	22
7.6.3 Measurement Procedure and Data	23



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 / 深圳中區標準技術服務有限公司

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

7.7	RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS.....	24
7.7.1	<i>E.U.T. Operation</i>	24
7.7.2	<i>Test Setup Diagram</i>	24
7.7.3	<i>Measurement Procedure and Data</i>	25
7.8	RADIATED SPURIOUS EMISSIONS	50
7.8.1	<i>E.U.T. Operation</i>	51
7.8.2	<i>Test Setup Diagram</i>	51
7.8.3	<i>Measurement Procedure and Data</i>	52
8	PHOTOGRAPHS	73
8.1	TEST SETUP	73
8.2	EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS)	73
9	APPENDIX	74
9.1	APPENDIX 15.247	74-104



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

4 General Information

4.1 Details of E.U.T.

Power Supply:	AC/DC Adapter Model: GSM60A15 Input: AC 100-240V, 50/60Hz, 1.4-0.7A Output: DC 15V,4.0A, 60W Max
Test Voltage:	DC 15V
Cable:	AC cable: 180cm unshielded DC cable: 120cm unshielded DC cable: 600cm unshielded
Type of Modulation:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11n (HT20): OFDM (64QAM, 16QAM, QPSK, BPSK)
Operating Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz
Channel Number:	802.11b/g/11n(HT20): 11 Channels
Channels Step:	Channels with 5MHz step
Sample Type:	Fixed production
Antenna Type:	Integral
Antenna Gain:	0dBi

4.2 Description of Support Units

The EUT has been tested as an independent unit.



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 / 深圳分公司 / 实验室

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	Conduction emission	$\pm 3.0\text{dB}$ (150kHz to 30MHz)
5	RF conducted power	$\pm 0.75\text{dB}$
6	RF power density	$\pm 2.84\text{dB}$
7	Conducted Spurious emissions	$\pm 0.75\text{dB}$
8	RF Radiated power	$\pm 4.5\text{dB}$ (Below 1GHz)
		$\pm 4.8\text{dB}$ (Above 1GHz)
9	Radiated Spurious emission test	$\pm 4.5\text{dB}$ (Below 1GHz)
		$\pm 4.8\text{dB}$ (Above 1GHz)
10	Temperature test	$\pm 1^\circ\text{C}$
11	Humidity test	$\pm 3\%$
12	Supply voltages	$\pm 1.5\%$
13	Time	$\pm 3\%$

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, 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**

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. 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: CN1178**

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **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



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 EMC Laboratory.

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2019-06-13	2022-06-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2019-07-11	2020-07-10
LISN	Rohde & Schwarz	ENV216	SEM007-01	2019-09-24	2020-09-23
LISN	ETS-LINDGREN	3816/2	SEM007-02	2019-04-01	2020-03-31
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2019-04-01	2020-03-31

RF Conducted Test					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2019-09-24	2020-09-23
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2019-09-24	2020-09-23
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2019-07-11	2020-07-10
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2019-09-24	2020-09-23
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2019-09-24	2020-09-23
Power Sensor	KEYSIGHT	U2021XA	SEM009-13	2019-04-12	2020-04-11
Electric and Magnetic Field Analyzer	Narda	NBM-550/EHP-50F	EMC2143	2018-02-07	2020-02-06
Electric Field Probe(100KHz-3GHz)	WANDEL & GOLTERMANN	EMR-20	EMC0907	2019-05-21	2020-05-20
EMF Tester	Narda	ELT-400	SZE039-4	2019-07-08	2020-07-07

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2019-09-24	2020-09-23
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27	2020-06-26
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2019-04-01	2020-03-31
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2019-07-11	2020-07-10



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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) 83071443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Radiated Emissions which fall in the restricted bands/ Radiated Spurious Emissions					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018-03-13	2021-03-12
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019-07-11	2020-07-10
EXA Spectrum Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2019-04-12	2020-04-11
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018-04-13	2021-04-12
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017-10-17	2020-10-16
Pre-Amplifier(0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2019-09-24	2020-09-23
Pre-amplifier(18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2019-04-01	2020-03-31
Pre-amplifier(26GHz-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2019-04-01	2020-03-31
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2019-09-24	2020-09-23
Active Loop Antenna	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2019-09-26	2020-09-25
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2019-09-26	2020-09-25
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2019-04-04	2020-04-03



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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, China SGS-CSTC Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 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 & 15.247(b)(4)

6.1.2 Conclusion

Standard Requirement:

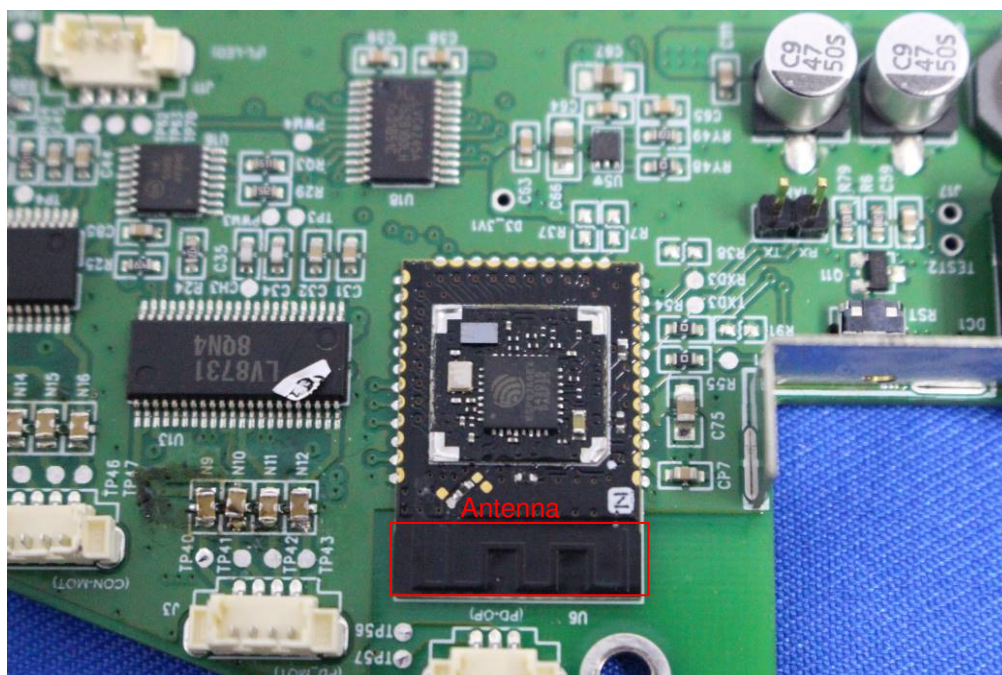
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.



7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207
Test Method: ANSI C63.10 (2013) Section 6.2
Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

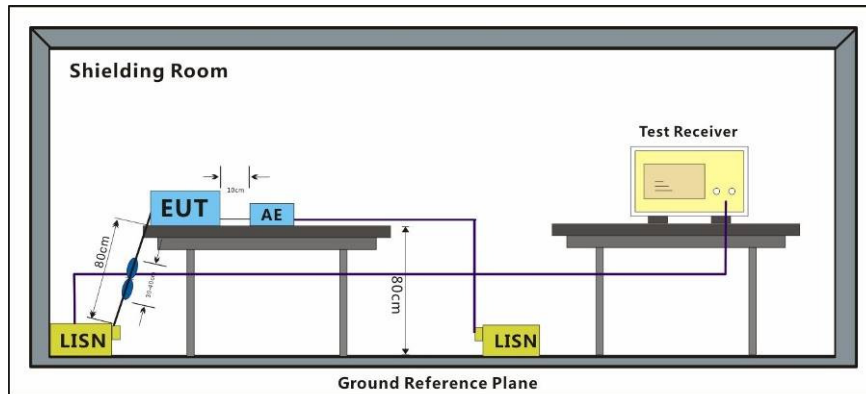
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.6 °C Humidity: 53.1 % RH Atmospheric Pressure: 1015 mbar

Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.1.2 Test Setup Diagram





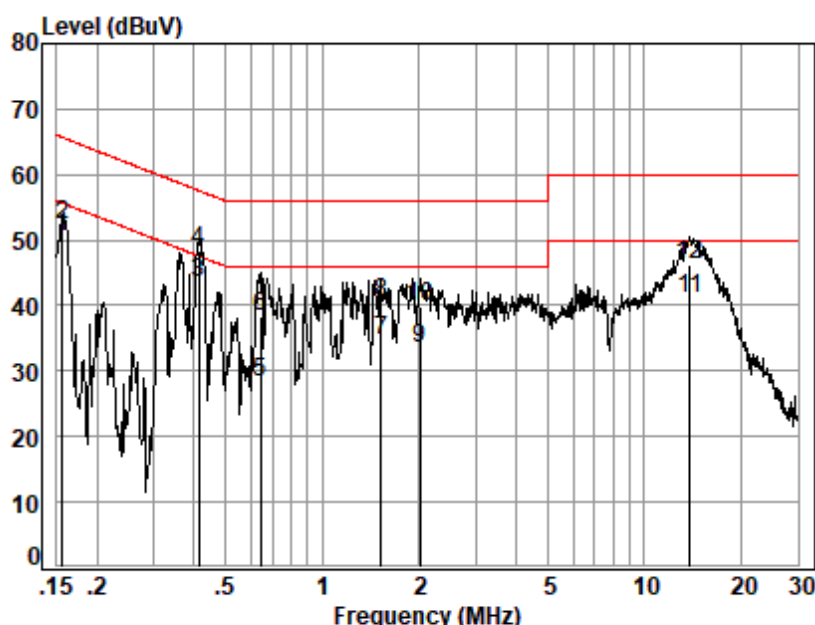
7.1.3 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: LISN=Read Level+ Cable Loss+ LISN Factor



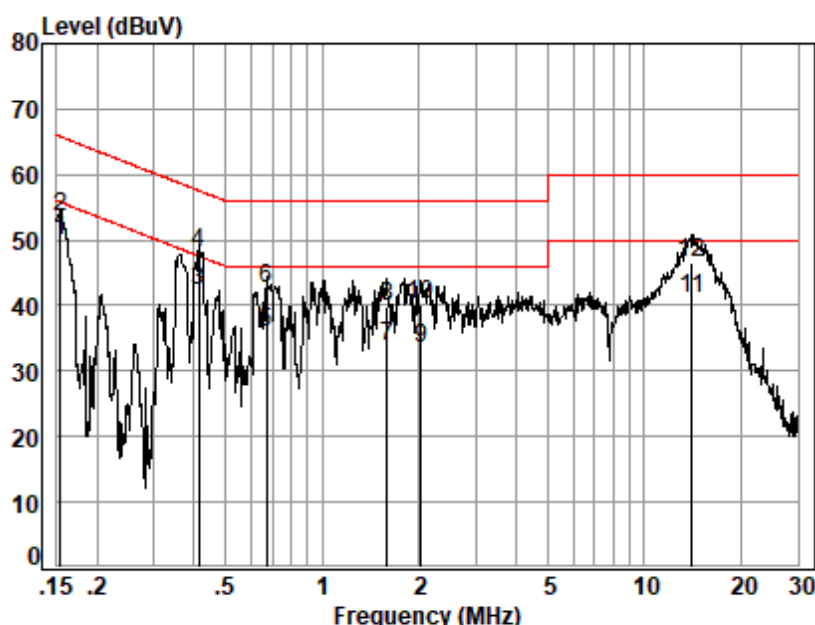
Mode:e; Line:Live Line



Site : Shielding Room
Condition: Line
Job No. : 18652CR
Test mode: e

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.16	0.01	9.66	40.96	50.63	55.65	-5.02	Average
2	0.16	0.01	9.66	42.74	52.41	65.65	-13.24	QP
3	0.41	0.05	9.67	33.86	43.58	47.55	-3.97	Average
4	0.41	0.05	9.67	38.76	48.48	57.55	-9.07	QP
5	0.64	0.07	9.67	18.66	28.40	46.00	-17.60	Average
6	0.64	0.07	9.67	28.57	38.31	56.00	-17.69	QP
7	1.52	0.13	9.73	24.93	34.79	46.00	-11.21	Average
8	1.52	0.13	9.73	30.52	40.38	56.00	-15.62	QP
9	2.01	0.16	9.72	23.61	33.49	46.00	-12.51	Average
10	2.01	0.16	9.72	30.03	39.91	56.00	-16.09	QP
11	13.84	0.20	10.25	30.50	40.95	50.00	-9.05	Average
12	13.84	0.20	10.25	35.70	46.15	60.00	-13.85	QP

Mode:e; Line:Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 18652CR
Test mode: e

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.15	0.01	9.63	40.36	50.00	55.78	-5.78	Average
2	0.15	0.01	9.63	43.90	53.54	65.78	-12.24	QP
3	0.41	0.05	9.65	32.70	42.40	47.59	-5.19	Average
4	0.41	0.05	9.65	38.31	48.01	57.59	-9.58	QP
5	0.67	0.07	9.65	26.27	35.99	46.00	-10.01	Average
6	0.67	0.07	9.65	32.71	42.43	56.00	-13.57	QP
7	1.59	0.14	9.70	23.96	33.80	46.00	-12.20	Average
8	1.59	0.14	9.70	29.91	39.75	56.00	-16.25	QP
9	2.02	0.16	9.69	23.75	33.60	46.00	-12.40	Average
10	2.02	0.16	9.69	30.26	40.11	56.00	-15.89	QP
11	14.06	0.20	10.29	30.58	41.07	50.00	-8.93	Average
12	14.06	0.20	10.29	35.93	46.42	60.00	-13.58	QP

7.2 Minimum 6dB Bandwidth

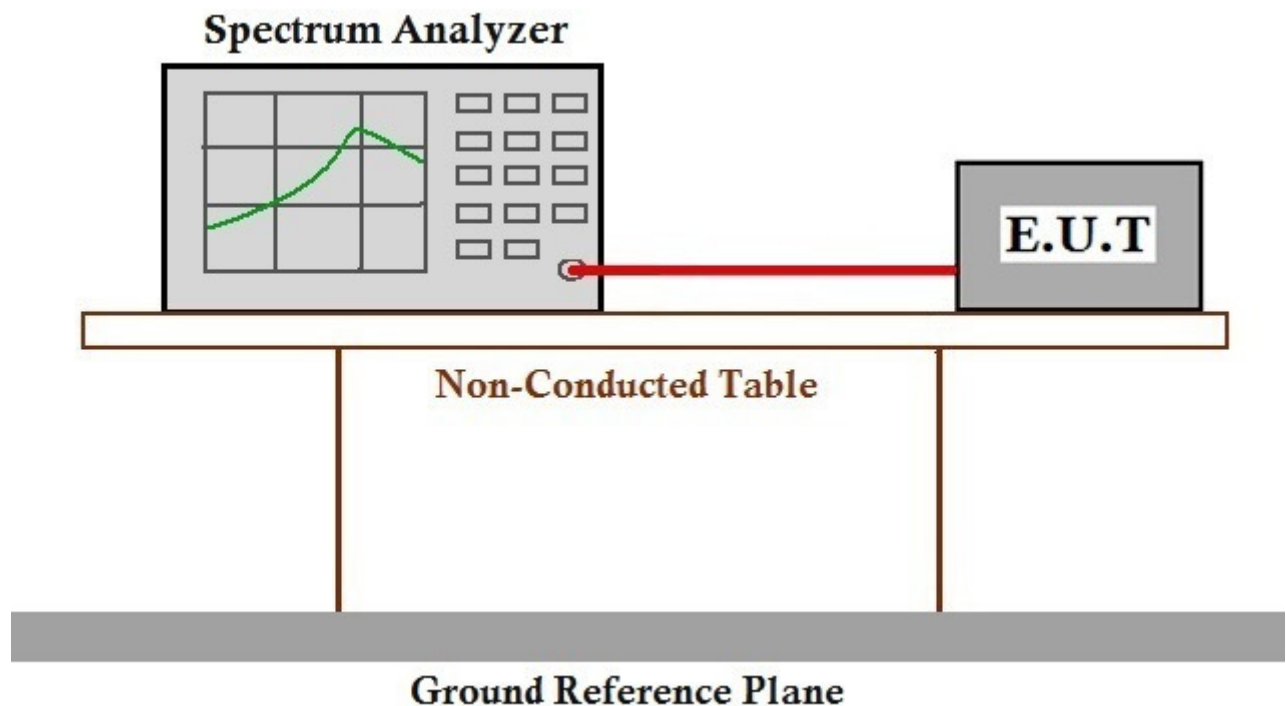
Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
 Test Method: ANSI C63.10 (2013) Section 11.8.1
 Limit: ≥ 500 kHz

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 20.6 °C Humidity: 52.2 % RH Atmospheric Pressure: 1015 mbar
 Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

7.3 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)
Test Method: ANSI C63.10 (2013) Section 11.9.1
Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

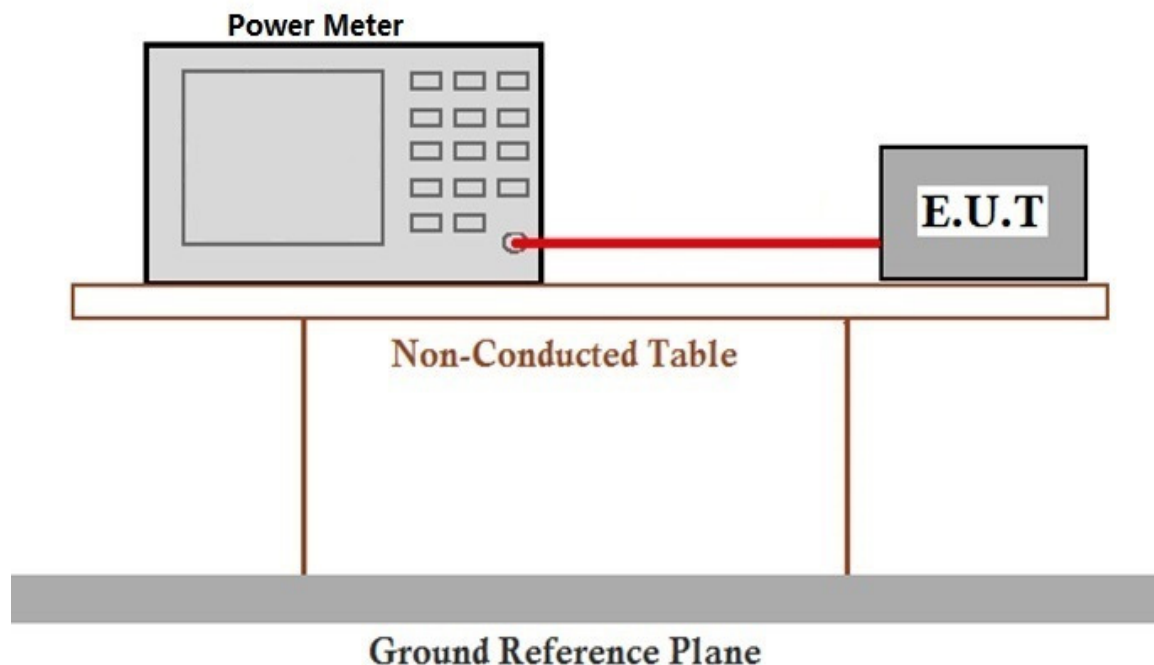
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.6 °C Humidity: 52.1 % RH Atmospheric Pressure: 1015 mbar

Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.3.2 Test Setup Diagram





7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



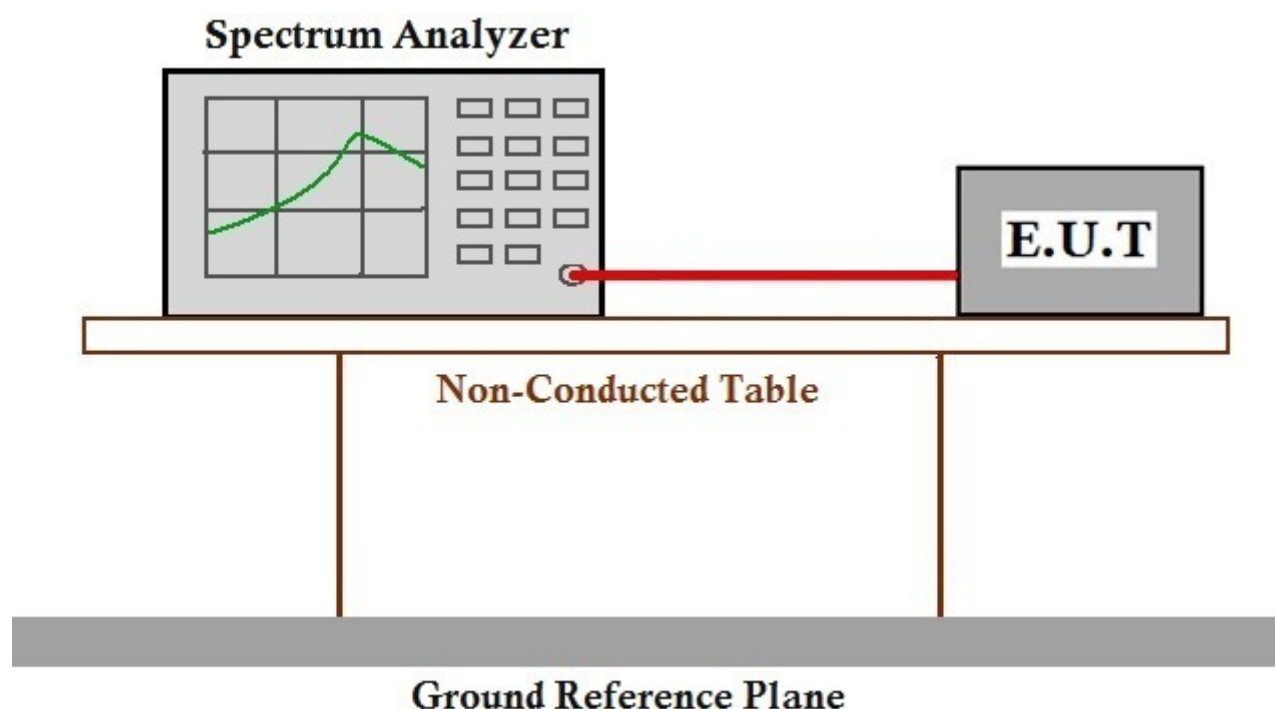
7.4 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)
Test Method: ANSI C63.10 (2013) Section 11.10.2
Limit: $\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission

7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 20.6 °C Humidity: 52.3 % RH Atmospheric Pressure: 1015 mbar
Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

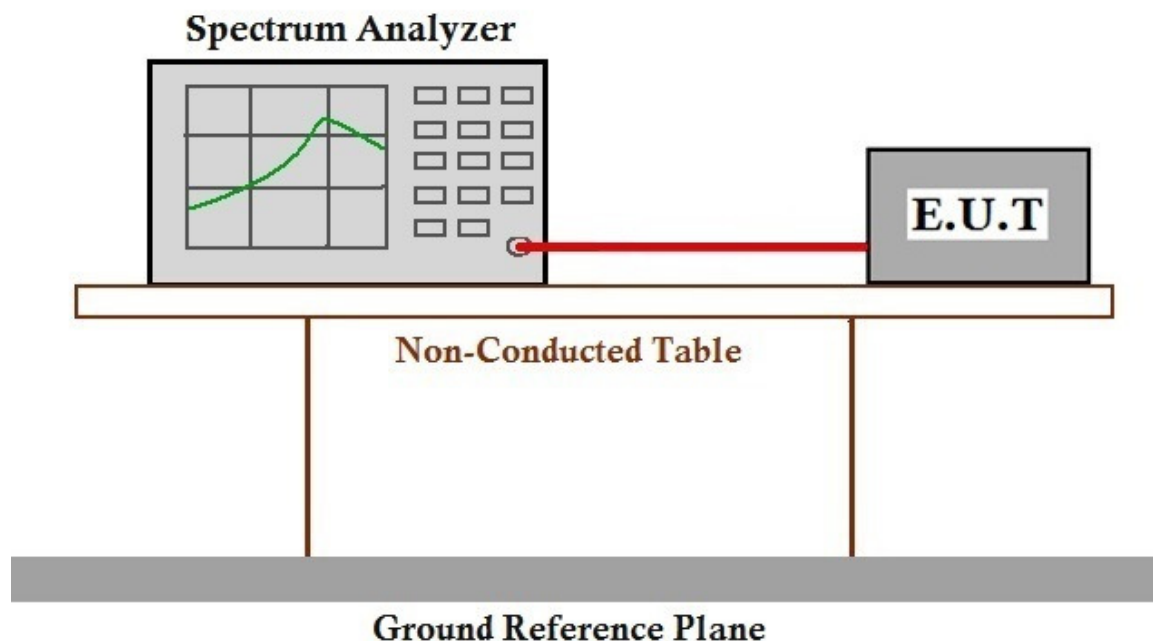
7.5 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
Test Method: ANSI C63.10 (2013) Section 11.13.3.2
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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 20.6 °C **Humidity:** 52.4 % RH **Atmospheric Pressure:** 1015 mbar
Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.5.2 Test Setup Diagram





7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



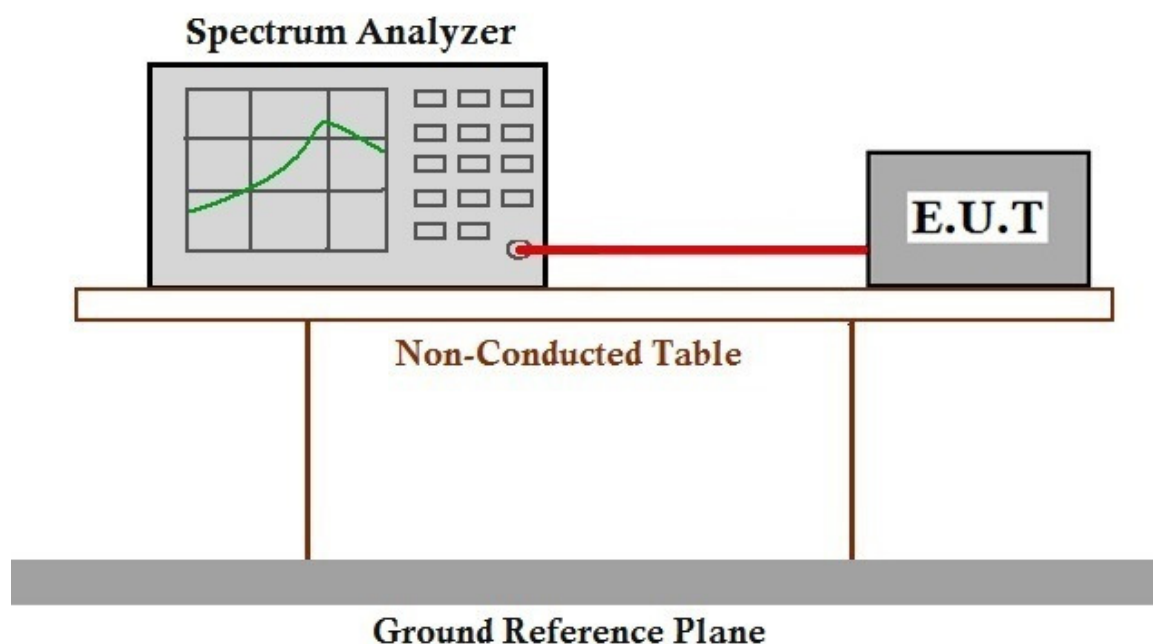
7.6 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
Test Method: ANSI C63.10 (2013) Section 11.11
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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

7.6.1 E.U.T. Operation

Operating Environment:
Temperature: 20.6 °C **Humidity:** 52.3 % RH **Atmospheric Pressure:** 1015 mbar
Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.6.2 Test Setup Diagram





7.6.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



7.7 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)

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

Measurement Distance: 3m

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.

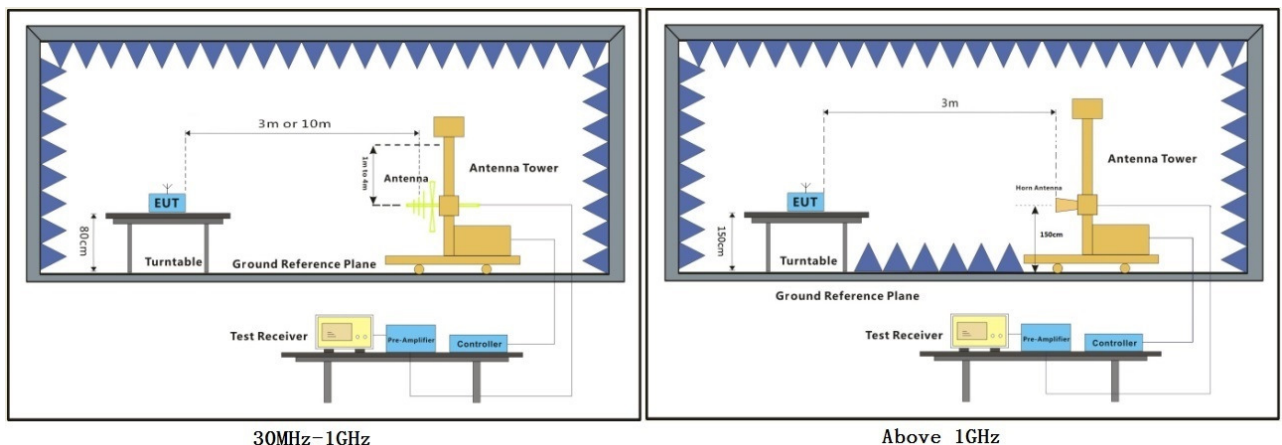
7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 19.4 °C Humidity: 55.7 % RH Atmospheric Pressure: 1015 mbar

Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.7.2 Test Setup Diagram





7.7.3 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 above 1GHz, 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.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- 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.

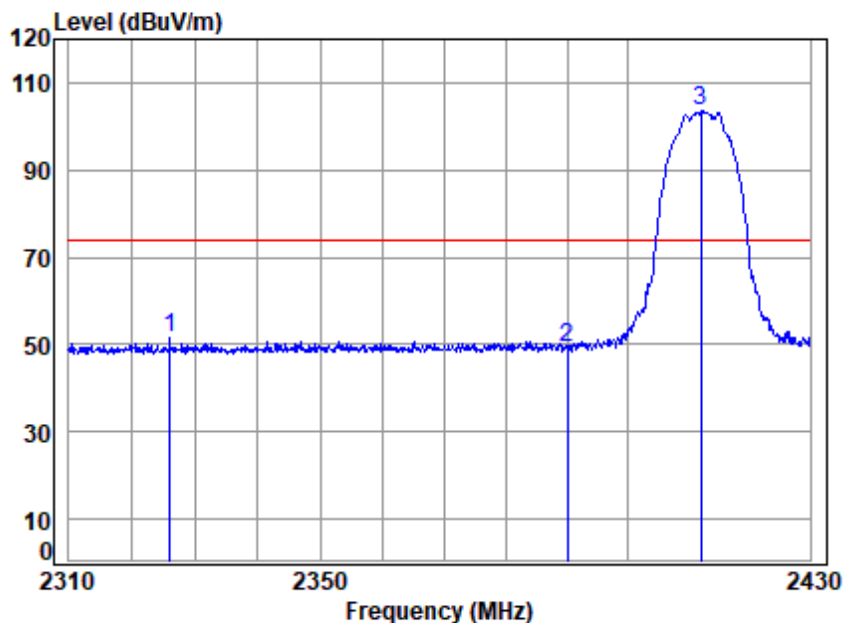


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 / CSTC Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11B

		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	2325.965	5.39	28.41	41.15	58.81	51.46	74.00	-22.54	peak
2	2390.000	5.47	28.52	41.17	56.56	49.38	74.00	-24.62	peak
3 *	2412.000	5.50	28.56	41.18	110.58	103.46	74.00	29.46	peak

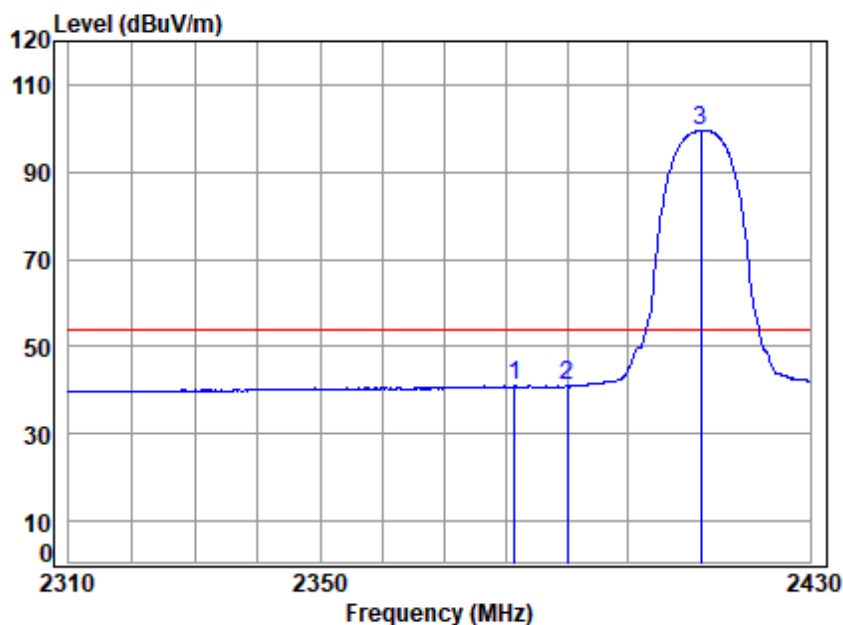


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

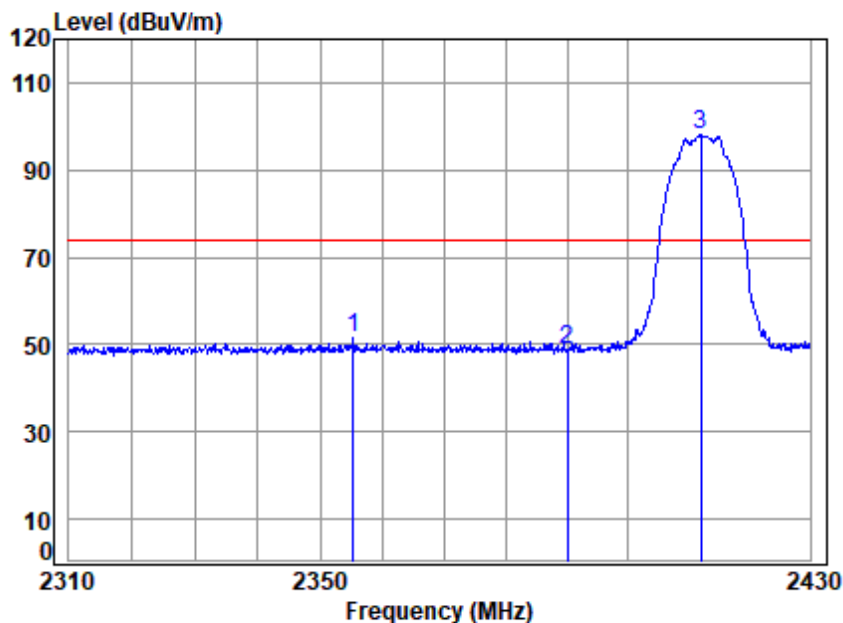
Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11B

		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	2381.511	5.46	28.50	41.17	48.14	40.93	54.00	-13.07	Average
2	2390.000	5.47	28.52	41.17	48.03	40.85	54.00	-13.15	Average
3 *	2412.000	5.50	28.56	41.18	106.71	99.59	54.00	45.59	Average

Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:Low

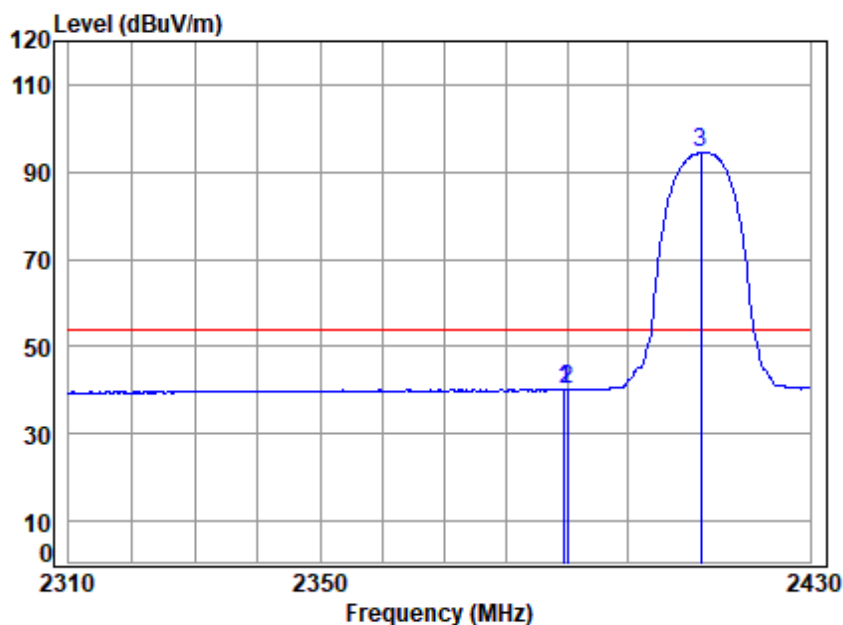


Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11B

		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	2355.363	5.43	28.46	41.16	58.83	51.56	74.00	-22.44	Peak
2	2390.000	5.47	28.52	41.17	56.10	48.92	74.00	-25.08	Peak
3 *	2412.000	5.50	28.56	41.18	105.11	97.99	74.00	23.99	Peak



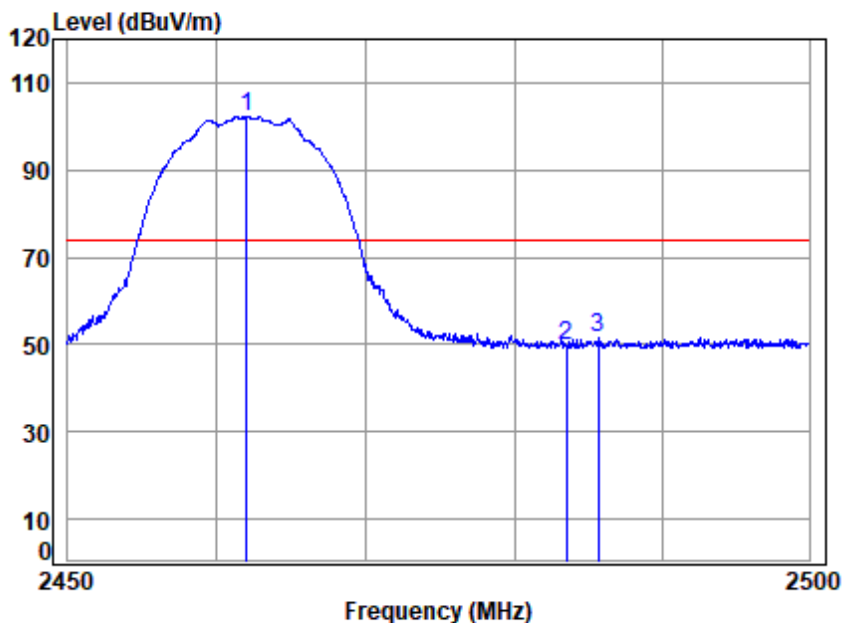
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11B

		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	2389.605	5.47	28.52	41.17	47.30	40.12	54.00	-13.88	Average
2	2390.000	5.47	28.52	41.17	47.19	40.01	54.00	-13.99	Average
3 *	2412.000	5.50	28.56	41.18	101.57	94.45	54.00	40.45	Average

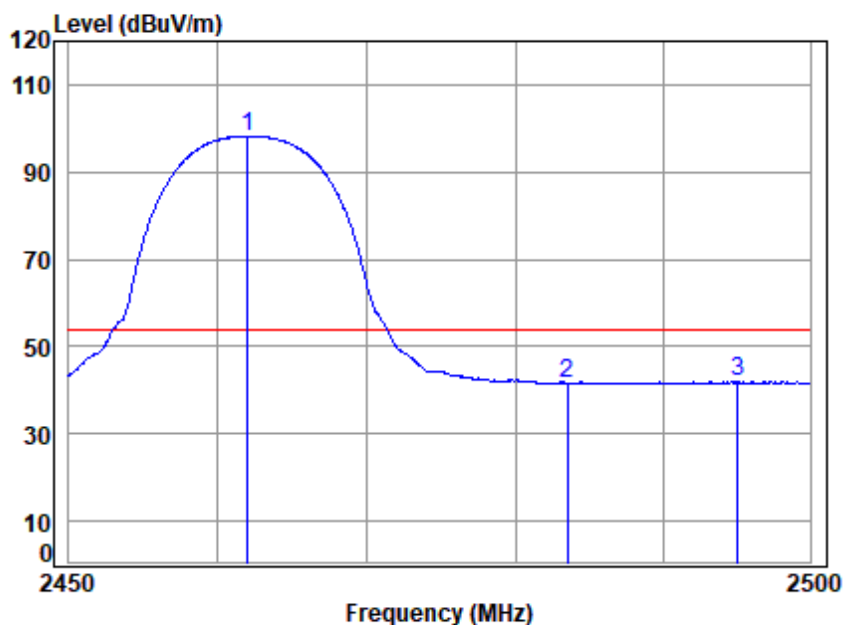
Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11B

	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 * 2462.000	5.57	28.64	41.20	109.14	102.15	74.00	28.15	peak
2 2483.500	5.60	28.67	41.21	56.64	49.70	74.00	-24.30	peak
3 2485.647	5.60	28.68	41.21	58.49	51.56	74.00	-22.44	peak

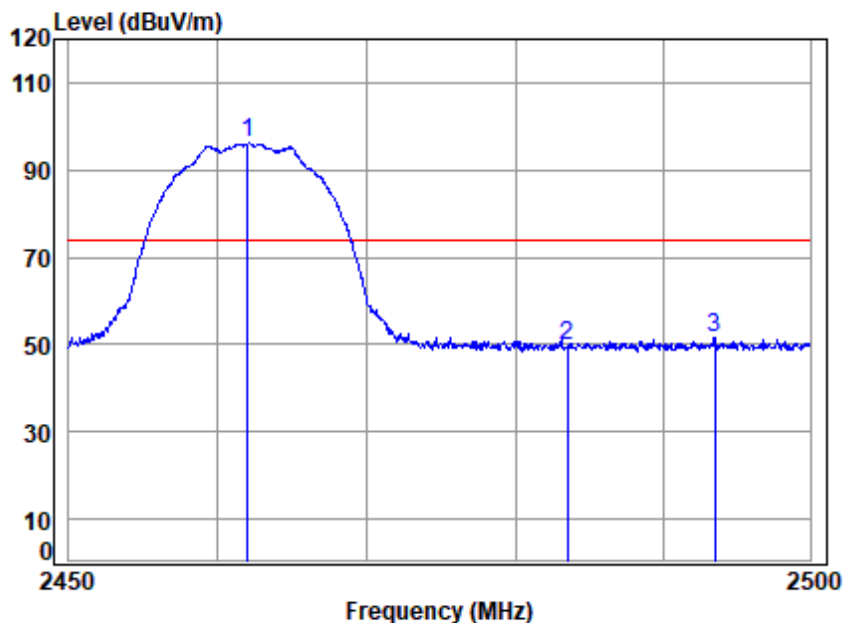
Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11B

	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 * 2462.000	5.57	28.64	41.20	105.27	98.28	54.00	44.28	Average
2 2483.500	5.60	28.67	41.21	48.55	41.61	54.00	-12.39	Average
3 2495.106	5.61	28.69	41.22	48.79	41.87	54.00	-12.13	Average

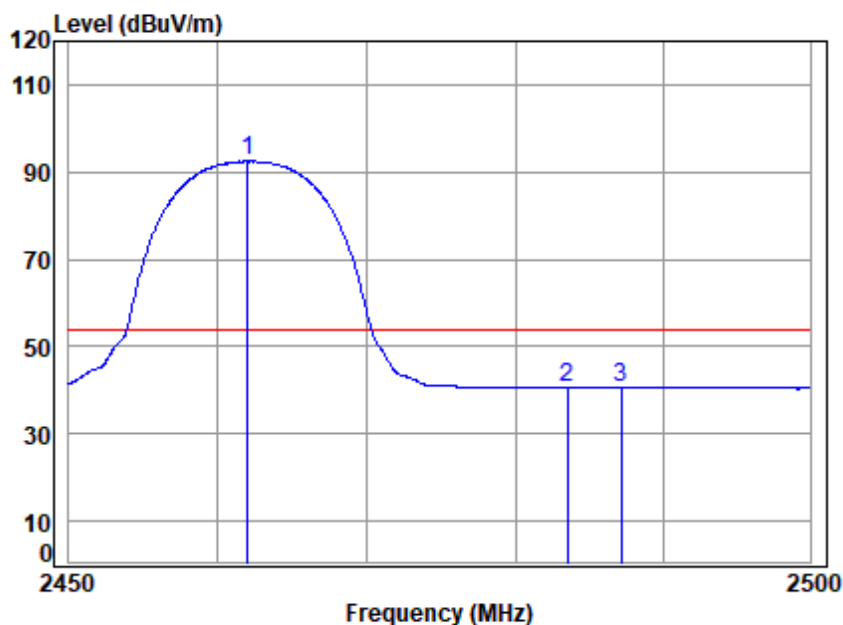
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11B

	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 * 2462.000	5.57	28.64	41.20	103.08	96.09	74.00	22.09	Peak
2 2483.500	5.60	28.67	41.21	56.81	49.87	74.00	-24.13	Peak
3 2493.493	5.61	28.69	41.21	58.59	51.68	74.00	-22.32	Peak

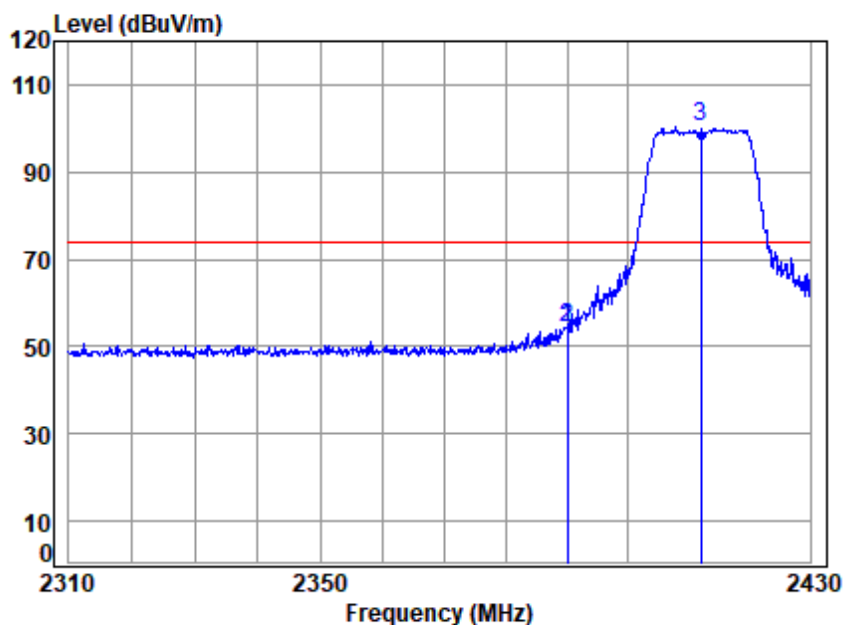
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11B

	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 * 2462.000	5.57	28.64	41.20	99.43	92.44	54.00	38.44	Average
2 2483.500	5.60	28.67	41.21	47.50	40.56	54.00	-13.44	Average
3 2487.154	5.60	28.68	41.21	47.61	40.68	54.00	-13.32	Average

Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11G

		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	2389.968	5.47	28.52	41.17	61.69	54.51	74.00	-19.49	peak
2	2390.000	5.47	28.52	41.17	61.69	54.51	74.00	-19.49	peak
3 *	2412.000	5.50	28.56	41.18	107.61	100.49	74.00	26.49	peak

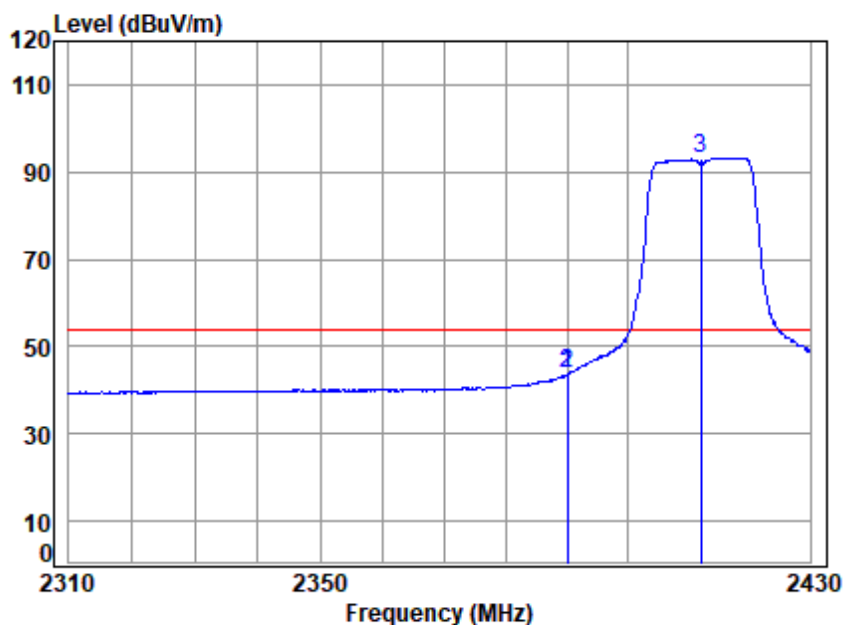


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 and 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

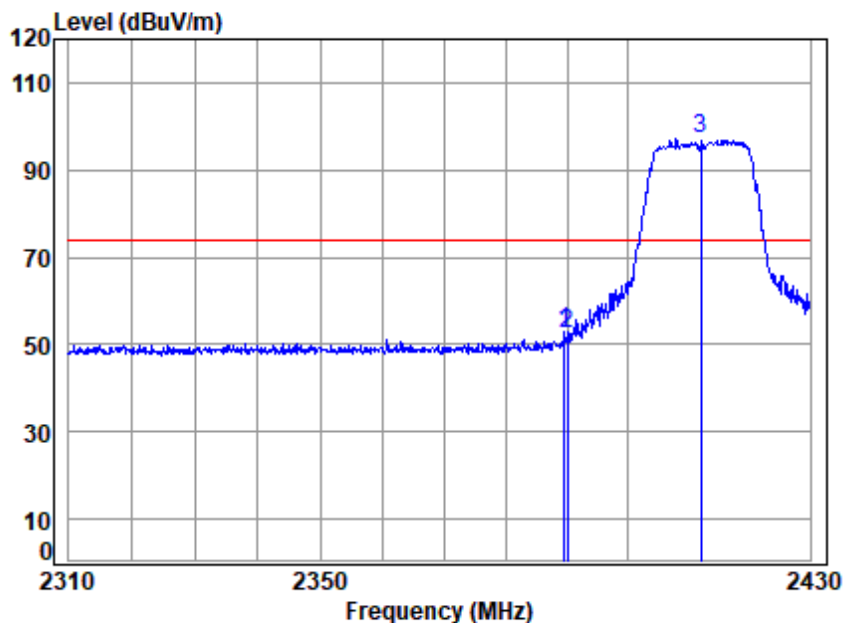
Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11G

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2389.968	5.47	28.52	41.17	50.79	43.61	54.00	-10.39 Average
2	2390.000	5.47	28.52	41.17	50.79	43.61	54.00	-10.39 Average
3 *	2412.000	5.50	28.56	41.18	100.20	93.08	54.00	39.08 Average

Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11G

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2389.605	5.47	28.52	41.17	59.90	52.72	74.00	-21.28 Peak
2	2390.000	5.47	28.52	41.17	59.43	52.25	74.00	-21.75 Peak
3 *	2412.000	5.50	28.56	41.18	104.09	96.97	74.00	22.97 Peak

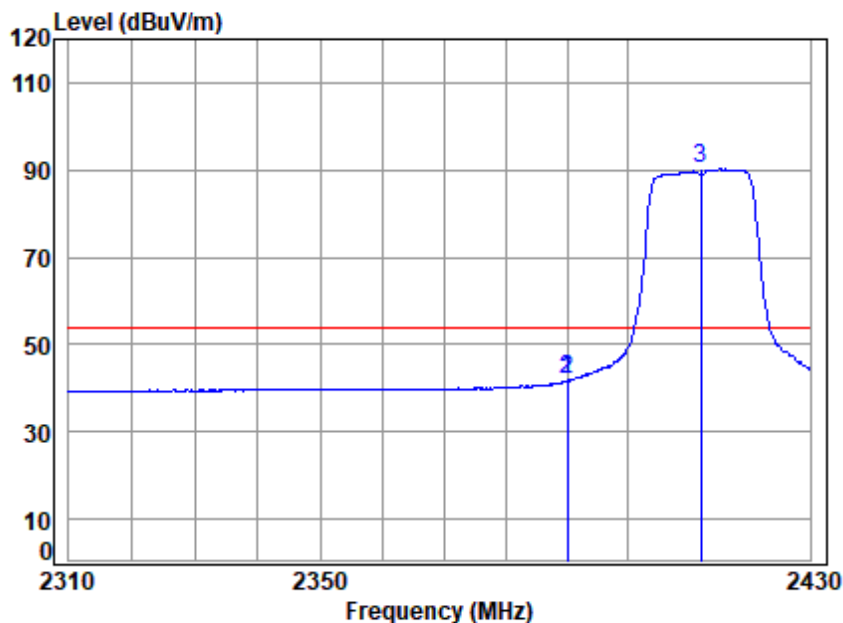


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

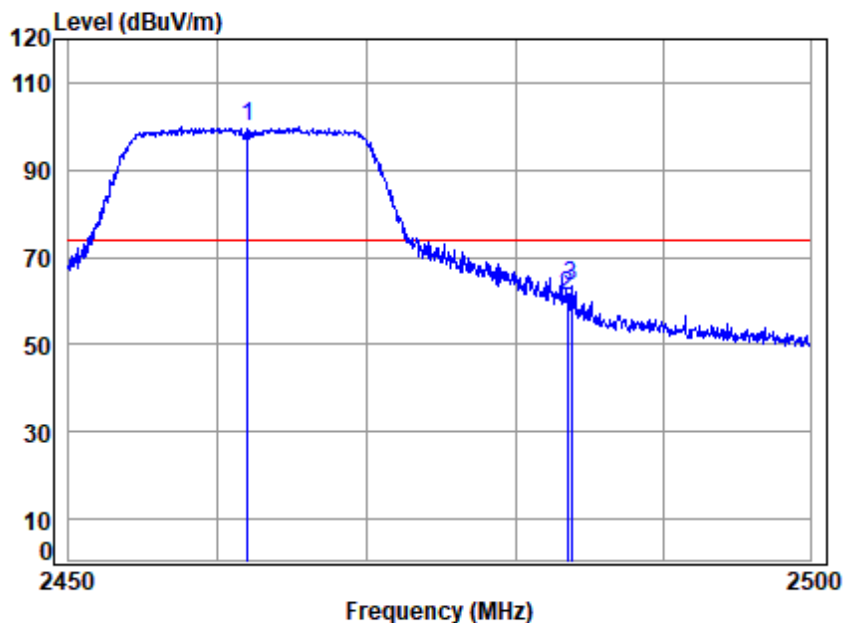
Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11G

		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	2389.968	5.47	28.52	41.17	48.97	41.79	54.00	-12.21 Average
2	2390.000	5.47	28.52	41.17	48.97	41.79	54.00	-12.21 Average
3 *	2412.000	5.50	28.56	41.18	97.25	90.13	54.00	36.13 Average

Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11G

	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 * 2462.000	5.57	28.64	41.20	107.05	100.06	74.00	26.06	peak
2 2483.500	5.60	28.67	41.21	68.23	61.29	74.00	-12.71	peak
3 2483.790	5.60	28.67	41.21	70.35	63.41	74.00	-10.59	peak

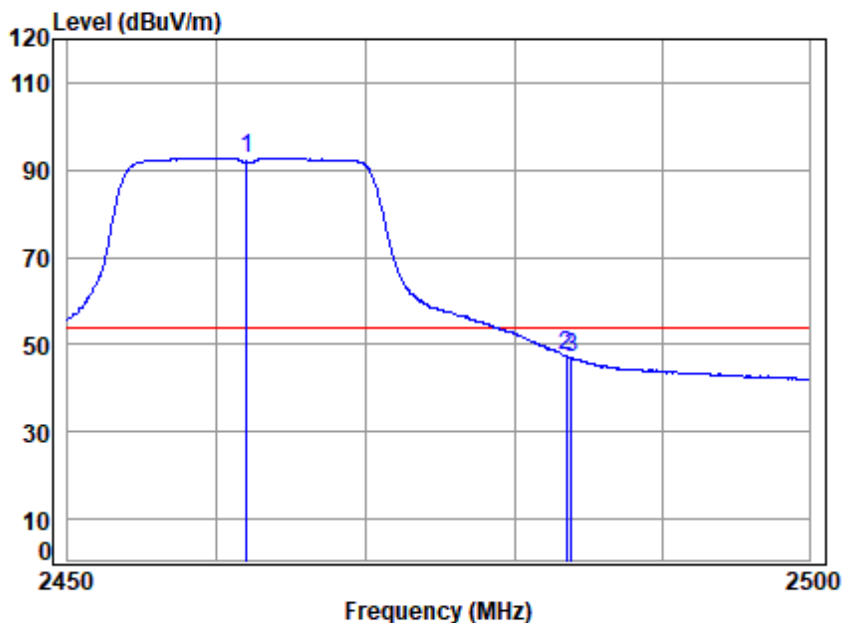


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11G

	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 * 2462.000	5.57	28.64	41.20	99.81	92.82	54.00	38.82	Average
2 2483.500	5.60	28.67	41.21	54.34	47.40	54.00	-6.60	Average
3 2483.890	5.60	28.67	41.21	53.83	46.89	54.00	-7.11	Average

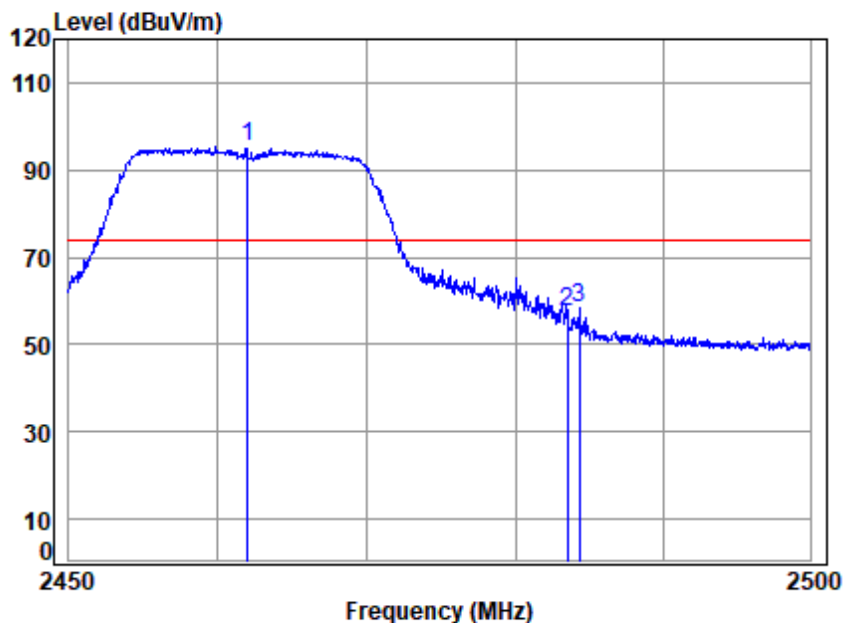


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:High

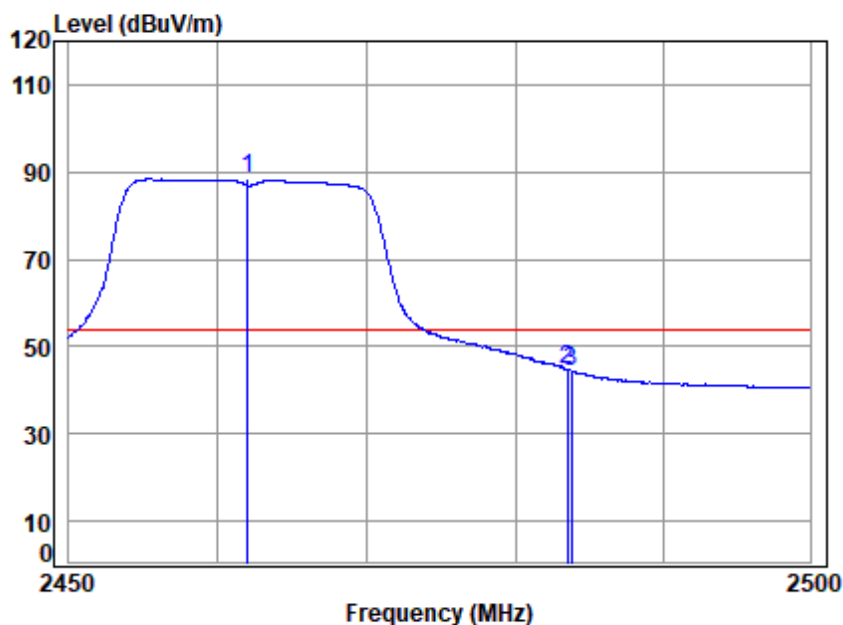


Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11G

	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 * 2462.000	5.57	28.64	41.20	102.55	95.56	74.00	21.56	Peak
2 2483.500	5.60	28.67	41.21	64.62	57.68	74.00	-16.32	Peak
3 2484.342	5.60	28.67	41.21	65.35	58.41	74.00	-15.59	Peak



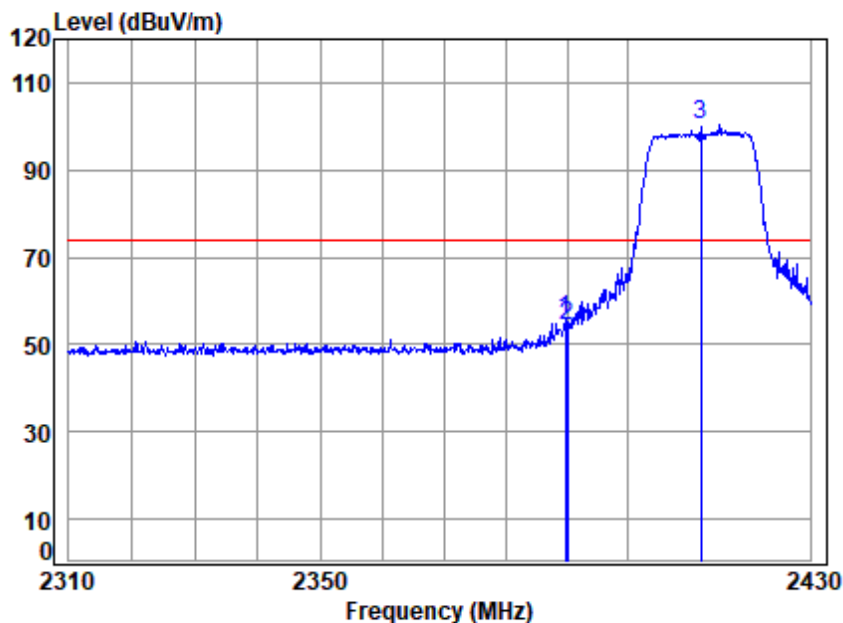
Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11G

	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 * 2462.000	5.57	28.64	41.20	95.34	88.35	54.00	34.35	Average
2 2483.500	5.60	28.67	41.21	51.67	44.73	54.00	-9.27	Average
3 2483.790	5.60	28.67	41.21	51.30	44.36	54.00	-9.64	Average

Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:Low

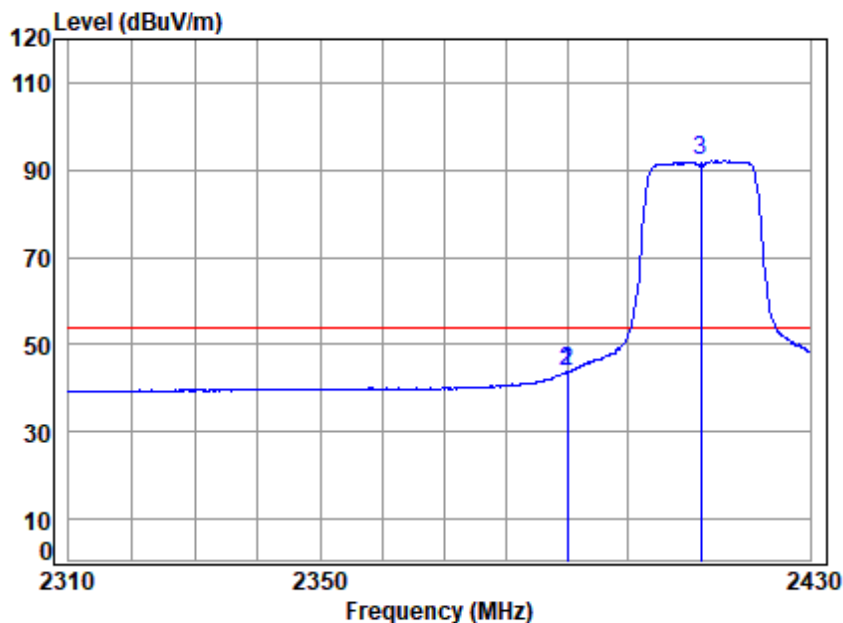


Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11N20

		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	2389.726	5.47	28.52	41.17	62.91	55.73	74.00	-18.27	peak
2	2390.000	5.47	28.52	41.17	61.53	54.35	74.00	-19.65	peak
3 *	2412.000	5.50	28.56	41.18	107.28	100.16	74.00	26.16	peak



Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11N20

		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	2389.968	5.47	28.52	41.17	50.87	43.69	54.00	-10.31	Average
2	2390.000	5.47	28.52	41.17	50.87	43.69	54.00	-10.31	Average
3 *	2412.000	5.50	28.56	41.18	99.11	91.99	54.00	37.99	Average

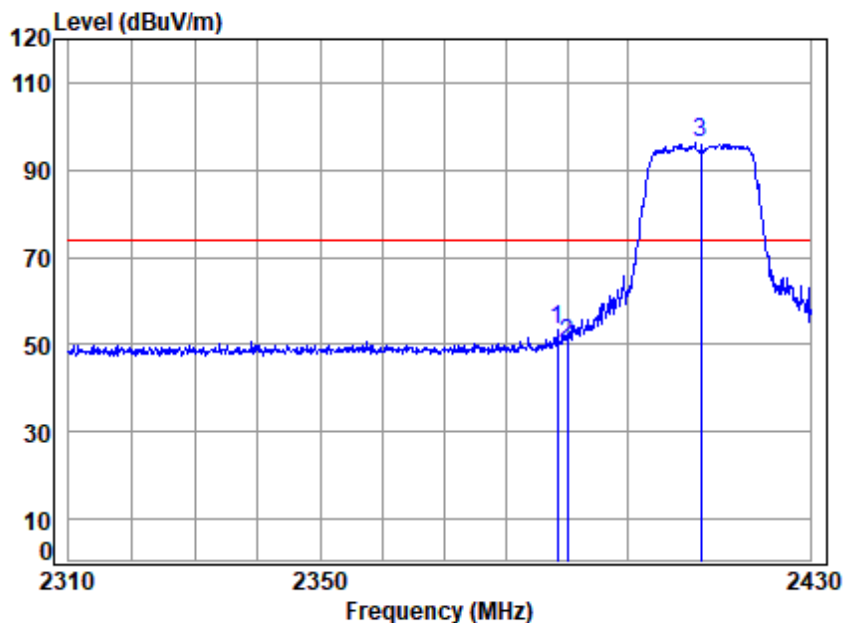


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 and 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:Low

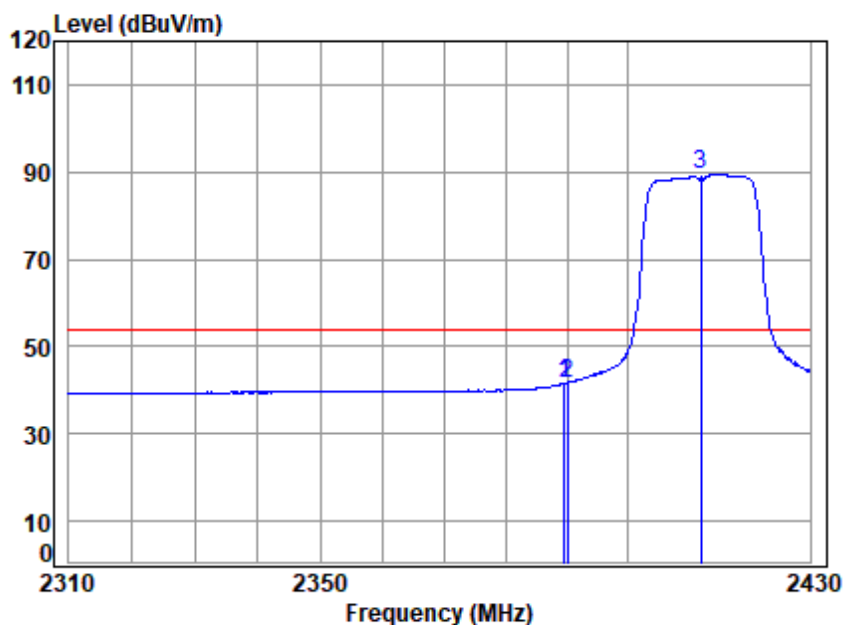


Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11N20

		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	2388.395	5.47	28.52	41.17	60.66	53.48	74.00	-20.52	Peak
2	2390.000	5.47	28.52	41.17	57.30	50.12	74.00	-23.88	Peak
3 *	2412.000	5.50	28.56	41.18	103.54	96.42	74.00	22.42	Peak



Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 Band edge
Note : 2.4G WIFI 11N20

		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	2389.605	5.47	28.52	41.17	48.84	41.66	54.00	-12.34	Average
2	2390.000	5.47	28.52	41.17	48.77	41.59	54.00	-12.41	Average
3 *	2412.000	5.50	28.56	41.18	96.46	89.34	54.00	35.34	Average

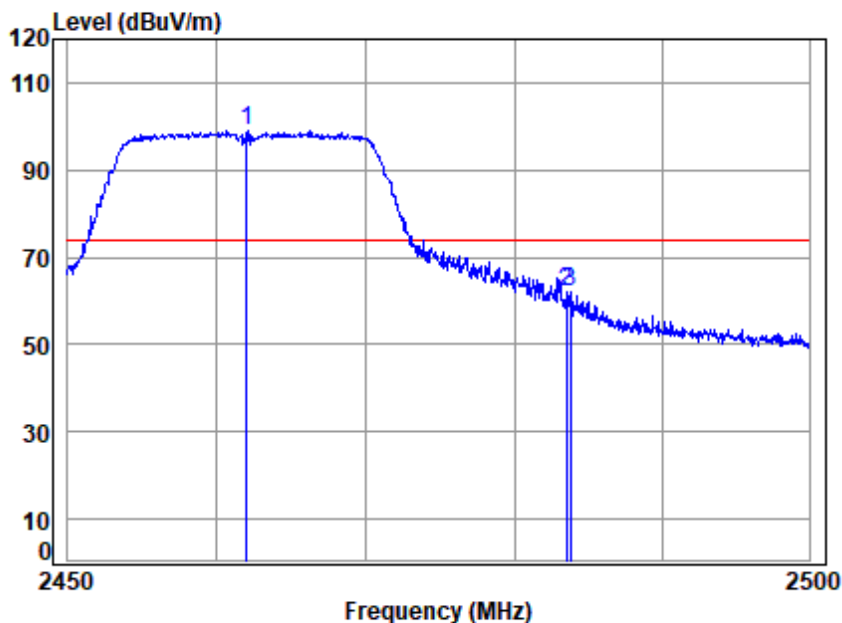


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 and 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11N20

	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 * 2462.000	5.57	28.64	41.20	106.10	99.11	74.00	25.11	peak
2 2483.500	5.60	28.67	41.21	68.95	62.01	74.00	-11.99	peak
3 2483.790	5.60	28.67	41.21	69.07	62.13	74.00	-11.87	peak

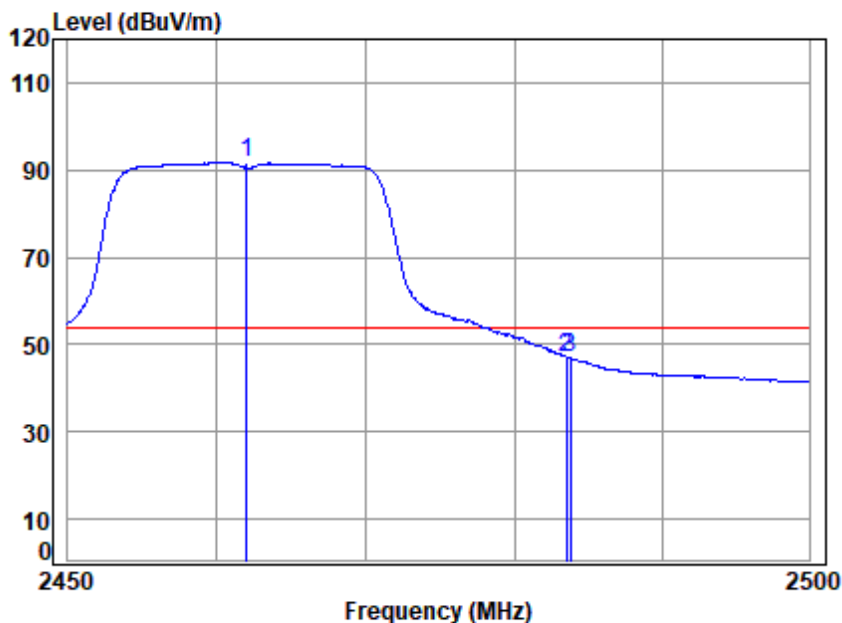


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

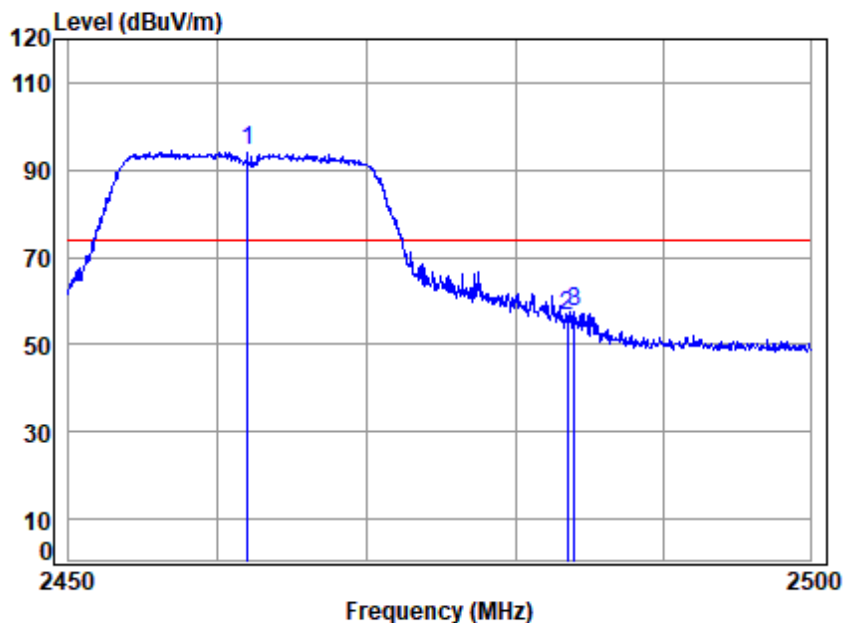
Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11N20

		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 * 2462.000	5.57	28.64	41.20	98.54	91.55	54.00	37.55	Average
2 2483.500	5.60	28.67	41.21	54.07	47.13	54.00	-6.87	Average
3 2483.790	5.60	28.67	41.21	53.77	46.83	54.00	-7.17	Average

Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11N20

	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 * 2462.000	5.57	28.64	41.20	101.29	94.30	74.00	20.30	Peak
2 2483.500	5.60	28.67	41.21	63.49	56.55	74.00	-17.45	Peak
3 2483.990	5.60	28.67	41.21	64.51	57.57	74.00	-16.43	Peak

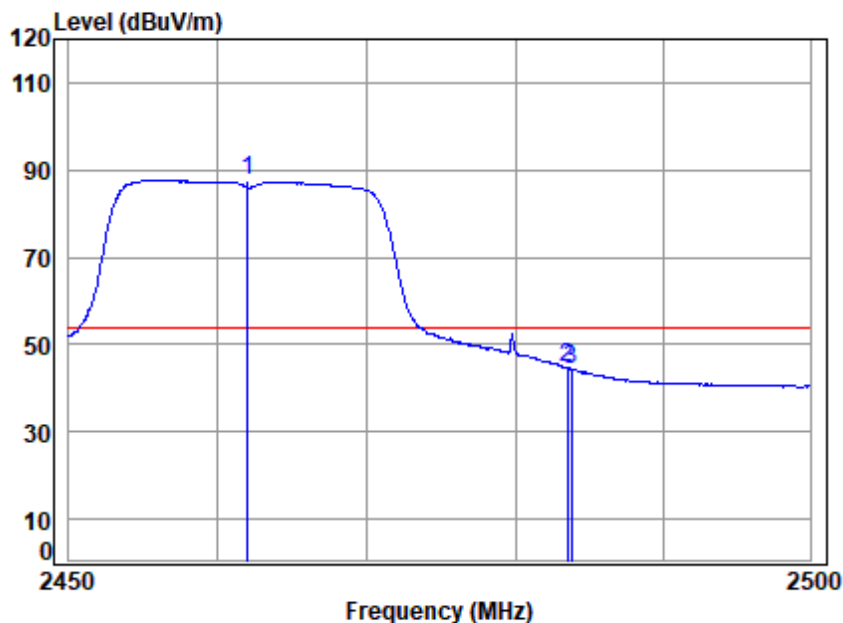


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 Band edge
Note : 2.4G WIFI 11N20

	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 * 2462.000	5.57	28.64	41.20	94.51	87.52	54.00	33.52	Average
2 2483.500	5.60	28.67	41.21	51.69	44.75	54.00	-9.25	Average
3 2483.790	5.60	28.67	41.21	51.25	44.31	54.00	-9.69	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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 and 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



7.8 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

Measurement Distance: 3m

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.



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 / SGS-CSTC Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

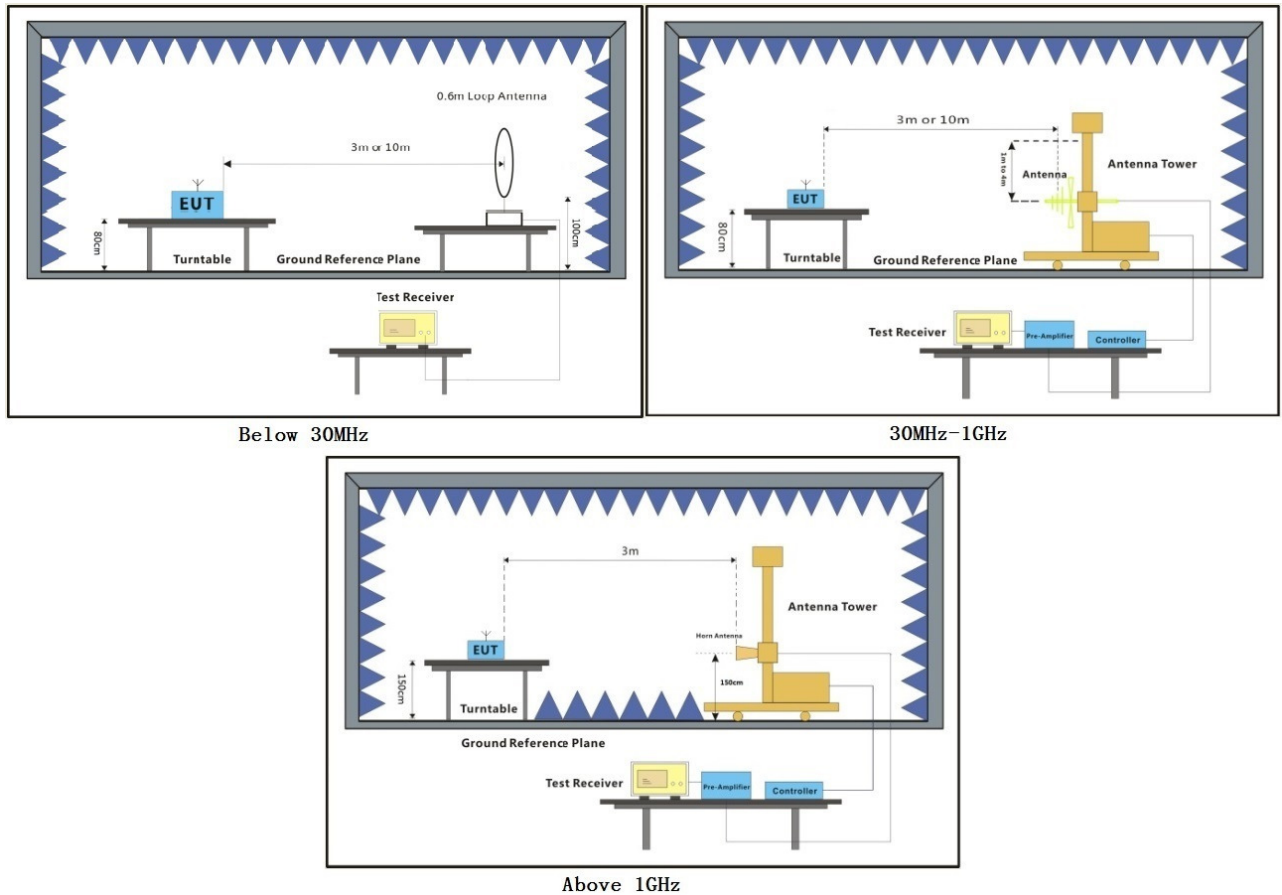
7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1015 mbar

Test mode: e: TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20). Only the data of worst case is recorded in the report.

7.8.2 Test Setup Diagram



7.8.3 Measurement Procedure and Data

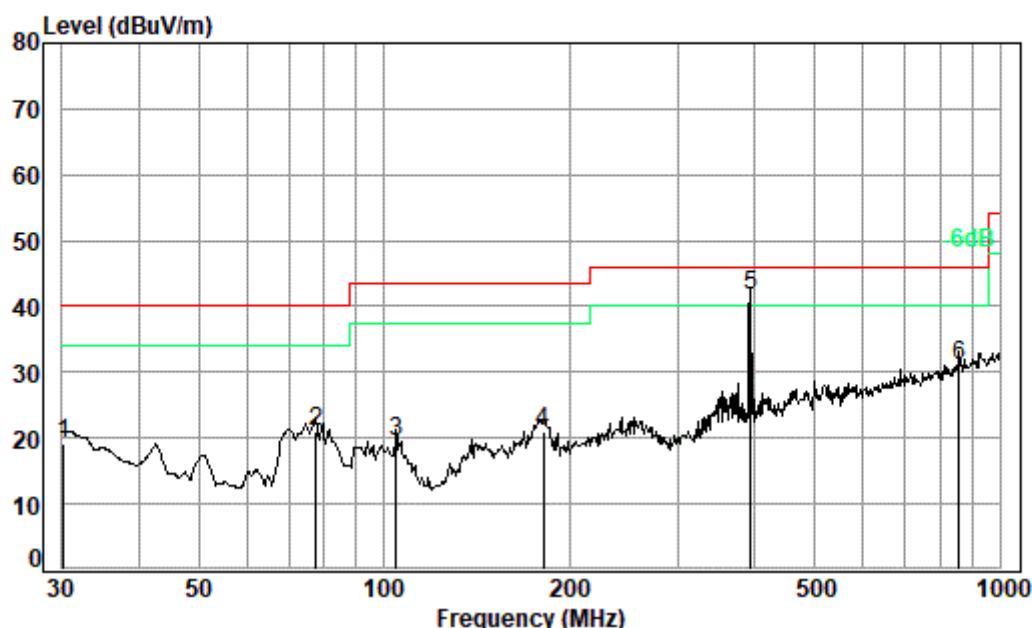
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 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.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- 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) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) 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
- 3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 4) 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.

Radiated emission below 1GHz

Mode:e; Polarization:Horizontal



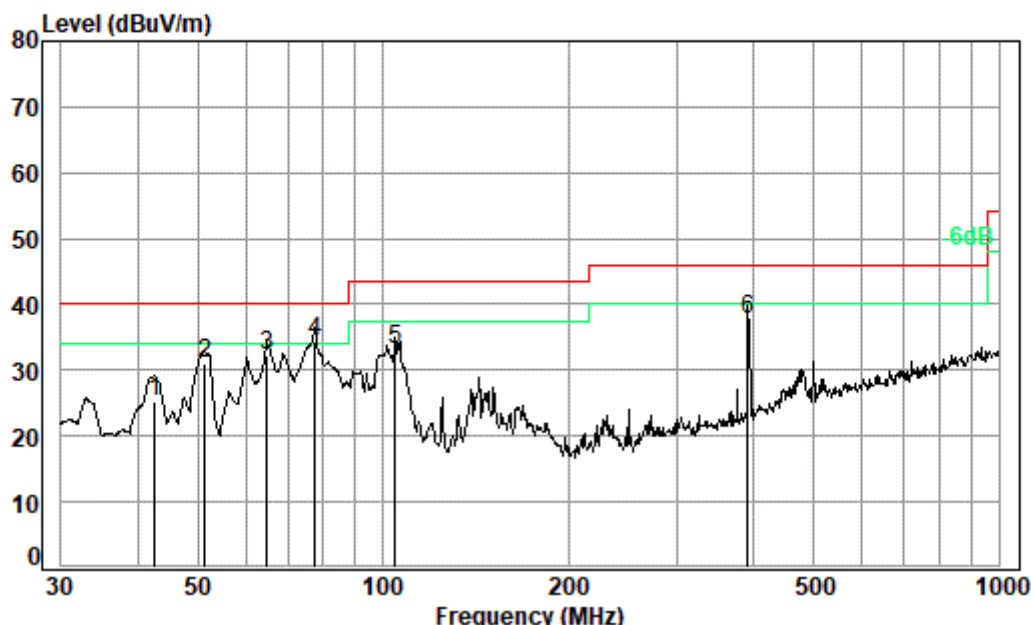
Condition: 3m HORIZONTAL

Job No. : 18652CR

Test mode: e

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.21	0.60	22.38	27.73	23.86	19.11	40.00	-20.89	peak
2	77.59	1.03	12.18	27.66	35.58	21.13	40.00	-18.87	peak
3	104.54	1.21	13.78	27.61	31.98	19.36	43.50	-24.14	peak
4	181.28	1.37	15.94	27.23	30.78	20.86	43.50	-22.64	peak
5 pp	393.47	2.18	22.24	27.39	44.65	41.68	46.00	-4.32	QP
6	860.04	3.45	29.30	27.46	25.73	31.02	46.00	-14.98	peak

Mode:e; Polarization:Vertical



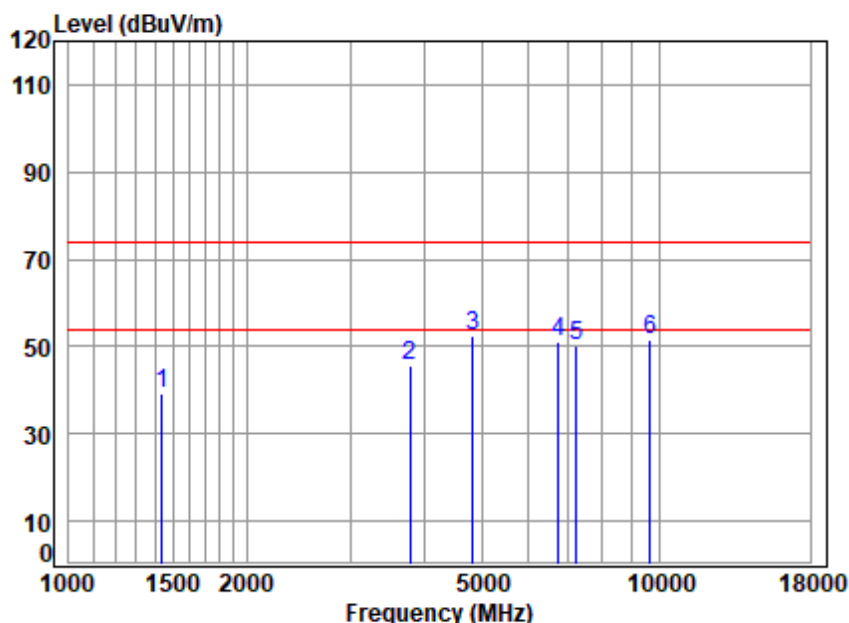
Condition: 3m VERTICAL

Job No. : 18652CR

Test mode: e

	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	42.60	0.66	16.57	27.70	35.66	25.19	40.00	-14.81	QP
2	51.30	0.80	14.06	27.69	43.75	30.92	40.00	-9.08	QP
3	64.89	0.80	13.00	27.67	46.16	32.29	40.00	-7.71	QP
4 pp	77.59	1.03	12.18	27.66	48.94	34.49	40.00	-5.51	QP
5	104.54	1.21	13.78	27.61	45.69	33.07	43.50	-10.43	QP
6	390.72	2.17	22.17	27.38	40.79	37.75	46.00	-8.25	QP

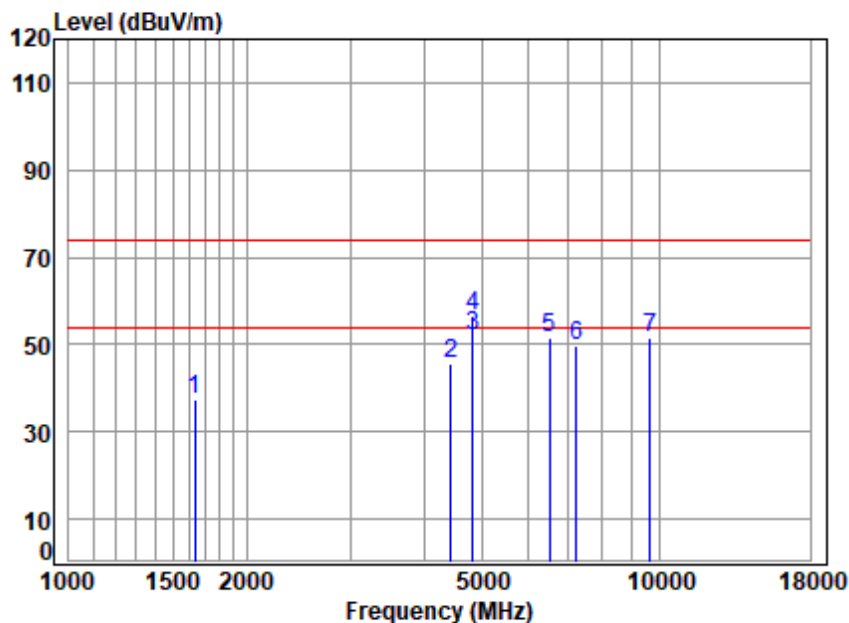
Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11B

		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	1439.343	5.28	25.56	40.66	49.27	39.45	74.00	-34.55	peak
2	3790.361	6.77	33.04	42.50	48.39	45.70	74.00	-28.30	peak
3	4824.000	7.91	34.19	43.63	53.80	52.27	74.00	-21.73	peak
4	6737.207	10.86	35.78	42.21	46.57	51.00	74.00	-23.00	peak
5	7236.000	10.07	36.40	41.83	45.56	50.20	74.00	-23.80	peak
6	9648.000	10.77	37.53	38.36	41.65	51.59	74.00	-22.41	peak

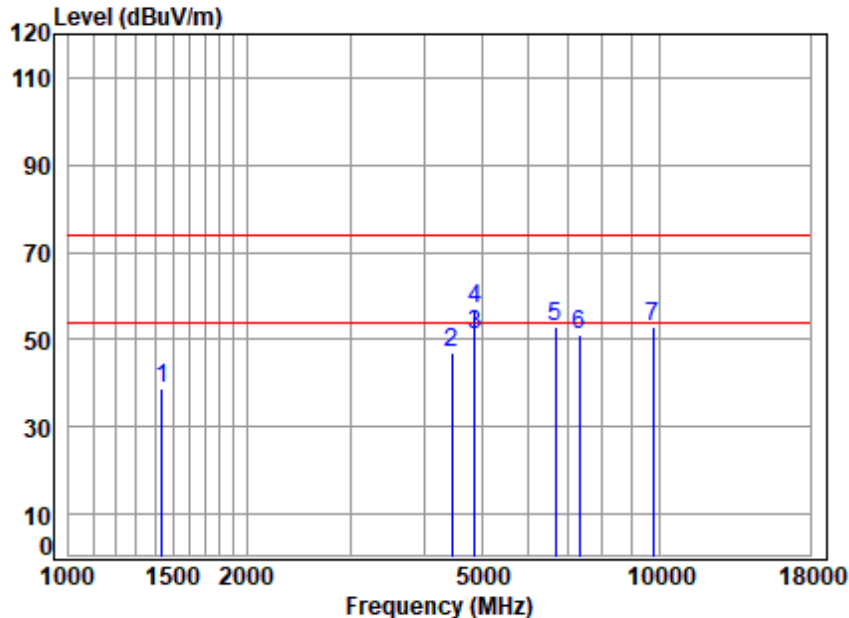
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1634.543	5.31	26.40	40.79	46.37	37.29	74.00	-36.71	peak
2	4430.628	7.48	33.60	43.23	47.68	45.53	74.00	-28.47	peak
3	4824.000	7.91	34.19	43.63	53.44	51.91	54.00	-2.09	Average
4	4824.000	7.91	34.19	43.63	57.97	56.44	74.00	-17.56	peak
5	6507.536	11.52	35.12	42.40	47.50	51.74	74.00	-22.26	peak
6	7236.000	10.07	36.40	41.83	45.23	49.87	74.00	-24.13	peak
7	9648.000	10.77	37.53	38.36	41.56	51.50	74.00	-22.50	peak

Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:middle

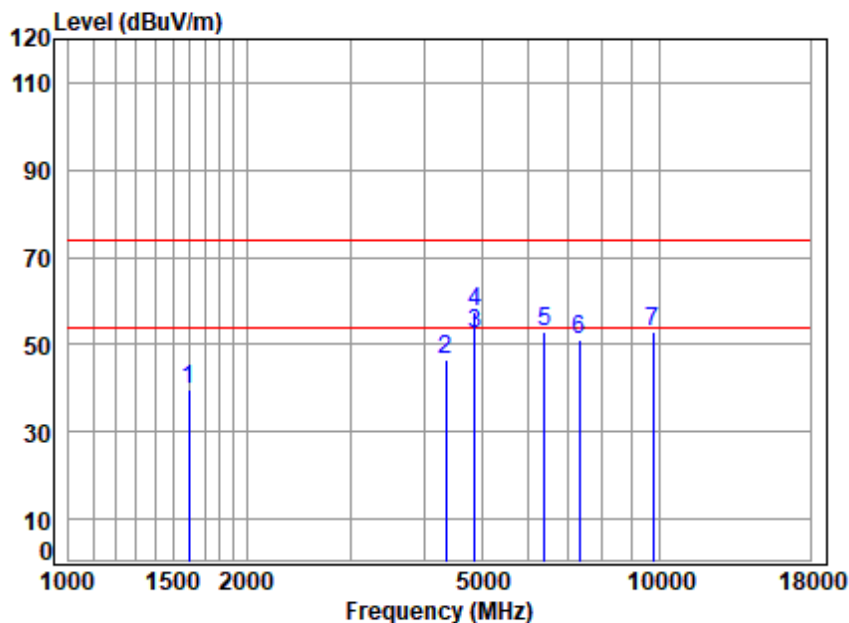


Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11B

	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	1439.343	5.28	25.56	40.66	48.44	38.62	74.00	-35.38	peak
2	4456.315	7.51	33.60	43.26	49.37	47.22	74.00	-26.78	peak
3	4874.000	7.96	34.28	43.68	52.62	51.18	54.00	-2.82	Average
4	4874.000	7.96	34.28	43.68	58.41	56.97	74.00	-17.03	peak
5	6659.763	11.08	35.56	42.28	48.56	52.92	74.00	-21.08	peak
6	7311.000	10.05	36.37	41.78	46.62	51.26	74.00	-22.74	peak
7	9748.000	10.82	37.55	38.20	42.71	52.88	74.00	-21.12	peak



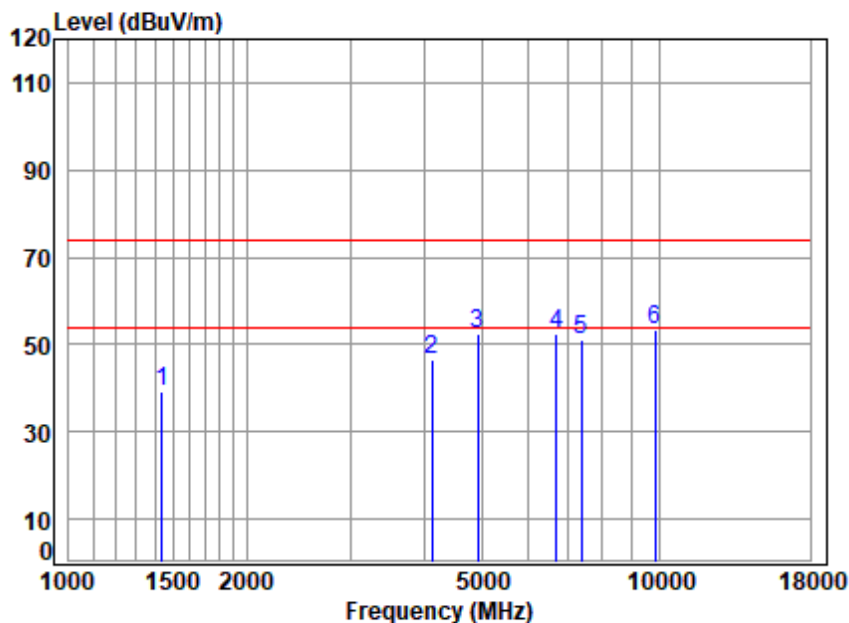
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1597.181	5.35	26.24	40.77	48.84	39.66	74.00	-34.34	peak
2	4354.454	7.40	33.60	43.15	48.91	46.76	74.00	-27.24	peak
3	4874.000	7.96	34.28	43.68	53.88	52.44	54.00	-1.56	Average
4	4874.000	7.96	34.28	43.68	58.77	57.33	74.00	-16.67	peak
5	6395.654	11.34	35.02	42.49	49.19	53.06	74.00	-20.94	peak
6	7311.000	10.05	36.37	41.78	46.64	51.28	74.00	-22.72	peak
7	9748.000	10.82	37.55	38.20	42.56	52.73	74.00	-21.27	peak

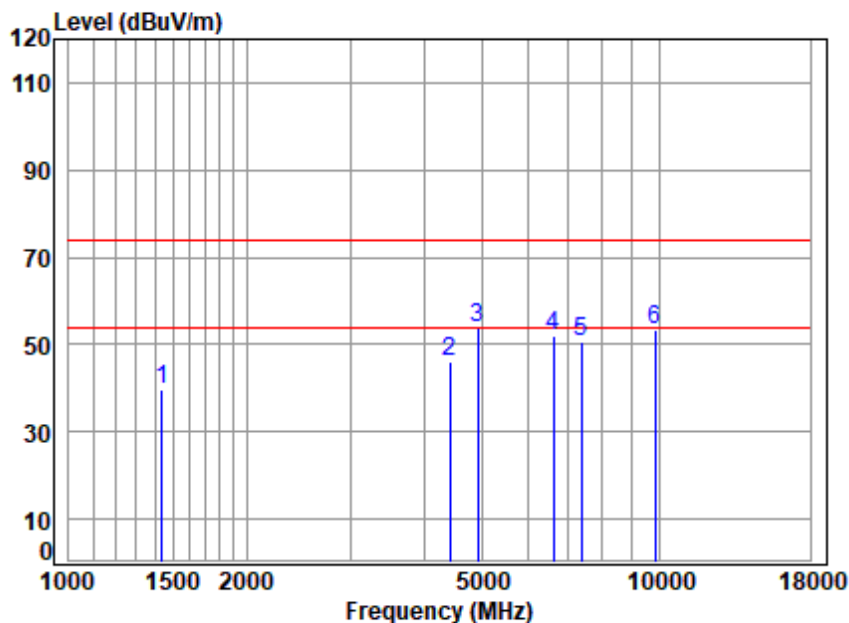
Mode:e; Polarization:Horizontal; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1439.343	5.28	25.56	40.66	49.01	39.19	74.00	-34.81	peak
2	4121.768	7.13	33.60	42.89	48.83	46.67	74.00	-27.33	peak
3	4924.000	8.01	34.37	43.73	53.71	52.36	74.00	-21.64	peak
4	6698.373	10.97	35.67	42.24	48.24	52.64	74.00	-21.36	peak
5	7386.000	10.03	36.34	41.72	46.57	51.22	74.00	-22.78	peak
6	9848.000	10.87	37.57	38.04	43.10	53.50	74.00	-20.50	peak

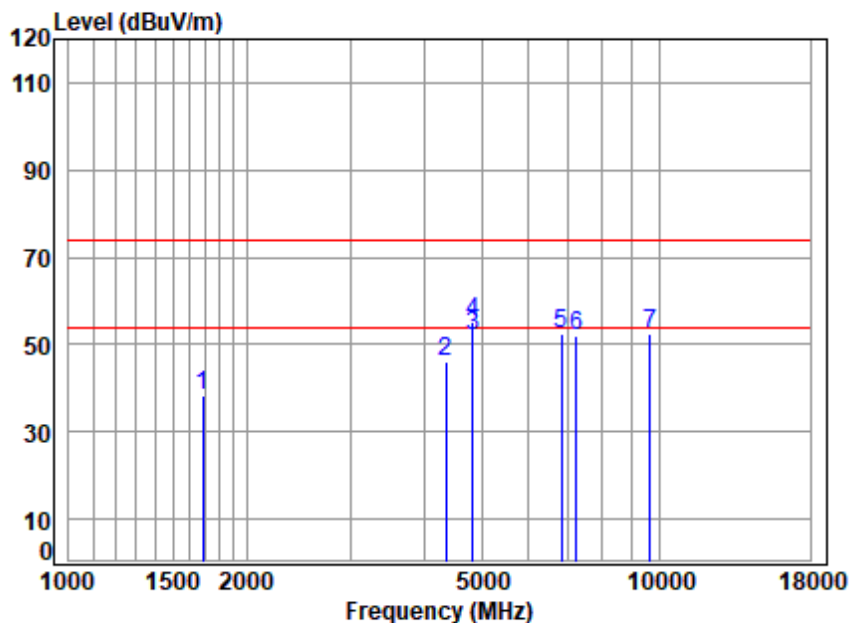
Mode:e; Polarization:Vertical; Modulation:802.11b; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1439.343	5.28	25.56	40.66	49.68	39.86	74.00	-34.14	peak
2	4417.841	7.47	33.60	43.22	48.03	45.88	74.00	-28.12	peak
3	4924.000	8.01	34.37	43.73	55.24	53.89	74.00	-20.11	peak
4	6621.375	11.19	35.45	42.31	47.86	52.19	74.00	-21.81	peak
5	7386.000	10.03	36.34	41.72	46.20	50.85	74.00	-23.15	peak
6	9848.000	10.87	37.57	38.04	42.82	53.22	74.00	-20.78	peak

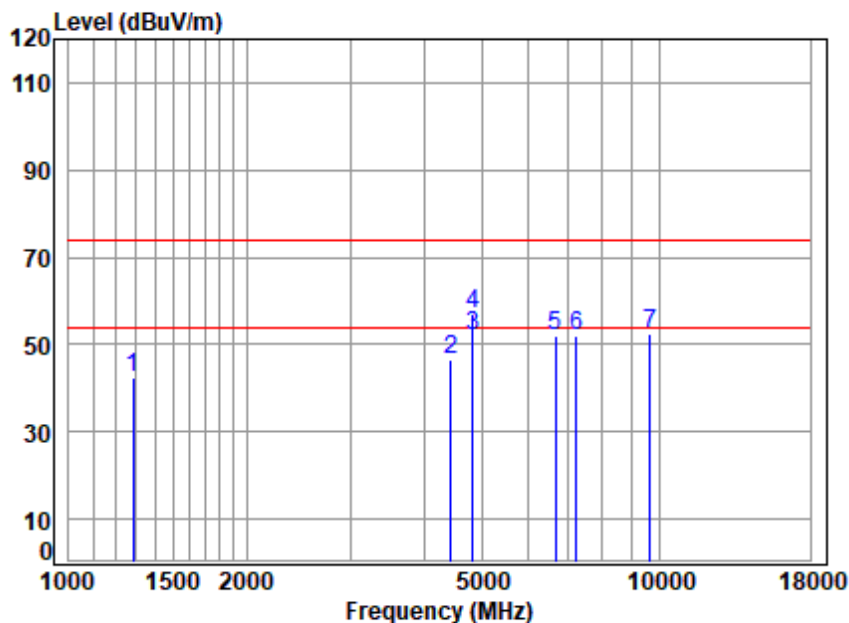
Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11G

	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	1687.347	5.24	26.62	40.82	47.50	38.54	74.00	-35.46	peak
2	4354.454	7.40	33.60	43.15	48.24	46.09	74.00	-27.91	peak
3	4824.000	7.91	34.19	43.63	53.44	51.91	54.00	-2.09	Average
4	4824.000	7.91	34.19	43.63	56.93	55.40	74.00	-18.60	peak
5	6815.551	10.64	36.00	42.15	47.95	52.44	74.00	-21.56	peak
6	7236.000	10.07	36.40	41.83	47.25	51.89	74.00	-22.11	peak
7	9648.000	10.77	37.53	38.36	42.54	52.48	74.00	-21.52	peak

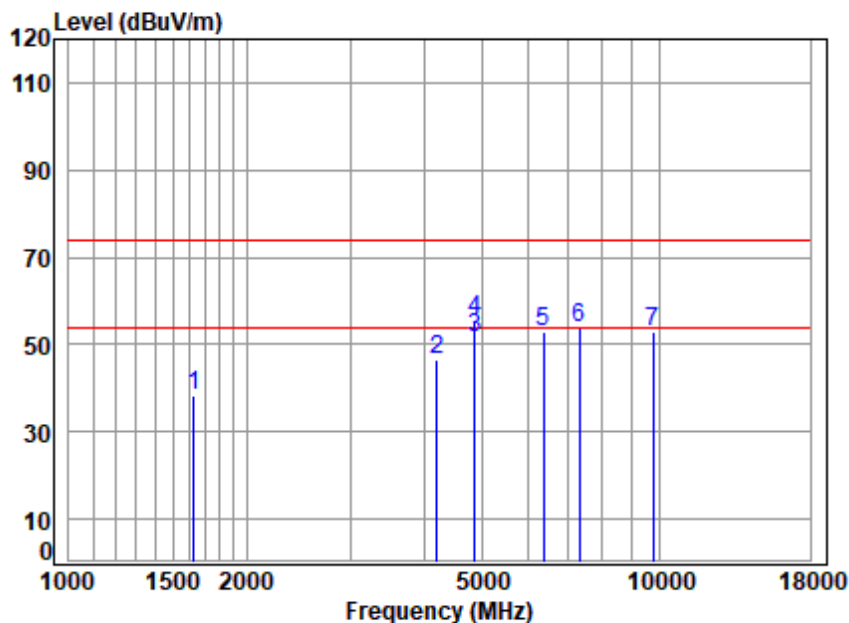
Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11G

	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	1285.904	4.75	24.89	40.55	53.13	42.22	74.00	-31.78	peak
2	4430.628	7.48	33.60	43.23	48.65	46.50	74.00	-27.50	peak
3	4824.000	7.91	34.19	43.63	53.77	52.24	54.00	-1.76	Average
4	4824.000	7.91	34.19	43.63	58.43	56.90	74.00	-17.10	peak
5	6679.040	11.02	35.61	42.26	47.69	52.06	74.00	-21.94	peak
6	7236.000	10.07	36.40	41.83	47.28	51.92	74.00	-22.08	peak
7	9648.000	10.77	37.53	38.36	42.43	52.37	74.00	-21.63	peak

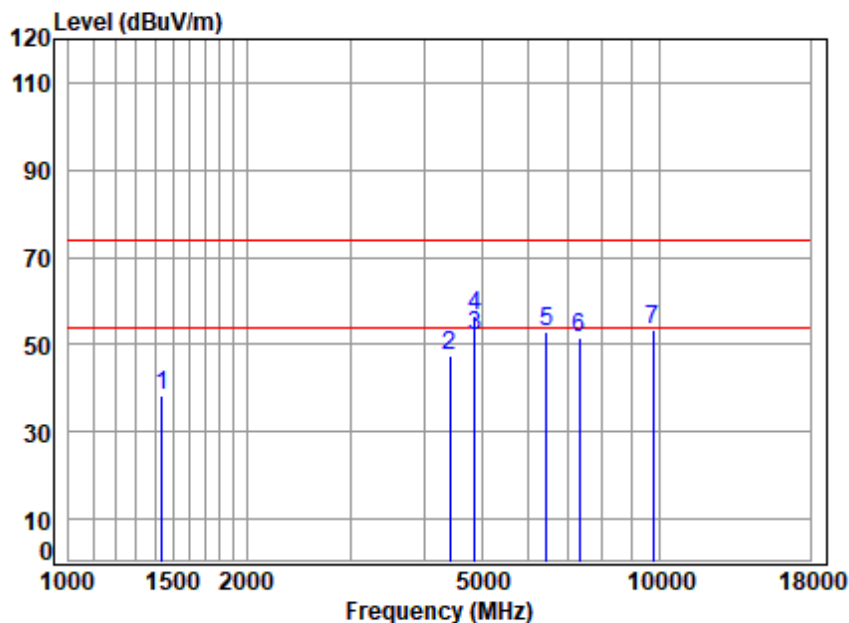
Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1629.825	5.31	26.38	40.79	47.52	38.42	74.00	-35.58	peak
2	4193.872	7.21	33.60	42.97	48.68	46.52	74.00	-27.48	peak
3	4874.000	7.96	34.28	43.68	53.17	51.73	54.00	-2.27	Average
4	4874.000	7.96	34.28	43.68	57.03	55.59	74.00	-18.41	peak
5	6377.195	11.31	35.00	42.51	49.04	52.84	74.00	-21.16	peak
6	7311.000	10.05	36.37	41.78	49.19	53.83	74.00	-20.17	peak
7	9748.000	10.82	37.55	38.20	42.80	52.97	74.00	-21.03	peak

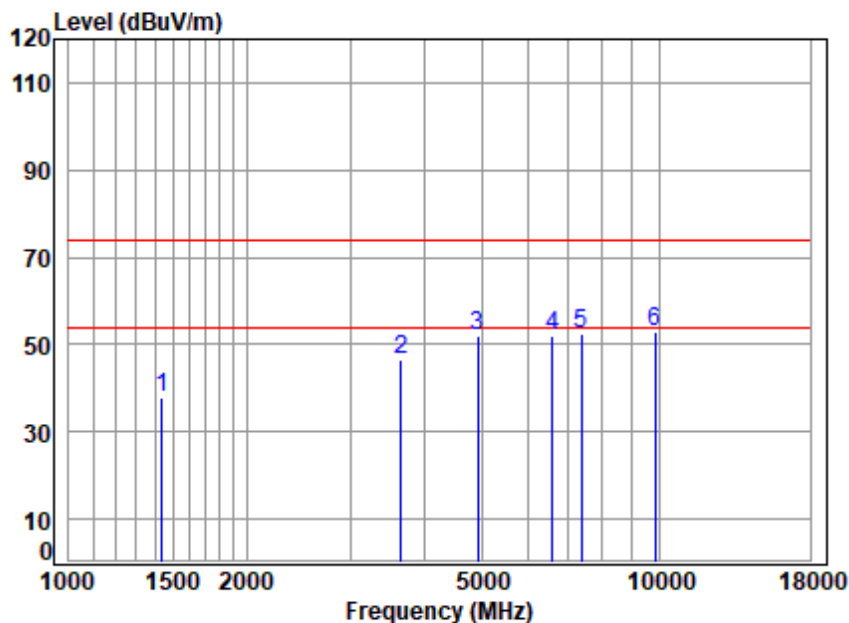
Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11G

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1439.343	5.28	25.56	40.66	48.27	38.45	74.00	-35.55	peak
2	4417.841	7.47	33.60	43.22	49.45	47.30	74.00	-26.70	peak
3	4874.000	7.96	34.28	43.68	53.31	51.87	54.00	-2.13	Average
4	4874.000	7.96	34.28	43.68	58.11	56.67	74.00	-17.33	peak
5	6451.353	11.45	35.06	42.44	48.68	52.75	74.00	-21.25	peak
6	7311.000	10.05	36.37	41.78	47.13	51.77	74.00	-22.23	peak
7	9748.000	10.82	37.55	38.20	43.34	53.51	74.00	-20.49	peak

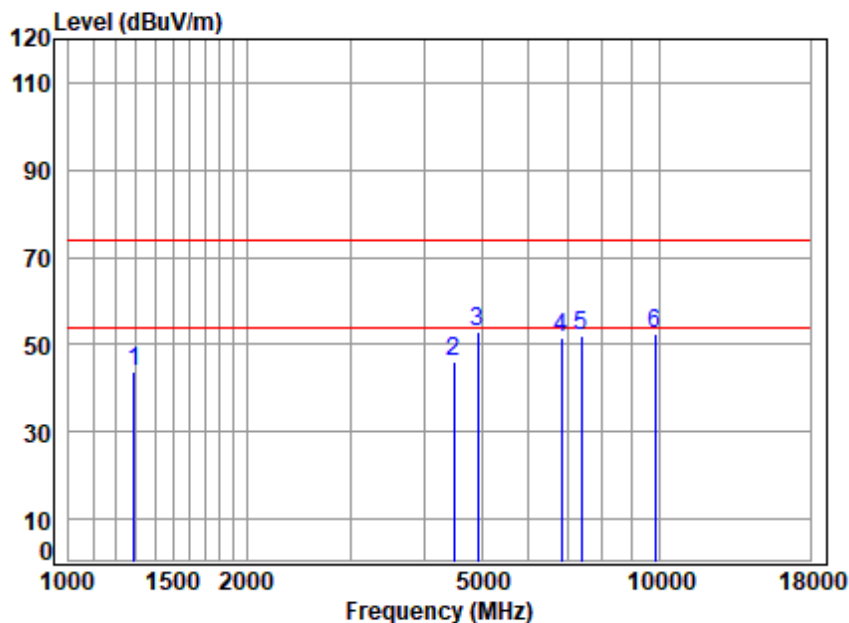
Mode:e; Polarization:Horizontal; Modulation:802.11g; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11G

	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	1439.343	5.28	25.56	40.66	47.67	37.85	74.00	-36.15	peak
2	3650.582	6.62	32.64	42.32	49.56	46.50	74.00	-27.50	peak
3	4924.000	8.01	34.37	43.73	53.17	51.82	74.00	-22.18	peak
4	6583.209	11.30	35.34	42.34	47.64	51.94	74.00	-22.06	peak
5	7386.000	10.03	36.34	41.72	47.91	52.56	74.00	-21.44	peak
6	9848.000	10.87	37.57	38.04	42.52	52.92	74.00	-21.08	peak

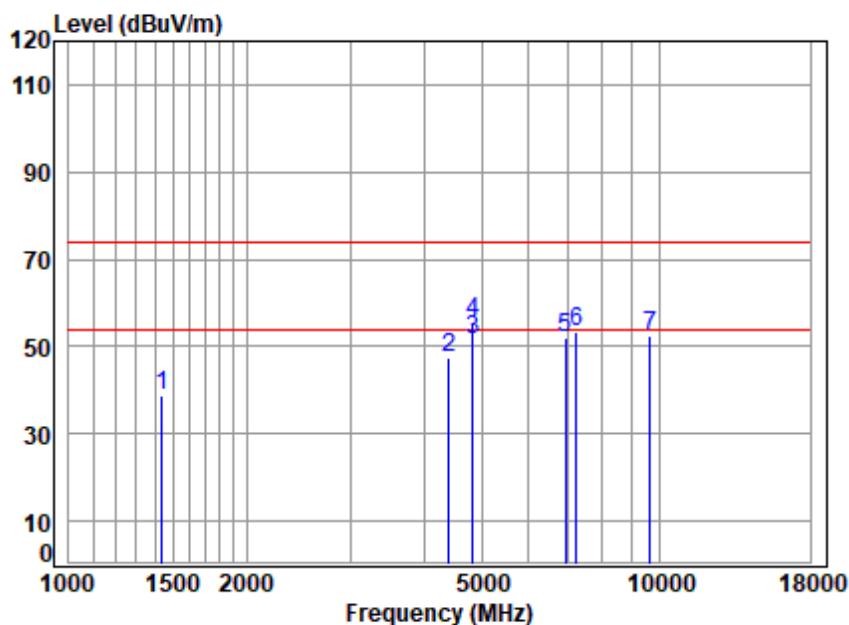
Mode:e; Polarization:Vertical; Modulation:802.11g; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11G

	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	1289.627	4.76	24.91	40.55	54.89	44.01	74.00	-29.99	peak
2	4495.125	7.55	33.60	43.30	48.09	45.94	74.00	-28.06	peak
3	4924.000	8.01	34.37	43.73	54.08	52.73	74.00	-21.27	peak
4	6835.278	10.58	36.05	42.14	47.28	51.77	74.00	-22.23	peak
5	7386.000	10.03	36.34	41.72	47.23	51.88	74.00	-22.12	peak
6	9848.000	10.87	37.57	38.04	42.28	52.68	74.00	-21.32	peak

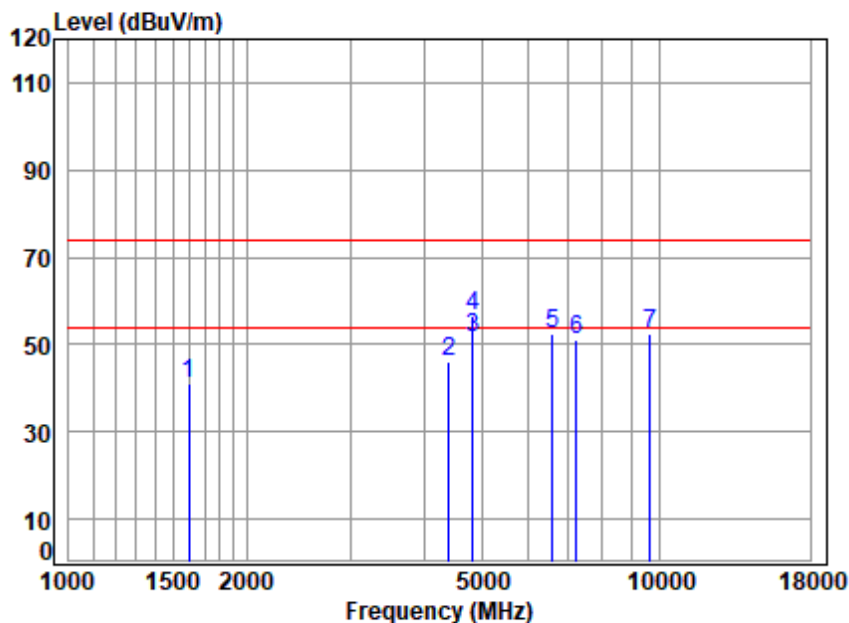
Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11N20

	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	1439.343	5.28	25.56	40.66	48.68	38.86	74.00	-35.14	peak
2	4405.090	7.46	33.60	43.20	49.78	47.64	74.00	-26.36	peak
3	4824.000	7.91	34.19	43.63	52.88	51.35	54.00	-2.65	Average
4	4824.000	7.91	34.19	43.63	57.09	55.56	74.00	-18.44	peak
5	6934.778	10.31	36.32	42.06	47.47	52.04	74.00	-21.96	peak
6	7236.000	10.07	36.40	41.83	48.88	53.52	74.00	-20.48	peak
7	9648.000	10.77	37.53	38.36	42.74	52.68	74.00	-21.32	peak

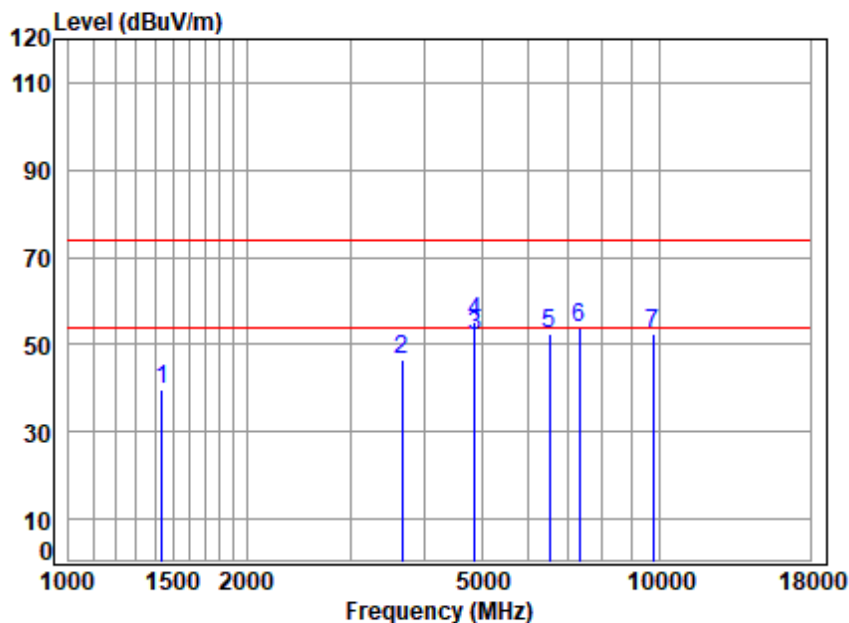
Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2412 TX RSE
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1597.181	5.35	26.24	40.77	50.36	41.18	74.00	-32.82	peak
2	4405.090	7.46	33.60	43.20	48.44	46.30	74.00	-27.70	peak
3	4824.000	7.91	34.19	43.63	52.99	51.46	54.00	-2.54	Average
4	4824.000	7.91	34.19	43.63	58.17	56.64	74.00	-17.36	peak
5	6602.265	11.24	35.39	42.32	48.21	52.52	74.00	-21.48	peak
6	7236.000	10.07	36.40	41.83	46.33	50.97	74.00	-23.03	peak
7	9648.000	10.77	37.53	38.36	42.55	52.49	74.00	-21.51	peak

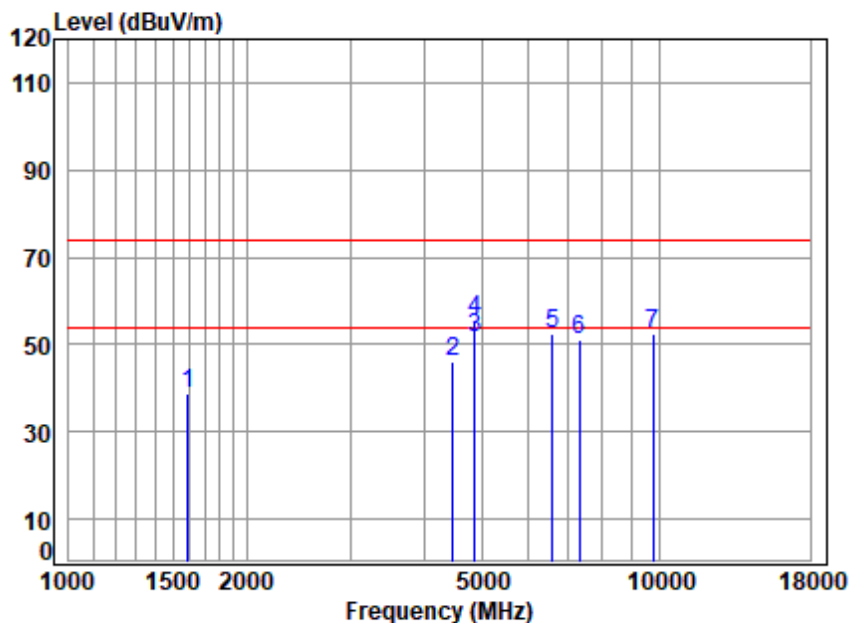
Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11N20

	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	1439.343	5.28	25.56	40.66	49.31	39.49	74.00	-34.51	peak
2	3661.149	6.64	32.67	42.34	49.48	46.45	74.00	-27.55	peak
3	4874.000	7.96	34.28	43.68	53.44	52.00	54.00	-2.00	Average
4	4874.000	7.96	34.28	43.68	56.69	55.25	74.00	-18.75	peak
5	6526.373	11.46	35.18	42.38	48.38	52.64	74.00	-21.36	peak
6	7311.000	10.05	36.37	41.78	49.07	53.71	74.00	-20.29	peak
7	9748.000	10.82	37.55	38.20	42.47	52.64	74.00	-21.36	peak

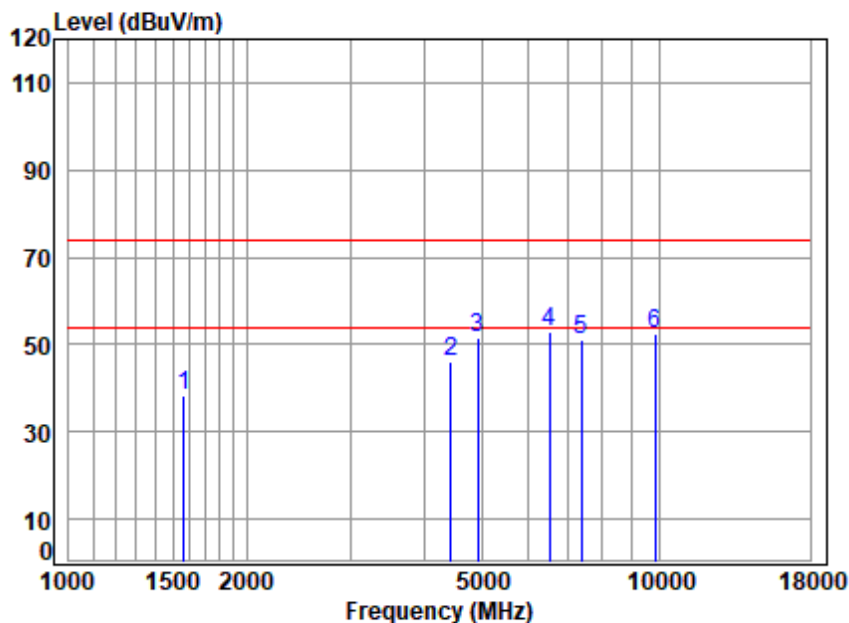
Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2437 TX RSE
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1592.571	5.36	26.22	40.77	47.89	38.70	74.00	-35.30	peak
2	4469.214	7.53	33.60	43.27	48.23	46.09	74.00	-27.91	peak
3	4874.000	7.96	34.28	43.68	52.88	51.44	54.00	-2.56	Average
4	4874.000	7.96	34.28	43.68	56.91	55.47	74.00	-18.53	peak
5	6602.265	11.24	35.39	42.32	48.09	52.40	74.00	-21.60	peak
6	7311.000	10.05	36.37	41.78	46.47	51.11	74.00	-22.89	peak
7	9748.000	10.82	37.55	38.20	42.26	52.43	74.00	-21.57	peak

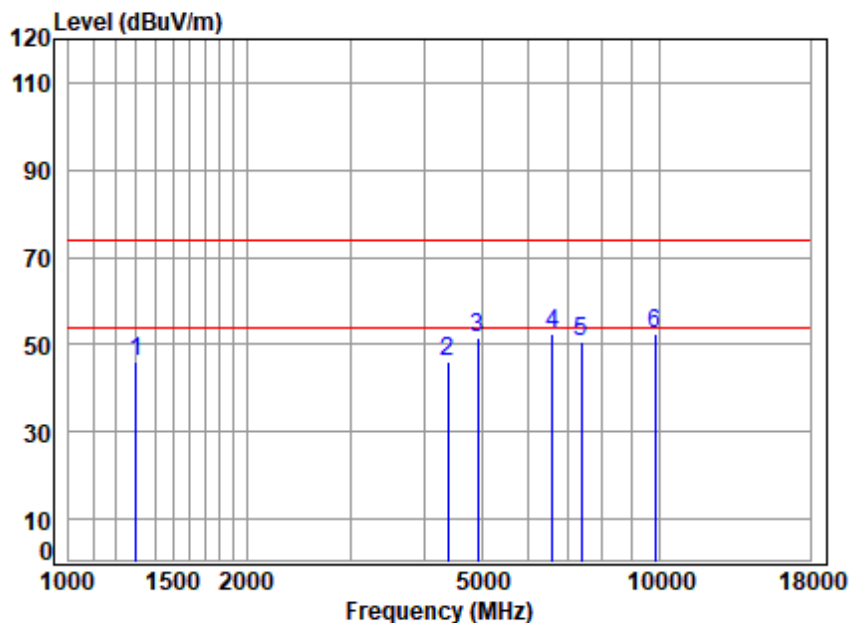
Mode:e; Polarization:Horizontal; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11N20

	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	5.39	26.10	40.75	47.67	38.41	74.00	-35.59	peak
2	7.50	33.60	43.25	48.34	46.19	74.00	-27.81	peak
3	8.01	34.37	43.73	52.70	51.35	74.00	-22.65	peak
4	11.46	35.18	42.38	48.86	53.12	74.00	-20.88	peak
5	10.03	36.34	41.72	46.25	50.90	74.00	-23.10	peak
6	10.87	37.57	38.04	41.97	52.37	74.00	-21.63	peak

Mode:e; Polarization:Vertical; Modulation:802.11n; bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 18652CR\18653CR
Mode : 2462 TX RSE
Note : 2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1300.858	4.80	24.96	40.56	56.83	46.03	74.00	-27.97	peak
2	4392.376	7.44	33.60	43.19	48.26	46.11	74.00	-27.89	peak
3	4924.000	8.01	34.37	43.73	53.02	51.67	74.00	-22.33	peak
4	6602.265	11.24	35.39	42.32	48.05	52.36	74.00	-21.64	peak
5	7386.000	10.03	36.34	41.72	45.86	50.51	74.00	-23.49	peak
6	9848.000	10.87	37.57	38.04	42.01	52.41	74.00	-21.59	peak



8 Photographs

8.1 Test Setup

Please refer to setup photos.

8.2 EUT Constructional Details (EUT Photos)

Please Refer to external and internal photos for details.



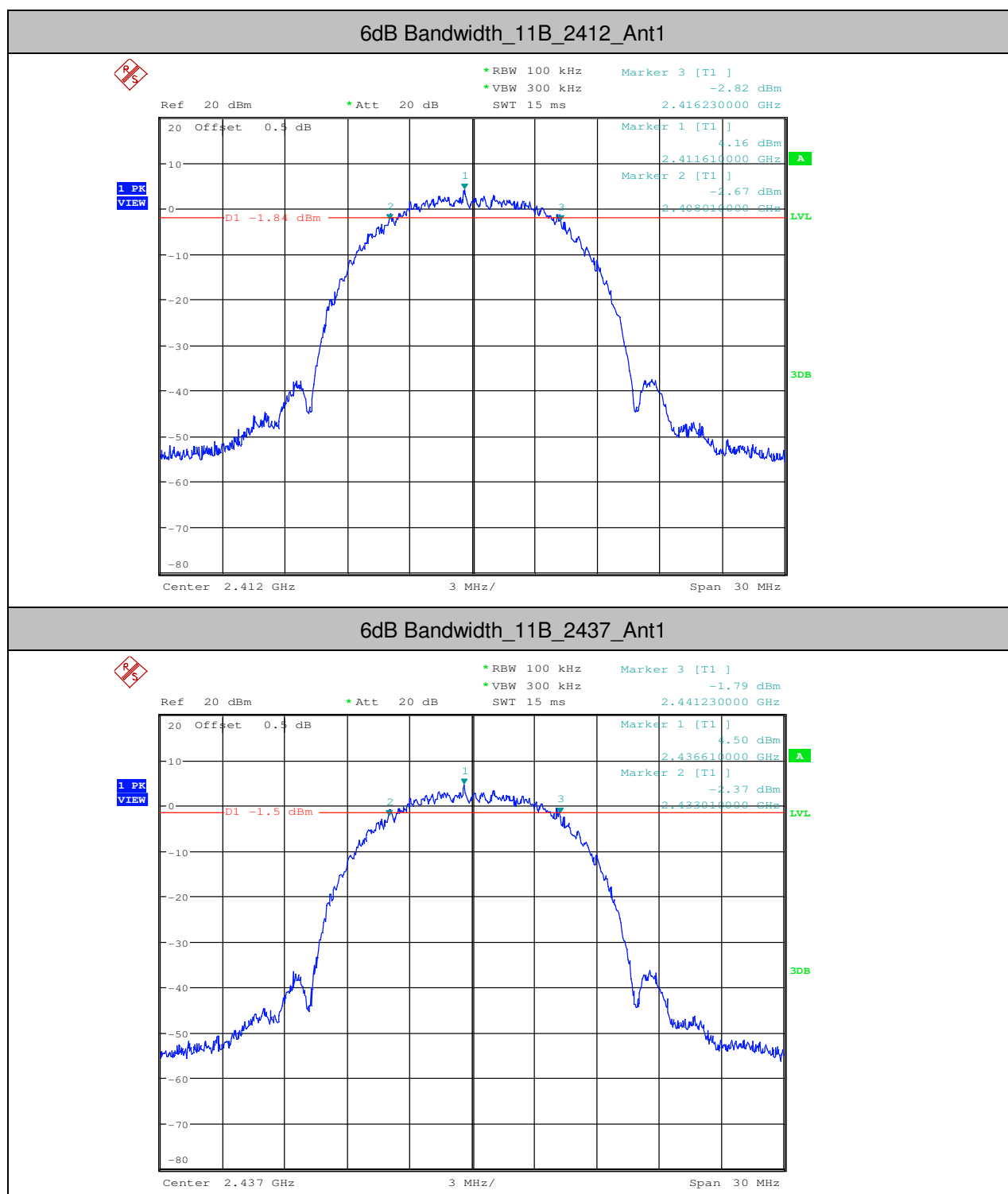
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

9 Appendix

9.1 Appendix 15.247

1.6dB Bandwidth

Test mode:	Test Channel	Ant	EBW[MHz]	Limit[MHz]	Verdict
11B	2412	Ant1	8.220	≥ 0.5	PASS
11B	2437	Ant1	8.220	≥ 0.5	PASS
11B	2462	Ant1	8.220	≥ 0.5	PASS
11G	2412	Ant1	16.380	≥ 0.5	PASS
11G	2437	Ant1	16.380	≥ 0.5	PASS
11G	2462	Ant1	16.380	≥ 0.5	PASS
11N20SISO	2412	Ant1	17.160	≥ 0.5	PASS
11N20SISO	2437	Ant1	17.100	≥ 0.5	PASS
11N20SISO	2462	Ant1	17.130	≥ 0.5	PASS



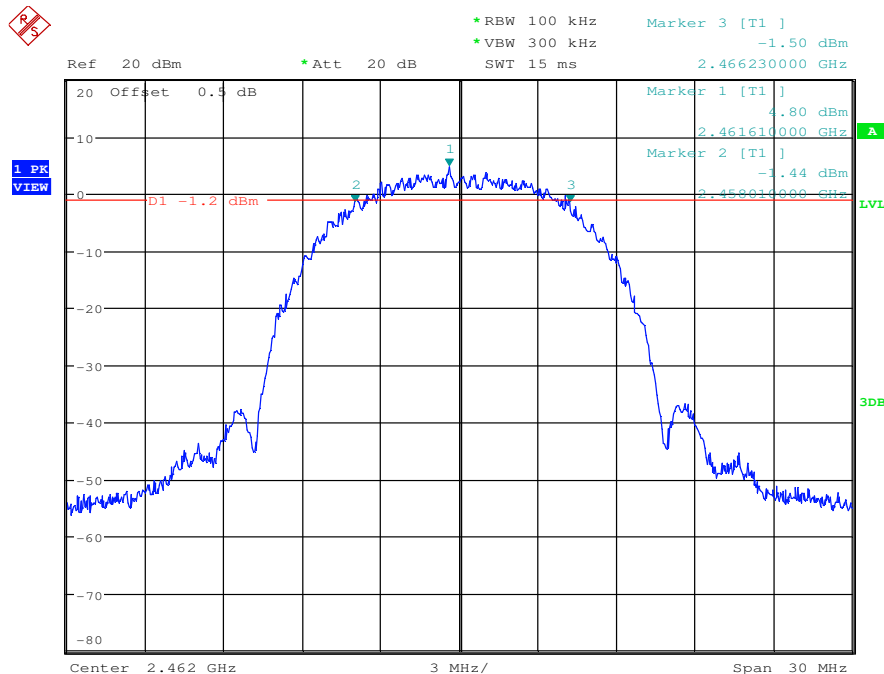
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed on the reverse, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic or digital documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 or further disseminated without the written consent of the Company. Any such reproduction, for any form or medium, or 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,

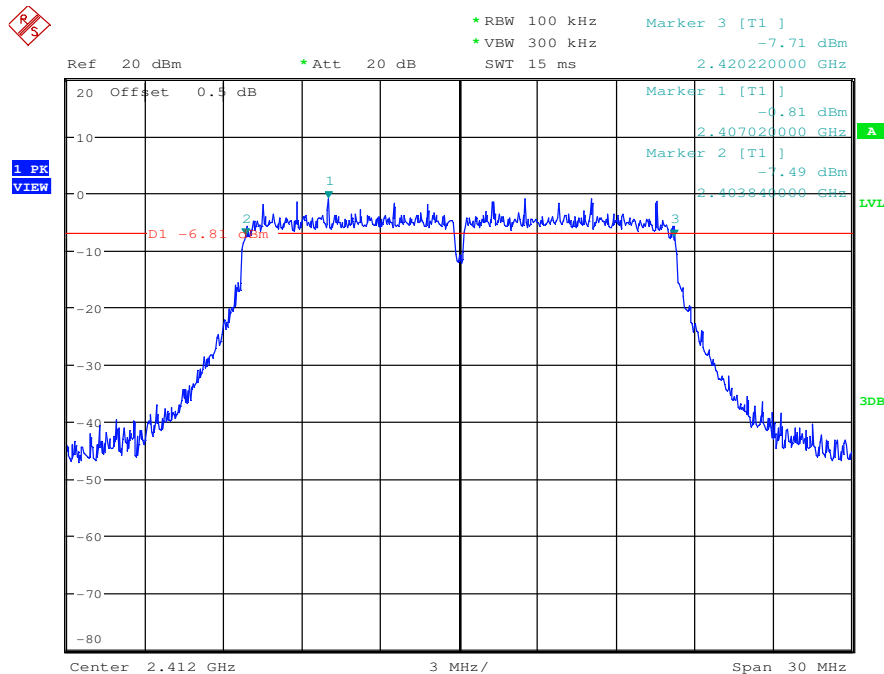
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center EEC Laboratory.

中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

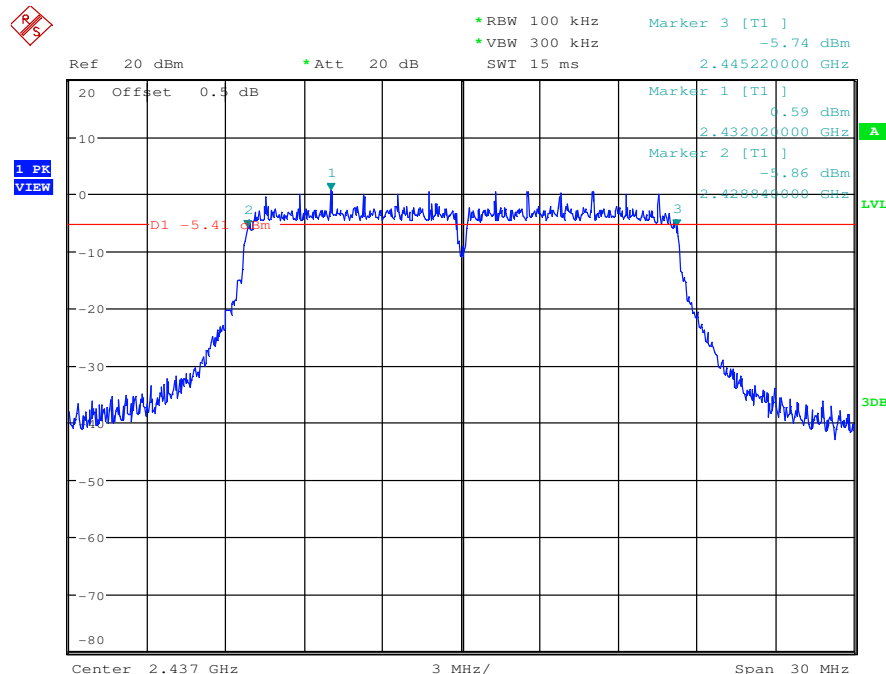
6dB Bandwidth_11B_2462_Ant1



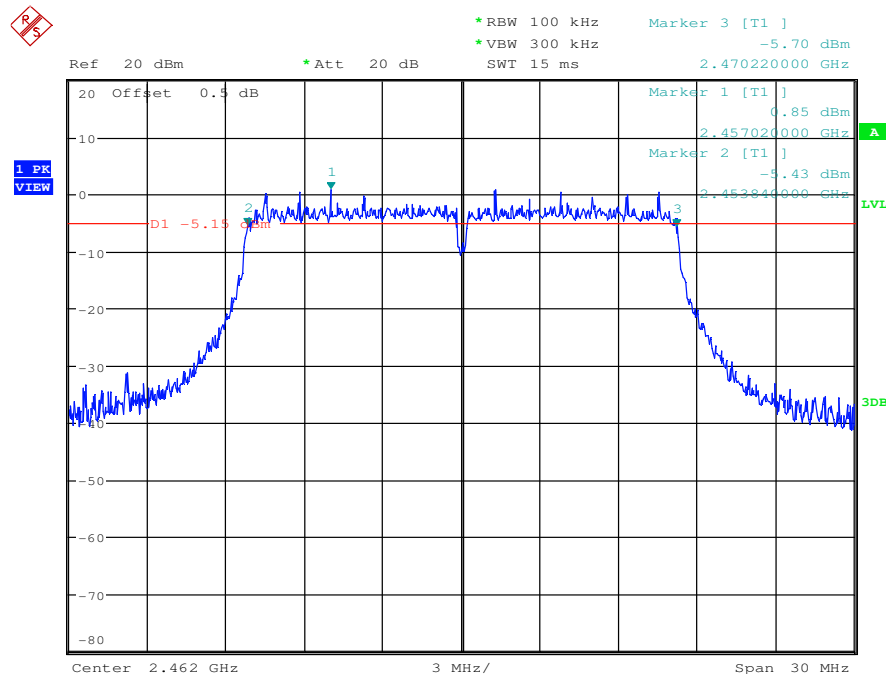
6dB Bandwidth_11G_2412_Ant1



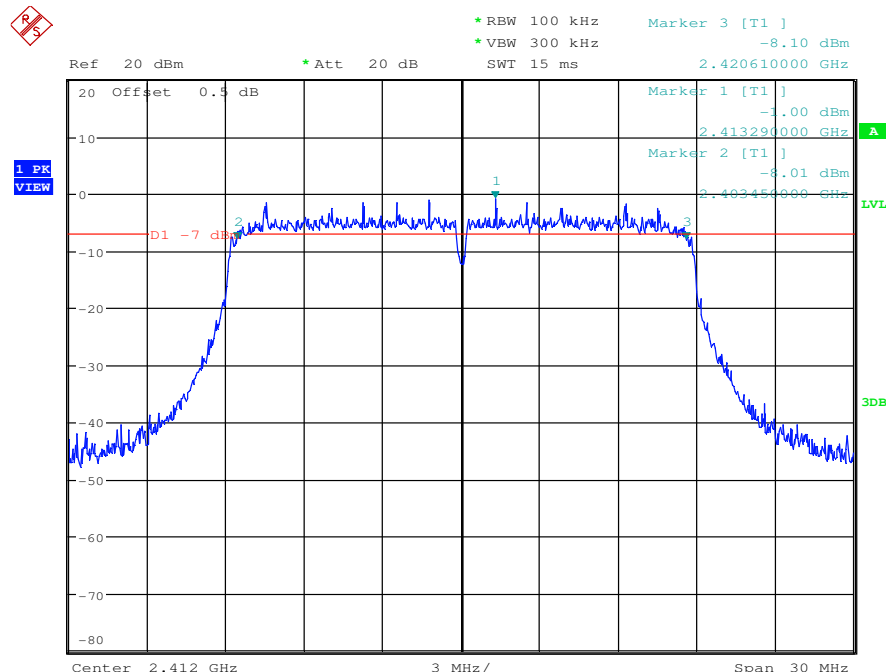
6dB Bandwidth_11G_2437_Ant1



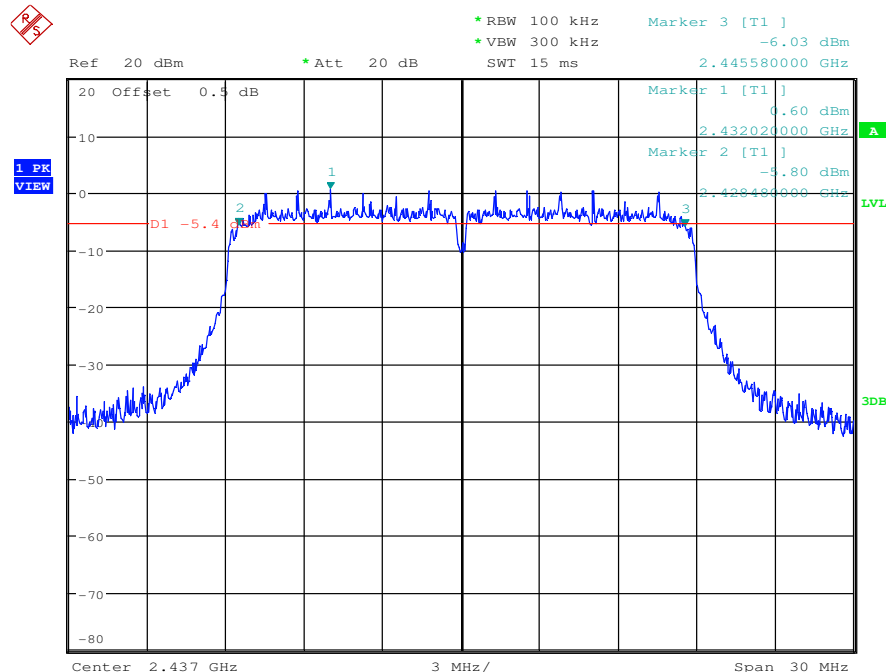
6dB Bandwidth_11G_2462_Ant1

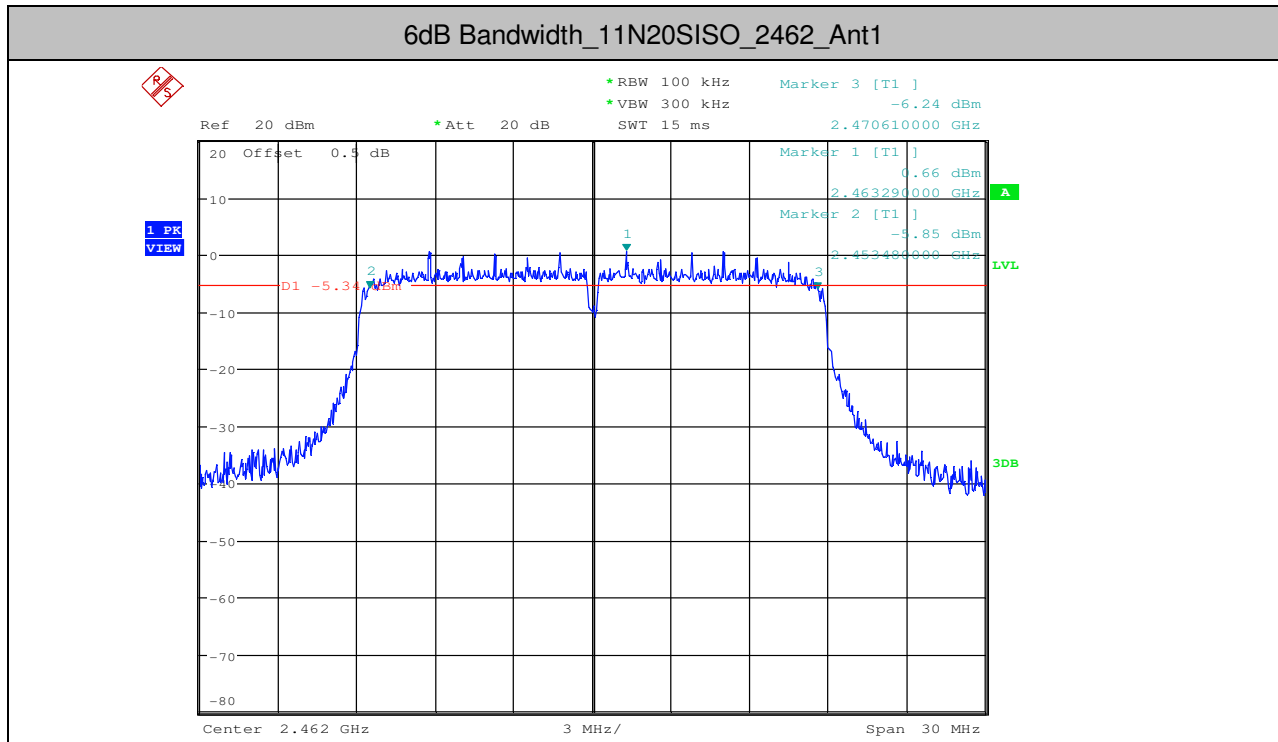


6dB Bandwidth_11N20SISO_2412_Ant1



6dB Bandwidth_11N20SISO_2437_Ant1





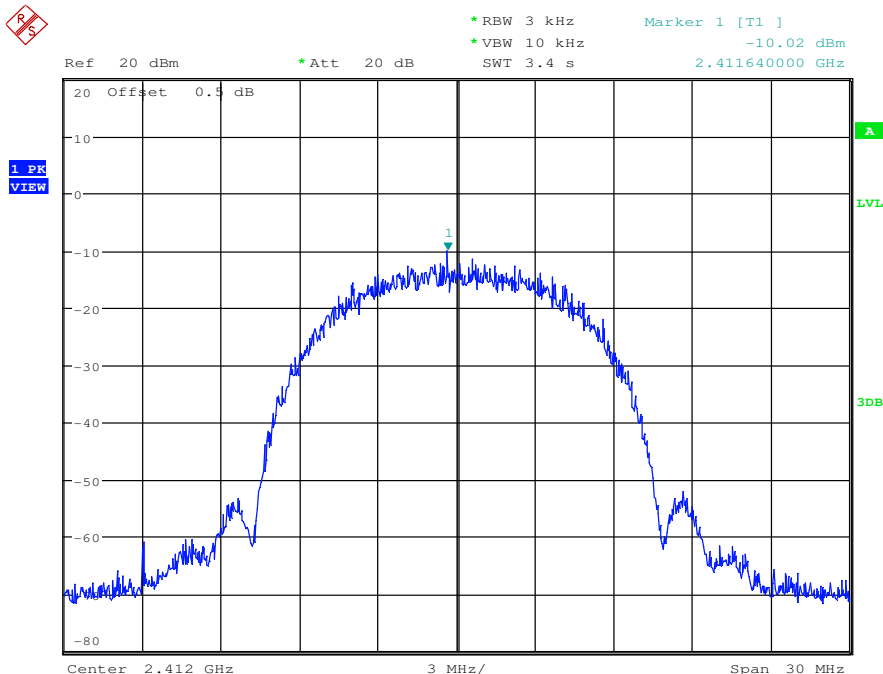
2. Maximum peak conducted output power

Test mode:	Test Channel	Ant	Power[dBm]	Limit[dBm]	Verdict
11B	2412	Ant1	17.1	<30	PASS
11B	2437	Ant1	17.46	<30	PASS
11B	2462	Ant1	17.78	<30	PASS
11G	2412	Ant1	19.66	<30	PASS
11G	2437	Ant1	21	<30	PASS
11G	2462	Ant1	21.23	<30	PASS
11N20SISO	2412	Ant1	19.52	<30	PASS
11N20SISO	2437	Ant1	20.82	<30	PASS
11N20SISO	2462	Ant1	21.05	<30	PASS

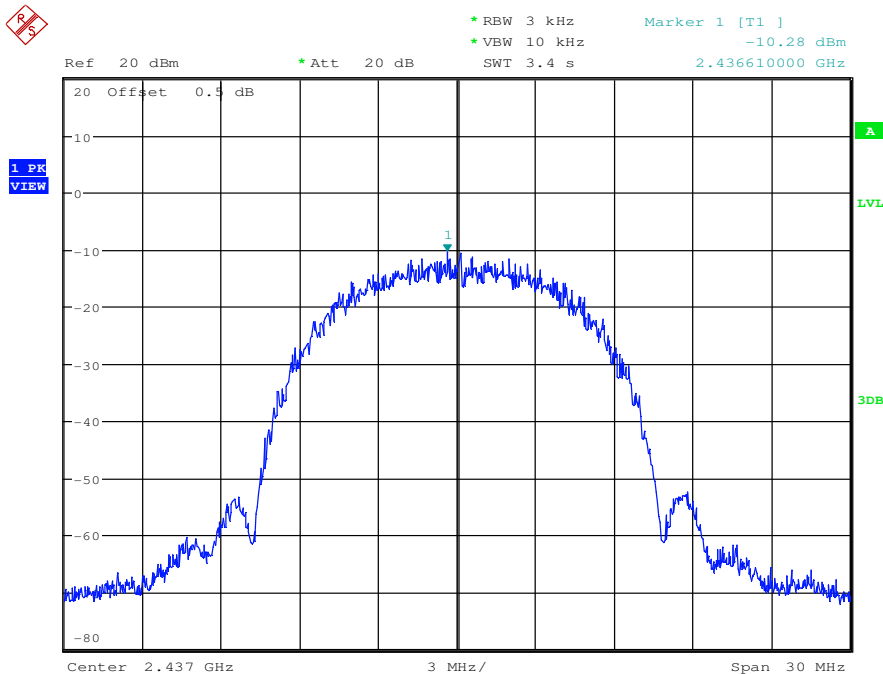
3. Maximum Peak power spectral density

Test mode:	Test Channel	Ant	PSD[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	2412	Ant1	-10.02	<8.00	PASS
11B	2437	Ant1	-10.28	<8.00	PASS
11B	2462	Ant1	-9.48	<8.00	PASS
11G	2412	Ant1	-14.56	<8.00	PASS
11G	2437	Ant1	-13.33	<8.00	PASS
11G	2462	Ant1	-12.95	<8.00	PASS
11N20SISO	2412	Ant1	-14.44	<8.00	PASS
11N20SISO	2437	Ant1	-13.46	<8.00	PASS
11N20SISO	2462	Ant1	-13.48	<8.00	PASS

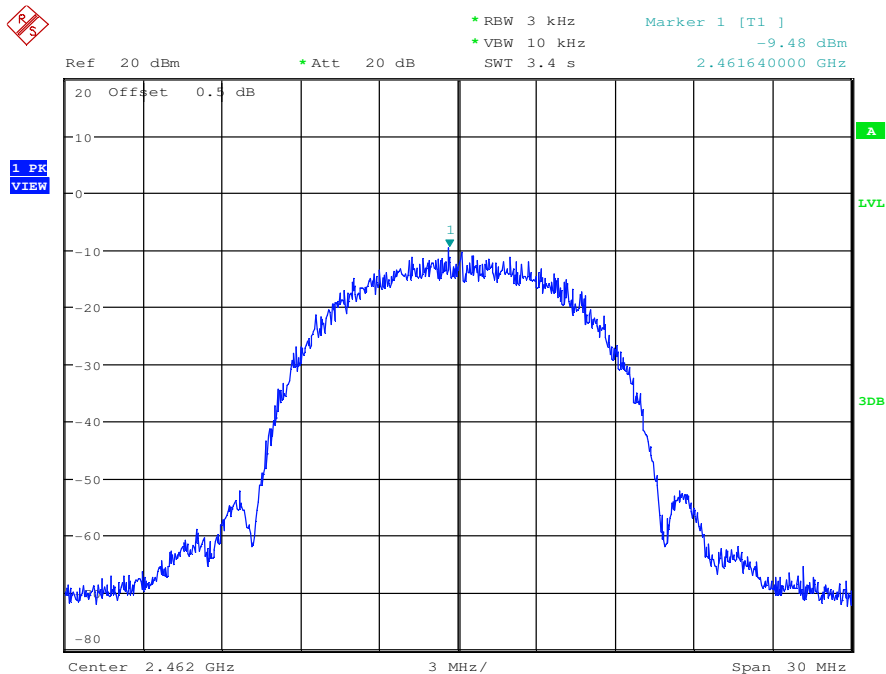
Maximum Peak power spectral density_11B_2412_Ant1



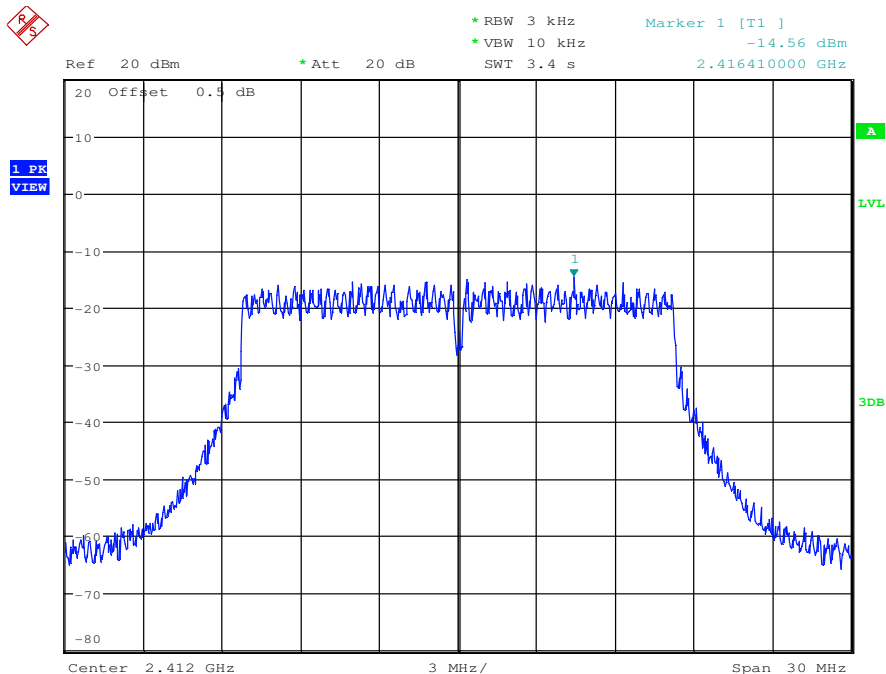
Maximum Peak power spectral density_11B_2437_Ant1



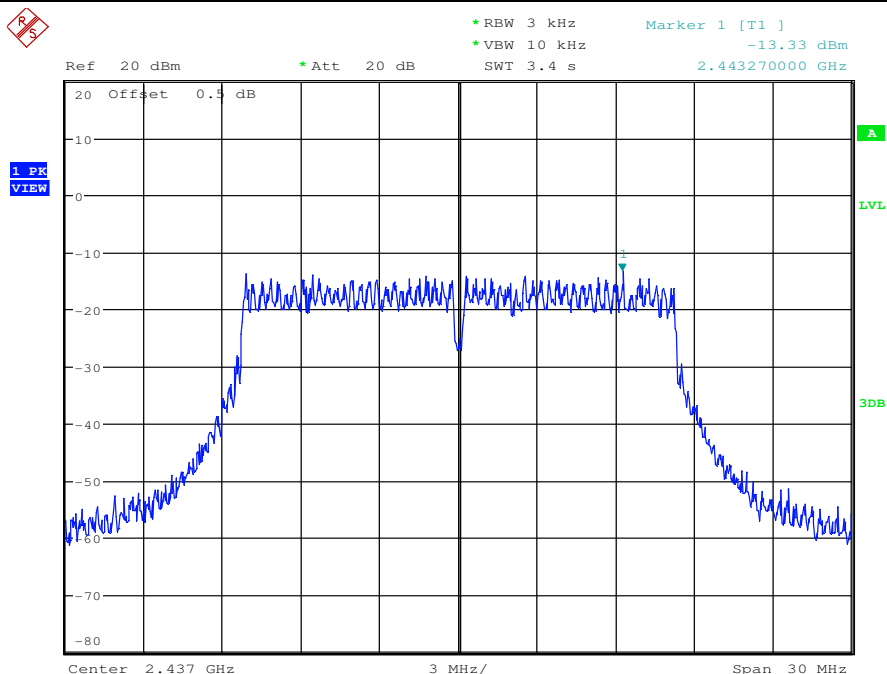
Maximum Peak power spectral density_11B_2462_Ant1



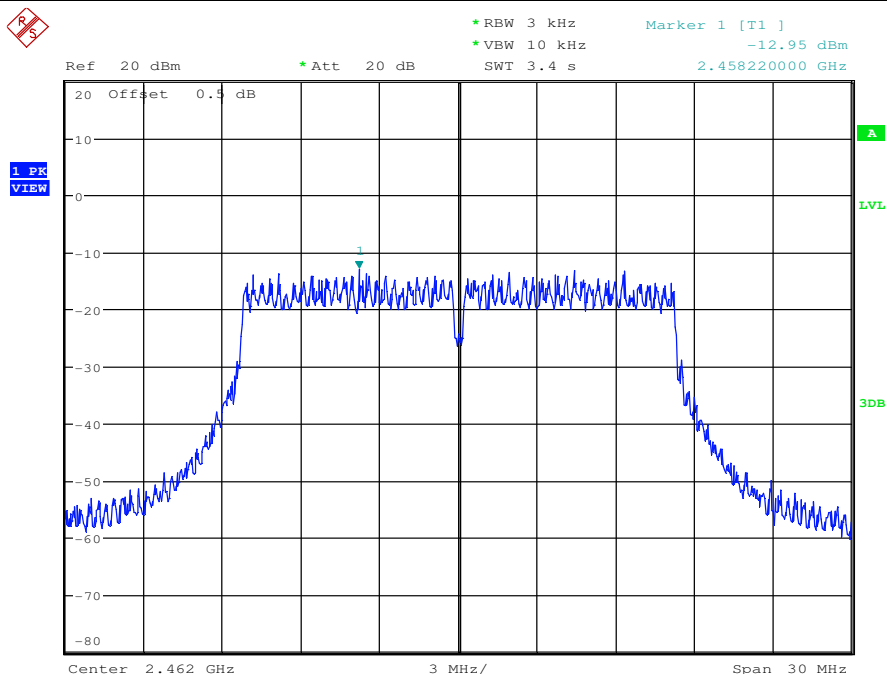
Maximum Peak power spectral density_11G_2412_Ant1



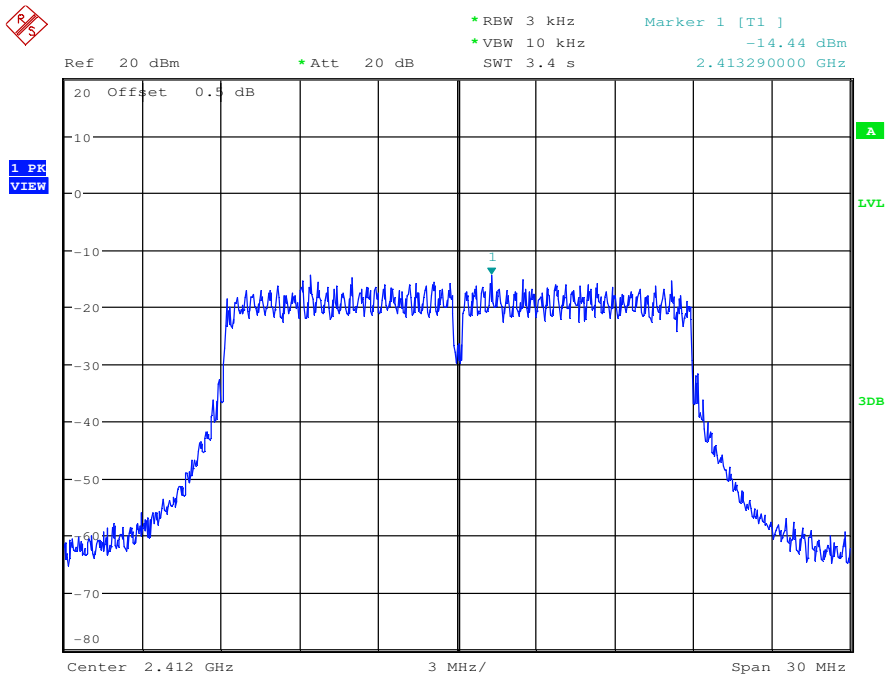
Maximum Peak power spectral density_11G_2437_Ant1



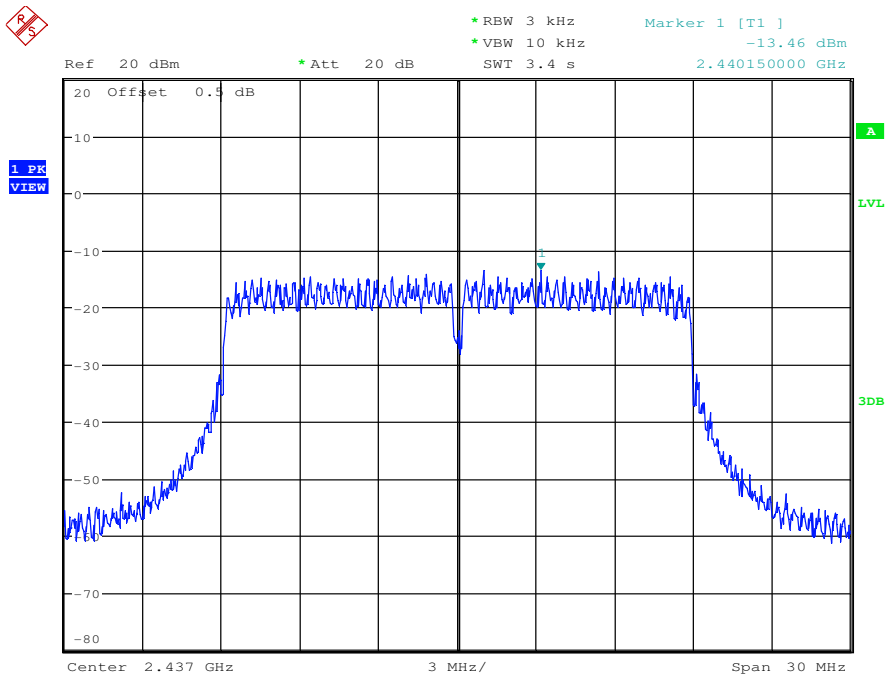
Maximum Peak power spectral density_11G_2462_Ant1



Maximum Peak power spectral density_11N20SISO_2412_Ant1



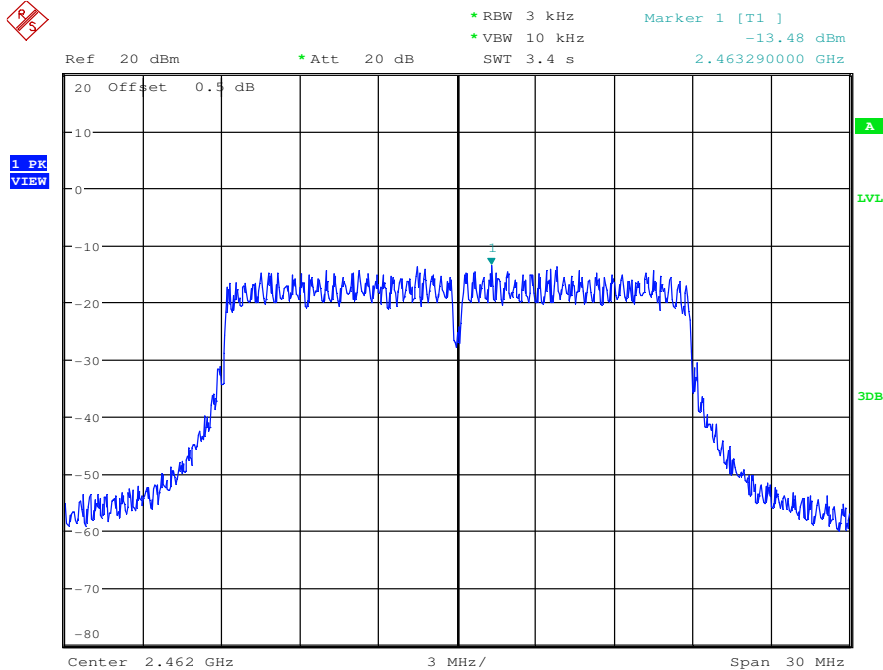
Maximum Peak power spectral density_11N20SISO_2437_Ant1



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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.



Maximum Peak power spectral density_11N20SISO_2462_Ant1



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

4.Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Ant	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	4.250	-53.981	<-15.75	PASS
11B	2462	Ant1	4.150	-53.055	<-15.85	PASS
11G	2412	Ant1	-0.750	-50.202	<-20.75	PASS
11G	2462	Ant1	0.660	-46.061	<-19.34	PASS
11N20SISO	2412	Ant1	-1.120	-49.704	<-21.12	PASS
11N20SISO	2462	Ant1	0.490	-45.245	<-19.51	PASS

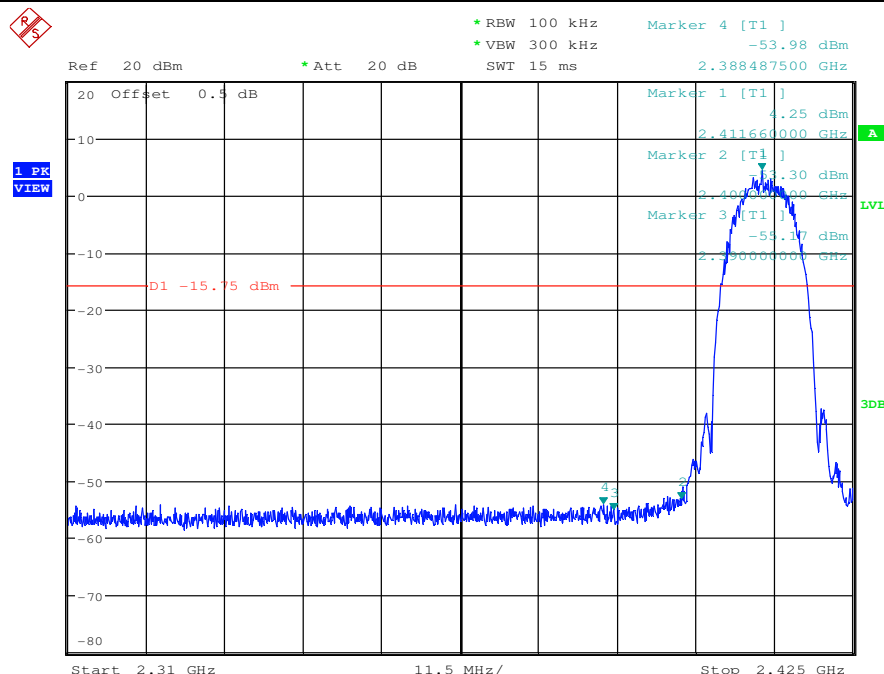


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

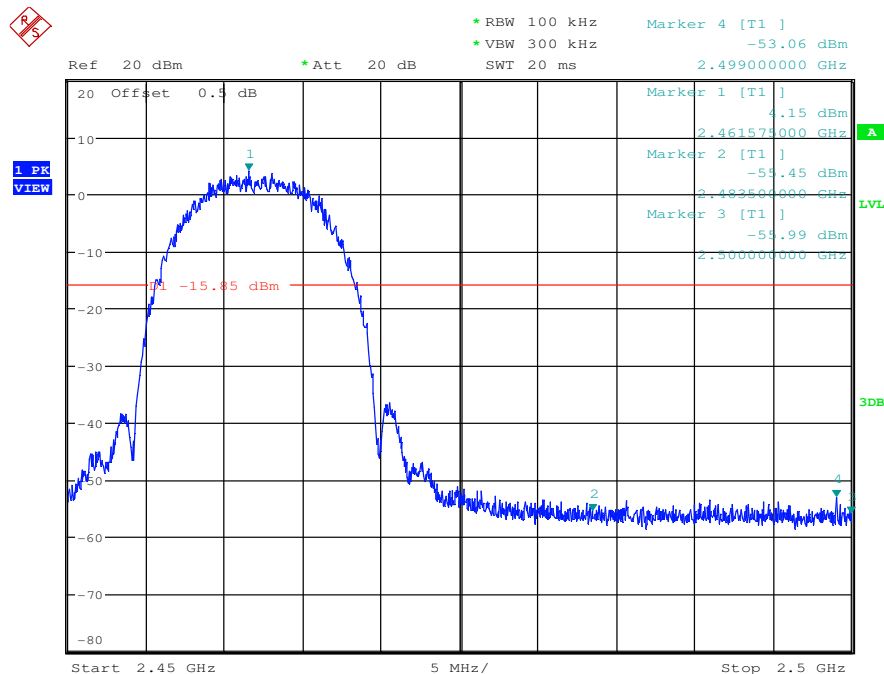
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch / China SGS Co., Ltd. Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

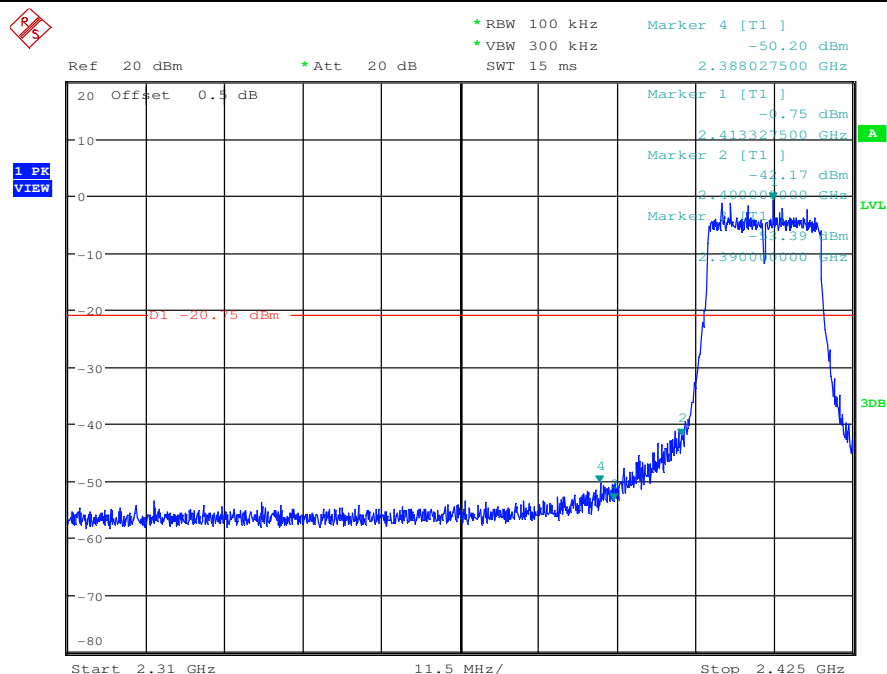
Band-edge for RF Conducted Emissions_11B_2412_Ant1



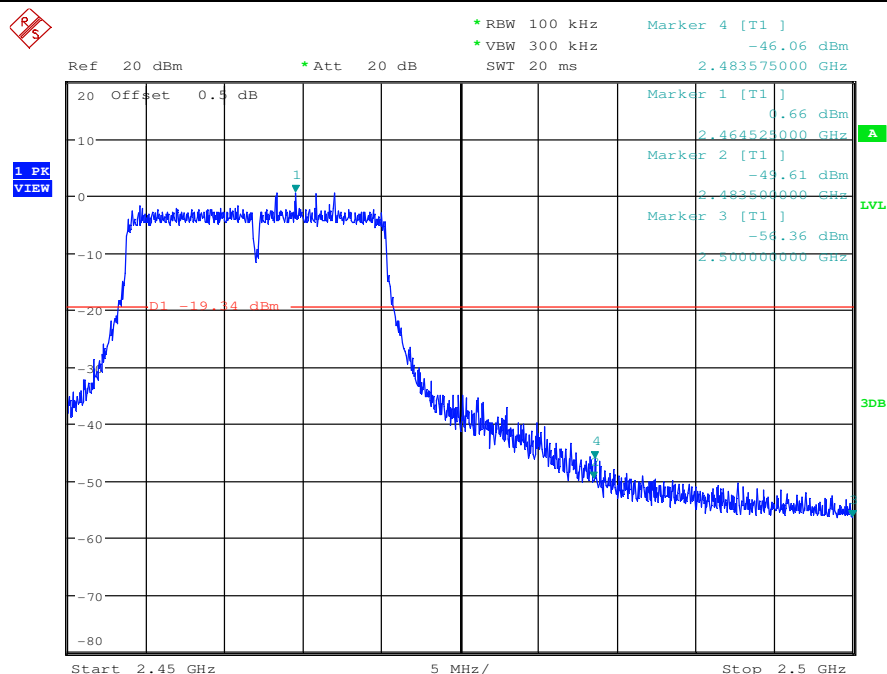
Band-edge for RF Conducted Emissions_11B_2462_Ant1



Band-edge for RF Conducted Emissions 11G 2412 Ant1



Band-edge for RF Conducted Emissions 11G 2462 Ant1



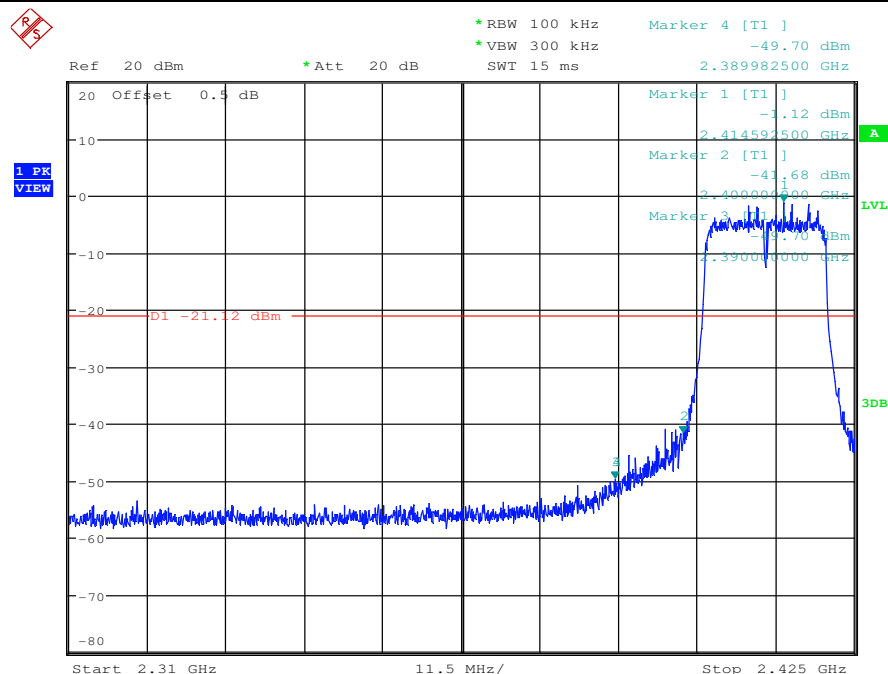
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed on the cover, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms_Electronic_Document.aspx. 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 constitutes a criminal offence. The holder of this document who is aware of its falsification and who still shows it to third parties may be held liable for damages. The sample is retained for 30 days only.

Attention: To check the authenticity of testing inspection report & certificate, please contact us at telephone: (86-755) 8307 1444.

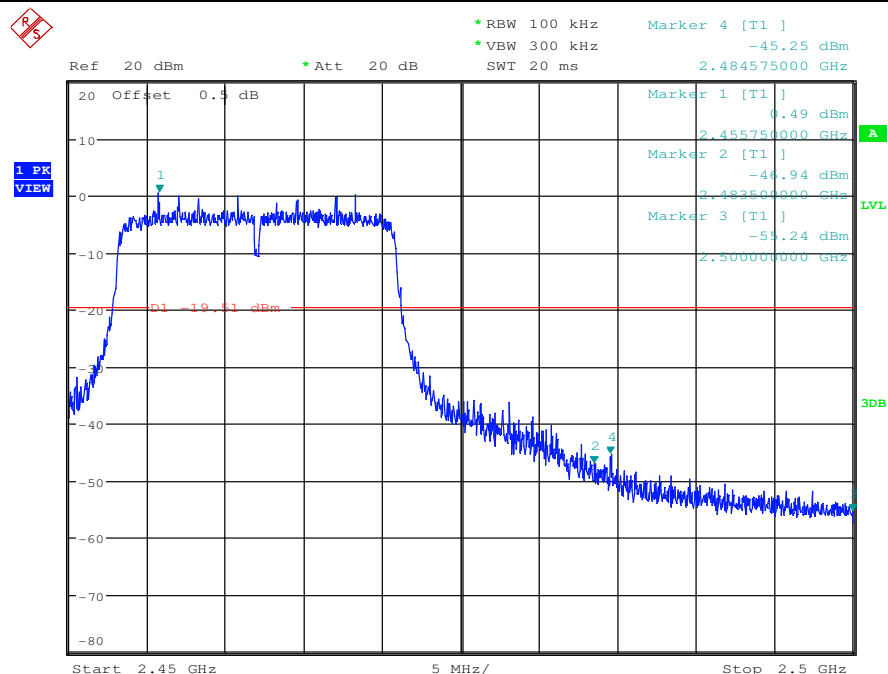
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center EEC Laboratory.

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Band-edge for RF Conducted Emissions 11N20SISO 2412 Ant1



Band-edge for RF Conducted Emissions 11N20SISO 2462 Ant1



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx>, and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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 its Client's instructions, if any. The Company's sole responsibility is to its Client and the relevant parties to the transaction. The Company is not liable for any loss or damage arising from the transaction documents. The document cannot be produced 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. For further information, please contact the nearest SGS office 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 Center EEC Laboratory.

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sas.china@sas.com

5.RF Conducted Spurious Emissions

Test mode:	Test Channel	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	2412	30	10000	100	300	4.04	-47.270	<-15.96	PASS
11B	2412	10000	25000	100	300	4.04	-56.130	<-15.96	PASS
11B	2437	30	10000	100	300	3.58	-42.580	<-16.42	PASS
11B	2437	10000	25000	100	300	3.58	-55.400	<-16.42	PASS
11B	2462	30	10000	100	300	3.72	-39.180	<-16.28	PASS
11B	2462	10000	25000	100	300	3.72	-55.400	<-16.28	PASS
11G	2412	30	10000	100	300	-1.38	-44.010	<-21.38	PASS
11G	2412	10000	25000	100	300	-1.38	-55.880	<-21.38	PASS
11G	2437	30	10000	100	300	0.58	-36.810	<-19.42	PASS
11G	2437	10000	25000	100	300	0.58	-55.290	<-19.42	PASS
11G	2462	30	10000	100	300	1.13	-34.950	<-18.87	PASS
11G	2462	10000	25000	100	300	1.13	-55.930	<-18.87	PASS
11N20SISO	2412	30	10000	100	300	-1.21	-43.070	<-21.21	PASS
11N20SISO	2412	10000	25000	100	300	-1.21	-55.430	<-21.21	PASS
11N20SISO	2437	30	10000	100	300	0.41	-39.580	<-19.59	PASS
11N20SISO	2437	10000	25000	100	300	0.41	-55.370	<-19.59	PASS
11N20SISO	2462	30	10000	100	300	0.63	-36.650	<-19.37	PASS
11N20SISO	2462	10000	25000	100	300	0.63	-55.770	<-19.37	PASS



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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.

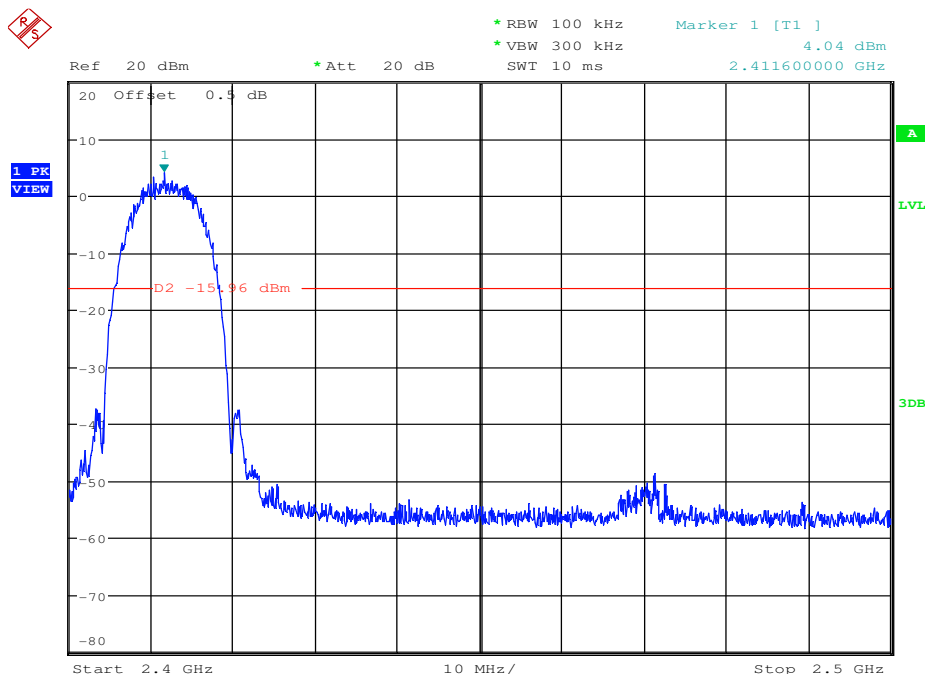
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

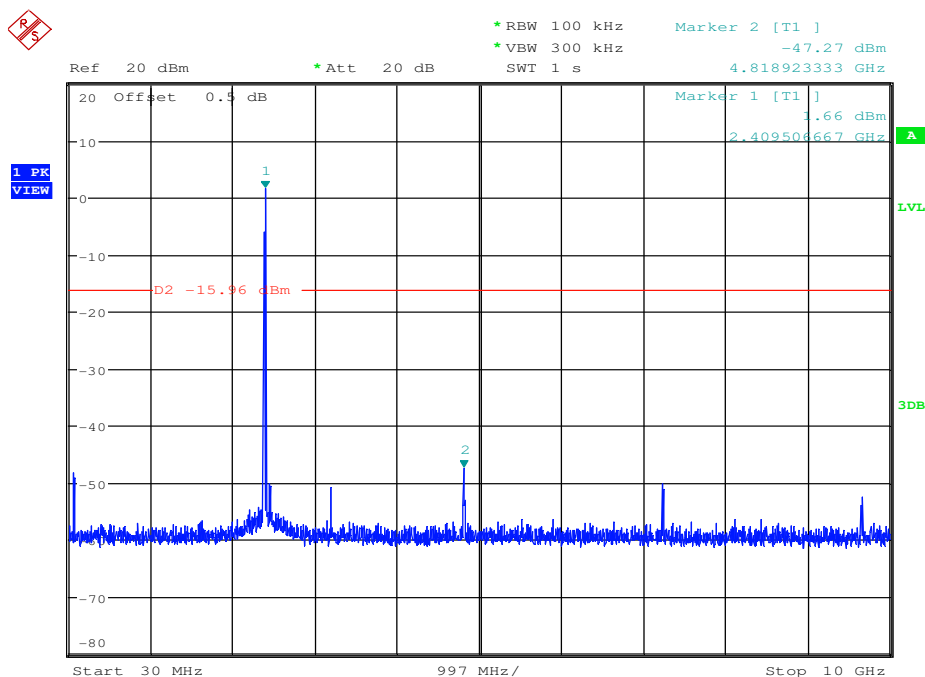
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

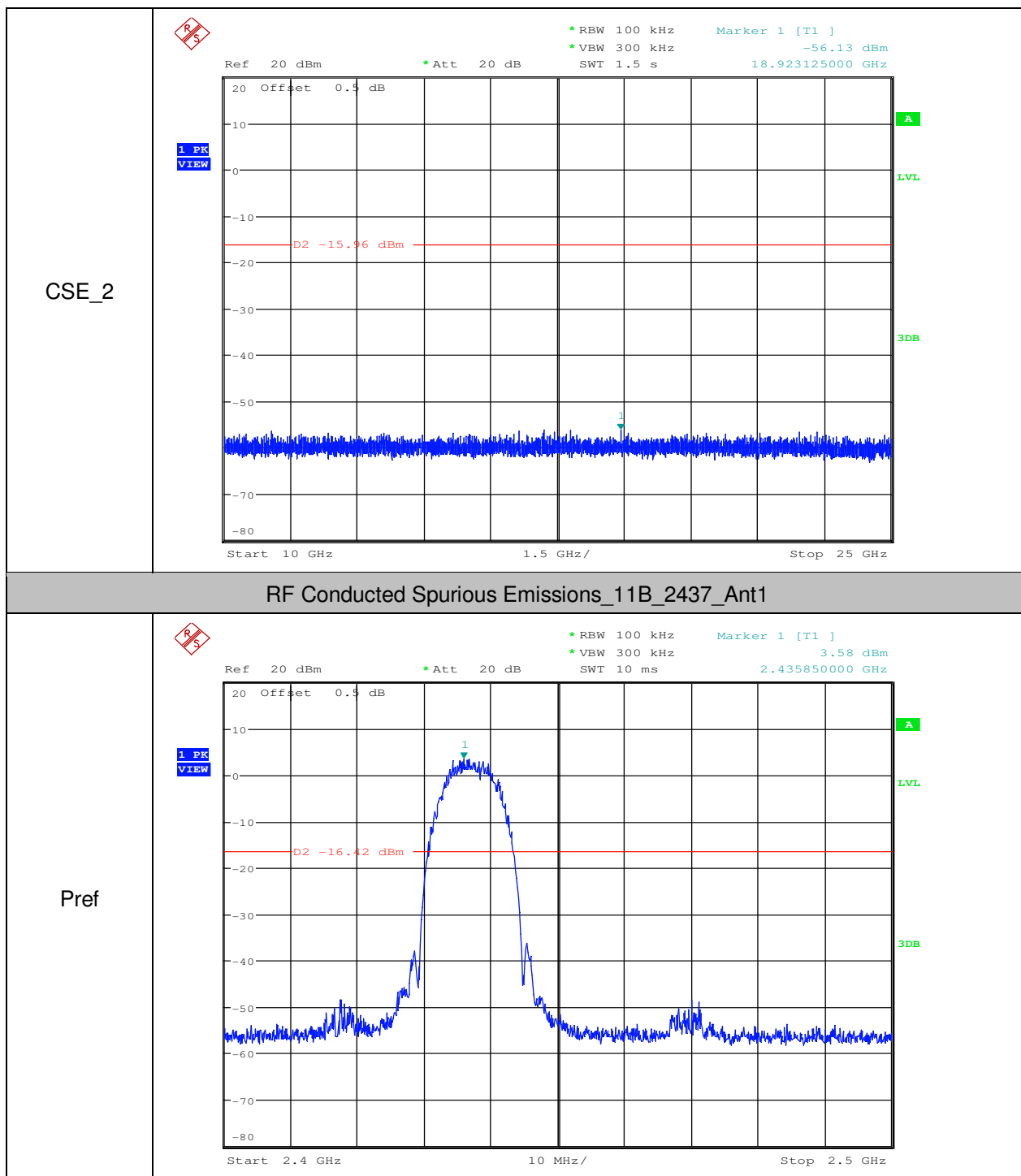
RF Conducted Spurious Emissions_11B_2412_Ant1

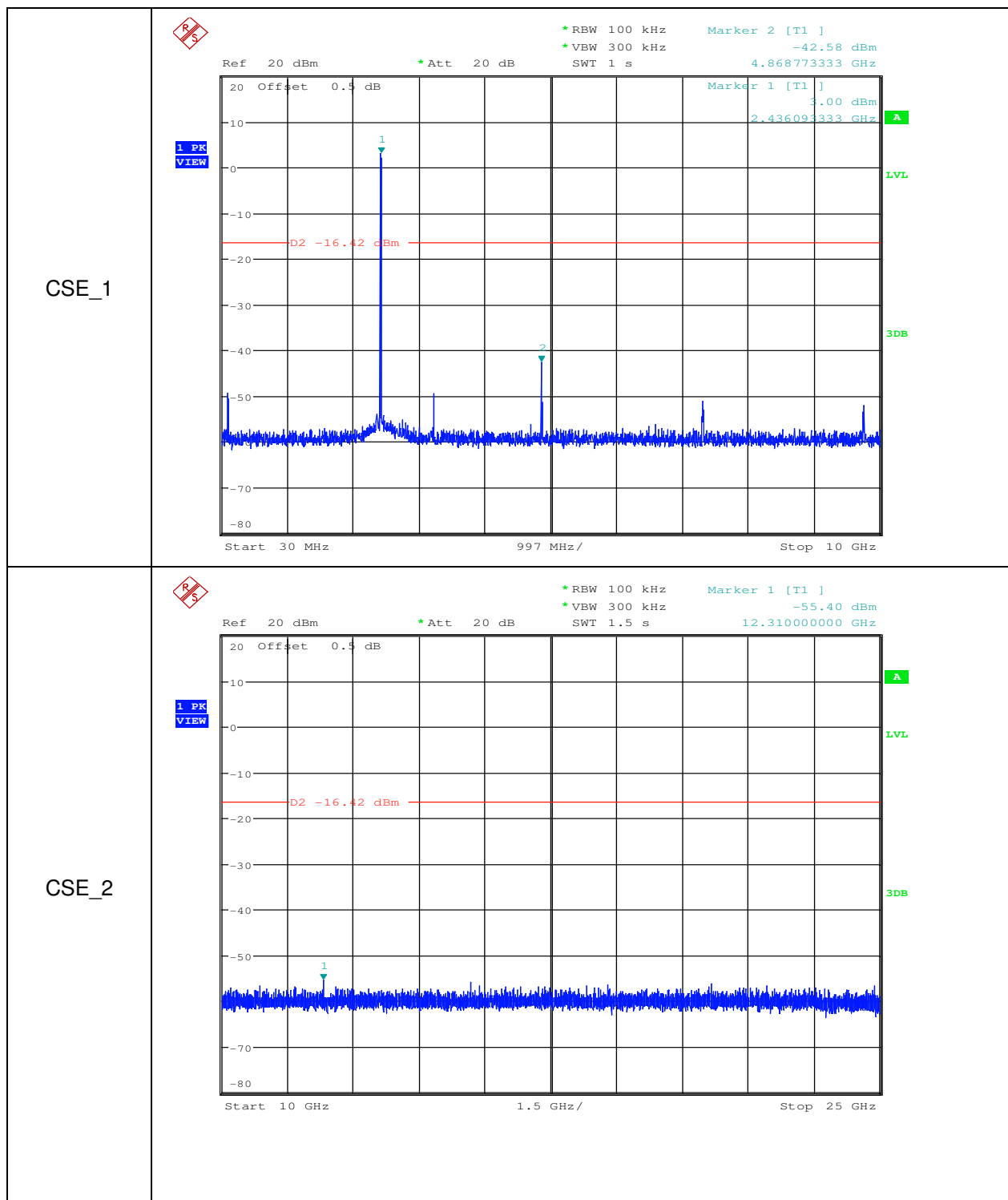
Pref



CSE_1

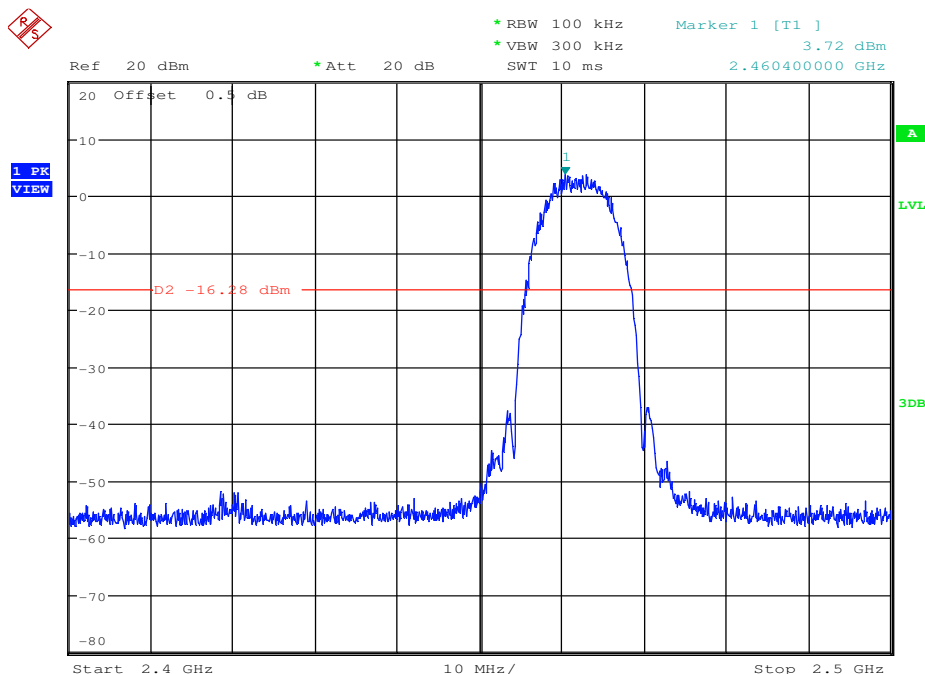




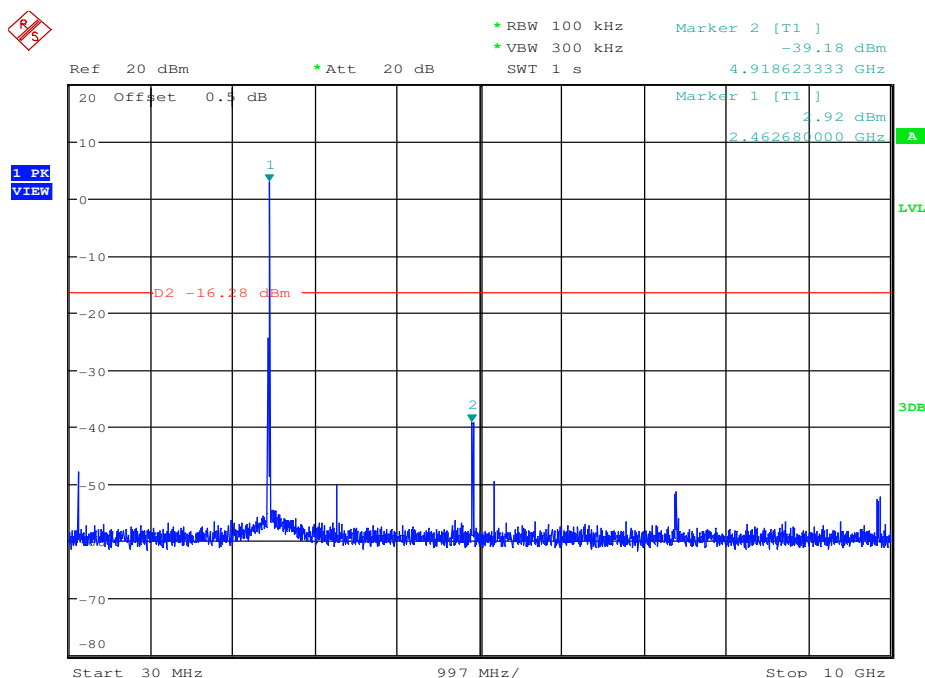


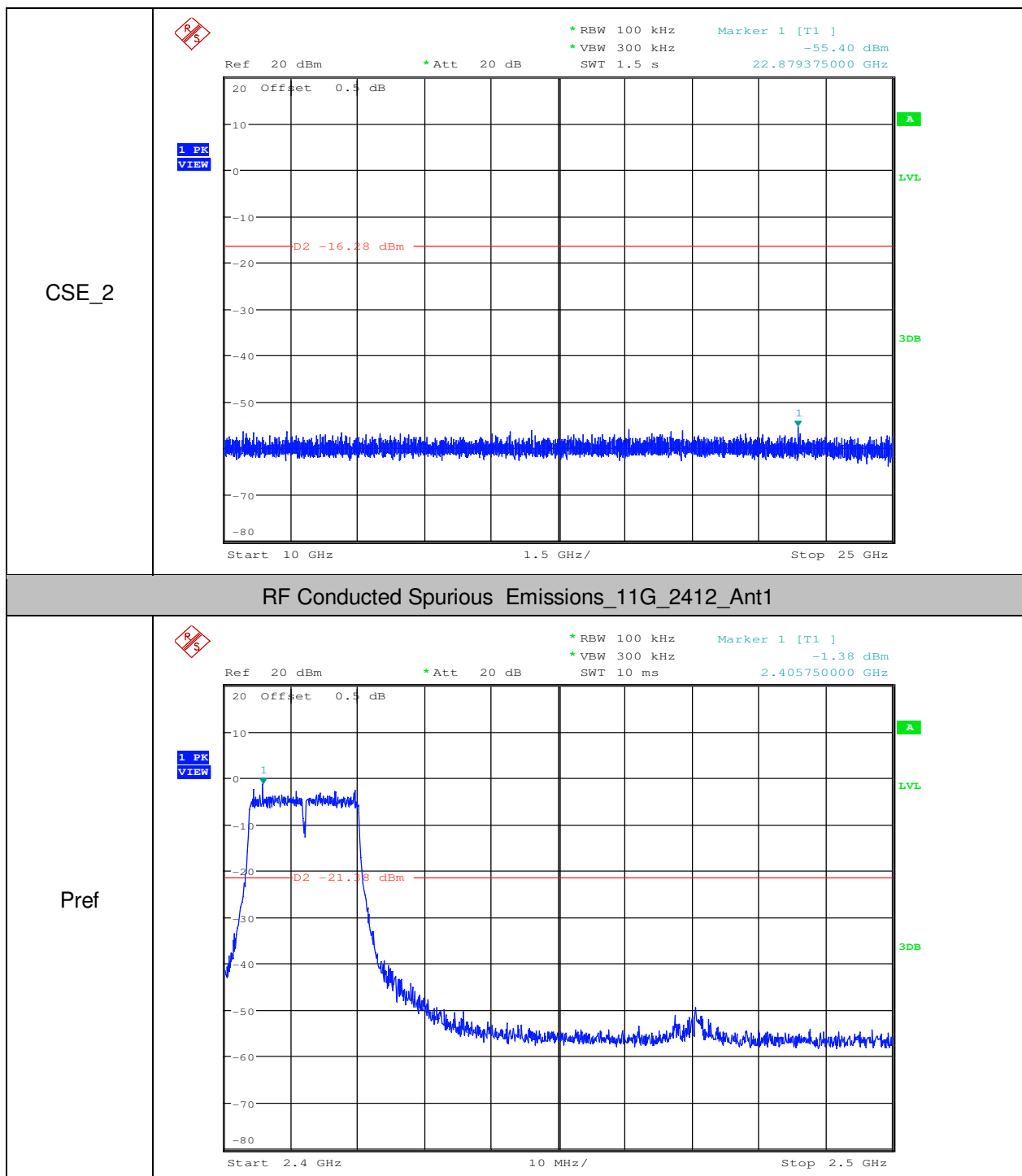
RF Conducted Spurious Emissions_11B_2462_Ant1

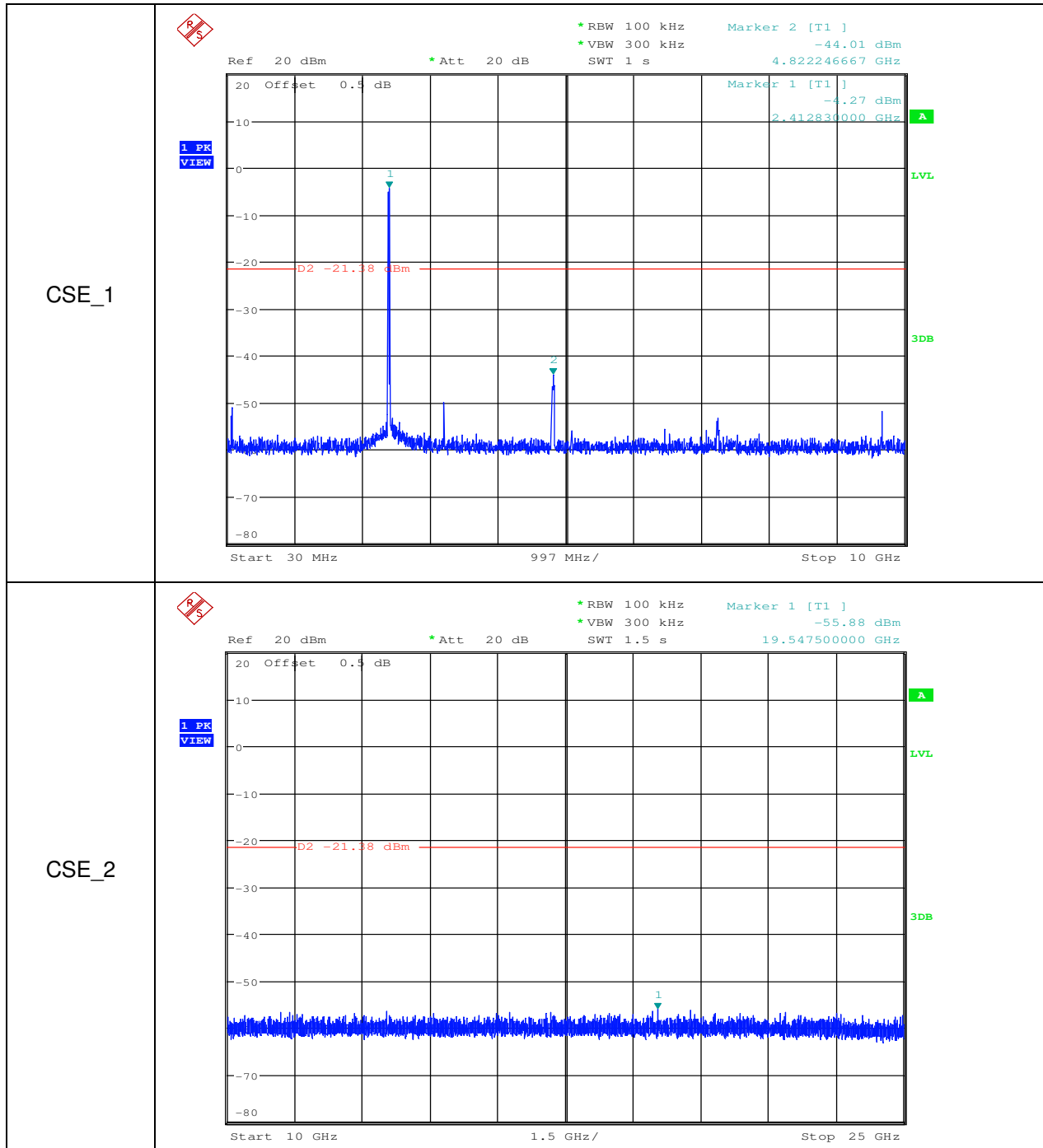
Pref



CSE_1

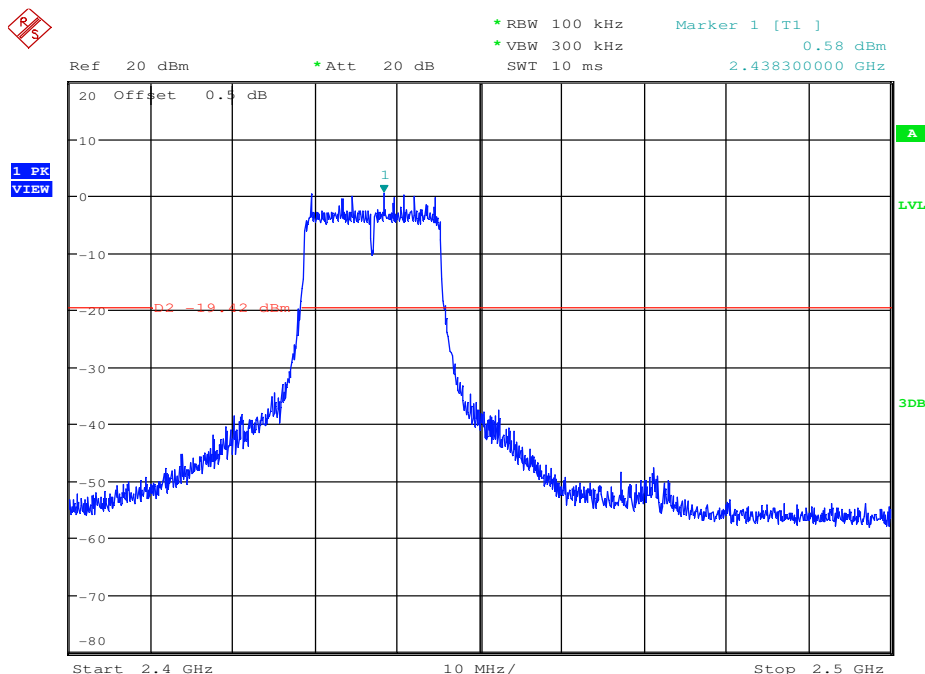




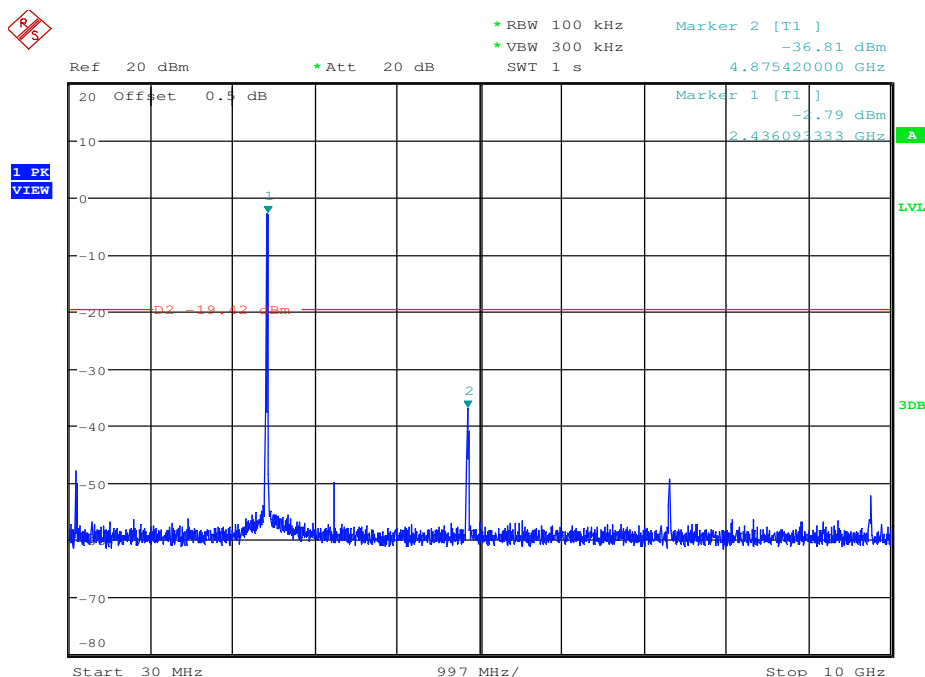


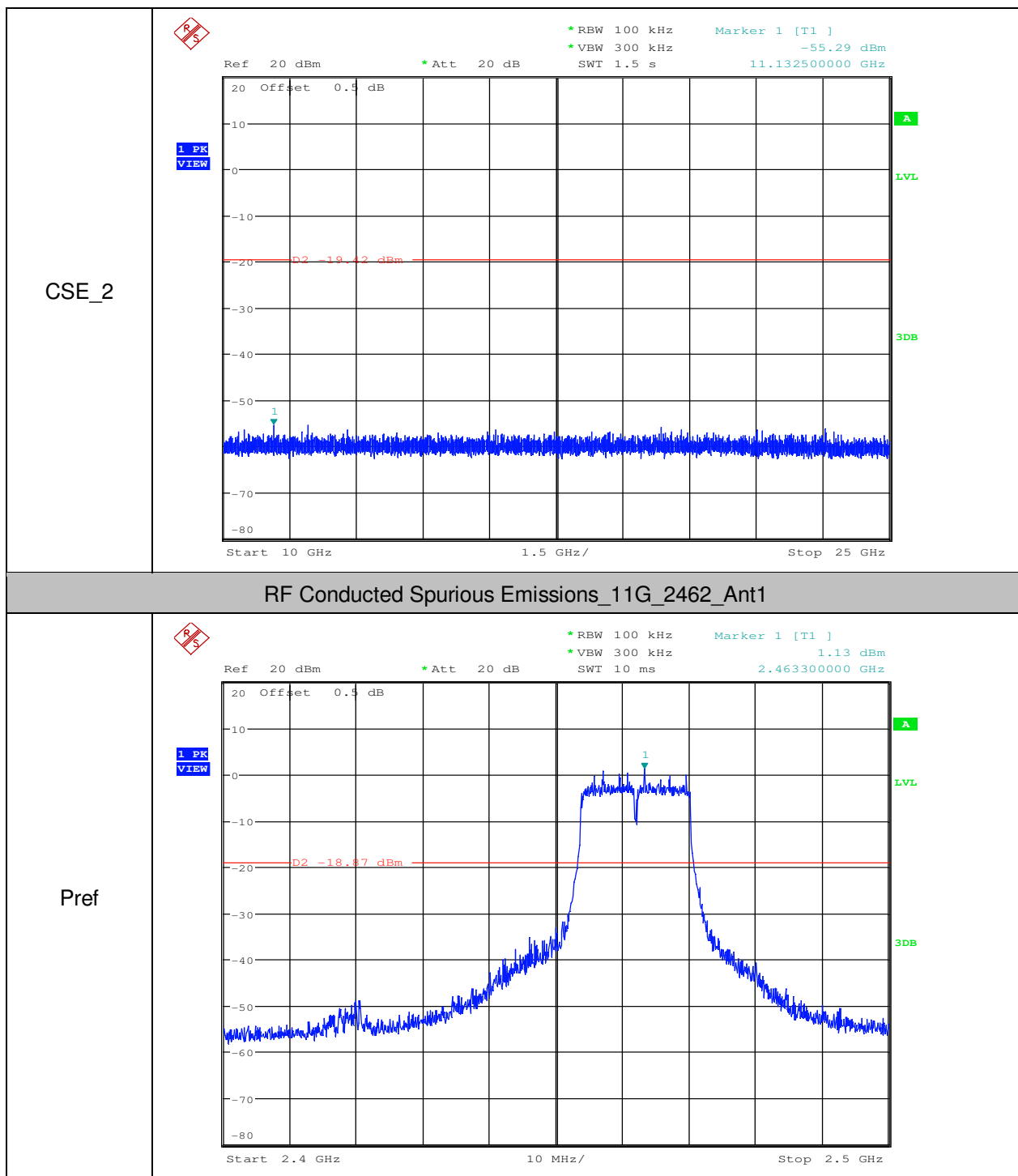
RF Conducted Spurious Emissions_11G_2437_Ant1

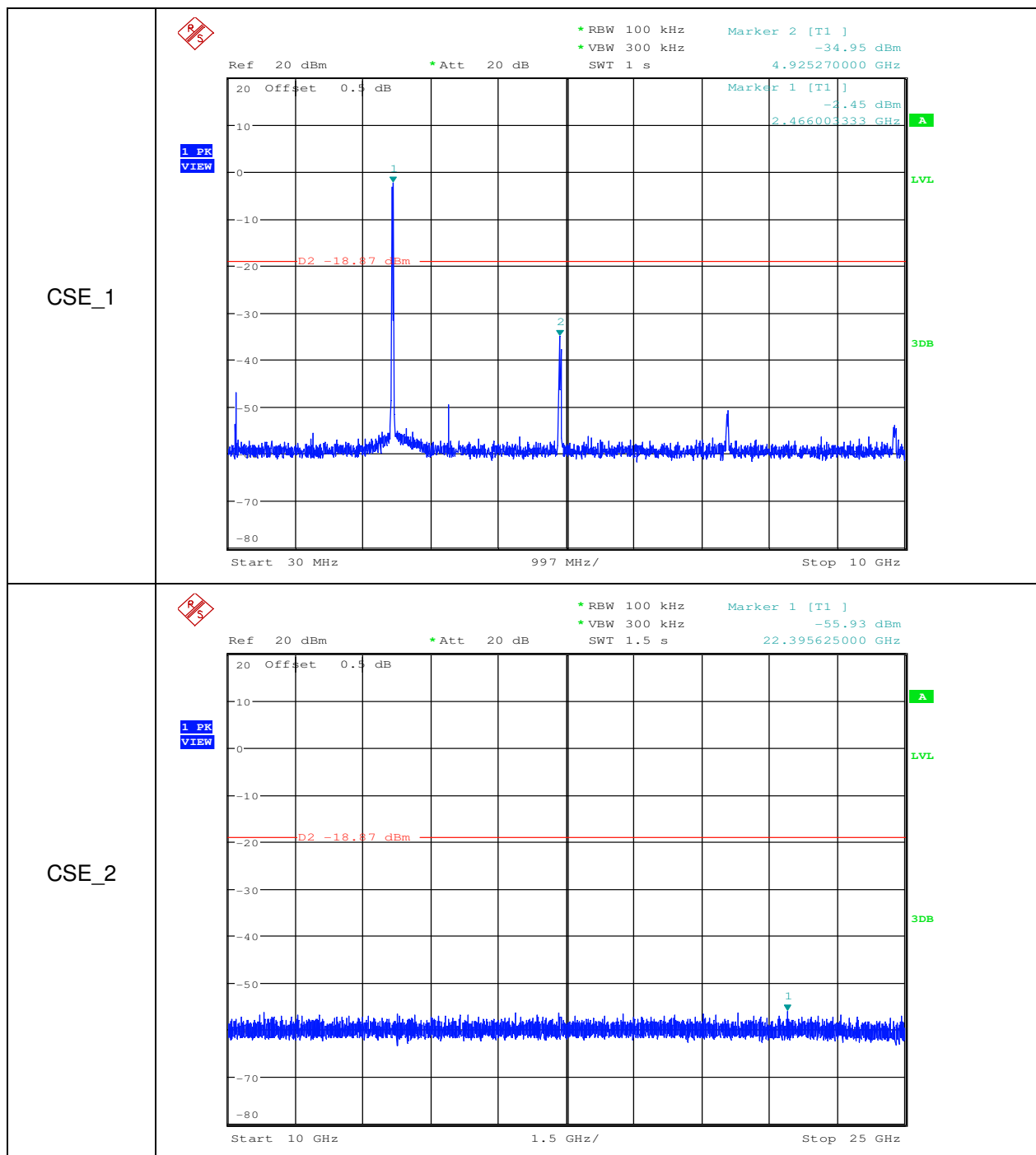
Pref



CSE_1

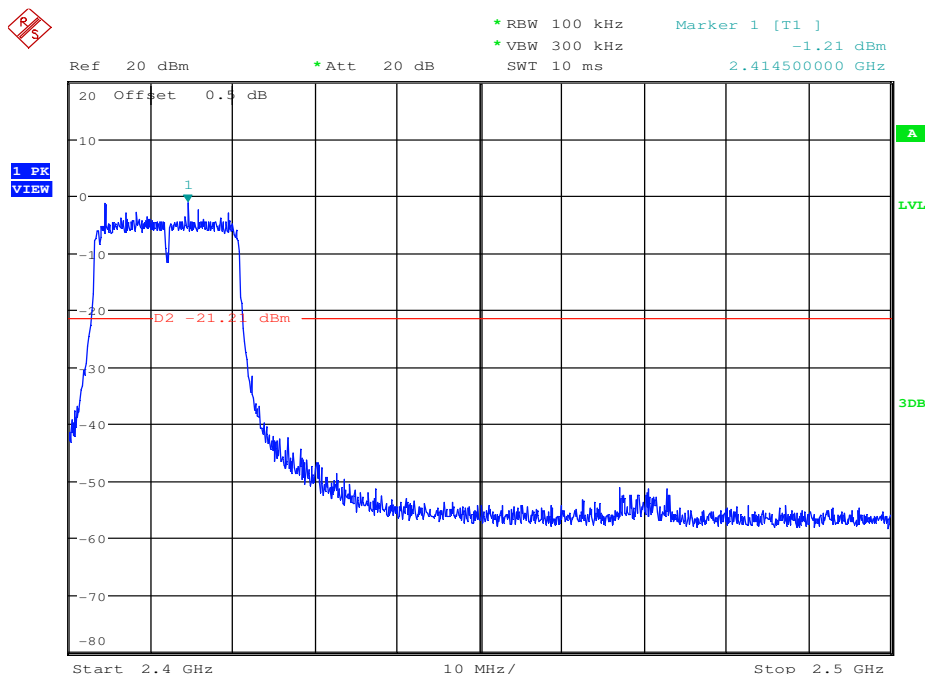




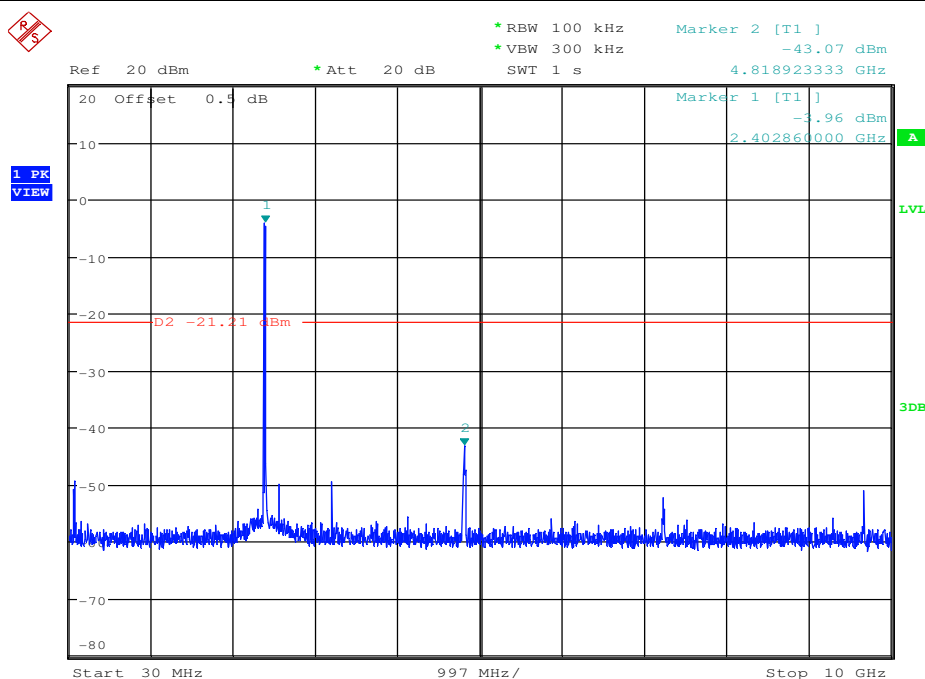


RF Conducted Spurious Emissions_11N20SISO_2412_Ant1

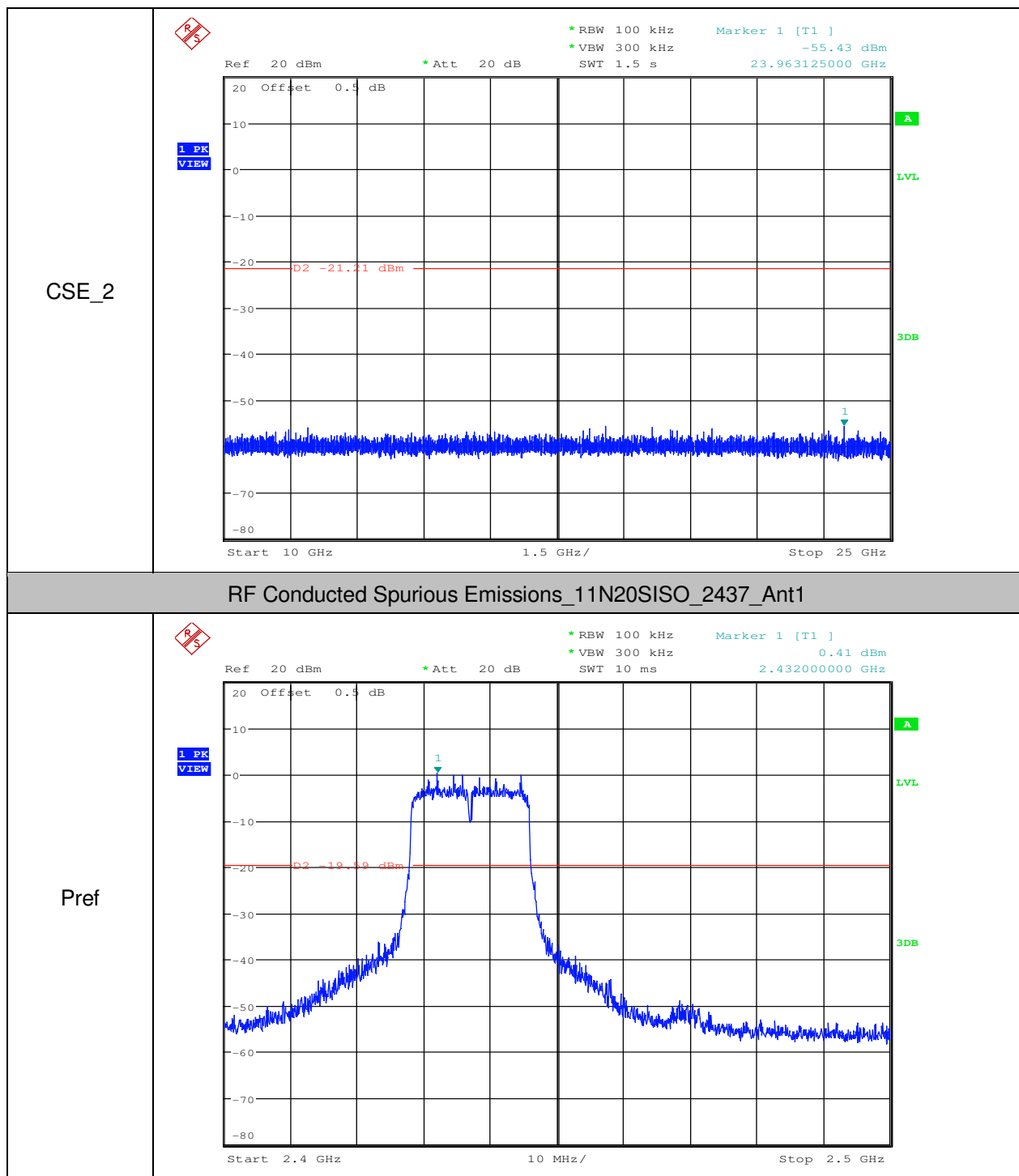
Pref

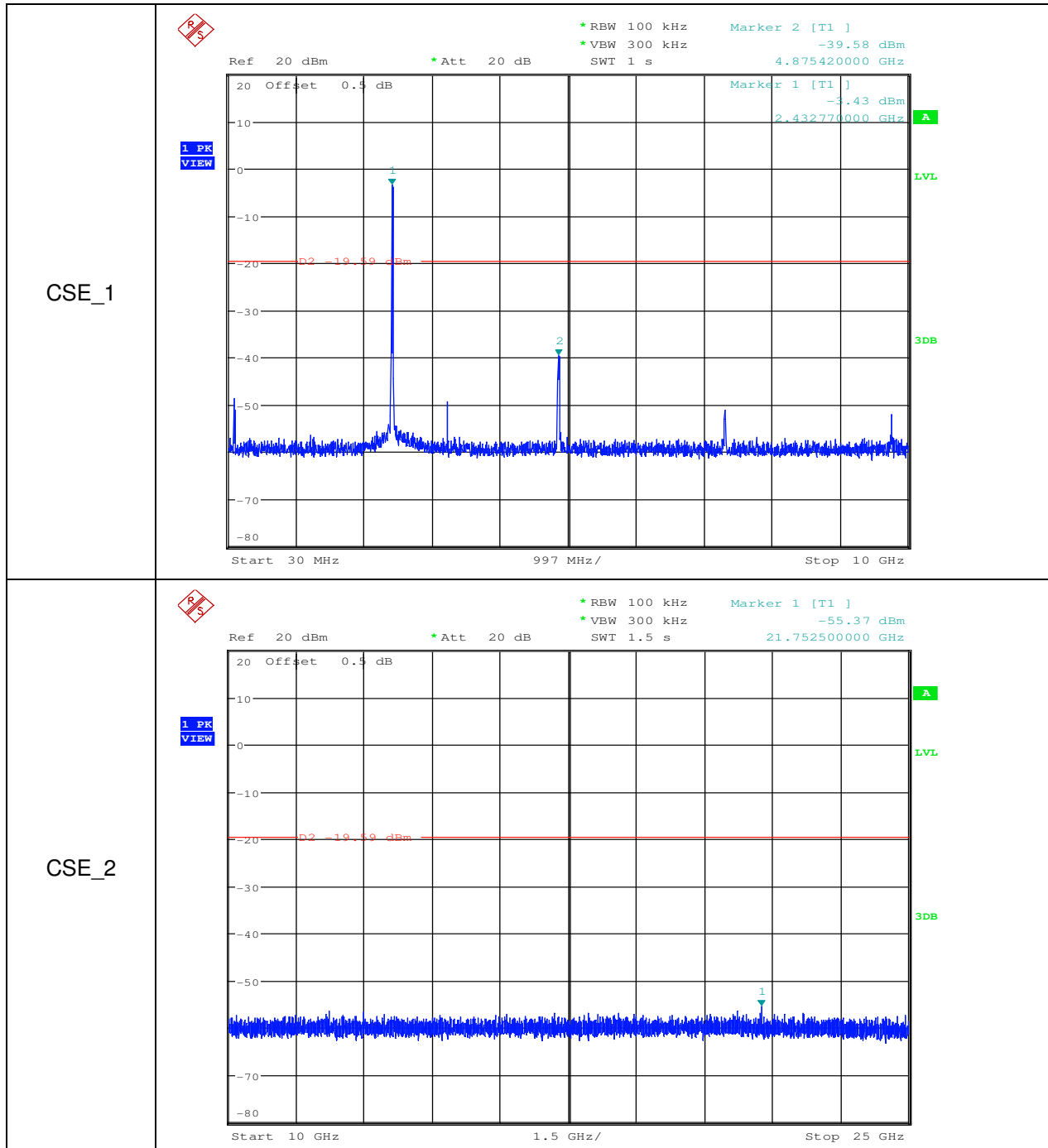


CSE_1



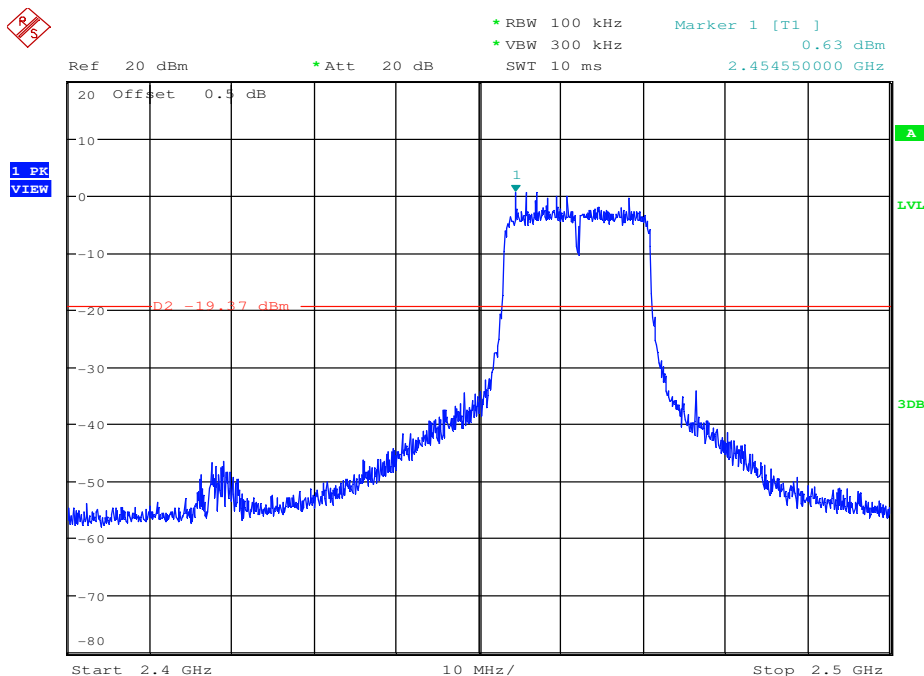
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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.



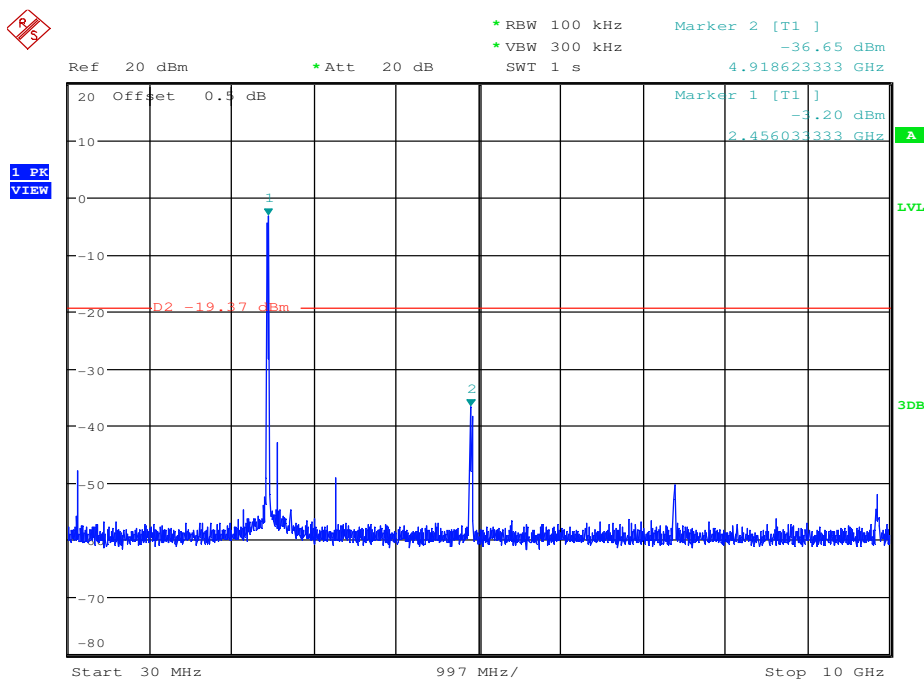


RF Conducted Spurious Emissions_11N20SISO_2462_Ant1

Pref

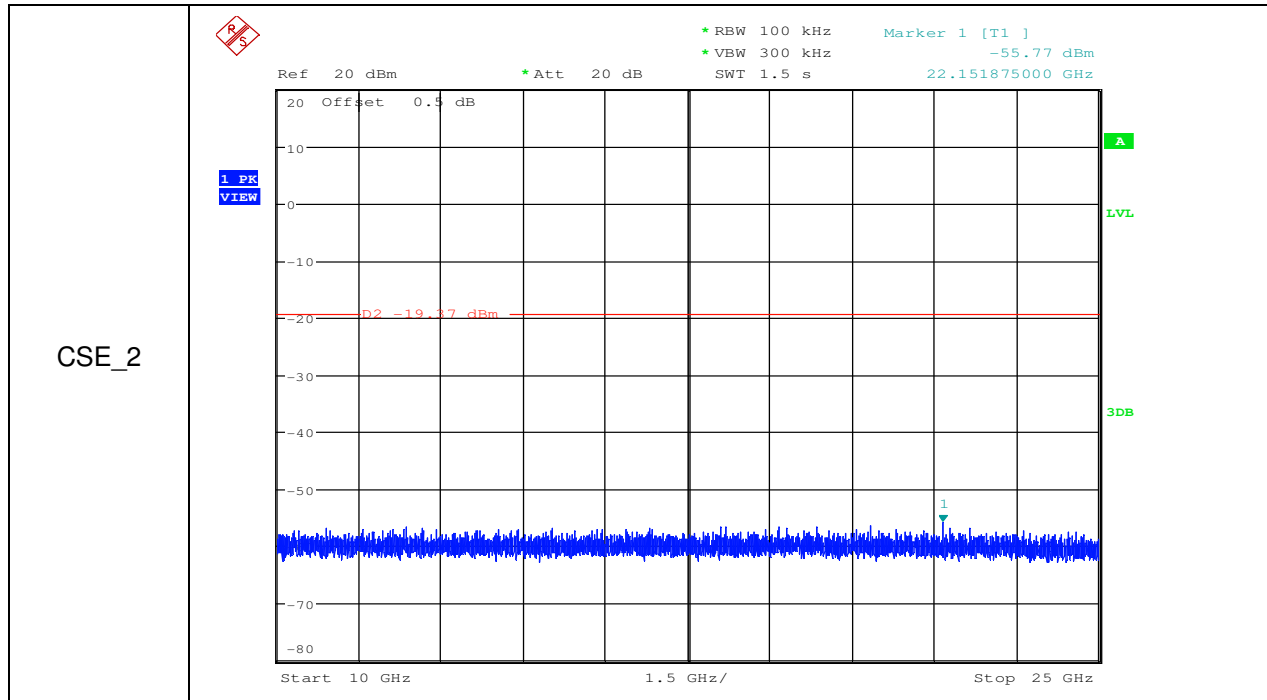


CSE_1



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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



- End of the Report -



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 <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com