



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

Telephone: +86 (0) 755 2601 2053

Fax: +86 (0) 755 2671 0594

Email: sgs\_internet\_operations@sgs.com

Report No.: SZEM110600177202

Page : 1 of 60

# FCC REPORT

**Application No:** SZEM1106001772RF  
**Applicant:** WideFly Ltd.  
**Manufacturer/Factory:** WideFly Ltd.  
**Product Name:** POS PDA  
**Operation Frequency:** 2412MHz to 2462MHz  
**FCC ID:** ZXWWF43  
**Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2010  
**Date of Receipt:** 2011-06-29  
**Date of Test:** 2011-06-29 to 2011-10-14  
**Date of Issue:** 2011-11-29

<b>Test Result :</b>	<b>PASS *</b>
----------------------	---------------

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

Authorized Signature:

Jack Zhang  
EMC Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf  
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK.. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



## 2 Contents

	Page
1 COVER PAGE.....	1
2 CONTENTS.....	2
3 TEST SUMMARY.....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF E.U.T.....	4
4.3 TEST ENVIRONMENT AND MODE.....	5
4.4 DESCRIPTION OF SUPPORT UNITS.....	6
4.5 TEST FACILITY.....	6
4.6 TEST LOCATION.....	6
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	6
4.8 TEST INSTRUMENTS LIST.....	7
5 TEST RESULTS AND MEASUREMENT DATA.....	9
5.1 ANTENNA REQUIREMENT:.....	9
5.2 CONDUCTED EMISSIONS.....	10
5.3 CONDUCTED PEAK OUTPUT POWER.....	13
5.4 6dB OCCUPY BANDWIDTH.....	20
5.5 POWER SPECTRAL DENSITY.....	24
5.6 BAND EDGE.....	28
5.7 RF ANTENNA CONDUCTED SPURIOUS EMISSIONS.....	31
5.8 RADIATED EMISSION.....	35
5.8.1 Radiated emission below 1GHz.....	37
5.8.2 Transmitter emission above 1GHz.....	39
5.8.3 Band edge (Radiated Emission).....	45-60



### 3 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

*Remark: Pass: The EUT complies with the essential requirements in the standard.*

*Fail: The EUT does not comply with the essential requirements in the standard.*



## 4 General Information

### 4.1 Client Information

Applicant:	WideFly Ltd.
Address of Applicant:	Unit 205, 2/F, Lakeside 2, Hong Kong Science Park, Shatin, N.T., HONG KONG
Manufacturer/Factory:	WideFly Ltd.
Address of Manufacturer/Factory:	Unit 205, 2/F, Lakeside 2, Hong Kong Science Park, Shatin, N.T., HONG KONG

### 4.2 General Description of E.U.T.

Product Name:	POS PDA
Model No.:	WF43
Operation Frequency:	2412MHz~2462MHz
Type of modulation:	IEEE for 802.11b: DSSS IEEE for 802.11g: OFDM
Channel Number:	11
Test power grade:	802.11b level 12 (manufacturer declare ) 802.11g level 9 (manufacturer declare )
Test software of EUT:	mfgui.exe ( provided by manufacturer )
Antenna Type:	Integral
Antenna gain:	-0.75dBi
Power supply:	AC/DC Adapter: Model: WHT0502000CN INPUT: AC100-240V 50/60Hz 20VA OUTPUT: DC 5V 2000mA
Battery:	3.7V LI-ION battery 2800mAh 10.36Wh
Voltage(declared by client)	Normal Voltage 3.7Vdc/Low Voltage 3.4Vdc /High Voltage 4.25Vdc



Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels for testing see below:

Channel	Frequency
lowest channel	2412MHz
middle channel	2437MHz
highest channel	2462MHz

### 4.3 Test environment and mode

Test Environment:	
Temperature:	24.0 °C
Humidity:	51 % RH
Atmospheric Pressure:	1004mbar
Test mode:	
Transmitting mode:	Keep the EUT in Transmitting mode, and AC/DC adapter charge to EUT.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan under all rate at lowest channel 1								
Mode	802.11b							
Data Rate	1Mbps	5.5Mbps	11Mbps					
PK Value(dBm)	18.90	20.24	21.74					
Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
PK Value(dBm)	20.48	20.76	21.00	21.02	21.07	21.12	21.21	21.39
Through Pre-scan, 11Mbps of rate is the worst case of 802.11b; 54Mbps of rate is the worst case of 802.11g.								

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



#### **4.4 Description of Support Units**

The EUT has been tested as an independent unit.

#### **4.5 Test Facility**

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

- **CNAS (No. CNAS L2929)**  
CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.
- **VCCI**  
The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.  
Date of Registration: September 29, 2011. Valid until September 28, 2014.
- **FCC – Registration No.: 556682**  
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, March 16, 2011
- **Industry Canada (IC)**  
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

#### **4.6 Test Location**

All tests were performed at:

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

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

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

#### **4.7 Other Information Requested by the Customer**

None.

**4.8 Test Instruments list**

RE in Chamber					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2012-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2012-05-26
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2012-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2011-11-09
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2011-11-09
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2011-11-09
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2012-05-26
9	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2011-10-27
11	Band filter	Amindeon	82346	SEL0094	2012-05-26

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2012-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2011-10-26
3	Two-Line V-Network	ETS-LINDGREN	3816/2	SEL0021	2012-05-26
4	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2012-05-26
5	Coaxial Cable	SGS	N/A	SEL0024	2012-05-29



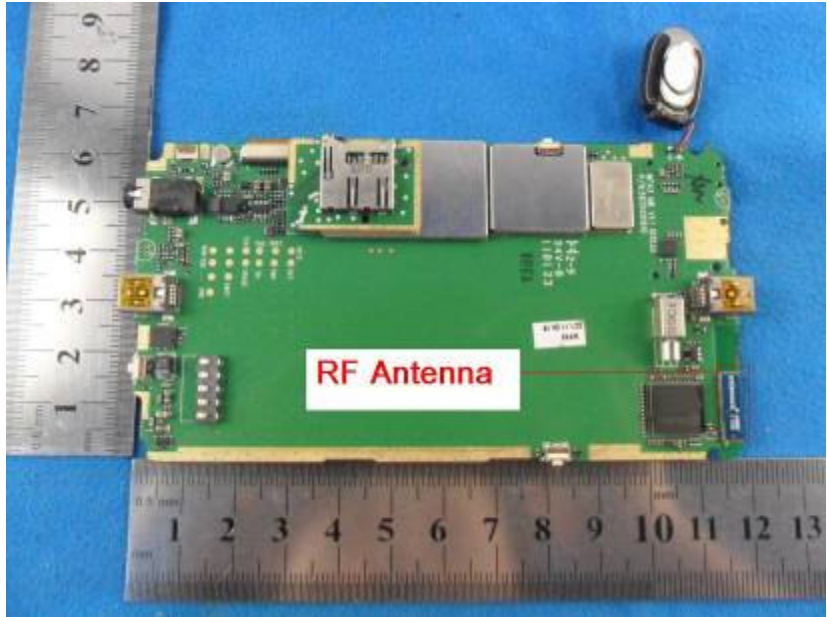
RF conducted					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Spectrum Analyzer	Rohde & Schwarz	FSP 30	SEL0154	2011-10-27
2	Coaxial cable	SGS	N/A	SEL0028	2012-05-29

General used equipment					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Due date (yyyy-mm-dd)
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2011-11-04
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2012-03-10
3	Barometer	ChangChun	DYM3	SEL0088	2012-05-18



## 5 Test results and Measurement Data

### 5.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203 /247(c)
<p>15.203 requirement:  <i>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.</i></p> <p>15.247(c) (1)(i) requirement:  <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</i></p>	
<b>E.U.T Antenna:</b>	
	<p>The antenna is integrated on the main PCB and no consideration of replacement . The best case gain of the antenna is -0.75dBi.</p>

## 5.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.10: 2009		
Test Frequency Range:	150kHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		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.			
Test procedure	The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. 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: 2009 on conducted measurement.		
Test setup:	<div><div><div>Reference Plane</div><div><div><div>LISN</div><div>AUX Equipment</div><div>E.U.T</div></div><div>40cm</div><div>80cm</div><div><div>LISN</div><div>Filter</div><div>AC power</div></div><div>EMI Receiver</div></div><div>Test table/Insulation plane</div></div><div><div>Remark</div><div>E.U.T: Equipment Under Test</div><div>LISN: Line Impedance Stabilization Network</div><div>Test table height=0.8m</div></div></div>		
Test Instruments:	Refer to section 4.8 for details		
Test mode:	Pretest was performed at the EUT in Transmitting mode.		
Test results:	Pass		

## Measurement Data

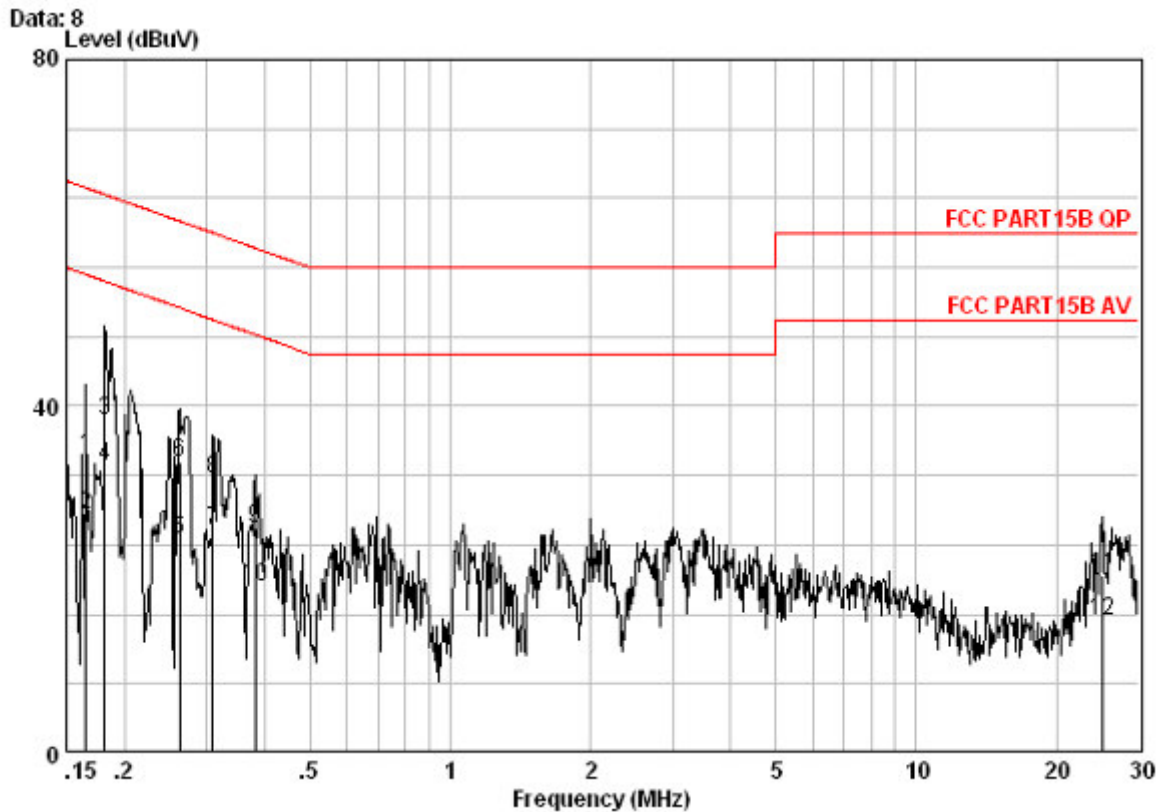
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



Live Line:



	Freq	Cable	LISN	Read	Limit	Over	
	MHz	Loss	Factor	Level	Line	Limit	Remark
		dB	dB	dBuV	dBuV	dBuV	dB
1	0.16501	0.04	9.60	24.53	34.17	65.21	-31.04 QP
2	0.16501	0.04	9.60	17.79	27.43	55.21	-27.78 Average
3	0.18152	0.04	9.60	28.75	38.39	64.42	-26.02 QP
4 @	0.18152	0.04	9.60	23.52	33.16	54.42	-21.26 Average
5	0.26164	0.05	9.60	15.01	24.66	51.38	-26.72 Average
6	0.26164	0.05	9.60	23.92	33.57	61.38	-27.81 QP
7	0.30834	0.05	9.60	15.99	25.64	50.02	-24.37 Average
8	0.30834	0.05	9.60	21.96	31.61	60.02	-28.40 QP
9	0.38113	0.05	9.60	16.24	25.90	58.25	-32.36 QP
10	0.38113	0.05	9.60	9.48	19.14	48.25	-29.12 Average
11	25.055	0.29	10.10	10.11	20.49	60.00	-39.51 QP
12	25.055	0.29	10.10	4.90	15.29	50.00	-34.71 Average

Notes:

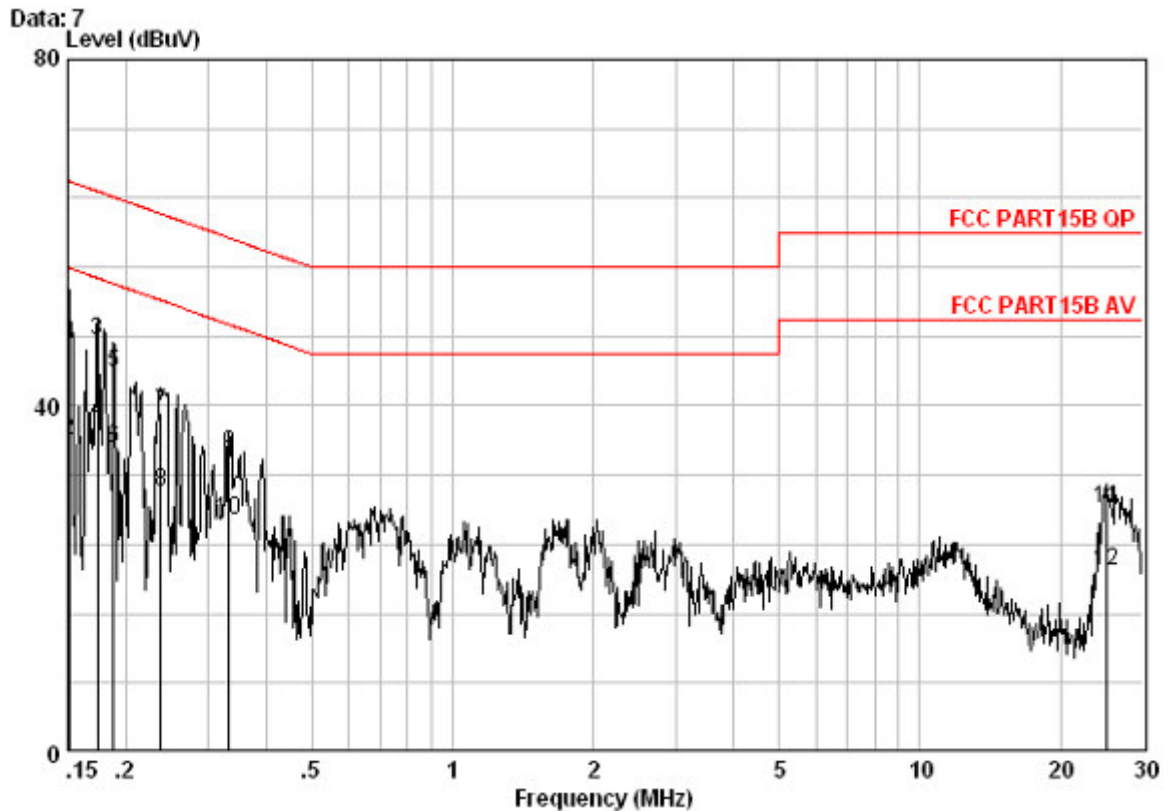
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."





Neutral Line:



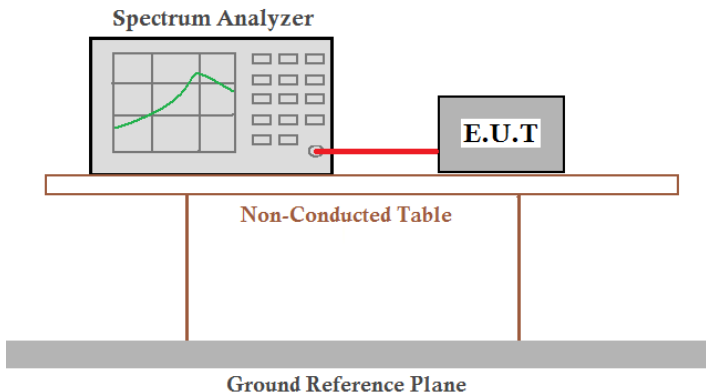
	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.15079	0.04	9.60	42.90	52.54	65.96	-13.42	QP
2 @	0.15079	0.04	9.60	26.41	36.05	55.96	-19.91	Average
3 @	0.17399	0.04	9.60	37.80	47.44	64.77	-17.33	QP
4 @	0.17399	0.04	9.60	28.52	38.16	54.77	-16.61	Average
5 @	0.18838	0.04	9.60	34.09	43.73	64.11	-20.38	QP
6 @	0.18838	0.04	9.60	25.56	35.20	54.11	-18.91	Average
7 @	0.23784	0.04	9.60	29.55	39.19	62.17	-22.98	QP
8 @	0.23784	0.04	9.60	20.45	30.09	52.17	-22.08	Average
9	0.33208	0.05	9.60	24.69	34.34	59.40	-25.06	QP
10 @	0.33208	0.05	9.60	17.14	26.79	49.40	-22.61	Average
11	25.055	0.29	10.10	17.81	28.20	60.00	-31.80	QP
12	25.055	0.29	10.10	10.50	20.89	50.00	-29.11	Average

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

### 5.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2009
Limit:	30dBm
Test setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

### Measurement Data

#### Peak Output Power:

802.11b mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	21.74	30.00	Pass
Middle	21.34	30.00	Pass
Highest	21.61	30.00	Pass
802.11g mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	21.39	30.00	Pass
Middle	21.30	30.00	Pass
Highest	21.45	30.00	Pass





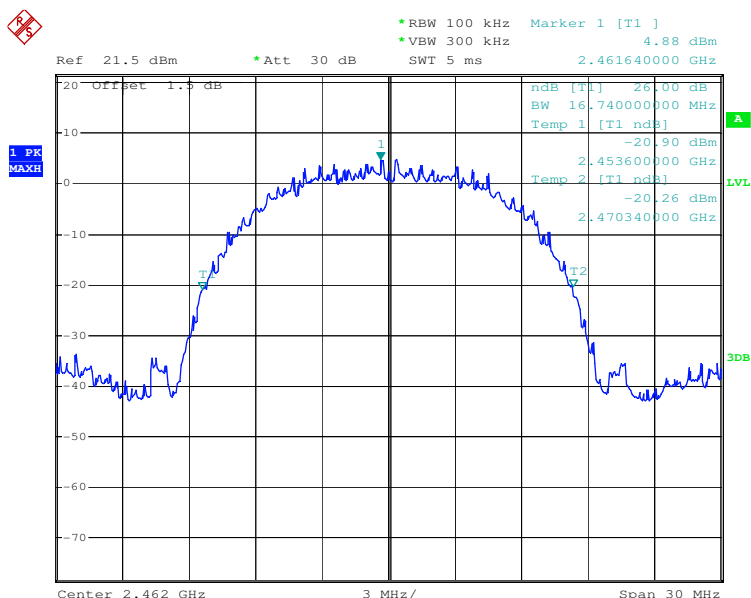




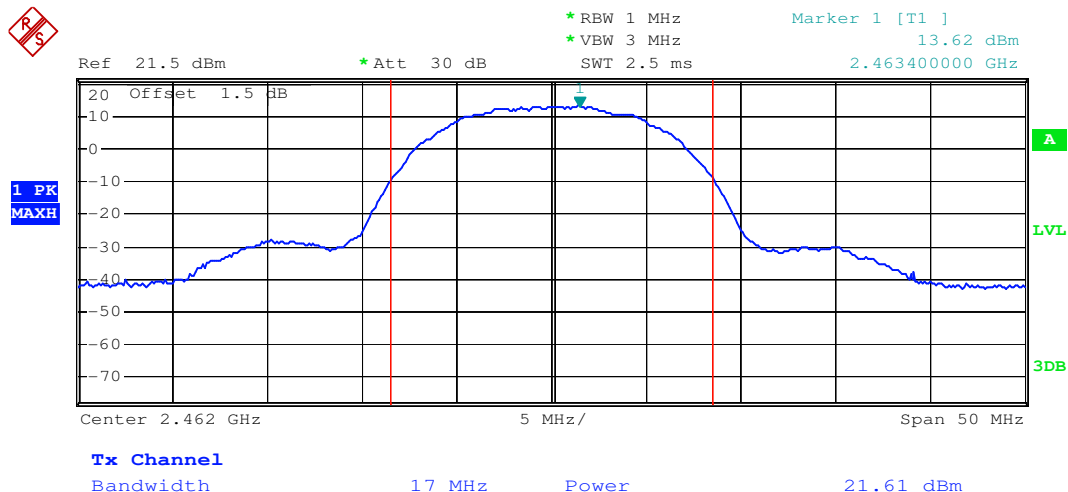
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 16 of 60

Test mode:	802.11b	Test channel:	Highest	-26dB
------------	---------	---------------	---------	-------



Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

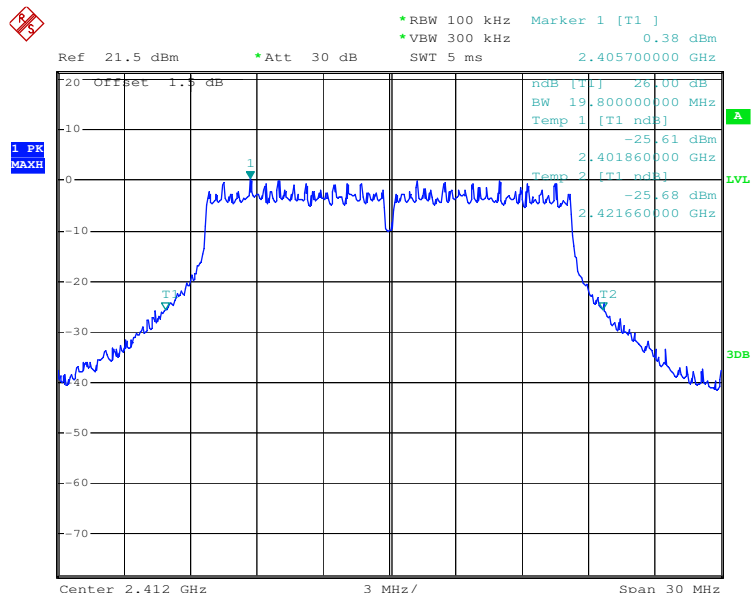




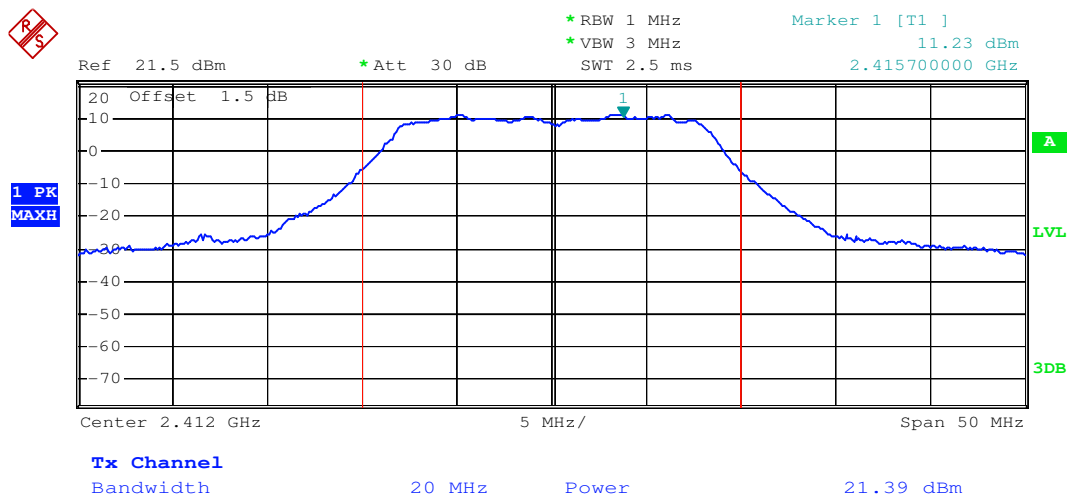
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 17 of 60

Test mode:	802.11g	Test channel:	Lowest	-26dB
------------	---------	---------------	--------	-------



Test mode:	802.11g	Test channel:	Lowest
------------	---------	---------------	--------



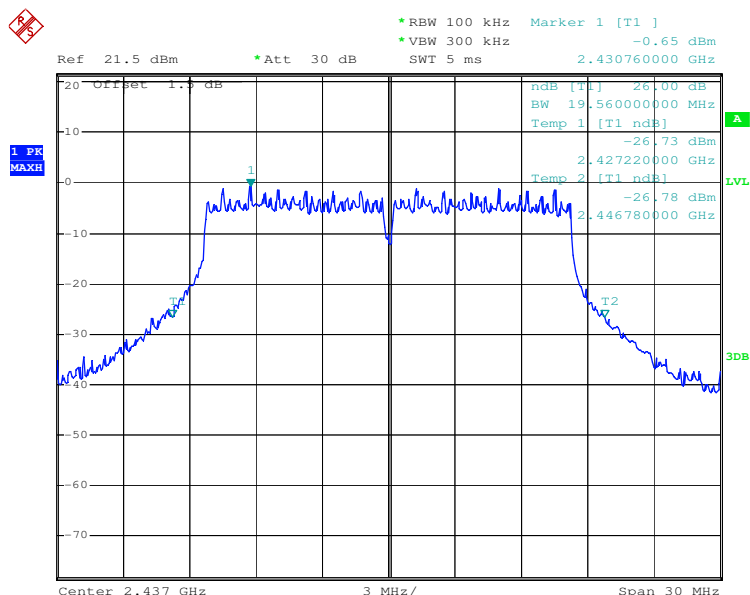
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



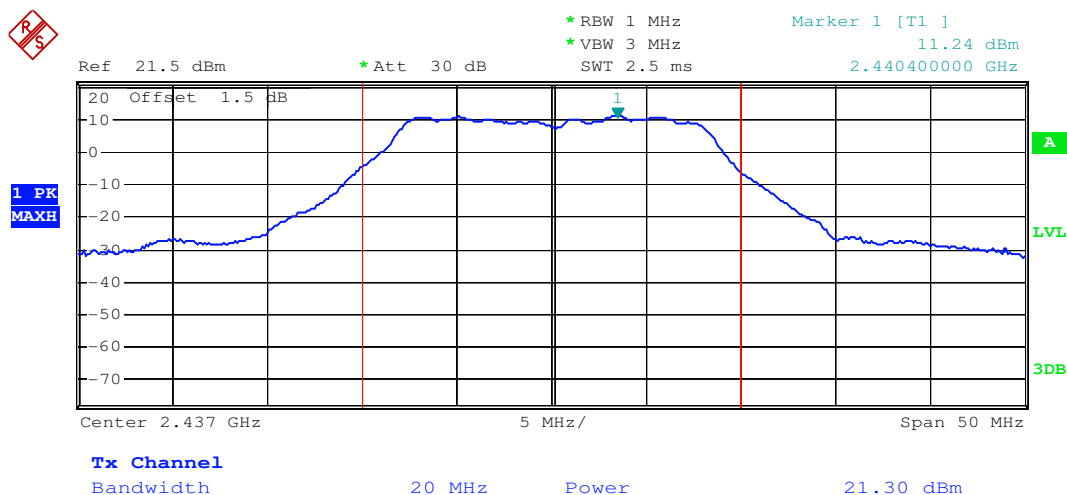
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 18 of 60

Test mode:	802.11g	Test channel:	Middle	-26dB
------------	---------	---------------	--------	-------



Test mode:	802.11g	Test channel:	Middle
------------	---------	---------------	--------



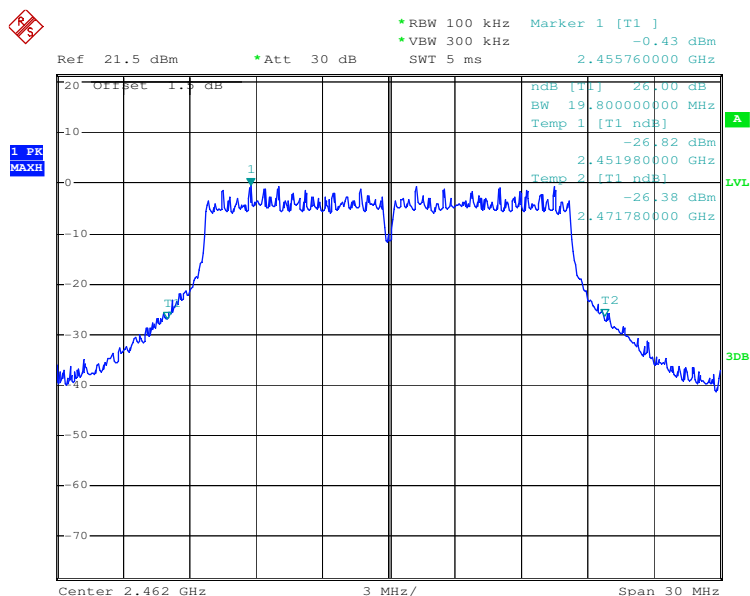
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



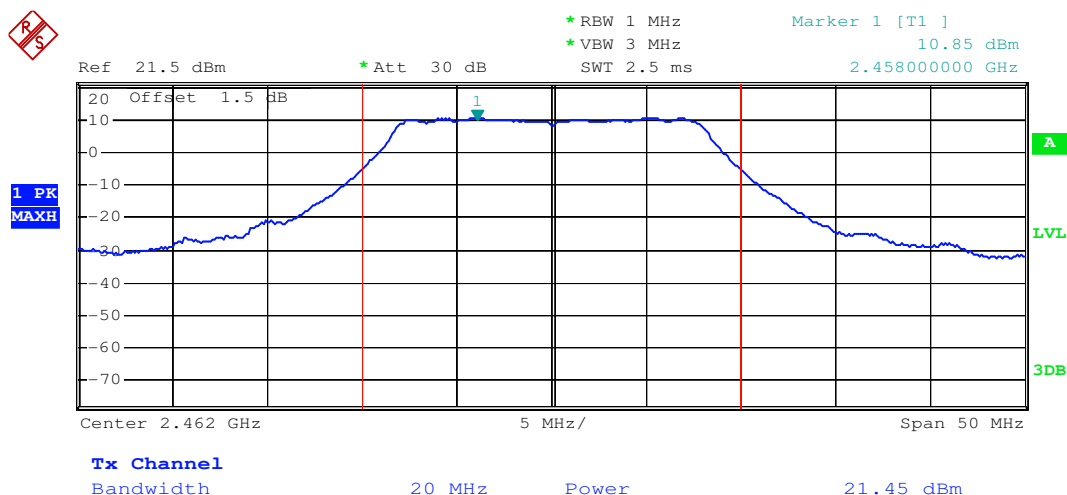
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 19 of 60

Test mode:	802.11g	Test channel:	Highest	-26dB
------------	---------	---------------	---------	-------



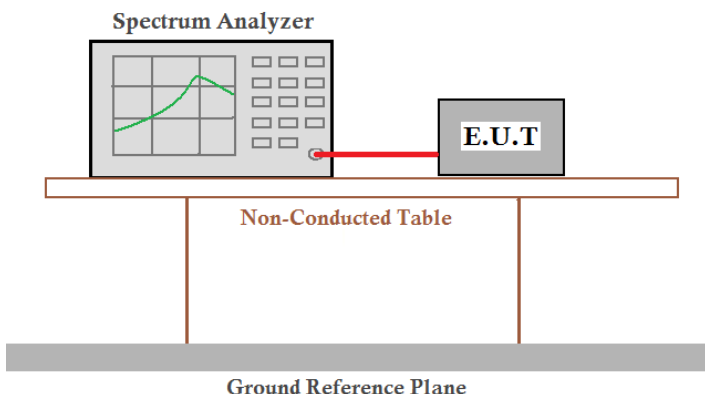
Test mode:	802.11g	Test channel:	Highest
------------	---------	---------------	---------



Tx Channel  
Bandwidth 20 MHz Power 21.45 dBm

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

## 5.4 6dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2009
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 4.8 for details
Test results:	Pass

## Measurement Data

802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	10.02	>500	Pass
Middle	9.96	>500	Pass
Highest	10.14	>500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (KHz)	Result
Lowest	16.62	>500	Pass
Middle	16.56	>500	Pass
Highest	16.62	>500	Pass

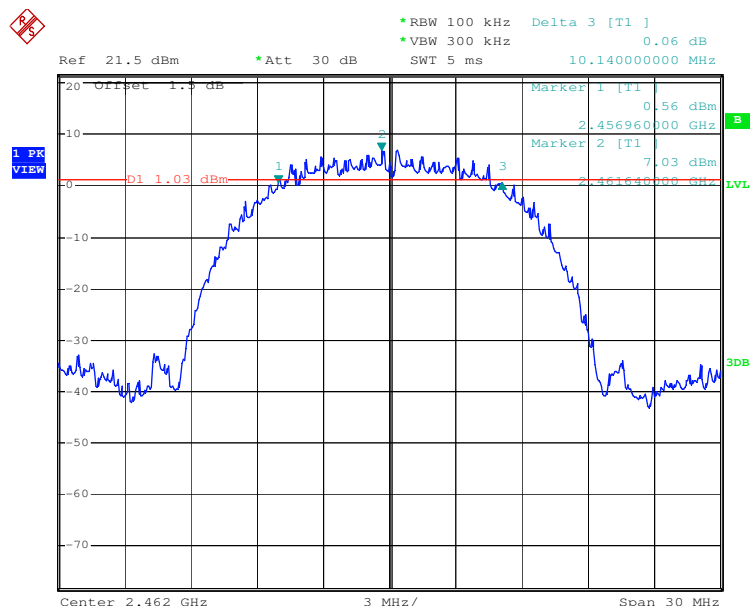




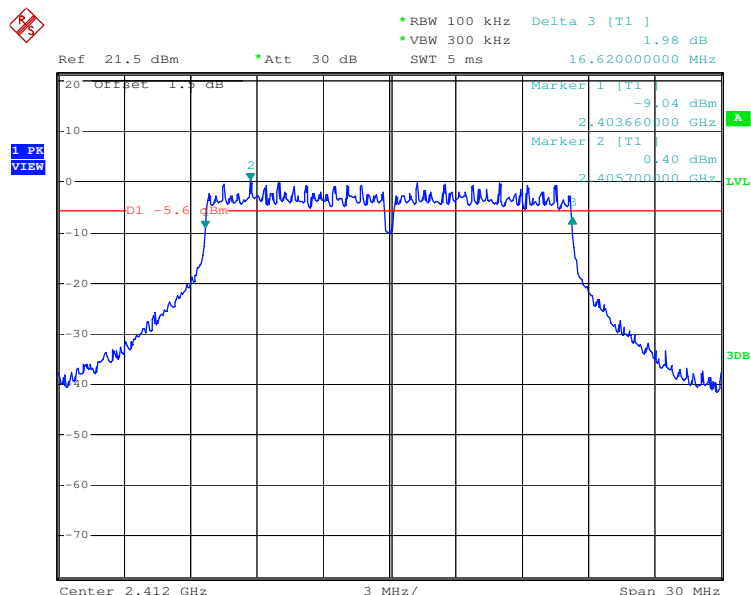
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 22 of 60

Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------



Test mode:	802.11g	Test channel:	Lowest
------------	---------	---------------	--------



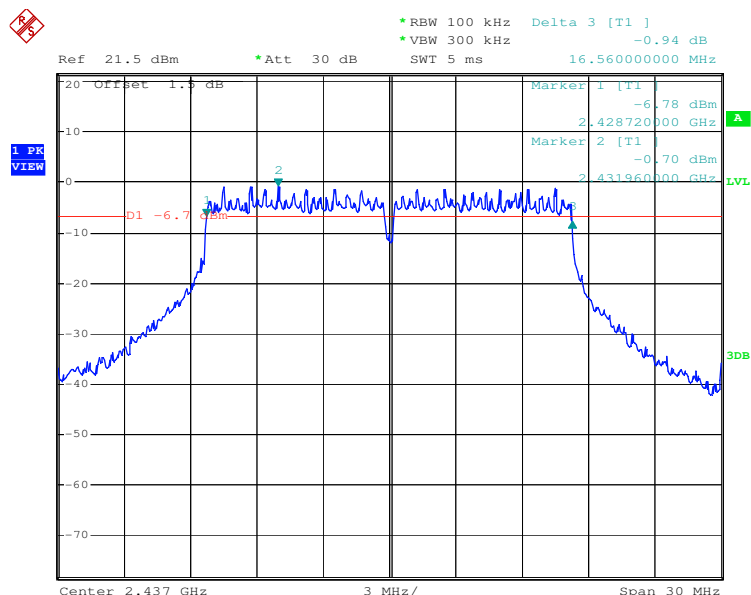
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



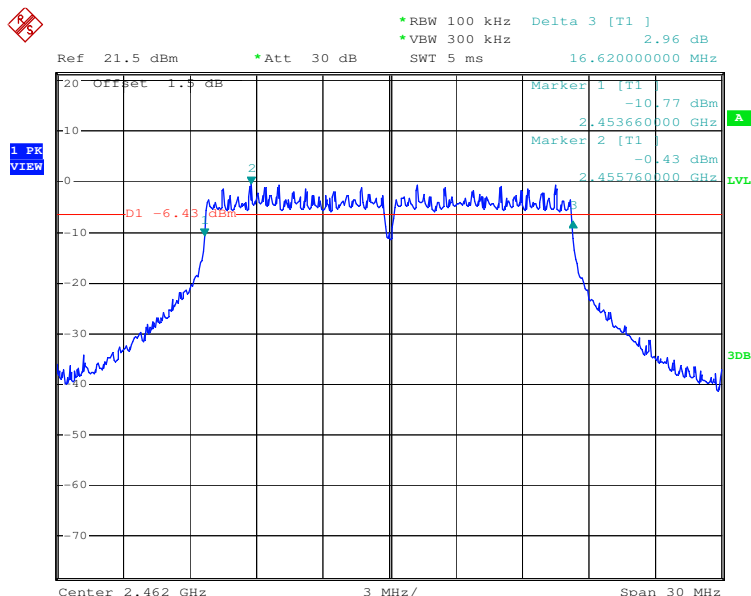
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 23 of 60

Test mode:	802.11g	Test channel:	Middle
------------	---------	---------------	--------

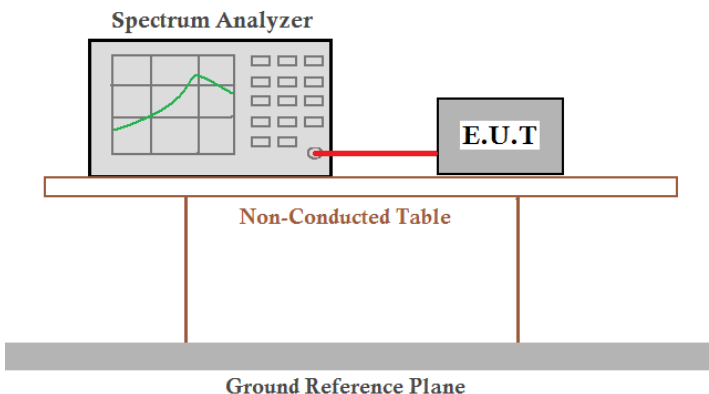


Test mode:	802.11g	Test channel:	Highest
------------	---------	---------------	---------



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

## 5.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2009
Limit:	<8dBm
Test setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

### Measurement Data

802.11b mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-6.15	<8.00	Pass
Middle	-8.59	<8.00	Pass
Highest	-8.20	<8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm)	Limit (dBm)	Result
Lowest	-16.64	<8.00	Pass
Middle	-18.11	<8.00	Pass
Highest	-17.41	<8.00	Pass



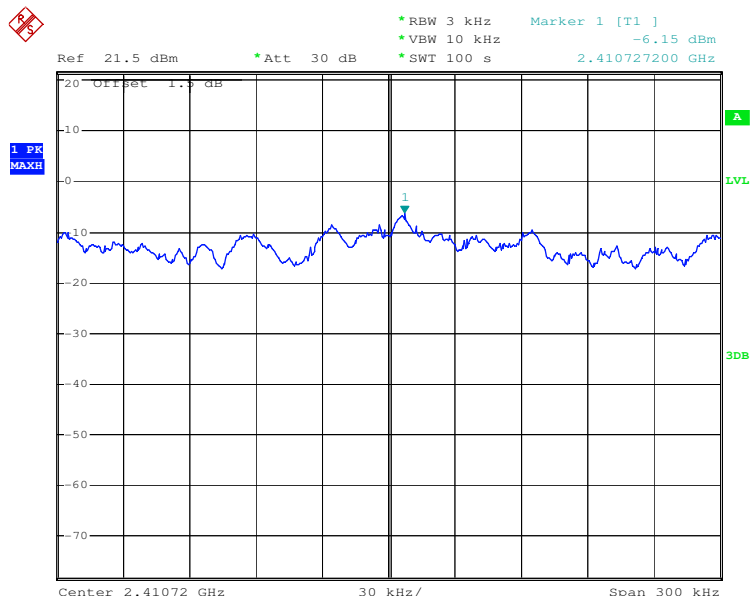


# SGS-CSTC Standards Technical Services Ltd.

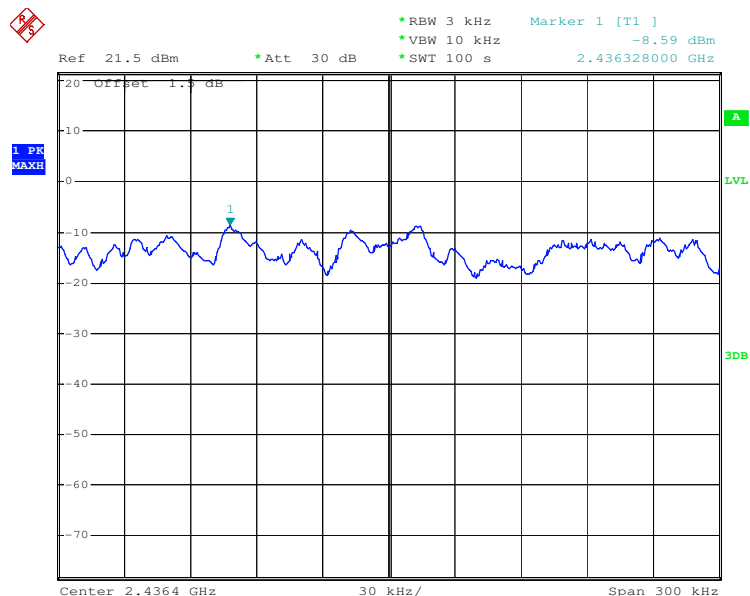
Report No.: SZEM110600177202  
Page: 25 of 60

## Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
------------	---------	---------------	--------



Test mode:	802.11b	Test channel:	Middle
------------	---------	---------------	--------



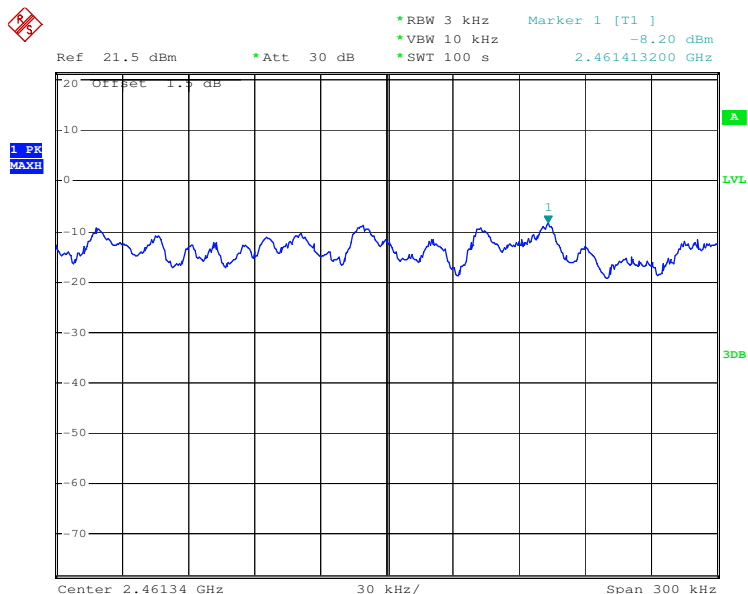
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



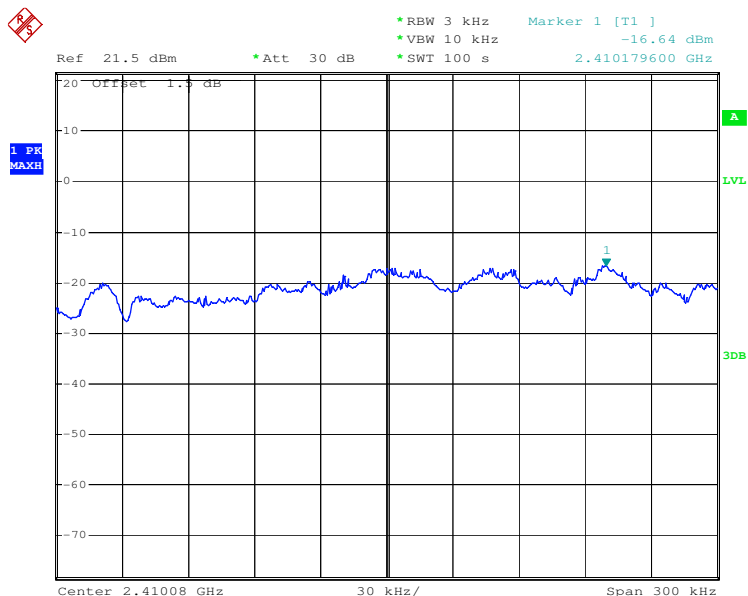
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 26 of 60

Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------



Test mode:	802.11g	Test channel:	Lowest
------------	---------	---------------	--------



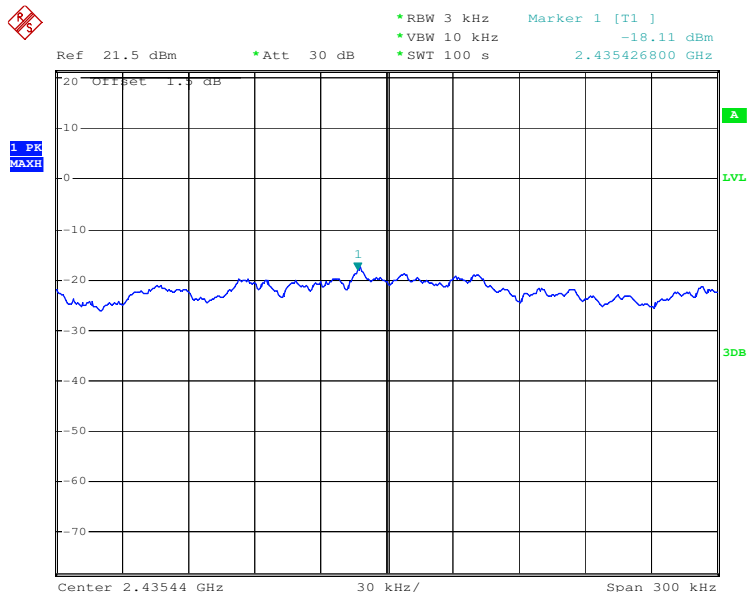
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



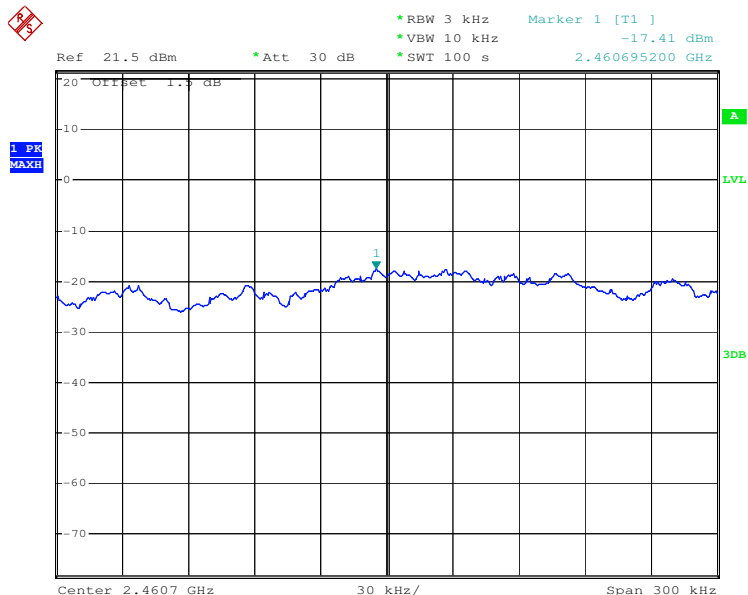
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 27 of 60

Test mode:	802.11g	Test channel:	Middle
------------	---------	---------------	--------

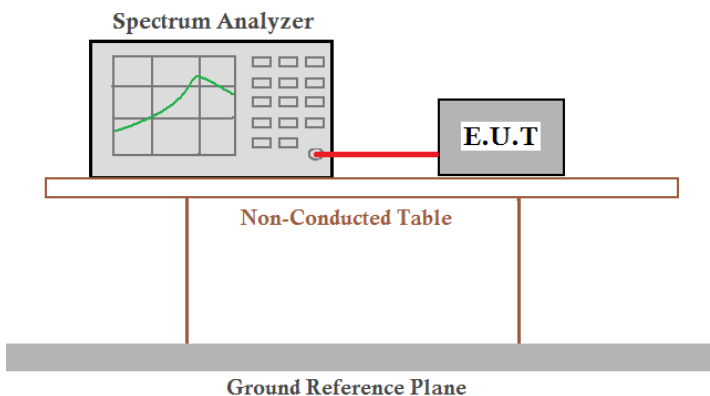


Test mode:	802.11g	Test channel:	Highest
------------	---------	---------------	---------



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

## 5.6 Band Edge

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass

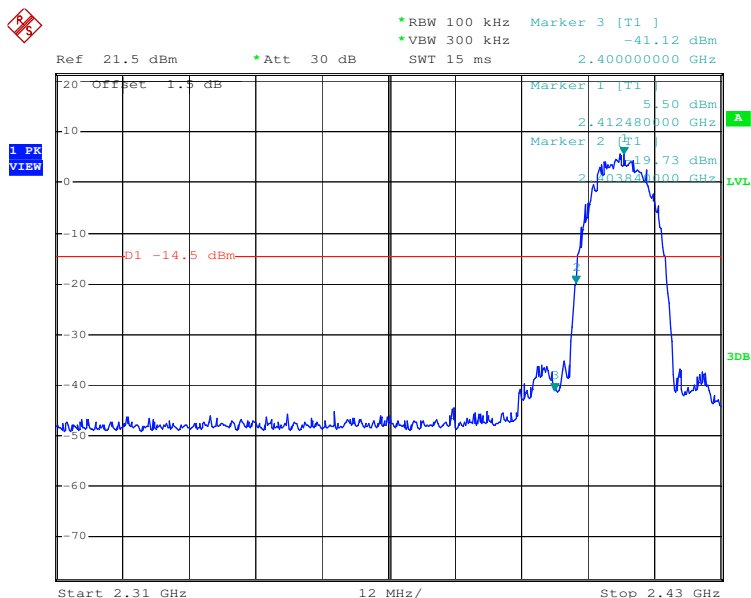


# SGS-CSTC Standards Technical Services Ltd.

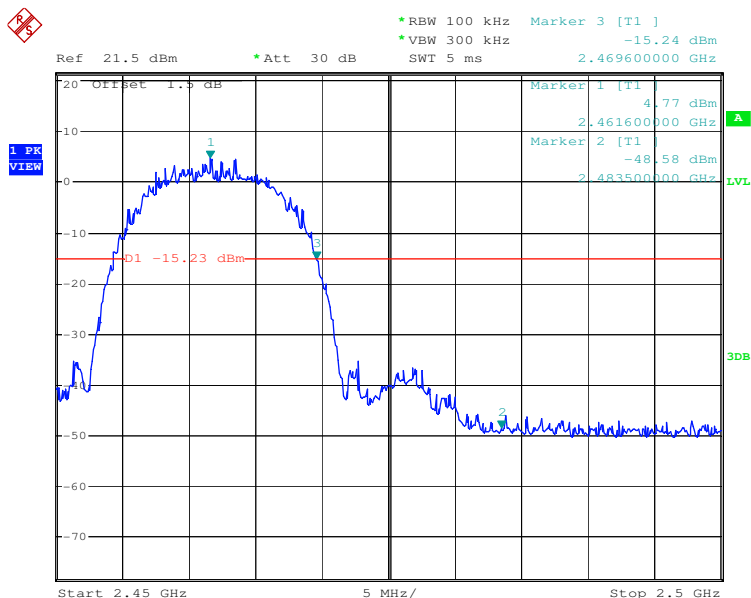
Report No.: SZEM110600177202  
Page: 29 of 60

## Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
------------	---------	---------------	--------



Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------



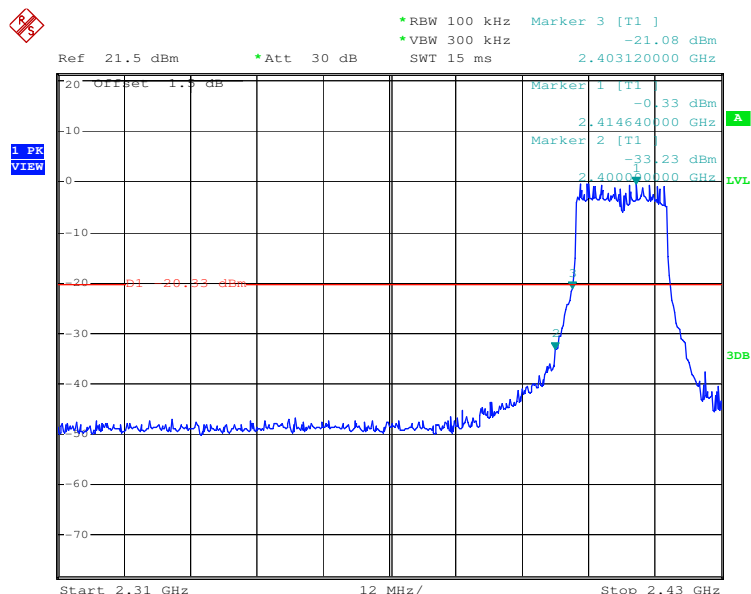
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



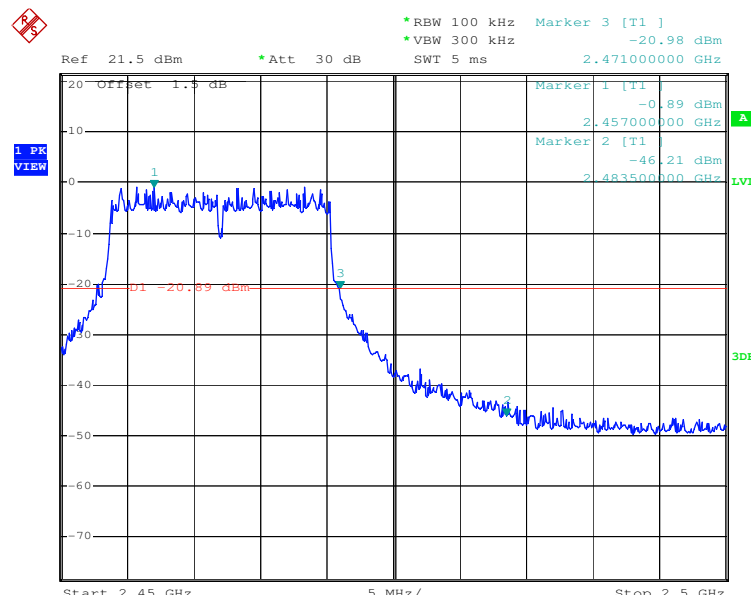
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 30 of 60

Test mode:	802.11g	Test channel:	Lowest
------------	---------	---------------	--------

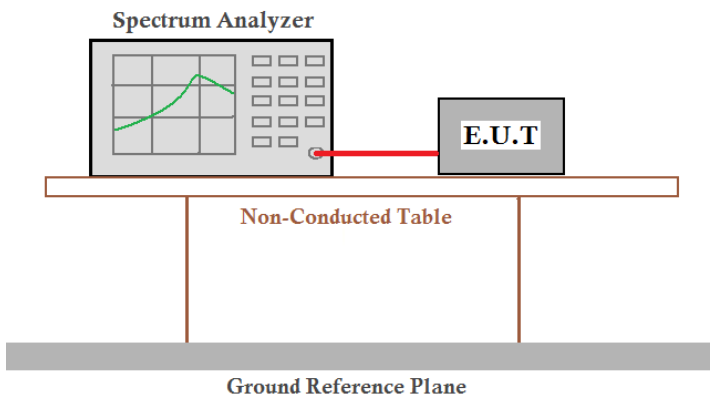


Test mode:	802.11g	Test channel:	Highest
------------	---------	---------------	---------



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

## 5.7 RF Antenna Conducted spurious emissions

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test setup:	 <p><i>Remark:</i> Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</p>
Test Instruments:	Refer to section 4.8 for details.
Test results:	Pass







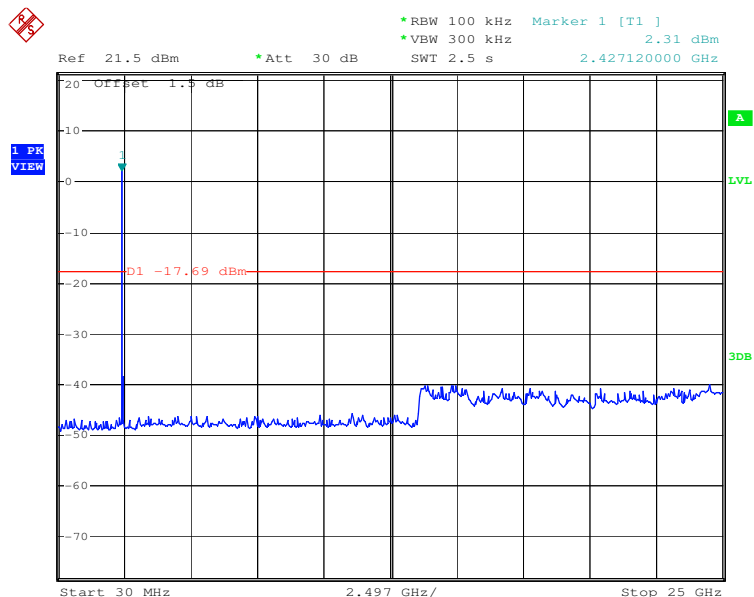


# SGS-CSTC Standards Technical Services Ltd.

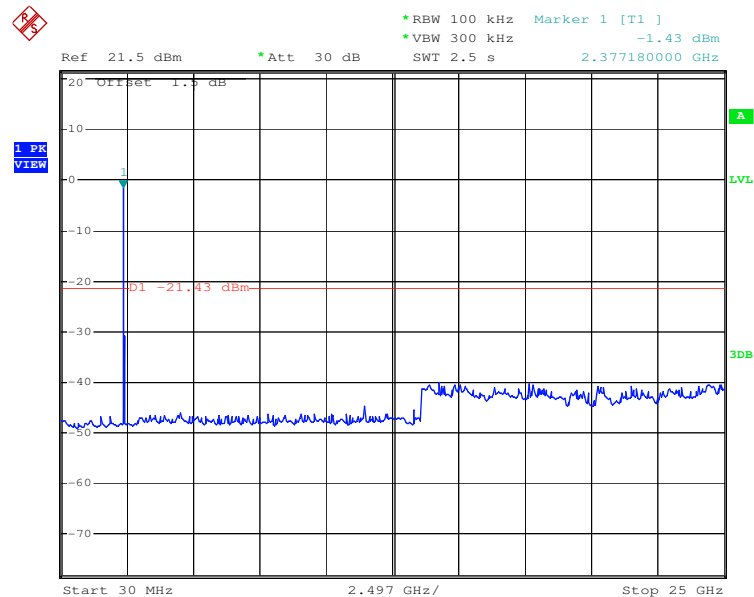
Report No.: SZEM110600177202

Page: 33 of 60

Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------



Test mode:	802.11g	Test channel:	Lowest
------------	---------	---------------	--------



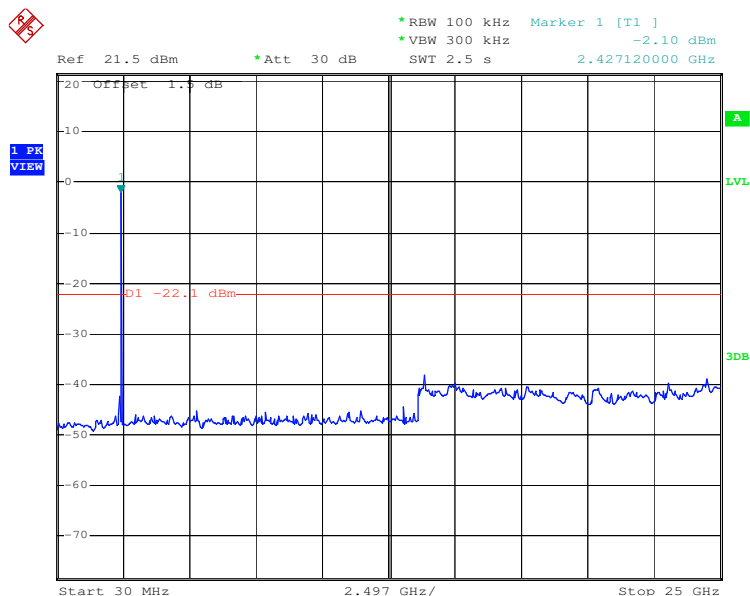
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



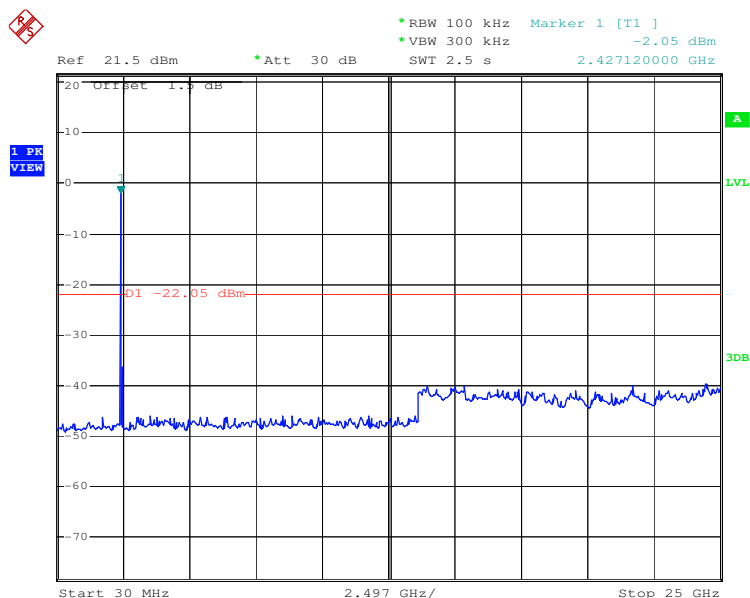
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 34 of 60

Test mode:	802.11g	Test channel:	Middle
------------	---------	---------------	--------



Test mode:	802.11g	Test channel:	Highest
------------	---------	---------------	---------

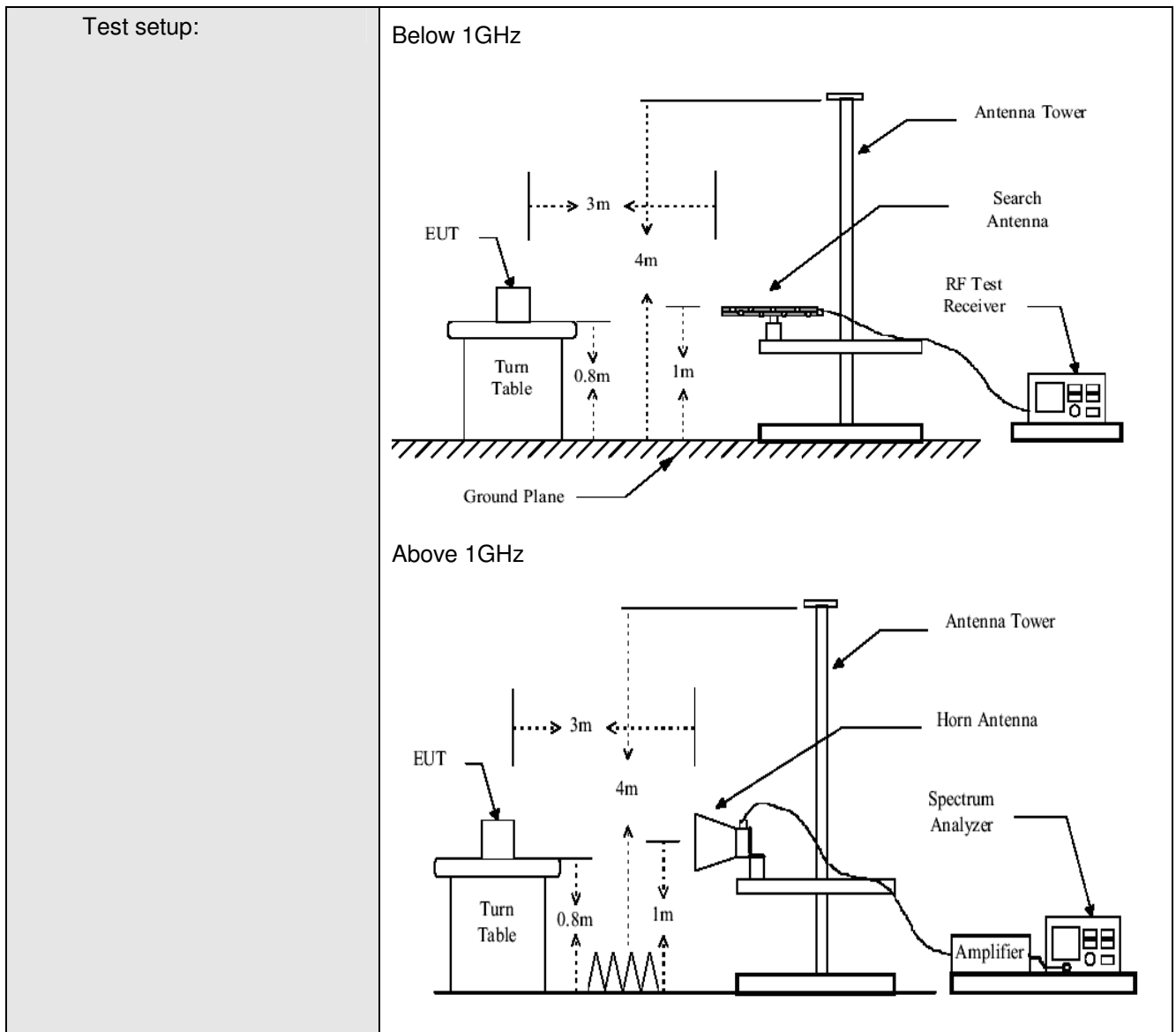


"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



## 5.8 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2009				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:					
	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Limit:					
	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
74.0			Peak Value		
Test Procedure:	The E.U.T and its simulators are placed on a turn table which is 0.8meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.				
	Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.				
	The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.				
Test Instruments:	Refer to section 4.8 for details.				
Test mode:	Test the EUT in Transmitting mode.				
Test results:	Pass				



**Note:**

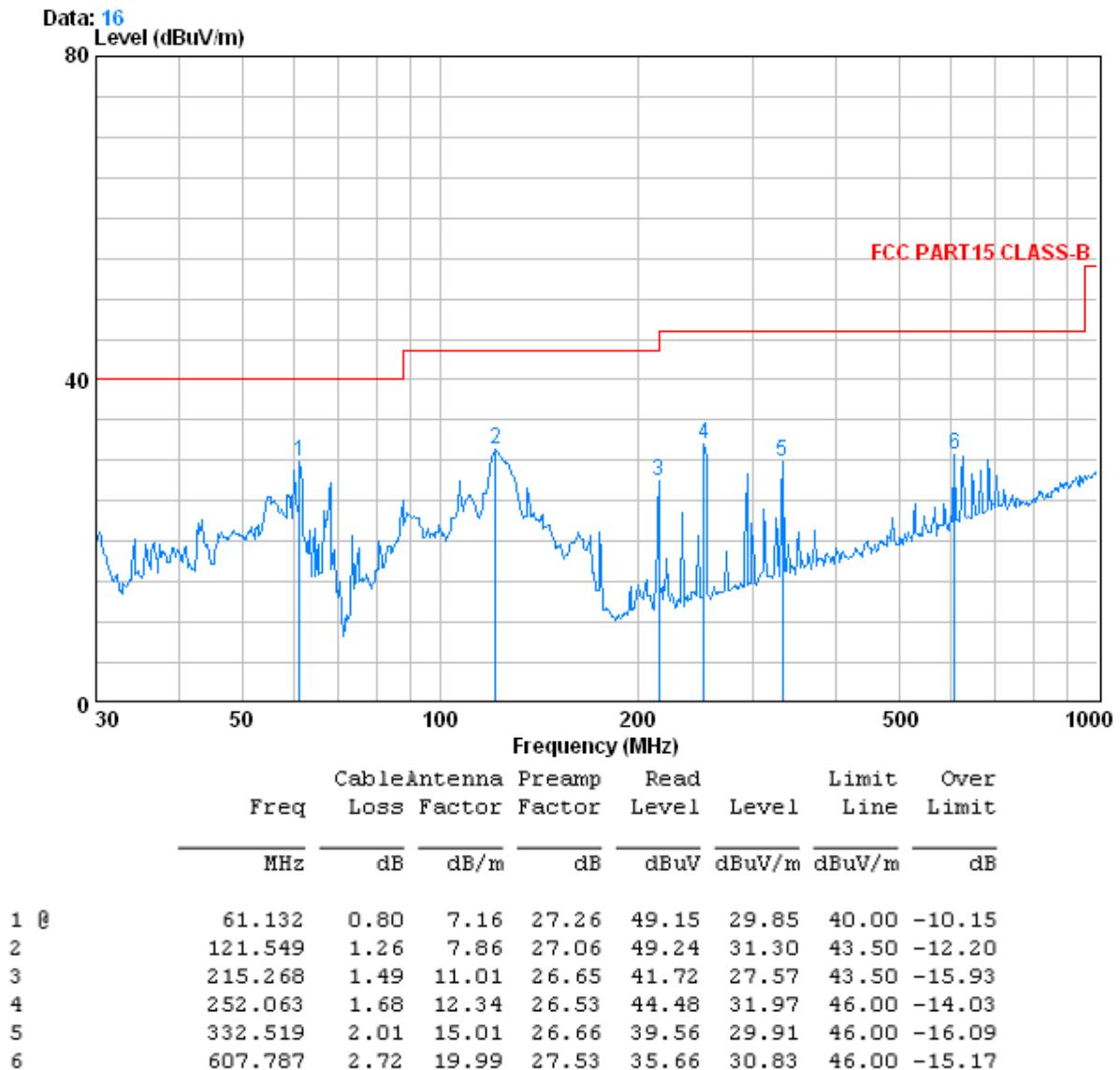
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$



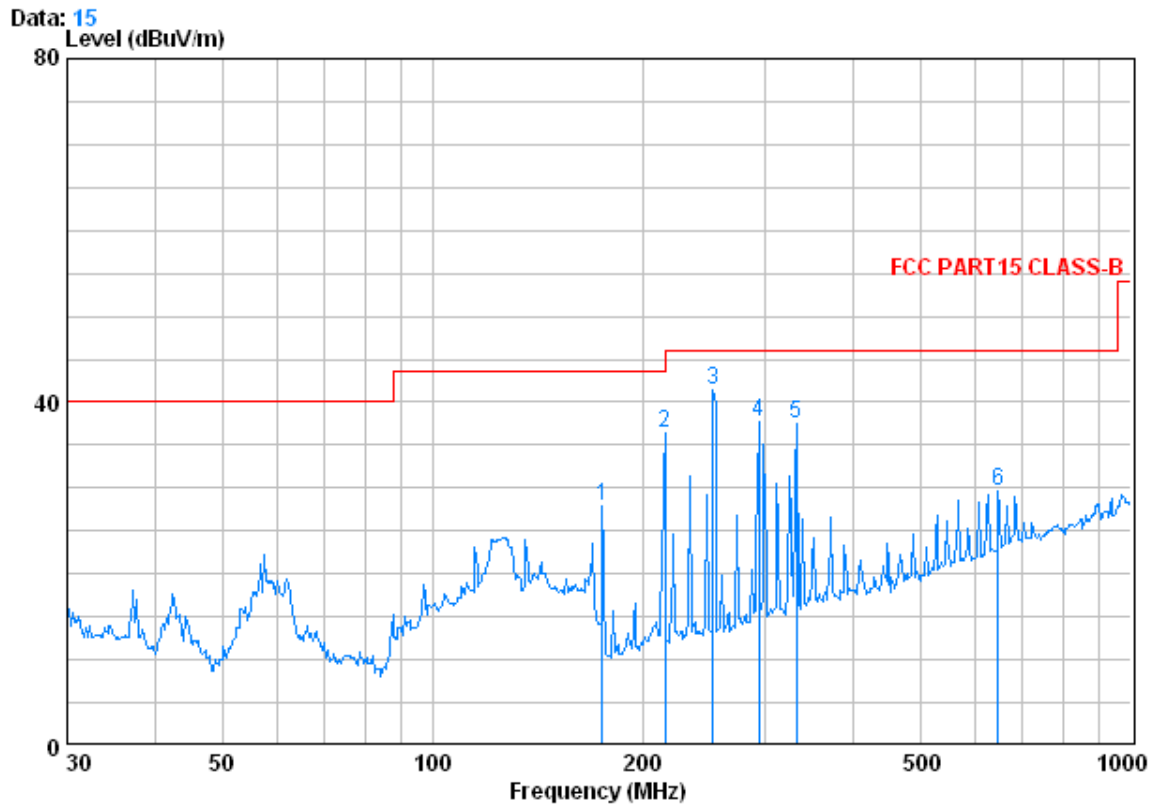
### 5.8.1 Radiated emission below 1GHz

Vertical:





Horizontal:



		CableAntenna Preamp			Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	175.037	1.36	9.71	26.79	43.52	27.80	43.50	-15.70
2 @	215.268	1.49	11.01	26.65	50.46	36.32	43.50	-7.18
3 @	252.063	1.68	12.34	26.53	54.00	41.49	46.00	-4.51
4 @	293.084	1.87	13.58	26.42	48.77	37.80	46.00	-8.20
5 @	332.519	2.01	15.01	26.66	47.08	37.44	46.00	-8.56
6	645.120	2.80	20.58	27.48	33.83	29.73	46.00	-16.27

**5.8.2 Transmitter emission above 1GHz**

Test mode:		802.11b		Test channel:		Lowest		Remark:		Peak	
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization			
3210	5.35	33.32	40.45	48.79	47.01	74.00	-26.99	Vertical			
4383	6.92	34.87	41.32	47.31	47.78	74.00	-26.22	Vertical			
6202	8.05	35.94	40.74	48.18	51.43	74.00	-22.57	Vertical			
7511	9.10	36.00	39.61	47.43	52.92	74.00	-21.08	Vertical			
8735	9.55	36.39	38.55	45.57	52.96	74.00	-21.04	Vertical			
11659	11.04	38.56	38.13	43.03	54.50	74.00	-19.50	Vertical			
4587	7.18	35.06	41.47	47.36	48.13	74.00	-25.87	Horizontal			
5947	7.95	35.62	40.97	48.53	51.13	74.00	-22.87	Horizontal			
7647	9.23	36.00	39.49	47.90	53.64	74.00	-20.36	Horizontal			
8395	9.44	36.16	38.85	46.34	53.09	74.00	-20.91	Horizontal			
10214	9.99	37.96	37.54	43.31	53.72	74.00	-20.28	Horizontal			
12679	11.56	39.47	38.56	43.97	56.44	74.00	-17.56	Horizontal			

Test mode:		802.11b		Test channel:		Lowest		Remark:		Average
------------	--	---------	--	---------------	--	--------	--	---------	--	---------

Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization
3210	5.35	33.32	40.45	33.08	31.30	54.00	-22.70	Vertical
4383	6.92	34.87	41.32	32.73	33.20	54.00	-20.80	Vertical
6202	8.05	35.94	40.74	33.45	36.70	54.00	-17.30	Vertical
7511	9.10	36.00	39.61	32.25	37.74	54.00	-16.26	Vertical
8735	9.55	36.39	38.55	30.65	38.04	54.00	-15.96	Vertical
11659	11.04	38.56	38.13	27.74	39.21	54.00	-14.79	Vertical
4587	7.18	35.06	41.47	32.71	33.48	54.00	-20.52	Horizontal
5947	7.95	35.62	40.97	33.40	36.00	54.00	-18.00	Horizontal
7647	9.23	36.00	39.49	32.21	37.95	54.00	-16.05	Horizontal
8395	9.44	36.16	38.85	31.28	38.03	54.00	-15.97	Horizontal
10214	9.99	37.96	37.54	28.07	38.48	54.00	-15.52	Horizontal
12679	11.56	39.47	38.56	28.65	41.12	54.00	-12.88	Horizontal



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 40 of 60

Test mode:		802.11b		Test channel:		Middle		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
4502	7.07	35.20	41.40	47.02	47.89	74.00	-26.11	Vertical	
5947	7.95	35.62	40.97	48.60	51.20	74.00	-22.80	Vertical	
6678	8.21	36.13	40.33	47.27	51.28	74.00	-22.72	Vertical	
7902	9.30	36.00	39.28	46.09	52.11	74.00	-21.89	Vertical	
9942	9.82	37.65	37.50	42.86	52.83	74.00	-21.17	Vertical	
11302	10.78	38.44	37.99	43.22	54.45	74.00	-19.55	Vertical	
3958	6.41	33.76	41.01	47.32	46.48	74.00	-27.52	Horizontal	
5590	7.80	35.04	41.27	47.97	49.54	74.00	-24.46	Horizontal	
6423	8.12	36.20	40.56	47.69	51.45	74.00	-22.55	Horizontal	
8310	9.42	36.12	38.92	45.46	52.08	74.00	-21.92	Horizontal	
9942	9.82	37.65	37.50	42.99	52.96	74.00	-21.04	Horizontal	
10775	10.41	38.41	37.76	42.15	53.21	74.00	-20.79	Horizontal	

Test mode:		802.11b		Test channel:		Middle		Remark:	Average
------------	--	---------	--	---------------	--	--------	--	---------	---------

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4502	7.07	35.20	41.40	32.22	33.09	54.00	-20.91	Vertical
5947	7.95	35.62	40.97	32.89	35.49	54.00	-18.51	Vertical
6678	8.21	36.13	40.33	32.71	36.72	54.00	-17.28	Vertical
7902	9.30	36.00	39.28	31.62	37.64	54.00	-16.36	Vertical
9942	9.82	37.65	37.50	27.87	37.84	54.00	-16.16	Vertical
11302	10.78	38.44	37.99	27.31	38.54	54.00	-15.46	Vertical
3958	6.41	33.76	41.01	32.33	31.49	54.00	-22.51	Horizontal
5590	7.80	35.04	41.27	33.02	34.59	54.00	-19.41	Horizontal
6423	8.12	36.20	40.56	32.98	36.74	54.00	-17.26	Horizontal
8310	9.42	36.12	38.92	31.18	37.80	54.00	-16.20	Horizontal
9942	9.82	37.65	37.50	27.93	37.90	54.00	-16.10	Horizontal
10775	10.41	38.41	37.76	27.53	38.59	54.00	-15.41	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."





# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 41 of 60

Test mode:		802.11b		Test channel:		Highest		Remark:	Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
3618	5.93	33.34	40.76	47.38	45.89	74.00	-28.11	Vertical	
5199	7.63	34.60	41.62	47.54	48.15	74.00	-25.85	Vertical	
6406	8.11	36.18	40.56	47.68	51.41	74.00	-22.59	Vertical	
7698	9.24	36.00	39.44	46.56	52.36	74.00	-21.64	Vertical	
8854	9.58	36.48	38.45	44.58	52.19	74.00	-21.81	Vertical	
10095	9.91	37.82	37.49	42.48	52.72	74.00	-21.28	Vertical	
4791	7.42	34.73	41.63	47.65	48.17	74.00	-25.83	Horizontal	
5539	7.78	34.96	41.32	48.41	49.83	74.00	-24.17	Horizontal	
6831	8.27	35.97	40.20	47.84	51.88	74.00	-22.12	Horizontal	
7579	9.19	36.00	39.56	46.83	52.46	74.00	-21.54	Horizontal	
8735	9.55	36.39	38.55	44.52	51.91	74.00	-22.09	Horizontal	
9823	9.77	37.53	37.61	42.62	52.31	74.00	-21.69	Horizontal	

Test mode:		802.11b		Test channel:		Highest		Remark:	Average
------------	--	---------	--	---------------	--	---------	--	---------	---------

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
3618	5.93	33.34	40.76	32.17	30.68	54.00	-23.32	Vertical	
5199	7.63	34.60	41.62	32.48	33.09	54.00	-20.91	Vertical	
6406	8.11	36.18	40.56	32.81	36.54	54.00	-17.46	Vertical	
7698	9.24	36.00	39.44	31.70	37.50	54.00	-16.50	Vertical	
8854	9.58	36.48	38.45	29.91	37.52	54.00	-16.48	Vertical	
10095	9.91	37.82	37.49	27.48	37.72	54.00	-16.28	Vertical	
4791	7.42	34.73	41.63	35.02	35.54	54.00	-18.46	Horizontal	
5539	7.78	34.96	41.32	35.66	37.08	54.00	-16.92	Horizontal	
6831	8.27	35.97	40.20	35.53	39.57	54.00	-14.43	Horizontal	
7579	9.19	36.00	39.56	34.84	40.47	54.00	-13.53	Horizontal	
8735	9.55	36.39	38.55	33.55	40.94	54.00	-13.06	Horizontal	
9823	9.77	37.53	37.61	31.62	41.31	54.00	-12.69	Horizontal	



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 42 of 60

Test mode:		802.11g		Test channel:		Lowest		Remark:		Peak
Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization		
4502	7.07	35.20	41.40	49.46	50.33	74.00	-23.67	Vertical		
4927	7.51	34.51	41.72	50.64	50.94	74.00	-23.06	Vertical		
6287	8.07	36.04	40.68	50.82	54.25	74.00	-19.75	Vertical		
7035	8.52	35.81	40.02	50.09	54.40	74.00	-19.60	Vertical		
8123	9.36	36.05	39.08	49.53	55.86	74.00	-18.14	Vertical		
10078	9.90	37.80	37.48	46.23	56.45	74.00	-17.55	Vertical		
4451	7.01	35.06	41.37	49.36	50.06	74.00	-23.94	Horizontal		
5386	7.71	34.78	41.45	50.79	51.83	74.00	-22.17	Horizontal		
6270	8.07	36.02	40.69	50.04	53.44	74.00	-20.56	Horizontal		
7987	9.33	36.00	39.20	50.70	56.83	74.00	-17.17	Horizontal		
9687	9.71	37.39	37.73	45.87	55.24	74.00	-18.76	Horizontal		
11166	10.68	38.47	37.93	46.37	57.59	74.00	-16.41	Horizontal		

Test mode:		802.11g		Test channel:		Lowest		Remark:	Average
------------	--	---------	--	---------------	--	--------	--	---------	---------

Frequency (MHz)	Cable loss (dB)	Antenna factors (dB/m)	Preamp factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over limit	polarization
4502	7.07	35.20	41.40	34.74	35.61	54.00	-18.39	Vertical
4927	7.51	34.51	41.72	35.13	35.43	54.00	-18.57	Vertical
6287	8.07	36.04	40.68	35.76	39.19	54.00	-14.81	Vertical
7035	8.52	35.81	40.02	34.99	39.30	54.00	-14.70	Vertical
8123	9.36	36.05	39.08	34.36	40.69	54.00	-13.31	Vertical
10078	9.90	37.80	37.48	31.37	41.59	54.00	-12.41	Vertical
4451	7.01	35.06	41.37	34.74	35.44	54.00	-18.56	Horizontal
5386	7.71	34.78	41.45	35.45	36.49	54.00	-17.51	Horizontal
6270	8.07	36.02	40.69	35.78	39.18	54.00	-14.82	Horizontal
7987	9.33	36.00	39.20	34.51	40.64	54.00	-13.36	Horizontal
9687	9.71	37.39	37.73	31.83	41.20	54.00	-12.80	Horizontal
11166	10.68	38.47	37.93	31.27	42.49	54.00	-11.51	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 43 of 60

Test mode:		802.11g		Test channel:		Middle		Remark:		Peak	
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBμV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization			
4587	7.18	35.06	41.47	49.61	50.38	74.00	-23.62	Vertical			
5658	7.82	35.15	41.22	50.28	52.03	74.00	-21.97	Vertical			
6423	8.12	36.20	40.56	49.56	53.32	74.00	-20.68	Vertical			
8259	9.41	36.10	38.96	48.97	55.52	74.00	-18.48	Vertical			
9738	9.73	37.44	37.68	45.81	55.30	74.00	-18.70	Vertical			
10571	10.25	38.33	37.69	44.94	55.83	74.00	-18.17	Vertical			
3601	5.90	33.32	40.74	48.23	46.71	74.00	-27.29	Horizontal			
4502	7.07	35.20	41.40	49.55	50.42	74.00	-23.58	Horizontal			
5811	7.89	35.40	41.09	50.24	52.44	74.00	-21.56	Horizontal			
7579	9.19	36.00	39.56	49.47	55.10	74.00	-18.90	Horizontal			
8854	9.58	36.48	38.45	47.61	55.22	74.00	-18.78	Horizontal			
10299	10.06	38.06	37.57	45.47	56.02	74.00	-17.98	Horizontal			

Test mode:		802.11g		Test channel:		Middle		Remark:		Average
------------	--	---------	--	---------------	--	--------	--	---------	--	---------

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBμV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
4587	7.18	35.06	41.47	34.63	35.40	54.00	-18.60	Vertical	
5658	7.82	35.15	41.22	35.22	36.97	54.00	-17.03	Vertical	
6423	8.12	36.20	40.56	35.16	38.92	54.00	-15.08	Vertical	
8259	9.41	36.10	38.96	33.93	40.48	54.00	-13.52	Vertical	
9738	9.73	37.44	37.68	31.23	40.72	54.00	-13.28	Vertical	
10571	10.25	38.33	37.69	30.72	41.61	54.00	-12.39	Vertical	
3601	5.90	33.32	40.74	33.89	32.37	54.00	-21.63	Horizontal	
4502	7.07	35.20	41.40	34.56	35.43	54.00	-18.57	Horizontal	
5811	7.89	35.40	41.09	35.20	37.40	54.00	-16.60	Horizontal	
7579	9.19	36.00	39.56	34.70	40.33	54.00	-13.67	Horizontal	
8854	9.58	36.48	38.45	32.93	40.54	54.00	-13.46	Horizontal	
10299	10.06	38.06	37.57	30.74	41.29	54.00	-12.71	Horizontal	

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 44 of 60

Test mode:		802.11g		Test channel:		Highest		Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBμV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization		
4230	6.74	34.45	41.21	48.97	48.95	74.00	-25.05	Vertical		
5794	7.89	35.37	41.10	49.79	51.95	74.00	-22.05	Vertical		
6474	8.14	36.26	40.51	49.31	53.20	74.00	-20.80	Vertical		
7766	9.26	36.00	39.39	49.35	55.22	74.00	-18.78	Vertical		
9126	9.64	36.74	38.21	46.59	54.76	74.00	-19.24	Vertical		
10894	10.49	38.46	37.82	45.33	56.46	74.00	-17.54	Vertical		
4162	6.66	34.27	41.15	49.82	49.60	74.00	-24.40	Horizontal		
5199	7.63	34.60	41.62	49.79	50.40	74.00	-23.60	Horizontal		
6202	8.05	35.94	40.74	50.94	54.19	74.00	-19.81	Horizontal		
7239	8.76	35.90	39.85	50.01	54.82	74.00	-19.18	Horizontal		
9262	9.65	36.91	38.09	46.22	54.69	74.00	-19.31	Horizontal		
11523	10.94	38.42	38.08	45.45	56.73	74.00	-17.27	Horizontal		

Test mode:		802.11g		Test channel:		Highest		Remark:		Average
------------	--	---------	--	---------------	--	---------	--	---------	--	---------

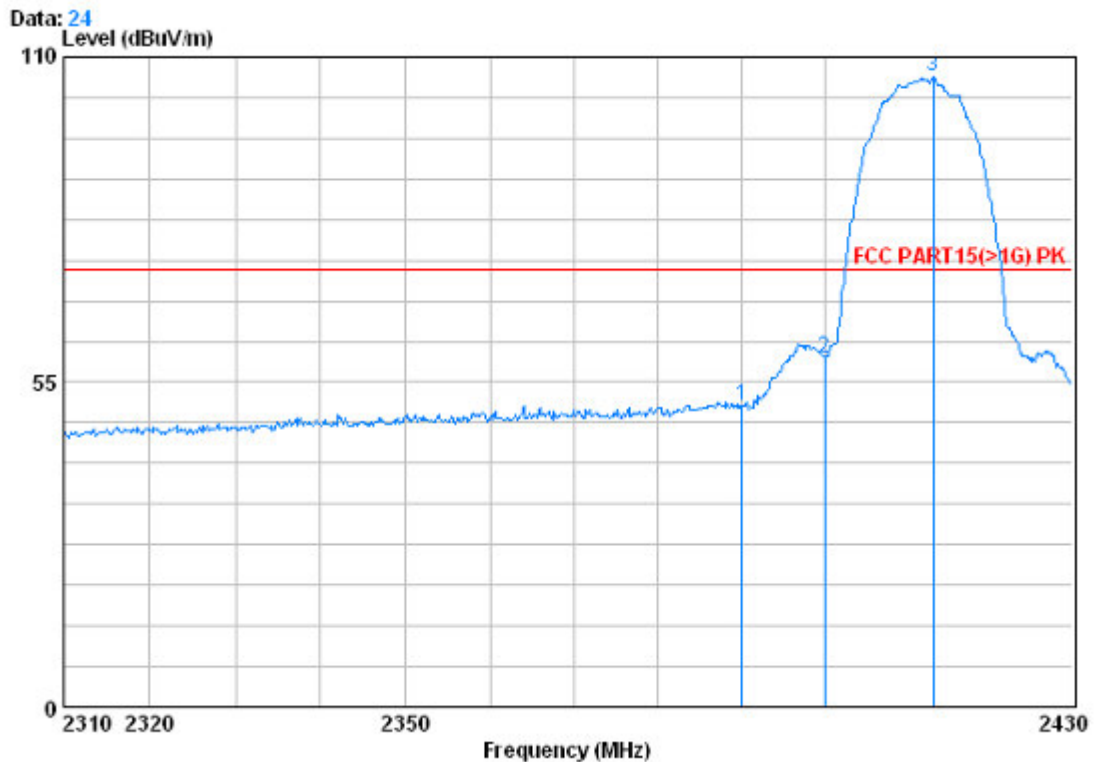
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Emission Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization	
4230	6.74	34.45	41.21	34.34	34.32	54.00	-19.68	Vertical	
5794	7.89	35.37	41.10	35.19	37.35	54.00	-16.65	Vertical	
6474	8.14	36.26	40.51	35.15	39.04	54.00	-14.96	Vertical	
7766	9.26	36.00	39.39	34.58	40.45	54.00	-13.55	Vertical	
9126	9.64	36.74	38.21	32.27	40.44	54.00	-13.56	Vertical	
10894	10.49	38.46	37.82	30.58	41.71	54.00	-12.29	Vertical	
4162	6.66	34.27	41.15	34.27	34.05	54.00	-19.95	Horizontal	
5199	7.63	34.60	41.62	34.99	35.60	54.00	-18.40	Horizontal	
6202	8.05	35.94	40.74	35.22	38.47	54.00	-15.53	Horizontal	
7239	8.76	35.90	39.85	34.71	39.52	54.00	-14.48	Horizontal	
9262	9.65	36.91	38.09	32.01	40.48	54.00	-13.52	Horizontal	
11523	10.94	38.42	38.08	30.85	42.13	54.00	-11.87	Horizontal	

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



### 5.8.3 Band edge (Radiated Emission)

Test mode:	802.11b	Test channel:	Lowest	Vertical	Peak
------------	---------	---------------	--------	----------	------



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	55.32	50.96	74.00	-23.04
2	2400.000	2.98	32.51	39.86	63.47	59.10	74.00	-14.90
3	2413.080	2.99	32.54	39.86	111.00	106.67	74.00	32.67

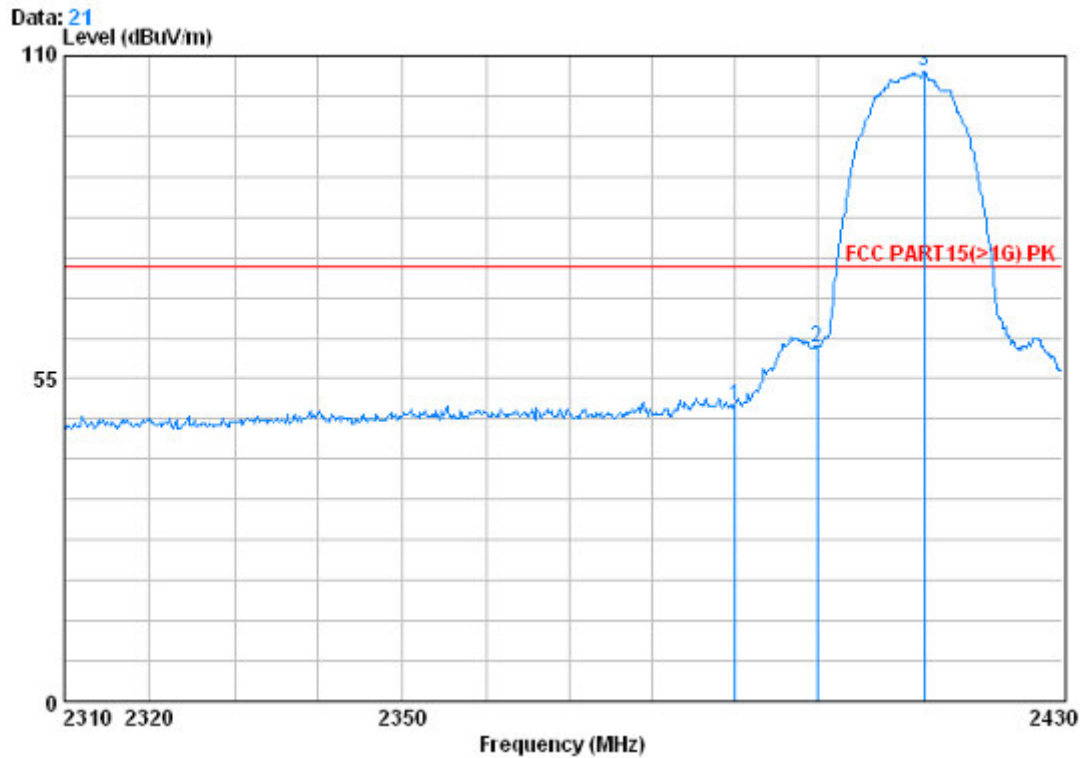


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 46 of 60

Test mode:	802.11b	Test channel:	Lowest	Horizontal	Peak
------------	---------	---------------	--------	------------	------



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	54.80	50.45	74.00	-23.55
2	2400.000	2.98	32.51	39.86	64.62	60.25	74.00	-13.75
3	2413.080	2.99	32.54	39.86	111.62	107.29	74.00	33.29

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

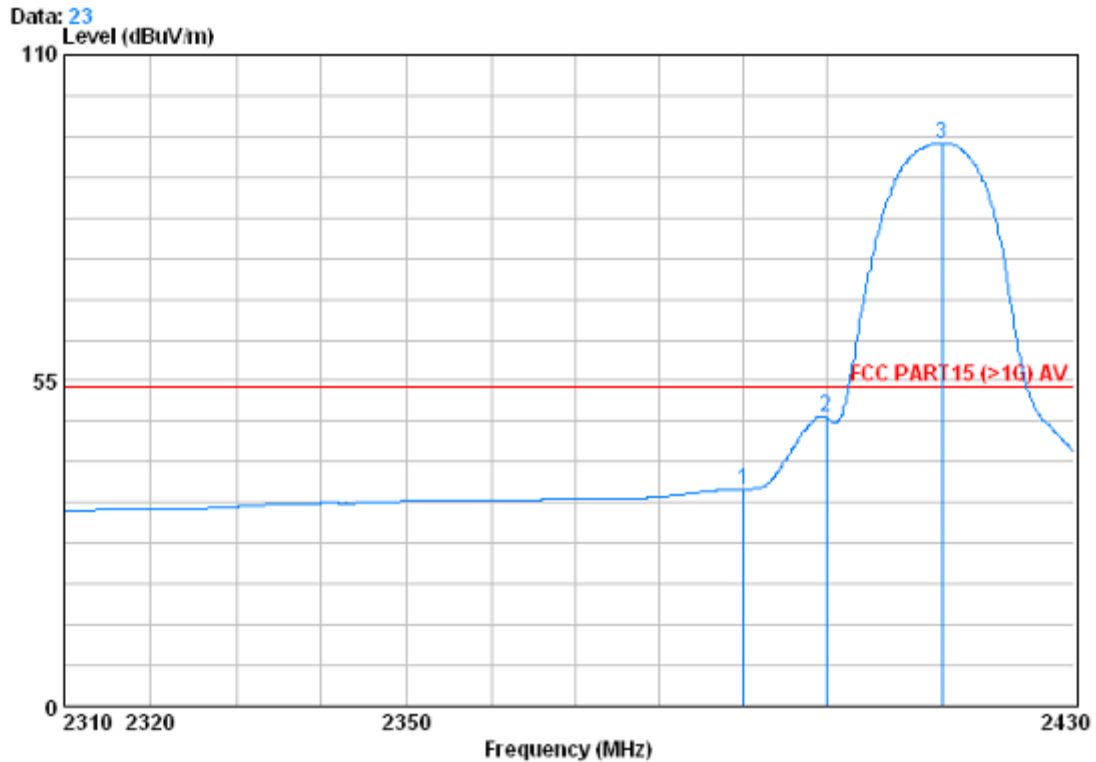


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 47 of 60

Test mode:	802.11b	Test channel:	Lowest	Vertical	Average
------------	---------	---------------	--------	----------	---------



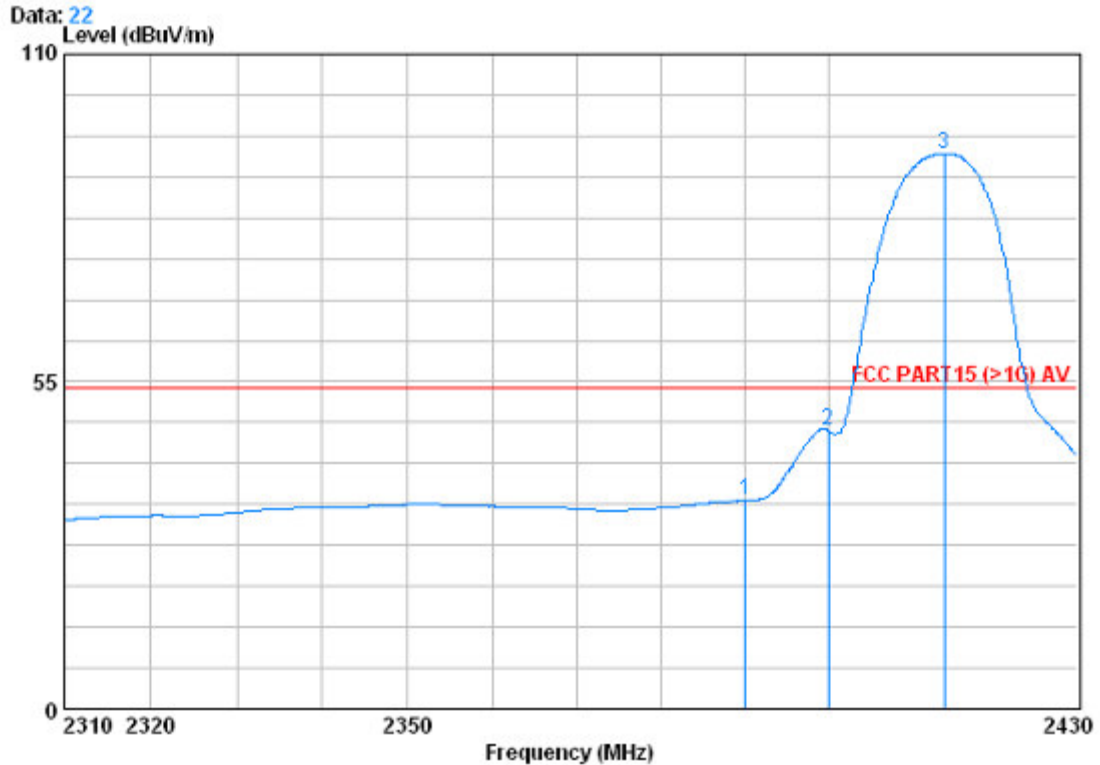
	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	40.95	36.60	54.00	-17.40
2	2400.000	2.98	32.51	39.86	53.12	48.76	54.00	-5.24
3	2413.920	2.99	32.54	39.86	99.44	95.12	54.00	41.12

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."





Test mode:	802.11b	Test channel:	Lowest	Horizontal	Average
------------	---------	---------------	--------	------------	---------



	Freq	Cable	Antenna	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	39.36	54.00	-19.00
2	2400.000	2.98	32.51	39.86	51.22	54.00	-7.14
3 @	2413.920	2.99	32.54	39.86	97.64	54.00	39.31

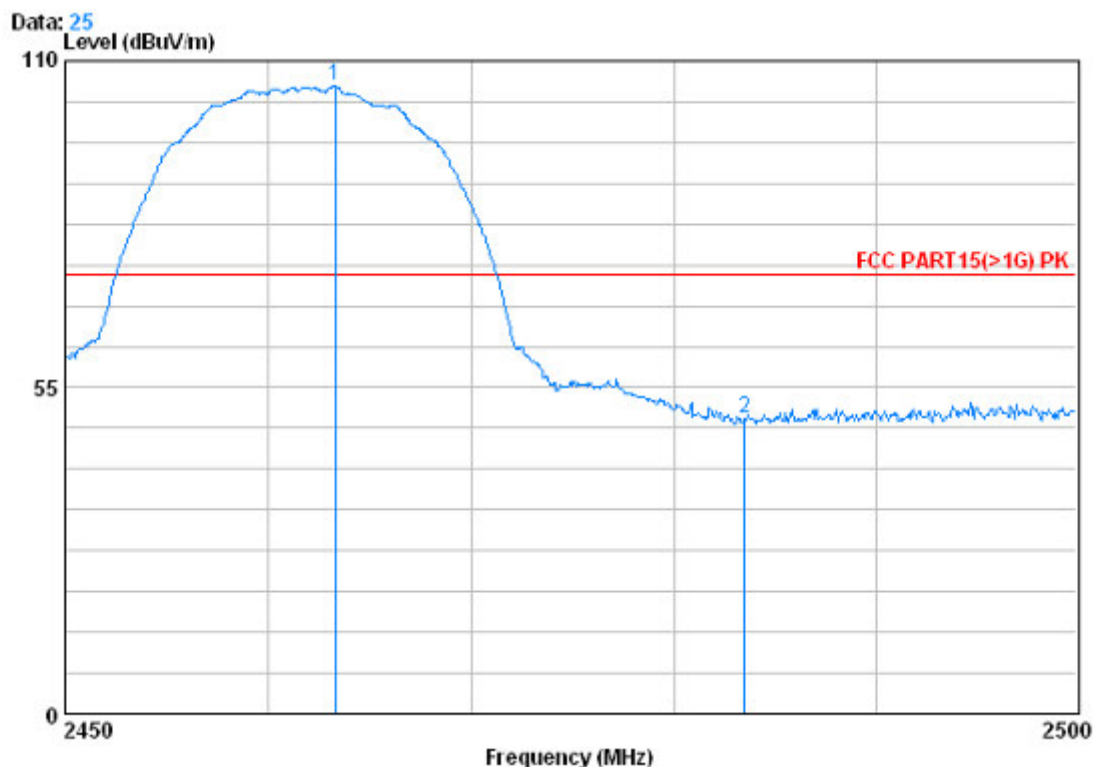




# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 49 of 60

Test mode:	802.11b	Test channel:	Highest	Vertical	Peak
------------	---------	---------------	---------	----------	------



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2463.300	3.02	32.64	39.91	110.01	105.77	74.00	31.77
2	2483.500	3.03	32.67	39.92	53.86	49.64	74.00	-24.36

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

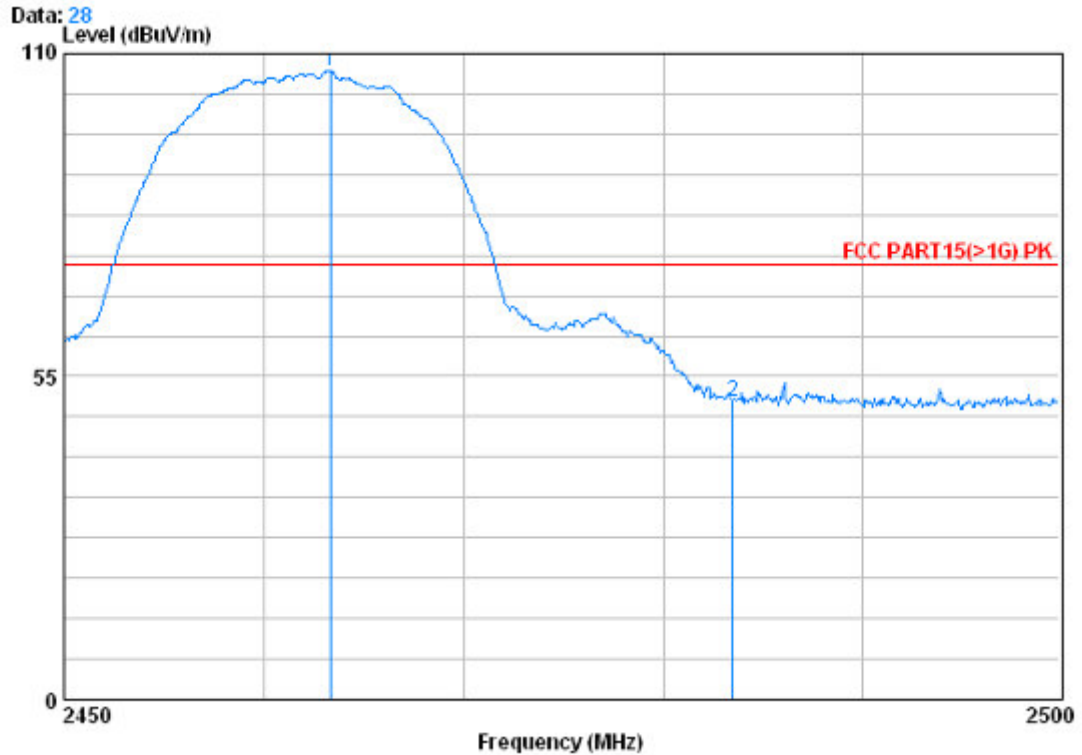


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 50 of 60

Test mode:	802.11b	Test channel:	Highest	Horizontal	Peak
------------	---------	---------------	---------	------------	------



	Freq	CableAntenna Loss Factor	Preamplifier Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m
1 0	2463.300	3.02	32.64	39.91	111.32	107.07	54.00
2	2483.500	3.03	32.67	39.92	54.79	50.57	54.00

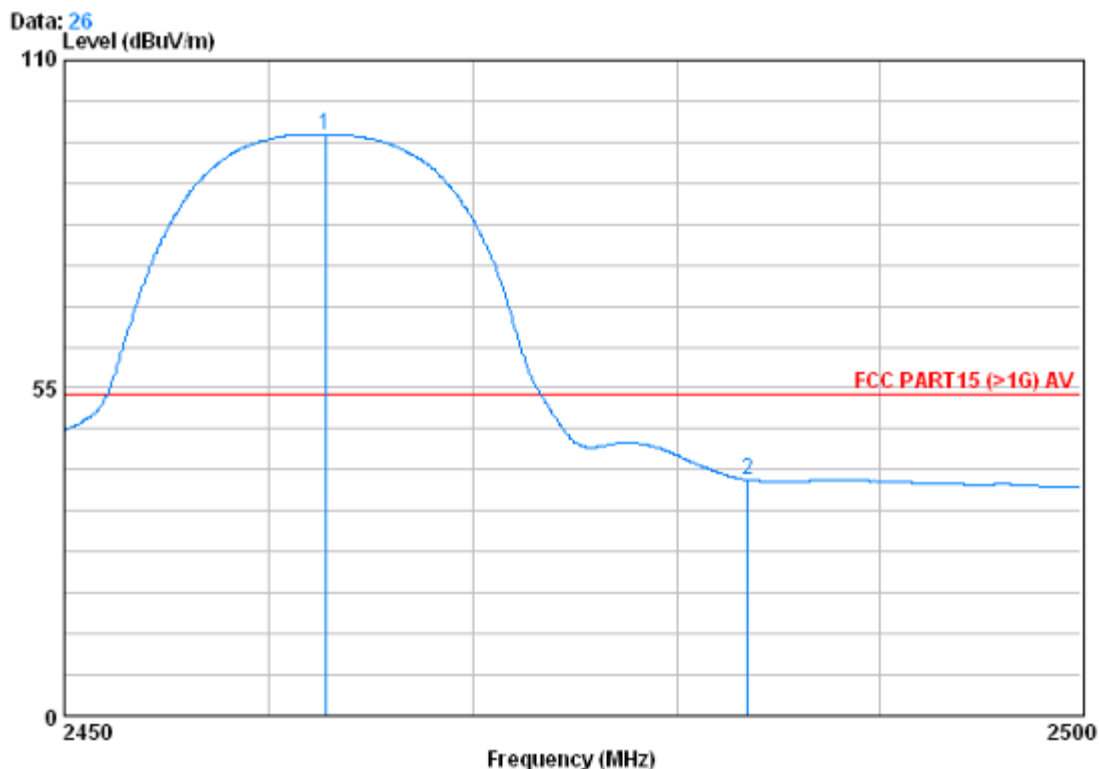
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202  
Page: 51 of 60

Test mode:	802.11b	Test channel:	Highest	Vertical	Average
------------	---------	---------------	---------	----------	---------



	Freq	Cable	Antenna	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 @	2462.750	3.02	32.64	39.91	101.76	97.51	54.00
2	2483.500	3.03	32.67	39.92	43.82	39.60	54.00



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

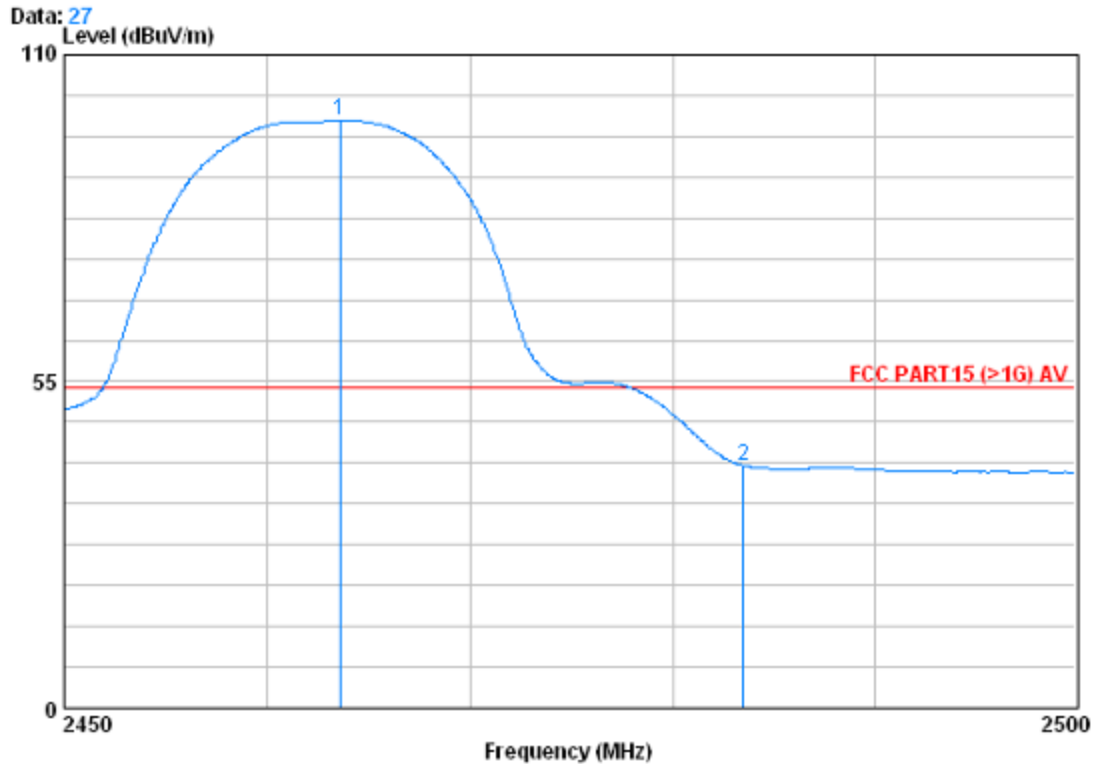


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 52 of 60

Test mode:	802.11b	Test channel:	Highest	Horizontal	Average
------------	---------	---------------	---------	------------	---------

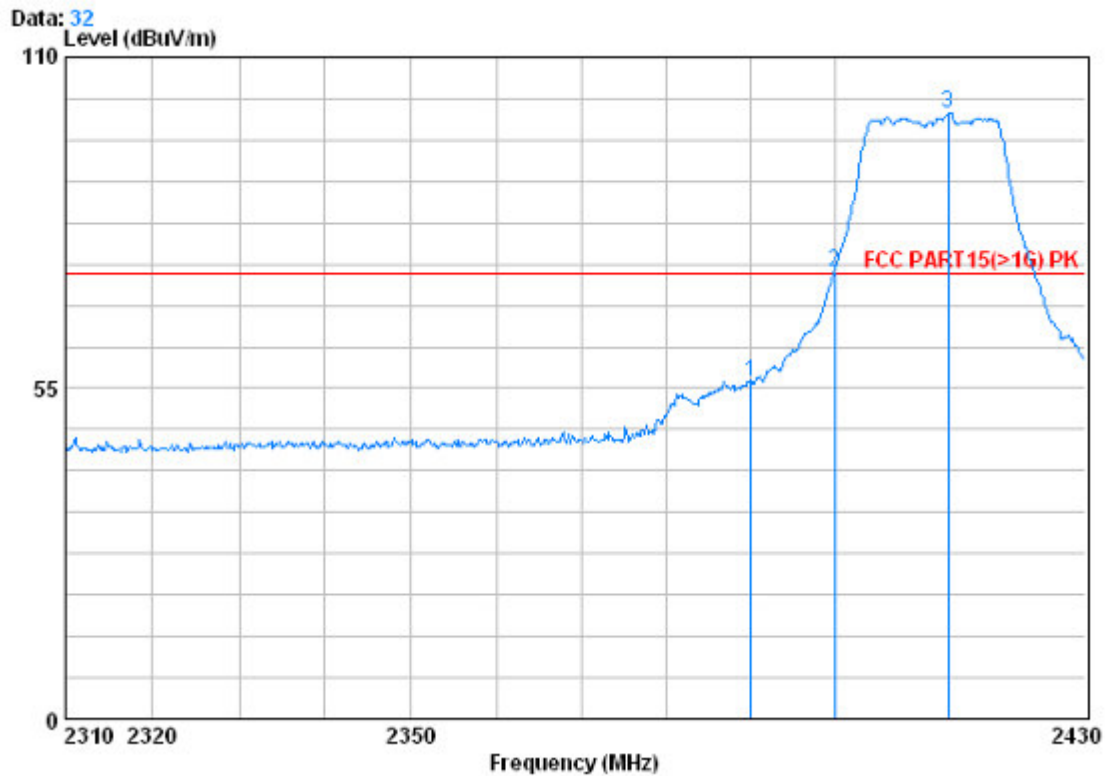


	Freq	Cable\Antenna Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 0	2463.550	3.02	32.64	39.91	103.26	99.02	54.00	45.02
2	2483.500	3.03	32.67	39.92	45.08	40.86	54.00	-13.14

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



Test mode:	802.11g	Test channel:	Lowest	Vertical	Peak
------------	---------	---------------	--------	----------	------



	Freq	Cable Loss	Antenna Factor	Preamplifier	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	Factor	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	60.52	56.16	74.00	-17.84
2 X	2400.000	2.98	32.51	39.86	78.59	74.23	74.00	0.23
3 X	2413.560	2.99	32.54	39.86	105.03	100.71	74.00	26.71

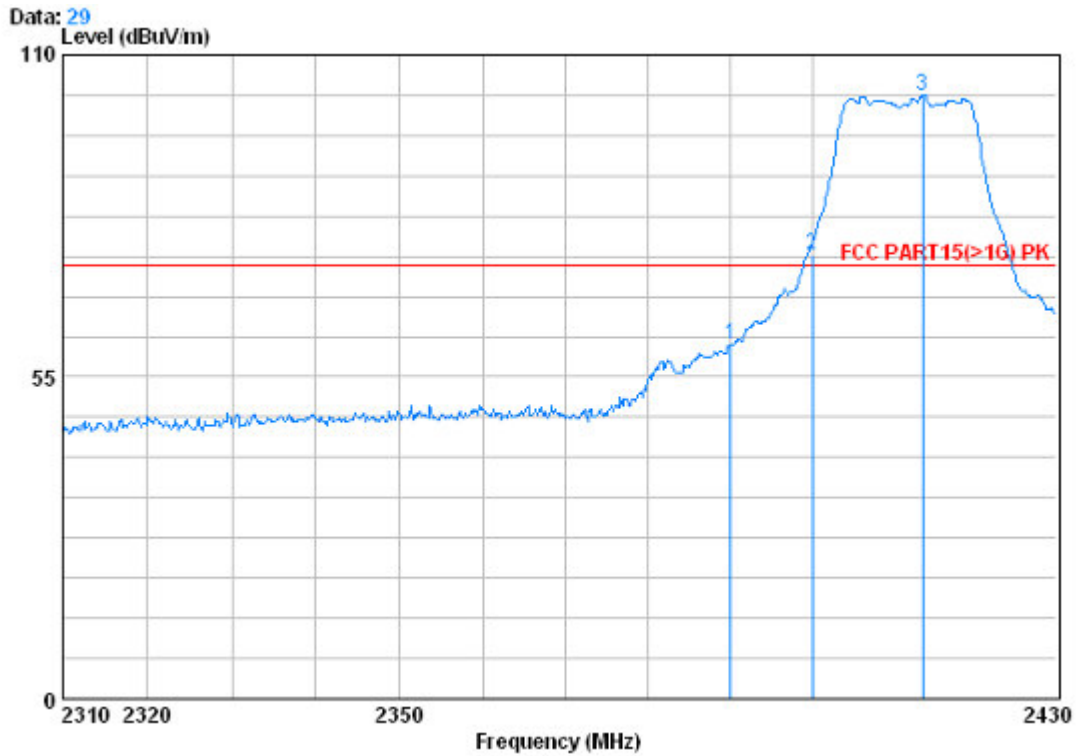


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 54 of 60

Test mode:	802.11g	Test channel:	Lowest	Horizontal	Peak
------------	---------	---------------	--------	------------	------



		CableAntenna Preamp			Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	64.88	60.52	74.00	-13.48
2 X	2400.000	2.98	32.51	39.86	80.06	75.69	74.00	1.69
3 X	2413.560	2.99	32.54	39.86	107.53	103.20	74.00	29.20

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

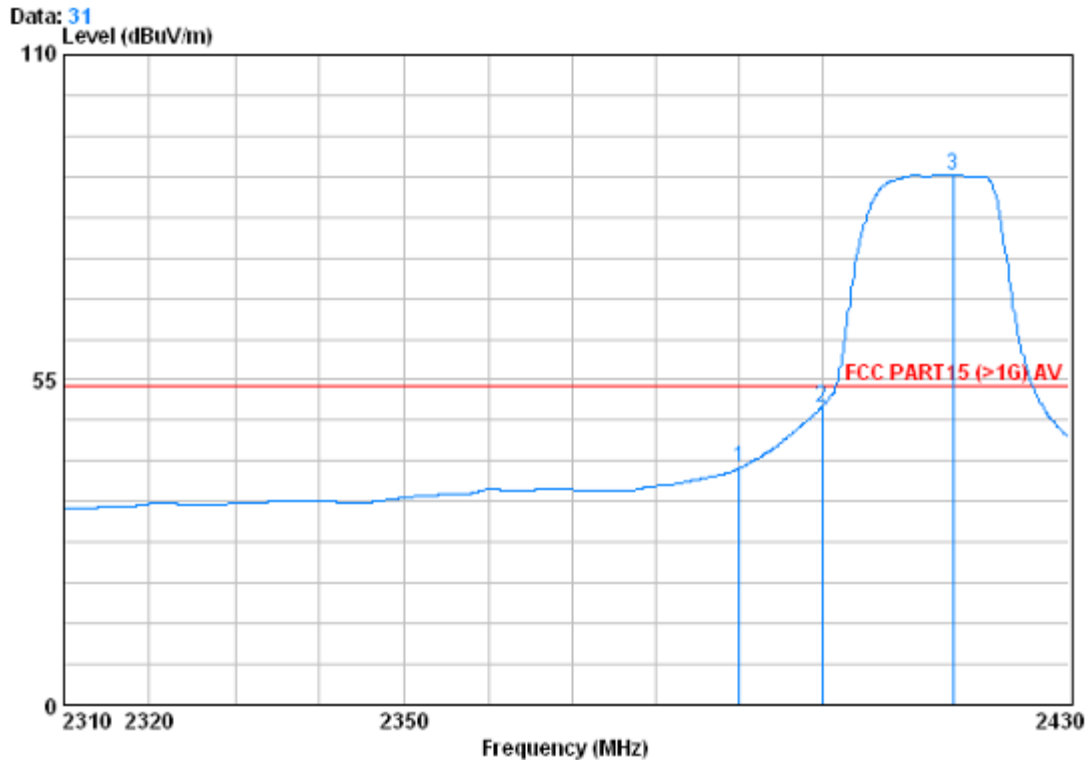


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 55 of 60

Test mode:	802.11g	Test channel:	Lowest	Vertical	Average
------------	---------	---------------	--------	----------	---------

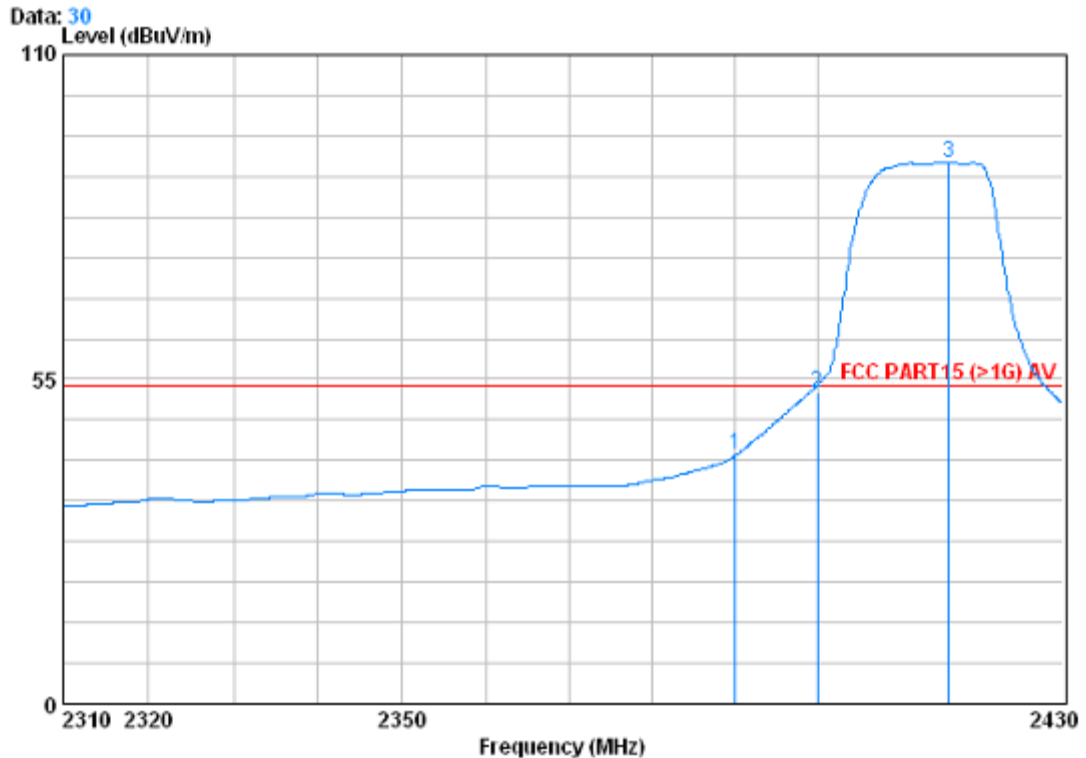


	Freq	Cable	Antenna	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	44.48	40.13	54.00 -13.87
2	2400.000	2.98	32.51	39.86	54.69	50.32	54.00 -3.68
3	2415.840	2.99	32.54	39.88	94.04	89.70	54.00 35.70

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



Test mode:	802.11g	Test channel:	Lowest	Horizontal	Average
------------	---------	---------------	--------	------------	---------



		CableAntenna Preamp			Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	46.53	42.17	54.00	-11.83
2	2400.000	2.98	32.51	39.86	57.10	52.74	54.00	-1.26
3 0	2415.960	2.99	32.54	39.88	96.11	91.77	54.00	37.77



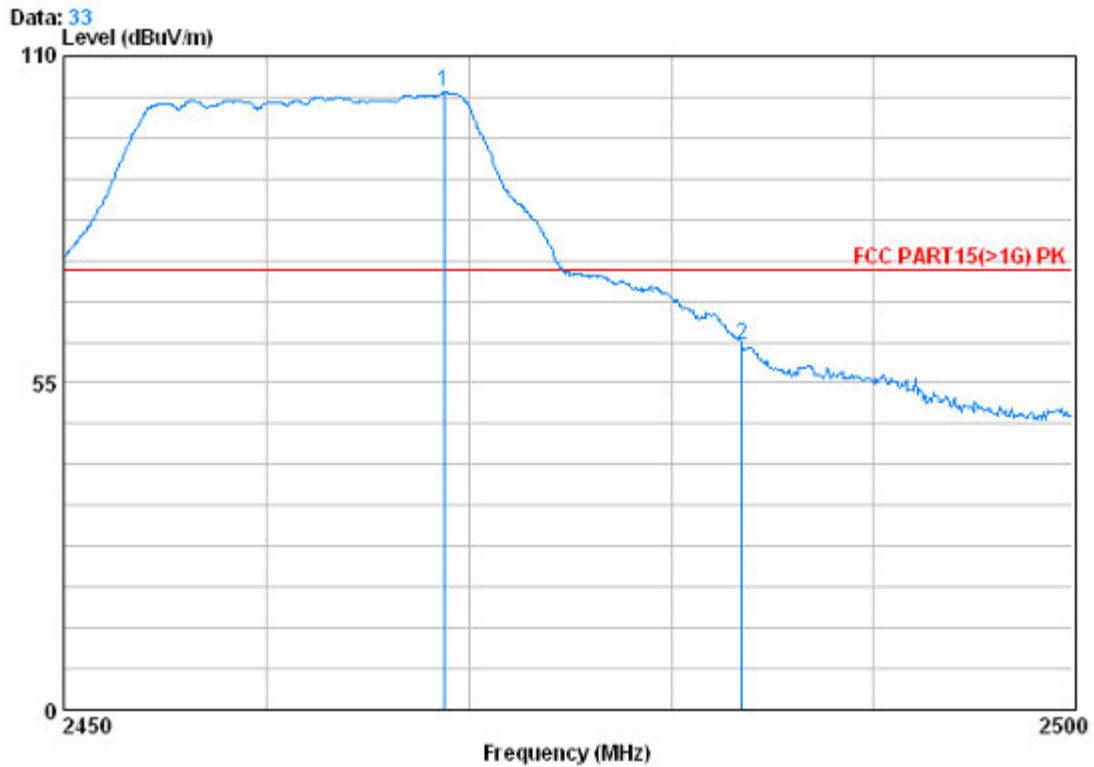


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 57 of 60

Test mode:	802.11g	Test channel:	Highest	Vertical	Peak
------------	---------	---------------	---------	----------	------



		Cable	Antenna	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 X	2468.750	3.02	32.64	39.91	108.18	103.94	74.00	29.94
2	2483.500	3.03	32.67	39.92	65.76	61.54	74.00	-12.46

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

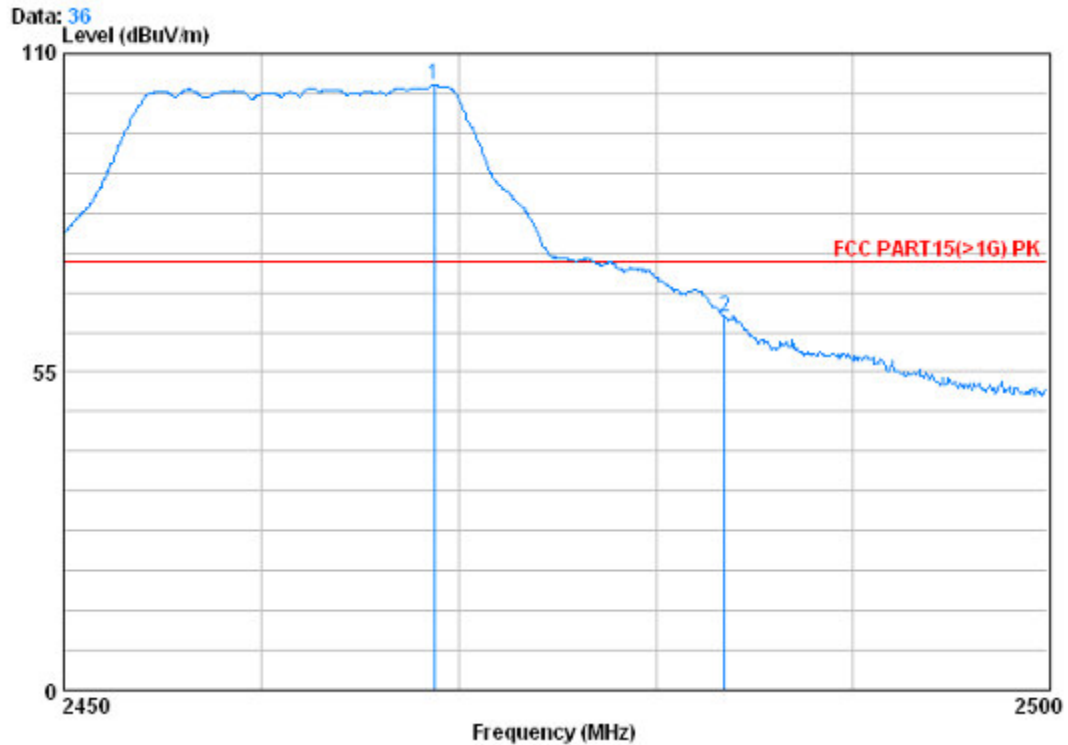


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 58 of 60

Test mode:	802.11g	Test channel:	Highest	Horizontal	Peak
------------	---------	---------------	---------	------------	------



	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2468.750	3.02	32.64	39.91	108.87	104.62	74.00	30.62
2	2483.500	3.03	32.67	39.92	68.78	64.56	74.00	-9.44

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

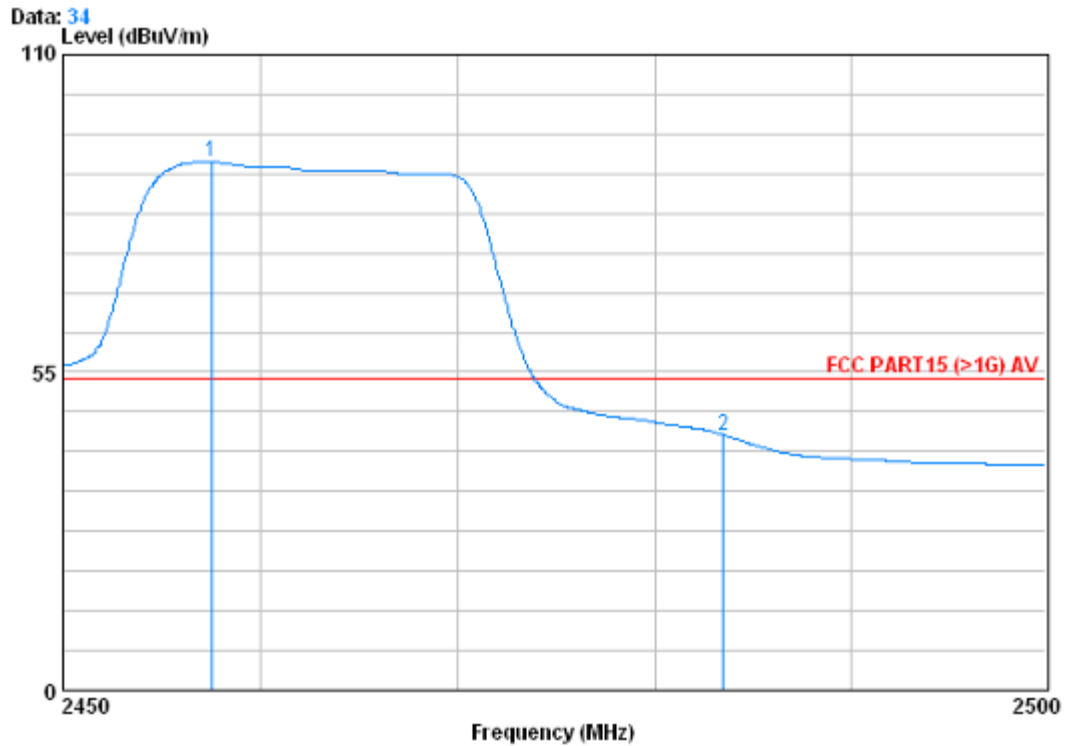


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 59 of 60

Test mode:	802.11g	Test channel:	Highest	Vertical	Average
------------	---------	---------------	---------	----------	---------



	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2457.500	3.02	32.64	39.91	95.60	91.35	54.00	37.35
2	2483.500	3.03	32.67	39.92	48.41	44.19	54.00	-9.81

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

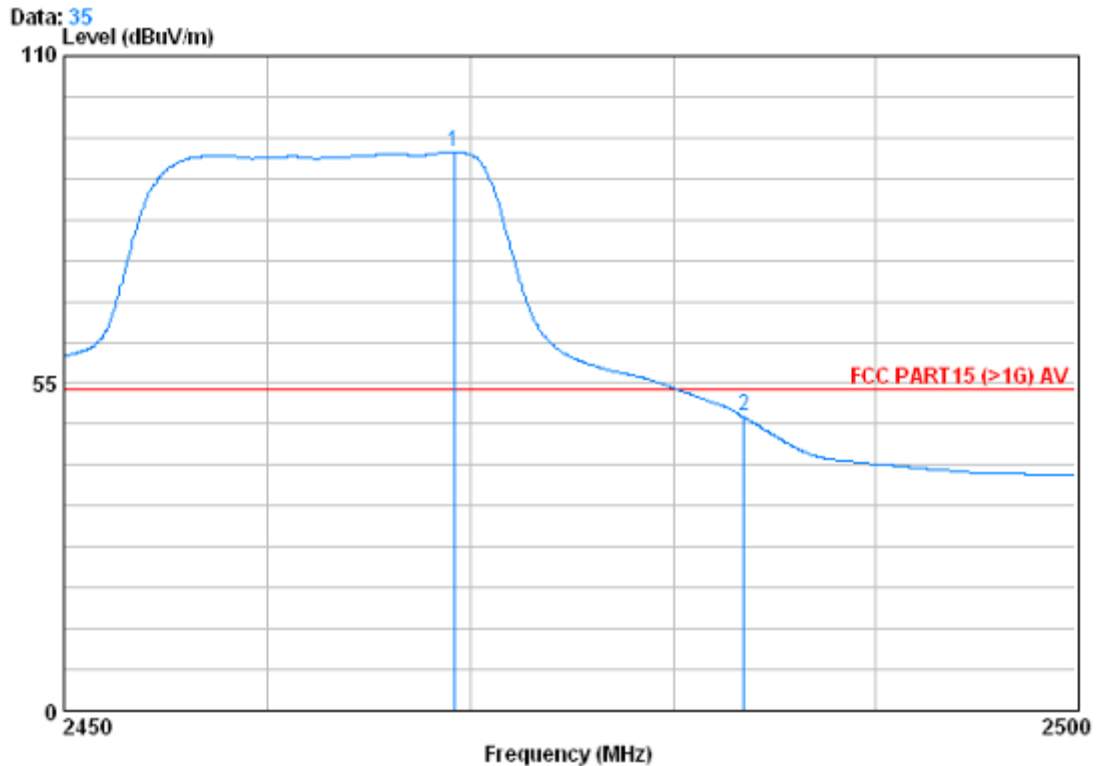


# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEM110600177202

Page: 60 of 60

Test mode:	802.11g	Test channel:	Highest	Horizontal	Average
------------	---------	---------------	---------	------------	---------



	Freq	Cable Loss	Antenna Factor	Preamplifier Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2469.150	3.02	32.64	39.91	98.09	93.84	54.00	39.84
2	2483.500	3.03	32.67	39.92	53.58	49.36	54.00	-4.64

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."