



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.: SZEMO11040150501

Page : 1 of 23

# FCC REPORT

**Application No.:** SZEMO110401505RF  
**Applicant:** Shenzhen Fuyeda Industry Development Corp., Ltd.  
**Manufacturer/ Factory:** Shenzhen Fuyeda Industry Development Corp., Ltd.  
**Product Name:** Mouse  
**FCC ID:** V4P-MS205OR  
**Frequency:** 2403MHz-2477MHz  
**Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2009  
**Date of Receipt:** 2011-04-06  
**Date of Test:** 2011-04-18 to 2011-04-21  
**Date of Issue:** 2011-04-22

<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

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.

# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 2 of 23

## 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 E.U.T OPERATION MODE .....	5
4.4 TEST FACILITY .....	6
4.5 TEST LOCATION .....	6
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
4.7 TEST INSTRUMENTS LIST: .....	7
5 TEST RESULTS AND MEASUREMENT DATA .....	8
5.1 ANTENNA REQUIREMENT: .....	8
5.2 RADIATED EMISSION .....	9
5.2.1 <i>Field Strength Of The Fundamental Signal</i> .....	11
5.2.2 <i>Spurious Emissions</i> .....	13
5.2.3 <i>Band edge (Radiated Emission)</i> .....	17
5.2.4 <i>20dB Bandwidth</i> .....	21

"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.: SZEMO11040150501

Page : 3 of 23

### 3 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a)/15.209	Pass
Band edge (Radiated Emission)	15.249(a)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	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.*

# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 4 of 23

## 4 General Information

### 4.1 Client Information

Applicant:	Shenzhen Fuyeda Industry Development Corp., Ltd.
Address of Applicant:	No.1 NEWMEN ROAD. TONGSHENG VILLAGE, DALANG STREET, BAO'AN, SHENZHEN, CHINA
Manufacturer/Factory:	Shenzhen Fuyeda Industry Development Corp., Ltd.
Address of Manufacturer/Factory:	No.1 NEWMEN ROAD. TONGSHENG VILLAGE, DALANG STREET, BAO'AN, SHENZHEN, CHINA

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

Product Name:	Mouse
Trade mark:	Newmen
Item No.:	MS-205OR
Operation Frequency:	2403MHz-2477MHz
Channel numbers:	16
Channel separation:	5MHz
Modulation type:	GFSK
Antenna Type:	PCB on board
Antenna gain:	1.86dBi
Power supply:	1.5V DC (1.5V x 1 "AA"Size Battery)

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 channel see below:

Channel	Frequency
The lowest channel	2403 MHz
The middle channel	2442 MHz
The Highest channel	2477 MHz

"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."

### **4.3 E.U.T Operation mode**

**Operating Environment:**

Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar

**Test mode:**

Transmitting mode:	Keep the EUT in Transmitting mode.
--------------------	------------------------------------

# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 6 of 23

## 4.4 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, 2008. Valid until September 28, 2011.
- **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, June 27, 2008.
- **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.

## 4.5 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.

## 4.6 Other Information Requested by the Customer

None.

## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 7 of 23

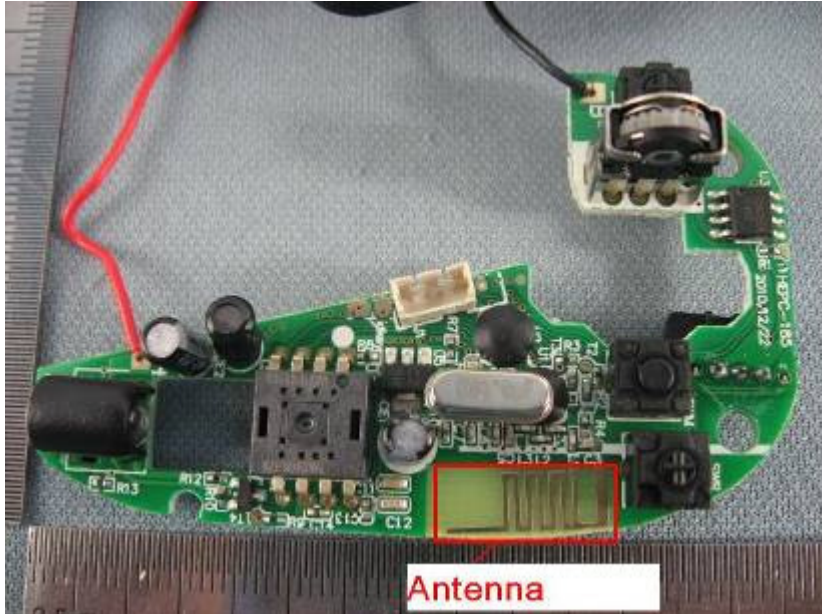
### 4.7 Test Instruments list:

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2010-06-17	2011-06-17
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2010-11-05	2011-11-05
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2008-06-18	2011-06-18
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2010-11-09	2011-11-09
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2010-11-09	2011-11-09
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2010-11-09	2011-11-09
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2010-06-02	2011-06-02
9	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2010-10-27	2011-10-27
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	SEL0080	2010-06-04	2011-06-04
11	Band filter	Amindeon	82346	SEL0094	2010-06-02	2011-06-02

"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 Test results and Measurement Data

### 5.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
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>	
<b>E.U.T Antenna:</b>	The antenna is integrated on the main PCB and no consideration of replacement. The maximum gain of the antenna is 1.86dBi.
	



# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 9 of 23

## 5.2 Radiated Emission

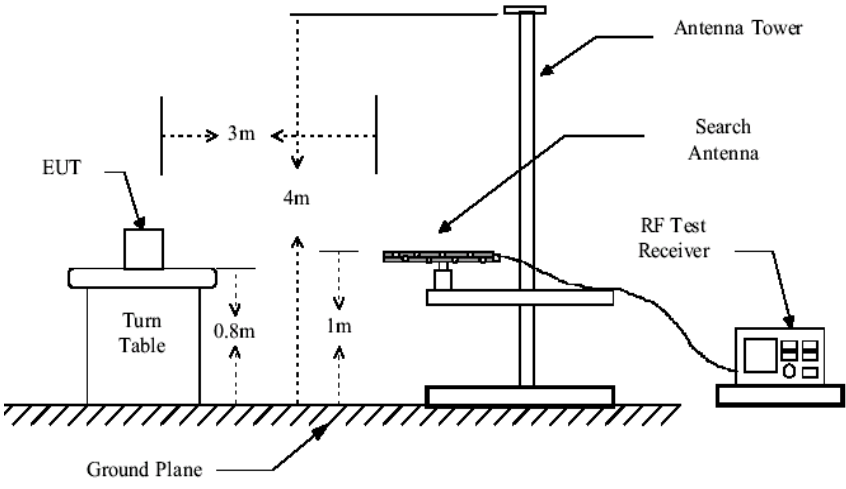
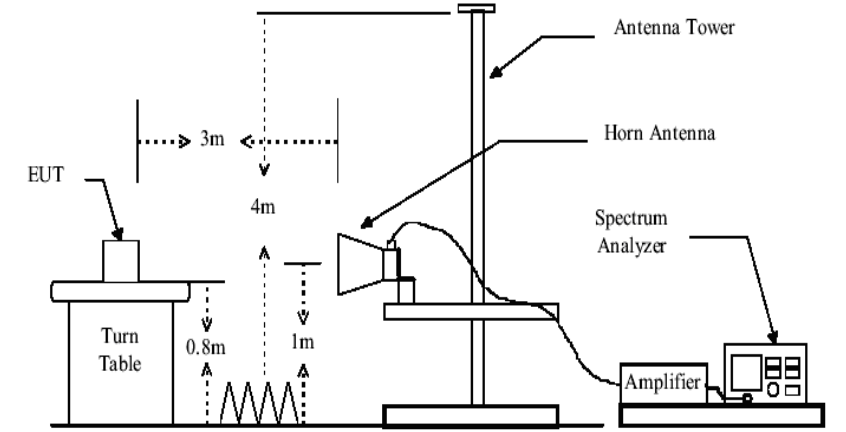
Test Requirement:	FCC Part15 C Section 15.249 and 15.209				
Test Method:	ANSI C63.10: 2009				
Test Frequency Range:	30MHz to 25000MHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark
	2400MHz-2483.5MHz		94.0		Average Value
			114.0		Peak Value
Limit: (Spurious Emissions)	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
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test Procedure:	<p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p>				
	The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.				

"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.: SZEMO11040150501

Page : 10 of 23

Test Instruments:	Refer to section 4.7 for details
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
Test mode:	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:

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

"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.: SZEMO11040150501

Page : 11 of 23

## Measurement Data

### 5.2.1 Field Strength Of The Fundamental Signal

Peak value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Peak Level (dBuV/m)	Peak Limit (dBuV/m)	Over Limit (dB)	polarization
2403.00	2.98	32.54	39.86	96.60	92.26	114.00	-21.74	Horizontal
2403.00	2.98	32.54	39.86	95.45	91.11	114.00	-22.89	Vertical
2442.00	3.01	32.61	39.89	97.65	93.38	114.00	-20.62	Horizontal
2442.00	3.01	32.61	39.89	95.30	91.03	114.00	-22.97	Vertical
2477.00	3.03	32.67	39.92	95.55	91.33	114.00	-22.67	Horizontal
2477.00	3.03	32.67	39.92	94.63	90.41	114.00	-23.59	Vertical

Note:

Peak Level (Final Level)= Reading Level + Antenna Factor + Cable Loss - Preamp Factor

Average value:

Frequency (MHz)	Peak Level (dBuV/m)	PDCF (dB)	Average Level (dBuV/m)	Average Limit (dBuV/m)	Over Limit (dB)	polarization
2403.00	92.26	-26.08	66.18	94.00	-27.82	Horizontal
2403.00	91.11	-26.08	65.03	94.00	-28.97	Vertical
2442.00	93.38	-26.08	67.30	94.00	-26.70	Horizontal
2442.00	91.03	-26.08	64.95	94.00	-29.05	Vertical
2477.00	91.33	-26.08	65.25	94.00	-28.75	Horizontal
2477.00	90.41	-26.08	64.33	94.00	-29.67	Vertical

PDCF Calculate Formula:

Average value=Peak value + PDCF(pulse desensitization correction factor)

PDCF=20 log(Duty cycle)= -26.08dB

Duty cycle= T on time / T period = 0.0496

Ton time = 400μs

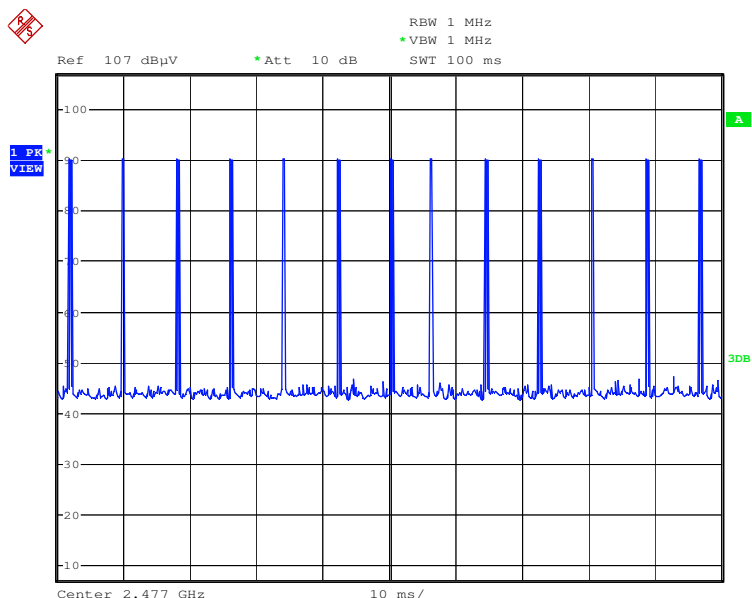
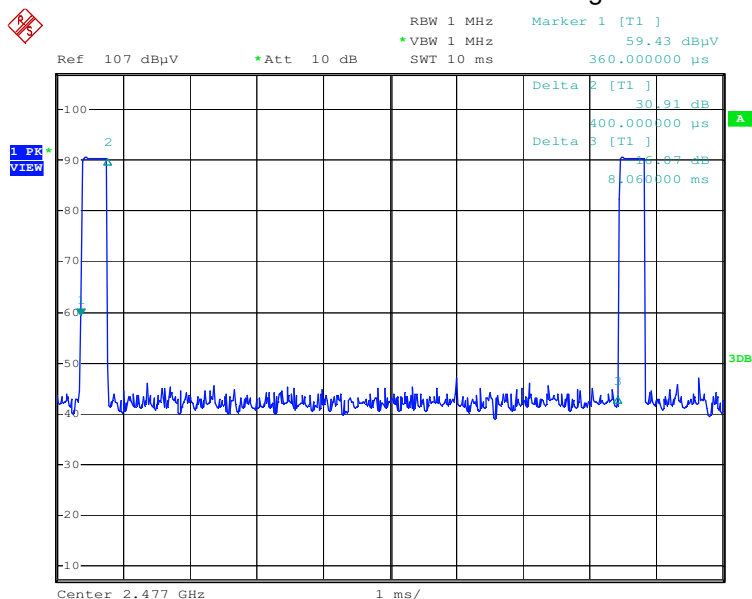
T period = 8060μs

"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.: SZEMO11040150501

Page : 12 of 23



"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.

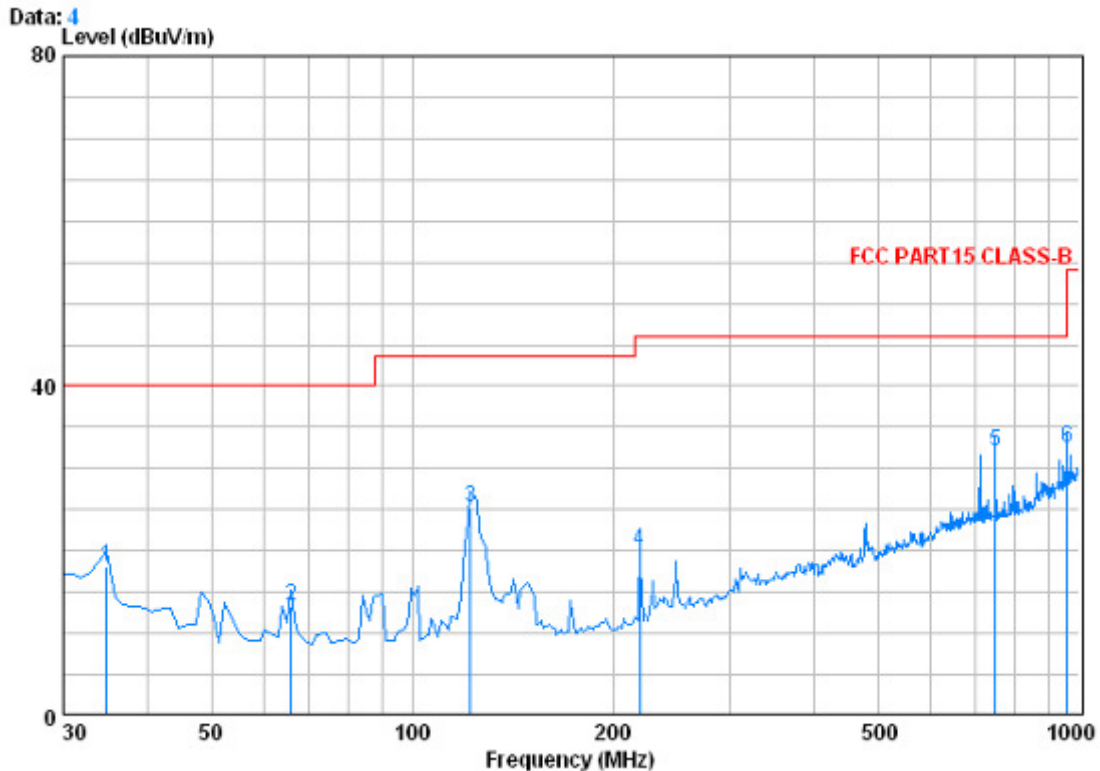
Report No.: SZEMO11040150501

Page : 13 of 23

## 5.2.2 Spurious Emissions

### 30MHz~1GHz

Test mode: Transmitting Vertical



	Freq	Cable&Antenna Loss Factor	Preamp Factor	Read Level	Level	Limit	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	34.850	0.60	13.06	27.34	31.77	18.09	40.00 -21.91
2	65.890	0.80	7.01	27.25	32.75	13.31	40.00 -26.69
3	122.150	1.26	7.85	27.06	43.25	25.31	43.50 -18.19
4	219.150	1.51	11.18	26.63	34.00	20.06	46.00 -25.94
5	748.770	3.05	21.70	27.35	34.66	32.05	46.00 -13.95
6	959.260	3.66	23.60	26.51	31.69	32.44	46.00 -13.56

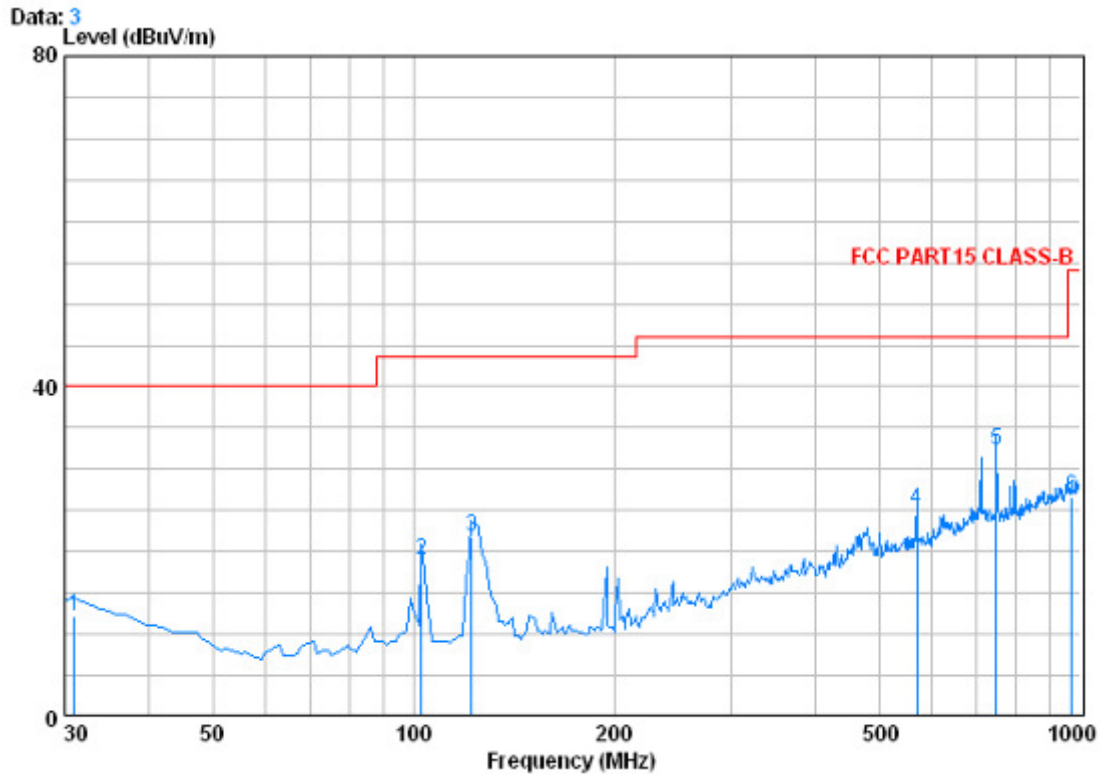
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for 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.: SZEMO11040150501

Page : 14 of 23

Test mode:	Transmitting	Horizontal
------------	--------------	------------



	Freq	Cable Loss	Antenna Factor	Preamplifier	Read Level	Level	Limit	Over
	MHz	dB	dB/m	Factor	dB	dBuV	dBuV/m	Limit
1	30.970	0.60	14.73	27.35	24.31	12.28	40.00	-27.72
2	102.750	1.21	8.97	27.18	36.04	19.03	43.50	-24.47
3	122.150	1.26	7.85	27.06	39.65	21.71	43.50	-21.79
4	568.350	2.67	19.05	27.59	30.96	25.10	46.00	-20.90
5	749.740	3.06	21.70	27.35	34.79	32.20	46.00	-13.80
6	970.900	3.67	23.90	26.44	25.50	26.63	54.00	-27.37

"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.: SZEMO11040150501

Page : 15 of 23

Above 1GHz								
Test mode:		Transmitting	Test channel:		Lowest	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4783.500	4.68	34.73	41.61	53.68	51.48	74.00	-22.52	Vertical
6193.500	5.18	35.94	40.76	52.03	52.39	74.00	-21.61	Vertical
7380.250	5.98	35.95	39.72	49.83	52.04	74.00	-21.96	Vertical
8026.500	6.20	36.01	39.16	49.52	52.57	74.00	-21.43	Vertical
9389.500	6.04	37.08	37.98	47.15	52.29	74.00	-21.71	Vertical
11892.250	6.44	38.80	38.23	46.94	53.95	74.00	-20.05	Vertical
3056.250	3.36	33.38	40.34	49.20	45.60	74.00	-28.40	Horizontal
4783.500	4.68	34.73	41.61	54.65	52.45	74.00	-21.55	Horizontal
6205.250	5.18	35.94	40.74	51.19	51.57	74.00	-22.43	Horizontal
7192.250	5.77	35.88	39.89	52.10	53.86	74.00	-20.14	Horizontal
8590.500	6.18	36.27	38.67	48.49	52.27	74.00	-21.73	Horizontal
11880.500	6.44	38.78	38.23	46.46	53.45	74.00	-20.55	Horizontal

Test mode:		Transmitting	Test channel:		Middle	Remark:		Peak
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4877.500	4.72	34.59	41.68	55.66	53.29	74.00	-20.71	Vertical
5958.500	5.11	35.64	40.96	50.50	50.29	74.00	-23.71	Vertical
6863.250	5.39	35.94	40.17	50.56	51.72	74.00	-22.28	Vertical
7756.250	6.22	36.00	39.39	49.49	52.32	74.00	-21.68	Vertical
10012.250	5.97	37.72	37.45	46.62	52.86	74.00	-21.14	Vertical
12350.500	6.56	39.26	38.42	45.69	53.09	74.00	-20.91	Vertical
4877.500	4.72	34.59	41.68	55.74	53.37	74.00	-20.63	Horizontal
5664.750	5.01	35.15	41.20	49.39	48.35	74.00	-25.65	Horizontal
6534.250	5.27	36.27	40.46	50.41	51.49	74.00	-22.51	Horizontal
7803.250	6.22	36.00	39.36	49.76	52.62	74.00	-21.38	Horizontal
8825.500	6.16	36.45	38.47	48.07	52.21	74.00	-21.79	Horizontal
10329.500	6.05	38.10	37.58	46.00	52.57	74.00	-21.43	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.: SZEMO11040150501

Page : 16 of 23

Test mode:		Transmitting		Test channel:		Highest		Remark:		Peak	
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization			
4936.250	4.75	34.48	41.72	55.91	53.42	74.00	-20.58	Vertical			
6475.500	5.25	36.26	40.51	50.93	51.93	74.00	-22.07	Vertical			
7897.250	6.21	36.00	39.28	50.58	53.51	74.00	-20.49	Vertical			
9295.500	6.07	36.95	38.06	47.17	52.13	74.00	-21.87	Vertical			
10388.250	6.07	38.16	37.61	46.16	52.78	74.00	-21.22	Vertical			
11563.250	6.36	38.45	38.10	47.12	53.83	74.00	-20.17	Vertical			
3949.250	4.11	33.74	41.00	50.00	46.85	74.00	-27.15	Horizontal			
4936.250	4.75	34.48	41.72	55.51	53.02	74.00	-20.98	Horizontal			
5923.250	5.10	35.59	40.99	50.59	50.29	74.00	-23.71	Horizontal			
7474.250	6.08	35.99	39.64	50.24	52.67	74.00	-21.33	Horizontal			
8731.500	6.17	36.39	38.55	48.54	52.55	74.00	-21.45	Horizontal			
11046.250	6.23	38.49	37.88	46.76	53.60	74.00	-20.40	Horizontal			

### Remark:

As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

"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."



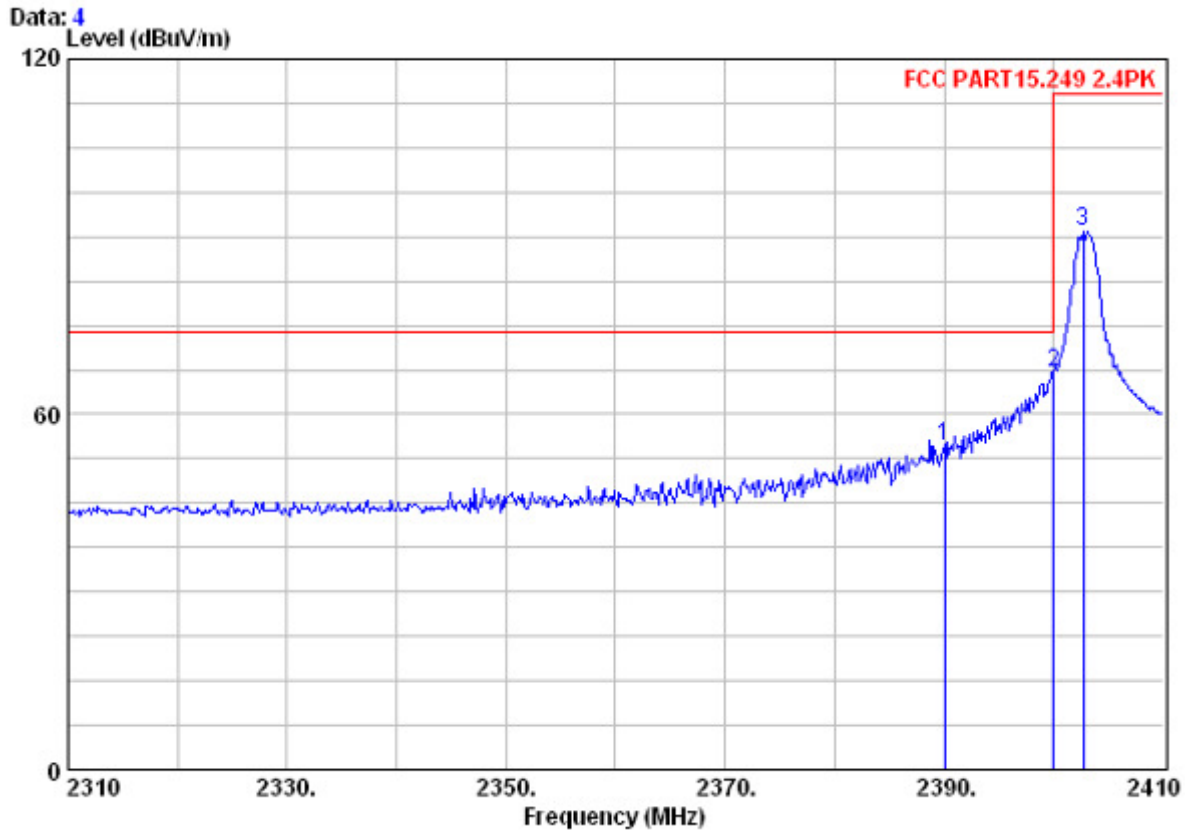
# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 17 of 23

## 5.2.3 Band edge (Radiated Emission)

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Vertical
------------	--------------	---------------	--------	---------	----------



		CableAntenna Preampl			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	58.86	54.51	74.00	-19.49
2	2400.000	2.98	32.51	39.86	71.54	67.17	74.00	-6.83
3	2402.700	2.98	32.54	39.86	95.22	90.88	114.00	-23.12

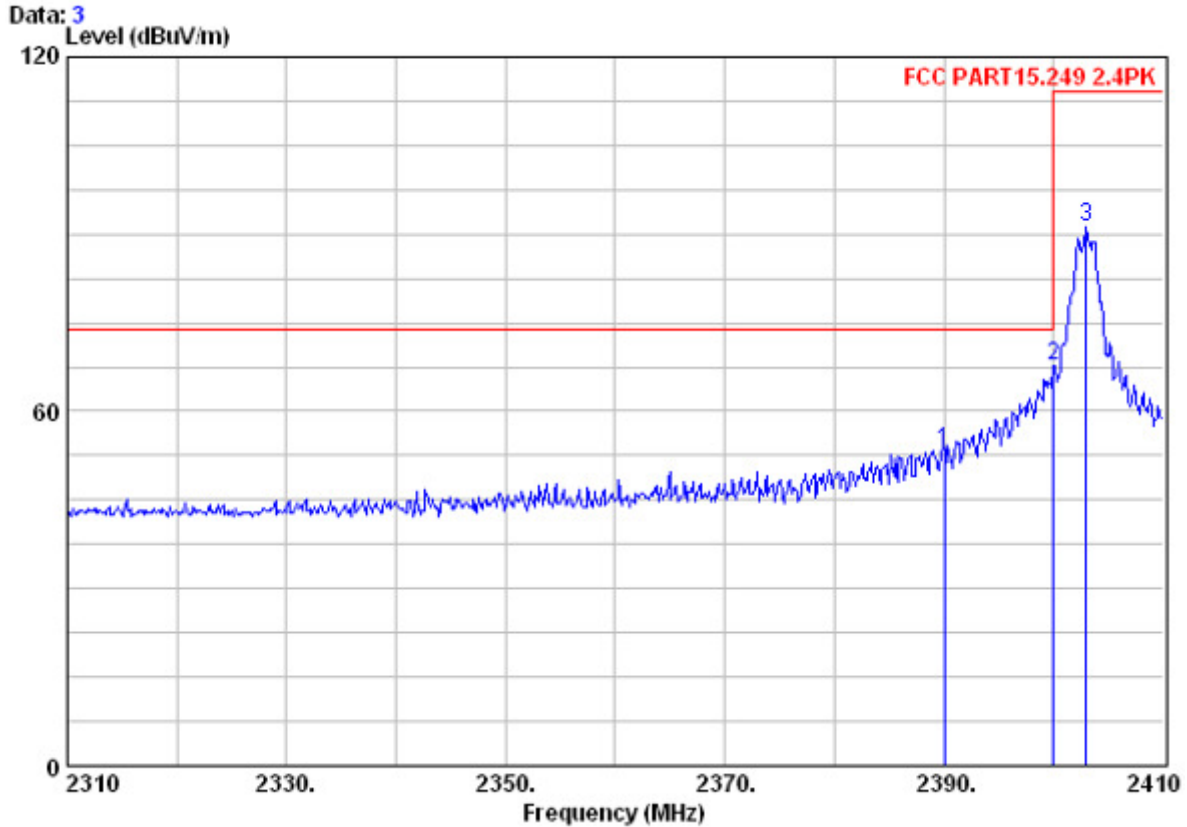
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for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

# SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

Page : 18 of 23

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Horizontal
------------	--------------	---------------	--------	---------	------------



		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	2390.000	2.98	32.51	39.85	57.66	53.31	74.00	-20.69
2 @	2400.000	2.98	32.51	39.86	71.99	67.62	74.00	-6.38
3	2403.000	2.98	32.54	39.86	95.51	91.17	114.00	-22.83

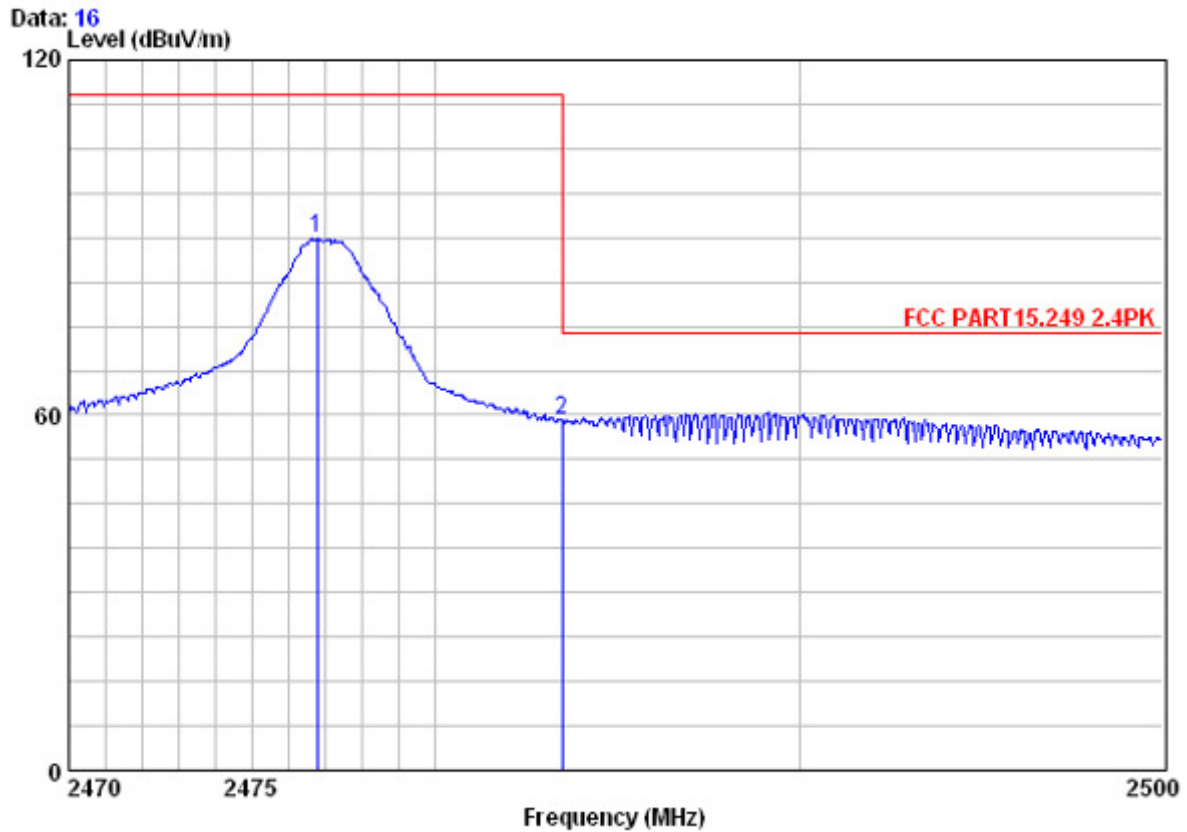
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for 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.: SZEMO11040150501

Page : 19 of 23

Test mode:	Transmitting	Test channel:	Highest	Remark:	Vertical
------------	--------------	---------------	---------	---------	----------



	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2476.780	3.03	32.67	39.92	94.04	89.82	114.00	-24.18
2	2483.500	3.03	32.67	39.92	63.47	59.25	74.00	-14.75

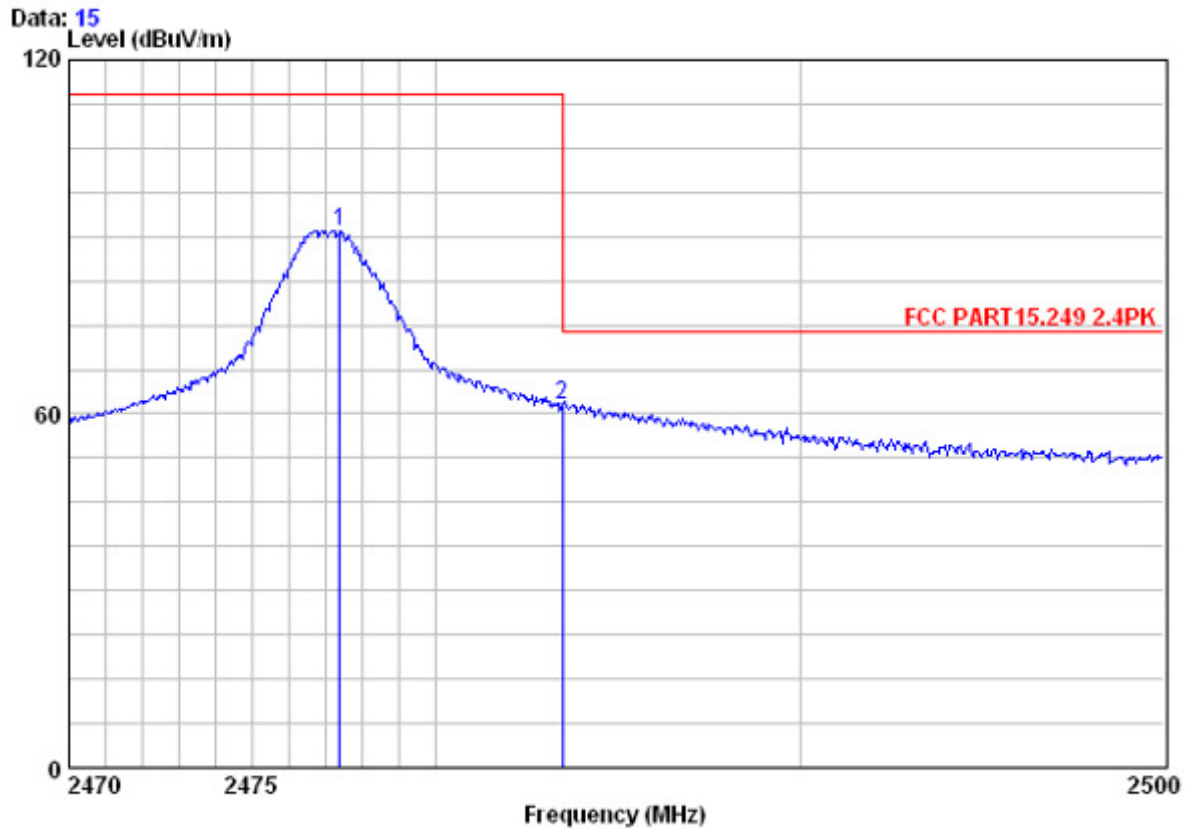
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for 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.: SZEMO11040150501

Page : 20 of 23

Test mode:	Transmitting	Test channel:	Highest	Remark:	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	2477.380	3.03	32.67	39.92	95.12	90.90	114.00	-23.10
2 @	2483.500	3.03	32.67	39.92	65.77	61.55	74.00	-12.45

Remark:

For the pulse emissions measurement, Average value = Peak value + PDCF and Average limit = Peak limit - 20dB. Since the device is pulse emission, PDCF = -26.08dB < -20dB and Peak value has met Peak limit.

Based on the above state, average value should meet average limit. So, only the peak measurements were shown in the report.

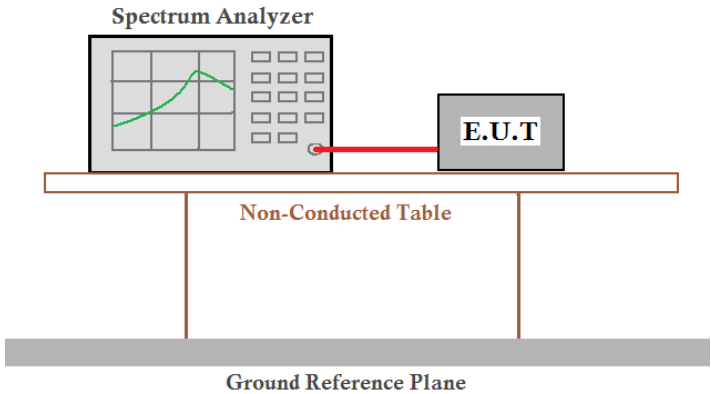
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for 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.: SZEMO11040150501

Page : 21 of 23

### 5.2.4 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2009
Receiver setup:	RBW=100KHz, VBW=300KHz, detector: Peak
Limit:	Operation Frequency range 2400MHz-2483.5MHz
Test Procedure:	<ol style="list-style-type: none"><li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li><li>2. Set the EUT to proper test channel.</li><li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li><li>4. Read 20dB bandwidth.</li></ol>
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Electronic Under Test) device. Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 4.7 for details
Test results:	Pass

### Measurement Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	2.08	Pass
Middle	2.05	Pass
Highest	2.08	Pass

"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."

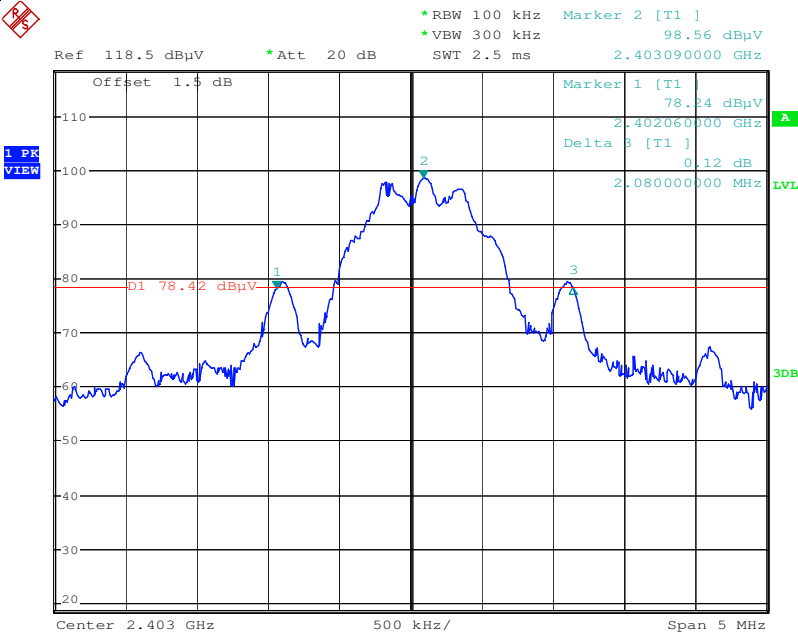
SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO11040150501

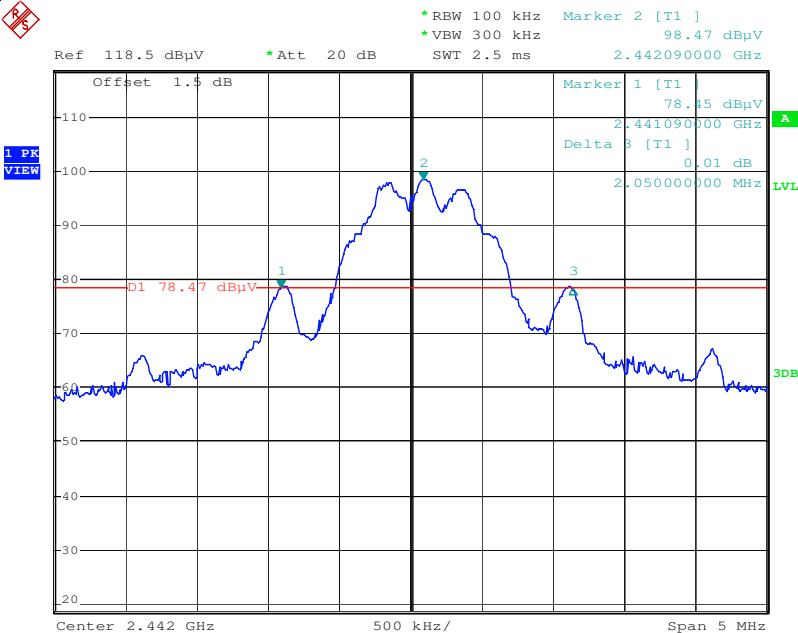
Page : 22 of 23

Test plot as follows:

Test channel:	Lowest	
---------------	--------	--



Test channel:	Middle	
---------------	--------	--



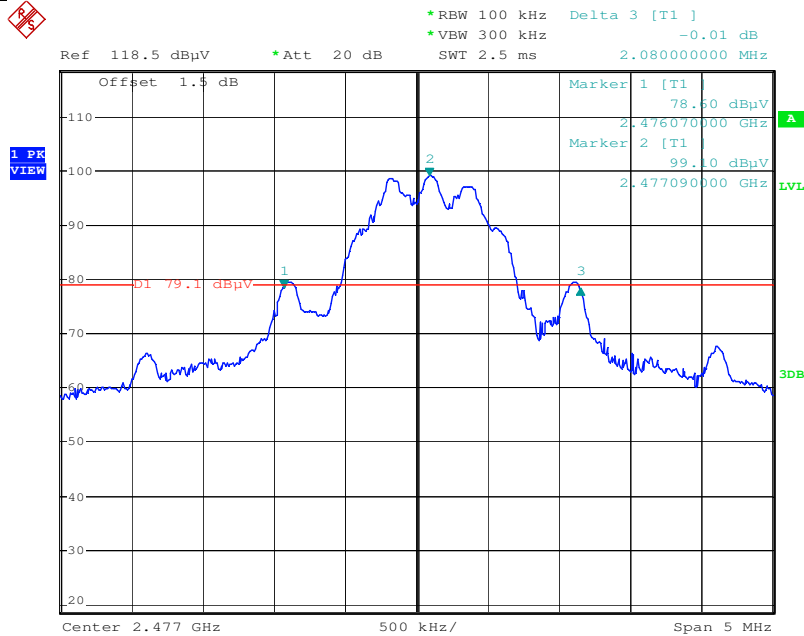
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for 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.: SZEMO11040150501

Page : 23 of 23

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.”