

No. 1 Workshop, M-10, Middle Section, Science & Technology Park,

District Shenzhen, China 518057 +86 (0) 755 2601 2053 Telephone: +86 (0) 755 2671 0594 Fax:

Email: sgs internet operations@sgs.com Report No.: SZEMO09070436401

FEDERAL COMMUNICATIONS COMMISSION 1 of 23

Registration number: 556682

# TEST REPORT

SZEMO090704364RF **Application No.:** 

Applicant: Shenzhen Fuyeda Industry Development Corp. Manufacturer/ Factory: Shenzhen Fuyeda Industry Development Corp.

No.1 NEWMEN ROAD. TONGSHENG VILLAGE, DALANG STREET, Address of Applicant:

BAO'AN, SHENZHEN, CHINA

FCC ID: V4P-MX116-KM

**Fundamental Carrier** Frequency: 2.402GHz to 2.480GHz

**Equipment Under Test (EUT):** 

Name: Dongle

Model: MX-116(K+M)

Standards: FCC PART 15: 2008

Date of Receipt: 30 July 2009

**Date of Test:** 30 July to 13 August 2009

14 August 2009 Date of Issue:

Test Result: PASS \*

Authorized Signature:

Robinson Lo 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 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 and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms-e-document.htm">www.sgs.com/terms-e-document.htm</a>. 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."

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



Report No.: SZEMO09070436401

Page: 2 of 23

# 2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Conduct Emission	FCC PART 15 2008	Section 15.207	PASS
Flied Strength of Fundamental	FCC PART 15 : 2008	Section 15.249 (a)	PASS
Flied Strength of Harmonics or other Frequency Emission	FCC PART 15 : 2008	Section 15.249 (a) Section 15.209/15.205	PASS
Occupied Bandwidth	FCC PART 15 : 2008	Section 15.249	PASS



Report No.: SZEMO09070436401

Page: 3 of 23

### 3 Contents

			Page
1	COVEF	R PAGE	1
2	TEST S	SUMMARY	2
3		ENTS	
J	CONTE	=N15	
4	GENEF	RAL INFORMATION	4
		ERAL DESCRIPTION OF E.U.T	
		CRIPTION OF SUPPORT UNITS	
		NDARDS APPLICABLE FOR TESTING	
		ER INFORMATION REQUESTED BY THE CUSTOMER	
	4.6 Test	FACILITY	5
5	TEST F	RESULTS	6
	5.1 Test	INSTRUMENTS	6
	5.2 E.U.7	T. OPERATION	8
		PROCEDURE & MEASUREMENT DATA	
		Conducted Emissions	
	5.3.2	Radiated Emissions	12
	5.3.3	Occupied Bandwidth	22



Report No.: SZEMO09070436401

Page: 4 of 23

### 4 General Information

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

Product Name: Dongle

Model: MX-116(K+M)Power Supply: PC supply 5V

Power Cord: N/A-

### 4.2 Description of Support Units

The EUT was tested with associated equipment below:

Description	Manufacturer	Model No.	Remark
PC	DELL	OPTIPLEX 755	DoC
LCD-displaying	DELL	E1909WF	DoC
KEYBOARD	DELL	SK-8115	DoC

### 4.3 Standards Applicable for Testing

The customer requested FCC tests for a 2.4G dongle

The standard used was FCC PART 15, SUBPART C: 2008 section 15.249.

#### 4.4 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.

### 4.5 Other Information Requested by the Customer

None.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms\_e-document.htm">www.sgs.com/terms\_e-document.htm</a>. 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."



Report No.: SZEMO09070436401

Page: 5 of 23

### 4.6 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.



Report No.: SZEMO09070436401

Page: 6 of 23

### 5 Test Results

### 5.1 Test Instruments

	RE in Chamber					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	16-06-2008	15-06-2010
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	12-12-2008	11-12-2009
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	18-06-2009	17-06-2010
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	12-08-2008	11-08-2009
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	18-06-2009	17-06-2010
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0005	12-08-2008	11-08-2009
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	12-08-2008	11-08-2009
9	Pre-amplifier (1-18GHz)	Rohde & Schwarz	AFS42-00101 800-25-S-42	SEL0081	18-06-2009	17-06-2010
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	SEL0080	18-06-2009	17-06-2010
11	Band filter	Amindeon	82346	SEL0094	18-06-2009	17-06-2010
12	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15-06-2009	14-06-2010



Report No.: SZEMO09070436401

Page: 7 of 23

	Conducted Emission											
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)						
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	N/A	N/A						
2	LISN	ETS-LINDGREN	3816/2	SEL0021	18-06-2009	17-06-2010						
3	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	21-02-2009	21-02-2010						
4	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	21-02-2009	21-02-2010						
5	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	21-02-2009	21-02-2010						
6	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	18-06-2009	17-06-2010						
7	Coaxial Cable	SGS	N/A	SEL0024	18-06-2009	17-06-2010						



Report No.: SZEMO09070436401

Page: 8 of 23

5.2 E.U.T. Operation

Input voltage: PC supply 5V

Operating Environment:

Temperature: 24°C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Test in transmitting mode:

For channel 1: 2.402GHz.
 For channel 3: 2.441GHz.
 For channel 4: 2.480GHz.



Report No.: SZEMO09070436401

Page: 9 of 23

### 5.3 Test Procedure & Measurement Data

#### 5.3.1 Conducted Emissions

Test Requirement: FCC Part15.207
Test Method: ANSI C63.4: 2003
Frequency Range: 150KHz to 30MHz

Class / Severity: Class B

Detector: Peak for pre-scan (9kHz Resolution Bandwidth)

Operating Environment:

Temperature: 24.0 °C Humidity: 52% RH Atmospheric Pressure: 1012 Mbar

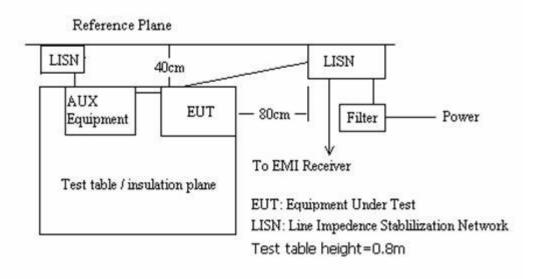
EUT Operation: Keep the EUT connected to mouse.

#### 5.3.1.1 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.

The following Quasi-Peak and Average measurements were performed on the EUT Plan View of Test Setup



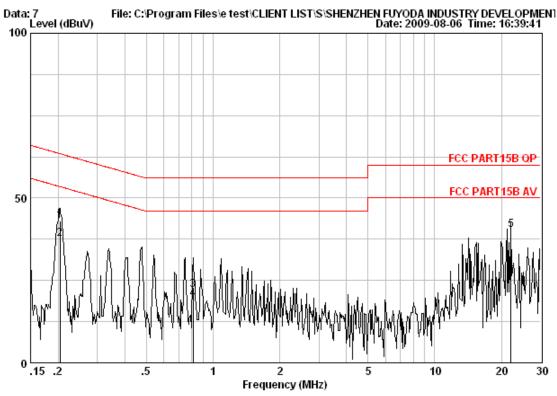
<sup>&</sup>quot;This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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."



Report No.: SZEMO09070436401

Page: 10 of 23

#### Live line



Site : Shielding Room

Condition : FCC PART15B QP CE LINE

EUT : Dongle Job No. : 4364RF

Test mode: Communicate with PC

	out . Communicate III								
			Cable	LISN	Read		Limit	Over	
		Freq	Loss	Factor	Level	Level	Line	Limit	Remark
	_								
		MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1		0.20396	0.04	-0.04	43.10	43.10	63.45	-20.35	QP
2	@	0.20396	0.04	-0.04	37.50	37.50	53.45	-15.95	Average
3		0.81305	0.07	-0.05	22.10	22.12	56.00	-33.88	QP
4		0.81305	0.07	-0.05	19.40	19.42	46.00	-26.58	Average
5		22.060	0.28	-0.69	40.70	40.28	60.00	-19.72	QP
6		22.060	0.28	-0.69	26.90	26.48	50.00	-23.52	Average

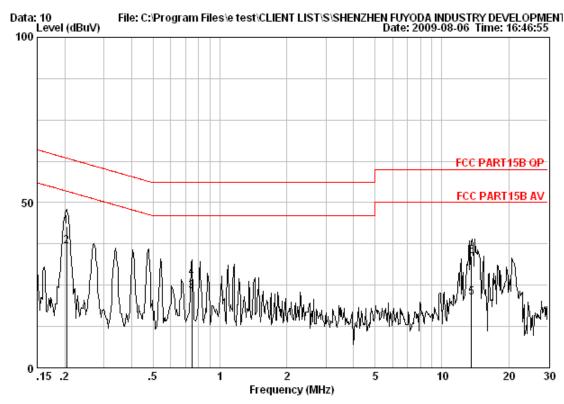
<sup>&</sup>quot;This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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."



Report No.: SZEMO09070436401

Page: 11 of 23

#### Neutral line



Site : Shielding Room

Condition : FCC PART15B QP CE NEUTRAL

EUT : Dongle Job No. : 4364RF

Test mode : Communicate with PC

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 2 @ 3	0.20396 0.20396 0.74690	0.04 0.04 0.06		42.80 36.70 23.10	42.80 36.70 23.12	53.45 46.00	-22.88	Average Average
4 5 6	0.74690 13.620 13.620	0.06 0.24 0.24	-0.04 -0.43 -0.43	27.20 21.40 34.10	27.22 21.22 33.92	50.00	-28.78 -28.78 -26.08	Average

<sup>&</sup>quot;This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm</a>. 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."



Report No.: SZEMO09070436401

Page: 12 of 23

### 5.3.2 Radiated Emissions

### 5.3.2.1 Test in transmitting mode

Test Requirement: FCC Part15.249,15.209 and 15.205

Test Method: ANSI C63.4: 2003

Measurement Distance: 3m (Semi-Anechoic Chamber)

Frequency range 30 MHz – 25GHz
Test instrumentation resolution bandwidth

Frequency Range	Detector	RBW/VBW
30MHz to 1000MHz	Quasi-Peak	120KHz/300KHz
		1MHz/3MHz for Peak
1GHz to 25GHz	Peak	1MHz/10Hz for Average

Operation: Receive antenna scan height 1 - 4 m, polarization Vertical/ Horizontal

Fundamental Frequency	Field Strength of Fundamental	Field Strength of Harmonics and Spurious Emissions
(MHz)	(dBuV/m @ 3m)	(dBuV/m @ 3m)
902 to 928	94.0	54.0
2400 to 2483.5	94.0	54.0
5725 to 5875	94.0	54.0
24000 to 24250	108.0	68.0

The fundamental frequency of the EUT is 2.402GHz to 2.480GHz

The limit for average field strength dBuv/m for the fundamental frequency = 94.0 dBuV/m.

No fundamental is allowed in the restricted bands.

#### Test Procedure:

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7 The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

<sup>&</sup>quot;This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm</a>. 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."

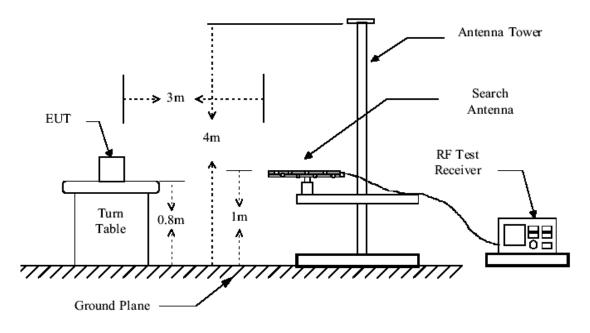


Report No.: SZEMO09070436401

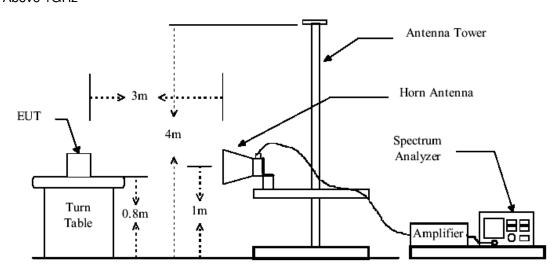
Page: 13 of 23

### **Test Configuration:**

Below 1GHz



### Above 1GHz



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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."



Report No.: SZEMO09070436401

Page: 14 of 23

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

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

The following test results were performed on the EUT:

1. The following test results were performed at 30MHz—1GHz

#### Vertical:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Quasi- peak Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
66.860	0.80	6.99	28.01	33.10	12.88	40.00	-27.12
109.540	1.23	8.62	27.78	33.56	15.63	43.50	-27.87
125.060	1.27	7.80	27.64	34.44	15.87	43.50	-27.63
246.310	1.66	12.19	26.93	28.94	15.86	46.00	-30.14
382.110	2.15	16.08	27.30	30.17	21.10	46.00	-24.90
591.630	2.69	19.57	27.63	29.88	24.51	46.00	-21.49

### Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Quasi- peak Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
97.900	1.18	9.02	27.89	29.51	11.82	43.50	-31.68
141.550	1.30	8.24	27.51	29.76	11.79	43.50	-31.71
188.110	1.38	10.06	27.22	31.00	15.22	43.50	-28.28
354.950	2.08	15.53	27.12	29.80	20.29	46.00	-25.71
673.110	2.85	21.40	27.37	34.07	30.95	46.00	-15.05
785.630	3.16	22.04	26.99	35.40	33.61	46.00	-12.39



Report No.: SZEMO09070436401

Page: 15 of 23

### 2. The following test results were performed at above 1GHz $\,$

For 2402MHz:

Harmonics & Spurious Emissions

#### Peak Measurement

Peak Measur		1	ı	ı	1	1	1	
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
2402.1	4.97	32.25	0	57.06	94.28	114	-19.72	Vertical
2377	4.95	32.23	37.65	58.97	58.50	74.00	-15.50	Vertical
2394	4.97	32.24	37.65	61.13	60.69	74.00	-13.31	Vertical
4825	6.62	34.03	38.20	44.22	46.67	74.00	-27.33	Vertical
7239	7.62	36.25	38.54	44.60	49.93	74.00	-24.07	Vertical
9687	8.58	37.06	39.16	45.89	52.37	74.00	-21.63	Vertical
12067	10.12	38.84	38.75	44.08	54.29	74.00	-19.71	Vertical
2402.1	4.97	32.25	0	46.25	83.47	114	-30.53	Horizontal
2390	4.97	32.24	37.65	58.93	58.49	74.00	-15.51	Horizontal
2400	4.97	32.25	37.65	62.66	62.23	74.00	-11.77	Horizontal
4804	6.61	34.04	38.18	49.92	52.39	74.00	-21.61	Horizontal
7206	7.64	36.33	38.55	44.47	49.89	74.00	-24.11	Horizontal
9608	8.51	36.99	39.11	45.59	51.98	74.00	-22.02	Horizontal
12010	10.11	38.80	38.80	44.27	54.38	74.00	-19.62	Horizontal



Report No.: SZEMO09070436401

Page: 16 of 23

Average Measurement

Average Mea	<u>asurement</u>							
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
2402.1	4.97	32.25	0	47.88	85.1	94	-8.9	Vertical
2377	4.95	32.23	37.65	39.41	38.94	54.00	-15.06	Vertical
2400	4.97	32.25	37.65	45.00	44.57	54.00	-9.43	Vertical
4825	6.62	34.03	38.20	31.96	34.41	54.00	-19.59	Vertical
7239	7.62	36.25	38.54	32.19	37.52	54.00	-16.48	Vertical
9619	8.53	36.99	39.13	33.03	39.42	54.00	-14.58	Vertical
12118	10.14	38.86	38.65	31.39	41.74	54.00	-12.26	Vertical
2402.1	4.97	32.25	0	37.04	74.26	94	-19.74	Horizontal
2390	4.97	32.24	37.65	42.15	41.71	54.00	-12.29	Horizontal
2400	4.97	32.25	37.65	45.60	45.17	54.00	-8.83	Horizontal
4804	6.61	34.04	38.18	32.57	35.04	54.00	-18.96	Horizontal
7206	7.64	36.33	38.55	31.84	37.26	54.00	-16.74	Horizontal
9608	8.51	36.99	39.11	33.58	39.97	54.00	-14.03	Horizontal
12010	10.11	38.80	38.80	31.84	41.95	54.00	-12.05	Horizontal



Report No.: SZEMO09070436401

Page: 17 of 23

### For 2441MHz:

. Harmonics & Spurious Emissions

#### Peak Measurement

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
2440.71	5.03	32.27	0	56.22	93.52	114	-20.48	Vertical
2411	4.99	32.25	37.65	46.62	46.21	74.00	-27.79	Vertical
2496	5.10	32.30	37.64	45.80	45.56	74.00	-28.44	Vertical
4876	6.64	34.02	38.23	44.08	46.51	74.00	-27.49	Vertical
7307	7.59	36.14	38.52	44.72	49.93	74.00	-24.07	Vertical
9772	8.65	37.12	39.20	44.90	51.47	74.00	-22.53	Vertical
12322	10.20	38.99	38.41	43.22	54.00	74.00	-20.00	Vertical
2440.71	5.03	32.27	0	48.28	85.58	114	-28.42	Horizontal
2411	4.99	32.25	37.65	45.69	45.28	74.00	-28.72	Horizontal
2496	5.10	32.30	37.64	45.91	45.67	74.00	-28.33	Horizontal
4859	6.63	34.03	38.22	48.12	50.56	74.00	-23.44	Horizontal
7358	7.57	36.06	38.50	43.82	48.95	74.00	-25.05	Horizontal
9772	8.65	37.12	39.20	45.39	51.96	74.00	-22.04	Horizontal
12322	10.20	38.99	38.41	43.77	54.55	74.00	-19.45	Horizontal



Report No.: SZEMO09070436401

Page: 18 of 23

Average Measurement

Average iviea							1	
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
2440.71	5.03	32.27	0	47.26	84.56	94	-9.44	Vertical
2394	4.97	32.24	37.65	33.24	32.80	54.00	-21.20	Vertical
2496	5.10	32.30	37.64	33.28	33.04	54.00	-20.96	Vertical
4893	6.65	34.02	38.24	31.81	34.24	54.00	-19.76	Vertical
7358	7.57	36.06	38.50	32.09	37.22	54.00	-16.78	Vertical
9738	8.62	37.08	39.18	33.35	39.87	54.00	-14.13	Vertical
12271	10.19	38.95	38.46	31.22	41.90	54.00	-12.10	Vertical
2440.71	5.03	32.27	0	39.25	76.55	94	-17.45	Horizontal
2411	4.99	32.25	37.65	33.37	32.96	54.00	-21.04	Horizontal
2496	5.10	32.30	37.64	33.33	33.09	54.00	-20.91	Horizontal
4876	6.64	34.02	38.23	32.93	35.36	54.00	-18.64	Horizontal
7324	7.58	36.10	38.51	32.17	37.34	54.00	-16.66	Horizontal
9806	8.68	37.14	39.21	32.70	39.31	54.00	-14.69	Horizontal
12509	10.29	39.10	38.21	31.39	42.57	54.00	-11.43	Horizontal



Report No.: SZEMO09070436401

Page: 19 of 23

For 2480MHz:

Harmonics & Spurious Emissions

### Peak Measurement

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
2480	5.08	32.29	0	73.07	96.78	114	-17.22	Vertical
2483.5	5.08	32.29	37.64	60.69	60.42	74.00	-13.58	Vertical
2496	5.10	32.30	37.64	52.72	52.48	74.00	-21.52	Vertical
4944	6.67	34.01	38.29	44.34	46.73	74.00	-27.27	Vertical
7426	7.53	35.91	38.48	43.86	48.82	74.00	-25.18	Vertical
9976	8.82	37.28	39.29	44.75	51.56	74.00	-22.44	Vertical
12373	10.22	39.01	38.36	43.23	54.10	74.00	-19.90	Vertical
2480	5.08	32.29	0	50.58	87.95	114	-26.05	Horizontal
2483.5	5.08	32.29	37.64	58.21	57.94	74.00	-16.06	Horizontal
2496	5.10	32.30	37.64	50.51	50.27	74.00	-23.73	Horizontal
4961	6.68	34.01	38.30	44.23	46.62	74.00	-27.38	Horizontal
7477	7.51	35.84	38.47	43.45	48.33	74.00	-25.67	Horizontal
9925	8.77	37.23	39.26	45.04	51.78	74.00	-22.22	Horizontal
12424	10.24	39.06	38.31	43.71	54.70	74.00	-19.30	Horizontal



Report No.: SZEMO09070436401

Page: 20 of 23

### Average Measurement

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
2480	5.08	32.29	0	50.55	87.92	94	-6.08	Vertical
2483.5	5.08	32.29	37.64	44.35	39.08	54.00	-9.92	Vertical
2496	5.10	32.30	37.64	40.35	40.08	54.00	-13.92	Vertical
4961	6.68	34.01	38.30	31.77	34.16	54.00	-19.84	Vertical
7443	7.52	35.91	38.47	31.32	36.28	54.00	-17.72	Vertical
9925	8.77	37.23	39.26	32.56	39.30	54.00	-14.70	Vertical
12475	10.25	39.08	38.21	31.37	42.49	54.00	-11.51	Vertical
2480	5.08	32.29	0	42.35	79.72	94	-14.28	Horizontal
2483.5	5.08	32.29	37.64	45.13	44.86	54.00	-9.14	Horizontal
2496	5.10	32.30	37.64	38.67	38.43	54.00	-15.57	Horizontal
4978	6.68	34.01	38.32	31.72	34.09	54.00	-19.91	Horizontal
7443	7.52	35.91	38.47	31.34	36.30	54.00	-17.70	Horizontal
9925	8.77	37.23	39.26	32.56	39.30	54.00	-14.70	Horizontal
12322	10.20	38.99	38.41	31.53	42.31	54.00	-11.69	Horizontal



Report No.: SZEMO09070436401

Page: 21 of 23

N/A: refer to remark 1).

#### Remark:

- 1). For this intentional radiator operates below 10 GHz, the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the fifth harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 5<sup>th</sup> harmonic.
- 2). According to 15.249 (e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above 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.

TEST RESULTS: The unit does meet the FCC requirements.



Report No.: SZEMO09070436401

Page: 22 of 23

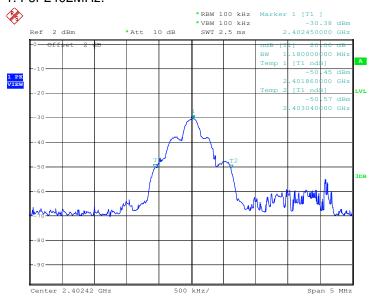
### 5.3.3 Occupied Bandwidth

Test Requirement: FCC Part 15.249
Test Method: ANSI C63.4:2003

Operation within the band 2.402 - 2.480GHz

### The occupied bandwidth as below:

#### 1. For 2402MHz:



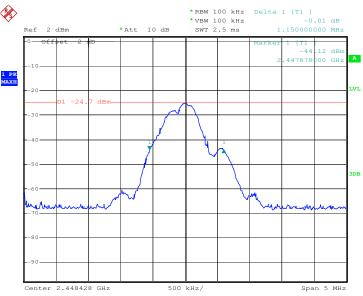
Date: 30.SEP.2009 04:25:31



Report No.: SZEMO09070436401

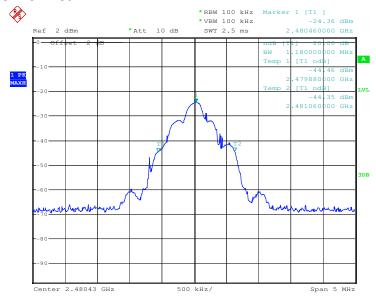
Page: 23 of 23

#### 2. For 2441MHz:



Date: 30.SEP.2009 04:18:52

#### 3. For 2480MHz:



Date: 30.SEP.2009 04:23:20

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> 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."