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**FEDERAL COMMUNICATIONS COMMISSION**

Registration number: 282399

Report No.: SZEMO071103097RFI

Page: 1 of 14

FCC ID: HS9-51367SL

# TEST REPORT

**Application No. :** SZEMO071103097RF  
**Applicant:** Honeywell International Inc.  
**Manufacturer:** VTech Communications Ltd  
**FCC ID:** HS9-51367SL  
**Fundamental Carrier:** 916.8MHz  
**Equipment Under Test (EUT):**  
    Name: Portrait Push: 1) White Push 2)Black/Sliver Push 3) Brass Push 4)  
          Chrome Push  
    Model: 1) 51367SL 2) 51368SL 3) 51369SL 4) 51370SL  
    Band Name: Honeywell  
**Standards:** FCC PART 15: 2007  
                Please refer to section 2 for further details.  
**Date of Receipt:** 06 November 2007  
**Date of Test:** 07 to 09 November 2007  
**Date of Issue:** 22 November 2007

<b>Test Result :</b>	<b>PASS *</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

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.

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## 2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Flied Strength of Fundamental	FCC PART 15 : 2007	Section 15.249 (a)	PASS
Flied Strength of Harmornics or other Frequency	FCC PART 15 : 2007	Section 15.249 (a) Section 15.209	PASS
Occupied Bandwidth	FCC PART 15 : 2007	Section 15.249	PASS
Band Edges Measurement	FCC PART 15 : 2007	Section 15.249 (d)	PASS

**Remark:**

The EUT can work with Premium Portable Wireless Chime (Model:51360SL) and Décor Mix and Match Wireless Chime Base (Model: 51365SL) together.

Only one model in the picturer 6.0 was tested as above since their electrical circuit design, layout, components used and internal wiring are identical. Only the prodcut name, model No. and the outer are different.



### 3 Contents

	Page
1 COVER PAGE .....	1
2 TEST SUMMARY .....	2
3 CONTENTS .....	3
4 GENERAL INFORMATION .....	4
4.1 CLIENT INFORMATION .....	4
4.2 GENERAL DESCRIPTION OF E.U.T. ....	4
4.3 DESCRIPTION OF SUPPORT UNITS .....	4
4.4 STANDARDS APPLICABLE FOR TESTING .....	4
4.5 TEST LOCATION .....	4
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	4
4.7 TEST FACILITY .....	5
5 TEST RESULTS .....	6
5.1 TEST INSTRUMENTS .....	6
5.2 E.U.T. OPERATION .....	6
5.3 TEST PROCEDURE & MEASUREMENT DATA .....	7
5.3.1 <i>Radiated Emissions</i> .....	7
5.3.2 <i>Occupied Bandwidth &amp; Band Edge</i> .....	13-14



## **4 General Information**

### **4.1 Client Information**

Applicant Name: Honeywell International Inc.  
Applicant Address: 1985 Douglas Drive, Golden Valley Minnesota United States  
Manufacturer: VTech Communications Ltd  
Manufacturer Address: Xia Ling Bei Management Zone, Liaobu District, Dongguan City, Guangdong, China

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

Product Name: Portrait Push: 1) White Push 2)Black/Sliver Push 3) Brass Push 4) Chrome Push  
Model: 1) 51367SL 2) 51368SL 3) 51369SL 4) 51370SL  
Power Supply: 3V DC('CR2032' Size Battery)  
Power Cord: N/A-

### **4.3 Description of Support Units**

The EUT was tested as an independent unit: Portrait Push: 1) White Push 2)Black/Sliver Push 3) Brass Push 4) Chrome Push

### **4.4 Standards Applicable for Testing**

The customer requested FCC tests for a 916.8MHz Portrait Push: 1) White Push 2)Black/Sliver Push 3) Brass Push 4) Chrome Push

The standard used was FCC PART 15, SUBPART C ( 2007) section 15.249.

### **4.5 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

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

None.



#### **4.7 Test Facility**

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

- **NVLAP – Lab Code: 200611-0**  
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.
- **ACA**  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **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, 2005. Valid until September 28, 2008.
- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**  
Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAS L0167**  
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.
- **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, Aug. 04, 2005
- **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.: 6002.



## 5 Test Results

### 5.1 Test Instruments

R&TTE 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	16-06-2007	15-06-2008
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	12-12-2007	11-12-2008
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	01-06-2007	31-05-2008
5	Coaxial cable	SGS	N/A	SEL0027	20-10-2007	19-10-2008
6	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0014	12-08-2007	11-08-2008
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	27-06-2007	26-06-2008
8	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15-06-2007	14-06-2008

### 5.2 E.U.T. Operation

Input voltage: 3.0V DC ('CR2032' Size Battery)  
Operating Environment:  
Temperature: 24.0 °C  
Humidity: 52 % RH  
Atmospheric Pressure: 1012 mbar  
EUT Operation: Test in transmitting mode with 916.8MHz  
Modulation FSK



### 5.3 Test Procedure & Measurement Data

#### 5.3.1 Radiated Emissions

##### 5.3.1.1 Test in transmitting mode

Test Requirement: FCC Part15 C Section 15.249  
Test Method: ANSI C63.4 2003  
Test Date: 08 November 2007  
Measurement Distance: 3m (Semi-Anechoic Chamber)  
Frequency range: 30 MHz – 10GHz for transmitting mode.  
Test instrumentation resolution bandwidth  
120 kHz (30 MHz - 1000 MHz), 1 MHz (1000 M – 25GHz)  
Operation: Receive antenna scan height 1 - 4 m, polarization Vertical/  
Horizontal

##### Requirements:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics and Spurious Emissions (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 916.8MHz

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

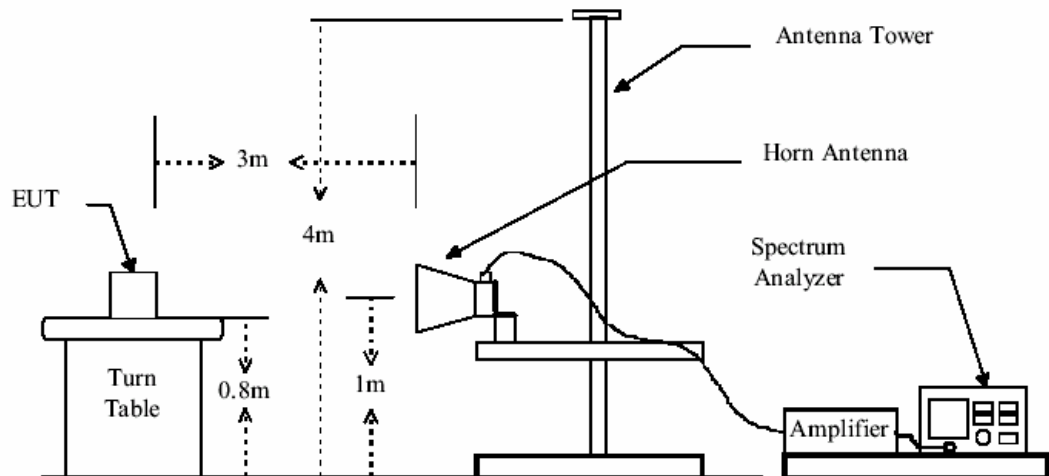
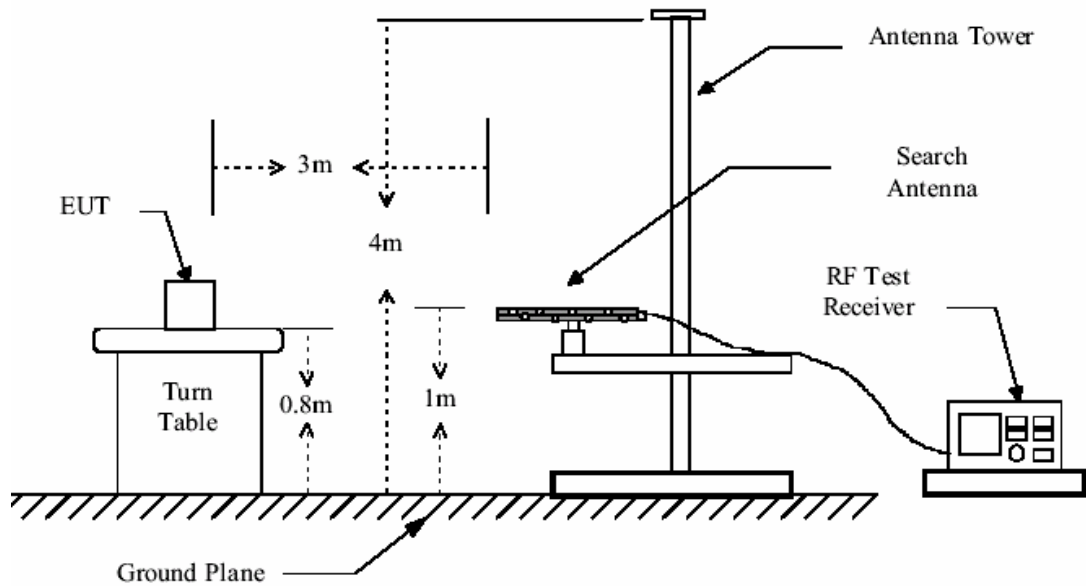
No fundamental is allowed in the restricted bands.

The limit for average field strength dBuV/m for the harmonics and spurious frequencies = 54.0 dBuV/m. Spurious in the restricted bands must be less than 54.0 dBuV/m or 15.209.

##### 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.  
The following measurements were performed on the modified modified EUT on 08 November 2007:  
Test the EUT in transmitting mode.
- 7 The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

### Test Configuration:





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

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Peramlifer Factor

The following test results were performed on the EUT:

Fundamental emission

**The duty cycle is 100%, then average equal peak.**

**Peak Measurement**

Test Frequency (MHz)	Measuring Level (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
916.8	87.3	91.1	114.0	26.7	22.9
<b>Average Measurement</b>					
916.8	87.3	91.1	94.0	6.7	2.9

(2). Harmonics & Spurious Emissions with peak dector.

**Peak Measurement of White Push mode**

Test Frequency (MHz)	Measuring Level (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	39.88	49.82	74.0	34.12	24.18
2332	48.18	38.10	74.0	25.82	35.90
2984	38.14	39.83	74.0	35.86	34.17
3636	37.27	40.28	74.0	36.73	33.72
4196	39.06	38.99	74.0	34.94	35.01

**Average Measurement of White Push mode**

Test Frequency (MHz)	Measuring Level (dBuV/m)		Peak/Average Limits (dBuV/m)	Peak/Average Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	39.88	49.82	54.0	14.12	4.18
2332	48.18	38.10	54.0	5.82	15.90
2984	38.14	39.83	54.0	15.86	14.17
3636	37.27	40.28	54.0	16.73	13.72
4196	39.06	38.99	54.0	14.94	15.01



## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO071103097RFI

Page: 10 of 14

### Peak Measurement of Brass Push mode

Test Frequency (MHz)	Measuring Level (dBuV/m)		Peak/Average Limits (dBuV/m)	Peak/Average Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	51.09	46.20	74.0	22.91	27.80
2388	38.56	38.80	74.0	35.44	35.20
3104	37.86	39.09	74.0	36.14	34.91
3788	39.68	38.99	74.0	34.32	35.01
4312	39.37	38.81	74.0	34.63	35.19

### Average Measurement of Brass Push mode

Test Frequency (MHz)	Measuring Level (dBuV/m)		Peak/Average Limits (dBuV/m)	Peak/Average Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	51.09	46.20	54.0	2.91	7.80
2388	38.56	38.80	54.0	15.44	15.20
3104	37.86	39.09	54.0	16.14	14.91
3788	39.68	38.99	54.0	14.32	15.01
4312	39.37	38.81	54.0	14.63	15.19

### Peak Measurement of Chrome Push mode

Test Frequency (MHz)	Measuring Level (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	52.99	47.85	74.0	21.01	26.15
2352	50.28	39.23	74.0	23.72	34.77
2720	38.66	37.92	74.0	35.34	36.08
3508	39.30	39.04	74.0	34.70	34.96
4228	39.40	40.94	74.0	34.60	33.06



## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO071103097RFI

Page: 11 of 14

### average Measurement of Chrome Push mode

Test Frequency (MHz)	Measuring Level (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1828	52.99	47.85	54.0	1.01	6.15
2352	50.28	39.23	54.0	3.72	14.77
2720	38.66	37.92	54.0	15.34	16.08
3508	39.30	39.04	54.0	14.70	14.96
4228	39.40	40.94	54.0	14.60	13.06

### Other Emission (selected worst case mode)

#### Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
47.460	0.76	8.72	28.11	39.70	21.07	40.00	-18.93
75.590	0.97	7.37	28.00	38.36	18.70	40.00	-21.30
89.170	1.10	8.64	27.95	35.95	17.74	43.50	-25.76
114.390	1.24	8.30	27.74	42.33	24.13	43.50	-19.37
229.820	1.57	11.64	27.00	40.56	26.77	46.00	-19.23
557.680	2.66	18.97	27.66	26.42	20.39	46.00	-25.61

#### Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
114.390	1.24	8.30	27.74	38.44	20.24	43.50	-23.26
129.910	1.28	7.70	27.61	36.30	17.67	43.50	-25.83
228.850	1.57	11.61	27.01	31.62	17.79	46.00	-28.21
344.280	2.05	15.28	27.05	25.23	15.51	46.00	-30.49
488.810	2.56	17.80	27.68	25.69	18.37	46.00	-27.63
635.280	2.77	20.54	27.49	26.50	22.32	46.00	-23.68



## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO071103097RFI

Page: 12 of 14

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 4<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.



### 5.3.2 Occupied Bandwidth & Band Edge

Test Requirement: FCC Part15 C Section 15.249

Test Method: ANSI C63.4 2003

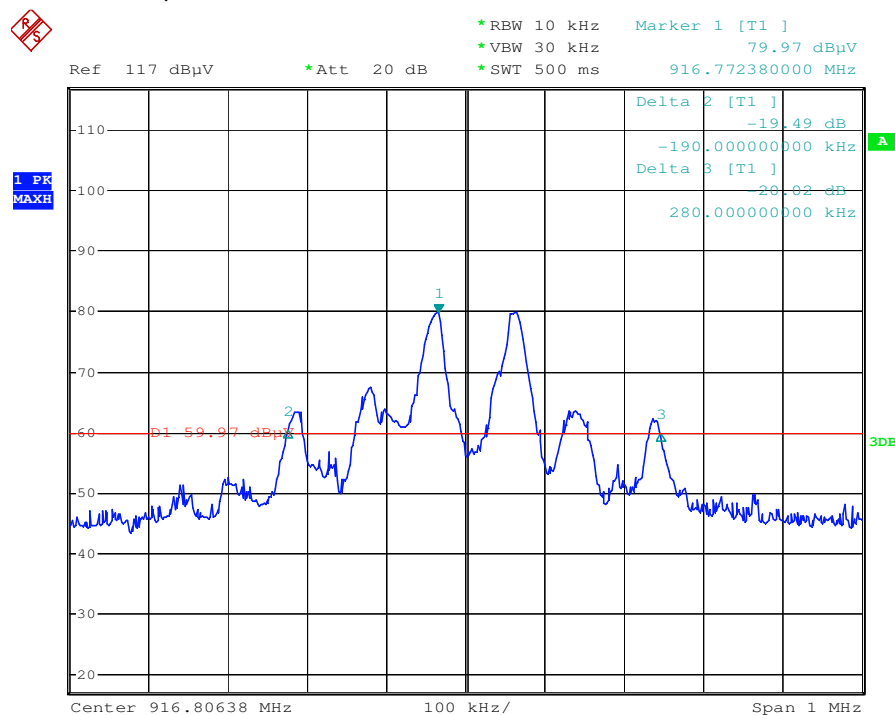
Operation within the band 902 – 928MHz

Test Date: 08 November 2007

Requirements: 15.249 (d) 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.

Method of measurement: A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken. The vertical is set to 10dB per division. The horizontal scale is set to 100KHz per division.

The occupied bandwidth as below:



Date: 26.NOV.2007 13:53:38

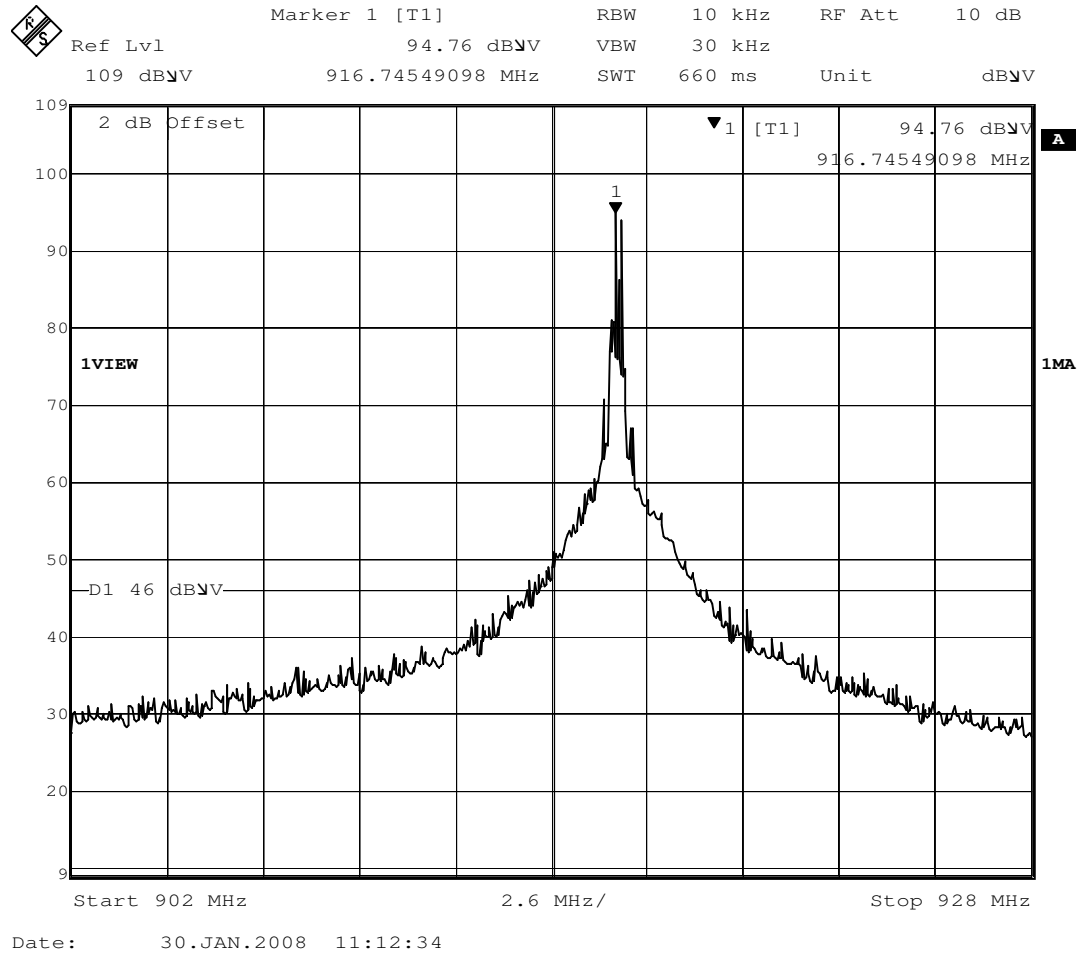


## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO071103097RFI

Page: 14 of 14

### (2). Band Edge:



**The results: The unit does meet the FCC requirements.**