



***Full***

# **TEST REPORT**

**No. ECIT-2014-0018-EMC**

***For***

**Client : AsiaTelco Technologies Co.**

**Production : USB datacard Dual-band 900/2100MHz and  
GSM/GPRS/EDGE in 850/900/1800/1900MHz**

**Model Name : A13G**

**Hardware Version: P1**

**Software Version: V1.0**

**FCC ID: XYOA13G**

**Issued date: 2014-04-04**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of ECIT Shanghai.

**Test Laboratory:**

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## 1. Test Laboratory

### 1.1. Testing Location

Company Name: ECIT Shanghai, East China Institute of Telecommunications  
Address: 7F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai,  
P. R. China  
Postal Code: 200001  
Telephone: (+86)-021-63843300  
Fax: (+86)-021-63843301  
FCC registration No: 489729

### 1.2. Testing Environment

Normal Temperature: 15-35°C  
Relative Humidity: 30-60%

### 1.3. Project data

Project Leader: Lan Yaqin  
Testing Start Date: 04-03, 2014  
Testing End Date: 04-03, 2014

### 1.4. Signature

Zhang Yijing

(Prepared this test report)

You Jinjun

(Reviewed this test report)

Zheng Zhongbin

Director of the laboratory

(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: AsiaTelco Technologies Co.  
Address /Post: #289 Bisheng Road, Building-8,3F,Zhangjiang Hi-Tech Park, Pudong,  
Shanghai 201204, China  
Country: China  
Telephone: +8621 51688806\*213

### **2.2. Manufacturer Information**

Company Name: AsiaTelco Technologies Co.  
Address /Post: #289 Bisheng Road, Building-8,3F,Zhangjiang Hi-Tech Park, Pudong,  
Shanghai 201204, China  
Country: China  
Telephone: +8621 51688806\*213

### 3. Equipment under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

EUT Description	USB datacard Dual-band 900/2100MHz and GSM/GPRS/EDGE in 850/900/1800/1900MHz
Model name	A13G
Frequency	GSM/GPRS/EDGE in 850/900/1800/1900MHz
HW Version	P1
SW Version	V1.0

#### 3.2. Internal Identification of AE used during the test

AE ID*	Description	Model	SN
AE1	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE2	Notebook PC	ThinkPad T420i	P1-5LEBD
AE3	LAN Cable	NA	NA
AE4	VGA Cable	NA	NA
AE5	RS232 Cable	NA	NA
AE6	Keyboard	KB212-B	CN-0Y88XT-65890-12I-005Q-A00
AE7	Mouse	MS111-P	CN-011D3V-71581-19J-1A64
AE8	LCD color Monitor	LE1901w1	3CQ131NT72

\*AE ID: is used to identify the test sample in the lab internally.

## **4. Reference Documents**

### **4.1. Reference Documents for testing**

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 15, Subpart B	Radio frequency devices	10-1-10 Edition
ANSI C63.4	Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009

## 5. Test Results

### 5.1. Summary of Test Results

Items	Test List	Clause in FCC rules	Verdict
1	Radiated Emission	15.109(a)	Pass
2	Conducted Emission	15.107(a)	Pass

### 5.2. Statements

The A13G supporting GSM850/900/1800/1900 and WCDMA band I / V , manufactured by AsiaTelco Technologies Co. is a new product for testing. ECIT only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

ECIT has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

## 6. Test Equipments Utilized

### 6.1 Radiated Emission Equipments list

No.	Name	Type	Series Number	Producer	Cal. Due Date
1	Universal Radio Communication Tester	CMU200	123102	R&S	2014-08-30
2	Test Receiver	ESU40	100307	R&S	2014-10-29
3	Trilog Antenna	VULB9163	19-162515	Schwarzbeck	2014-11-11
4	Double Ridged Guide Antenna	ETS3117	135885	ETS	2014-04-28

### 6.1 CE Equipments list

No.	Name	Type	Series Number	Producer	Cal. Due Date
1	Universal Radio Communication Tester	CMU200	123124	R&S	2014-08-30
2	Test Receiver	ESCI	101235	R&S	2014-08-30
3	2-Line V-Network	ENV216	101380	R&S	2014-10-30

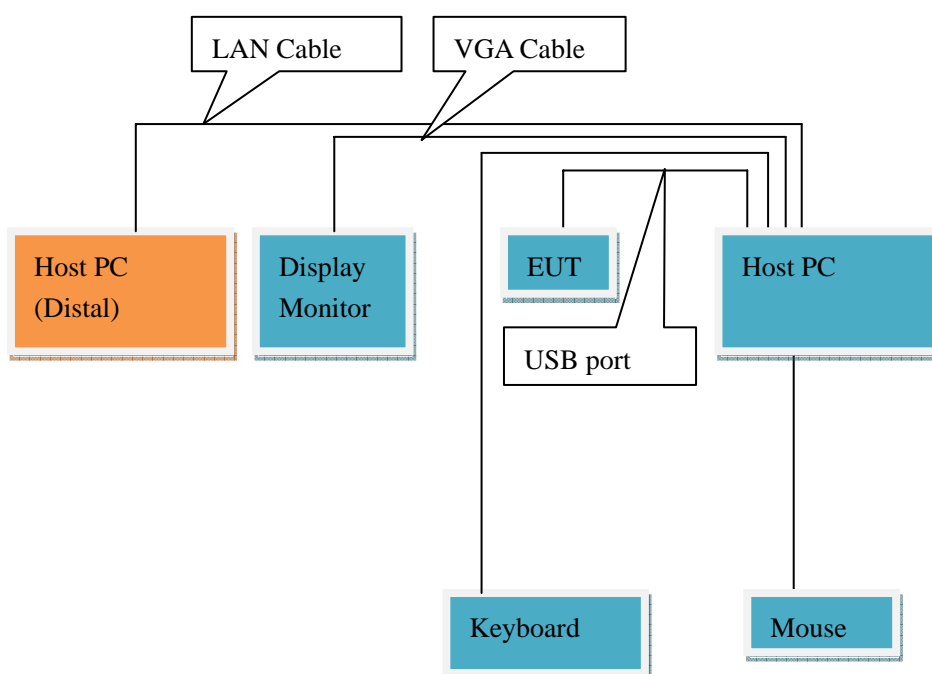


## 7. System Configuration during Test

### 7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: idle+ adapter charging+ PC<Figure 1>
Radiated Emission	Mode 1: idle+ adapter charging+ PC <Figure 1>
Remark: 1. All test modes are performed, only the worst cases test data are recorded in this report. 2. Data Link with PC means data application transferred mode between EUT and PC.	

### 7.2 Connection Diagram of Test System



<Figure 1>

## 8. Measurement Results

Only the worst test result was shown in this report.

### 8.1 Radiated Emission 30MHz-12.75GHz

#### Method of Measurement

For 30-1000MHz, the EUT was placed on the top of a rotating 0.8-m table above the ground at a semi-anechoic chamber. The distance between the EUT and the received antenna was 3 meters. The table was rotated 360 degree and the received antenna mounted on a variable-height antenna tower was varied from 1m to 4m to find the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement. Tested in accordance with the procedures of ANSI C63.4-2009, section 8.3.

For 1000-12750MHz, The maximal emission value was acquired by adjusting the antenna height, The table was rotated 360 degree to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna were set during the measurement.

#### Limits for Radiated Emission at a measuring distance of 3m

Frequency Range (MHz)	Quasi-Peak (dBuV/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Frequency Range (MHz)	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

#### Test conditions

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
30-1000	120KHz/300KHz	5
1000-12750	1MHz/1MHz	10

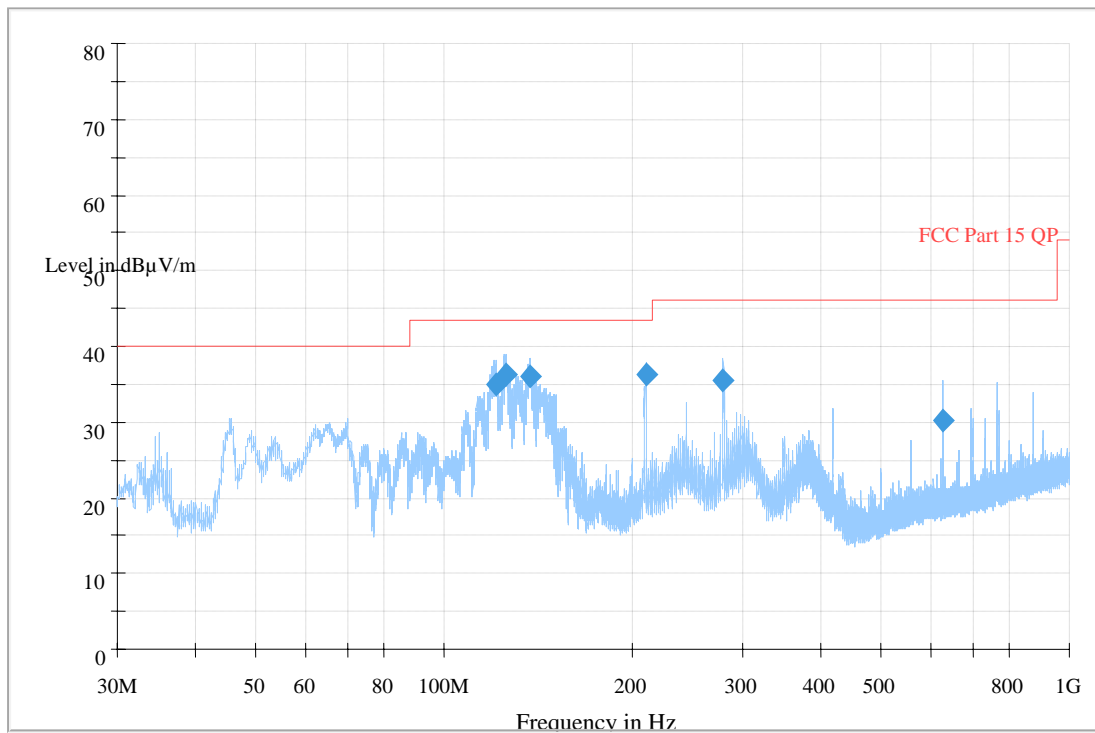
#### Uncertainty Measurement

The measurement uncertainty is 3.92dB (k=1.96).

## Test Results

Mode 1: idle+ adapter charging+ PC

Frequency Range: 30MHz – 1GHz

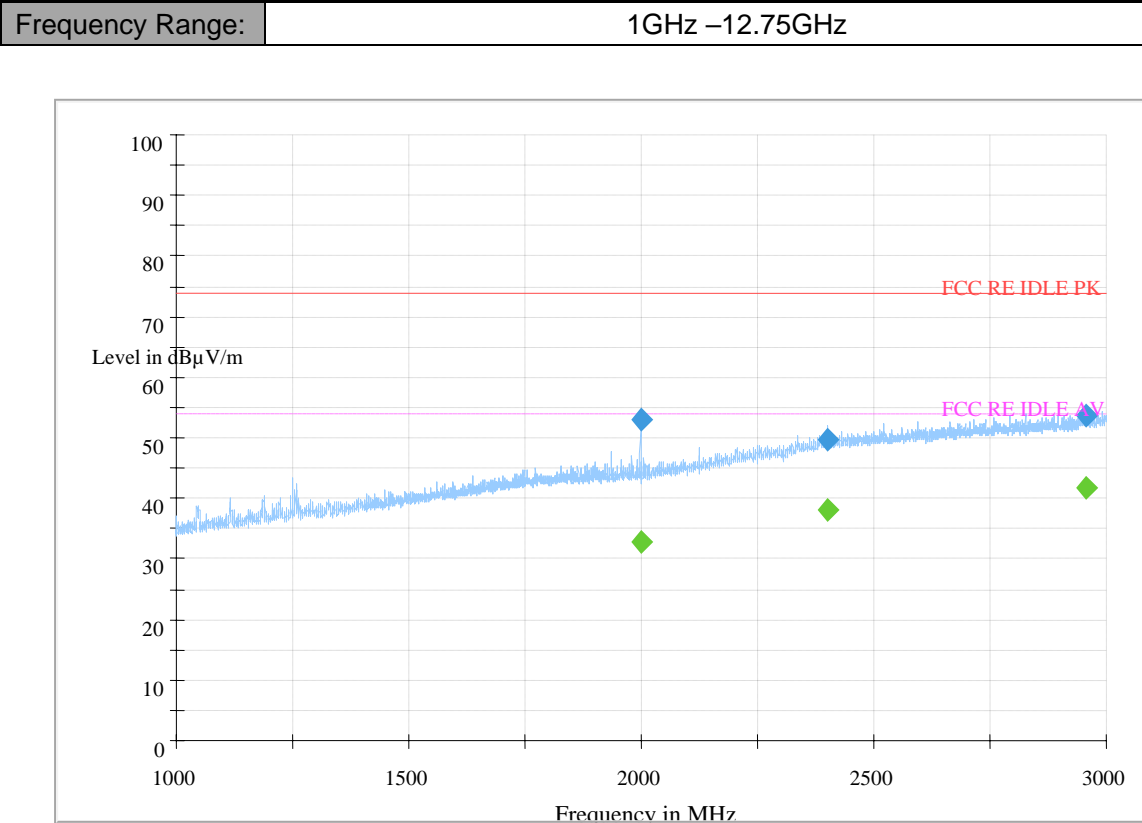


Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
121.163000	35.0	1000.0	120.000	100.0	V	217.0	-27.1	5.0	40.0
125.398667	36.2	1000.0	120.000	100.0	V	233.0	-27.6	3.8	40.0
137.291333	35.9	1000.0	120.000	100.0	V	314.0	-28.4	4.1	40.0
209.870333	36.2	1000.0	120.000	100.0	H	259.0	-24.9	3.8	40.0
278.869667	35.5	1000.0	120.000	100.0	H	275.0	-21.7	11.5	47.0
629.775667	30.2	1000.0	120.000	100.0	H	196.0	-13.1	16.8	47.0

Note:

1. Emission level(QP)=Raw value by receiver + Corr(Antenna factor + cable loss - preamplifier gain)
2. The raw value is used to calculate by software which is not shown in the sheet.
3. Margin=limit value – emission level.

Mode 1: idle+ adapter charging+ PC



## Final Result 1

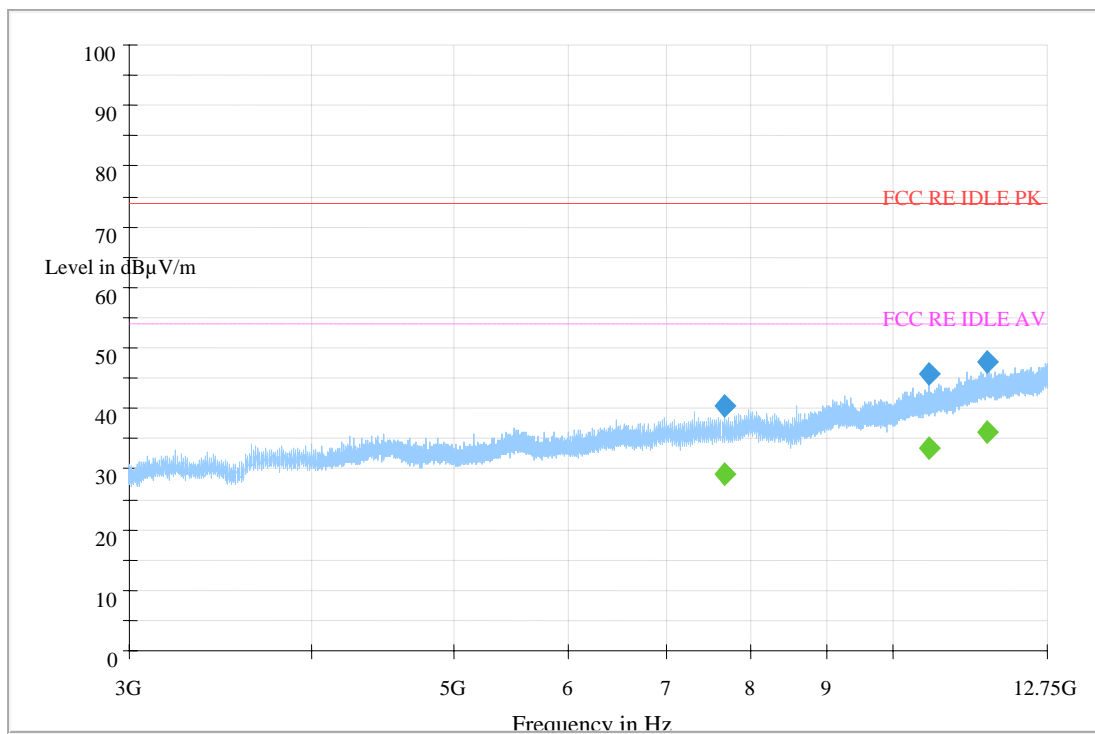
Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1998.728800	53.0	50.0	1000.000	155.0	H	193.0	1.1	21.0	74.0
2402.939200	49.6	50.0	1000.000	155.0	H	18.0	6.3	24.4	74.0
2955.029200	53.6	50.0	1000.000	155.0	V	131.0	10.1	20.4	74.0

## Final Result 2

Frequency (MHz)	Average (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1998.728800	32.9	50.0	1000.000	155.0	H	193.0	1.1	21.1	54.0
2402.939200	38.1	50.0	1000.000	155.0	H	18.0	6.3	15.9	54.0
2955.029200	41.6	50.0	1000.000	155.0	V	131.0	10.1	12.4	54.0

Note:

1. Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
  2. The raw value is used to calculate by software which is not shown in the sheet.
- Margin=limit value – emission level.



## Final Result 1

Frequency (MHz)	MaxPeak (dBuV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
7677.690600	40.4	50.0	1000.000	155.0	V	235.0	3.0	33.6	74.0
10575.866500	45.6	50.0	1000.000	155.0	V	14.0	7.4	28.4	74.0
11610.392900	47.6	50.0	1000.000	155.0	V	91.0	9.7	26.4	74.0

## Final Result 2

Frequency (MHz)	Average (dBuV/m)	Meas. Time	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
7677.690600	29.0	50.0	1000.000	155.0	V	235.0	3.0	25.0	54.0
10575.866500	33.4	50.0	1000.000	155.0	V	14.0	7.4	20.6	54.0
11610.392900	36.0	50.0	1000.000	155.0	V	91.0	9.7	18.0	54.0

Note:

1. Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
  2. The raw value is used to calculate by software which is not shown in the sheet.
- Margin=limit value – emission level.

## 8.2 Conducted Emission

### Method of Measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies with the band 150 kHz to 30MHz shall not exceed the limits. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. Tested in accordance with the procedures of ANSI C63.4-2009, section 7.3

### Limit of Conducted Emission

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

### Test Condition in Charging Mode

Voltage (V)	Frequency (Hz)	RBW	Sweep Time (s)
120	60	9 KHz	1

### Uncertainty Measurement

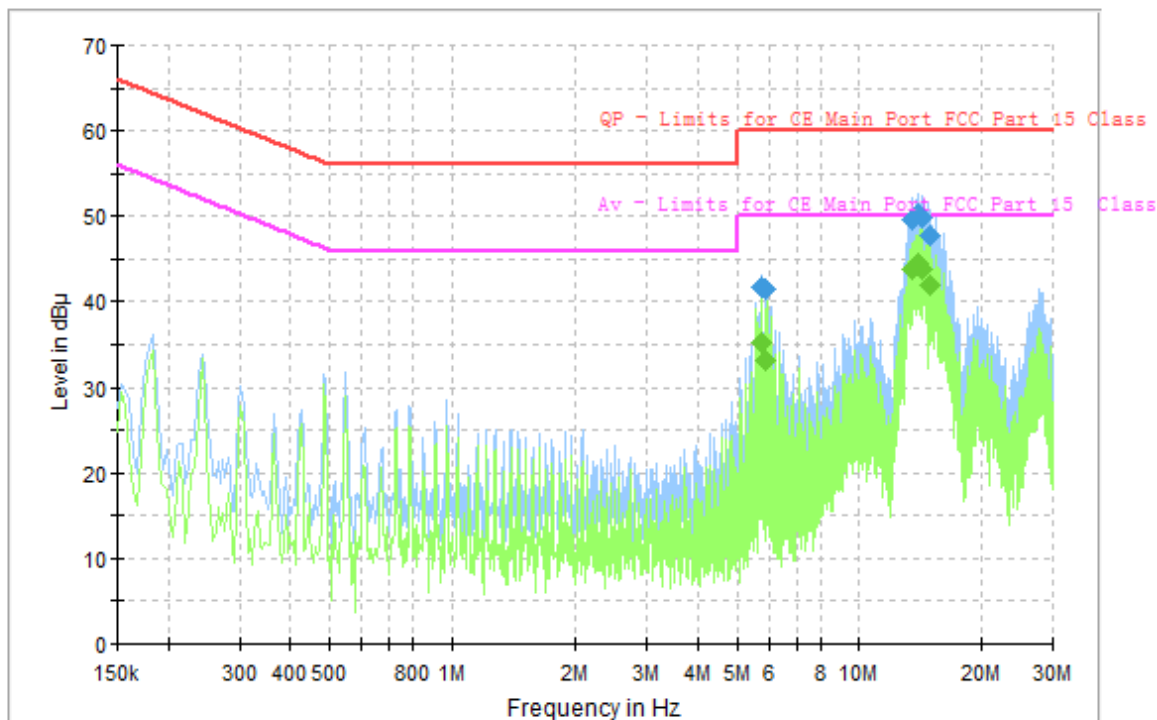
The measurement uncertainty is 2.69dB (k=1.96).

### Test Results

Mode 1: idle+ adapter charging+ PC

Frequency Range:

150kHz – 30MHz



Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
5.731950	41.6	1000.0	9.000	On	L1	9.8	18.4	60.0	
5.858812	41.4	1000.0	9.000	On	L1	9.8	18.6	60.0	
13.496681	49.6	1000.0	9.000	On	L1	9.9	10.4	60.0	
13.948162	50.3	1000.0	9.000	On	L1	9.9	9.7	60.0	
14.201888	49.7	1000.0	9.000	On	L1	9.9	10.3	60.0	
15.015300	47.8	1000.0	9.000	On	L1	9.9	12.2	60.0	

Frequency (MHz)	Average (dB μ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
5.731950	41.6	1000.0	9.000	On	L1	9.8	18.4	60.0	
5.858812	41.4	1000.0	9.000	On	L1	9.8	18.6	60.0	
13.496681	49.6	1000.0	9.000	On	L1	9.9	10.4	60.0	
13.948162	50.3	1000.0	9.000	On	L1	9.9	9.7	60.0	
14.201888	49.7	1000.0	9.000	On	L1	9.9	10.3	60.0	
15.015300	47.8	1000.0	9.000	On	L1	9.9	12.2	60.0	

Note:

1. Emission level(quasi-peak or Average peak)=Raw value by receiver + Corr(Insertion loss+ cable loss)
2. The raw value is used to calculate by software which is not shown in the sheet.
3. Margin=limit value – emission level.

\*\*\*\*\*End the Report\*\*\*\*\*