



TEST REPORT

No. 2013EM02092

For

Client : Shanghai SIMCom Wireless Solutions Co., Ltd.

Production : GSM/GPRS(850/900/1800/1900MHz)+

BT Wireless Data Module

Model Name : SIM800

Hardware: V2.01

Software Version: SIM800 R13.08

FCC ID: UDV-201314

Issued date: 2014-01-09



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:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

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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: 86-21-63843300
Fax: 86-21-63843301
FCC registration No: 489729

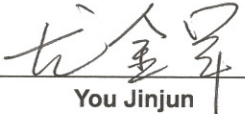
1.2. Testing Environment

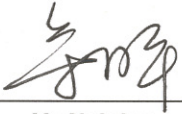
Normal Temperature: 15-35°C
Relative Humidity: 30-60%

1.3. Project data

Project Leader: Gong Yajuan
Testing Start Date: Dec 23, 2013
Testing End Date: Jan 09, 2014

1.4. Signature


You Jinjun
(Testing Engineer)


Yu Naiping
(Reviewed this test report)


ZhengZhongbin
Director of the laboratory
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Shanghai SIMCom Wireless Solutions Co., Ltd.
Address /Post: Building A, SIM Technology Building, No.633, Jinzhong Road,
Changning District, Shanghai R.R. China
Country: China
Telephone: + 86-021-32523020

2.2. Manufacturer Information

Company Name: Shenyang Simcom Technology Ltd.
Address /Post: No.37, Shenbei Rd, Shenbei New Area, Shenyang, P.R.China
Country: China
Telephone: + 86-024-88922225

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

3.1. About EUT

EUT Description	GSM/GPRS(850/900/1800/1900MHz)+BT Wireless Data Module
Model name	SIM800
Serial Number or IMEI	865459015200316
GSM Frequency Band	GSM850/GSM900/GSM1800 /GSM1900
HW Version	V2.01
SW Version	SIM800 R13.08

3.2. Internal Identification of AE used during the test

AE ID*	Description	Model	SN
AE1	Adapter	P12-050200 US	NA
AE2	Main Board	SIM5310-EVB S2-3035X	D20613221669855
AE3	Antenna	NA	NA
AE4	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE5	Notebook PC	ThinkPad T420i	P1-5LEBD
AE6	LAN Cable	NA	NA
AE7	VGA Cable	NA	NA
AE8	RS232 Cable	NA	NA
AE9	Keyboard	KB212-B	CN-0Y88XT-65890-12I-005Q-A00
AE10	Mouse	MS111-P	CN-011D3V-71581-19J-1A64

*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.

Reference	Title	Version
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 SIM800 supporting GSM850/GSM900/GSM1800 /GSM1900 and BT, manufactured by Shanghai SIMCom Wireless Solutions Co., Ltd. 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

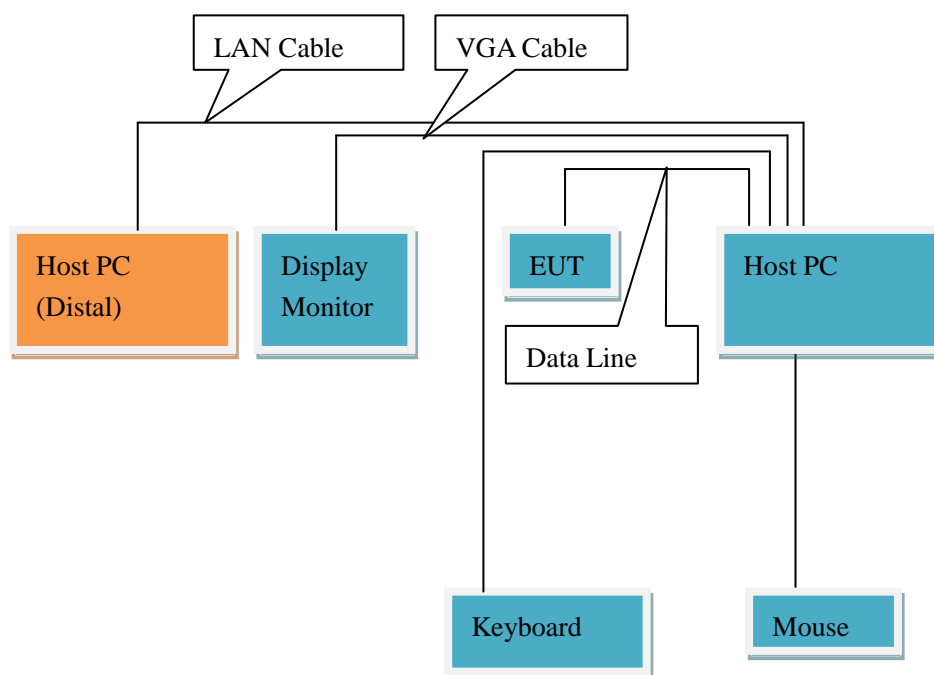
No.	Name	Type	Series Number	Producer	Cal. Due Date
1	Universal Radio Communication Tester	CMU200	123124	R&S	2014-08-30
2	Test Receiver	ESCI	101235	R&S	2014-08-30
3	2-Line V-Network	ENV216	101380	R&S	2014-10-30

7. System Configuration during Test

7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Idle + antenna + earphone + Adapter charging + Serial data line (Data Link with PC) <Figure 1> Mode 2: Idle + antenna + earphone + Adapter charging <Figure 2>
Radiated Emission	Mode 1: Idle + antenna + Adapter charging + Serial data line (Data Link with PC) <Figure 1> Mode 2: Idle + antenna + earphone + Adapter charging <Figure 2>
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>



<Figure 2>

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

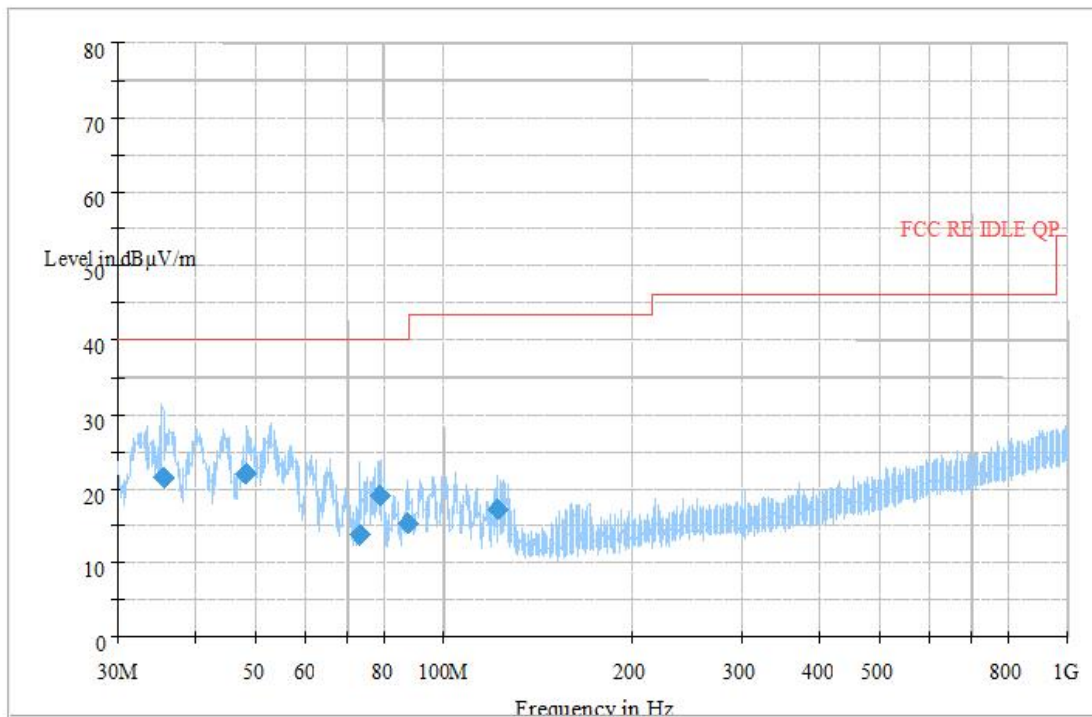
Uncertainty Measurement

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

Test Results

Mode 1: Idle + antenna + earphone + Adapter charging + Serial data line (Data Link with 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)
40.192667	31.6	1000.0	120.000	100.0	V	217.0	-24.0	8.4	40.0
124.995333	16.4	1000.0	120.000	200.0	H	280.0	-26.5	27.1	43.5
198.262667	11.1	1000.0	120.000	100.0	V	6.0	-24.3	32.4	43.5
240.012667	20.3	1000.0	120.000	100.0	H	219.0	-22.2	25.7	46.0
484.331000	15.8	1000.0	120.000	100.0	V	6.0	-15.2	30.2	46.0
728.012000	20.2	1000.0	120.000	200.0	V	188.0	-10.8	25.8	46.0

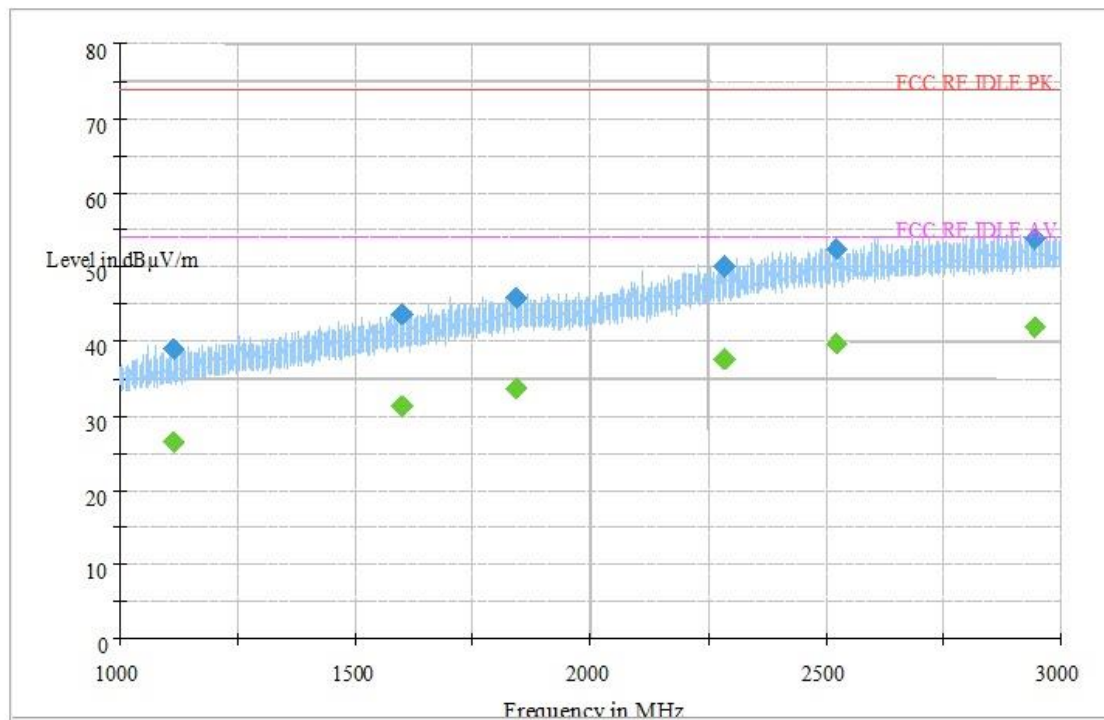
Note:

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 + antenna + earphone + Adapter charging + Serial data line (Data Link with PC)

Frequency Range:

1GHz –12.75GHz



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)
1116.466667	39.0	100.0	1000.000	155.0	V	340.0	-5.3	35.0	74.0
1598.640000	43.8	100.0	1000.000	155.0	H	0.0	-0.5	30.2	74.0
1843.360000	45.8	100.0	1000.000	155.0	H	0.0	1.9	28.2	74.0
2286.426667	50.0	100.0	1000.000	155.0	H	19.0	6.3	24.0	74.0
2521.800000	52.4	100.0	1000.000	155.0	V	312.0	8.5	21.6	74.0
2943.560000	53.7	100.0	1000.000	155.0	V	91.0	10.6	20.4	74.0

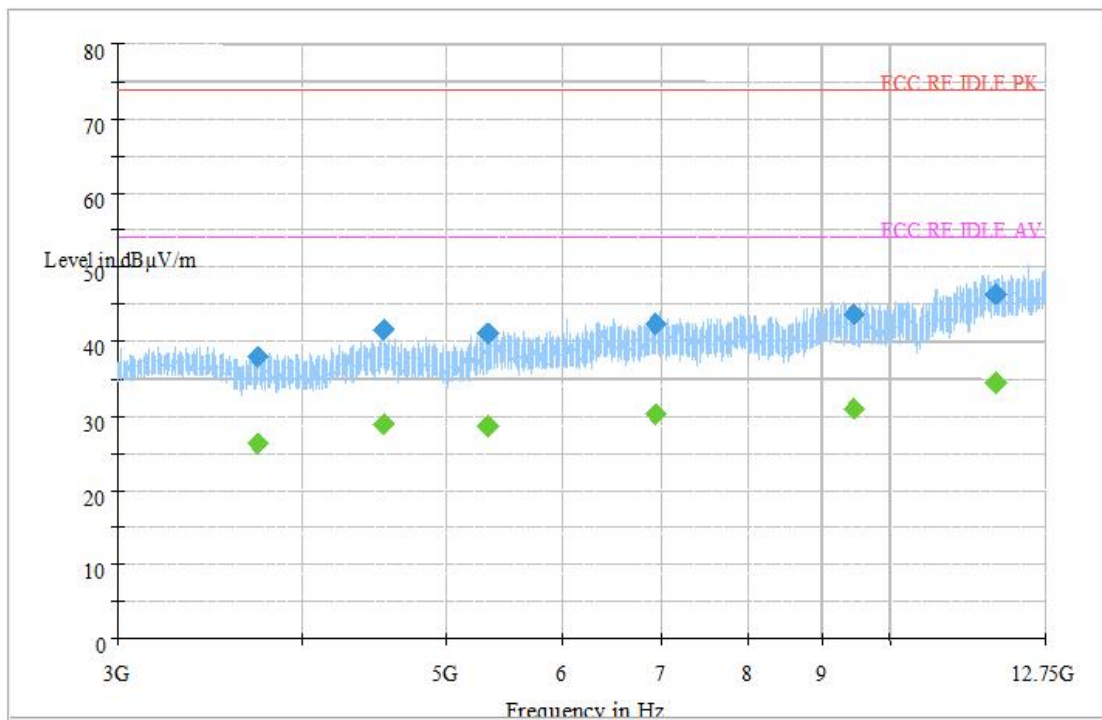
Final Result 2

Frequency (MHz)	Average (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1116.906667	26.4	100.0	1000.000	155.0	V	340.0	-5.3	27.6	54.0
1600.440000	31.2	100.0	1000.000	155.0	H	0.0	-0.5	22.8	54.0
1844.640000	33.6	100.0	1000.000	155.0	H	0.0	1.9	20.4	54.0
2286.066667	37.7	100.0	1000.000	155.0	H	19.0	6.3	16.3	54.0
2521.560000	39.7	100.0	1000.000	155.0	V	312.0	8.5	14.3	54.0
2944.080000	41.8	100.0	1000.000	155.0	V	91.0	10.6	12.2	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)
3735.890000	37.9	100.0	1000.000	155.0	H	64.0	-3.3	36.1	74.0
4539.660000	41.6	100.0	1000.000	155.0	H	0.0	-1.0	32.4	74.0
5342.810000	40.9	100.0	1000.000	155.0	H	214.0	-0.8	33.1	74.0
6946.895000	42.4	100.0	1000.000	155.0	H	22.0	2.3	31.6	74.0
9461.635000	43.7	100.0	1000.000	155.0	H	0.0	5.0	30.3	74.0
11794.085000	46.3	100.0	1000.000	155.0	H	0.0	9.6	27.7	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)
3736.170000	26.2	100.0	1000.000	155.0	H	64.0	-3.3	27.8	54.0
4539.540000	28.9	100.0	1000.000	155.0	H	0.0	-1.0	25.1	54.0
5343.490000	28.7	100.0	1000.000	155.0	H	214.0	-0.8	25.3	54.0
6947.815000	30.3	100.0	1000.000	155.0	H	22.0	2.3	23.7	54.0
9461.395000	31.0	100.0	1000.000	155.0	H	0.0	5.0	23.0	54.0
11794.405000	34.3	100.0	1000.000	155.0	H	0.0	9.6	19.7	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

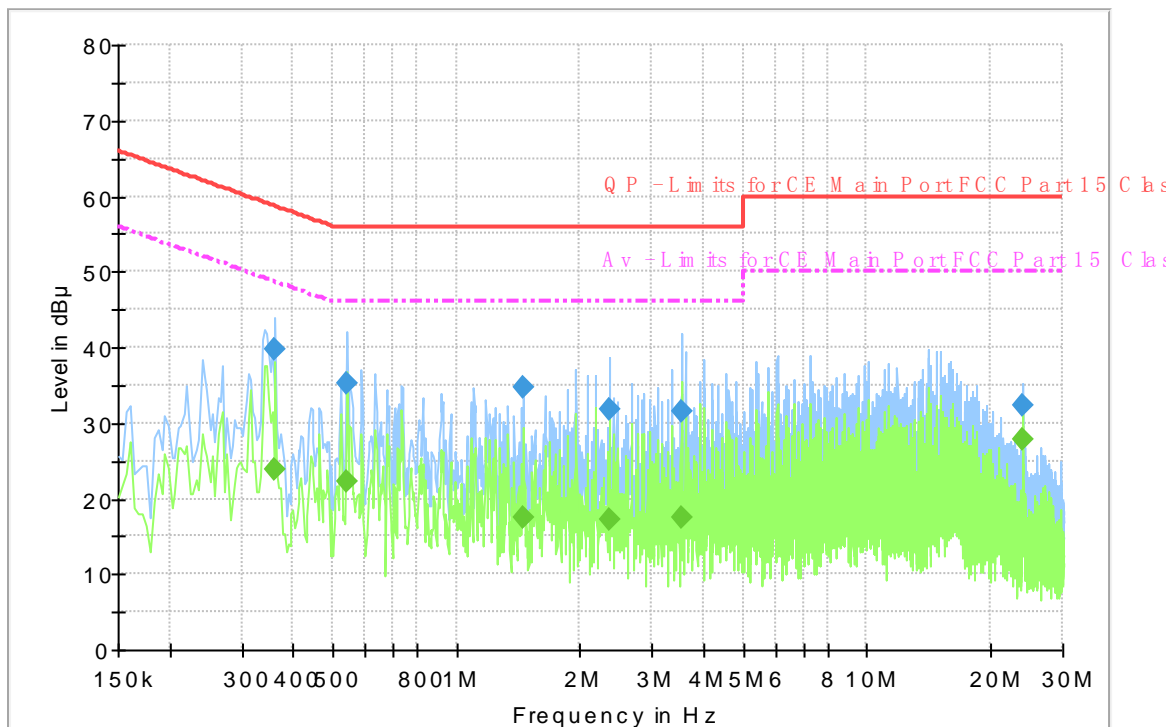
Uncertainty Measurement

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

Test Results

Mode 1: Idle + antenna + earphone + Adapter charging + Serial data line (Data Link with PC)

Frequency Range: 150kHz – 30MHz



Final Result 1

Frequency (MHz)	QuasiPeak (dB μV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)	Comment
0.362681	39.8	1000.0	9.000	On	L1	10.1	18.9	58.7	
0.541781	35.1	1000.0	9.000	On	L1	10.1	20.9	56.0	
1.455938	34.6	1000.0	9.000	On	L1	9.9	21.4	56.0	
2.358900	31.7	1000.0	9.000	On	L1	9.8	24.3	56.0	
3.537975	31.4	1000.0	9.000	On	L1	9.8	24.6	56.0	
24.003881	32.4	1000.0	9.000	On	N	10.0	27.6	60.0	

Final Result 2

Frequency (MHz)	Average (dB μV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)	Comment
0.362681	24.0	1000.0	9.000	On	L1	10.1	24.7	48.7	
0.541781	22.2	1000.0	9.000	On	L1	10.1	23.8	46.0	
1.455938	17.5	1000.0	9.000	On	L1	9.9	28.5	46.0	
2.358900	17.3	1000.0	9.000	On	L1	9.8	28.7	46.0	
3.537975	17.6	1000.0	9.000	On	L1	9.8	28.4	46.0	
24.003881	27.7	1000.0	9.000	On	N	10.0	22.3	50.0	

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*****