



TEST REPORT

No. I14D00033-EMC

For

Client : Moxee Technologies

Production: WCDMA/GSM (GPRS) Dual-Mode

Digital Mobile Phone

Model Name : X1

Hardware Version: MBV1.0

Software Version: MOXEE_X1_V1.1

FCC ID: 2ADHZ-MOXEEX1

Issued date: 2014-11-27

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

Tel: (+86)-021-63843300, E-Mail: welcome@ecit.org.cn

Revision Version

Report Number	Revision	Date	Memo
I14D00033-EMC	00	2014-11-27	Initial creation of test report

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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°C-35°C
Relative Humidity: 30-60%

1.3. Project data

Project Leader: Chen Kan
Testing Start Date: 11-12, 2014
Testing End Date: 11-23, 2014

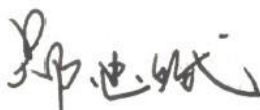
1.4. Signature



You Jinjun
(Prepared this test report)



Yu Naiping
(Reviewed this test report)



Zheng Zhongbin
Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Moxee Technologies
Address /Post: 10900 NE 8th Street, #1000
Tel: 425-890-7897
City: Washington
Country: America

2.2. Manufacturer Information

Company Name: Moxee Technologies
Address /Post: 10900 NE 8th Street, #1000
Tel: 425-890-7897
City: Washington
Country: America

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

3.1. About EUT

EUT Description	WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
Model name	X1
Serial Number or IMEI	862240021000616
GSM Frequency Band	GSM850/1800/1900MHz
UMTS Frequency Band	WCDMA band II/WCDMA band IV
HW Version	MBV1.0
SW Version	MOXEE_X1_V1.1

3.2. Internal Identification of AE used during the test

AE ID*	Description	Model	SN
AE1	Adapter	NB-0501000U	NA
AE2	Battery	HX336271	NA
AE3	Earphone	JHC20140922004H	NA
AE4	USB Cable	NA	NA
AE5	Desktop PC	OptiPlex 790 DT	X8RP1 A01 APCC
AE6	Notebook PC	ThinkPad Edge E430	0B65911
AE7	LAN Cable	NA	NA
AE8	VGA Cable	NA	NA
AE9	RS232 Cable	NA	NA
AE10	Keyboard	KB212-B	CN-0Y88XT-65890-12I-005Q-A00
AE11	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 X1 supporting GSM850/1800/1900 and WCDMA band II/IV, manufactured by Moxee Technologies 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. Date	Cal. interval
1	Universal Radio Communication	CMU200	123102	R&S	2014-07-07	1
2	Test Receiver	ESU40	100307	R&S	2014-07-25	1
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2014-11-5	3
4	Double Ridged Guide	ETS-3117	00135885	ETS	2014-05-06	3
5	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

6.1 CE Equipments list

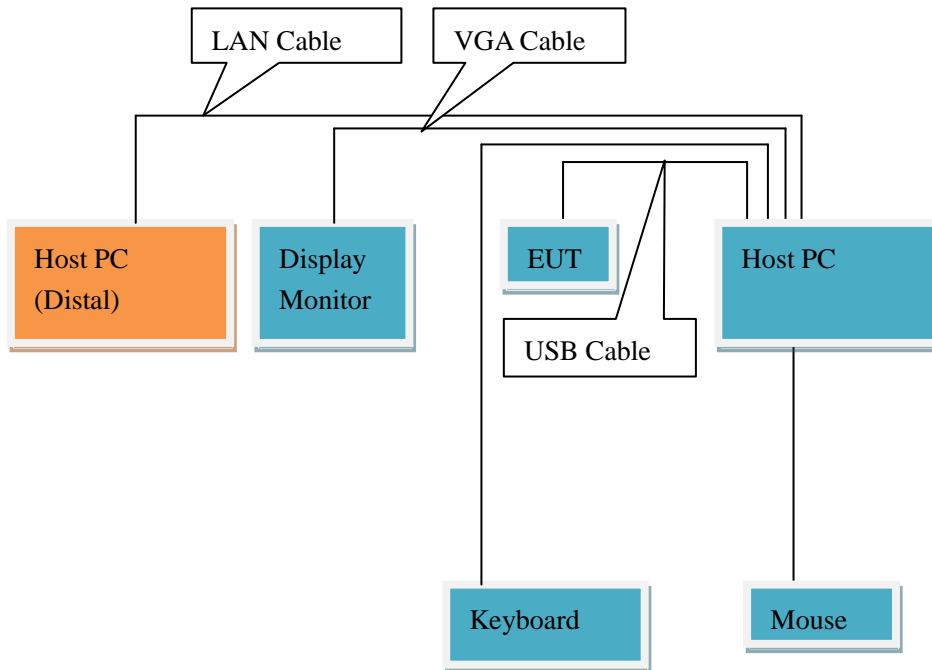
No.	Name	Type	Series Number	Producer	Cal. Date	Cal. interval
1	Universal Radio	CMU200	123124	R&S	2014-07-07	1
2	Test Receiver	ESCI	101235	R&S	2014-07-06	1
3	2-Line V-Network	ENV216	101380	R&S	2014-07-25	1
4	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

7. System Configuration during Test

7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Idle + Earphone + Camera on + USB cable (Data Link with PC) <Figure 1> Mode 2: Idle + Earphone + MP4 + Adapter charging <Figure 2>
Radiated Emission	Mode 1: Idle + Earphone + Camera on + USB cable (Data Link with PC) <Figure 1> Mode 2: Idle + Earphone + MP4 + 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 (dB μ V/m)
30-88	40
88-216	43.5
216-960	46
Above 960	54

Frequency Range (MHz)	Peak (dB μ V/m)	Average (dB μ V/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

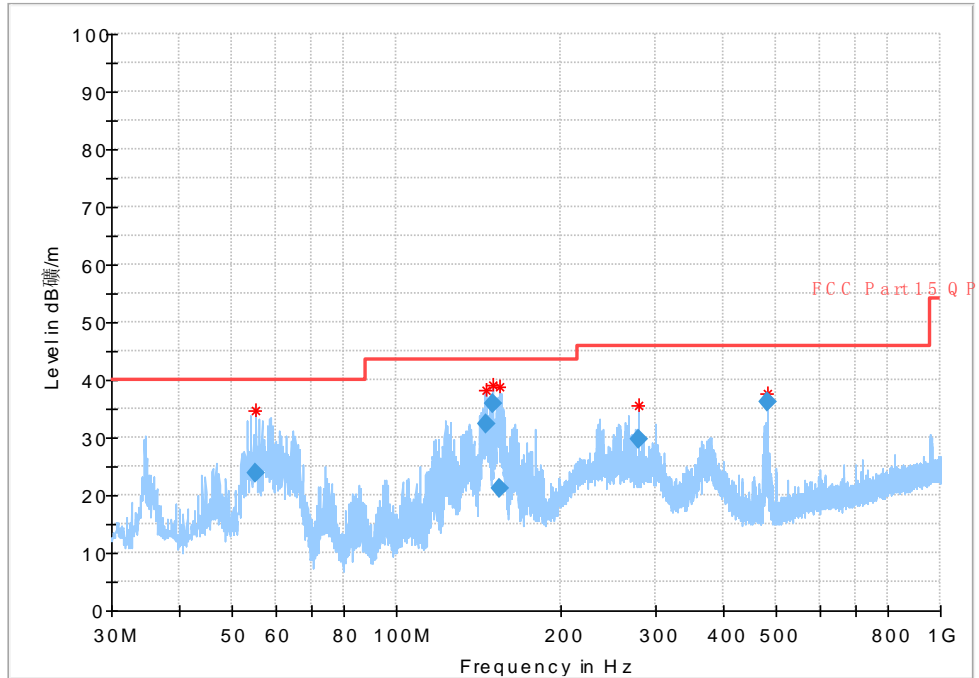
Uncertainty Measurement

The measurement uncertainty is 5.59dB (k=2).

Test Results

Mode 1: Idle + Earphone + Camera on + USB cable (Data Link with PC)

Frequency Range: 30MHz – 1GHz



Frequency (MHz)	QuasiPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
55.349772	23.77	40.00	16.23	1000.0	120.000	98.0	H	115.0	-25.0
146.012376	32.35	43.50	11.15	1000.0	120.000	216.0	H	327.0	-28.1
150.927872	35.97	43.50	7.53	1000.0	120.000	181.0	H	142.0	-27.9
155.289848	21.18	43.50	22.32	1000.0	120.000	125.0	H	91.0	-27.7
279.350604	29.59	46.00	16.41	1000.0	120.000	125.0	H	24.0	-21.3
480.027336	36.10	46.00	9.90	1000.0	120.000	92.0	V	69.0	-15.6

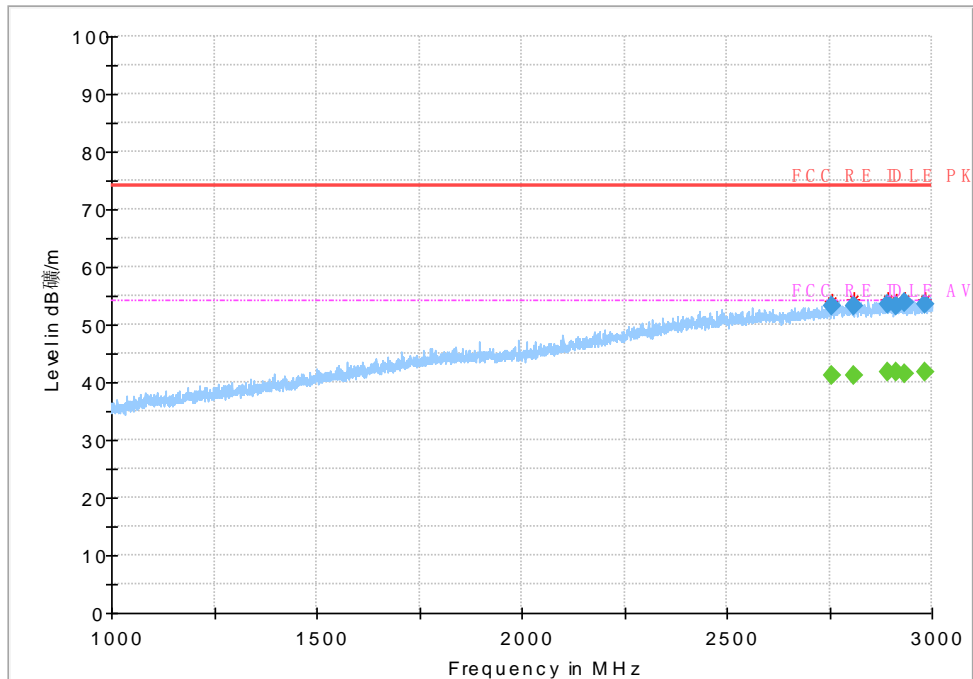
Note:

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

Mode 1: Idle + Earphone + Camera on + USB cable (Data Link with PC)

Frequency Range:

1GHz –12.75GHz

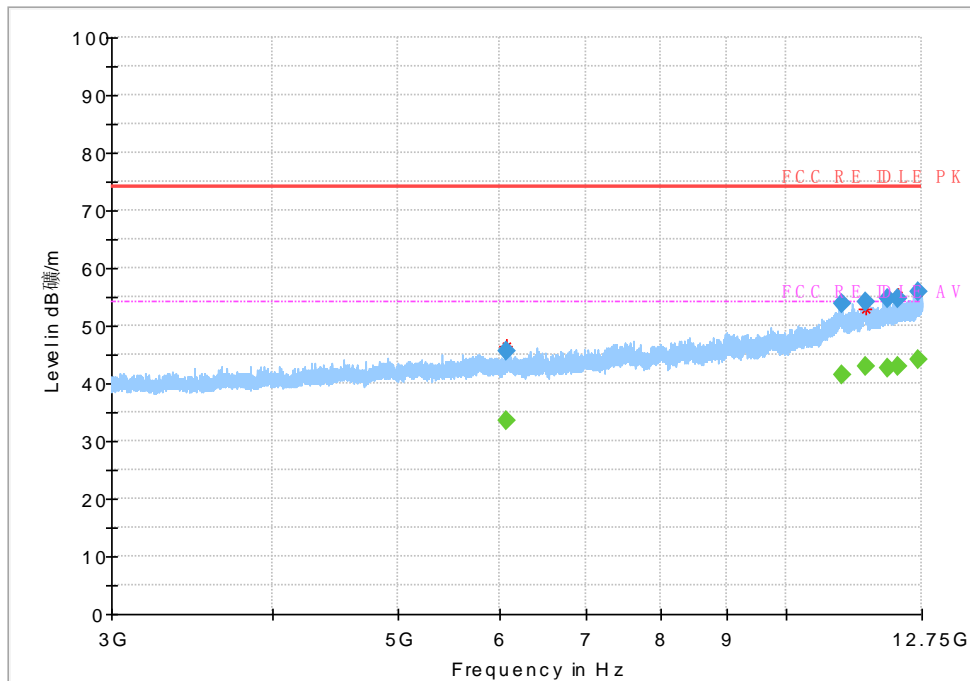


Final Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2756.964800	53.16	---	74.00	20.84	50.0	1000.000	155.0	V	258.0	9.7
2756.964800	---	41.07	54.00	12.93	50.0	1000.000	155.0	V	258.0	9.7
2810.076000	53.18	---	74.00	20.82	50.0	1000.000	155.0	V	293.0	10.0
2810.076000	---	41.23	54.00	12.77	50.0	1000.000	155.0	V	293.0	10.0
2891.806000	53.59	---	74.00	20.41	50.0	1000.000	155.0	V	319.0	10.4
2891.806000	---	41.66	54.00	12.34	50.0	1000.000	155.0	V	319.0	10.4
2913.298000	---	41.67	54.00	12.33	50.0	1000.000	155.0	H	8.0	10.4
2913.298000	53.18	---	74.00	20.82	50.0	1000.000	155.0	H	8.0	10.4
2934.203200	53.84	---	74.00	20.16	50.0	1000.000	155.0	V	300.0	10.3
2934.203200	---	41.45	54.00	12.55	50.0	1000.000	155.0	V	300.0	10.3
2982.629200	---	41.73	54.00	12.27	50.0	1000.000	155.0	V	24.0	10.7
2982.629200	53.39	---	74.00	20.61	50.0	1000.000	155.0	V	24.0	10.7

Note:

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



Final_Result

Frequency (MHz)	MaxPeak (dB μV/m)	Average (dB μV/m)	Limit (dB μV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
6074.891600	---	33.62	54.00	20.38	50.0	1000.000	155.0	V	44.0
6074.891600	45.52	---	74.00	28.48	50.0	1000.000	155.0	V	44.0
11062.048800	---	41.61	54.00	12.39	50.0	1000.000	155.0	H	40.0
11062.048800	53.75	---	74.00	20.25	50.0	1000.000	155.0	H	40.0
11520.789300	54.06	---	74.00	19.94	50.0	1000.000	155.0	H	322.0
11520.789300	---	42.89	54.00	11.11	50.0	1000.000	155.0	H	322.0
12015.500500	54.82	---	74.00	19.18	50.0	1000.000	155.0	H	269.0
12015.500500	---	42.79	54.00	11.21	50.0	1000.000	155.0	H	269.0
12235.853600	54.67	---	74.00	19.33	50.0	1000.000	155.0	V	173.0
12235.853600	---	43.01	54.00	10.99	50.0	1000.000	155.0	V	173.0
12686.398400	56.02	---	74.00	17.98	50.0	1000.000	155.0	V	269.0
12686.398400	---	44.18	54.00	9.82	50.0	1000.000	155.0	V	269.0

Note:

- Emission level(peak or average)=Raw value by receiver + Corr(Antenna factor+ cable loss - preamplifier gain)
 - 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

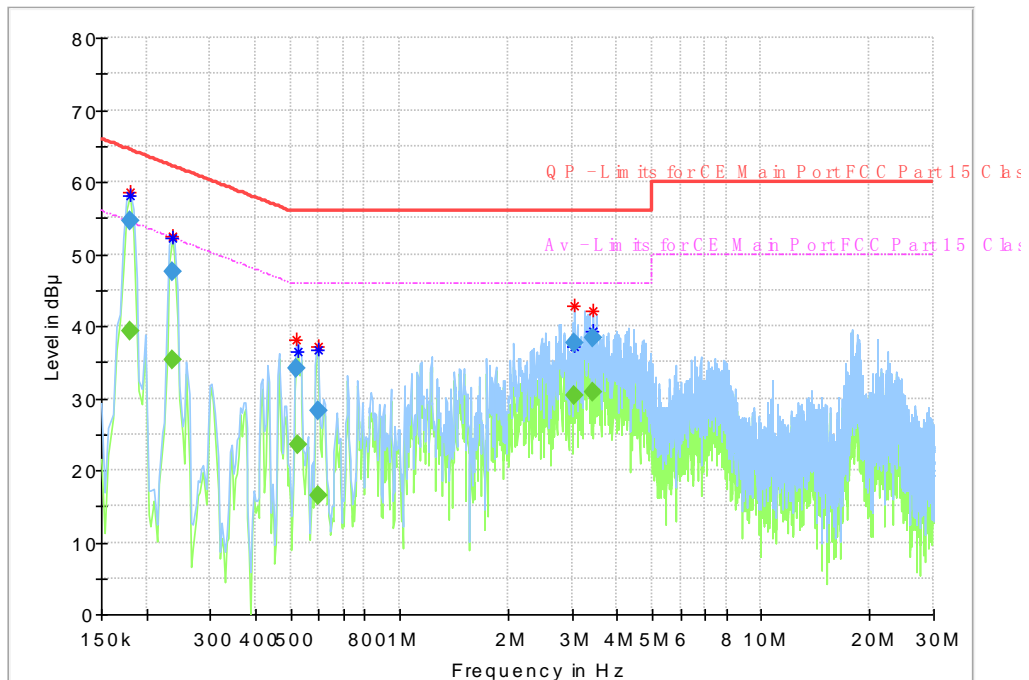
Uncertainty Measurement

The measurement uncertainty is 3.57dB (k=2).

Test Results

Mode 1: Idle + Earphone + Camera on + USB cable (Data Link with PC)

Frequency Range: 150kHz – 30MHz



Frequency (MHz)	QuasiPeak (dB μV)	Average (dB μV)	Limit (dB μV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.179850	---	39.24	54.49	15.25	1000.0	9.000	N	ON	9.7
0.179850	54.51	---	64.49	9.98	1000.0	9.000	N	ON	9.7
0.235819	---	35.26	52.24	16.98	1000.0	9.000	L1	ON	9.9
0.235819	47.58	---	62.24	14.66	1000.0	9.000	L1	ON	9.9
0.519394	34.02	---	56.00	21.98	1000.0	9.000	N	ON	9.6
0.526856	---	23.51	46.00	22.49	1000.0	9.000	N	ON	9.6
0.594019	---	16.36	46.00	29.64	1000.0	9.000	L1	ON	9.8
0.594019	28.21	---	56.00	27.79	1000.0	9.000	L1	ON	9.8
3.037988	---	30.26	46.00	15.74	1000.0	9.000	L1	ON	9.8
3.037988	37.62	---	56.00	18.38	1000.0	9.000	L1	ON	9.8
3.444694	38.34	---	56.00	17.66	1000.0	9.000	L1	ON	9.8
3.444694	---	30.82	46.00	15.18	1000.0	9.000	L1	ON	9.8

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*****