TEST REPORT

No. I17D00232-EMC01

For

Client : LongSung Technology (Shanghai) Co.,Ltd.

Production: LTE module

Model Name : U9507A

Hardware Version: A4

Software Version: QB40007.1.0_MX11

FCC ID: XHZU9507A

Issued date: 2017-11-16

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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Revision Version

Report Number	Revision	Date	Memo
I17D00232-EMC01	00	2017-11-16	Initial creation of test report

CONTENTS

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℃
Relative Humidity:	30-60%RH

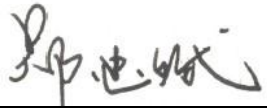
1.3. Project data

Project Leader:	Zhou Yan
Testing Start Date:	10-30,2017
Testing End Date:	11-06,2017

1.4. Signature

Qin Yabin
(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:	LongSung Technology (Shanghai) Co.,Ltd.
Address :	Room 606, Block B, Bldg. 1, No. 3000 Longdong Avenue., Zhangjiang Hi-Tech Park, Pudong District, Shanghai, P.R. China
Telephone:	021-50809688
Postcode:	/

2.2. Manufacturer Information

Company Name:	LongSung Technology (Shanghai) Co.,Ltd.
Address :	Room 606, Block B, Bldg. 1, No. 3000 Longdong Avenue., Zhangjiang Hi-Tech Park, Pudong District, Shanghai, P.R. China
Telephone:	021-50809688
Postcode:	/

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

3.1. About EUT

EUT Description	LTE module
Model name	U9507A
GSM Frequency Band	GSM850/GSM1900
WCDMA Frequency Band	WCDMA BAND Ⅱ/Ⅵ/Ⅴ
LTE Frequency Band	LTE FDD Band 2/4/5/12/13/17/28
Additional Communication Function	GPS

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N04	865865030000889	A4	QB40007.1.0_MX11	2017-10-30

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN
S06	PCB	LEVT01A2	E9300061678102248
EB10	Antenna	/	/
EA23	RF Cable	/	/
AE1	DC Power Supply	PS-305DM	/

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

4. Reference Documents

4.3. 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	2014

5. Test Results

5.3. Summary of Test Results

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

5.4. Statements

The U9507A, manufactured by LongSung Technology (Shanghai) Co.,Ltd. is a new product for testing. ECIT 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	123126	R&S	2017-05-11	1 Year
2	Test Receiver	ESU40	100307	R&S	2017-05-11	1 Year
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-02-25	3 Year
4	Double Ridged Guide	ETS-3117	00135890	ETS	2017-01-11	3 Year
5	EMI Test Software	EMC32 V9.15	NA	R&S	NA	NA

6.1 AC Conducted Emission Equipments list

No.	Name	Type	Series Number	Producer	Cal. Date	Cal. interval
1	Universal Radio	CMU200	123123	R&S	2017-05-11	1 Year
2	Test Receiver	ESCI	101235	R&S	2017-05-11	1 Year
3	2-Line V-Network	ENV216	101380	R&S	2017-05-11	1 Year
4	EMI Test Software	EMC32 V9.12	NA	R&S	NA	NA

7. System Configuration during Test

7.1 Test Mode

Test Item	Function Type
AC Conducted Emission	Mode 1: Working mode <Figure 1>
Radiated Emission	Mode 1: Working mode <Figure 1>
Remark: 1. All test modes are performed, only the worst cases test data are recorded in this report. 2. The EUT maintains the working state through the DC Power Supply (DC 3.4V)	

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 C63.4-2014, 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	Auto
1000-12750	1MHz/3MHz	Auto

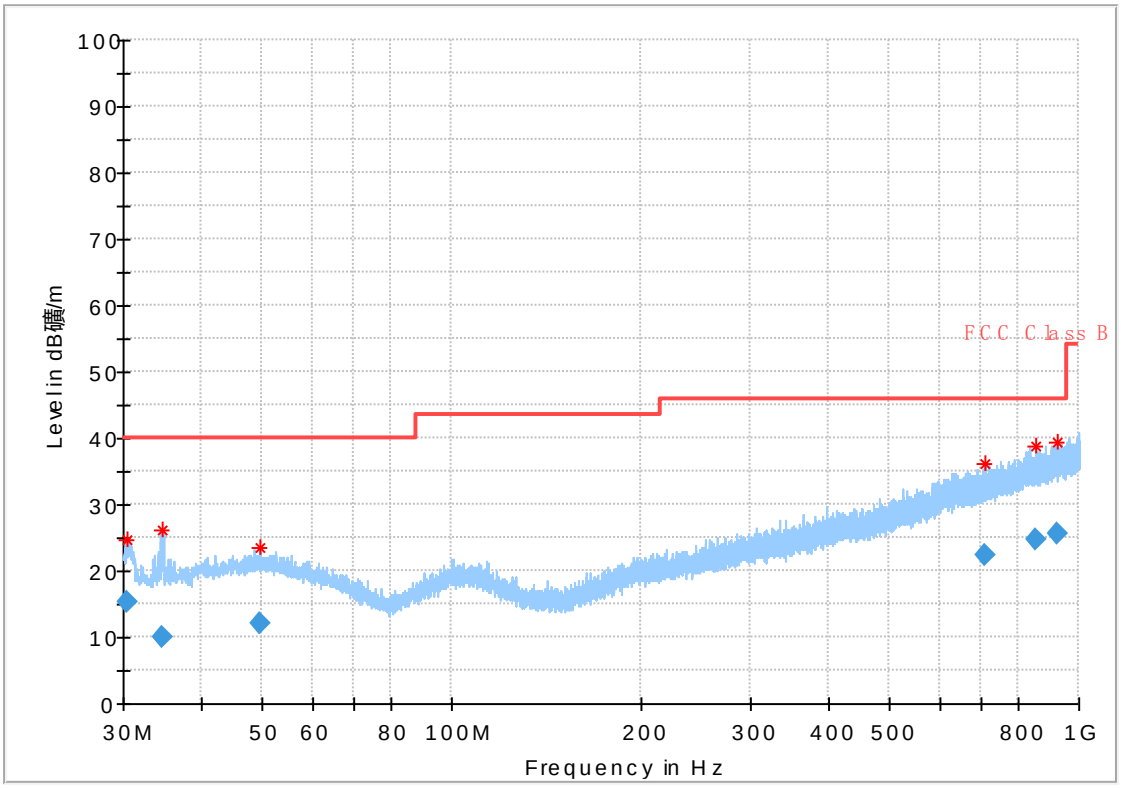
Uncertainty Measurement

The measurement uncertainty is 5.48dB (30 MHz -1000MHz) and 5.20dB（1 GHz -12.75GHz） (k=2)

Test Results

Mode 1: Working mode

Frequency Range:	30MHz – 1GHz



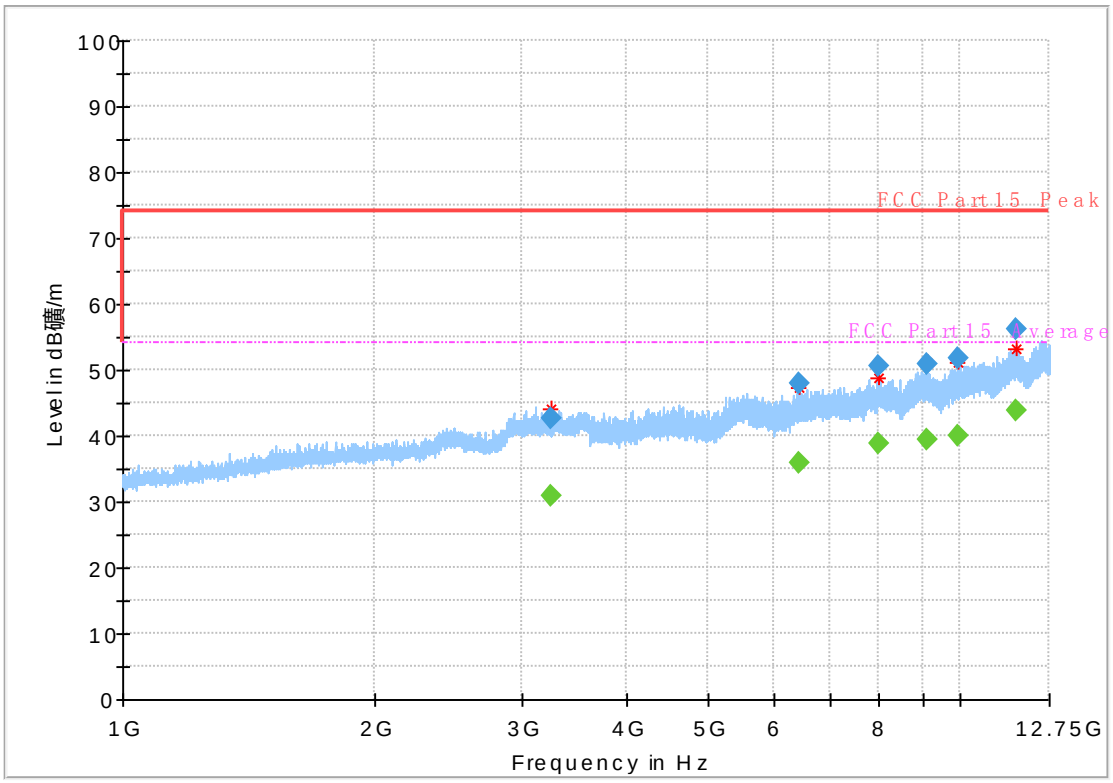
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.478555	15.26	40.00	24.74	1000.0	120.000	281.0	H	159.0	-12.3
34.538163	10.07	40.00	29.93	1000.0	120.000	100.0	V	111.0	-11.9
49.464293	11.96	40.00	28.04	1000.0	120.000	125.0	H	53.0	-9.1
710.336029	22.26	46.00	23.74	1000.0	120.000	106.0	V	283.0	3.0
856.000528	24.60	46.00	21.40	1000.0	120.000	314.0	V	-30.0	5.2
921.914384	25.65	46.00	20.35	1000.0	120.000	275.0	V	169.0	6.2

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: Working mode

Frequency Range:	1GHz –12.75GHz, Vertical



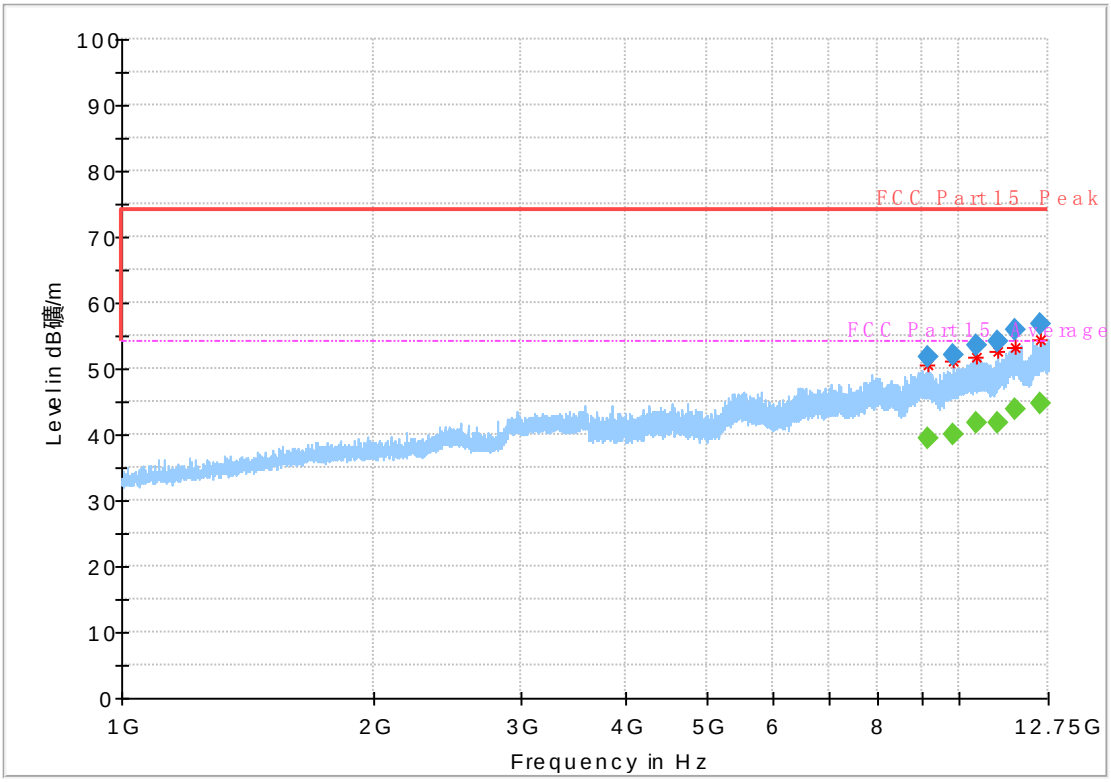
Final Result

Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
3243.916800	42.68	---	74.00	31.32	50.0	1000.000	200.0	V	294.0	-0.8
3243.916800	---	30.78	54.00	23.22	50.0	1000.000	200.0	V	294.0	-0.8
6411.184067	47.84	---	74.00	26.16	50.0	1000.000	100.0	V	258.0	5.7
6411.184067	---	35.96	54.00	18.04	50.0	1000.000	100.0	V	258.0	5.7
7977.009467	50.47	---	74.00	23.53	50.0	1000.000	200.0	V	287.0	9.3
7977.009467	---	38.91	54.00	15.09	50.0	1000.000	200.0	V	287.0	9.3
9138.749200	---	39.52	54.00	14.48	50.0	1000.000	200.0	V	63.0	10.4
9138.749200	50.93	---	74.00	23.07	50.0	1000.000	200.0	V	63.0	10.4
9936.706800	51.89	---	74.00	22.11	50.0	1000.000	200.0	V	0.0	11.2
9936.706800	---	40.08	54.00	13.92	50.0	1000.000	200.0	V	0.0	11.2
11649.574266	---	43.77	54.00	10.23	50.0	1000.000	200.0	V	19.0	15.2
11649.574266	56.11	---	74.00	17.89	50.0	1000.000	200.0	V	19.0	15.2

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.
3. Margin=limit value – emission level.

Frequency Range:	1GHz –12.75GHz, Horizontal



Final Result

Frequency (MHz)	MaxPeak (dBuV/m	Average (dBuV/m	Limit (dBuV/m	Margin (dB)	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
9143.749666	51.71	---	74.00	22.29	50.0	1000.000	300.0	H	71.0	10.4
9143.749666	---	39.50	54.00	14.50	50.0	1000.000	300.0	H	71.0	10.4
9827.574134	52.05	---	74.00	21.95	50.0	1000.000	100.0	H	307.0	11.1
9827.574134	---	40.00	54.00	14.00	50.0	1000.000	100.0	H	307.0	11.1
10484.360333	53.41	---	74.00	20.59	50.0	1000.000	200.0	H	22.0	13.1
10484.360333	---	41.86	54.00	12.14	50.0	1000.000	200.0	H	22.0	13.1
11111.323000	54.05	---	74.00	19.95	50.0	1000.000	200.0	H	232.0	13.4
11111.323000	---	41.73	54.00	12.27	50.0	1000.000	200.0	H	232.0	13.4
11666.273400	55.75	---	74.00	18.25	50.0	1000.000	300.0	H	263.0	15.1
11666.273400	---	43.70	54.00	10.30	50.0	1000.000	300.0	H	263.0	15.1
12494.612800	56.80	---	74.00	17.20	50.0	1000.000	100.0	H	-11.0	16.5
12494.612800	---	44.80	54.00	9.20	50.0	1000.000	100.0	H	-11.0	16.5

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.
3. Margin=limit value – emission level.

8.2 AC 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 C63.4-2014, section 7.3

Limit of AC 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	Auto

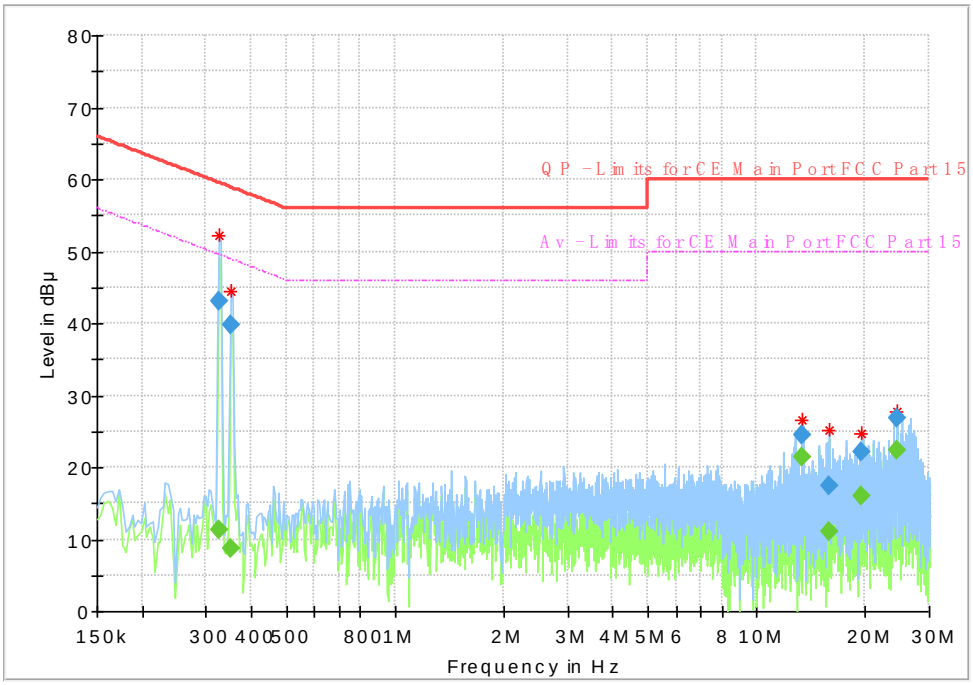
Uncertainty Measurement

The measurement uncertainty is 3.68dB (k=2).

Test Results

Mode 1: Working mode

Frequency Range:	150kHz – 30MHz



Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ V)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.325369	43.01	---	59.57	16.56	1000.0	9.000	N	ON	9.7
0.325369	---	11.40	49.57	38.17	1000.0	9.000	N	ON	9.7
0.351488	39.84	---	58.93	19.09	1000.0	9.000	L1	ON	9.6
0.351488	---	8.76	48.93	40.17	1000.0	9.000	L1	ON	9.6
13.358625	24.39	---	60.00	35.61	1000.0	9.000	L1	ON	9.8
13.358625	---	21.30	50.00	28.70	1000.0	9.000	L1	ON	9.8
15.858562	17.40	---	60.00	42.60	1000.0	9.000	L1	ON	9.8
15.858562	---	11.08	50.00	38.92	1000.0	9.000	L1	ON	9.8
19.466681	---	16.08	50.00	33.92	1000.0	9.000	N	ON	10.0
19.466681	22.22	---	60.00	37.78	1000.0	9.000	N	ON	10.0
24.533719	---	22.42	50.00	27.58	1000.0	9.000	N	ON	10.0
24.533719	26.90	---	60.00	33.10	1000.0	9.000	N	ON	10.0

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.
4. L1 and N line is all have been tested , the result of them is synthesized in the above data diagram.

**********END OF REPORT**********