

FCC - TEST REPORT

Report Number : **68.760.15.658.01** Date of Issue: October 30 2015

Model : **Le Max**

Product Type : TD LTE digital mobile phone

Applicant : Lemobile Information Technology (Beijing) Co., Ltd

Address : WENHUAYING NORTH (No.1, LINKONG 2nd St), GAOLIYING,
SHUNYI DISTRICT, BEIJING, China

Production Facility : MAINTEK COMPUTER (SUZHOU) CO LTD

Address : NO. 233, JIN FENG ROAD, NEW DISTRICT, SUZHOU, CHINA

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including Appendices : 21

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1:

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
Shenzhen City, 518052,
P. R. China

FCC Registration No.: 502708

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

Test Site 2:

Company name: Shenzhen Academy of Metrology and Quality Inspection
National Digital Electronic Product Testing Center
NETC Building, No.4 Tongfa Rd., Xili,
Nanshan, Shenzhen,
China

FCC Registration Number: 97379(open area test site) and
274801(semi anechoic chamber).

Telephone: +86 755 8692 8965
Fax: +86 755 8600 9898-31396

Remark: All test items were performed at Site 2.

3 Description of the Equipment Under Test

Product: TD LTE digital mobile phone

Model no.: Le Max

FCC ID: 2AFWMLEMAX

Brand Name: Letv

Rating: DC 3.8V by Li-ion Battery or DC 5.0V/2A by adapter
Powered by external power supply:
Adaptor Input: 100-240VAC, 50/60Hz; 500mA
Adaptor Output: 5.0V, 2A

Description of the EUT: Class B Equipment

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B 10-1-2014 Edition	Unintentional Radiators

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart B 10-1-2014 Edition				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Conducted Emission on AC 150kHz to 30MHz	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emission 30MHz to 1000MHz	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emission 1GHz to 6GHz	17	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 General Remarks

Remarks

NIL

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: September 6, 2015

Testing Start Date: September 7, 2015

Testing End Date: October 27, 2015

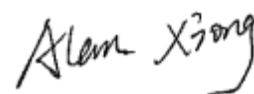
- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:

Prepared by:



John Zhi
EMC Project Manager



Alan Xiong
EMC Project Engineer

7 Systems test configuration

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Configuration List:

TEST MODE	DESCRIPTION	REMARK
TM1	Playing Mode	N/A
TM2	REC Mode	N/A
TM3	Data transmitter	Connect to PC

Remark: We test all modes and worse case recorded in the report.

Auxiliary Equipment Used during Test:

Name	Model No	S/N	Manufacturer	FCC
Computer	9439	L3BDF2K	Lenovo	DOC
Keyboard (USB)	SK-8825 (L)	02553778	Lenovo	DOC
Mouse (USB)	MO28UOL	4418011108	Lenovo	DOC
Monitor	9227-AE1	V1TDB38	Lenovo	DOC
Printer	BJC-265SP	EVX81604	CANON	DOC
Adaptor for Printer	AD-300	---	CANON	DOC
Adaptor for EUT	DDC-0001	---	Gionee Communication Equipment Co.,Ltd	---

The EUT has been tested under two frequencies of input voltage (50Hz, 60Hz), the worst test result are listed in the report.

8 Technical Requirement

8.1 Conducted Emission Test

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

According to §15.107, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

Conducted Emission Test 150kHz – 30MHz

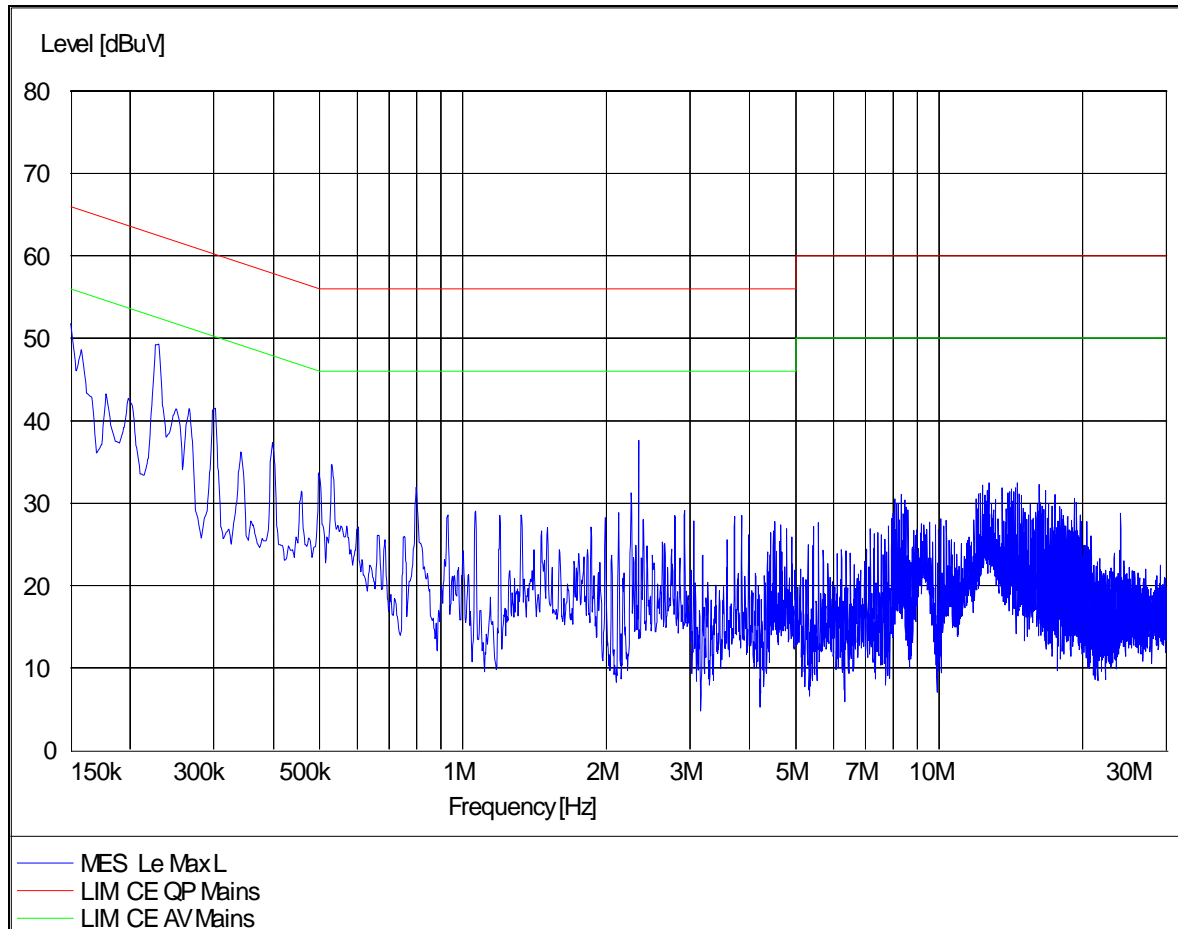
Product Type: TD LTE digital mobile phone

M/N: Le Max

Operating Condition: TM3; Data Transmitter Mode

Test Specification: Power Line, Live

Comment: AC 120V/50Hz



Conducted Emission Test 150kHz – 30MHz

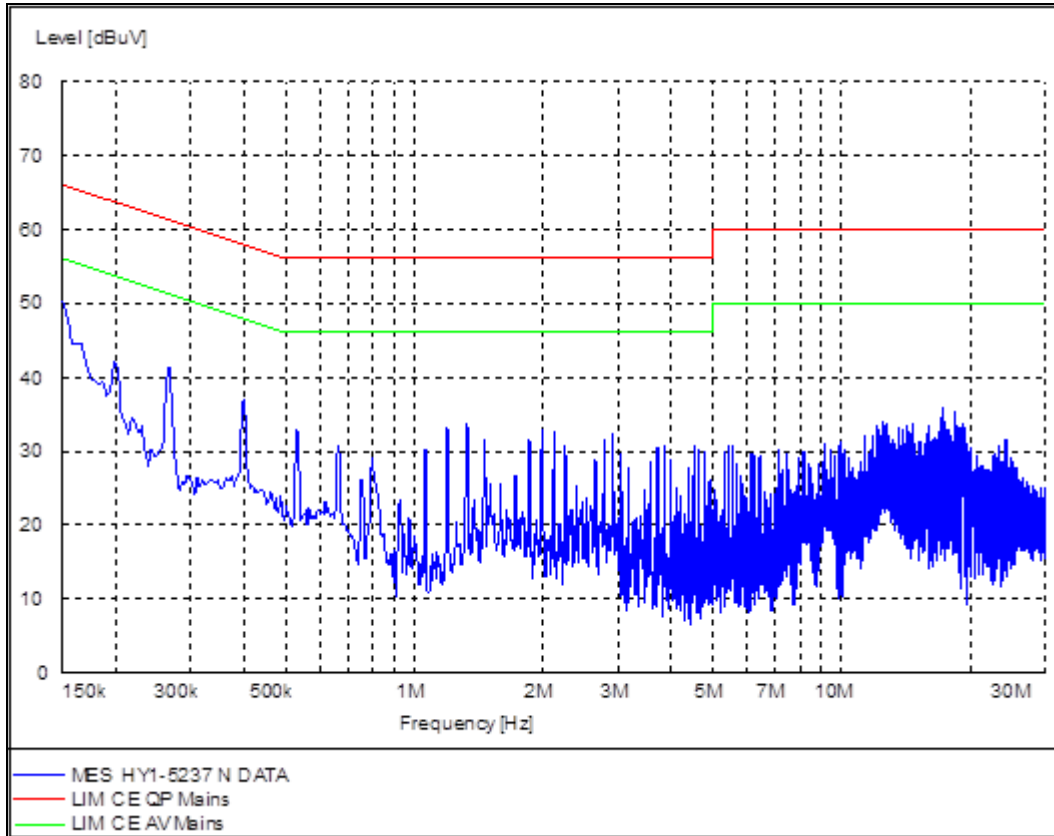
Product Type: TD LTE digital mobile phone

M/N: Le Max

Operating Condition: TM3; Data Transmitter Mode

Test Specification: Power Line, Neutral

Comment: AC 120V/50Hz



Conducted Emission Test 150kHz – 30MHz

Conducted Disturbance Test Data at mains Port

Model No.: Le Max								
Test mode: data transmitter with PC by USB port								
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dB μ V)	Emission Level (dB μ V)	Limits (dB μ V)	Reading (dB μ V)	Emission Level (dB μ V)	Limits (dB μ V)
Line	0.15	9.7	28.1	37.8	66	17.0	26.7	56
	0.226	9.7	37.9	47.6	62.6	37.8	47.5	52.6
	2.332	9.9	21.7	31.6	56	14.6	24.5	46
Neutral	0.15	9.7	26.0	35.71	66	16.0	25.69	56
	0.226	9.7	37.8	47.5	62.6	37.6	47.3	52.6
	0.4	9.7	25.9	35.6	57.9	25.4	35.1	47.9

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
 3. The other emission levels were are more than 20dB below the limits.

Test Equipment List**Conducted emission test**

No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB3319	EMI Test Receiver	R&S	ESCS30	Dec.20,2014	1 Year
SB4357	AMN	R&S	ENV216	Oct.14,2014	1 Year
SB3321	AMN	R&S	ESH2-Z5	Jan.19,2015	1 Year
---	Conducted Emissions Cable set	HUBER+SUHNER	FAC X3/AP1	Dec.20,2014	1 Year

8.2 Radiated Emission Test

Test Method

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
3. Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured, RBW = 1 MHz for $f \geq 1\text{GHz}$, 100 kHz for $f < 1\text{GHz}$, VBW \geq RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Follow the guidelines in ANSI C63.4-1992 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc.
The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

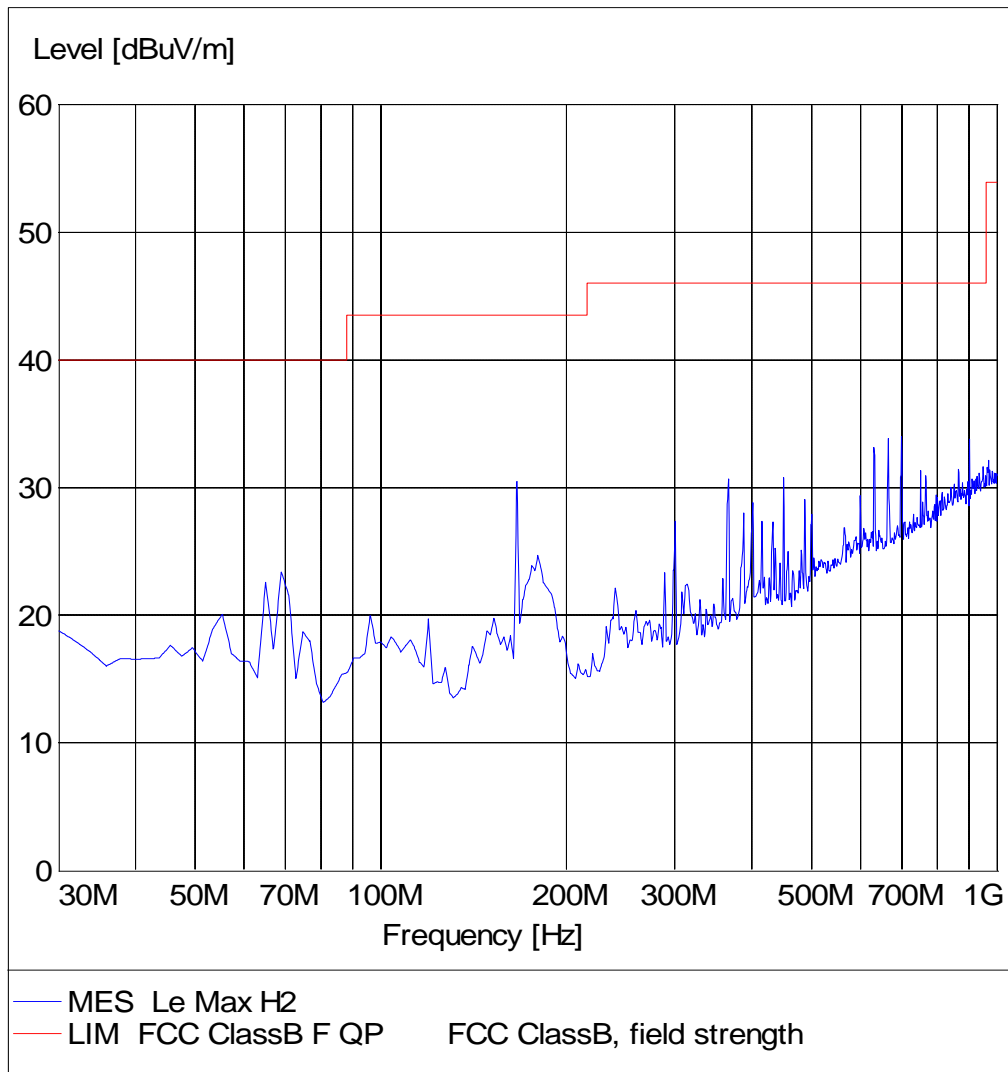
Limit

According to §15.109, conducted emissions limit as below:

Frequency MHz	Field Strength uV/m	Field Strength dB μ V/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

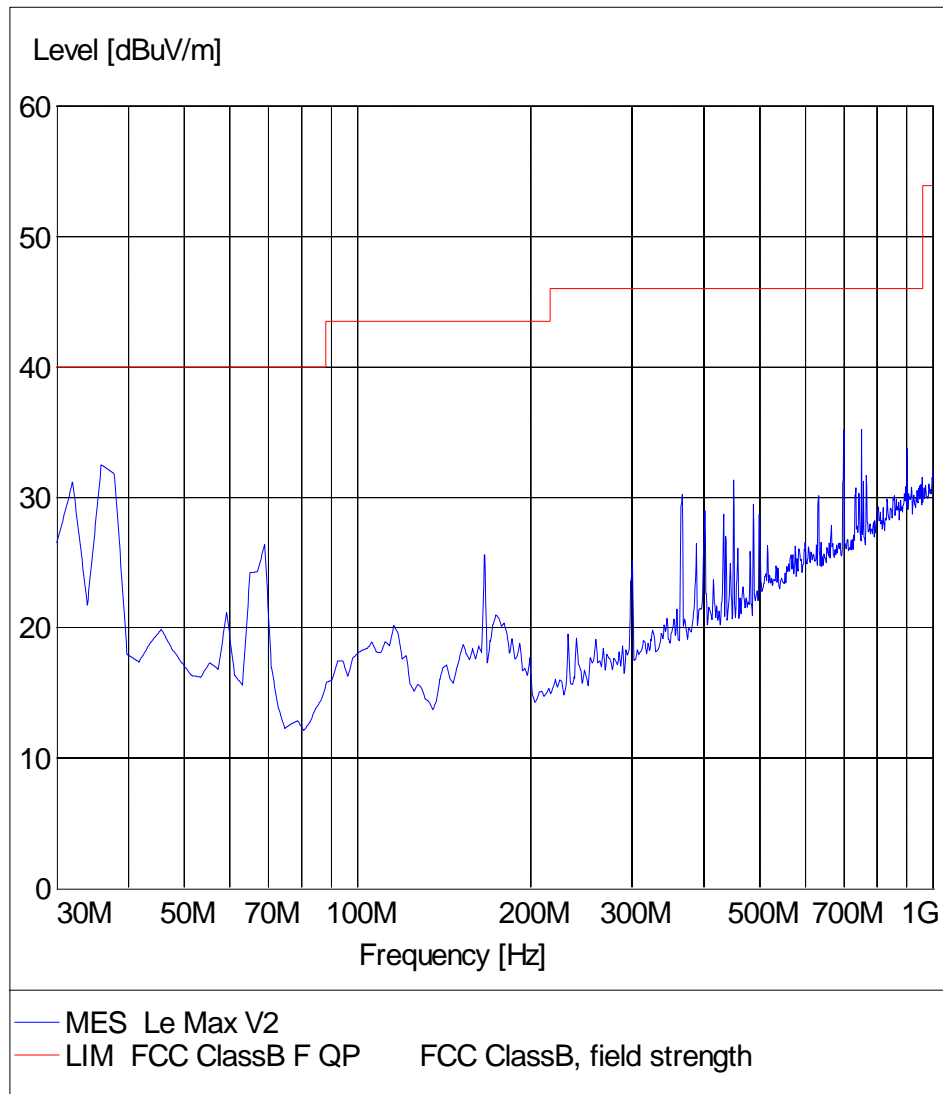
8.2.1 Radiated Emission Test 30MHz – 1000MHz

Product Type : TD LTE digital mobile phone
M/N : Le Max
Operating Condition : TM3; Data Transmitter Mode
Ant. Polarity : Horizontal
Comment : 30-1000MHz



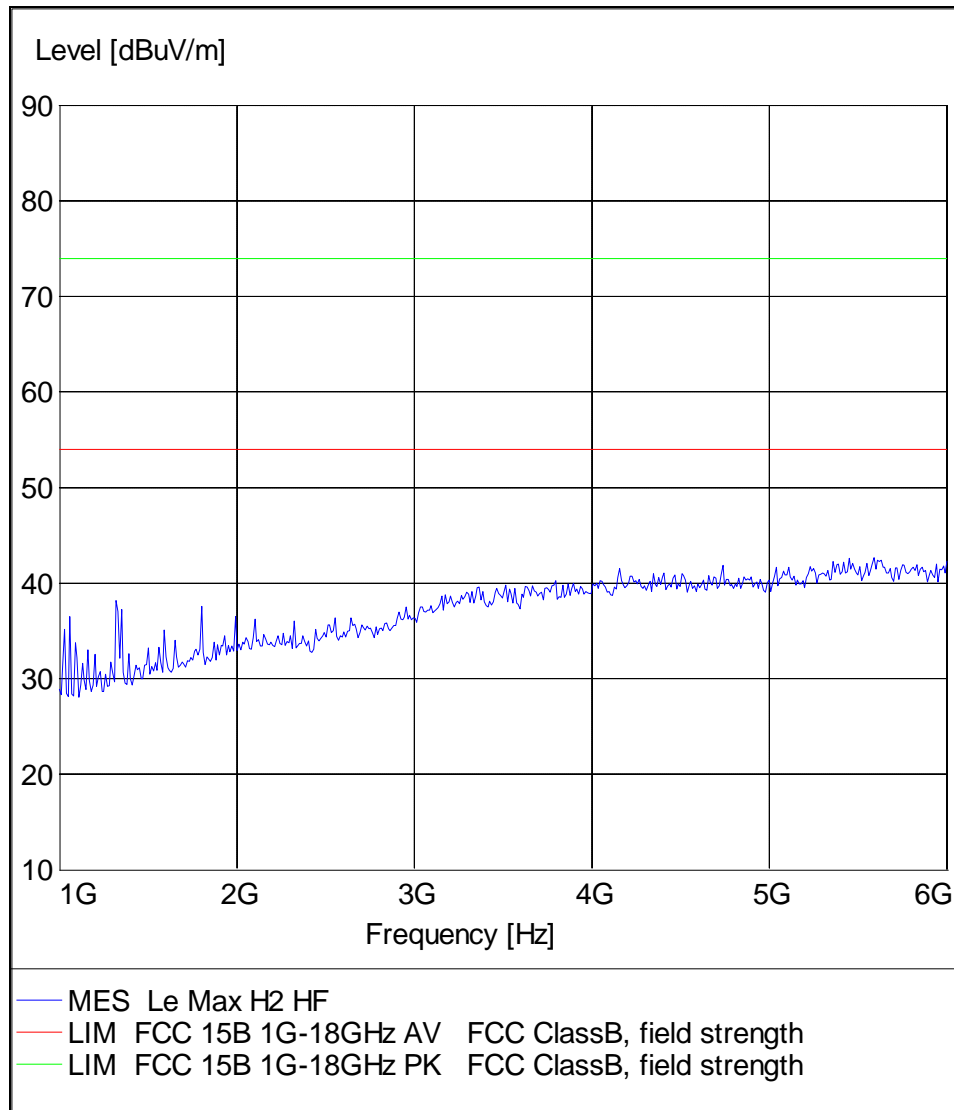
Radiated Emission Test 30MHz – 1000MHz

Product Type : TD LTE digital mobile phone
M/N : Le Max
Operating Condition : TM3; Data Transmitter Mode
Ant. Polarity : Vertical
Comment : 30-1000MHz



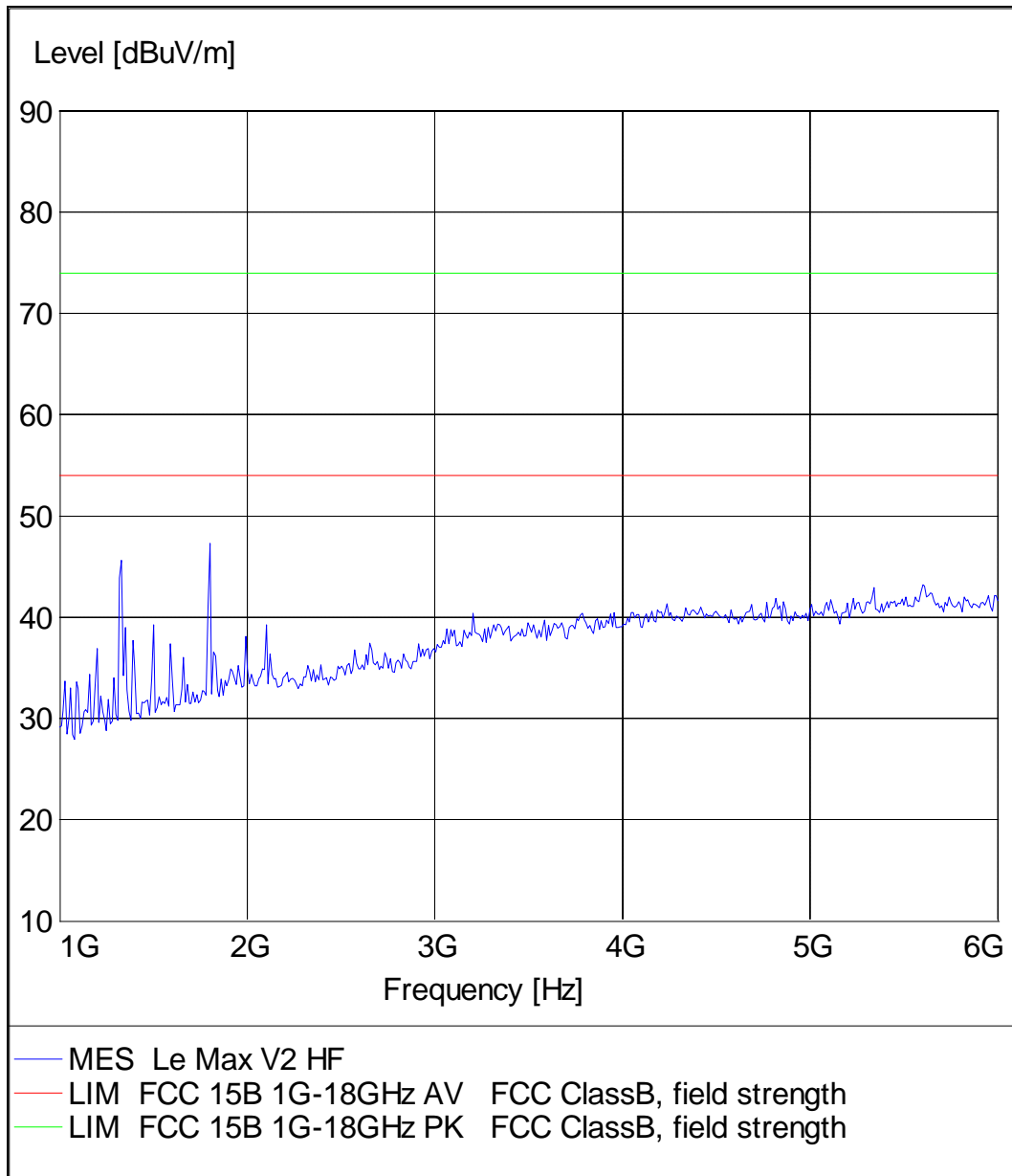
8.2.2 Radiated Emission Test 1GHz – 6GHz

Product Type : TD LTE digital mobile phone
M/N : Le Max
Operating Condition : TM3; Data Transmitter Mode
Ant. Polarity : Horizontal
Comment : Above 1GHz



Radiated Emission Test 1GHz – 6GHz

Product Type : TD LTE digital mobile phone
M/N : Le Max
Operating Condition : TM3; Data Transmitter Mode
Ant. Polarity : Vertical
Comment : Above 1GHz



Radiated Disturbance Test Data

Frequency MHz	Cable Loss +pre amp(dB)	Antenna Factor (dB)	Readings (dBμV/m)	Level (dBμV/m)	Polarity (H/V)	Turntable Angle(deg)	Antenna Height (m)	Limits (dBμV/m)	Margin (dB)
68.877	0.9	10.7	9.5	21.1	H	30	1.0	40.0	18.9
166.072	1.5	8.7	14.6	24.8	H	0	1.0	43.5	18.7
449.879	2.6	15.6	6.3	24.5	H	90	1.0	46.0	21.5
630.661	3.2	18.5	9.4	31.1	H	60	1.0	46.0	14.9
665.651	3.1	18.5	10.2	31.8	H	110	1.0	46.0	14.2
698.697	3.3	18.5	10.8	32.6	H	90	1.0	46.0	13.4
31.943	0.6	12.3	14.0	26.9	V	0	1.0	40	13.1
35.831	0.6	12.3	17.3	30.2	V	80	1.0	40	9.8
449.879	2.6	15.6	9.6	27.8	V	30	1.0	46	18.2
700.641	3.3	18.8	11.2	33.3	V	0	1.0	46	12.7
751.182	3.5	18.8	10.4	32.7	V	60	1.0	46	13.3
900.861	3.9	21.1	6.9	31.9	V	0	1.0	46	14.1
PK									
1030.100	-41.1	24.4	52.6	35.9	H	0	1.0	74	38.1
1060.012	-41.1	24.4	53.3	36.6	H	40	1.0	74	37.4
1090.018	-41.0	24.4	51.0	34.4	H	50	1.0	74	39.6
1320.641	-40.8	24.3	55.6	39.1	H	110	1.0	74	34.9
1350.700	-40.8	24.3	53.7	37.2	H	80	1.0	74	36.8
1801.600	-40.5	26.9	51.4	37.8	H	120	1.0	74	36.2
1200.040	-40.9	24.3	53.5	36.9	V	80	1.0	74	37.1
1330.500	-40.8	24.3	63.4	46.9	V	30	1.0	74	27.1
1390.750	-40.8	24.3	54.4	37.9	V	0	1.0	74	36.1
1501.002	-40.8	25.1	55.6	39.9	V	90	1.0	74	34.1
1590.180	-40.6	25.1	53.0	37.5	V	100	1.0	74	36.5
1801.600	-40.5	26.9	61.2	47.6	V	30	1.0	74	26.4
AV									
1030.100	-41.1	24.4	35.0	18.3	H	0	1.0	54	35.7
1060.012	-41.1	24.4	35.9	19.2	H	40	1.0	54	34.8
1090.018	-41.0	24.4	32.6	16	H	50	1.0	54	38.0
1320.641	-40.8	24.3	39.8	23.3	H	110	1.0	54	30.7
1350.700	-40.8	24.3	34.4	17.9	H	80	1.0	54	36.1
1801.600	-40.5	26.9	35.1	21.5	H	120	1.0	54	32.5
1200.040	-40.9	24.3	36.9	20.3	V	80	1.0	54	33.7
1330.500	-40.8	24.3	42.1	25.6	V	30	1.0	54	28.4
1390.750	-40.8	24.3	39.5	23.0	V	0	1.0	54	31.0
1501.002	-40.8	25.1	41.8	26.1	V	90	1.0	54	27.9
1590.180	-40.6	25.1	37.3	21.8	V	100	1.0	54	32.2
1801.600	-40.5	26.9	38.5	24.9	V	30	1.0	54	29.1

1. Emission level(dBuV)=Read Value(dBuV/m) + Antenna Factor(dB)+ Cable Loss +pre amp(dB)

Test Equipment List

Radiated Emission Test

No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB3436	EMI Test Receiver	Rohde & Schwarz	ESI26	Dec.29,2014	1 Year
SB5472/02	Bilog Antenna	SCHWARZBECK	VULB9163	Jan.18,2015	1 Year
SB9422/16	Horn Antenna	Rohde & Schwarz	HF907	May.19.2015	1Year
----	Radiated Emissions Cable set	HUBER+SUHNER	---	Jan.19, 2015	1 Year
---	Radiated Emissions Cable set	HUBER+SUHNER	---	Jan.19, 2015	1 Year
SB8501/17	Preamplifier	Rohde & Schwarz	SCU-18	Mar.27, 2015	1 Year
SB8501/16	Preamplifier	Rohde & Schwarz	SCU-26	Mar.27, 2015	1 Year

9 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz	3.50dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	4.5dB
Uncertainty for Radiated Emission in 3m chamber 1000MHz-26500MHz	4.6dB