

## 47 CFR PART 15 SUBPART B

# TEST REPORT

of

### CDMA 800MHz Fixed Wireless Phone

Model Name: L100

Trade Name: ATEL

Brand Name: ATEL

Report No: SH12020013E01

*prepared for*

AsiaTelco Technologies Co.

#289 Bisheng Road, Building-8,3F,Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China

*prepared by*

Shenzhen Electronic Product Quality Testing Center

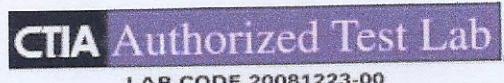
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# 1 TEST CERTIFICATION

Equipment under Test: CDMA 800MHz Fixed Wireless Phone

Trade Name: ATEL

Brand Name: ATEL

Model Name: L100

Applicant: AsiaTelco Technologies Co.

Applicant Address: #289 Bisheng Road, Building-8,3F,Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China

Manufacturer: AsiaTelco Technologies Co.

Manufacturer Address: #289 Bisheng Road, Building-8,3F,Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China

Test Standards: 47 CFR Part 15 Subpart B

Test Date(s): 2012. 1.10-2012. 1.13

Test Result: PASS

## \* We Hereby Certify That:

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by:

*Zhang Wenjie* ..... Dated: ..... 2012-2-13 .....  
Zhang Wenjie

Reviewed by:

*Zhang Jun* ..... Dated: ..... 2012. 2. 13 .....  
Zhang Jun

Approved by:

*Wei Bei* ..... Dated: ..... 2012. 2. 13 .....  
Wei Bei

## 2 GENERAL INFORMATION

### 2.1 EUT Description

EUT Type .....	CDMA 800MHz Fixed Wireless Phone
FCC ID.....	XYOGC159132
Hardware Version.....	328_HW
Software Version .....	6681_M_1.94.67_1_6T
Frequency.....	CDMA 800
Power supply .....	Battery
	Model No.: BL-5C
	Brand Name: Asiatelco Technologies Co.
	Capacitance: 900mAh
	Rated Voltage: 3.7V
	Charge Limit: 4.2V
	Manufacturer: Asiatelco Technologies Co.
Ancillary Equipment .....	Charger for Battery
	Model No.: XHC-01
	Brand Name: XHC
	Rated Input: AC 110-240V 240A 50/60Hz
	Rated Output: DC 5V, 500mA
	Manufacturer: Shenzhen shajing xinhecheng electronic factory

#### NOTE:

1. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

## 2.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	15.107	Conducted Emission	PASS
2	15.109	Radiated Emission	PASS
3	ANSI C63.4-2003	Radiated Emission	PASS

## 2.3 Facilities and Accreditations

### 2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Laboratories (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

### 2.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 – 25
Relative Humidity (%):	40 – 60
Atmospheric Pressure (kPa):	102

### 3 TEST CONDITIONS SETTING

#### 3.1 Test Mode

1. During the measurement, the CDMA radio is working. The test modes of the EUT are showed as below:

- (1) Traffic operating CDMA 1xRTT mode EUT+USB line +PC

The EUT configuration of the emission tests is EUT + USB line +PC

A communication link was established between the EUT and a System Simulator (SS).

And EUT connect to PC by usb line in a situation of data transmission .

The EUT operated at CDMA PCS mid ARFCN (600) and maximum output power (All up bit).

- (2) Idle operating mode EUT+USB line +PC

The EUT configuration of the emission tests is EUT + USB line +PC

The EUT was registered to the base station simulator but no call was set up.

And EUT connect to PC by usb line in a situation of data transmission

Note: All test modes are performed, only the worst cases are recorded in this report.

Note: In the Conducted Emission, the worst cases are operated at CDMA 1xRTT Cellular EUT+USB line +PC(Traffic)

### 3.2 Description Of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

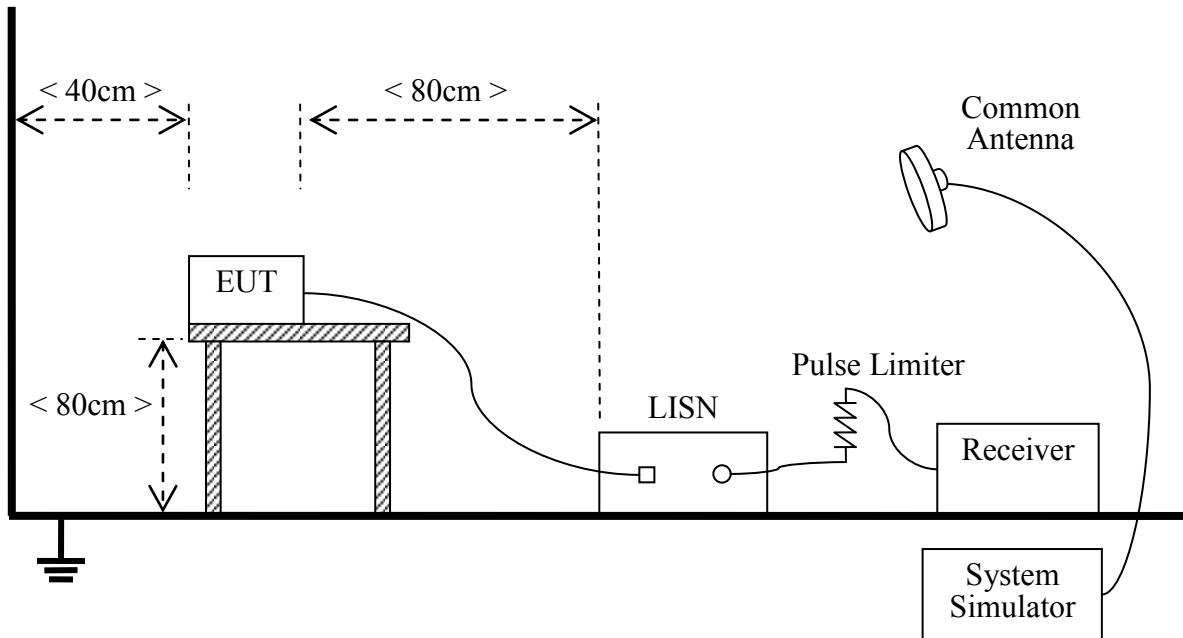
No.	Equipment	Model No.	Serial No.	Trade Name
1	PC	SL400	L3-BBB0A	LENOVO

Note: Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

### 3.3 Test Setup and Equipments List

#### 3.3.1 Conducted Emission

##### A. Test Setup:



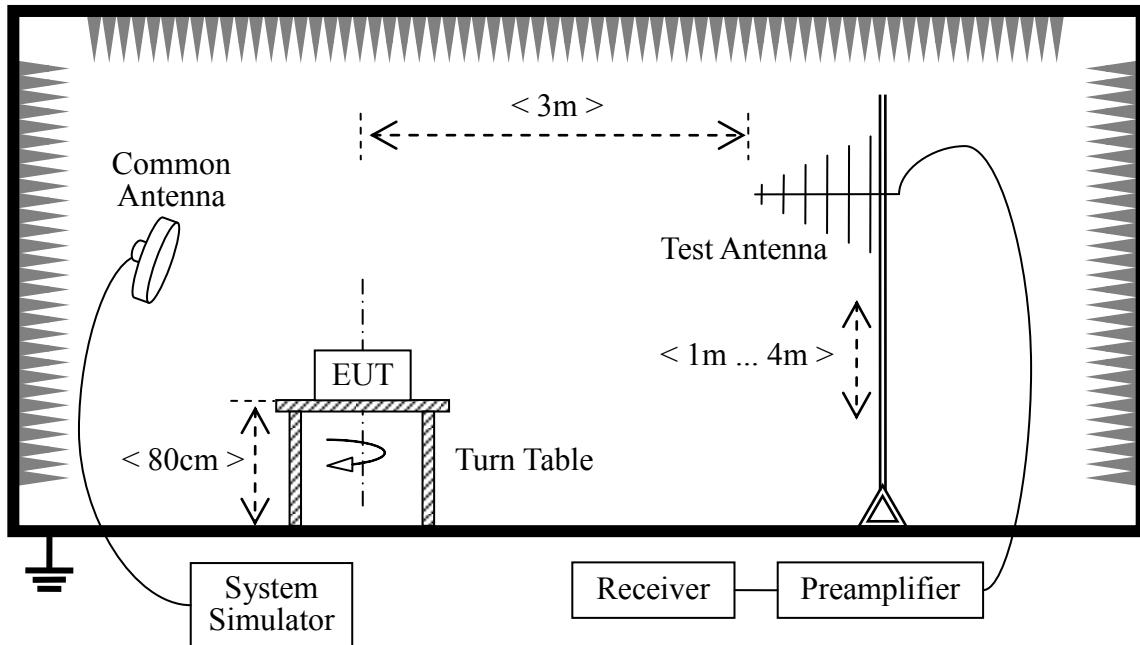
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides  $50\Omega/50\mu\text{H}$  of coupling impedance for the measuring instrument. The Common Antenna is used for the call between the EUT and the System Simulator (SS). A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

##### B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Rohde&Schwarz	ESCI3	100666	2011.09	1year
LISN	Rohde&Schwarz	ENV216	812744	2011.09	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2011.09	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(n.a.)	(n.a.)

### 3.3.2 Radiated Emission

#### A. Test Setup:



The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower. The Common Antenna is used for the call between the EUT and the System Simulator (SS).

#### B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Rohde&Schwarz	ESCI3	100666	2011.09	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2011.09	1year
Test Antenna - Bi-Log	Rohde&Schwarz	HL562	100385	2011.09	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2011.09	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(n.a.)	(n.a.)

## 47 CFR PART 15B REQUIREMENTS

### 4 Conducted Emission

#### 4.1 Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE:

- a) The limit subjects to the Class B digital device.
- b) The lower limit shall apply at the band edges.
- c) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

#### 4.2 Test Description

See section 3.3.1 of this report.

#### 4.3 Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

**A. Test Verdict Recorded for Suspicious Points:**
**1. The EUT with base**

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.545512	52.5	1000.000	9.000	N	9.7	3.5	56	PASS
0.817894	48.3	1000.000	9.000	N	9.7	7.7	56	PASS
1.094006	42.2	1000.000	9.000	N	9.7	13.8	56	PASS
1.37385	36.1	1000.000	9.000	N	9.7	19.9	56	PASS
1.638769	40	1000.000	9.000	N	9.7	16.0	56	PASS
2.743219	31.8	1000.000	9.000	N	9.8	24.2	56	PASS
0.552975	53.2	1000.000	9.000	L	9.7	2.8	56	PASS
0.821625	38.6	1000.000	9.000	L	9.7	17.4	56	PASS
1.101469	40.0	1000.000	9.000	L	9.7	16.0	56	PASS
1.381312	47.6	1000.000	9.000	L	9.7	8.4	56	PASS
3.336488	45.6	1000.000	9.000	L	9.8	10.4	56	PASS
3.605138	39.6	1000.000	9.000	L	9.8	16.4	56	PASS

Frequency (MHz)	Average (dB $\mu$ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.545512	38.6	1000.000	9.000	N	9.7	7.4	46	PASS
0.817894	34.6	1000.000	9.000	N	9.7	11.4	46	PASS
1.094006	27.6	1000.000	9.000	N	9.7	18.4	46	PASS
1.37385	21	1000.000	9.000	N	9.7	25.0	46	PASS
1.635038	29.2	1000.000	9.000	N	9.7	16.8	46	PASS
2.978288	37.2	1000.000	9.000	N	9.8	8.8	46	PASS
0.276862	47	1000.000	9.000	L	9.7	3.7	50.7	PASS
0.552975	42.3	1000.000	9.000	L	9.7	3.7	46	PASS
0.825356	30.9	1000.000	9.000	L	9.7	15.1	46	PASS
1.101469	28.7	1000.000	9.000	L	9.7	17.3	46	PASS
1.381312	33	1000.000	9.000	L	9.7	13.0	46	PASS
3.605138	25.5	1000.000	9.000	L	9.8	20.5	46	PASS

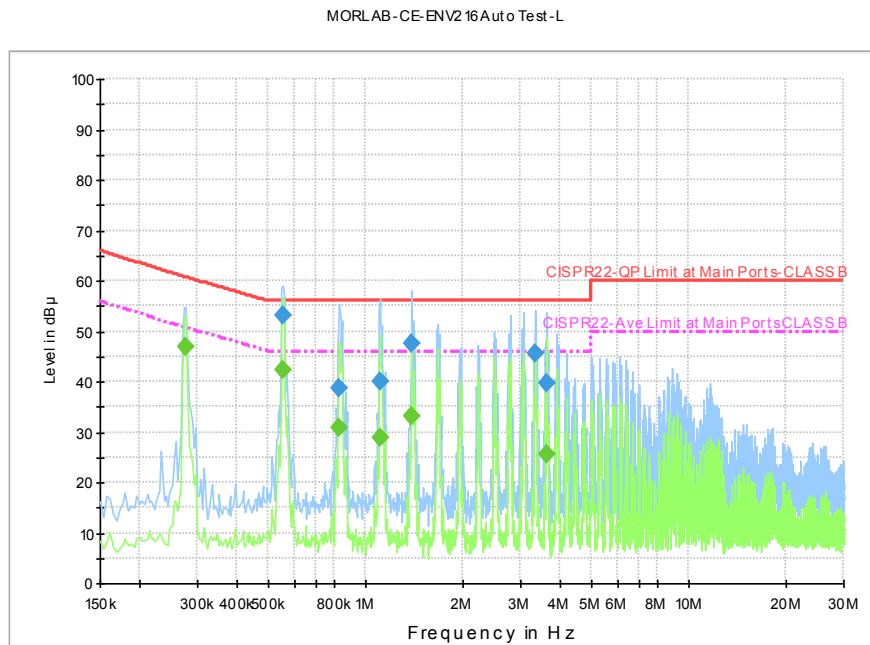
## 2.The EUT without base

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.545512	52.5	1000.000	9.000	N	9.7	3.5	56	PASS
0.817894	48.3	1000.000	9.000	N	9.7	7.7	56	PASS
1.094006	42.2	1000.000	9.000	N	9.7	13.8	56	PASS
1.37385	36.1	1000.000	9.000	N	9.7	19.9	56	PASS
1.638769	40	1000.000	9.000	N	9.7	16.0	56	PASS
2.743219	31.8	1000.000	9.000	N	9.8	24.2	56	PASS
0.552975	53.2	1000.000	9.000	L	9.7	2.8	56	PASS
0.821625	38.6	1000.000	9.000	L	9.7	17.4	56	PASS
1.101469	40.0	1000.000	9.000	L	9.7	16.0	56	PASS
1.381312	47.6	1000.000	9.000	L	9.7	8.4	56	PASS
3.336488	45.6	1000.000	9.000	L	9.8	10.4	56	PASS
3.605138	39.6	1000.000	9.000	L	9.8	16.4	56	PASS

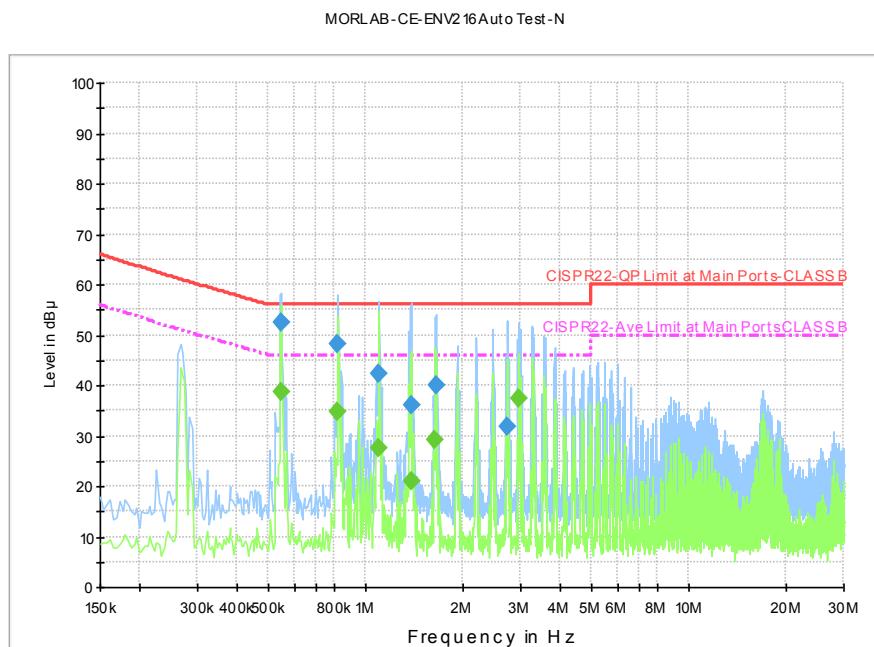
Frequency (MHz)	Average (dB $\mu$ V)	Meas. Time (ms)	Band width (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.545512	38.6	1000.000	9.000	N	9.7	7.4	46	PASS
0.817894	34.6	1000.000	9.000	N	9.7	11.4	46	PASS
1.094006	27.6	1000.000	9.000	N	9.7	18.4	46	PASS
1.37385	21	1000.000	9.000	N	9.7	25.0	46	PASS
1.635038	29.2	1000.000	9.000	N	9.7	16.8	46	PASS
2.978288	37.2	1000.000	9.000	N	9.8	8.8	46	PASS
0.276862	47	1000.000	9.000	L	9.7	3.7	50.7	PASS
0.552975	42.3	1000.000	9.000	L	9.7	3.7	46	PASS
0.825356	30.9	1000.000	9.000	L	9.7	15.1	46	PASS
1.101469	28.7	1000.000	9.000	L	9.7	17.3	46	PASS
1.381312	33	1000.000	9.000	L	9.7	13.0	46	PASS
3.605138	25.5	1000.000	9.000	L	9.8	20.5	46	PASS

## B. Test Plot:

### 1. The EUT with base

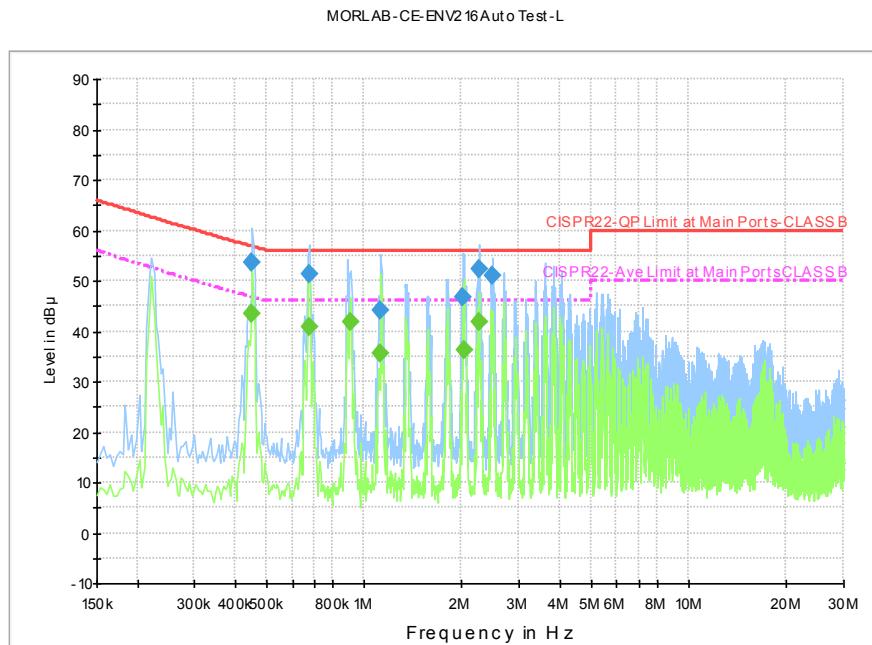


(Plot: L Phase)

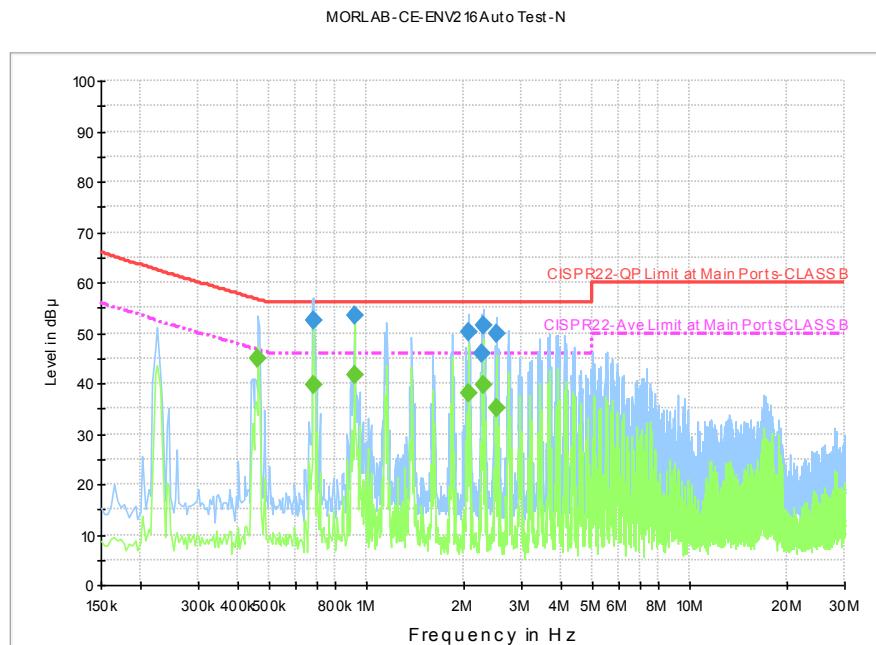


(Plot: N Phase)

## 2.The EUT without base



(Plot: L Phase)



(Plot: N Phase)

## 5 Radiated Emission

### 5.1 Requirement

According to FCC section 15.109, the field strength of radiated emissions from unintentional radiators at a certain distance shall not exceed the following values:

Frequency range (MHz)	Field Strength CLASS B (at 3m)	
	µV/m	dBµV/m
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Frequency range (MHz)	Field Strength CLASS A (at 10m)	
	µV/m	dBµV/m
30 - 88	90	39.0
88 - 216	150	43.5
216 - 960	210	46.4
Above 960	300	49.5

NOTE:

- Field Strength (dBµV/m) =  $20 \cdot \log[\text{Field Strength } (\mu\text{V/m})]$ .
- In the emission tables above, the tighter limit applies at the band edges.

### 5.2 Test Description

See section 3.2.2 of this report.

### 5.3 Test Result

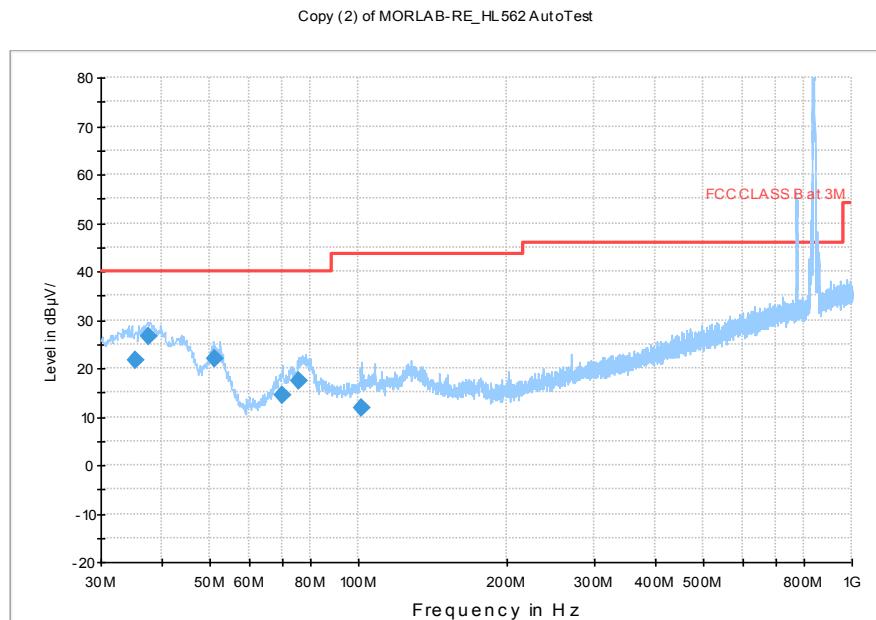
The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

**A. Test Data:**
**1. The EUT with base**

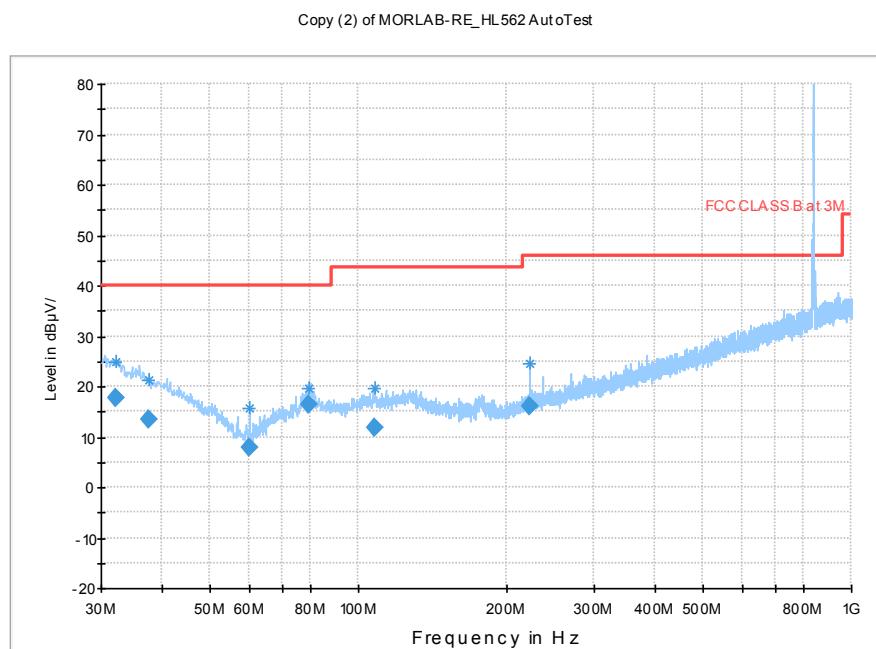
No.	@Frequency (MHz)	Emission Level (dB $\mu$ V/m)		Quasi-Peak Limit (dB $\mu$ V/m)	Margin (dB $\mu$ V/m)	Result
		QP (dB $\mu$ V/m)	Antenna Polarization			
1	35.213750	21.6	V	40.0	18.4	PASS
2	37.638750	26.4	V	40.0	13.6	PASS
3	50.976250	21.9	V	40.0	18.1	PASS
4	69.891250	14.5	V	40.0	25.5	PASS
5	75.590000	17.4	V	40.0	22.6	PASS
6	101.295000	11.7	V	43.5	31.8	PASS
7	79.348750	16.4	H	40.0	23.6	PASS
8	32.182500	17.6	H	40.0	22.4	PASS
9	37.396250	13.5	H	40.0	26.5	PASS
10	59.948750	7.9	H	40.0	32.1	PASS
11	107.842500	11.8	H	43.5	31.7	PASS
12	222.666250	16.0	H	46.0	30.0	PASS

**2. The EUT without base**

No.	@Frequency (MHz)	Emission Level (dB $\mu$ V/m)		Quasi-Peak Limit (dB $\mu$ V/m)	Margin (dB $\mu$ V/m)	Result
		QP (dB $\mu$ V/m)	Antenna Polarization			
1	37.39625	29.6	V	40	10.4	PASS
2	40.54875	25.1	V	40	14.9	PASS
3	45.64125	21.7	V	40	18.3	PASS
4	50.37000	22.0	V	40	18.0	PASS
5	73.16500	20.9	V	40	19.1	PASS
6	79.95500	22.0	V	40	18.0	PASS
7	32.30375	17.5	H	40	22.5	PASS
8	38.60875	14.0	H	40	26.0	PASS
9	59.94875	8.0	H	40	32.0	PASS
10	79.59125	16.1	H	40	23.9	PASS
11	105.17500	14.0	H	43.5	29.5	PASS
12	127.00000	17.1	H	43.5	26.4	PASS

**B. Test Plot:****1. The EUT with base**

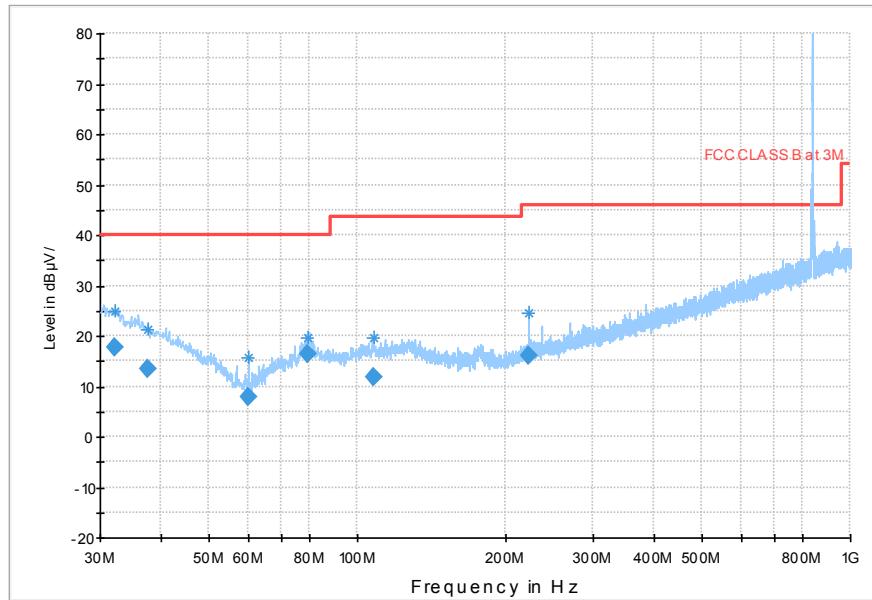
(Plot: Test Antenna Vertical)



(Plot: Test Antenna Horizontal)

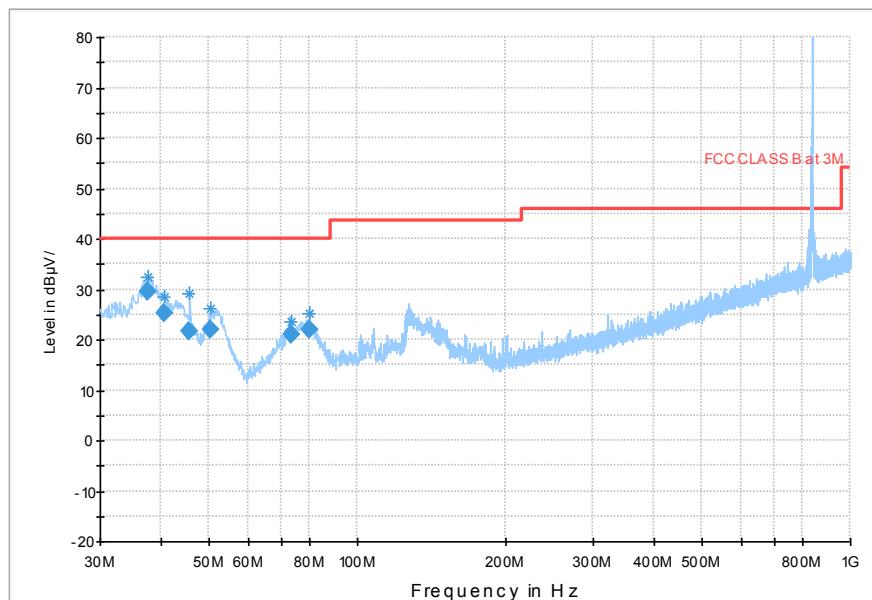
## 2.The EUT without base

Copy (2) of MORLAB-RE\_HL562 AutoTest



(Plot: Test Antenna Vertical)

Copy (2) of MORLAB-RE\_HL562 AutoTest



(Plot: Test Antenna Horizontal)

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