## FCC 47 CFR PART 22H and 24E

# **RF Test Report**

Product Type : LE910-NA V2

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy

Trade Name : Telit

Model Number : LE910-NA V2

Test Specification : FCC 47 CFR PART 22H: Oct, 2014

FCC 47 CFR PART 24E: Oct, 2014

ANSI/TIA/EIA-603-C

Application Purpose : Original

Receive Date : Jun. 04, 2015

Test Period : Jun. 10 ~ 18, 2015

Issue Date : Aug. 03, 2015

Issue by

A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,

Taoyuan County 334, Taiwan R.O.C.

Tel: +886-3-2710188 / Fax: +886-3-2710190





Taiwan Accreditation Foundation accreditation number: 1330

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# **Revision History**

Rev.	Issue Date	Revisions	Revised By
00	Jul. 28, 2015	Initial Issue	
01	Aug. 03, 2015	Revised report information.	Peggy Chang

# Verification of Compliance

Issued Date: 08/03/2015

Product Type : LE910-NA V2

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy

Trade Name : Telit

Model Number : LE910-NA V2

EUT Rated Voltage : DC 3.4V / 3.8V / 4.2V

Test Voltage : DC 3.8V

Applicable Standard : FCC 47 CFR PART 22H: Oct, 2014

FCC 47 CFR PART 24E: Oct, 2014

ANSI/TIA/EIA-603-C

Application Purpose : Original

(Manager)

Test Result : Complied

Performing Lab. : A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,

Taoyuan County 334, Taiwan R.O.C.

Tel: +886-3-2710188 / Fax: +886-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330

http://www.atl-lab.com.tw/e-index.htm

The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 22H, Part 24E.

The test results of this report relate only to the tested sample identified in this report.

Lu) (Testing Engineer)



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# 1 General Information

# 1.1. EUT Description

Applica	ınt	Telit Communications S.p.A.						
Applica	int Address	Viale Stazione di Prosecco 5/B, 34010 Sgonico- Trieste- Italy						
Manufa	acturer	Telit Co	ommunications S.p.A.					
Manufa	acturer Address	Viale S	Stazione di Prosecco 5/B,	34010 Sgonico- Trieste- Ita	aly			
Produc	t Type	LE910	-NA V2					
Trade N	Name	Telit						
Model I	Number	LE910	-NA V2					
Hardwa	are Version	00						
Softwa	re Version	20.00.	501					
Radio I	Hardware Version	00						
Radio S	Software Version	20.00.	20.00.501					
	WCDMA (RMC12.2K)/ HSDPA/	Band	UL Frequency (MHz) DL Frequency (MHz)		Modulation			
Mode		=	1852.4 ~ 1907.6	1932.4 ~ 1987.6	QPSK			
	HSUPA/	V	826.4 ~ 846.6	871.4 ~ 891.6	QPSK			
Channe	el Control	Auto						
Antenn	a Gain (dBi)	WCDMA/ HSDPA/ HSUPA Band II : 2.14 dBi						
		WCDMA/ HSDPA/ HSUPA Band V : 2.14 dBi						
Max. R	F Output power	WCDM	1A/ HSDPA/ HSUPA Band	III : 23.66 dBm	/ 0.232 W			
(Avg.)		WCDM	1A/ HSDPA/ HSUPA Band	V : 23.59 dBm	/ 0.229 W			
Max. ERP/EIRP		WCDM	1A Band II : 25.80	dBm / 0.38 W				
		WCDM	1A Band V : 23.58	dBm / 0.23 W				
Emissio	on Designator	WCDM	IA Band II : 4M09I	-9W				
		WCDM	IA Band V : 4M08I	=9W				

## 1.2. Mode of Operation

ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

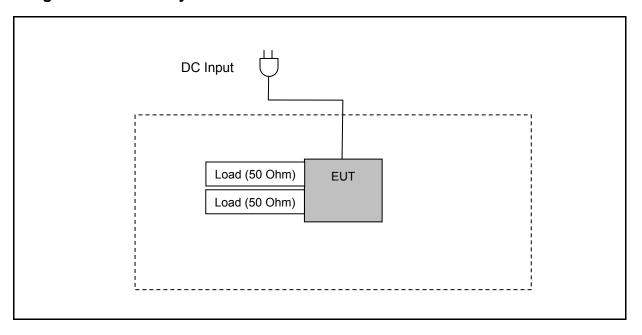
Test Mode
Mode 1: WCDMA Band II Link Mode
Mode 2: WCDMA Band V Link Mode

Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

### 1.3. EUT Exercise Software

1 Setup the EUT and Base Station (CMU200) as shown on 1.4.
2 Turn on the power of all equipment.

## 1.4. Configuration of Test System Details





## 1.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

# 1.6. Summary of Test Result

Description	FCC Rule	Limit	Result
Conducted Output Power	§2.1046	N/A	Pass
Effective Radiated Power	§22.913(a)(2)	< 7 Watts for FCC	Pass
Equivalent Isotropic Radiated Power	§24.232(c)	≤ 11.5 Watts	Pass
Peak to average ratio	§24.232(d)	< 13 dB	Pass
Emission Bandwidth & Occupied Bandwidth	§2.1049 §22.917(a) §24.238(a)	N/A	Pass
Band Edge Measurement	§2.1051 §22.917(a) §24.238(a)	< 43+10log <sub>10</sub> (P[Watts])	Pass
Conducted Spurious Emission	§2.1051 §22.917(a) §24.238(a)	< 43+10log <sub>10</sub> (P[Watts])	Pass
Field Strength of Spurious Radiation	§2.1053 §22.917(a) §24.238(a)	< 43+10log <sub>10</sub> (P[Watts])	Pass
Frequency Stability for Temperature & Voltage	§2.1055 §22.355 §24.235	< 2.5 ppm	Pass

# 2 RF Output Power Test

### 2.1. **Limit**

N/A

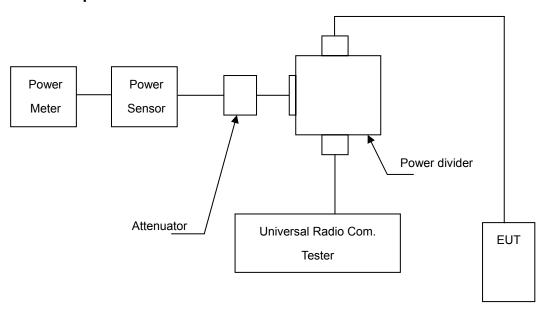
### 2.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2014	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

### 2.3. Test Setup



### 2.4. Test Procedure

The measurement is made according to as follows:

- 1. The transmitter output was connected to power meter and base station through Power Divider.
- 2. Set base station for EUT at GSM 850: PCL=5 and PCS 1900: PCL=0.
- 3. Set base station for EUT at WCDMA Band V and WCDMA Band II, power level was set to maximum.
- 4. Select lowest, middle, and highest channels for each band.

## 2.5. Uncertainty

The measurement uncertainty is defined as for RF output power measurement is 1.2 dB.



## 2.6. Test Result

Model Number	LE910-NA V2	!			
Test Item	RF Output Po	wer			
Date of Test	06/18/2015			Test Site	TE05
Bands	Modulation	Sub-Test	Frequency		verage Power
	Туре		(MHz)	(dBm)	(W)
WCDMA			1852.4	23.66	0.232
Band II	QPSK		1880.0	23.64	0.231
Pate of Test Bands WCDMA			1907.6	23.57	0.228
			1852.4	22.61	0.182
		1	1880.0	22.57	0.181
			1907.6	22.49	0.177
			1852.4	22.48	0.177
		2	1880.0	22.42	0.175
HSDPA	ODSK		1907.6	22.32	0.171
Band II	QPSK .	3	1852.4	22.08	0.161
			1880.0	22.01	0.159
			1907.6	21.91	0.155
			1852.4	22.04	0.160
			1880.0	21.96	0.157
			1907.6	21.86	0.153
		1	1852.4	21.98	0.158
			1880.0	21.91	0.155
			1907.6	21.81	0.152
			1852.4	19.95	0.099
		2	1880.0	19.87	0.097
			1907.6	19.76	0.095
			1852.4	20.92	0.124
	QPSK	3	1880.0	20.82	0.121
Danu II			1907.6	20.70	0.117
			1852.4	19.92	0.098
		4	1880.0	19.83	0.096
			1907.6	19.72	0.094
			1852.4	21.87	0.154
		5	1880.0	21.77	0.150
			1907.6	21.65	0.146

Note: The peak power testing result was used peak detector.

Model Number	LE910-NA V2				
Test Item	RF Output Po	wer			
Date of Test	07/23/2013			Test Site	TE05
Bands	Modulation	Sub-Test	Frequency		verage Power
	Туре		(MHz)	(dBm)	(W)
WCDMA			826.4	23.55	0.226
Test Item  Date of Test	QPSK		836.6	23.59	0.229
			846.6	23.46	0.222
			826.4	22.51	0.178
		1	836.6	22.56	0.180
			846.6	6.6 22.40	0.174
			826.4	22.36	0.172
		2	836.6	22.41	0.174
	QPSK -		846.6	22.23	0.167
Band V	QPSK =	4	826.4	21.98	0.158
			836.6	22.05	0.160
			846.6	21.86	0.153
			826.4	21.93	0.156
			836.6	21.99	0.158
			846.6	21.78	0.151
		1	826.4	21.84	0.153
			836.6	21.88	0.154
			846.6	21.71	0.148
			826.4	19.80	0.095
		2	836.6	19.86	0.222 0.178 0.180 0.174 0.172 0.174 0.167 0.158 0.160 0.153 0.156 0.158 0.151 0.153 0.154 0.148
			846.6	19.65	0.092
			826.4	20.78	0.120
	QPSK	3	836.6	20.84	0.121
Dana v			846.6	20.62	0.115
			826.4	19.75	0.094
		4	836.6	19.81	0.096
			846.6	19.58	0.091
			826.4	21.69	
		5	836.6	21.75	
			846.6	21.54	

Note: The peak power testing result was used peak detector.

## 3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

### 3.1. **Limit**

For FCC Part 22.913(a)(2): The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts. For FCC Part 24.232(b): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

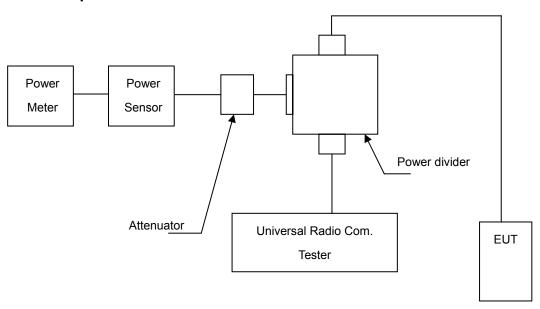
#### 3.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2014	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

### 3.3. Test Setup



### 3.4. Test Procedure

The measurement is made according to as follows:

- 1. The transmitter output was connected to power meter and base station through Power Divider.
- 2. Set base station for EUT at GSM 850: PCL=5 and PCS 1900: PCL=0.
- 3. Set base station for EUT at WCDMA Band V and WCDMA Band II, power level was set to maximum.
- 4. Select lowest, middle, and highest channels for each band.

### 3.5. Uncertainty

The measurement uncertainty is defined as for RF output power measurement is 1.2 dB.

## 3.6. Test Result

Model Number	LE910-NA V	E910-NA V2								
Test Item	ERP/EIRP	RP/EIRP								
Date of Test	06/18/2015	06/18/2015 Test Site TE01								
Bands	Modulation	Frequency	Burst Average Power (dBm)	Antenna Gain (dBi)	EIF	RP	Limit			
Danus	Туре	(MHz)			(dBm)	(W)				
MODMA	105111	1852.4	23.66	2.14	25.80	0.38	< 2W			
WCDMA Band II	QPSK	1880.0	23.64	2.14	25.78	0.38	< 2W			
		1907.6	23.57	2.14	25.71	0.37	< 2W			

Model Number	LE910-NA V	′2											
Test Item	ERP/EIRP	RP/EIRP											
Date of Test	06/18/2015	8/2015 Test Site TE01											
Bands	Modulation	ulation Frequency Burst Average Power		Antenna Gain	ERP		Limit						
Dallus	Type	(MHz)	(dBm)	(dBi)	(dBm)	(W)	LIIIII						
14/00144		826.4	23.55	2.14	23.54	0.23	< 7W						
WCDMA Band V	QPSK	836.6	23.59	2.14	23.58	0.23	< 7W						
		846.6	23.46	2.14	23.45	0.22	< 7W						

Note: ERP = Peak Conducted power + Antenna Gain - 2.15, EIRP = Peak Conducted power + Antenna Gain

# 4 Peak to Average Ratio Test

### 4.1. **Limit**

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

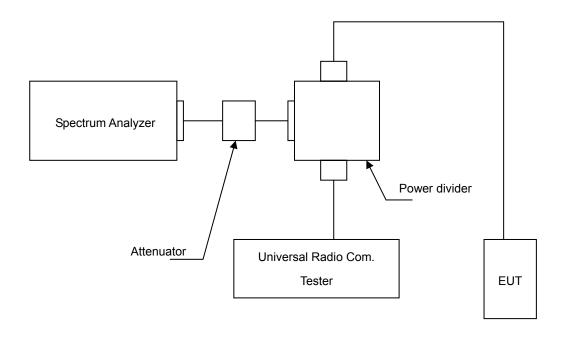
### 4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A MY46181986		05/14/2015	(1)
Wideband Radio Communication Test	R&S	CMW500	103168	11/05/2014	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	
Power divider	Agilent	87302C	3239A00760	N.C.R.	
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

### 4.3. Setup



#### 4.4. Test Procedure

The measurement is made according to FCC rules part 24:

- a. Set resolution/measurement bandwidth signal's occupied bandwidth;
- b. Set the number of counts to a value that stabilizes the measured CCDF curve;
- c. Record the maximum PAPR level associated with a probability of 0.1%.

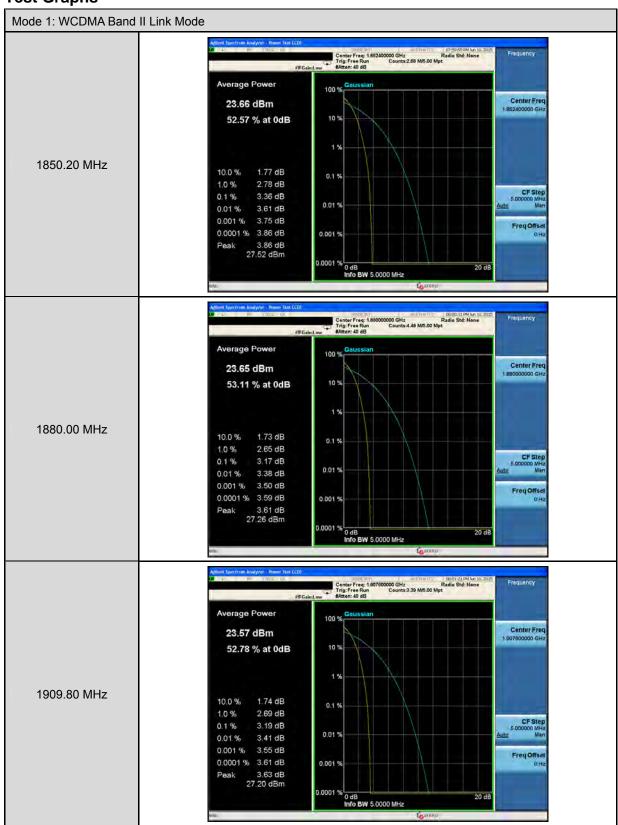
# 4.5. Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

## 4.6. Test Result

Model Number	LE910-NA V2						
Test Item	Peak to Average R	atio					
Date of Test	06/10/2015	6/10/2015					
Bands	Channel	Limit (dB)					
	9262	1852.4 3.36		< 13			
WCDMA Band II	9400 1880.0		3.17	< 13			
	9538	1907.6	3.19	<	13		

## 4.7. Test Graphs



#### **Emission Bandwidth & Occupied Bandwidth Test** 5

### **5.1. Limit**

The Occupied Bandwidth Limit:

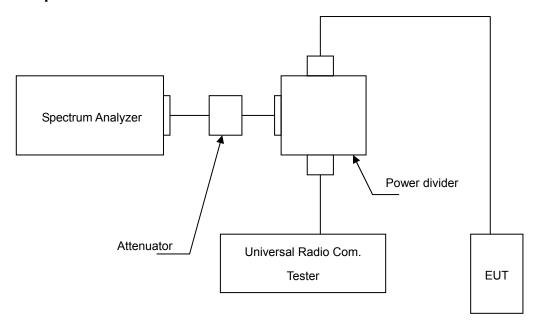
N/A.

### 5.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	
Power Divider	Agilent	87302C	3239A00760	N.C.R.	
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: <sup>(1)</sup> Calibration period 1 year. <sup>(2)</sup> Calibration period 2 years. Note: N.C.R. = No Calibration Request.

## 5.3. Setup



### 5.4. Test Procedure

The measurement is made according to FCC rules part 22 and 24:

- 1. The EUT was connected to Spectrum Analyzer and Base Station via Power Divider.
- 2. The occupied bandwidth of middle channel for the highest and lowest RF powers was measured.

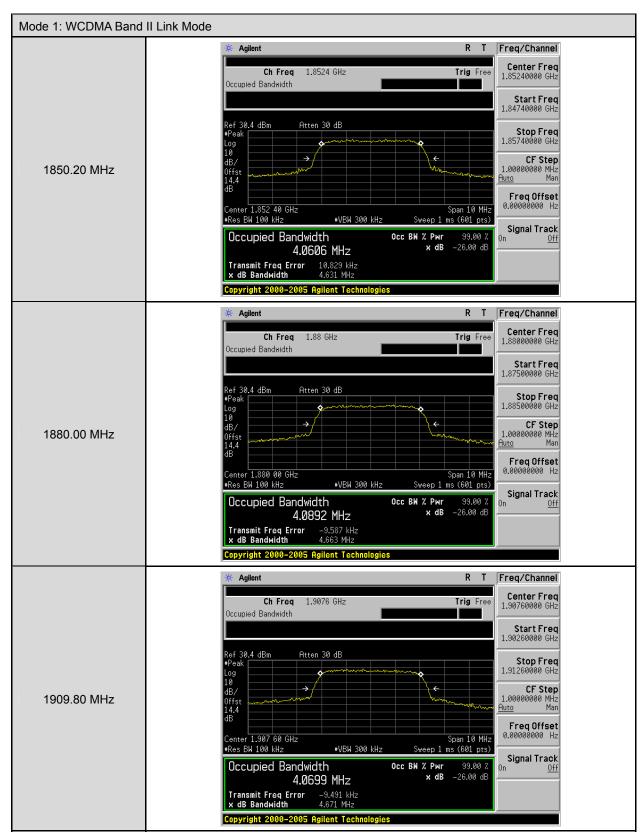
## 5.5. Uncertainty

The measurement uncertainty is defined as  $\pm$  10Hz

### 5.6. Test Result

Model Number	LE910-NA V2						
Test Item	Emission Band	dwidth & Occupie	ed Bandwidth				
Date of Test	06/10/2015				Test Site	TE05	
Bands	Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Note		
14/00144	9262	1852.4	4.631	4.0606	RBW:100KHz,	VBW:300KHz	
WCDMA Band II	9400	1880.0	4.663	4.0892	RBW:100KHz,	VBW:300KHz	
20	9538	1907.6	4.671	4.0699	RBW:100KHz,	VBW:300KHz	
MODAAA	4132	826.4	4.665	4.0772	RBW:100KHz,	VBW:300KHz	
WCDMA Band V	4183	836.6	4.640	4.0491	RBW:100KHz, VBW:300KHz		
2510	4233	846.6	4.610	4.0651	RBW:100KHz,	VBW:300KHz	

## 5.7. Test Graphs





# 6 Band Edge Test

### 6.1. Limit

The Band Edge Limit:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

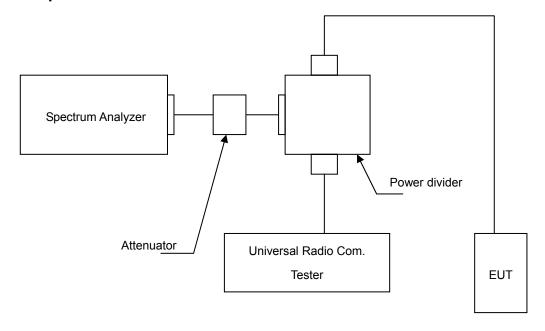
### 6.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	
Power Divider	Agilent	87302C	3239A00760	N.C.R.	
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

## 6.3. Setup



#### 6.4. Test Procedure

The measurement is made according to FCC rules part 22 and 24:

- 1. The EUT was connected to Spectrum Analyzer and Base Station via Power Divider.
- 2. The band edge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/100.
- 3. The band edge setting:
  - a. RB=10 kHz; VB=30 kHz for GSM 850 and PCS 1900.
  - b. RB=51 kHz; VB=160 kHz for WCDMA Band V and WCDMA Band II.

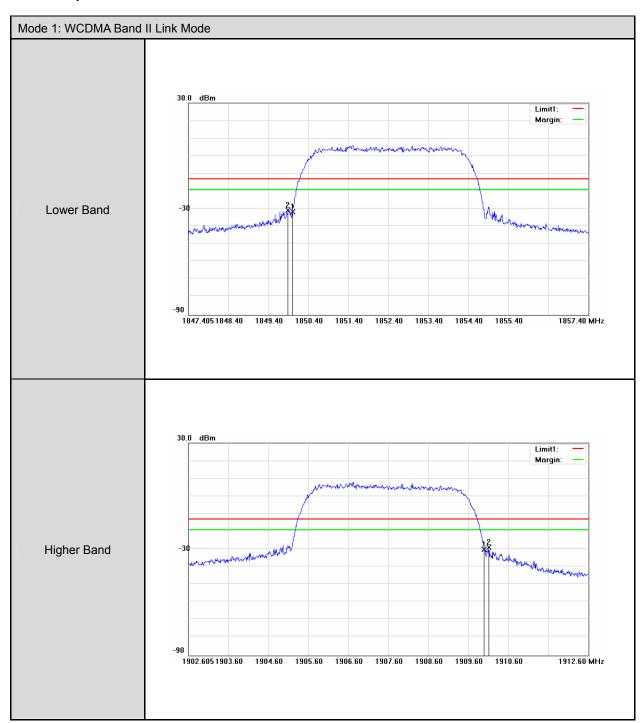
## 6.5. Uncertainty

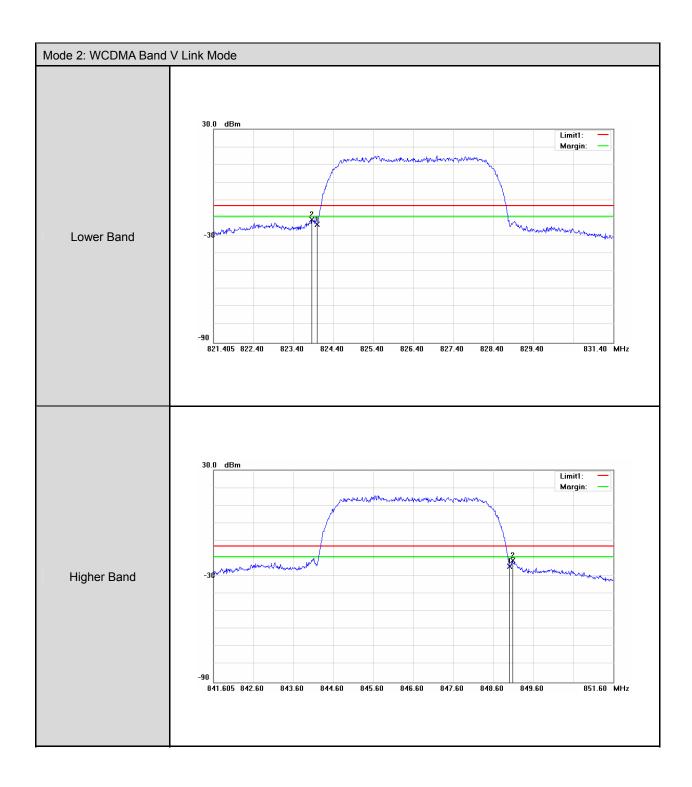
The measurement uncertainty is defined as  $\pm$  10Hz

### 6.6. Test Result

Model Numb	per	LE910-NA V2								
Test Item		Band Edge								
Date of Test		06/10/2015		Test Site	TE05					
Bands		Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result				
WCDMA	Lower	9262	1850.000	-30.71	-13	Pass				
Band II	Higher	9538	1910.000	-28.97	-13	Pass				
WCDMA	Lower	4132	824.0000	-20.85	-13	Pass				
Band V	Higher	4233	849.0000	-21.09	-13	Pass				

# 6.7. Test Graphs





# **Conducted Spurious Emission and Radiation Emission Test**

### **7.1. Limit**

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

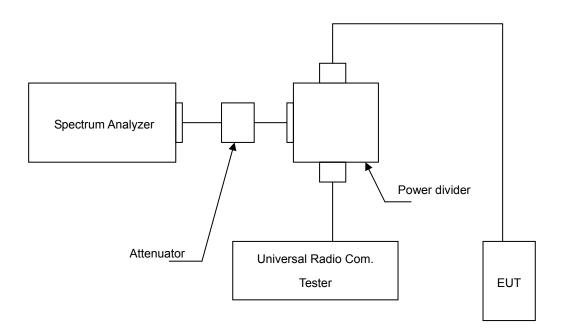
### 7.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	
Power Divider	Agilent	87302C	3239A00760	N.C.R.	
Test Site	ATL	TE05	TE05	N.C.R.	

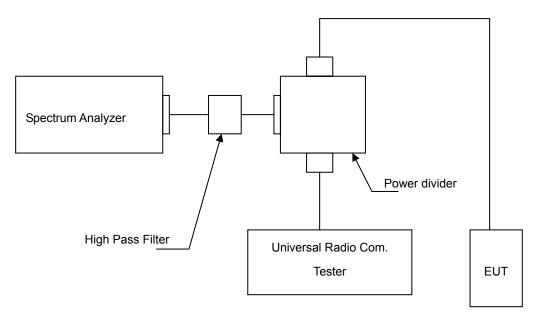
Remark: <sup>(1)</sup> Calibration period 1 year. <sup>(2)</sup> Calibration period 2 years. Note: N.C.R. = No Calibration Request.

## 7.3. Setup

Below 2.8GHz



#### Above 2.8GHz



### 7.4. Test Procedure

- 1. The EUT was connected to Spectrum Analyzer and Base Station via Power Divider.
- 2. The middle channel for the highest RF power within the transmitting frequency was measured.
- 3. The conducted spurious emission for the whole frequency range was taken.

## 7.5. Uncertainty

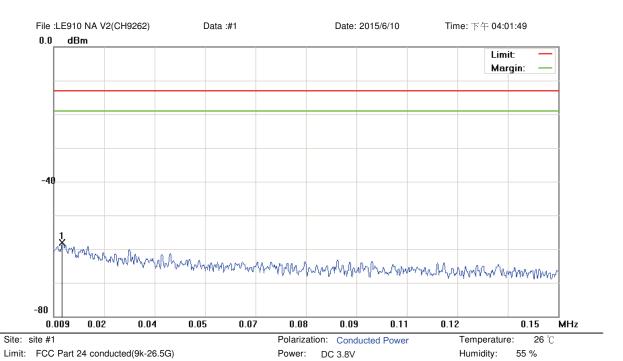
The measurement uncertainty is evaluated as  $\pm$  2.24 dB.

### 7.6. Test Result

Model Number	LE910-NA V2							
Test Item	Conducted Emission							
Test Mode	Mode 1 / Mode 2							
Date of Test	06/23/2015	Test Site	TE05					

RBW: 1 KHz

VBW: 3 KHz



EUT: LE910-NA V2 M/N: LE910-NA V2

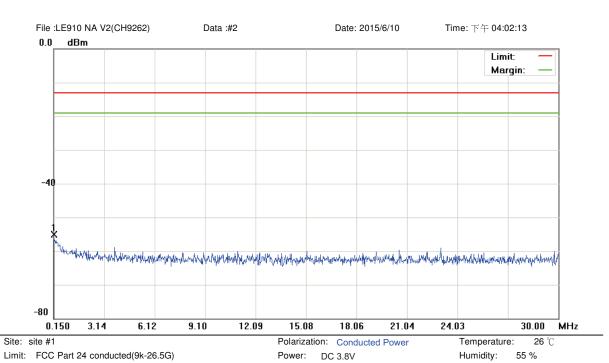
Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Antenna Height		Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0114	-69.47	11.35	-58.12	-13.00	-45.12	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

RBW: 10 KHz VBW: 30 KHz



Limit: FCC Part 24 conducted(9k-26.5G)

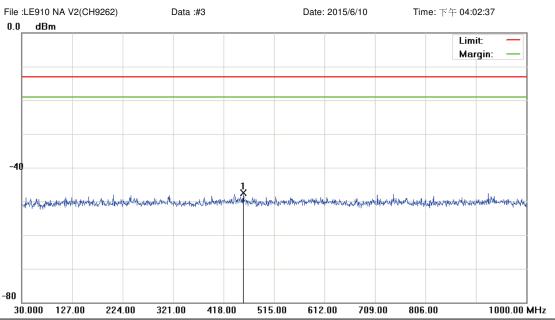
EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.1500	-67.48	12.47	-55.01	-13.00	-42.01	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2
M/N: LE910-NA V2
Mode: WCDMA Band II

Note:

Polarization: Conducted Power Temperature: 26 ℃ Power: DC 3.8V Humidity: 55 %

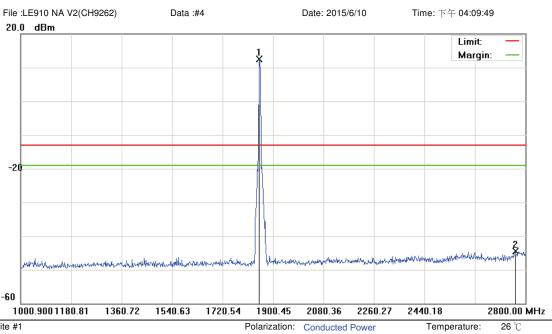
Distance: RBW: 100 KHz VBW: 300 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	455.8300	-60.69	13.22	-47.47	-13.00	-34.47	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

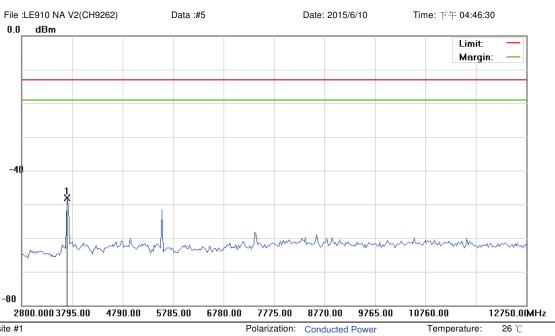
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1850.500	8.16	4.26	12.42	-13.00	25.42	peak			Tx
2		2763.100	-50.16	5.64	-44.52	-13.00	-31.52	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G) EUT: LE910-NA V2

M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3695.500	-53.02	4.87	-48.15	-13.00	-35.15	peak			

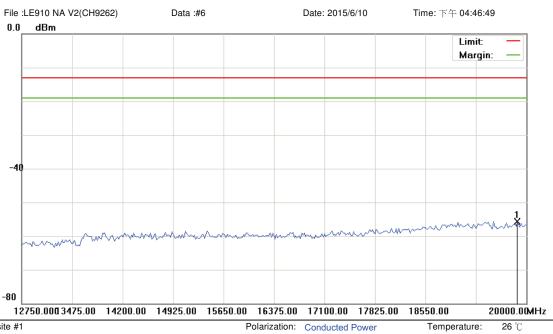
Distance:

Power: DC 3.8V

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	19873.125	-63.01	7.40	-55.61	-13.00	-42.61	peak			

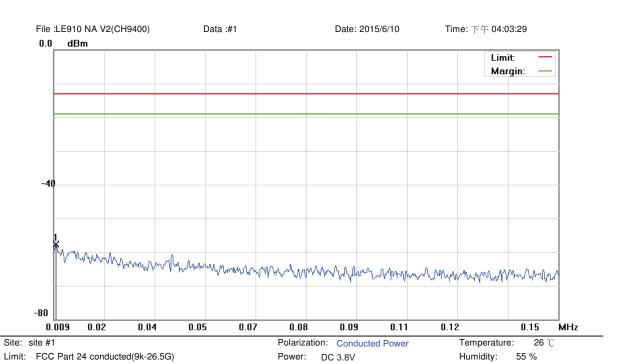
Distance:

Power: DC 3.8V

<sup>\*:</sup>Maximum data x:Over limit !:over margin

RBW: 1 KHz

VBW: 3 KHz



EUT: LE910-NA V2

M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

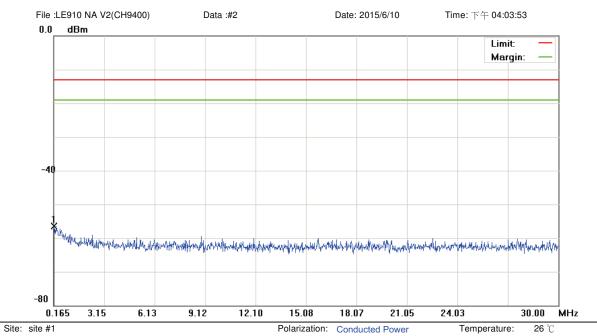
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0097	-69.09	11.33	-57.76	-13.00	-44.76	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 10 KHz VBW: 30 KHz

Humidity:



Power: DC 3.8V

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band II

Note:

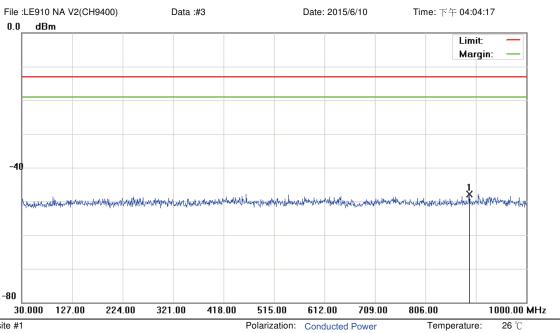
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	,	Antenna Height	Table Degree	
·		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.1948	-68.90	12.45	-56.45	-13.00	-43.45	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 100 KHz VBW: 300 KHz

Humidity:



Power: DC 3.8V

Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

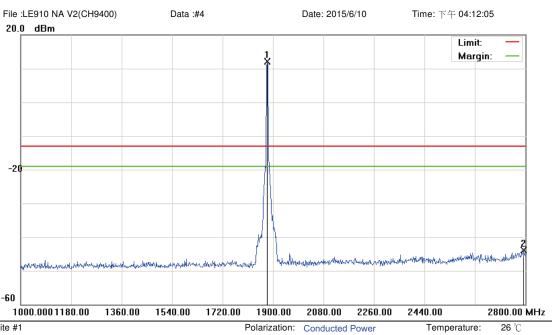
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	890.3900	-61.07	13.22	-47.85	-13.00	-34.85	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

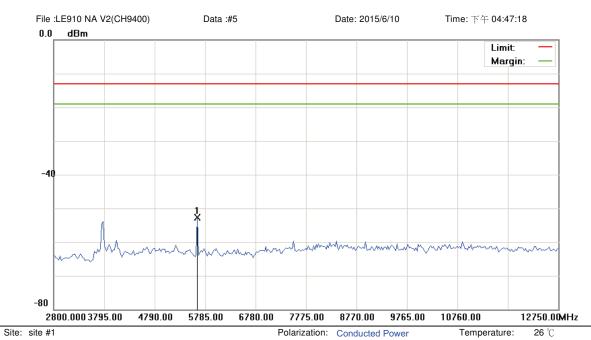
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1878.400	7.45	4.61	12.06	-13.00	25.06	peak			Tx
2		2792.800	-49.84	5.90	-43.94	-13.00	-30.94	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band II

Note:

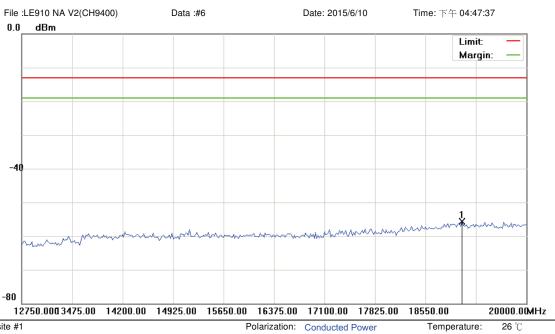
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	5635.750	-57.52	4.86	-52.66	-13.00	-39.66	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	19075.625	-62.90	7.18	-55.72	-13.00	-42.72	peak			

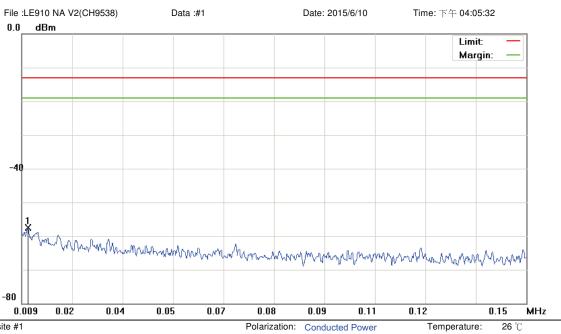
Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

VBW: 3 KHz

RBW: 1 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

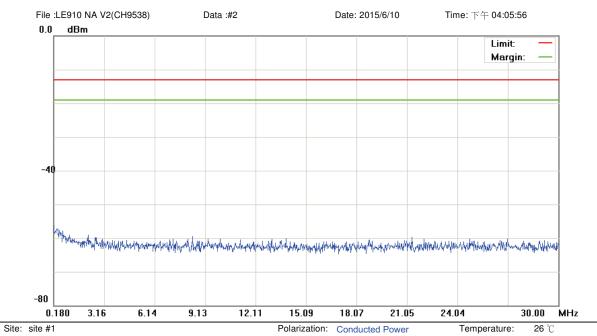
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0107	-68.74	11.34	-57.40	-13.00	-44.40	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 10 KHz VBW: 30 KHz

Humidity:



Power: DC 3.8V

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band II

Note:

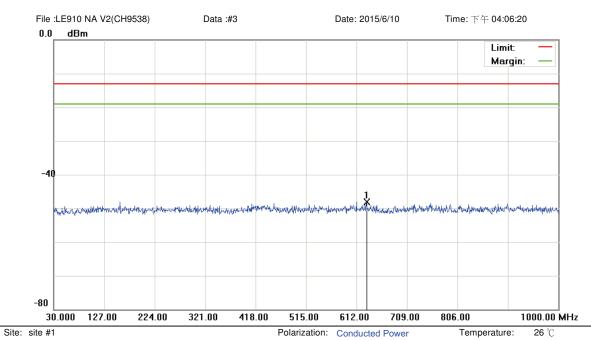
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.1798	-68.83	12.45	-56.38	-13.00	-43.38	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 100 KHz VBW: 300 KHz

Humidity:



Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band II

Note:

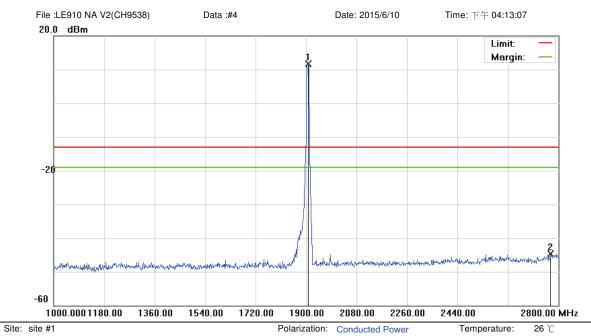
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	630.9150	-61.29	13.13	-48.16	-13.00	-35.16	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Power: DC 3.8V

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

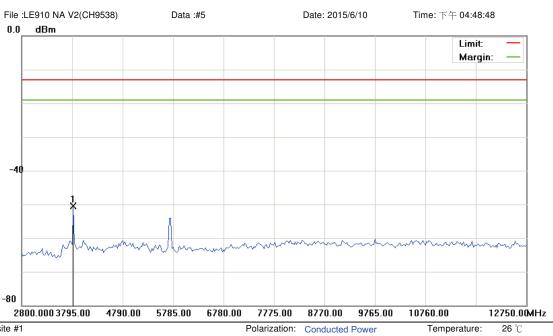
Note:

			Reading	Correct	Measure-				Antenna	Table	
No.	Mk.	Freq.	Level	Factor	ment	Limit	Over		Height	Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1906.300	5.69	6.05	11.74	-13.00	24.74	peak			Tx
2		2773.000	-50.39	5.78	-44.61	-13.00	-31.61	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

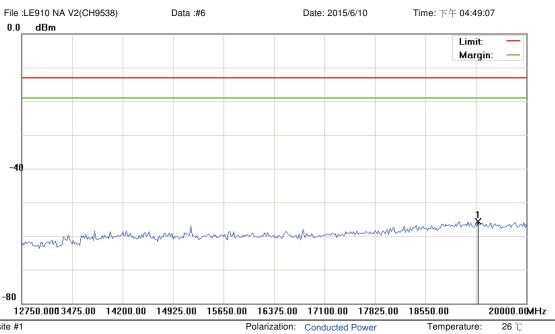
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3819.875	-55.44	4.91	-50.53	-13.00	-37.53	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	19311.250	-62.89	7.24	-55.65	-13.00	-42.65	peak			

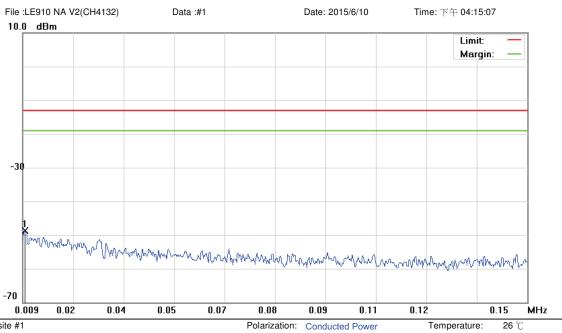
Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

VBW: 3 KHz

RBW: 1 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

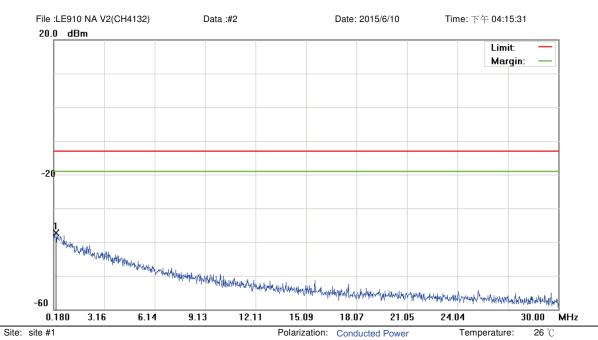
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0095	-79.36	30.58	-48.78	-13.00	-35.78	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz



Power: DC 3.8V

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

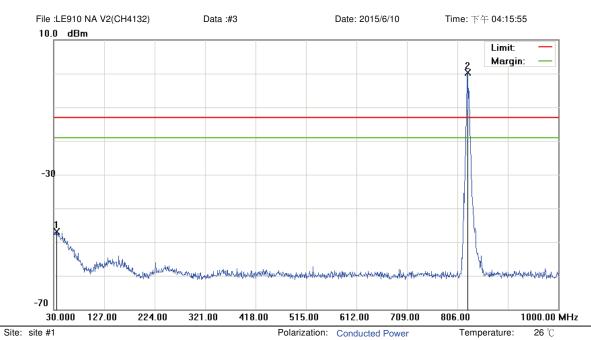
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.2993	-69.03	31.73	-37.30	-13.00	-24.30	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 100 KHz VBW: 300 KHz

Humidity:



Power: DC 3.8V

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

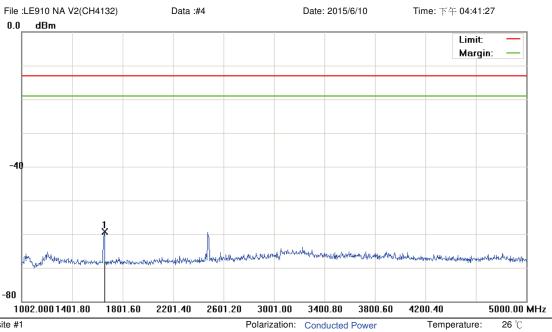
Note:

			Reading	Correct	Measure-				Antenna	Table	
No.	Mk.	Freq.	Level	Factor	ment	Limit	Over		Height	Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		35.3350	-63.44	16.61	-46.83	-13.00	-33.83	peak			
2	*	824.9150	-3.44	3.84	0.40	-13.00	13.40	peak			Tx

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

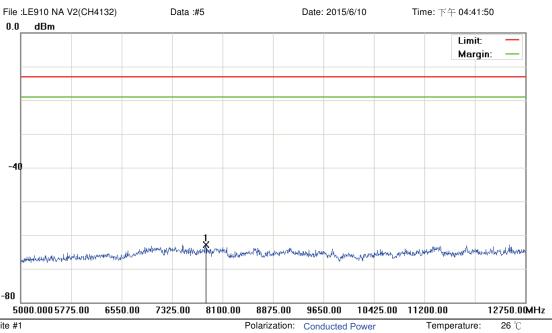
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1656.000	-63.81	4.45	-59.36	-13.00	-46.36	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	7844.250	-68.45	5.61	-62.84	-13.00	-49.84	peak			

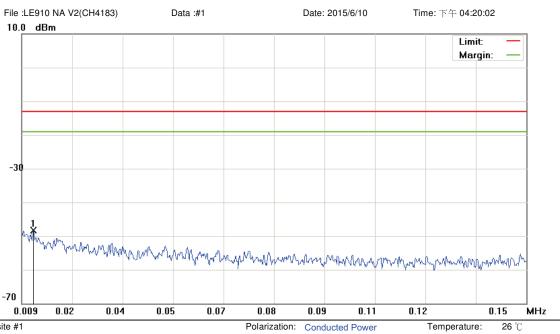
Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

VBW: 3 KHz

RBW: 1 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band V

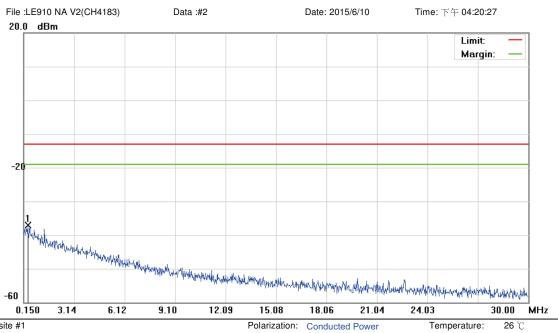
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0122	-78.86	30.57	-48.29	-13.00	-35.29	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
•		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.4037	-69.09	31.91	-37.18	-13.00	-24.18	peak			

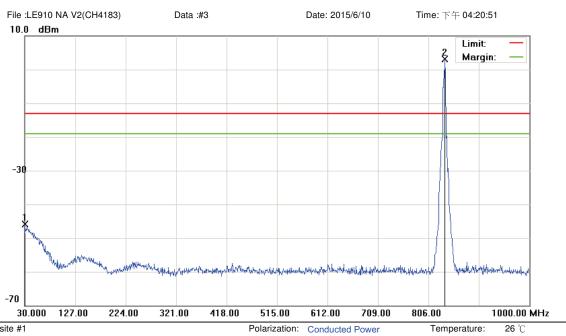
Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 100 KHz VBW: 300 KHz

Humidity:



Power: DC 3.8V

Site: site #1 Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band V

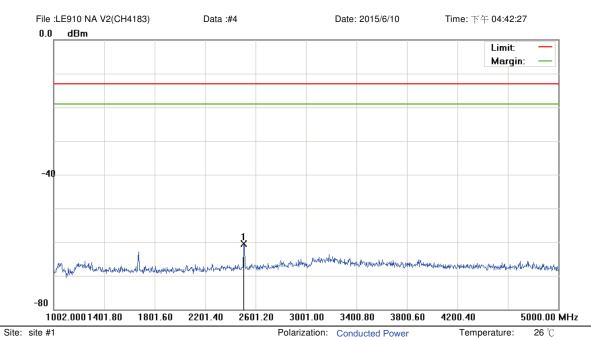
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
•		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		30.0000	-63.06	17.21	-45.85	-13.00	-32.85	peak			
2	*	838.0100	-0.93	3.97	3.04	-13.00	16.04	peak			Tx

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band V

Note:

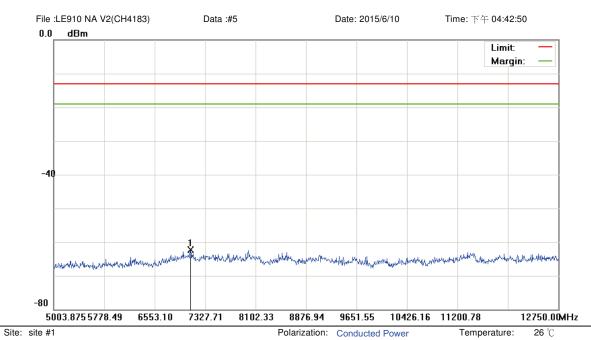
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	2508.000	-64.84	4.36	-60.48	-13.00	-47.48	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	7096.375	-67.40	5.07	-62.33	-13.00	-49.33	peak			

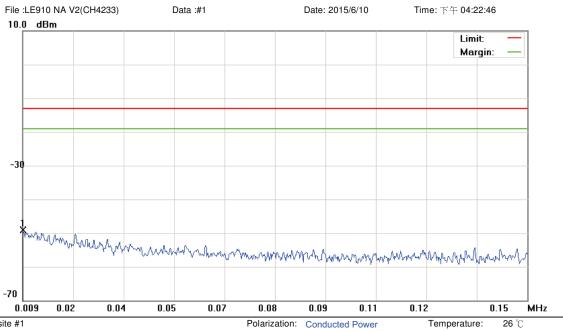
Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

VBW: 3 KHz

RBW: 1 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band V

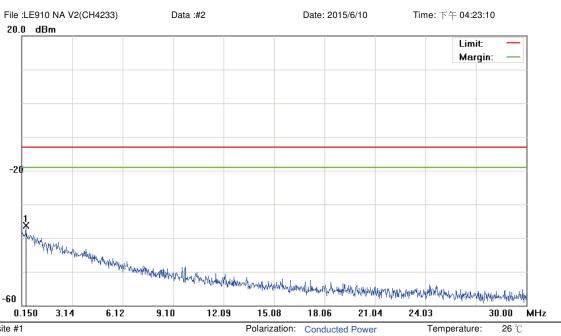
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.0090	-79.61	30.58	-49.03	-13.00	-36.03	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz



Power: DC 3.8V

Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

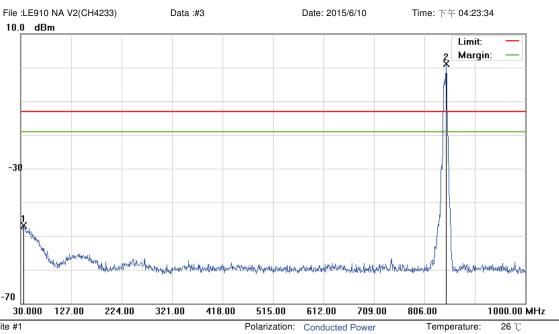
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	0.4037	-68.28	31.91	-36.37	-13.00	-23.37	peak			

<sup>\*:</sup>Maximum data x:Over limit !:over margin

55 %

RBW: 100 KHz VBW: 300 KHz

Humidity:



Power: DC 3.8V

Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

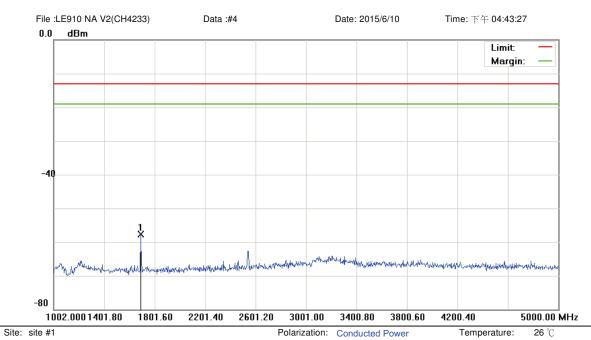
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		35.3350	-63.44	16.61	-46.83	-13.00	-33.83	peak			
2	*	847.7100	-2.84	3.98	1.14	-13.00	14.14	peak			Tx

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2

M/N: LE910-NA V2 Mode: WCDMA Band V

Note:

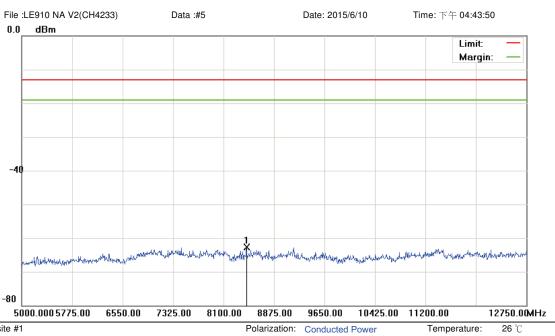
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1690.000	-62.27	4.47	-57.80	-13.00	-44.80	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: LE910-NA V2 M/N: LE910-NA V2

Mode: WCDMA Band V

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	8452.625	-68.13	5.49	-62.64	-13.00	-49.64	peak			

Distance:

<sup>\*:</sup>Maximum data x:Over limit !:over margin

Model Number	LE910-NA V2		
Test Item	Radiation Emission		
Test Mode	Mode 1 / Mode 2		
Date of Test	06/18/2015	Test Site	TE05

Band	СН	Frequency (MHz)	Measurement (dBm)	Antanna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
		0.0114	-58.12	2.14	-55.98	-58.13	-13.00	-45.13
		0.1500	-55.01	2.14	-52.87	-55.02	-13.00	-42.02
	9262	455.8300	-47.47	2.14	-45.33	-47.48	-13.00	-34.48
	9202	2763.1000	-44.52	2.14	-42.38		-13.00	-29.38
		3695.5000	-48.15	2.14	-46.01		-13.00	-33.01
		19873.1250	-55.61	2.14	-53.47		-13.00	-40.47
		0.0097	-57.76	2.14	-55.62	-57.77	-13.00	-44.77
		0.1948	-56.45	2.14	-54.31	-56.46	-13.00	-43.46
WCDMA	9400	890.3900	-47.85	2.14	-45.71	-47.86	-13.00	-34.86
Band II	9400	2792.8000	-43.94	2.14	-41.80		-13.00	-28.80
		5635.7500	-52.66	2.14	-50.52		-13.00	-37.52
		19075.6250	-55.72	2.14	-53.58		-13.00	-40.58
		0.0107	-57.40	2.14	-55.26	-57.41	-13.00	-44.41
		0.1798	-56.38	2.14	-54.24	-56.39	-13.00	-43.39
	0539	630.9150	-48.16	2.14	-46.02	-48.17	-13.00	-35.17
	9538	2773.0000	-44.61	2.14	-42.47		-13.00	-29.47
		3819.8750	-50.53	2.14	-48.39		-13.00	-35.39
		19311.2500	-55.65	2.14	-53.51		-13.00	-40.51

Band	СН	Frequency (MHz)	Measurement (dBm)	Antanna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
		0.0095	-48.78	2.14	-46.64	-48.79	-13.00	-35.79
		0.2993	-37.30	2.14	-35.16	-37.31	-13.00	-24.31
	4132	35.3350	-46.83	2.14	-44.69	-46.84	-13.00	-33.84
		1656.0000	-59.36	2.14	-57.22		-13.00	-44.22
		7844.2500	-62.84	2.14	-60.70		-13.00	-47.70
		0.0122	-48.29	2.14	-46.15	-48.30	-13.00	-35.30
MODMA		0.4037	-37.18	2.14	-35.04	-37.19	-13.00	-24.19
WCDMA Band V	4183	30.0000	-45.85	2.14	-43.71	-45.86	-13.00	-32.86
Dana v		2508.0000	-60.48	2.14	-58.34		-13.00	-45.34
		7096.3750	-62.33	2.14	-60.19		-13.00	-47.19
		0.0090	-49.03	2.14	-46.89	-49.04	-13.00	-36.04
		0.4037	-36.37	2.14	-34.23	-36.38	-13.00	-23.38
	4233	35.3350	-46.83	2.14	-44.69	-46.84	-13.00	-33.84
		1690.0000	-57.80	2.14	-55.66		-13.00	-42.66
		8452.6250	-62.64	2.14	-60.50		-13.00	-47.50

# 8 Field Strength of Spurious Radiation Test

## **8.1. Limit**

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

## 8.2. Test Instruments

		3 Meter Chamber			
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/22/2014	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/02/2014	(1)
Test Site	ATL	TE01	888001	08/28/2014	(1)

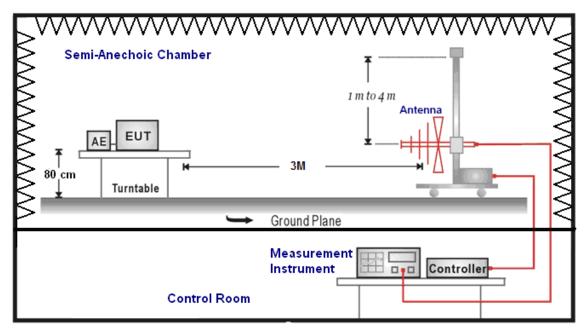
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

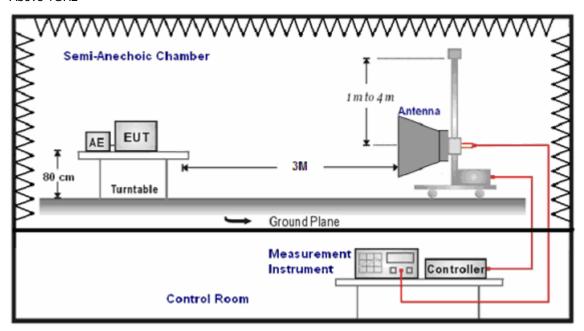


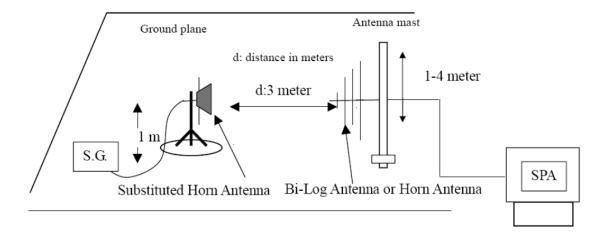
## 8.3. Setup

Below 1GHz



Above 1GHz





#### 8.4. Test Procedure

- a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 1MHz for LTE and WCDMA mode.
- b. Radiation Emission measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- d. E.I.R.P. = Output power level of S.G TX cable loss + Antenna gain of substitution horn
- e. E.R.P. = E.I.R.P- 2.15 dB

## 8.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is ± 3.072 dB.

06/18/2015

## 8.6. Test Result

Standard: FCC Part 24 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

 $\label{eq:model_Number:} \mbox{ LE910-NA V2} \qquad \mbox{ Temp.($^{\circ}$C)/Hum.($^{\circ}$RH): } \mbox{ 26($^{\circ}$C)/60$\%RH}$ 

Mode: 1 Date:

Frequency: 1852.4 MHz Test By: Eric Ou Yang

Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
4204.000	-72.19	21.26	-50.93	-13.00	-37.93	peak	Н
4132.000	-71.57	21.03	-50.54	-13.00	-37.54	peak	V

Standard: FCC Part 24 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

 $\label{eq:model_Number:} \mbox{ LE910-NA V2} \qquad \mbox{ Temp.($^{\circ}$C)/Hum.($^{\circ}$RH): } \mbox{ 26($^{\circ}$C)/60$\%RH}$ 

Mode: 1 Date: 06/18/2015

Frequency: 1880.0 MHz Test By: Eric Ou Yang

Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
4960.000	-72.78	22.93	-49.85	-13.00	-36.85	peak	Н
3256.000	-69.90	19.42	-50.48	-13.00	-37.48	peak	V

Standard: FCC Part 24 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

 $\label{eq:model_Number:} \mbox{ LE910-NA V2} \qquad \mbox{ Temp.($^{\circ}$C)/Hum.($^{\circ}$RH): } \mbox{ 26($^{\circ}$C)/60$\%RH}$ 

Mode: 1 Date: 06/18/2015

Frequency: 1907.6 MHz Test By: Eric Ou Yang

Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
4192.000	-72.00	21.22	-50.78	-13.00	-37.78	peak	Н
6676.000	-72.41	24.87	-47.54	-13.00	-34.54	peak	V

Standard: FCC Part 22 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

 $\label{eq:model_Number:} \mbox{ LE910-NA V2} \qquad \mbox{ Temp.($^{\circ}$C)/Hum.($^{\circ}$RH): } \mbox{ 26($^{\circ}$C)/60$\%RH}$ 

Mode: 2 Date: 06/18/2015

Frequency: 826.4 MHz Test By: Eric Ou Yang

Frequen	cy Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
5668.00	-74.05	24.02	-50.03	-13.00	-37.03	peak	Н
4756.00	-73.06	22.59	-50.47	-13.00	-37.47	peak	V

Standard: FCC Part 22 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

 $\label{eq:model_Number:} \mbox{ LE910-NA V2} \qquad \mbox{ Temp.($^{\circ}$C)/Hum.($^{\circ}$RH): } \mbox{ 26($^{\circ}$C)/60$\%RH}$ 

Mode: 2 Date: 06/18/2015

Frequency: 836.6 MHz Test By: Eric Ou Yang

Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
6424.000	-73.73	24.66	-49.07	-13.00	-36.07	peak	Н
4060.000	-71.83	20.81	-51.02	-13.00	-38.02	peak	V

Standard: FCC Part 22 Test Distance: 3m

Test item: Radiated Emission Power: DC 3.8V

Model Number: LE910-NA V2 Temp.( $^{\circ}$ C)/Hum.( $^{\circ}$ RH): 26( $^{\circ}$ C)/60%RH

 Mode:
 2
 Date:
 06/18/2015

 Frequency:
 846.6 MHz
 Test By:
 Eric Ou Yang

Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark	Ant.Polar.
(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		H/V
3628.000	-72.17	20.46	-51.71	-13.00	-38.71	peak	Н
6904.000	-73.73	25.15	-48.58	-13.00	-35.58	peak	V

# 9 Frequency Stability (Temperature & Voltage Variation) Test

### 9.1. **Limit**

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$ ppm) of the center frequency.

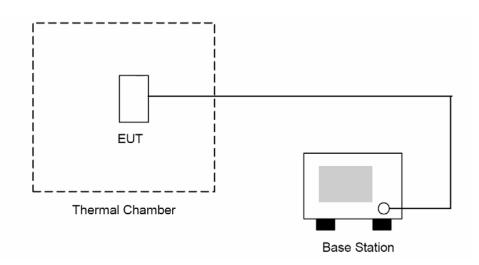
### 9.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R&S	CMU200	109369	10/21/2014	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/27/2015	(1)
Test Site	ATL	TE05	TE05	N.C.R.	

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

## 9.3. Setup



#### 9.4. Test Procedure

The measurement is made according to FCC rules part 22 and 24:

- 1. The EUT and test equipment were set up as shown on the following section.
- 2. With all power removed, the temperature was decreased to -30℃ and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
- 3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
- 4. The EUT was placed in a temperature chamber at  $25 \pm 5$  °C and connected as the following section.
- 5. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- 6. The temperature tests were performed for the worst case.
- 7. Test data was recorded.

## 9.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability (Temperature Variation) measurement is ± 10Hz.

# 9.6. Test Result

Model Number	LE910-NA V2	2							
Test Item	Frequency St	ability (Temper	ature & Voltage	e Variation)					
Test Mode	Mode 1	Mode 1							
Date of Test	06/16/2015	06/16/2015 Test Site TE05							
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result			
Normal	3.80	-10	5.31	0.006	±2.5	Pass			
Normal	3.80	0	12.92	0.015	±2.5	Pass			
Normal	3.80	10	-13.64	-0.016	±2.5	Pass			
Battery full point	4.20	20	-5.99	-0.007	±2.5	Pass			
Normal	3.80	20	2.76	0.003	±2.5	Pass			
Battery cut-off point	3.40	20	12.7	0.015	±2.5	Pass			
Normal	3.80	30	4.35	0.005	±2.5	Pass			
Normal	3.80	40	-5.42	-0.006	±2.5	Pass			
Normal	3.80	50	-2.86	-0.003	±2.5	Pass			
Normal	3.80	55	2.69	0.003	±2.5	Pass			

Model Number	LE910-NA V2								
Test Item	Frequency St	ability (Temperate	ature & Voltage	e Variation)					
Test Mode	Mode 2	Mode 2							
Date of Test	06/16/2015				Test Site	TE05			
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result			
Normal	3.80	-10	5.37	0.003	±2.5	Pass			
Normal	3.80	0	11.05	0.006	±2.5	Pass			
Normal	3.80	10	-13.55	-0.007	±2.5	Pass			
Battery full point	4.20	20	3.98	0.002	±2.5	Pass			
Normal	3.80	20	11.50	0.006	±2.5	Pass			
Battery cut-off point	3.40	20	-15.81	-0.008	±2.5	Pass			
Normal	3.80	30	6.64	0.004	±2.5	Pass			
Normal	3.80	40	4.33	0.002	±2.5	Pass			
Normal	3.80	3.80 50 -2.54 -0.001 ±2.5 Pass							
Normal	3.80	55	1.36	0.001	±2.5	Pass			

Note: This device temperature only support -10 $^{\circ}$ C to +55 $^{\circ}$ C.