



# FCC Radio Test Report

## FCC ID: XW3KM1001RL

This report concerns (check one):  Original Grant  Class II Change

**Issued Date** : Apr. 23, 2012  
**Project No.** : 1204C042  
**Equipment** : LuxeMatei8150  
**Model Name** : GK-110010/T; GK-110009/T; KM-1001RL  
**Applicant** : Dongguan Siliten Electronics CO.,LTD  
**Address** : Sijia Yewu Industrial estate, Shijie Town, Dongguan City, Guangdong Province, China

**Tested by:**

Neutron Engineering Inc. EMC Laboratory

**Date of Receipt:** Apr. 05, 2012

**Date of Test:**

Apr. 05, 2012 ~ Apr. 22, 2012

Testing Engineer

: David Mao  
(David Mao)

Technical Manager

: Leo Hung  
(Leo Hung)

Authorized Signatory

: Steven Lu  
(Steven Lu)

**Neutron Engineering Inc.**

No.3, Jinshagang 1st Road, ShiXia, Dalang  
Town, Dong Guan, China.  
TEL : (0769) 8318-3000 FAX : (0769) 8319-6000



## Declaration

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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## Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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## **1. CERTIFICATION**

Equipment: LuxeMatei8150

Brand Name: Genius

Model Name.: GK-110010/T; GK-110009/T; KM-1001RL

Applicant: Dongguan Siliten Electronics CO.,LTD

Factory: Dongguan Siliten Electronics CO.,LTD

Address: Sijia Yewu Industrial estate, Shijie Town, Dongguan City, Guangdong Province, China

Date of Test: Apr. 05, 2012 ~ Apr. 22, 2012

Test Item: ENGINEERING SAMPLE

Standards: FCC Part15, Subpart C(15.249)/ ANSI C63.4 : 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1204C042) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).



## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C (15.249)			
StandardSection	Test Item	Judgment	Remark
FCC			
15.207	Conducted Emission	N/A	Note(1)
15.209	Radiated Emission	PASS	
15.249	Radiated Spurious Emission	PASS	

**NOTE:**

(1)" N/A" denotes test is not applicable in this Test Report

(2) The EUT used new battery.



## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C01/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town,Dong Guan, China.523792

Neutron's test firm number for FCC 319330

Neutron's test firm number for IC 4428B-1

## 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement  $y \pm U$  , where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2** , providing a level of confidence of approximately **95 %** .

### A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
DG-C01	CISPR	150 KHz ~ 30MHz	1.94	

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
DG-CB03	CISPR	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	LuxeMatei8150																	
Brand Name	Genius																	
Model Name.	GK-110010/T; GK-110009/T; KM-1001RL																	
OEM Brand/Model Name	N/A																	
Model Difference	Only difference is model name.																	
Product Description	<p>The EUT is a LuxeMatei8150.</p> <table border="1"><tr><td>Product Type:</td><td>Low Power Communication Device</td></tr><tr><td>Operation Frequency:</td><td>2405~2476 MHz</td></tr><tr><td>Modulation Technology:</td><td>GFSK</td></tr><tr><td>Data rate:</td><td>1Mbps</td></tr><tr><td>Number of Channel:</td><td>64CH .Please see Note 2.</td></tr><tr><td>Antenna Designation:</td><td>Printed antenna</td></tr><tr><td>Antenna Gain(Peak):</td><td>1.40 dBi</td></tr><tr><td>Output Power:</td><td>87.93 dBuV/m (AV Max.)</td></tr></table> <p>Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</p>		Product Type:	Low Power Communication Device	Operation Frequency:	2405~2476 MHz	Modulation Technology:	GFSK	Data rate:	1Mbps	Number of Channel:	64CH .Please see Note 2.	Antenna Designation:	Printed antenna	Antenna Gain(Peak):	1.40 dBi	Output Power:	87.93 dBuV/m (AV Max.)
Product Type:	Low Power Communication Device																	
Operation Frequency:	2405~2476 MHz																	
Modulation Technology:	GFSK																	
Data rate:	1Mbps																	
Number of Channel:	64CH .Please see Note 2.																	
Antenna Designation:	Printed antenna																	
Antenna Gain(Peak):	1.40 dBi																	
Output Power:	87.93 dBuV/m (AV Max.)																	
Channel List	Please refer to the Note 2.																	
Power Source	DC Voltage supplied from 1*AA Battery																	
Power Rating	DC 1.5V																	
Connecting I/O Port(s)	Please refer to the User's Manual																	

**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.

<b>Frequency Channel</b>							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
<b>01</b>	<b>2405</b>	17	2421	33	2442	49	2461
02	2406	18	2422	34	2443	50	2462
03	2407	19	2423	35	2444	51	2463
04	2408	20	2425	36	2446	52	2464
05	2409	21	2427	37	2447	53	2465
06	2410	22	2428	38	2448	54	2466
07	2411	23	2429	39	2449	55	2467
08	2412	24	2430	40	2451	56	2468
09	2412	25	2431	41	2452	57	2469
10	2414	26	2432	42	2453	58	2470
11	2415	27	2434	43	2455	59	2471
12	2416	28	2435	44	2456	60	2472
13	2417	29	2436	45	2457	61	2473
14	2418	30	2437	46	2458	62	2474
15	2419	31	2438	47	2459	63	2475
16	2420	<b>32</b>	<b>2439</b>	48	2460	<b>64</b>	<b>2476</b>



<b>Hopping Channel List</b>			
<b>Group 1</b>		<b>Group 2</b>	
01	2407	01	2405
02	2408	02	2406
03	2412	03	2409
04	2414	04	2410
05	2417	05	2411
06	2420	06	2412
07	2421	07	2415
08	2422	08	2416
09	2427	09	2418
10	2428	10	2419
11	2431	11	2423
12	2435	12	2425
13	2436	13	2429
14	2437	14	2430
15	2438	15	2432
16	2439	16	2434
17	2442	17	2443
18	2447	18	2444
19	2451	19	2446
20	2452	20	2448
21	2457	21	2449
22	2458	22	2453
23	2459	23	2455
24	2460	24	2456
25	2461	25	2462
26	2465	26	2463
27	2468	27	2464
28	2469	28	2466
29	2472	29	2467
30	2473	30	2470
31	2475	31	2471
32	2476	32	2474

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed	N/A	1.40



### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH Lower – 2405MHz
Mode 2	CH Middle – 2439MHz
Mode 3	CH Highest -2476MHz

For Conducted Test	
Final Test Mode	Description
N/A	” N/A” denotes test is not applicable in this Test Report

For Radiated Test	
Final Test Mode	Description
Mode 1	CH Lower – 2405MHz
Mode 2	CH Middle – 2439MHz
Mode 3	CH Highest -2476MHz

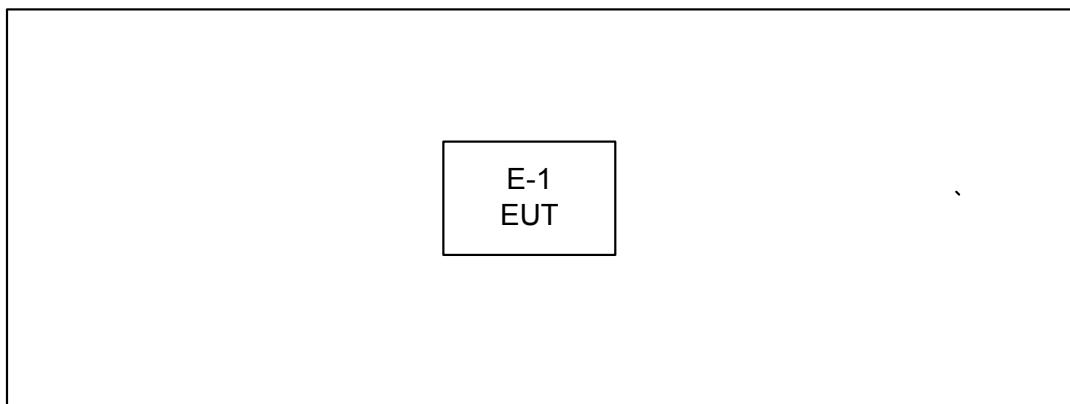
Note:

(1) The measurements are performed at the highest, middle, lowest available channels.



**3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**

**Radiated: Normal**





### 3.4 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.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	LuxeMatei8150	Genius	GK-110010/T	XW3KM1001RL	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in m in 『Length』 column.



#### 4. EMC EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

###### 4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

##### 4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	May.26.2012
2	LISN	R&S	ENV216	100087	May.26.2012
3	Test Cable	N/A	C_17	N/A	Mar.30.2013
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	May.26.2012
5	50Ω Terminator	SHX	TF2-3G-A	08122902	May.26.2012

Remark: " N/A" denotes No Model Name. , Serial No. or No Calibration specified.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



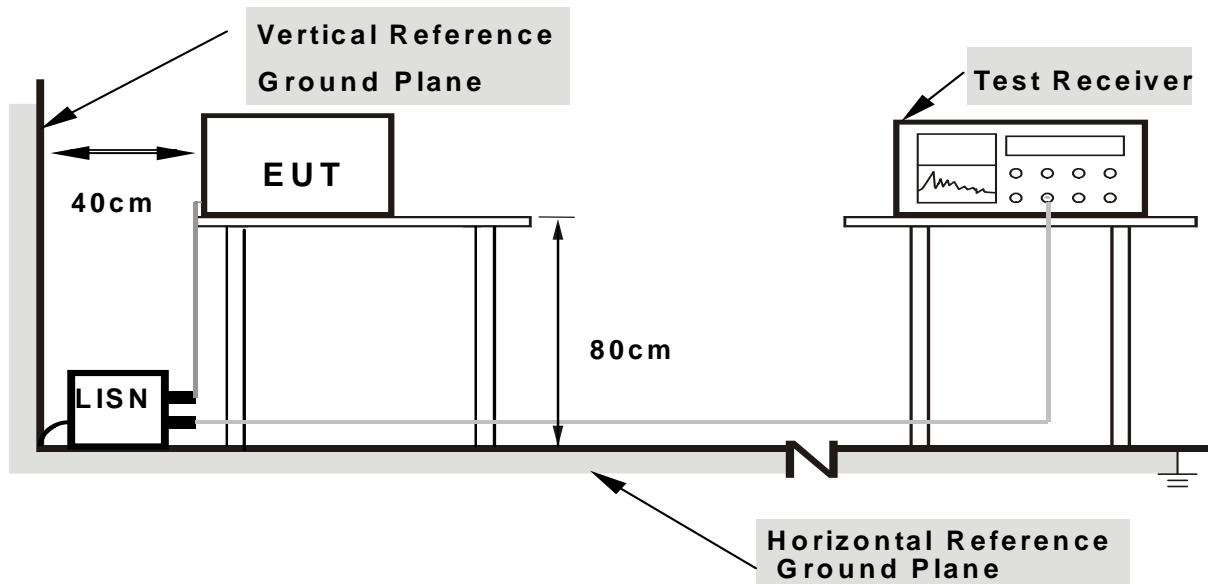
### 4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.1.5 TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

### 4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting mode.



## 4.1.7 TEST RESULTS

EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	--	Relative Humidity :	--
Pressure :	--	Test Power :	--
Test Mode :	N/A		

### NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

### Remark

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.
- (3) "N/A" denotes test is not applicable in this Test Report.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 RADIATED EMISSION LIMITS ( FCC 15.209 )

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

### LIMITS OF RADIATED EMISSION MEASUREMENT ( FCC 15.209 )

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

### LIMITS OF RADIATED EMISSION MEASUREMENT (FCC Part 15.249)

FCC Part15 (15.249) , Subpart C	
Limit	Frequency Range (MHz)
Field strength of fundamental 50000 $\mu$ V/m (94 dB $\mu$ V/m) @ 3 m	2400-2483.5
Field strength of harmonics 500 $\mu$ V/m (54 dB $\mu$ V/m) @ 3 m	Above 2483.5

**4.2.2 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Jun.04.2012
2	Amplifier	HP	8447D	2944A09673	May.26.2012
3	Test Receiver	R&S	ESCI	100382	May.26.2012
4	Test Cable	N/A	C-01_CB03	N/A	Jul.01.2012
5	Antenna	ETS	3115	00075789	May.26.2012
6	Amplifier	Agilent	8449B	3008A02274	May.26.2012
7	Spectrum	Agilent	E4408B	US39240143	Nov.25.2012
8	Test Cable	HUBER+SUHNER	C-45	N/A	May.04.2012
9	Controller	CT	SC100	N/A	N/A
10	Triple Loop Antenna	Schwarbeck	HXYZ9170	9170-110	May.26.2012
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	May.26.2012

Remark: " N/A" denotes No Model Name. / Serial No. and No Calibration specified.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, Average=PK-duty cycle

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



DUTY CYCLE: TX 2476MHz (1Mbps)

Dwell time=ON/ON+OFF

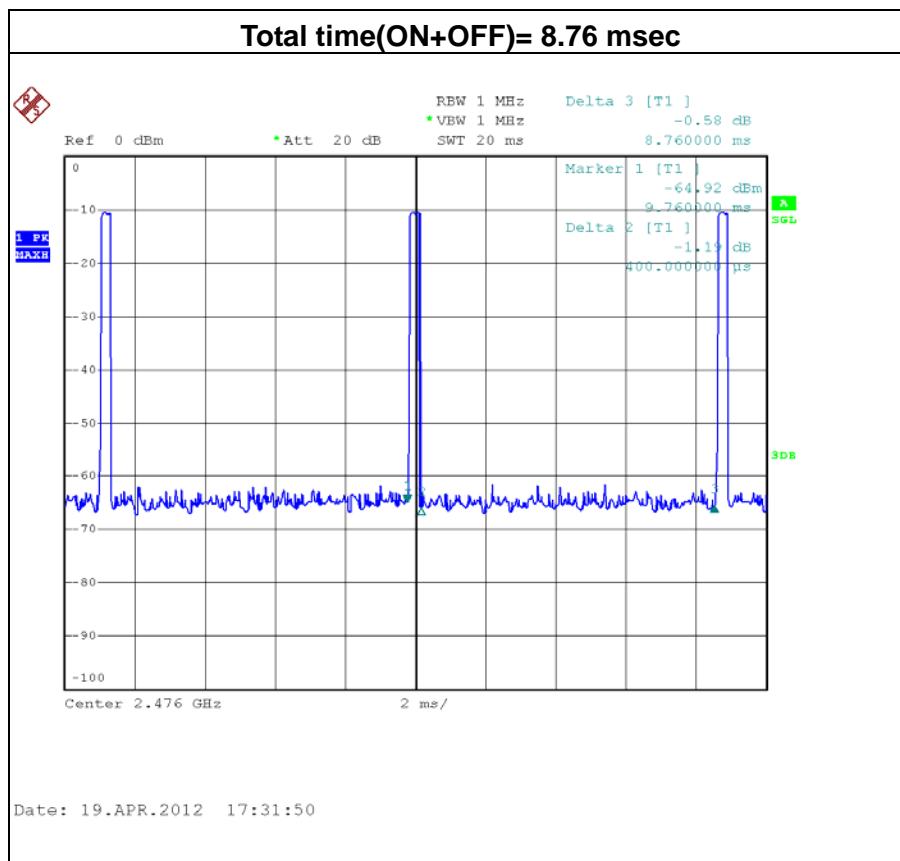
ON: 0.4msec

ON+OFF: (total time):8.76msec

Dwell time: 4.57%

AV=PK+20 log(Dwell time)

AV=PK-26.81





#### **4.2.3 TEST PROCEDURE**

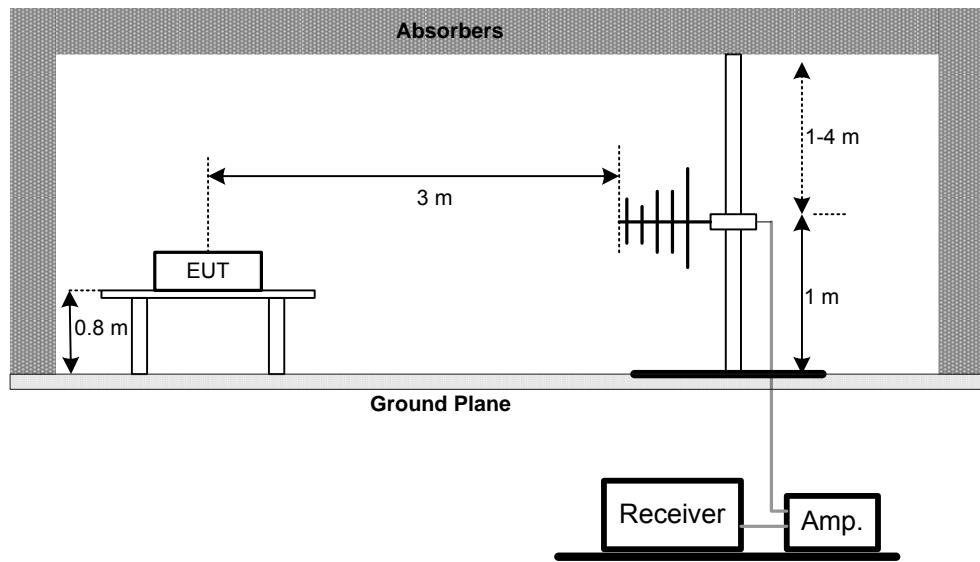
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### **4.2.4 DEVIATION FROM TEST STANDARD**

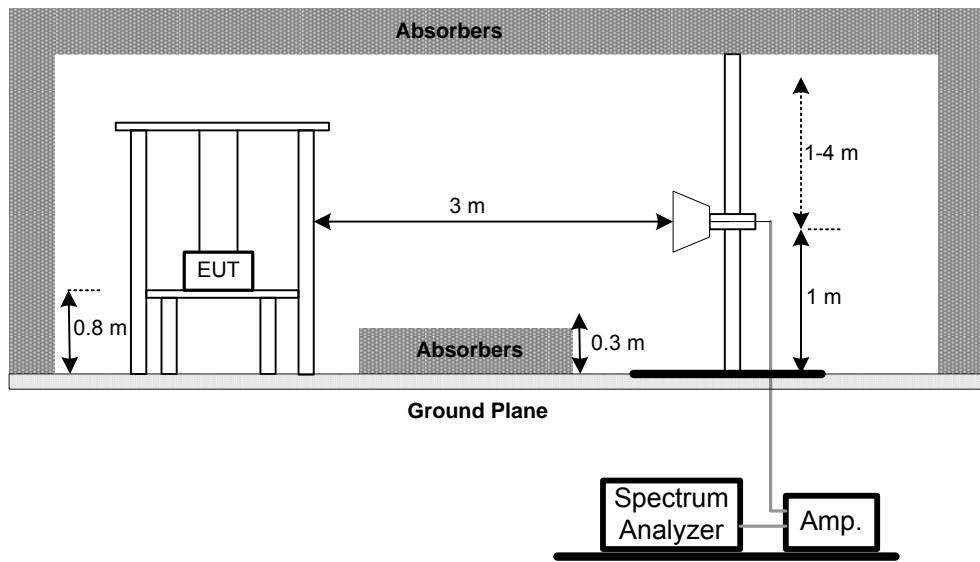
No deviation

#### 4.2.5 TEST SETUP

##### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



##### (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



#### 4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

**4.2.7 TEST RESULTS (BELOW 30MHz)**

EUT :	150Mbps Wireless-N Outdoor Access Point	Model Name :	WF-2301
Temperature :	25 °C	Relative Humidity :	55 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.010	0°	20.19	24.30	44.49	127.96	-83.47	AVG
0.010	0°	22.69	24.30	46.99	147.96	-100.97	PK
0.024	0°	18.24	24.07	42.31	120.15	-77.84	AVG
0.024	0°	21.05	24.07	45.12	140.15	-95.03	PK
0.037	0°	18.55	23.19	41.74	116.13	-74.39	AVG
0.037	0°	22.52	23.19	45.71	136.13	-90.42	PK
0.07	0°	19.37	22.06	41.43	111.06	-69.63	AVG
0.07	0°	24.18	22.06	46.24	131.06	-84.82	PK
0.26	0°	21.40	20.39	41.79	99.44	-57.65	AVG
0.26	0°	23.69	20.39	44.08	119.44	-75.36	PK
1.26	0°	24.53	19.57	44.10	65.62	-21.51	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.010	90°	17.24	24.30	41.54	127.84	-86.30	AVG
0.010	90°	21.64	24.30	45.94	147.84	-101.90	PK
0.026	90°	15.37	23.94	39.31	119.39	-80.08	AVG
0.026	90°	19.58	23.94	43.52	139.39	-95.87	PK
0.035	90°	18.49	23.36	41.85	116.74	-74.90	AVG
0.035	90°	22.54	23.36	45.90	136.74	-90.85	PK
0.06	90°	20.68	22.11	42.79	111.38	-68.59	AVG
0.06	90°	24.52	22.11	46.63	131.38	-84.75	PK
0.24	90°	21.31	20.43	41.74	100.15	-58.41	AVG
0.24	90°	23.68	20.43	44.11	120.15	-76.04	PK
1.25	90°	23.76	19.57	43.33	65.64	-22.30	QP

Remark :

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported .
- (2) Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB); °
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor. °

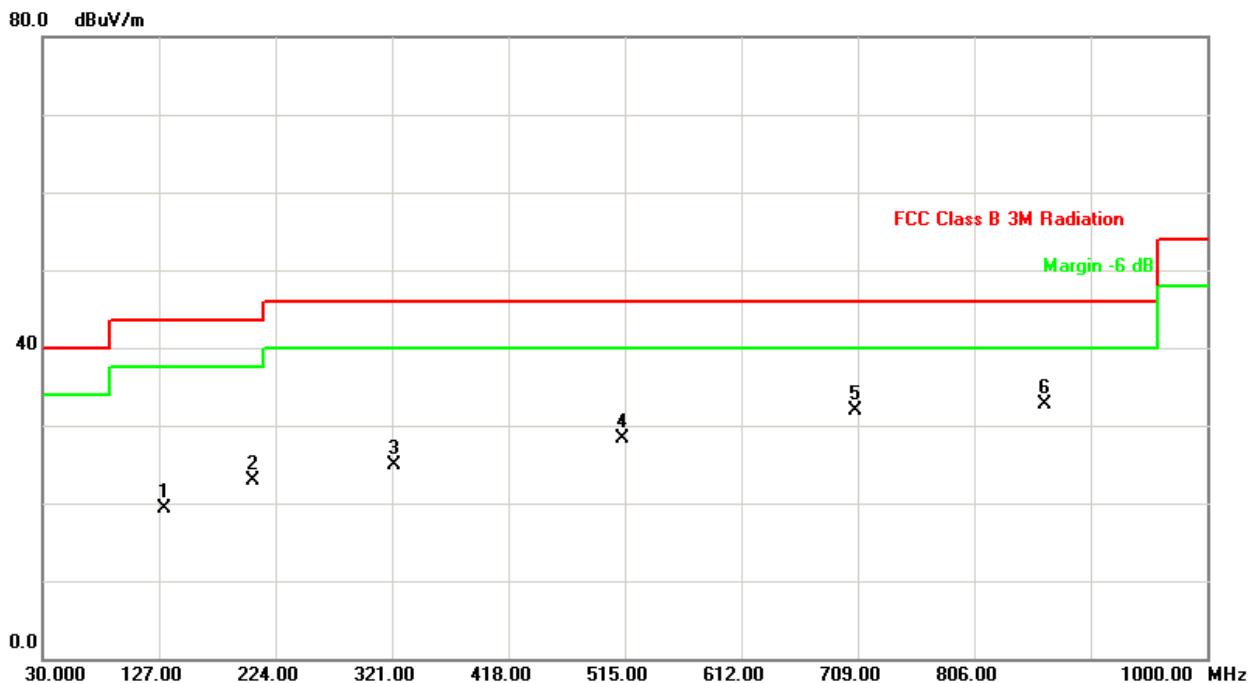
**4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHz)**

EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	58 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX Mode 2405MHz		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
131.85	V	37.40	-18.03	19.37	43.50	- 24.13	
204.60	V	39.40	-16.44	22.96	43.50	- 20.54	
323.43	V	36.34	-11.49	24.85	46.00	- 21.15	
512.58	V	35.10	-6.89	28.21	46.00	- 17.79	
706.58	V	35.04	-3.09	31.95	46.00	- 14.05	
864.20	V	33.40	-0.65	32.75	46.00	- 13.25	

**Remark :**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency 。 "F" denotes fundamental frequency; " H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission 。
- (4) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.



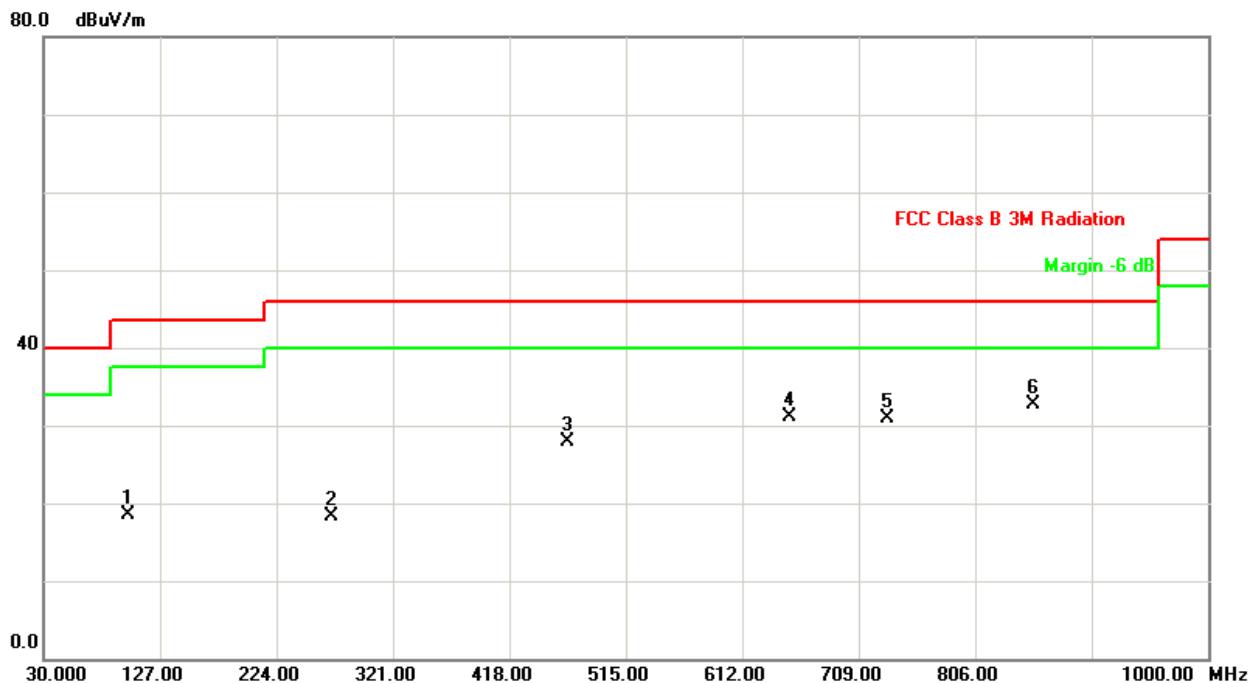


EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	58 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX Mode 2405MHz		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
100.33	H	36.98	-18.41	18.57	43.50	- 24.93	
270.08	H	31.64	-13.28	18.36	46.00	- 27.64	
466.50	H	35.84	-7.87	27.97	46.00	- 18.03	
650.80	H	34.40	-3.34	31.06	46.00	- 14.94	
733.25	H	33.77	-2.77	31.00	46.00	- 15.00	
854.50	H	33.58	-0.80	32.78	46.00	- 13.22	

Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency 。 "F" denotes fundamental frequency; " H" denotes spurious frequency. "E" denotes band edge frequency.
- (3) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission 。
- (4) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.





## 4.2.9 TEST RESULTS (ABOVE 1000 MHz)

EUT :	LuxeMatei8150		Model Name. :	GK-110010/T	
Temperature :	25°C		Relative Humidity :	51%	
Pressure :	1009 hPa		Test Power :	DC 1.5V	
Test Mode :	TX 2405MHz				

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	23.12	-3.69	28.32	51.44	24.63	74.00	54.00	X/E
2398.00	V	31.82	5.01	28.30	60.12	33.31	74.00	54.00	X/E
2400.00	V	25.35	-1.46	28.30	53.65	26.84	74.00	54.00	X/E
<b>2405.00</b>	<b>V</b>	<b>53.37</b>	<b>26.56</b>	<b>28.29</b>	<b>81.66</b>	<b>54.85</b>	<b>114.00</b>	<b>94.00</b>	<b>X/F</b>
4809.65	V	43.41	16.60	5.23	48.64	21.83	74.00	54.00	X/H

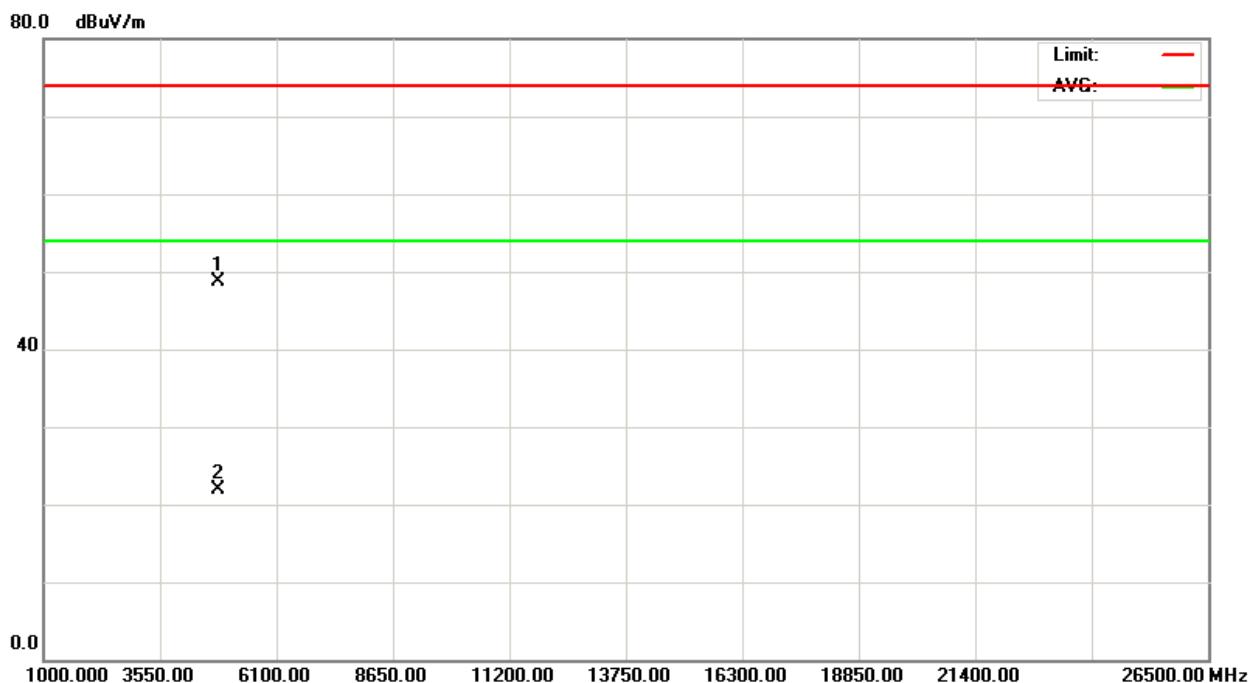
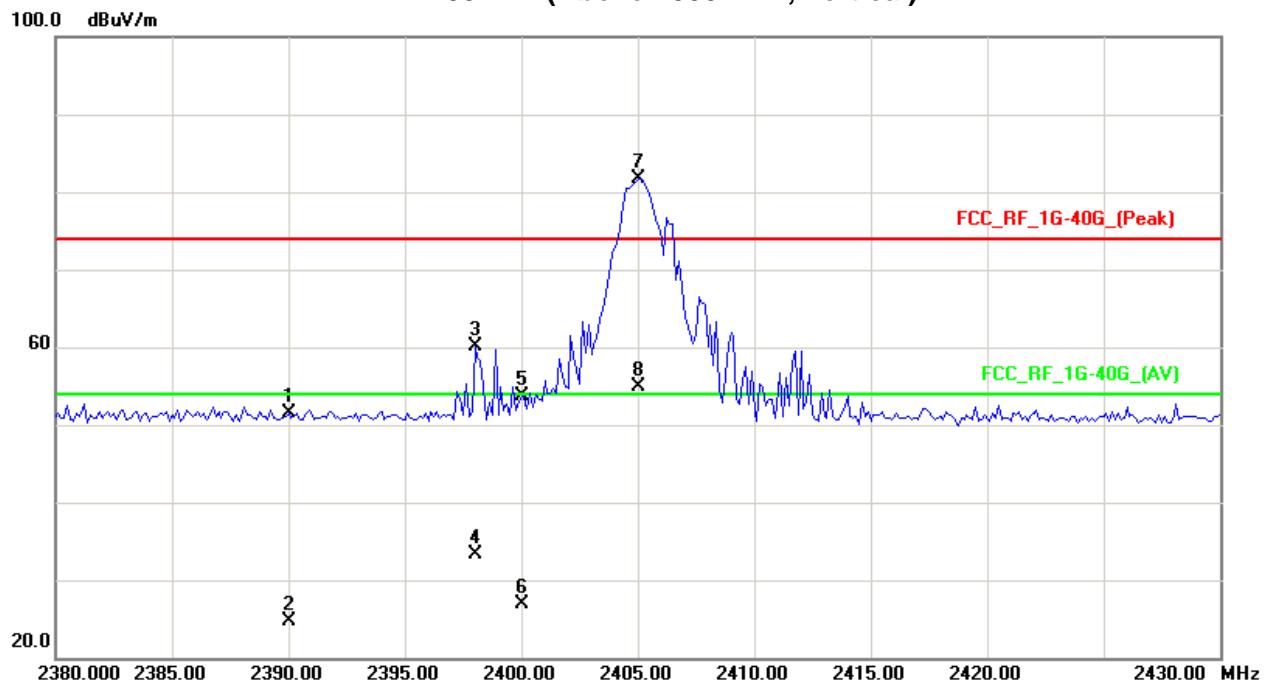
### Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) , Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2405MHz (Above 1000 MHz, Vertical)**





EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	51%
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX 2405MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	22.20	-4.61	28.32	50.52	23.71	74.00	54.00	X/E
2399.00	H	37.77	10.98	28.30	66.07	39.28	74.00	54.00	X/E
2400.00	H	32.08	5.27	28.30	60.38	33.57	74.00	54.00	X/E
<b>2404.88</b>	<b>H</b>	<b>59.64</b>	<b>32.80</b>	<b>28.29</b>	<b>87.93</b>	<b>61.09</b>	<b>114.00</b>	<b>94.00</b>	<b>X/F</b>
4810.05	H	43.39	16.58	5.23	48.62	21.81	74.00	54.00	X/H

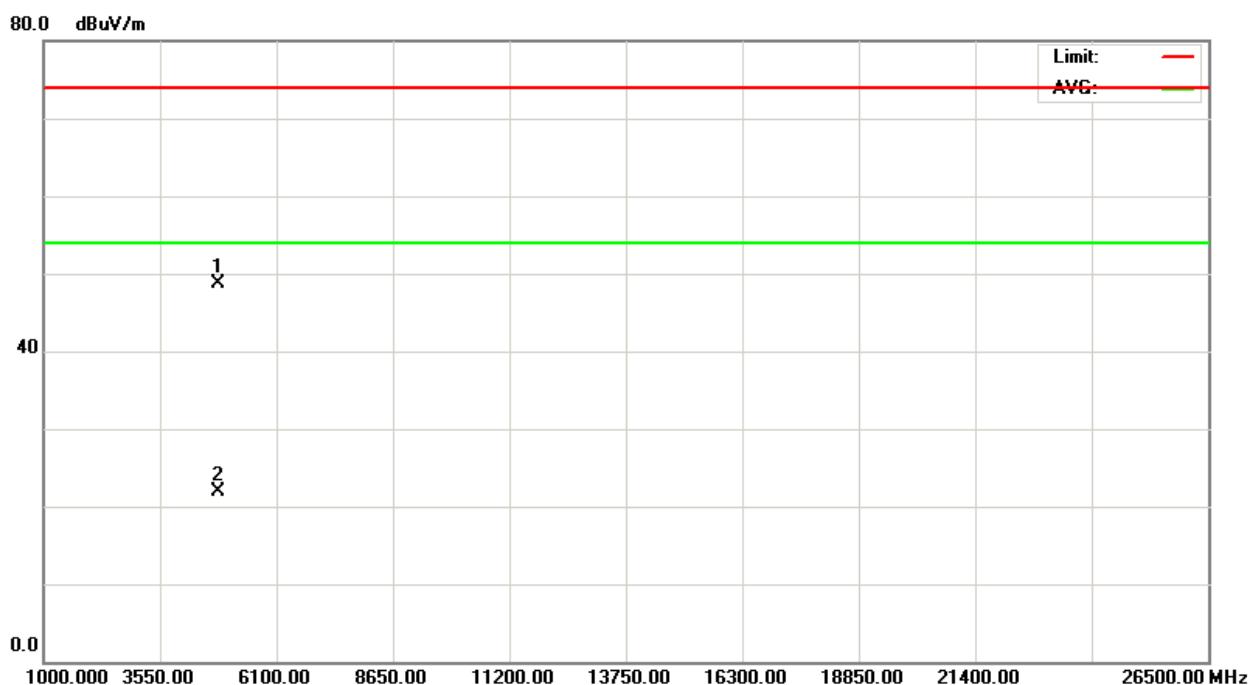
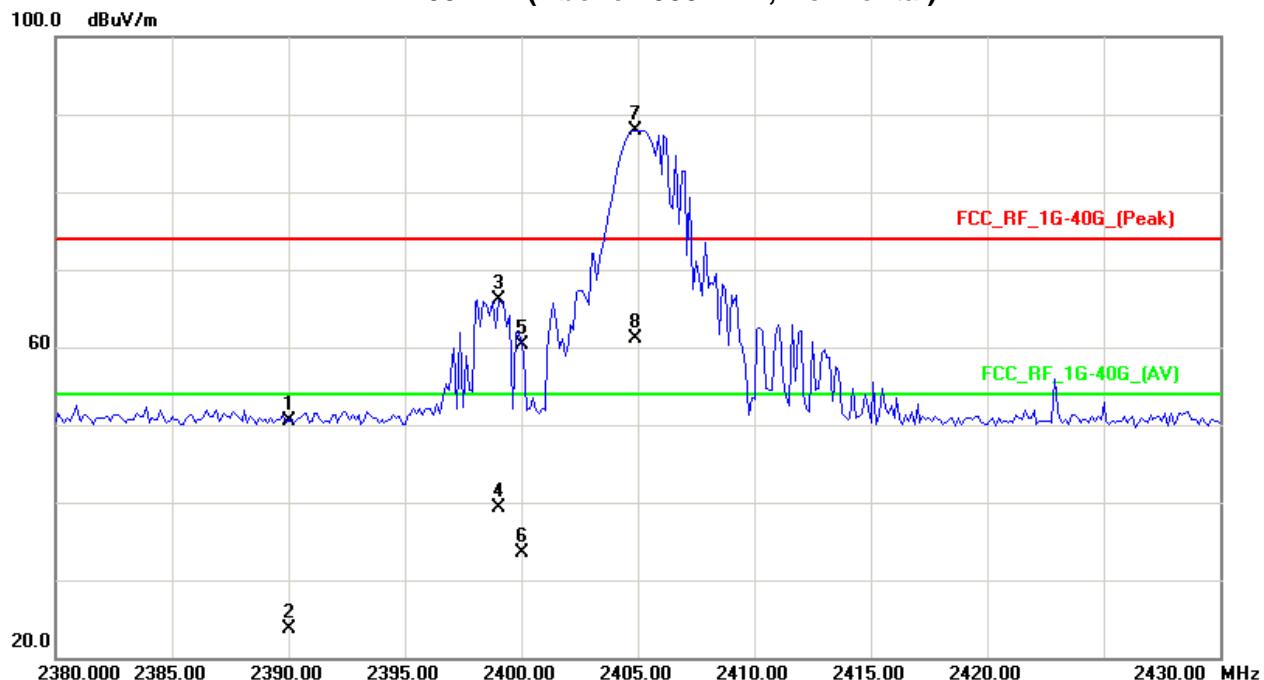
## Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency . "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) → Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2405MHz (Above 1000 MHz, Horizontal)**





EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	58 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX 2439MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2439.13	V	<b>52.70</b>	<b>25.89</b>	<b>28.22</b>	<b>80.92</b>	<b>54.11</b>	<b>114.00</b>	<b>94.00</b>	X/F
4878.14	V	41.38	14.57	5.49	46.87	20.06	74.00	54.00	X/H

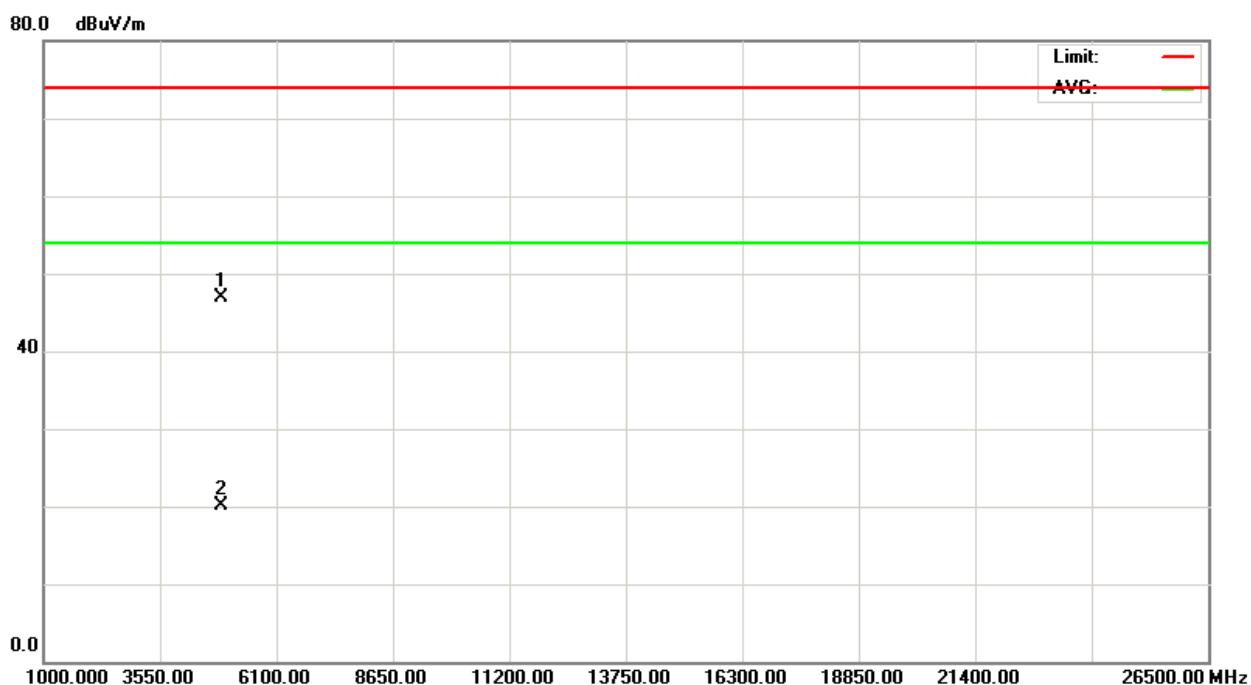
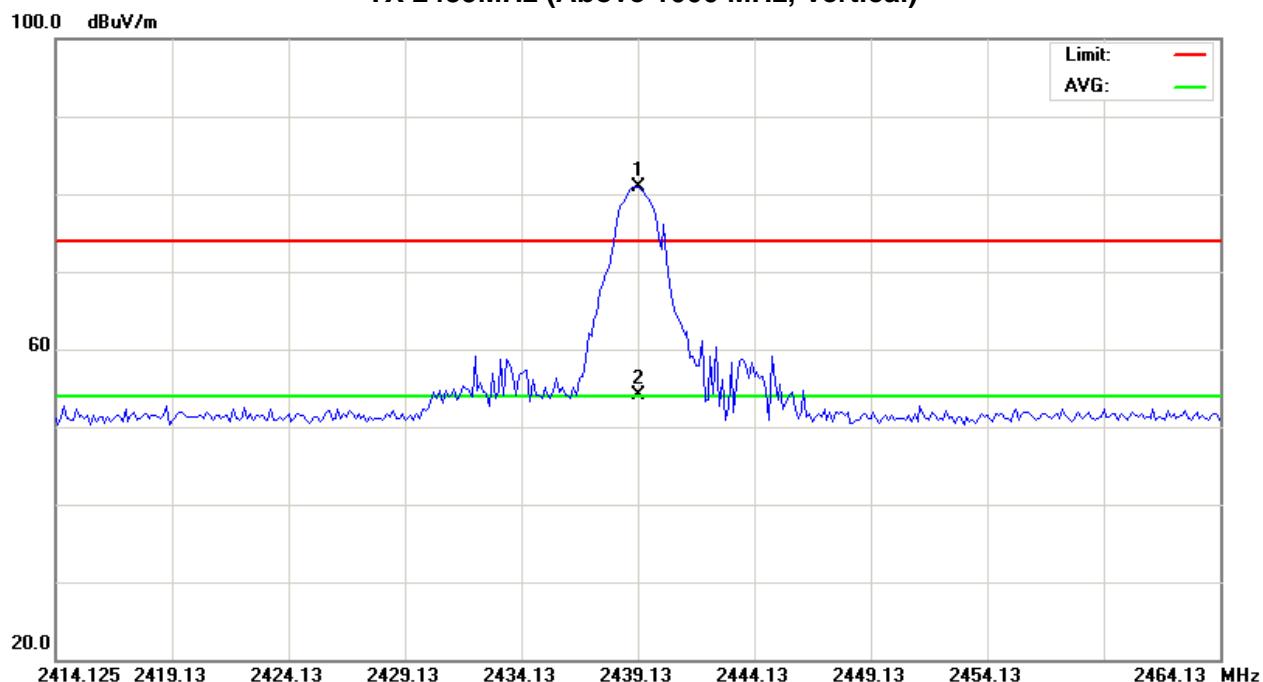
Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) , Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2439MHz (Above 1000 MHz, Vertical)**





EUT :	LuxeMatei8150		Model Name. :	GK-110010/T	
Temperature :	25°C		Relative Humidity :	58 %	
Pressure :	1009 hPa		Test Power :	DC 1.5V	
Test Mode :	TX 2439MHz				

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2439.13	H	<b>59.18</b>	<b>32.37</b>	<b>28.22</b>	<b>87.40</b>	<b>60.59</b>	<b>114.00</b>	<b>94.00</b>	X/F
4877.65	H	42.02	15.21	5.49	47.51	20.70	74.00	54.00	X/H

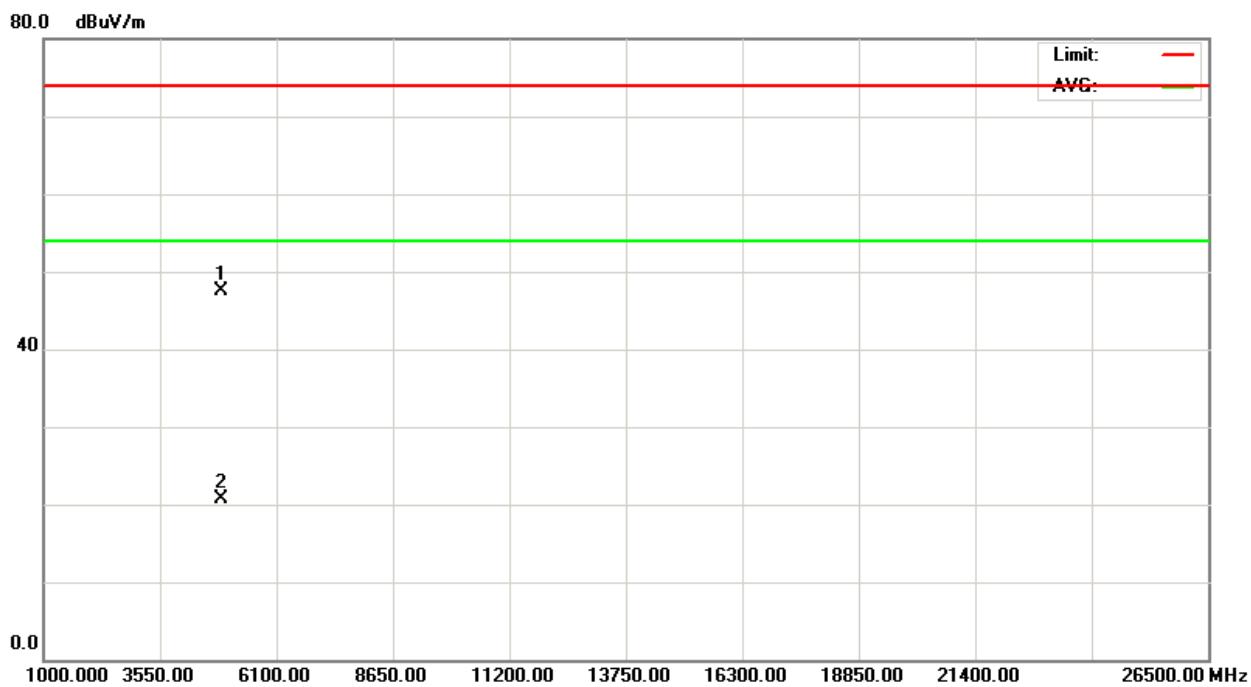
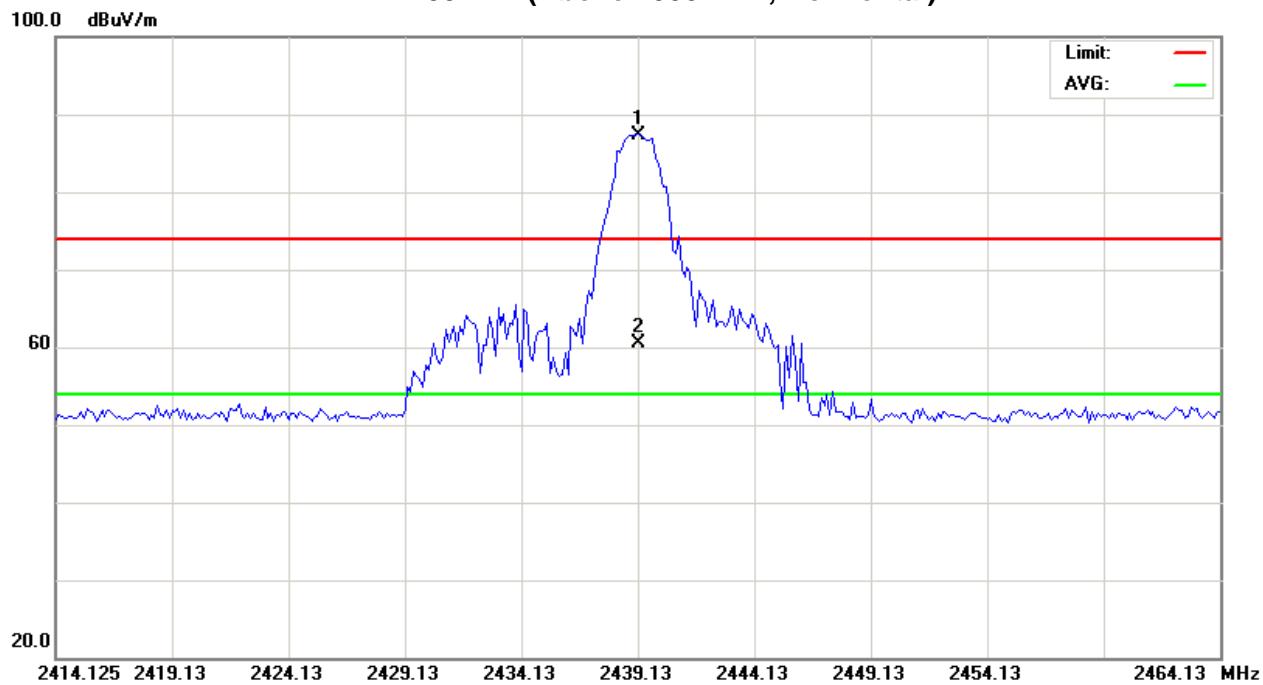
Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) , Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2439MHz (Above 1000 MHz, Horizontal)**





EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	58 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX 2476MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2476.00	V	51.96	25.15	28.15	80.11	53.30	114.00	94.00	X/F
2481.25	V	29.16	2.35	28.14	57.30	30.49	114.00	94.00	X/E
2483.50	V	22.71	-4.10	28.13	50.84	24.03	74.00	54.00	X/E
4952.34	V	43.27	16.16	5.76	49.03	21.92	74.00	54.00	X/H

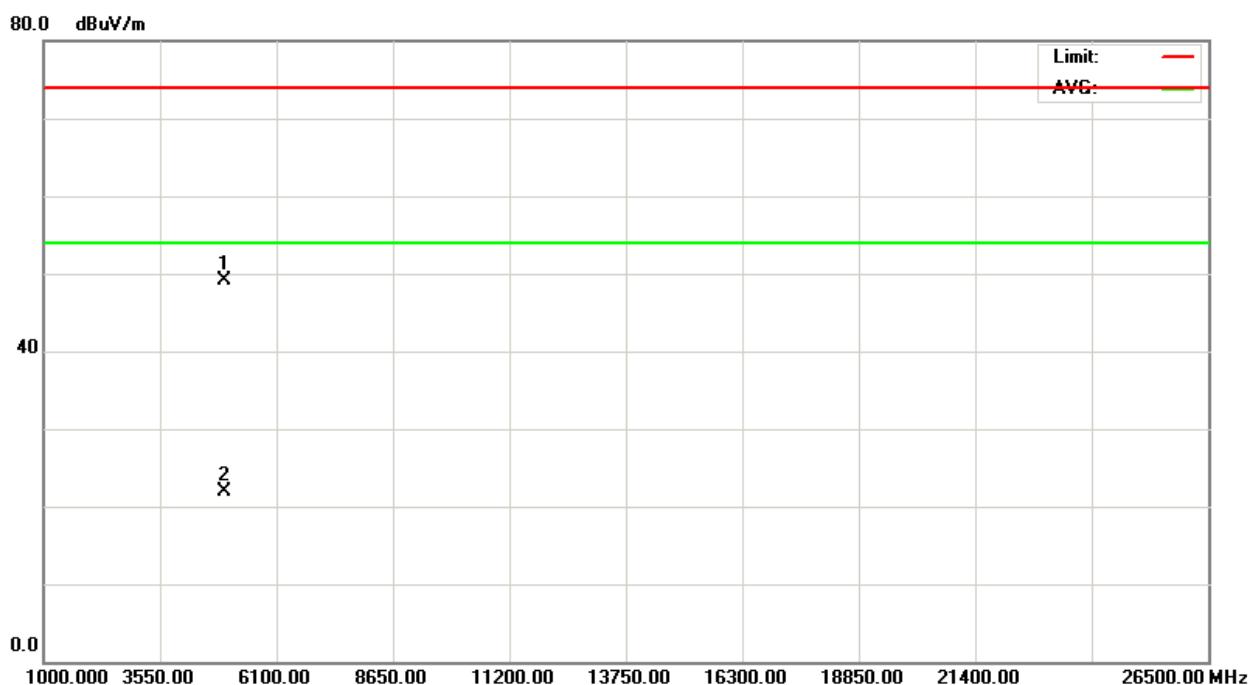
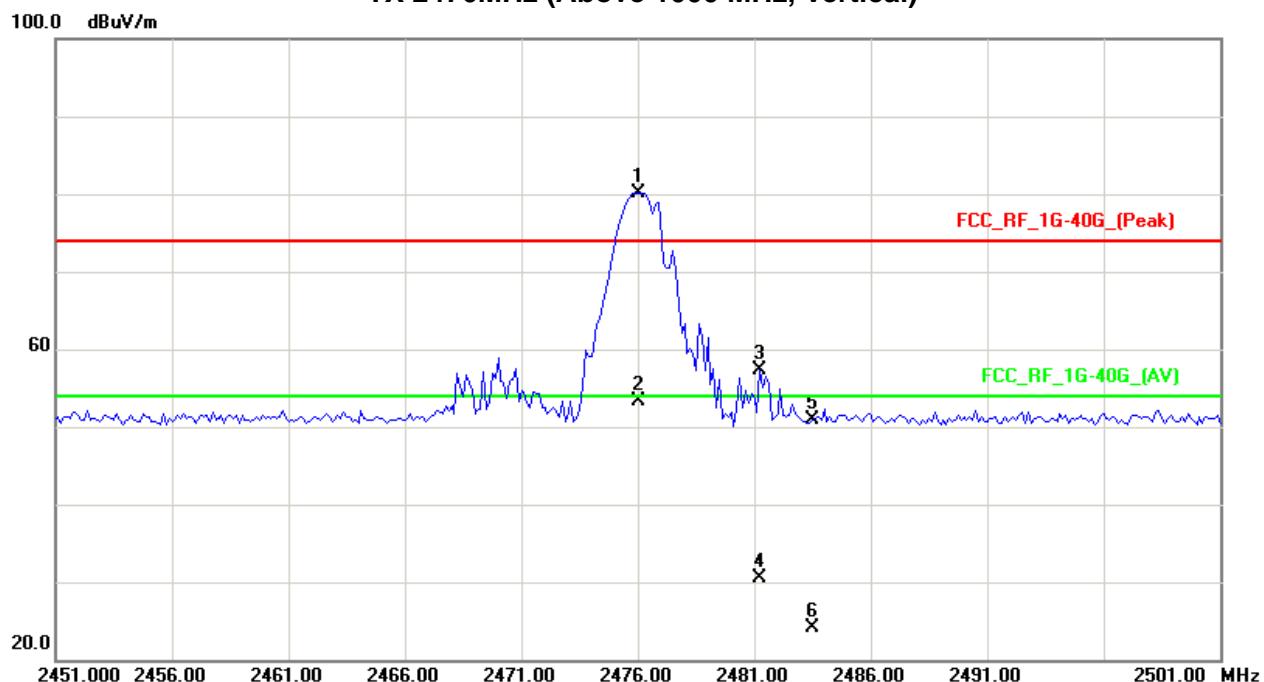
**Remark :**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) , Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2476MHz (Above 1000 MHz, Vertical)**





EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25°C	Relative Humidity :	58 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX 2476MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2475.88	H	56.86	30.05	28.15	85.01	58.20	114.00	94.00	X/F
2481.38	H	32.39	5.58	28.14	60.53	33.72	114.00	94.00	X/E
2483.50	H	22.70	-4.11	28.13	50.83	24.02	74.00	54.00	X/E
4951.87	H	42.68	15.87	5.75	48.43	21.62	74.00	54.00	X/H

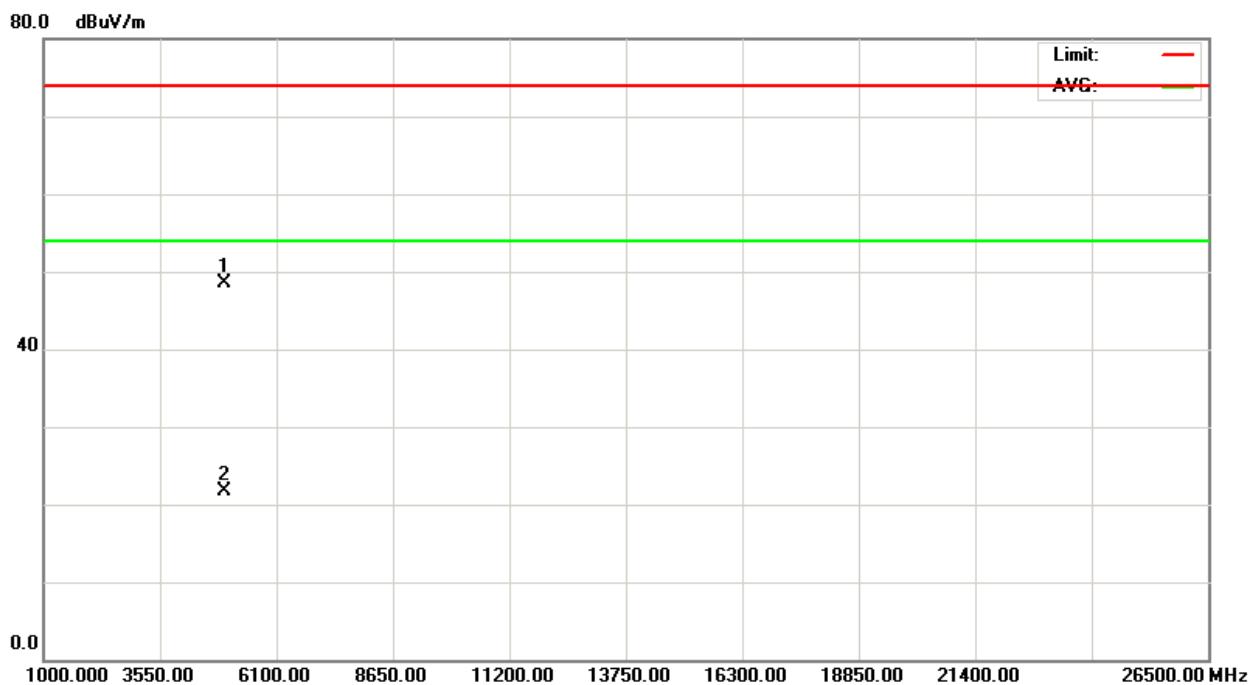
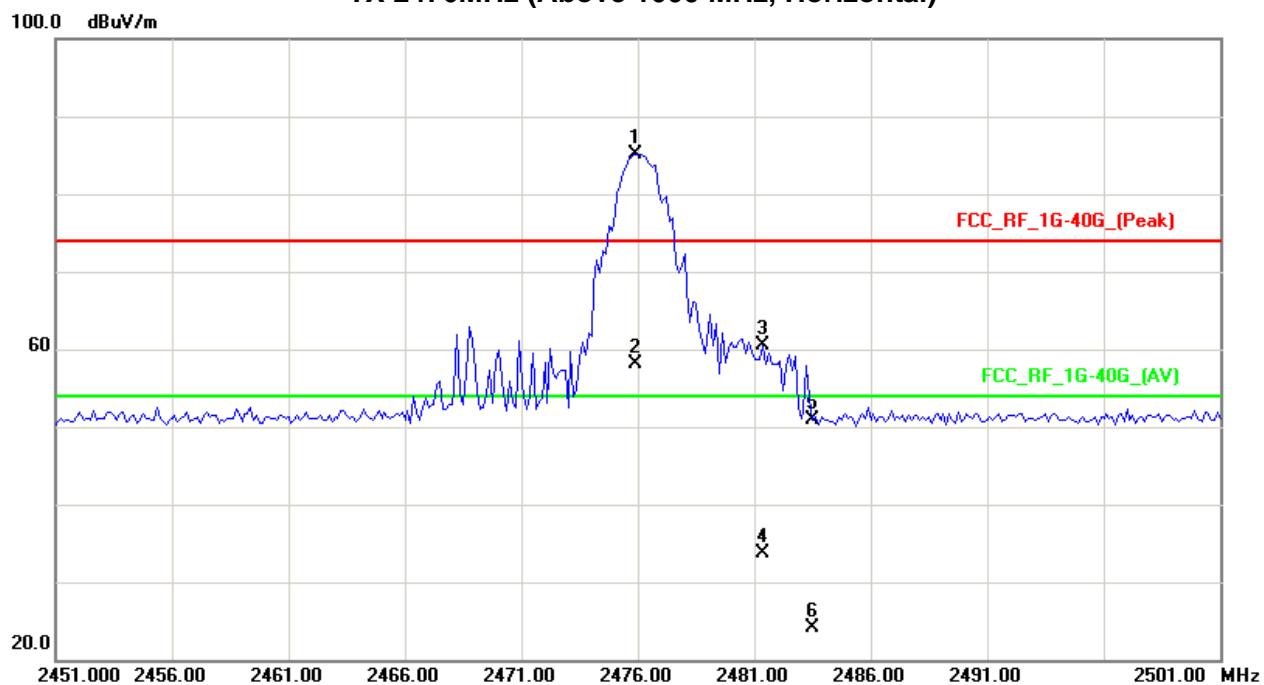
## Remark :

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis :
  - "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) The average value of fundamental frequency is:  
Average = Peak value + 20log(Duty cycle) , Final AV=PK-26.81



**Orthogonal Axis : X**

**TX 2476MHz (Above 1000 MHz, Horizontal)**





## 5. BANDWIDTH TEST

### 5.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov.25.2012

Remark: " N/A" denotes No Model Name. , Serial No. or No Calibration specified.

### 5.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = 2.5 ms.

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 EUT OPERATION CONDITIONS

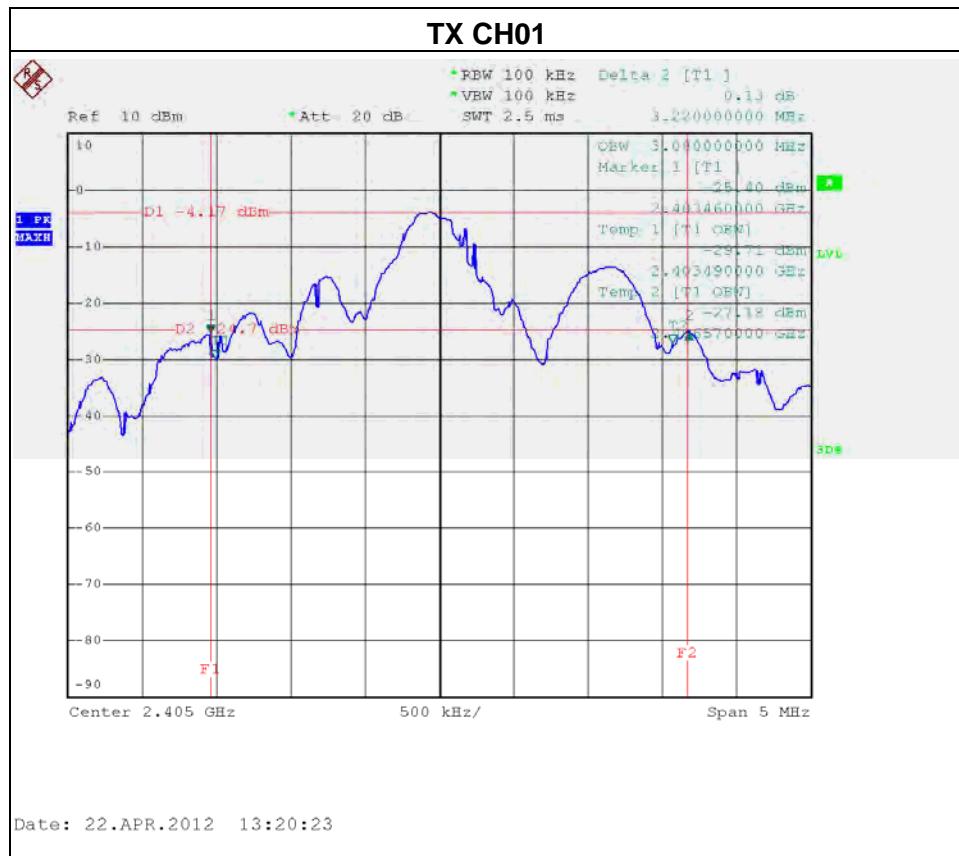
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

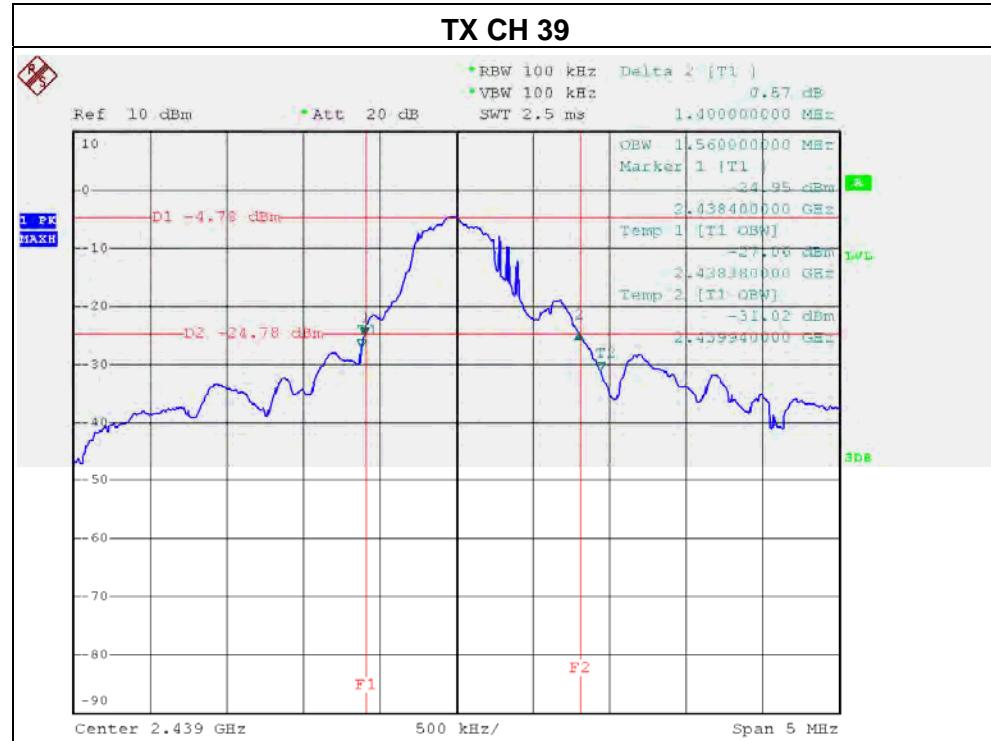


## 5.6 TEST RESULTS

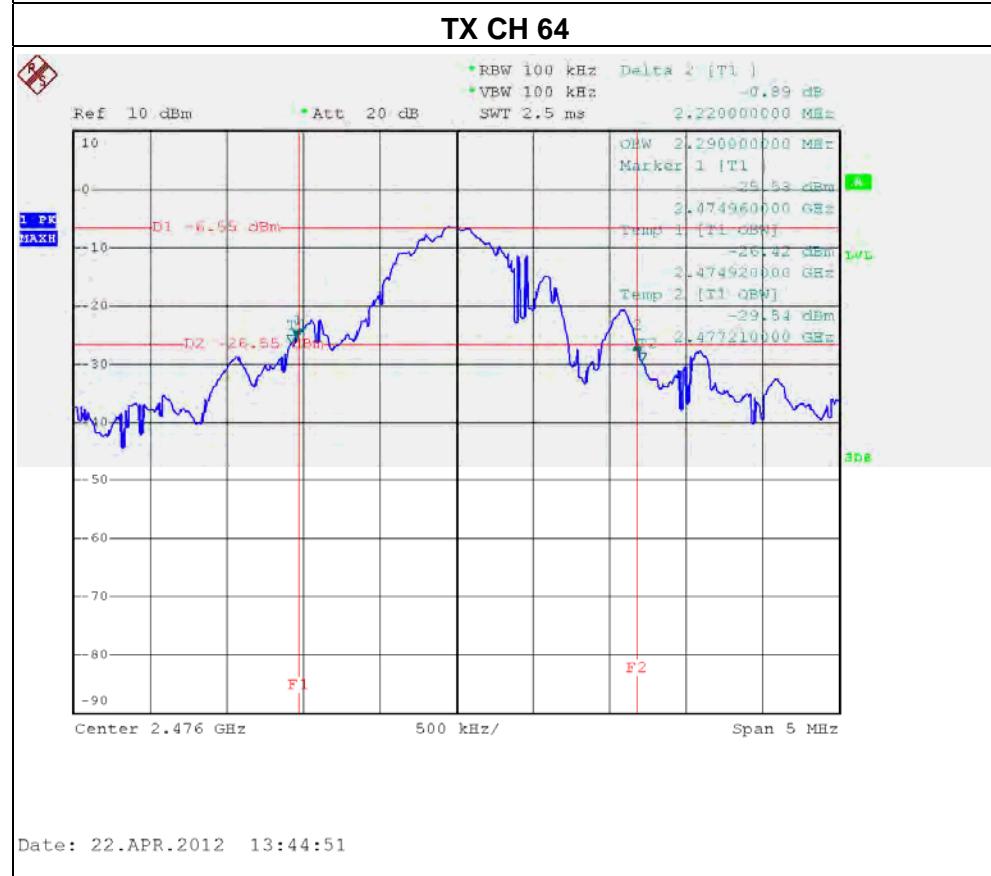
EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25 °C	Relative Humidity :	55 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX CH 01/39/64		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (MHz)
CH 01	2405	3.22
CH 39	2439	1.40
CH 64	2476	2.22





Date: 22.APR.2012 13:35:28



Date: 22.APR.2012 13:44:51



## 6. ANTENNA CONDUCTED SPURIOUS EMISSION

### 6.1 APPLIED PROCEDURES / LIMIT

50dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

### 6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov.25.2012

Remark: " N/A " denotes No Model Name. , Serial No. or No Calibration specified.

### 6.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.

### 6.1.3 DEVIATION FROM STANDARD

No deviation.

### 6.1.4 TEST SETUP



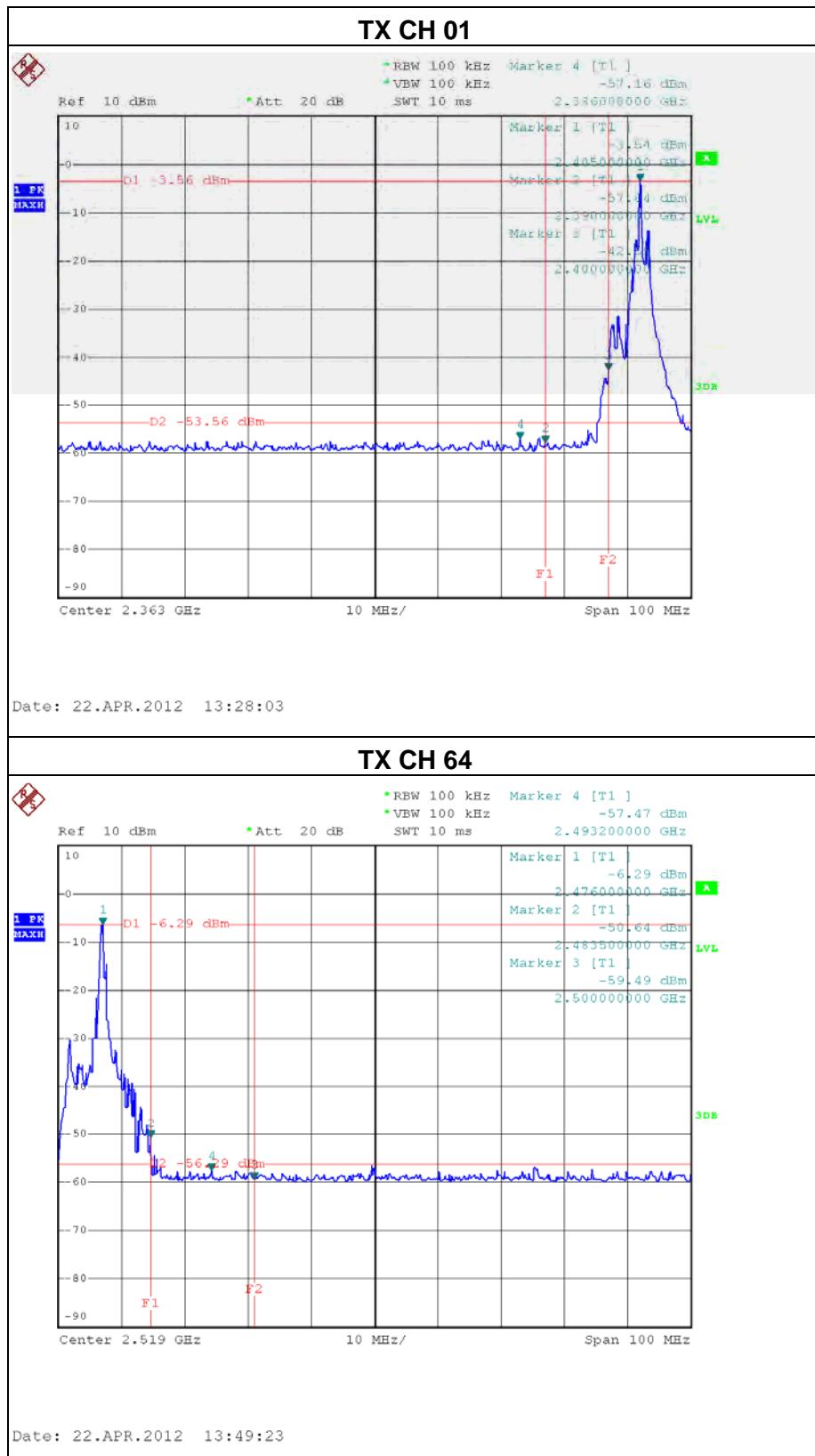
### 6.1.5 EUT OPERATION CONDITIONS

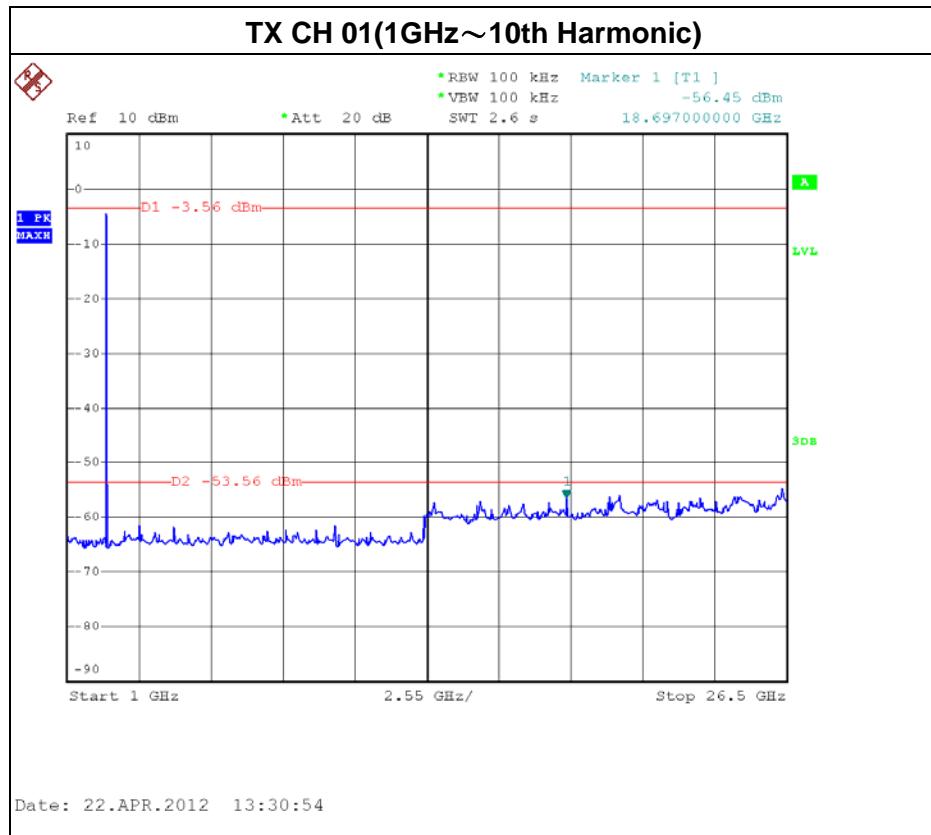
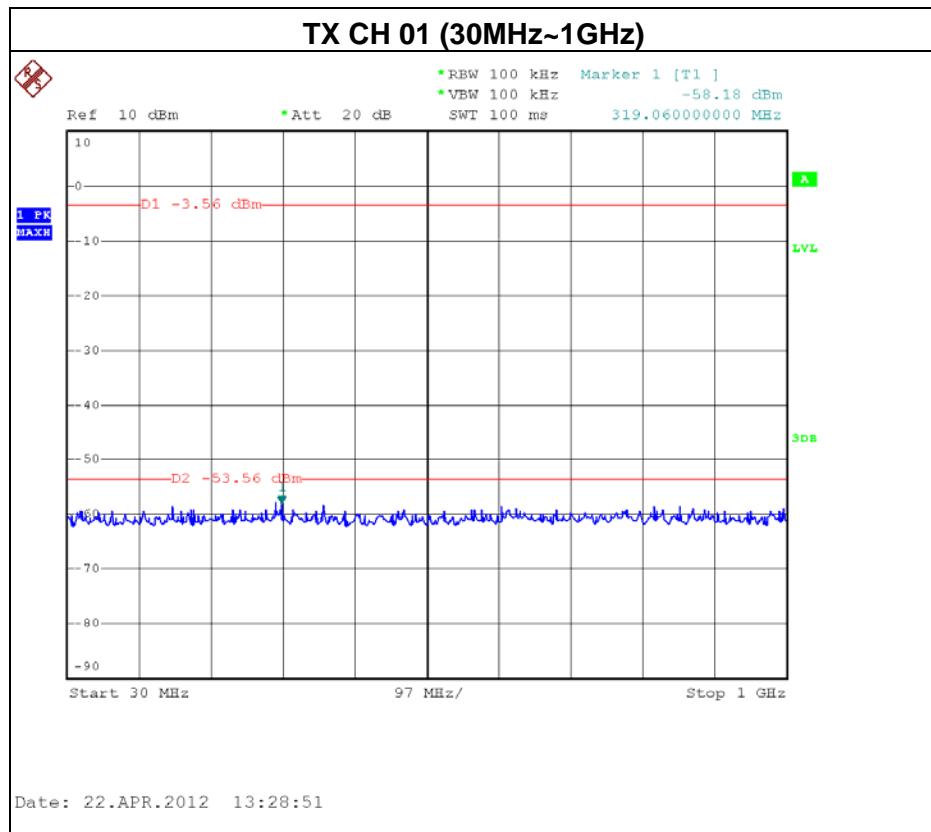
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

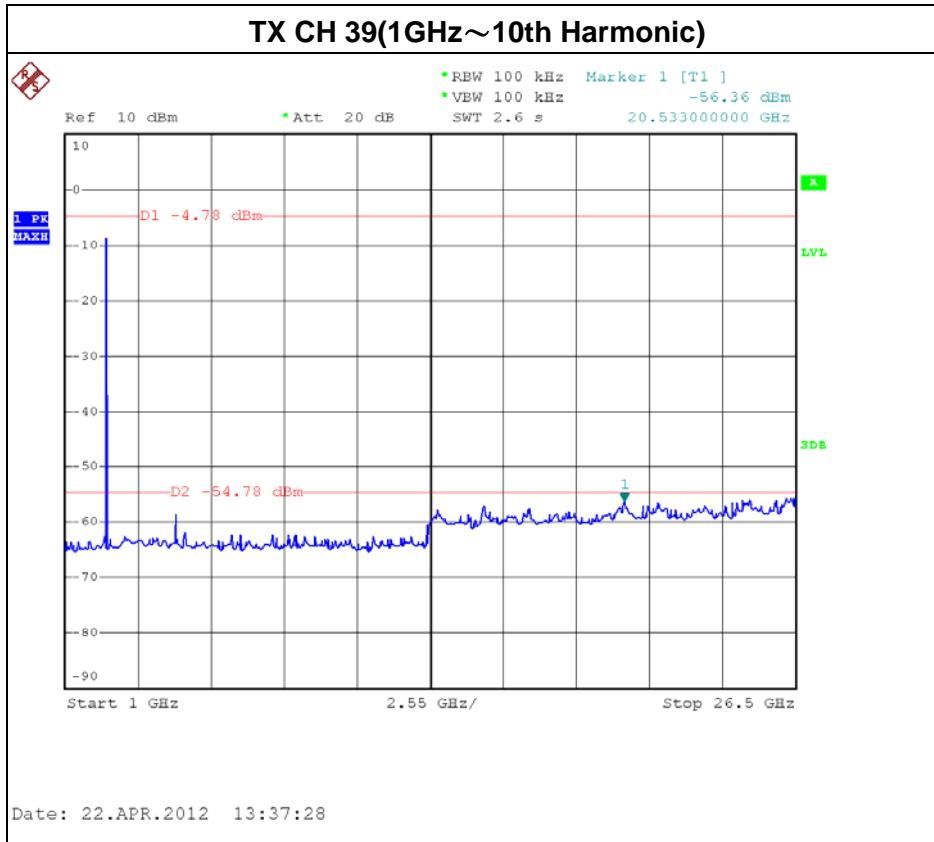
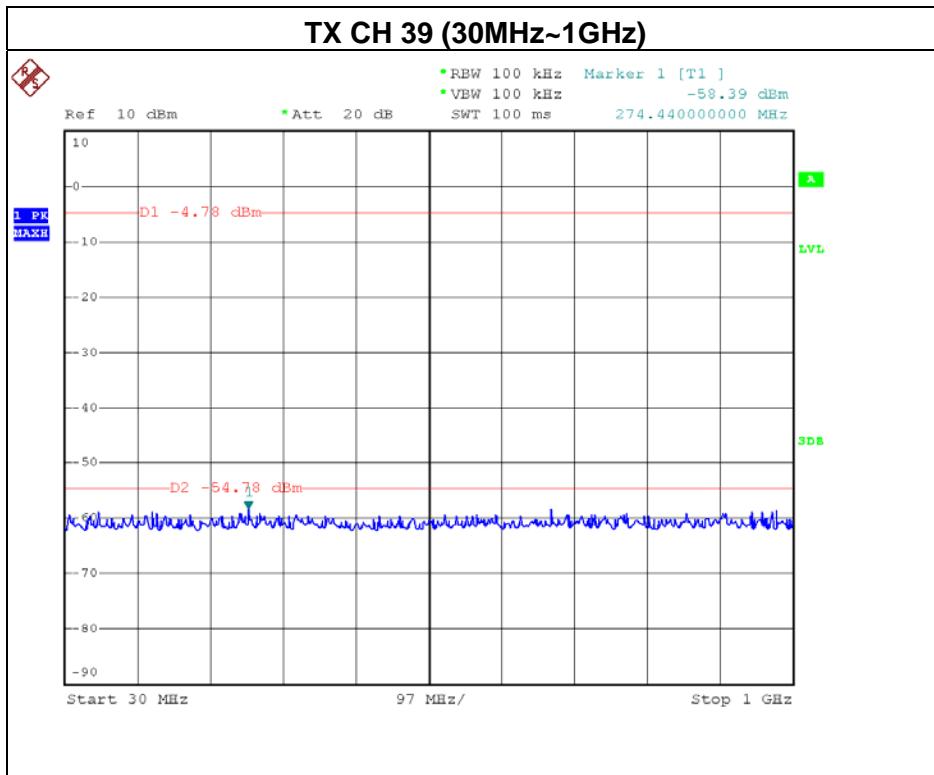
**6.1.6 TEST RESULTS**

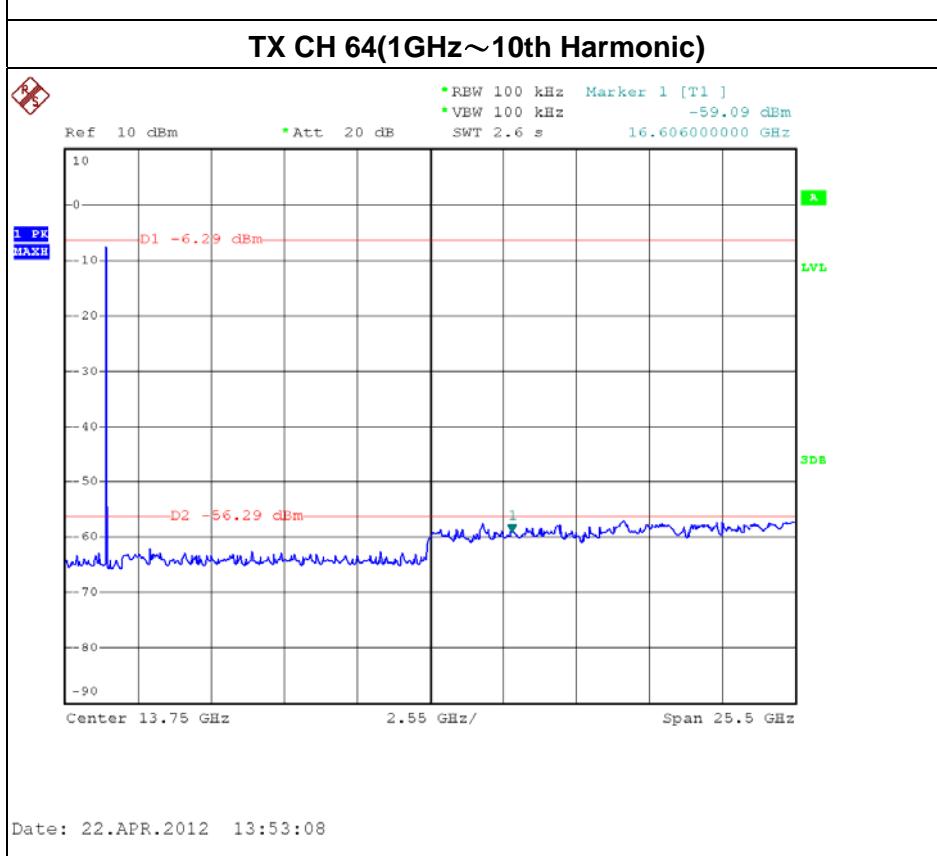
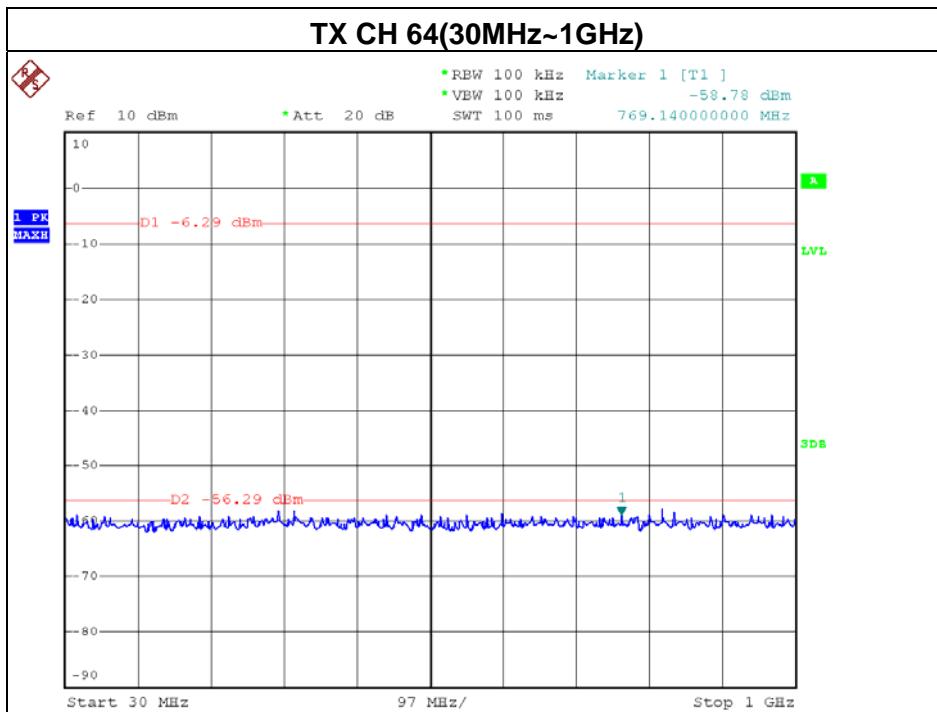
EUT :	LuxeMatei8150	Model Name. :	GK-110010/T
Temperature :	25 °C	Relative Humidity :	55 %
Pressure :	1009 hPa	Test Power :	DC 1.5V
Test Mode :	TX CH 01, CH 39, CH 64		

Channel of Worst Data: CH 01			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-42.55	2483.50	-50.64
Result			
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.			





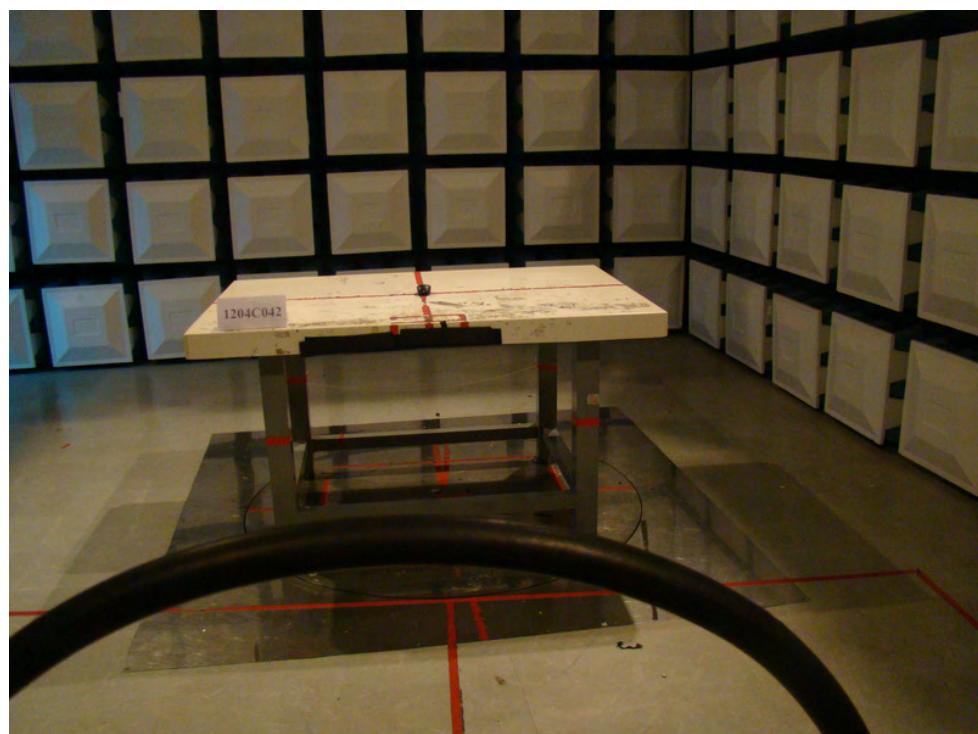
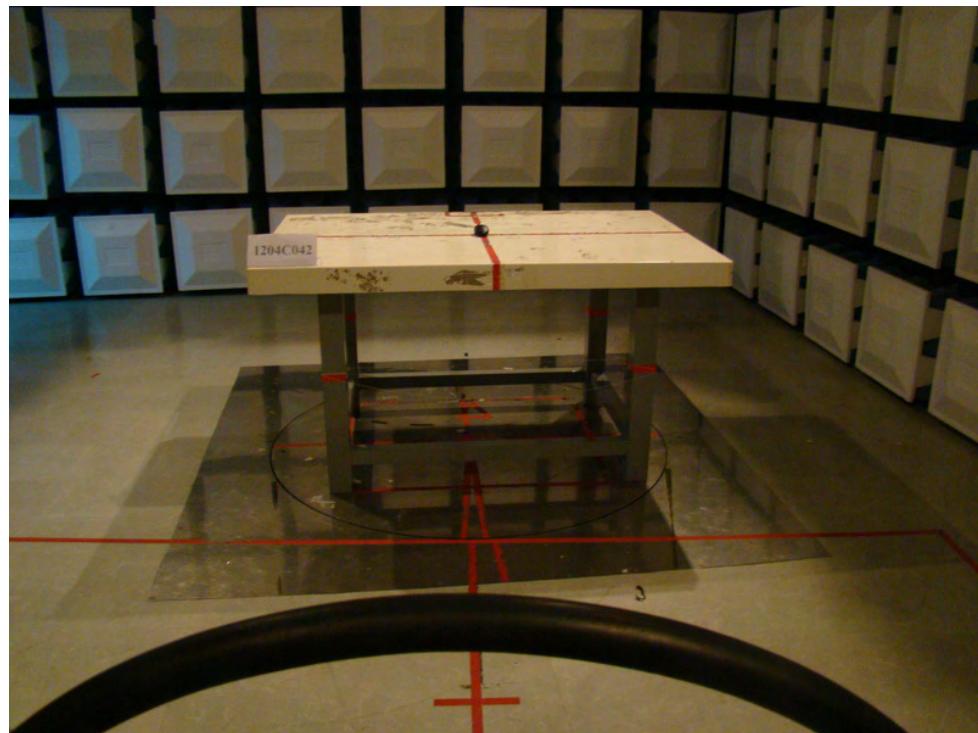






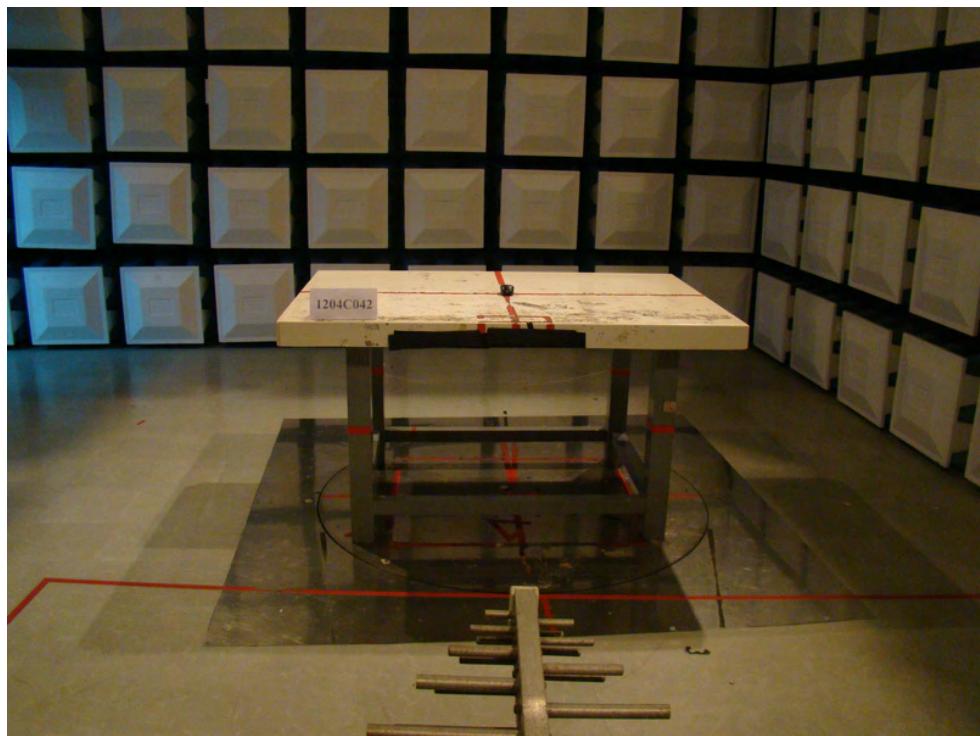
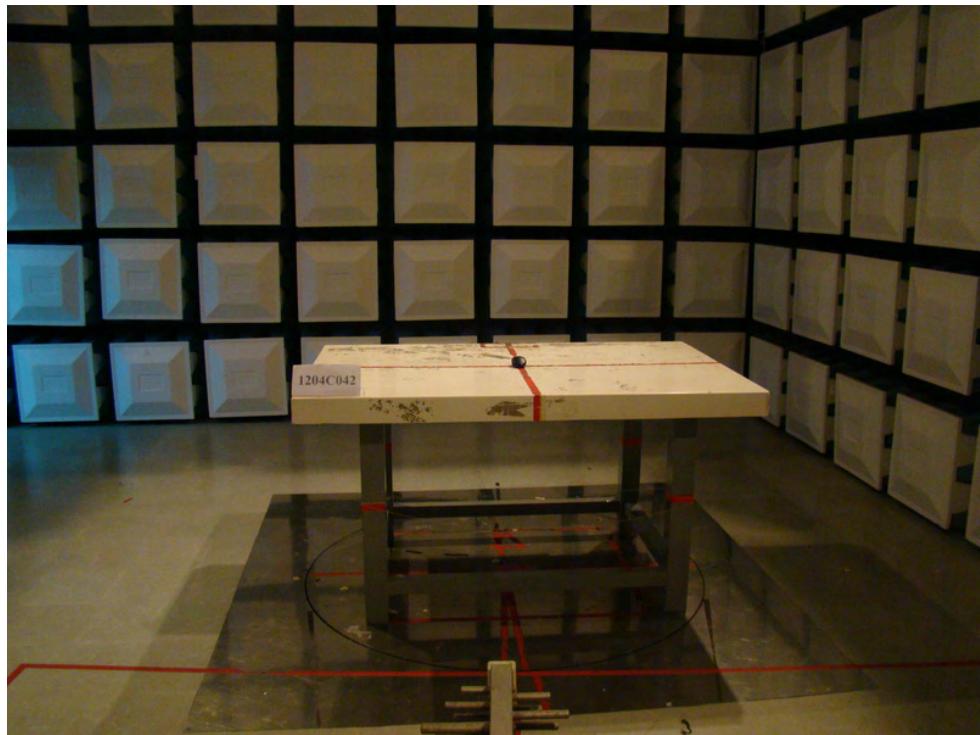
**7. EUT TEST PHOTO**

**Radiated Measurement Photos  
9K - 30MHz**





**Radiated Measurement Photos  
30MHz - 1000MHz**





**Radiated Measurement Photos  
Above 1000MHz**

