

FCC TEST REPORT for SHENZHEN HERO LOYAL MICROELECTRONICS CO., LTD

Wireless Keyboard Model No.: KMG1005, KMG1006, KMG1008, KG1006, G700E, G701E, G702E

Prepared for : SHENZHEN HERO LOYAL MICROELECTRONICS CO.,

LTD

Address : 604, Block A, Developing Building, Tsing-hua High-tect Park,

Keyuan Road, Nanshan District, Shenzhen, China

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited

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Report Number : 201308902F

Date of Test : Aug. 27~Sept. 06, 2013

Date of Report : Sept. 09, 2013



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TEST REPORT

Applicant : SHENZHEN HERO LOYAL MICROELECTRONICS CO., LTD

Manufacturer : SHENZHEN HERO LOYAL MICROELECTRONICS CO., LTD

EUT : Wireless Keyboard

Model No. : KMG1005, KMG1006, KMG1008, KG1006, G700E, G701E,

G702E

Serial No. : N/A

Trade Mark : Loshine

Rating : DC 3V, 30mA Battery

Measurement Procedure Used:

FCC Part15 Subpart C, Paragraph 15.207, 15.249 & 15.209

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without

written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test:	Aug. 27~Sept. 06, 2013
Prepared by :	Zock zeng
_	(Tested Engineer / Rock Zeng)
Reviewer :	Amy Ding
	(Project Manager / Amy Ding)
Approved & Authorized Signer:	Jon Chen
	(Manager / Tom Chen)



1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Wireless Keyboard

Model Number : KMG1005, KMG1006, KMG1008, KG1006, G700E, G701E,

G702E

(Note: All samples are the same except the model number & shape of

appliances, so we prepare "KMG1005" for EMC test only.)

Test Power Supply: DC 3V

Frequency: 2405-2472MHz

Channel Space 1MHz

No. of Channels : 68

Antenna: 1.76 dBi

Specification

Applicant : SHENZHEN HERO LOYAL MICROELECTRONICS CO., LTD Address : 604, Block A, Developing Building, Tsing-hua High-tect Park,

Keyuan Road, Nanshan District, Shenzhen, China

Manufacturer : SHENZHEN HERO LOYAL MICROELECTRONICS CO., LTD

Address : 604, Block A, Developing Building, Tsing-hua High-tect Park,

Keyuan Road, Nanshan District, Shenzhen, China

Date of receiver : Aug. 27, 2013

Date of Test : Aug. 27~Sept. 06, 2013



1.2. Auxiliary Equipment Used during Test

PC : Manufacturer: DELL

M/N: OPTIPLEX 380

S/N: 1J63X2X CE, FCC: DOC

MONITOR : Manufacturer: DELL

M/N: E170Sc

S/N: CN-00V539-64180-055-0UPS

CE, FCC: DOC

MOUSE : Manufacturer: DELL

M/N: M-UARDEL7

S/N: N/A CE, FCC: DOC

Cable: 1m, unshielded

Printer : Manufacturer:Brother

M/N: MFC-3360C

S/N: N/A CE, FCC:DOC

Power Line : Non-Shielded, 1.5m

VGA Cable : Non-Shielded, 1.5m

Network Cable : Non-Shielded, 1.5m



1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS - LAB Code: L3503

Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 10, 2013.

IC-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

Test Location

All Emissions tests were performed at

Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB



2. Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of Shenzhen Anbotek Compliance Laboratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2009 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-2009 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.



3. Conducted Limits

Test Equipment

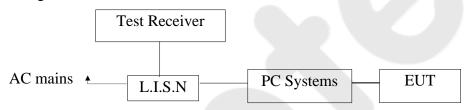
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	
1.	Two-Line	Rohde & Schwarz	ENV216	100055	Apr. 23, 2013	1 Year	
	V-network	Ronde & Senwarz	LI\\210	100033	Apr. 23, 2013	1 Tear	
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year	
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 23, 2013	1 Year	

Conduction Uncertainty

Uc = 3.4dB

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



(EUT: Wireless Keyboard)

3.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency	Limits dB(μV)			
MHz	Quasi-peak Level	Average Level		
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*		
0.50 ~ 5.00	56	46		
5.00 ~ 30.00	60	50		

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Wireless Keyboard

Model Number : KMG1005

Applicant : SHENZHEN HERO LOYAL MICROELECTRONICS CO.,

LTD



3.4. Operating Condition of EUT

- 3.4.1. Setup the EUT and simulator as shown as Section 3.1.
- 3.4.2. Turn on the power of all equipment.
- 3.4.3. Let the EUT work in test mode (ON) and measure it.

3.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 3.6.

3.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150KHz to 30 MHz is investigated.

Please refer the following pages.



CONDUCTED EMISSION TEST DATA

EUT: Wireless Keyboard M/N: KMG1005

Operating Condition: ON

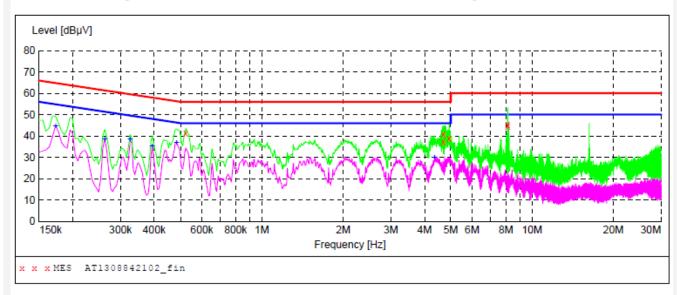
Test Site: 1# Shielded Room

Operator: Finley Li
Test Specification: DC 3V
Comment: Live Line

Tem:25°C Hum:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1308842102 fin"

8/28/2013 10:	:56AM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμ∇	dB	dBµV	dB			
0.523500	41.20	20.1	56	14.8	QP	L1	GND
4.694500	37.30	20.5	56	18.7	QP	L1	GND
4.703500	41.10	20.5	56	14.9	QP	L1	GND
4.933000	38.80	20.5	56	17.2	QP	L1	GND
8.119000	44.70	20.5	60	15.3	QP	L1	GND
8.128000	45.30	20.5	60	14.7	QP	L1	GND

MEASUREMENT RESULT: "AT1308842102_fin2"

8/28/2013 10 Frequency MHz	Level		Limit dBµV	Margin dB	Detector	Line	PE
0.172500	44.80	20.1	55	10.0	AV	L1	GND
0.262500	38.50	20.1	51	12.9	AV	L1	GND
0.325500	38.30	20.1	50	11.3	AV	L1	GND
0.393000	35.00	20.1	48	13.0	AV	L1	GND
0.483000	37.00	20.1	46	9.3	AV	L1	GND
4.357000	29.90	20.5	4.6	16.1	ΔV	T.1	GND



CONDUCTED EMISSION TEST DATA

EUT: Wireless Keyboard M/N: KMG1005

Operating Condition: ON

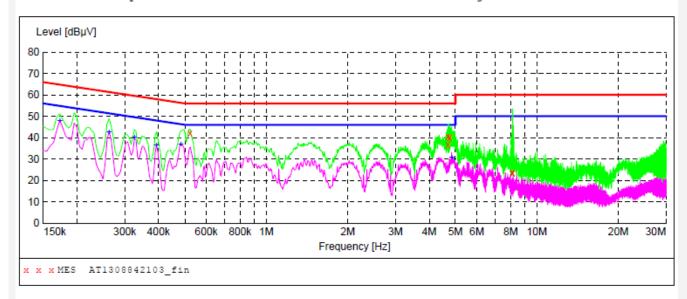
Test Site: 1# Shielded Room

Operator: Finley Li
Test Specification: DC 3V
Comment: Neutral Line

Tem:25°C Hum:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1308842103 fin"

8/28/2013 10	:59AM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμV	dB	dΒμV	dB			
0.523500	42.20	20.1	E.C.	12 0	O.D.	NT.	CND
	42.20	20.1	56	13.8	QP	N	GND
4.694500	37.00	20.5	56	19.0	QP	N	GND
4.703500	40.70	20.5	56	15.3	QP	N	GND
4.771000	40.30	20.5	56	15.7	QP	N	GND
8.114500	23.70	20.5	60	36.3	QP	N	GND
8.123500	23.50	20.5	60	36.5	OP	N	GND

MEASUREMENT RESULT: "AT1308842103_fin2"

8/28/2013 10	:59AM						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.172500	48.00	20.1	55	6.8	AV	N	GND
0.262500	42.70	20.1	51	8.7	AV	N	GND
0.325500	40.20	20.1	50	9.4	AV	N	GND
0.393000	36.40	20.1	48	11.6	AV	N	GND
0.483000	36.90	20.1	46	9.4	AV	N	GND
4.838500	30.80	20.5	46	15.2	AV	N	GND



4. Radiation Interference

4.1. Requirements (15.249, 15.209):

S15.209 FIELD STRENGTH FIELD STRENGTH of Fundamental: of Harmonics 30 - 88 MHz 40 dBuV/m @3M

902-928 MHZ 88 - 216 MHz 43.5 2.4-2.4835 GHz 216 - 960 MHz 46

 $94 dB\mu V/m @3m$ $54 dB\mu V/m @3m$ ABOVE 960 MHz 54dBuV/m

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 15.209, whichever is the lesser attenuation.

4.2 Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz. The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 4.3.

Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Aug. 09, 2013	1 Year
2.	Preamplifier	Instruments corporation	EMC01183 0	980100	Aug. 09, 2013	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2013	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	3 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 23, 2013	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

Radiation Uncertainty : Ur = 4.3dB

4.3 Test Results

PASS.

Please refer the following pages.

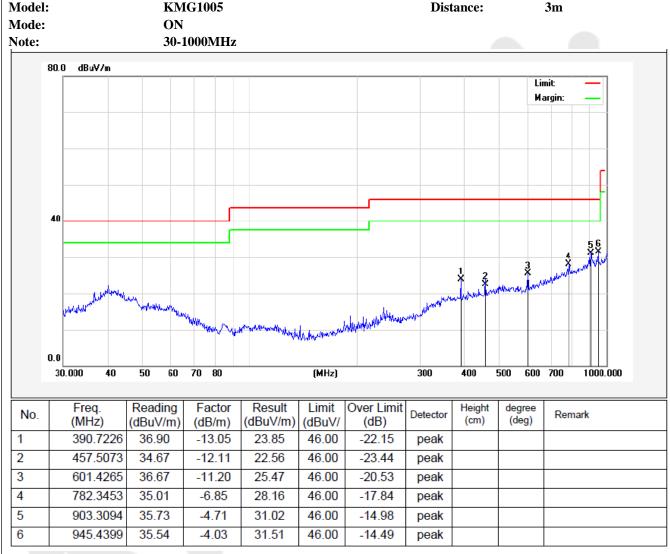
Data:



Below 1GHz:

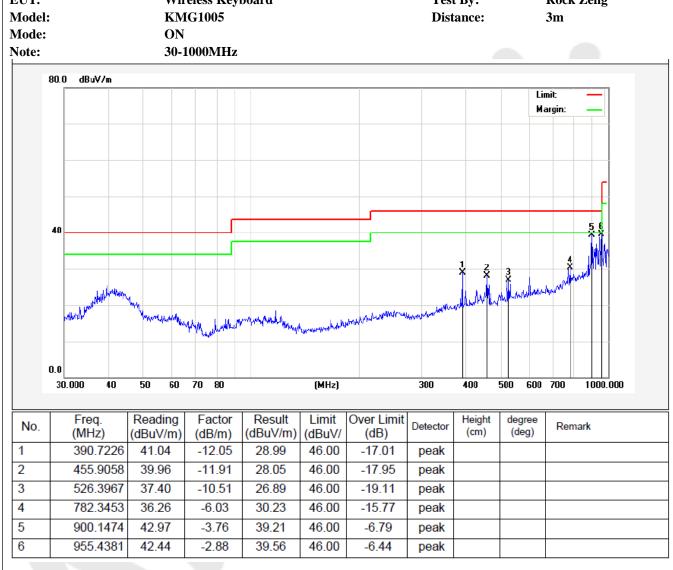
Job No.: AT1308842F **Polarziation:** Horizontal Standard: (RE)FCC PART15 C _3m **Power Source:** DC₃V 2013/08/28 Test item: **Radiation Test** Date: 19/37/18 Temp.(C)/Hum.(%RH): 24.3(C)/55%RH Time: Test By: EUT: Wireless Keyboard **Rock Zeng**

Model: **KMG1005 Distance:**





Job No.: AT1308842F **Polarziation:** Vertical DC 3V Standard: (RE)FCC PART15 C _3m **Power Source:** 2013/08/28 Test item: **Radiation Test** Date: 19/34/23 Temp.(C)/Hum.(%RH): 24.3(C)/55%RH Time: **EUT:** Wireless Keyboard Test By: **Rock Zeng**





Above 1 GHz:

Horizonta	.l
CH Low	(2405MHz)

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	$dB\mu V$	$dB\mu V/m \\$	$dB\mu V/m$	dB	
2405.000	2.17	31.21	35.30	86.87	84.95	114.0	-29.05	Peak
2405.000	2.17	31.21	35.30	83.88	81.96	94.0	-12.04	AV
4810.350	2.56	34.01	34.71	47.71	49.57	74.0	-24.43	Peak
4810.350	2.56	34.01	34.71	36.35	38.21	54.0	-15.79	AV
7215.590	2.98	36.16	35.15	32.06	36.05	74.0	-37.95	Peak
7215.590	2.98	36.16	35.15	27.09	31.08	54.0	-22.92	AV
9620.000							<u> </u>	
12025.00						/	-	
14430.00				🔪)		7	
16835.00								

Vertical

CH Low (2405MHz)

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	$dB\mu V/m$	$dB\mu V/m$	dB	
2405.000	2.17	31.21	35.30	89.13	87.21	114.0	-26.79	Peak
2405.000	2.17	31.21	35.30	81.15	79.23	94.0	-14.77	AV
4810.350	2.56	34.01	34.71	36.49	38.35	74.0	-35.65	Peak
4810.350	2.56	34.01	34.71	37.76	39.62	54.0	-14.38	AV
7215.590	2.98	36.16	35.15	33.17	37.16	74.0	-36.84	Peak
7215.590	2.98	36.16	35.15	37.18	41.17	54.0	-12.83	AV
9620.000								
12025.00								
14430.00)						
16835.00								



Horizontal CH Middle (2448MHz)

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	$dB\mu V/m \\$	$dB\mu V/m \\$	dB	
2448.000	2.19	31.22	34.60	91.14	89.95	114.0	-24.05	Peak
2448.000	2.19	31.22	34.60	86.35	85.16	94.0	-8.84	AV
4896.250	2.57	35.00	34.58	38.24	41.23	74.0	-32.77	Peak
4896.250	2.57	35.00	34.58	31.16	34.15	54.0	-19.85	AV
7344.370	3.00	36.17	35.14	35.12	39.15	74.0	-34.85	Peak
7344.370	3.00	36.17	35.14	34.59	38.62	54.0	-15.38	AV
9792.000								<i></i>
12240.00								
14688.00							/	
17136.00								

Vertical

CH Middle (2448MHz)

Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	$dB\mu V/m$	$dB\mu V/m \\$	dB	
2448.000	2.19	31.22	34.60	94.86	93.67	114.0	-20.33	Peak
2448.000	2.19	31.22	34.60	82.15	80.96	94.0	-13.04	AV
4896.250	2.57	35.00	34.58	37.29	40.28	74.0	-33.72	Peak
4896.250	2.57	35.00	34.58	41.22	44.21	54.0	-9.79	AV
7344.370	3.00	36.17	35.14	39.61	43.64	74.0	-30.36	Peak
7344.370	3.00	36.17	35.14	37.75	41.78	54.0	-12.22	AV
9792.000								
12240.00								
14688.00								
17136 00								



Horizontal	
CH High (2472MHz	2)
O 11	

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Preamp Factor dB	Read Level dBµV	$\begin{array}{c} Level \\ dB\mu V/m \end{array}$	$\begin{array}{c} Limit \\ dB\mu V/m \end{array}$	Over Limit dB	Remark
2472.000 2472.000 4944.420 4944.420 7416.790 7416.790 9888.000 12360.00	2.20 2.20 2.58 2.58 3.02 3.02	31.65 31.65 35.06 35.06 36.19 36.20	36.00 36.00 34.79 34.79 34.90 35.20	89.28 83.18 49.98 37.24 48.03 34.85	87.13 81.03 52.83 40.09 52.34 38.87	114.0 94.0 74.0 54.0 74.0 54.0	-26.87 -12.97 -21.17 -13.91 -21.66 -15.13	Peak AV Peak AV Peak AV
14832.00 17304.00							7	

Vertical

CH High	(2472MHz)
---------	-----------

CH High (2	.4 / ZIVII IZ)	1						
Frequency	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
MHz	dB	dB/m	dB	dBμV	$dB\mu V/m$	$dB\mu V/m \\$	dB	
2472.000	2.20	31.65	36.00	89.77	87.62	114.0	-26.38	Peak
2472.000	2.20	31.65	36.00	82.84	80.69	94.0	-13.31	AV
4944.420	2.58	35.06	34.79	43.26	46.11	74.0	-27.89	Peak
4944.420	2.58	35.06	34.79	35.21	38.06	54.0	-15.94	AV
7416.790	3.02	36.19	34.90	42.63	46.94	74.0	-27.06	Peak
7416.790	3.02	36.20	35.20	32.51	36.53	54.0	-17.47	AV
9888.000								
12360.00								
14832.00								
17304.00								
	Frequency MHz 2472.000 2472.000 4944.420 4944.420 7416.790 7416.790 9888.000 12360.00 14832.00	Frequency Loss MHz dB 2472.000 2.20 2472.000 2.20 4944.420 2.58 4944.420 2.58 7416.790 3.02 7416.790 3.02 9888.000 12360.00 14832.00	Frequency Loss Factor dB/m MHz dB dB/m 2472.000 2.20 31.65 2472.000 2.20 31.65 4944.420 2.58 35.06 4944.420 2.58 35.06 7416.790 3.02 36.19 7416.790 3.02 36.20 9888.000 12360.00 14832.00	Frequency Cable Loss Factor dB/m Ant Freamp Factor GB/m Preamp Factor GB/m 2472.000 2.20 31.65 36.00 2472.000 2.20 31.65 36.00 4944.420 2.58 35.06 34.79 4944.420 2.58 35.06 34.79 7416.790 3.02 36.19 34.90 7416.790 3.02 36.20 35.20 9888.000 12360.00 14832.00	Frequency Cable Loss Ant Factor Factor GBμ Preamp Level Level GBμ MHz dB dB/m dB dBμV 2472.000 2.20 31.65 36.00 89.77 2472.000 2.20 31.65 36.00 82.84 4944.420 2.58 35.06 34.79 43.26 4944.420 2.58 35.06 34.79 35.21 7416.790 3.02 36.19 34.90 42.63 7416.790 3.02 36.20 35.20 32.51 9888.000 12360.00 14832.00	Frequency Cable Loss Ant Factor Factor dB Preamp Factor Level dB μV Level dB μV/m 2472.000 2.20 31.65 36.00 89.77 87.62 2472.000 2.20 31.65 36.00 82.84 80.69 4944.420 2.58 35.06 34.79 43.26 46.11 4944.420 2.58 35.06 34.79 35.21 38.06 7416.790 3.02 36.19 34.90 42.63 46.94 7416.790 3.02 36.20 35.20 32.51 36.53 9888.000 12360.00 14832.00	Frequency Cable Loss Ant Factor Factor Preamp Factor Level dB μV Level dB μV/m Limit dB μV/m 2472.000 2.20 31.65 36.00 89.77 87.62 114.0 2472.000 2.20 31.65 36.00 82.84 80.69 94.0 4944.420 2.58 35.06 34.79 43.26 46.11 74.0 4944.420 2.58 35.06 34.79 35.21 38.06 54.0 7416.790 3.02 36.19 34.90 42.63 46.94 74.0 7416.790 3.02 36.20 35.20 32.51 36.53 54.0 9888.000 12360.00 14832.00	Frequency Cable Loss Ant Factor Factor Preamp Factor Level Level Level Level Limit Limit dB μV/m Over Limit dB μV/m 2472.000 2.20 31.65 36.00 89.77 87.62 114.0 -26.38 2472.000 2.20 31.65 36.00 82.84 80.69 94.0 -13.31 4944.420 2.58 35.06 34.79 43.26 46.11 74.0 -27.89 4944.420 2.58 35.06 34.79 35.21 38.06 54.0 -15.94 7416.790 3.02 36.19 34.90 42.63 46.94 74.0 -27.06 7416.790 3.02 36.20 35.20 32.51 36.53 54.0 -17.47 9888.000 14832.00

NOTE: "---" 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. The results of different modulations are the same.



5. Occupied Bandwidth

5.1. Requirements (15.249):

The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

5.2. Test Procedure

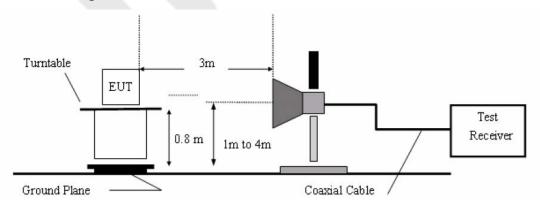
The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Test Equipment

	Test Equipment							
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval		
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Aug. 09, 2013	1 Year		
2.	Preamplifier	Instruments corporation	EMC01183 0	980100	Aug. 09, 2013	1 Year		
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 23, 2013	1 Year		
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Aug. 09, 2013	3 Year		
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	3 Year		
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 23, 2013	1 Year		
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A		

Radiation Uncertainty : Ur = 4.3dB

5.3. Test Configuration:



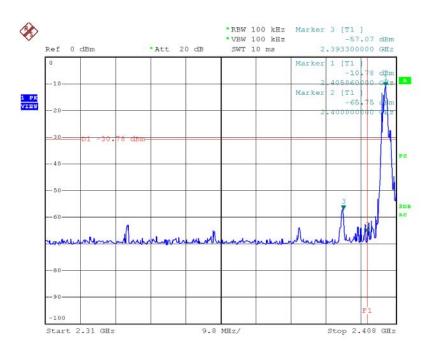
5.4. Test Results

Pass.

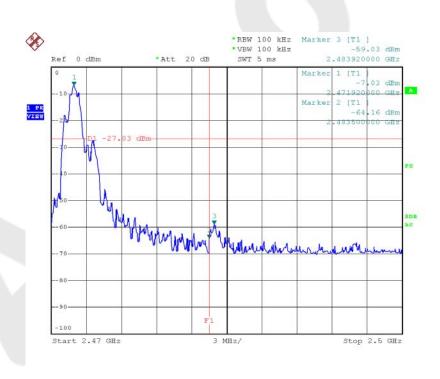
Please refer the following plot.

(Note: Marker 3 means the highest value in 2.39GHz~2.4GHz or 2.4835~2.5GHz)



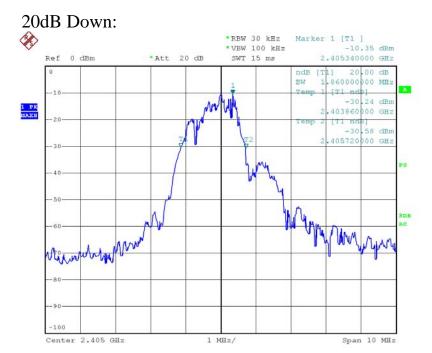


Date: 3.SEP.2013 17:43:56



Date: 3.SEP.2013 17:31:05

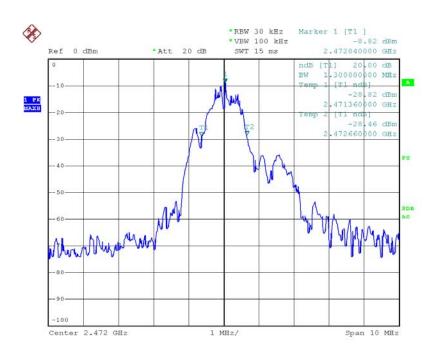




Date: 3.SEP.2013 17:21:43



Date: 3.SEP.2013 17:24:26



Date: 3.SEP.2013 17:26:22



6. PHOTOGRAPH

6.1. Photo of Power Line Conducted Emission Measurement









6.2. Photo of Radiation Emission Test















APPENDIX I (External Photos)

Figure 1
The EUT-Front View

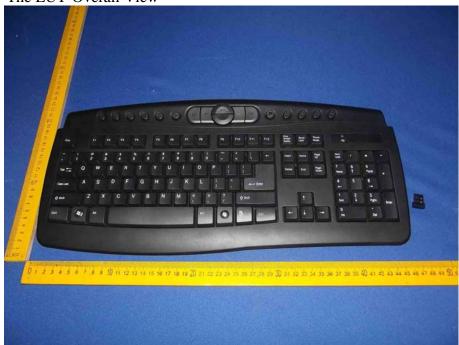


Figure 2
The EUT-Back View











APPENDIX I (Internal Photos)

Figure 4
The EUT-Inside View

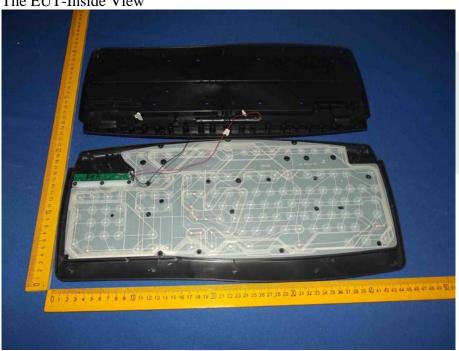


Figure 5
The EUT-Inside View





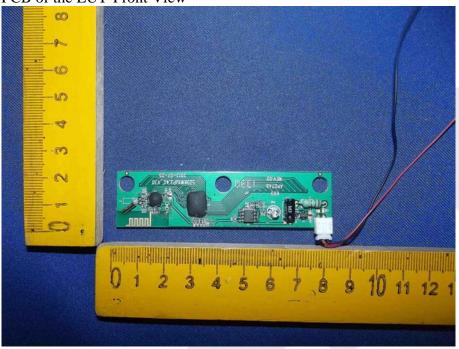


Figure 7 PCB of the EUT-Back View

