

FCC TEST REPORT

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Prepared For :	VTrump Tech (shanghai) Co.,Ltd
Product Name:	Magic Kegel / Juve
Model :	SMV02 / SMV02S
Prepared By :	Shenzhen United Testing Technology Co., Ltd. 4F, Block B Unit 2, Jianxing Building, Chaguang Industry Area, Nanshan District, Shenzhen, China Tel: 86-755-86180996 Fax: 86-755-86180156
Test Date:	Sep 09, 2014 to September 24, 2014
Date of Report :	September 24, 2014
Report No.:	UNI-1409095

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TEST CERTIFICATION

Product: Magic Kegel / Juve

Model: SMV02 / SMV02S

Applicant:	VTrump Tech (shanghai) Co.,Ltd
	Room 707, 1888 Yishan Road, Shanghai, China
Factory:	VTrump Tech (shanghai) Co.,Ltd Room 707, 1888 Yishan Road, Shanghai, China

Trade Mark: Magic Motion Tested: September 09, 2014 to September 23, 2014

Test Voltage: DC3.7V Powered Li-Po Battery

Operational Bluetooth: 2402-2480MHz Frequency Range: Modulation Bluetooth LE: GFSK Type: Number of 40Channel for Bluetooth

Channel Bluetooth 4.0 Version:

Antenna: Integral antenna with Gain 2.0 dBi

FCC ID: QSESMV02

Applicable FCC Part 15.247 Standards:

The test report was prepared by Shenzhen United Testing Technology Co., Ltd.and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Prepared by :

/Michael Su

Michael Su /Assistant Engineer

Mike Yong

Reviewer :

Mike Yong/Supervisor

Approved & Authorized Signer :

Hotter / au

Hoffer Lau/ Manager



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Shenzhen United Testing Technology Co., Ltd. Report No.: UNI-1409095

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2.0 1	lest Eqipment							
ltem	Test Equipment	Manufacturer	Model No.		Cal.Da (mm-dd			l.Due date nm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	June. 30 2	2014	Jun	e. 29 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	N/A			N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU2	6	Jul. 03 20)14	Jul	. 02 2015
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9 [,]	163	Feb. 25 2	014	Fet	o. 24 2015
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-8	829	June 29 2	014	Jun	e 28 2015
6	Horn Antenna	ETS-LINDGREN	3160)	June. 30 2014		Jun	e. 29 2015
7	EMI Test Software	AUDIX	E3		N/A			N/A
8	Amplifier(100kHz-3GHz)	HP	8347/	Ą	Jul. 03 20	014	Jul	. 02 2015
9	Amplifier(2GHz-20GHz)	HP	8349B		Jul. 03 20)14	Jul	. 02 2015
10	Amplifier (18-26GHz)	er (18-26GHz) Rohde & Schwarz AFS33-18002 650-30-8P-44			June. 30 2	2014	Jun	e. 29 2015
11	Band filter	Amindeon	8234	6	June. 30 2014		Jun	e. 29 2015
12	Constant temperature and humidity box	Oregon Scientific	BA-8	88	May 11 2	014	Ма	y 10 2015
13	D.C. Power Supply	Instek	PS-30	30	May 11 2	014	Ma	y 10 2015
14	Universal radio communication tester	Rohde & Schwarz		00	May 11 2	014	Ма	y 10 2015
15	Splitter Agilent		11636B		May 11 2014		Ma	y 10 2015
16	EMI Test Receiver	Rohde & Schwarz	ESCS30		Jul. 03 2014		Jul	. 02 2015
17	LISN	Schwarebeck	NSLK 8	126	Jul. 03 20	014	Jul	. 02 2015
18 19	Power meter Power sensor	Anritsu Anritsu	ML2487A MA2491A		0003613 2263	2014-0		2015 -08-20 2015 -08-20



3.0 Technical Details

3.1 Summary of test results Г

he EUT has been tested according	ing to the following specific	cutions.	
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209	PASS	Complies

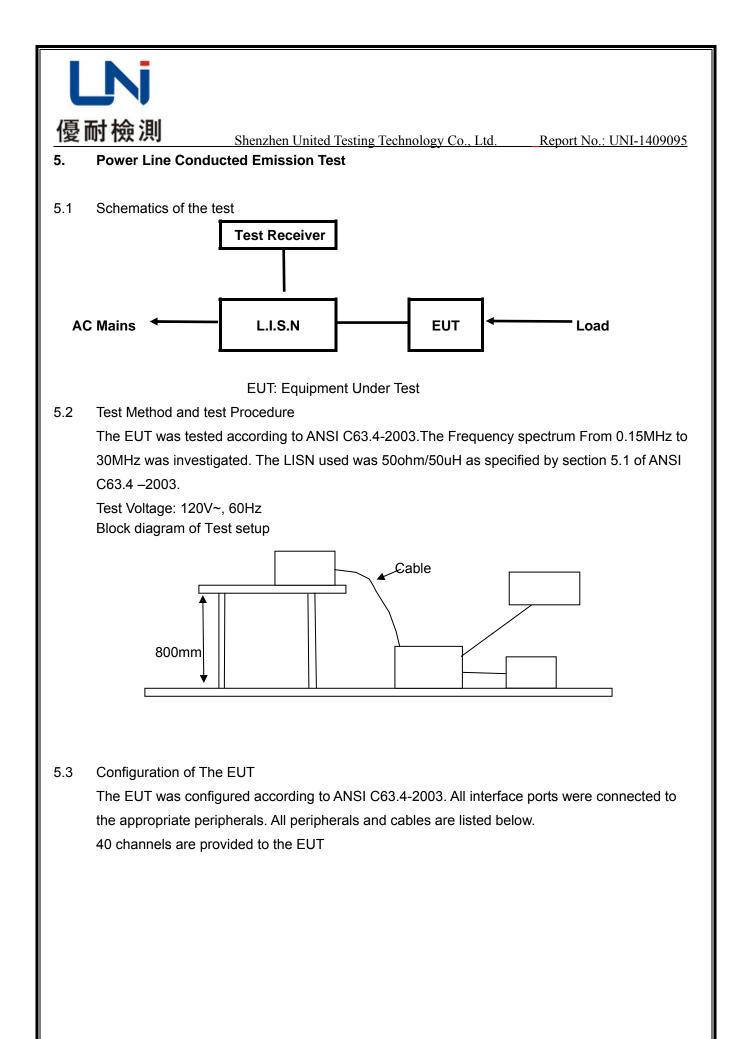
4.0 Test LAB Details

All Tests Performed at

Name: ShenZhen CTL Testing Technology Co.,Ltd

Address: Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen, Guangdong, China

FCC Registration Number: 970318





EUT

Device	Manufacturer	Model	FCC ID
Magic Kegel	VTrump Tech (shanghai)	SMV02 / SMV02S	QSESMV02
/ Juve	Co.,Ltd	31010027 31010023	QGLOWIVUZ

B. Internal Device

Device	Manufacturer	Model	FCC
			ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
Power	HUONIU	HNB050100U	VOC	1.0m unshielded output cable
Supply				

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.107, 15.207

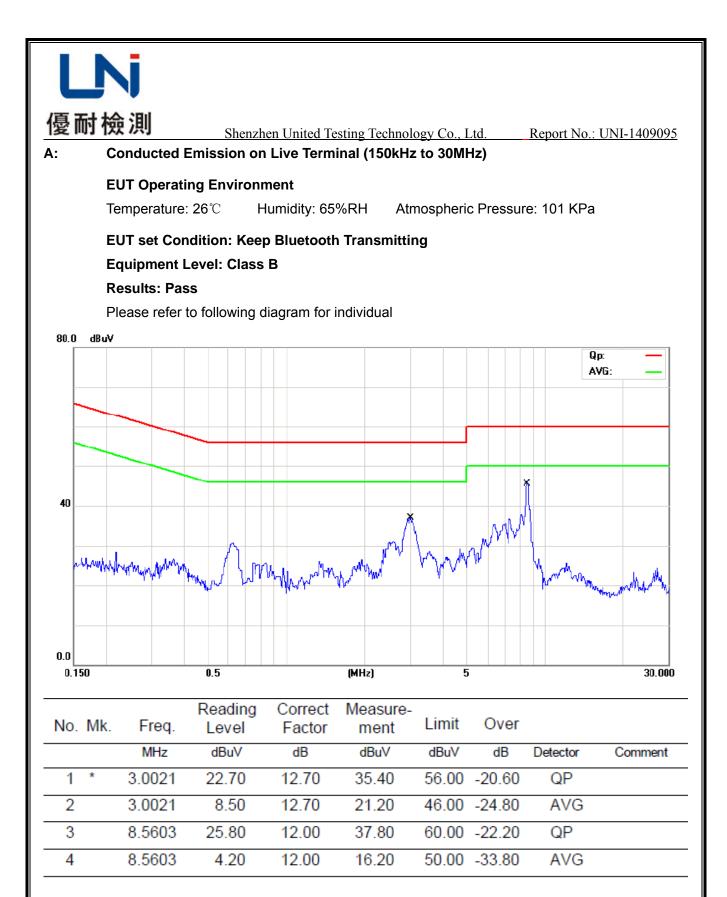
Frequency	Class A Lir	nits (dBµV)	Class B Limits (dBµV)		
Frequency (MHz)	Quasi-peak	Average Level	Quasi-peak Level	Average Level	
(11112)	Level				
0.15 ~ 0.50	79.0	66.0	66.0~56.0*	56.0~46.0*	
0.50 ~ 5.00	73.0	60.0	56.0	46.0	
$5.00 \sim 30.00$	73.0	60.0	60.0	50.0	

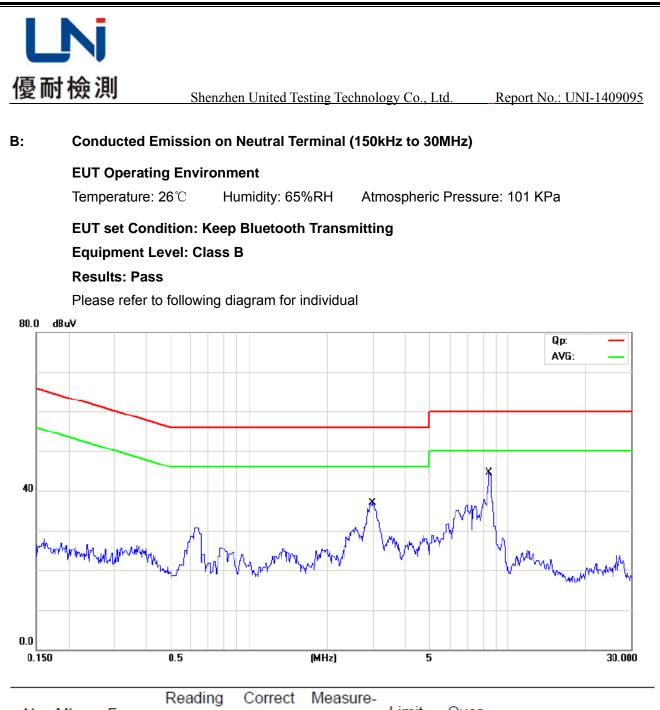
Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.





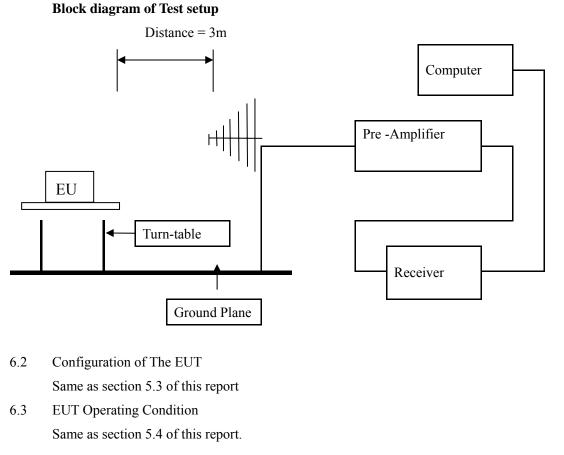
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	2.9803	20.90	12.69	33.59	56.00	-22.41	QP	
2	2.9803	7.60	12.69	20.29	46.00	-25.71	AVG	
3 *	8.5571	26.50	12.01	38.51	60.00	-21.49	QP	
4	8.5571	7.40	12.01	19.41	50.00	-30.59	AVG	



6 Radiated Emission Test

6.1 Test Method and test Procedure:

- The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at CTL Laboratory. This site is on file with the FCC laboratory division, Registration No.807767
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz, VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.





6.4 **Radiated Emission Limit**

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Encourancies in nestricted hand	and complied to limit on	Davagement 15 200 and 15 100
Frequencies in restricted band	are complied to mint of	raragraph 15.209 and 15.109

	=	
Frequency Range (MHz)	Distance (m)	Field strength ($dB\mu V/m$)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

1. RF Voltage (dBuV) = $20 \log \text{RF}$ Voltage (uV) Note:

2. In the Above Table, the higher limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side,

and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

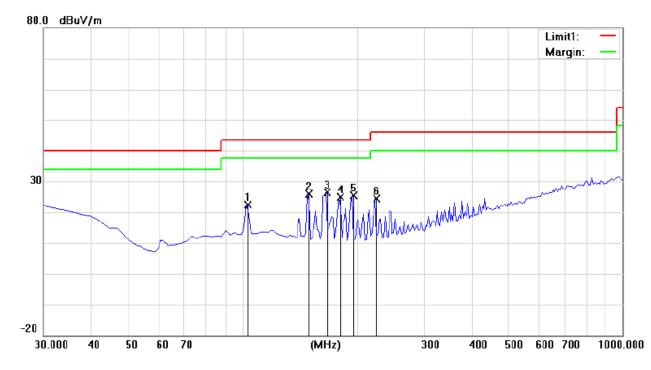


A: Radiated Disturbance In Horizontal (30MHz----1000MHz)

EUT set Condition:	Keep Bluetooth Transmitting
Level:	Class B
Results:	PASS

Please refer to following diagram for individual

Picture of the test



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		102.7500	36.48	-14.00	22.48	43.50	-21.02	peak		0	
2		148.8250	41.37	-15.37	26.00	43.50	-17.50	peak		0	
3	*	165.8000	41.71	-15.38	26.33	43.50	-17.17	peak		0	
4		180.3500	39.61	-14.79	24.82	43.50	-18.68	peak		0	
5		194.9000	40.87	-15.53	25.34	43.50	-18.16	peak		0	
6		224.0000	38.68	-14.32	24.36	46.00	-21.64	peak		0	

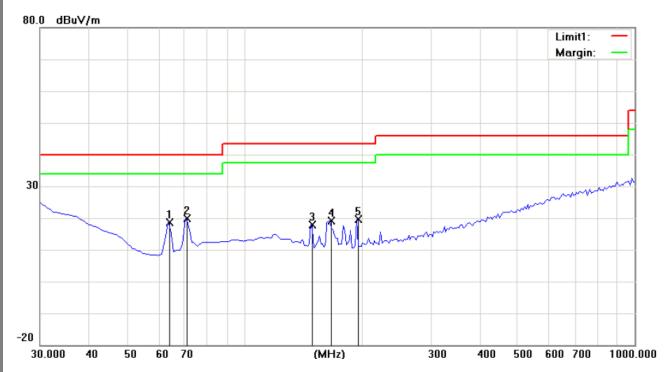


Radiated Disturbance In Vertical (30MHz----1000MHz) B:

EUT set Condition:	Keep Bluetooth Transmitting
Level:	Class B
Results:	PASS

Please refer to following diagram for individual

Picture of the test



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		63.9500	37.12	-18.46	18.66	40.00	-21.34	peak		0	
2	*	71.2249	36.32	-16.47	19.85	40.00	-20.15	peak		0	
3		148.8249	33.33	-15.37	17.96	43.50	-25.54	peak		0	
4		165.8000	34.49	-15.38	19.11	43.50	-24.39	peak		0	
5		194.9000	35.13	-15.53	19.60	43.50	-23.90	peak		0	



Frequency	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
(MHz)			
4804		H/V	74(Peak)/ 54(AV)
7206		H/V	74(Peak)/ 54(AV)
9608		H/V	74(Peak)/ 54(AV)
12010		H/V	74(Peak)/ 54(AV)
14412		H/V	74(Peak)/ 54(AV)
16814		H/V	74(Peak)/ 54(AV)
19216		H/V	74(Peak)/ 54(AV)
21618		H/V	74(Peak)/ 54(AV)
24020		H/V	74(Peak)/ 54(AV)

Operation Mode: Transmitting under Low Channel (2402MHz)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

Operation Mode: Transmitting g under Middle Channel (2441MHz)

Frequency Level@3m (dBµV/m)		Antenna Polarity	Limit@3m (dBµV/m)
(MHz)			
4882		H/V	74(Peak)/ 54(AV)
7323		H/V	74(Peak)/ 54(AV)
9764		H/V	74(Peak)/ 54(AV)
12205		H/V	74(Peak)/ 54(AV)
14646		H/V	74(Peak)/ 54(AV)
17087		H/V	74(Peak)/ 54(AV)
19528		H/V	74(Peak)/ 54(AV)
21969		H/V	74(Peak)/ 54(AV)
24410		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured



Frequency	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
(MHz)			
4960		H/V	74(Peak)/ 54(AV)
7440		H/V	74(Peak)/ 54(AV)
9920		H/V	74(Peak)/ 54(AV)
12400		H/V	74(Peak)/ 54(AV)
14880		H/V	74(Peak)/ 54(AV)
17360		H/V	74(Peak)/ 54(AV)
19840		H/V	74(Peak)/ 54(AV)
22320		H/V	74(Peak)/ 54(AV)
24800		H/V	74(Peak)/ 54(AV)

Operation Mode: Transmitting under High Channel (2480MHz)

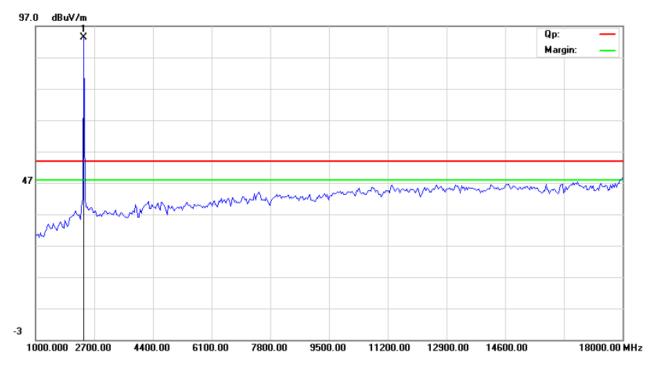
Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

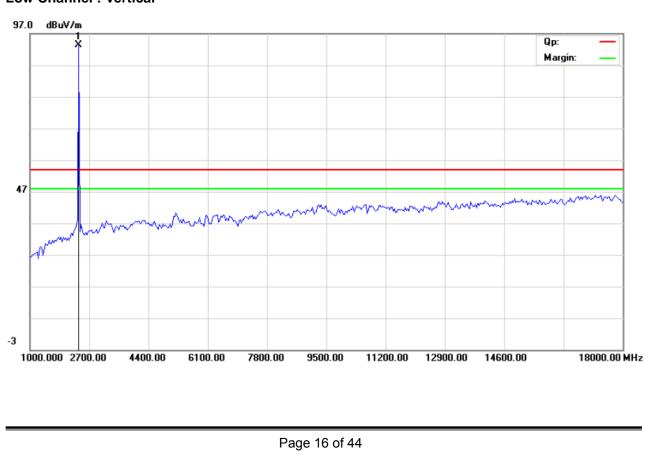
2. Remark "----" means that the emissions level is too low to be measured



Please refer to the following test plots for details:

Low Channel: Horizontal

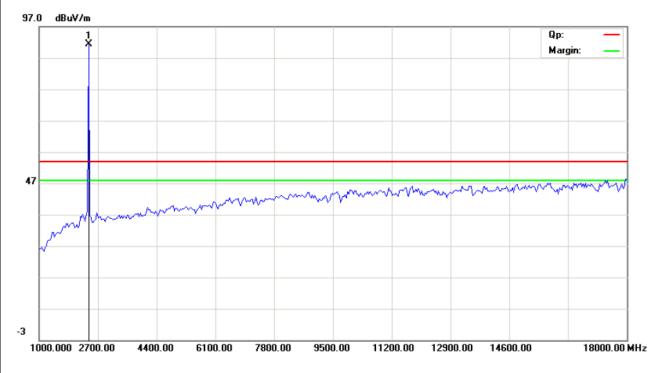




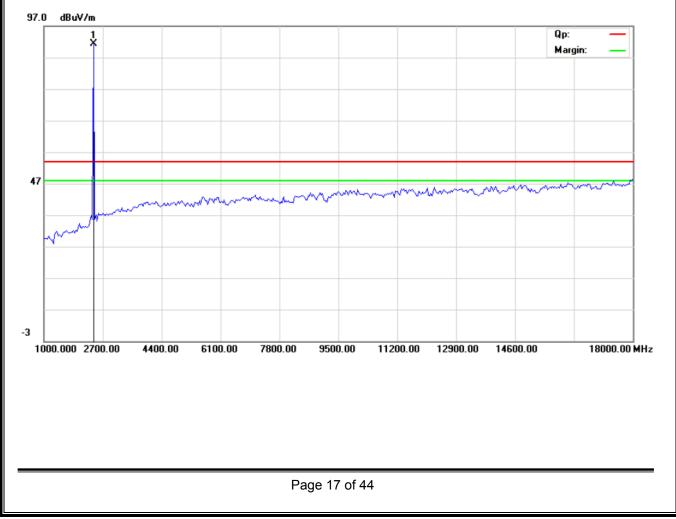
Low Channel : Vertical



Middle Channel : Horizontal

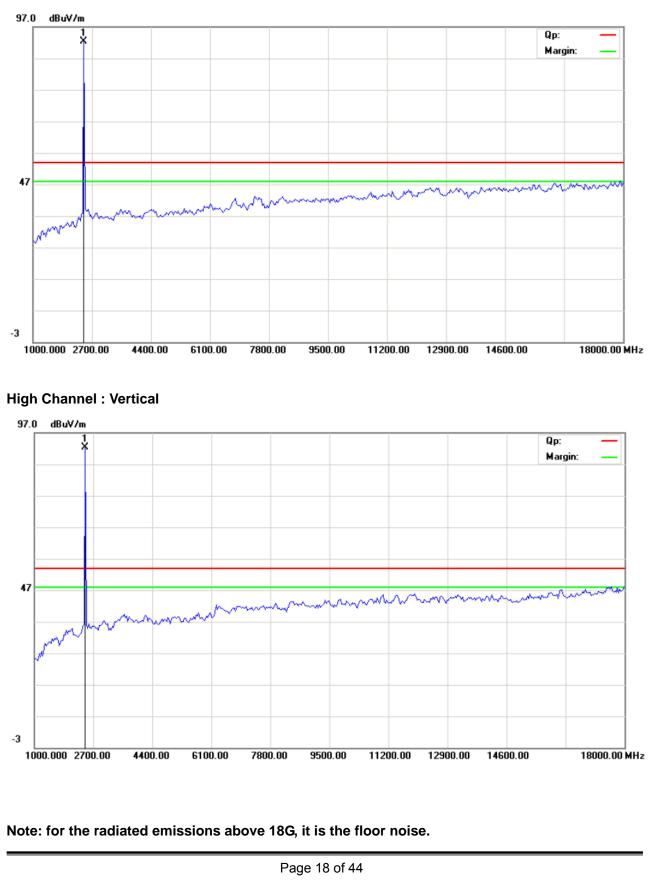


Middle Channel :: Vertical





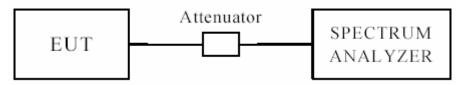
High Channel : Horizontal





7.0 6dB Bandwidth Measurement

7.1 Test Setup



7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \ge 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 Test Result

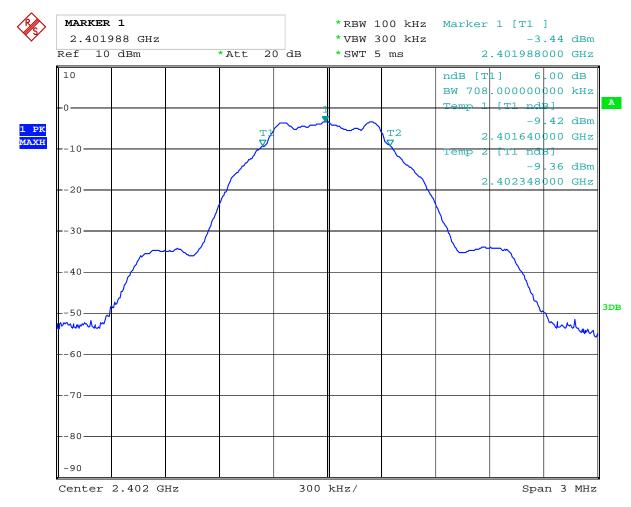


EUT	Magic K	egel / Juve Mode		el SMV02		2 / SMV02S	
Mode	Mode Keep Tra		Input Voltage		D	C3.7V	
Temperatur	e 24 c	24 deg. C,		Humidity		6% RH	
Channel	Channel Frequency (MHz)	6 dB Bandwi (kHz)	dth	Maximum Limit (kHz)		Pass/ Fail	
Low	2402	708			0.5	Pass	
Middle	2440	708			0.5	Pass	
High	2480	708			0.5	Pass	



Test Figure:

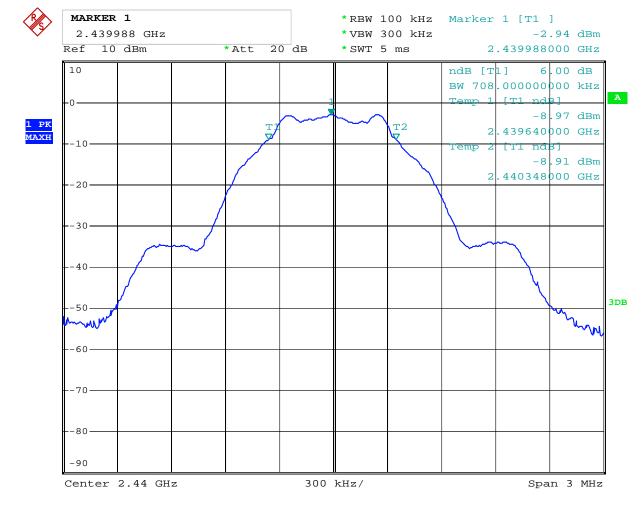
1. Condition: Low Channel



4.SEP.2014 18:14:39 Date:



2. Condition: Middle Channel



Date: 4.SEP.2014 18:15:41



3. High Channel





8. Maximum Peak Output Power

8.1 Test Setup



8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the peak power was measured



8.4Test Results

EUT Magic Ke		Cegel / Juve Model		SMV02 / SMV02S		
Mode	Keep Tr	ransmitting Input Voltage		DC3.7V		
Temperatu	re 24 c	leg. C,	Humidity	56% RH		
	Channel			Peak	Pass/ Fail	
Channel	Frequency	Peak Power C	Dutput (dBm)	Power Limit	F 855/ 1 ali	
	(MHz)			(dBm)		
Low	2402	-0.40		30	Pass	
Middle	2440	0.1	5	30	Pass	
High	2480	-0.0)1	30	Pass	

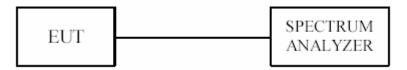
Note: 1. the result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator



9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

9.3 Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.

- 2. Set the RBW = 10 kHz.
- 3. Set the VBW \geq 30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be \leq 8 dBm.



9.4Test Result

EUT		Magio	: Kegel / Ju	uve Model		SMV02	/ SMV02S
Mode		Keep	Transmitting		Input Voltage	DC3.7V	
Temperat	ure	2	4 deg. C,		Humidity	56%	% RH
Channel	Po Re	Peak Power Reading (dBm)		Final Power pectral Density (dBm)	Maximum Limit (dBm)	Pass/ Fail	
Low	-1	2.78	0.2		-12.58	8	Pass
Middle	-1	2.23	0.2		-12.03	8	Pass
High	-1	2.39	0.2		-12.19	8	Pass

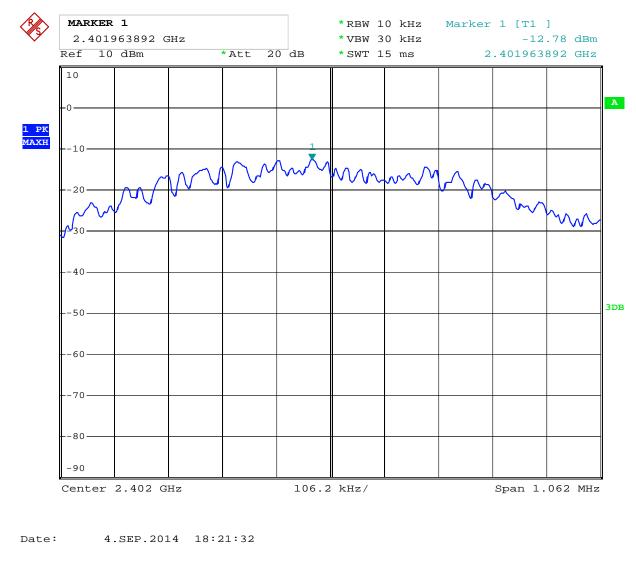
Note: The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss



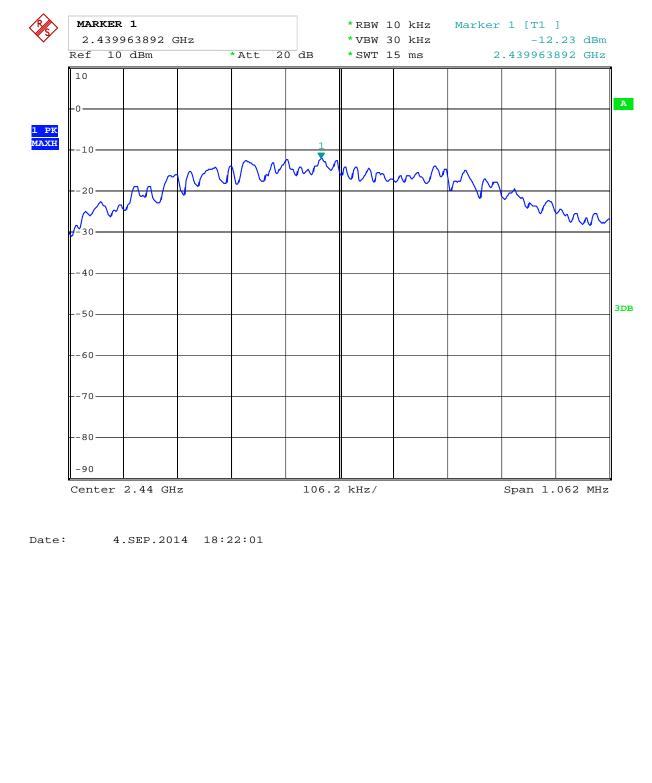
Test Figure:

1. Condition: Low Channel



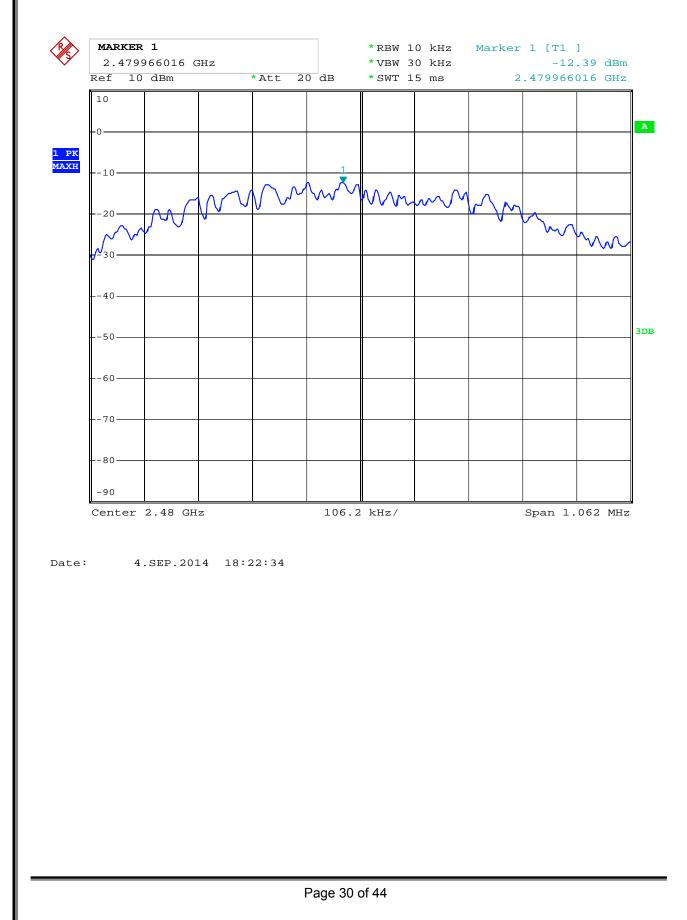


2. Condition: Middle Channel





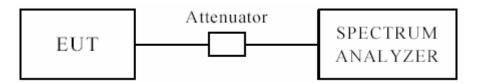
3. High Channel





10 Out of Band Measurement

10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

10.2 Limits of Out of Band Emissions Measurement

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth). Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

10.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of

radiated emission test.(Peak values with RBW=1MHz, VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector)

For bandage test, the spectrum set as follows: RBW=VBW=100 kHz. A conducted measurement used

10.4 Test Result

Please see next pages

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

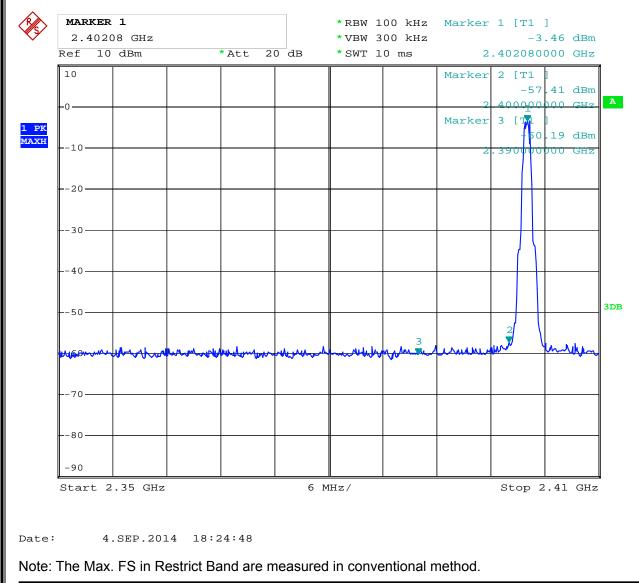
2. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.



Band-edge and Restricted band Measurement 10.4

EUT	Magic Keg	el / Juve	Model	SMV02 / SMV02S
Mode	Keeping Tra	ansmitting	Input Voltage	DC3.7V
Temperature	24 de	g. C,	Humidity	56% RH
Test Result:	Pass		Detector	РК
2400MHz	PK	37.6		74(dBµV/m)
	(dBµV/m)	57.0	Limit	74(ασμν/π)
	AV (dBµV/m)			54(dBµV/m)
2390MHz	PK	35.2		74(dRu)/(m)
	(dBµV/m)	55.2	Limit	74(dBµV/m)
	AV (dBµV/m)			54(dBµV/m)

Test Figure:



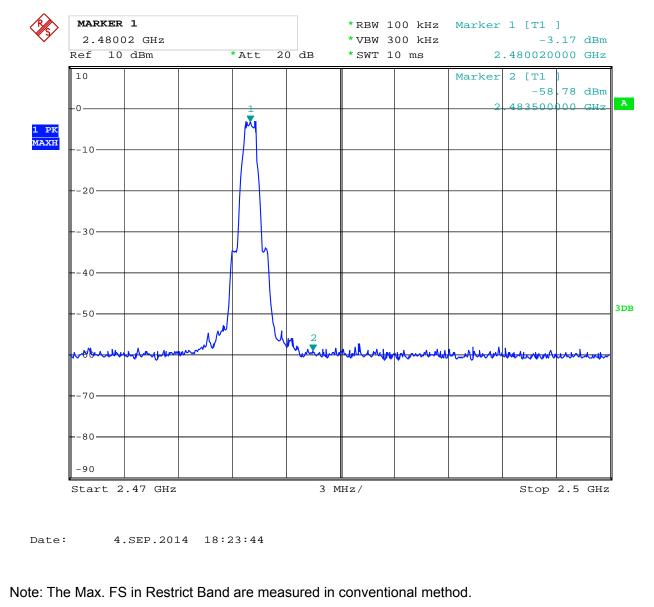
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Band-edge and Restricted band Measurement 10.4

Г					
	EUT	Magic	Kegel / Juve	Model	SMV02 / SMV02S
	Mode	Keeping	g Transmitting	Input Voltage	DC3.7V
	Temperature	24	l deg. C,	Humidity	56% RH
	Test Result:		Pass	Detector	PK
	2483.5MHz	PK (dBµV/m)	37.8	Limit	74(dBµV/m)
		AV (dBµV/m)			54(dBµV/m)

Test Figure:



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11.0 Antenna Requirement

11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of the antennas is 2.0 dBi.

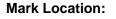


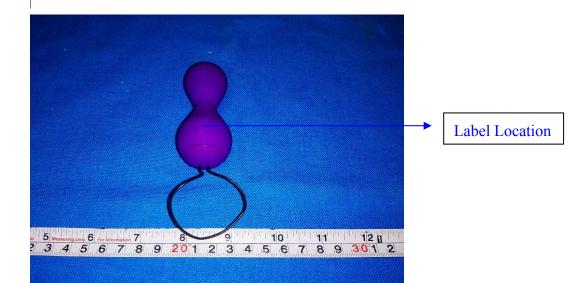
12.0 FCC ID Label

FCC ID: QSESMV02

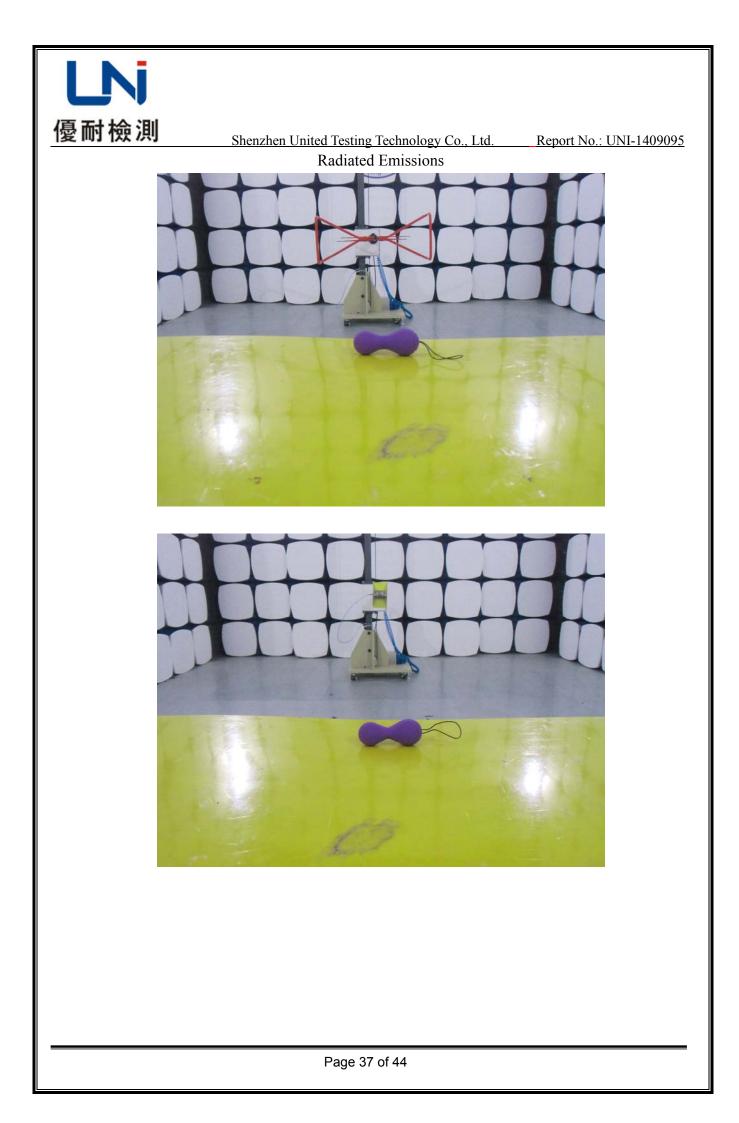
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

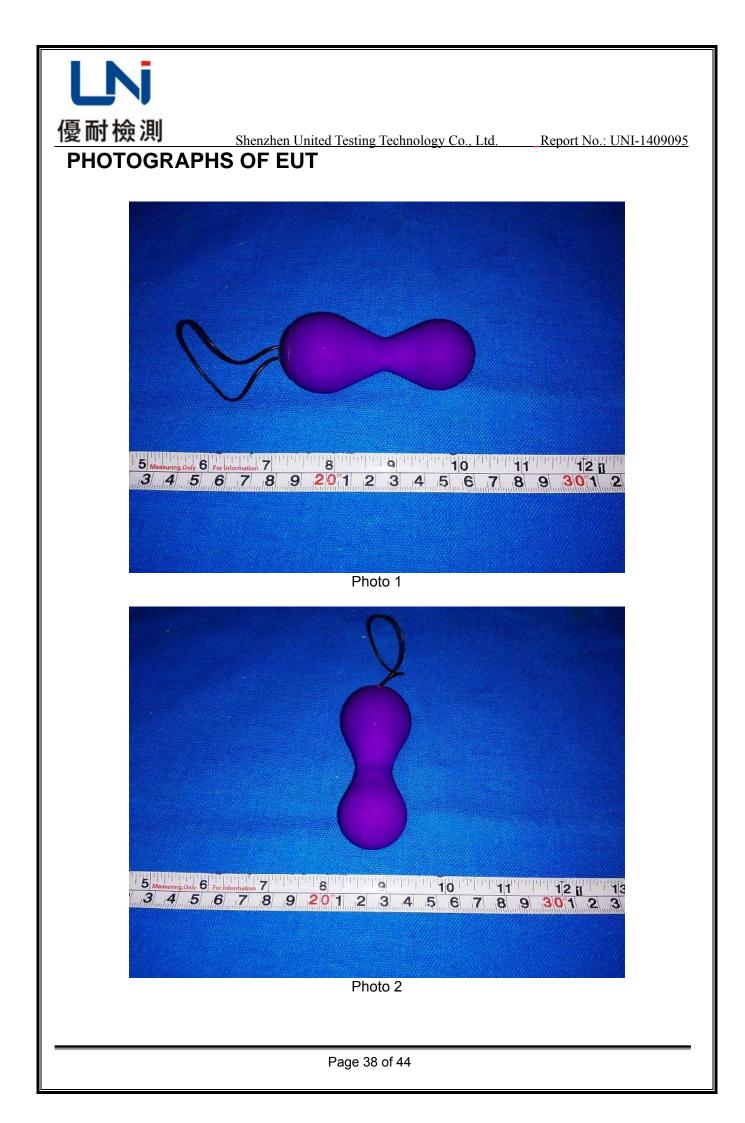
The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

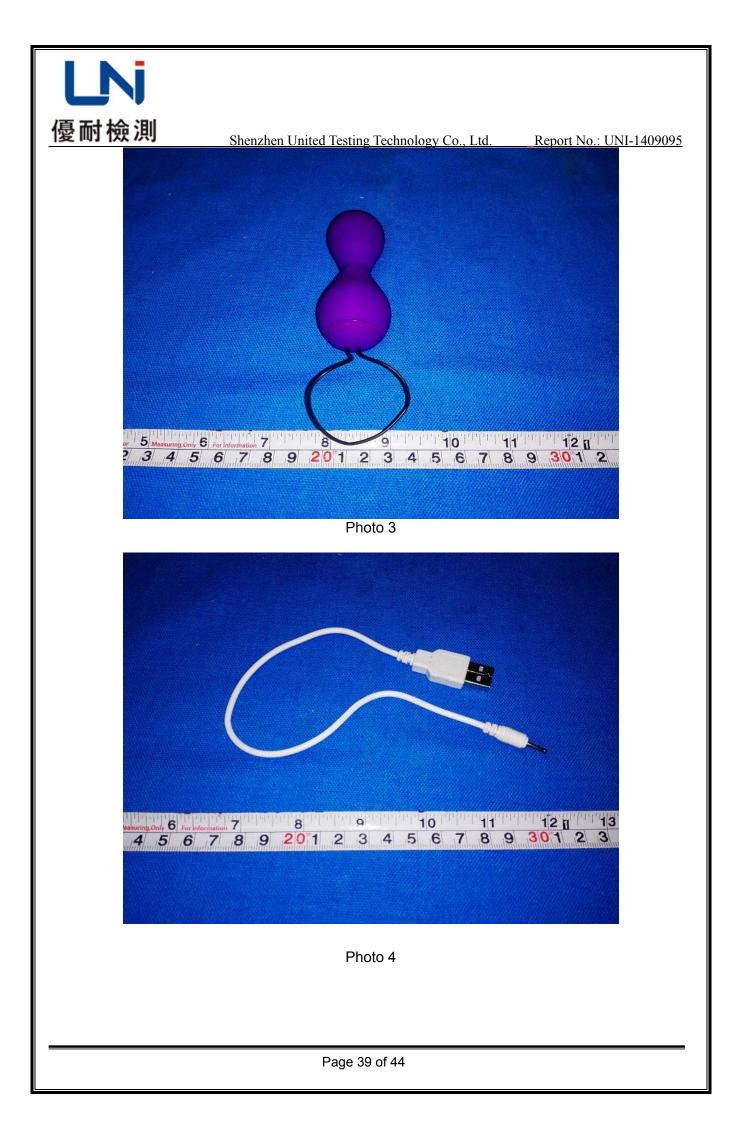












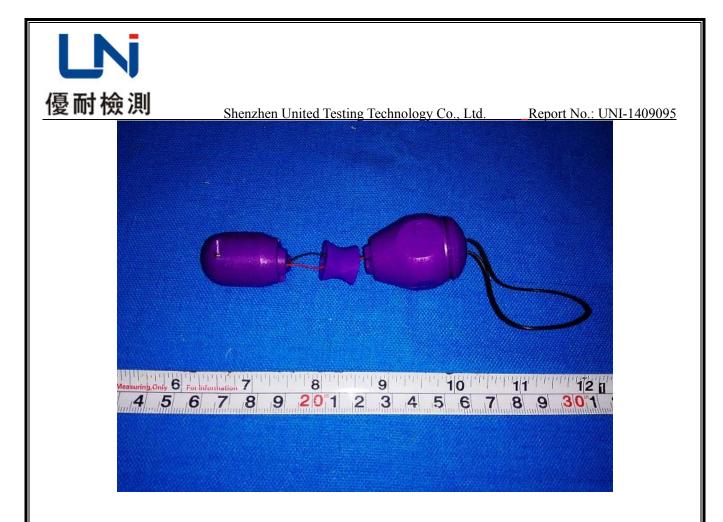


Photo 5

