

588 West Jindu Road, Songjiang District, Shanghai, China

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### Cover Page

## TEST REPORT

Application No. :	SHEM1308001631HS
Applicant:	Suzhou Armocon Technology Co.,Ltd.
FCC ID:	ZT5-ARM215021
Equipment Under Test (E NOTE: The following samp	UT): ole(s) submitted was/were identified on behalf of the client as
Product Name:	TX: Remoto Controller RX: Massager
Brand Name:	LELO
Model:	TX: LELO Insigia-V3 RX: IDA, Lyla, Oden,Tiani
Standards:	FCC PART 15 Subpart C Section 15.249: 2012 ANSI C63.10: 2009
Date of Receipt:	August 22, 2013
Date of Test:	September 17, 2013
Date of Issue:	September 22, 2013
Test Result :	PASS *

In the configuration tested, the EUT complied with the standards specified above.

&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.



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## 2 Version

Revision Record						
Version	Chapter	Date	Modifier	Remark		
00	/	September 22, 2013	/	Original		

Authorized for issue by:		
Engineer	Eddy Zong Print Name	Eddy Zong
Clerk	Susie Liu Print Name	Suire Lin
Reviewer	Keny Xu Print Name	Kony Ku



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## 3 Test Summary

Test Item	FCC Requirement	IC Requirement	Test method	Result	
Antenna Requirement	Section 15.203	RSS-Gen 7.1.2	ANSI C63.10 (2009)	PASS	
AC Power Line	Coation 15 007	RSS-Gen Section	ANCI CC2 10 (2000)	NI/A	
Conducted Emission	Section 15.207	7.2.4	ANSI C63.10 (2009)	N/A	
Field Strength of the	Continu 15 040 (a)	RSS 210 A 2.9	ANCI CC2 10 (2000)	DACC	
Fundamental Signal	Section 15.249 (a)	(a)	ANSI C63.10 (2009)	PASS	
Spurious Emissions	Section 15.249 (a)/15.209	RSS 210 A 2.9 (a)	ANSI C63.10 (2009)	PASS	
20dB Occupied	Costian 15 O15 (a)		ANCI CC2 10 (2000)	DACC	
Bandwidth Section 15.215			ANSI C63.10 (2009)	PASS	
99% Occupied Bandwidth		RSS-Gen section 4.6.1	RSS-Gen section 4.6.1	PASS	

N/A: Not applicable

This EUT is powered by battery only; therefore the AC Conducted Emission test is not applicable.



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## 5 General Information

### 5.1 Client Information

Applicant:	Suzhou Armocon Technology Co.,Ltd.
Address of Applicant:	3-5/F No77 SuHong Middle Road SIP Jiangsu China
Manufacturer:	Suzhou Armocon Technology Co.,Ltd.
Address of Manufacturer:	3-5/F No77 SuHong Middle Road SIP Jiangsu China
Factory:	Not supplied by the client.
Address of Factory:	Not supplied by the client.

## 5.2 General Description of EUT

Product Name TX: Remoto Controller RX: Massager	
Brand Name:	LELO
Model No:	TX: LELO Insigia-V3 RX: IDA, Lyla, Oden,Tiani
Power Supply:	"AAA" Battery Size 2*1.5V(a new battery is used during the measurement)

## 5.3 Technical Specifications:

Operation Frequency:	2421MHz
Modulation Technique:	MSK

## 5.4 Support equipments for Testing

The EUT has been tested independently.

### 5.5 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 kPa
Test mode:	
Transmitting mode:	Keep the EUT in continuously transmitting mode.



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### 5.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. No.588 West Jindu Road, Songjiang District, Shanghai, China.201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

## 5.7 Test Facility

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

### CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

#### • FCC – Registration No.: 402683

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

### Industry Canada (IC) – IC Assigned Code: 8617A

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

#### VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

#### 5.8 Deviation from Standards

None.

### 5.9 Abnormalities from Standard Conditions

None.

## 5.10 Other Information Requested by the Customer

None.



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### 5.11 Test Instruments List

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2014-02-22
2	Horn Antenna	SCHWARZBEC K	BBHA9120D	9120D-679	2014-03-06
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2014-06-01
4	ANTENNA	SCHWARZBEC K	VULB9168	9168-313	2014-03-06
5	Horn Antenna	SCHWARZBEC K	BBHA 9170	BBHA91703 73	2014-03-06
6	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2013-10-08
7	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY-2009P		2013-10-08
8	CLAMP METER	FLUKE	316	86080010	2014-06-01
9	Thermo-Hygromete r	ZHICHEN	ZC1-2	01050033	2013-10-08
11	High-low temperature cabinet	Shanghai YuanZhen	GW2050		2014-06-01
12	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800. 0/ 2000.0-0.2/4 0-5SSK	11	2014-06-01
13	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/ 880.0-0.2/40 -5SSK	9	2014-06-01
14	High pass Filter	FSCW	HP 12/2800-5AA 2	19A45-02	2014-06-01
15	Low nosie amplifier	TESEQ	LNA6900	70133	2014-02-22
16	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2014-02-22
17	Line impedance stabilization network	SCHWARZBEC K	NSLK8127	8127-490	2014-02-22



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### 6 Test results and Measurement Data

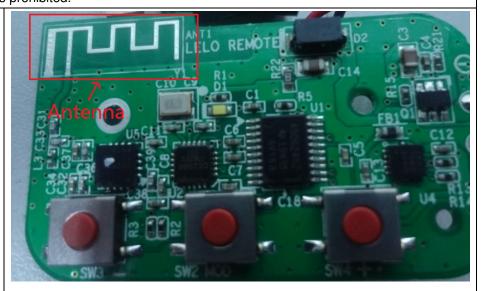
## 6.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **EUT Antenna:**



The antenna is integrated on the main PCB and no consideration of replacement.



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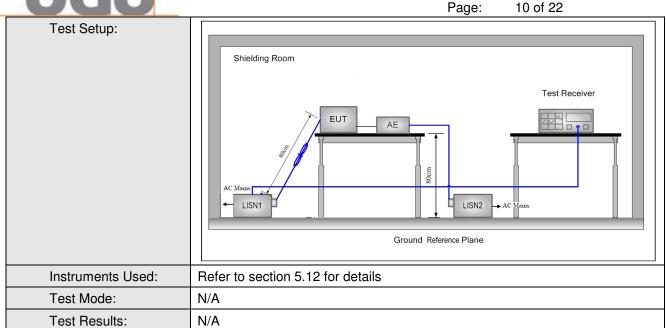
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### 6.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207				
Test Method:	ANSI C63.10: 2009				
Test Frequency Range:	150KHz to 30MHz				
Limit:	Francisco (MIII-)	Limit (dBuV)			
	Frequency range (MHz)	Quasi-peak	Average		
	0.15-0.5	66 to 56*	56 to 46*		
	0.5-5	56	46		
	5-30	60	50		
	* Decreases with the logarith	nm of the frequency.			
Test Procedure:	1) The mains terminal disturshielded room. 2) The EUT was connected Impedance Stabilization I linear impedance. The power connected to a second ground reference plane in being measured. A multiple multiple power cables to a LISN was not exceeded. 3) The tabletop EUT was plane the ground reference plane EUT was placed on the houndary of the EUT shall be only plane. The vertical ground horizontal ground reference plane for LISNs plane. This distance was and the EUT. All other unwas at least 0.8 m from the according to ANSI C63.1	arrough a LISN 1 (Line es a 50Ω/50μH + 5Ω r units of the EUT should be bounded to the LISN 1 for the unit was used to connect did the rating of the allic table 0.8m above ing arrangement, the ence plane, reference plane. The ground reference bounded to the was placed 0.8 m anded to a ground reference points of the LISN 1 sociated equipment ative positions of the changed			

SGS

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#### **Measurement Data:**

This EUT is powered by battery only; therefore the AC Conducted Emission test is not applicable.

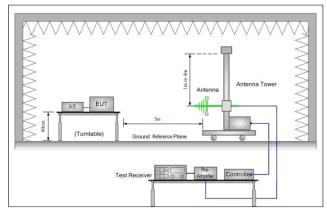


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## 6.3 Field Strength of the Fundamental Signal

	_		_					
Test Requirement:	47 CFR Part 15C Section 15.249 and 15.209							
Test Method:	ANSI C63.10: 2009							
Test Site:	Measurement Distance: 3m	ı (Ser	mi-Anecho	ic Chamber)				
Receiver Setup:	Frequency	Detector		RBW	VBW		Remark	
	Above 1GHz		Peak	1MHz	3MHz		Peak	
			Peak	1MHz	10Hz		Average	
	Frequency		Limit (dBuV/m @3m)		)	Remark		
Limit:	2421MHz		94.0		Average Value			
			114.0		Peak Value			
Test Setup:							_	



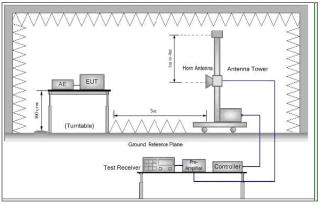


Figure 1. 30MHz to 1GHz

Figure 2. Above 1 GHz

#### Test Procedure:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. The radiation measurements are performed in X, Y, Z axis positioning. And found the Z axis positioning which it is worse case, Only the test worst case



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mode is recorded in the report.  h. Repeat above procedures until all frequencies measured was comp			
Instruments Used:	Refer to section 5.12 for details		
Test Mode: Transmitting mode			
Test Results:	Pass		

#### 6.3.1 Measurement Data

#### Peak value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Polarization
2421	4.80	27.60	61.10	93.50	94.00	0.50	Horizontal
2421	4.80	27.60	58.80	91.20	94.00	2.80	Vertical

#### Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Loss. The basic equation with a sample calculation is as follows:Level = Read Level + Antenna Factor + Cable Loss.
- 2) Beacause of PK values below the AV limit, so do not perform AV test.



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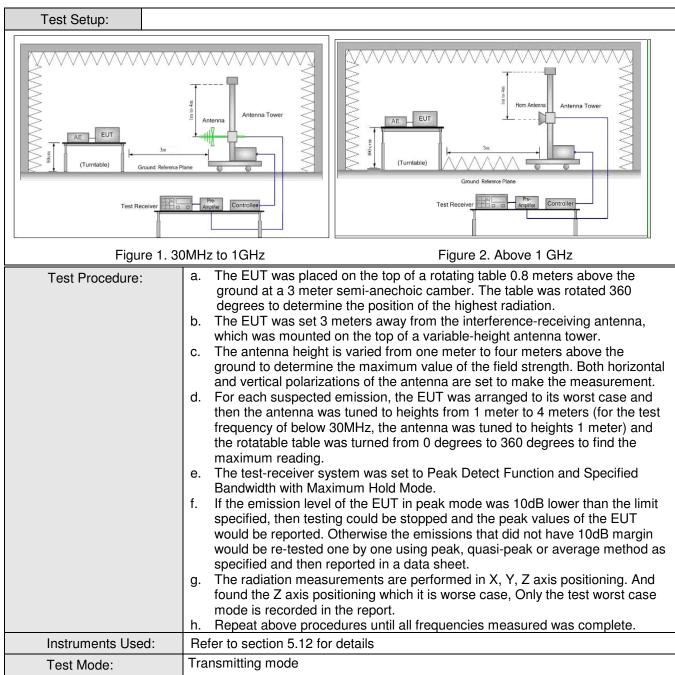
## 6.4 Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.249 and 15.209								
Test Method:	ANSI C63.10: 2009								
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)								
Receiver Setup:	Frequency Detector RBW VBW Remark								
	0.009MHz-0.090MHz	Pea	k	10kHz	30KHz	0KHz			
	0.009MHz-0.090MHz	Avera	.ge	10kHz	30KHz	A <sup>,</sup>	verage		
	0.090MHz-0.110MHz	Quasi-	oeak	10kHz	30KHz	Qua	asi-peak	]	
	0.110MHz-0.490MHz	Pea	k	10kHz	30KHz		Peak		
	0.110MHz-0.490MHz	Avera	.ge	10kHz	30KHz	A	verage		
	0.490MHz -30MHz	Quasi-	oeak	10kHz	30kHz	Qua	asi-peak		
	30MHz-1GHz	Quasi-	oeak	100 kHz	300KHz	Qua	asi-peak		
	Above 1GHz	Pea	k	1MHz	3MHz	Peak			
	Above Tariz	Pea	k	1MHz	10Hz	Average			
Limit: (Spurious Emissions)	Frequency	Field str (microvolt	_	Limit (dBuV/m	) Rema	ark	Measure distance		
, ,	0.009MHz-0.490MHz	2400/F	(kHz)	-	-	-		)	
	0.490MHz-1.705MHz	24000/F	(kHz)	-	-		30		
	1.705MHz-30MHz	30		-	-		30		
	30MHz-88MHz	100	)	40.	.0 Quasi-p	oeak	3		
	88MHz-216MHz	150	)	43.	5 Quasi-p	oeak	3		
	216MHz-960MHz	46.	3.0 Quasi-peak		3				
	Above 1GHz 500 54.0 Quasi-peak								
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.								



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Pass

Test Results:





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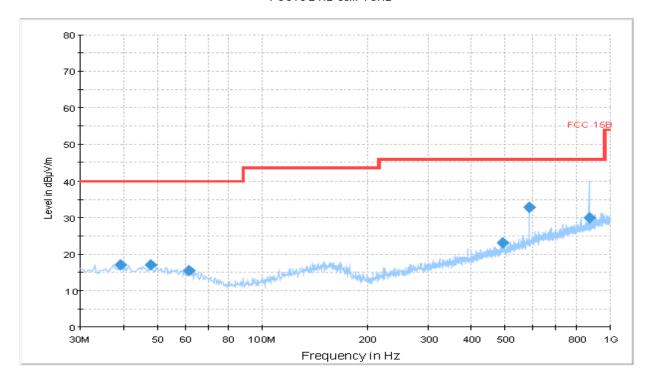
#### 6.4.1 Measurement Data

### 6.4.1.1 Spurious Emissions

### 30MHz~1GHz

Horizontal::

#### FCC15BRE 30M-1GHz



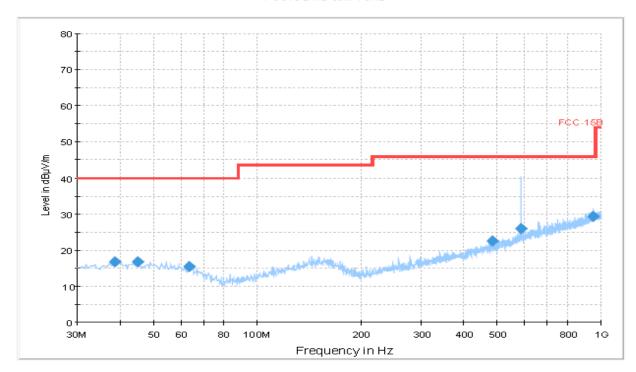
Frequency	QuasiPeak	Meas.	Bandwidth	Antenna	Polarity	Turntable	Corr.	Margin
(MHz)	(dBµV/m)	Time	(kHz)	height	_	position	(dB)	(dB)
		(ms)		(cm)		(deg)		·
39.312000	17.1	1000,000	120,000	200.0	H	134.0	-9.0	22.9
47.848000	17.0	1000,000	120,000	100.0	H	164.0	-9.3	23.0
61.816000	15.6	1000,000	120,000	100.0	H	223.0	-10.4	24.4
491.720000	23.0	1000.000	120,000	100.0	H	0.0	42	23.0
584.973760	32.8	1000,000	120,000	150.0	Н	214.0	-22	13.2
869,089920	29.9	1000,000	120,000	183.0	Н	50.0	2.1	16.1



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#### FCC15BRE 30M-1GHz



Frequency	QuasiPeak	Meas.	Bandwidth	Antenna	Polarity	Turntable	Corr.	Margin
(MHz)	(dBµV/m)	Time	(kHz)	height		position	(dB)	(dB)
, ,		(ms)	, ,	(cm)		(deg)	·	` '
38.536000	16.7	1000.000	120,000	200.0	٧	84.0	-9.1	23.3
45.132000	16.8	1000.000	120,000	100.0	٧	301.0	-9.3	20.0
63.368000	15.4	1000.000	120,000	100.0	٧	0.0	-10.6	24.6
483,960000	22.5	1000.000	120,000	100.0	٧	0.08	43	23.5
585,268320	26.0	1000.000	120,000	100.0	٧	46.0	-2.1	20.0
945.680000	29.5	1000.000	120.000	100.0	٧	348.0	32	16.5



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#### **Peak Detector Measurement:**

Above 1GHz

Frequency (MHz)	Antenna	Antenna factors (dB/m)	Cable loss (dB)	Preamp factor (dB)	Original Receiver Reading (dBuV)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/ m)	Margin (dB)
2420.94	Н	27.60	4.80	NA	61.10	32.40	93.50	94.00	0.50
2420.93	V	27.60	4.80	NA	58.80	32.40	91.20	94.00	2.80
4842.78	Н	31.60	6.90	-43.90	56.52	-5.40	51.12	54.00	2.28
7265.19	Н	35.50	8.10	-43.80	47.35	-0.20	47.16	54.00	6.84
9686.37	Н	38.10	9.80	-42.30	39.73	5.60	45.33	54.00	8.67
2399.78	Н	27.3	4.6	-42.7	63.31	-10.8	52.51	54.00	1.49
2484.71	Н	27.6	4.8	-42.5	56.69	-10.1	46.59	54.00	7.41
2400.66	V	27.3	4.6	-42.7	59.06	-10.8	48.26	54.00	5.74
2486.50	V	27.6	4.8	-42.5	49.81	-10.1	39.71	54.00	14.29

#### Remark:

- 1. For fundamental emission test, no amplifier is employed.
- 2. Correct Factor = Antenna Factor + Cable Loss (-Amplifier, is employed)
- 3. Corrected Reading = Original Receiver Reading + Correct Factor
- 4. Margin = limit Corrected Reading
- 5. If the PK reading is lower than AV limit, the AV test can be elided.
- 6. The shaded data is the fundamental emission.

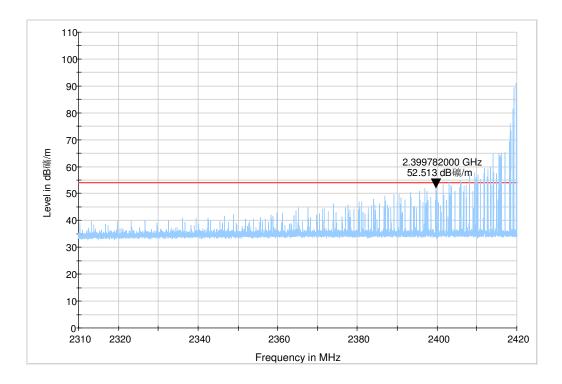


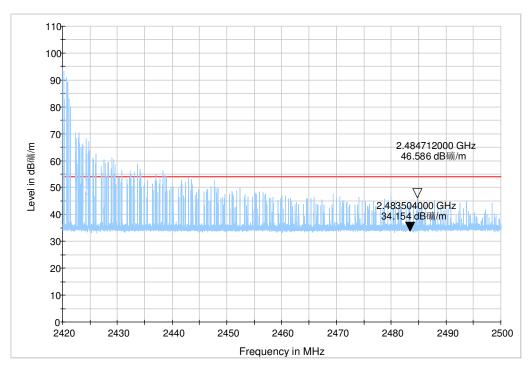
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#### **Test Plot:**

Horizontal, Peak Detector:



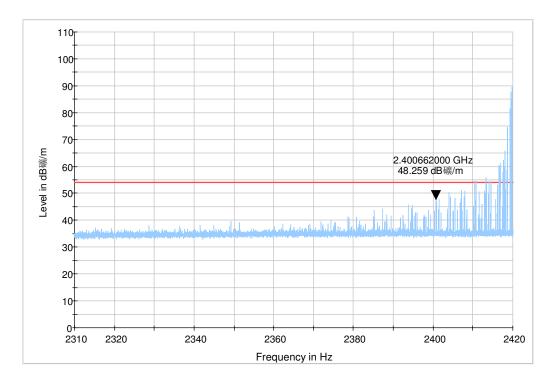


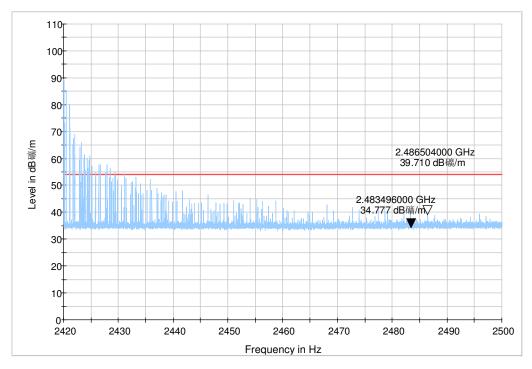


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#### Vertical, Peak Detector:



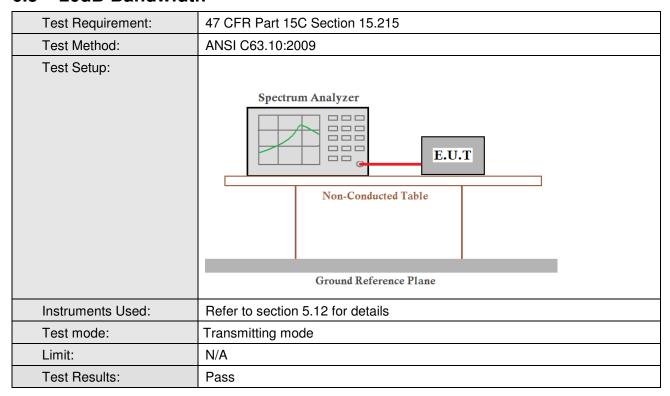




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### 6.5 20dB Bandwidth



Frequency	20dB bandwidth	20dB bandwidth 80% of permitted band	
(MHz)	(MHz)	(MHz)	Result
2421	2420.42 ~ 2421.44	2408.35 ~ 2475.15	PASS



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### Test plot as follows:

Test channel: Lowest \*RBW 30 kHz 87.65 dBµV VBW 100 kHz 97 dBuV \*Att 20 dB SWT 15 mg 2.420940000 GHz et -20 420420 00 GHz 3 [Tl VIEW 421440000 GH:

W LO LIVE WAS A COMPANY The think the terminal of the MHz



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## 7 Test Setup Photographs

Refer to the < Test Setup photos>.

### 8 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.