

## TEST REPORT

100, Jangjateo-ro, Hobeop-myeon, Icheon-si, Gyeonggi-do, 17396, Korea Tel: 031-637-8898 / Fax: 0505-116-8895

1. Client				
Name:     Address	Helsel Co., Ltd D-324, 520 Misa-daero, Hanam-si, Gyeonggi-do, South Korea			
2. Use of Report: :	FCC Approval			
3. Sample Description				
Product Name :	FEEBY Remote Controller			
• Model Name :	FEEBY			
4. Date of Receipt: :	2024-11-01			
5. Date of Test: :	2024-11-22 ~ 2024-12-27			
6. Test Method :	FCC Part 15 Subpart C 15.247			
7. Test Results: :	Refer to the test results			
	eport are the results of testing the samples provided. ording to the requirements of ISO / IEC 17025.			
Affirmation Joonyoung, J	eon (Sign) Jong-Myoung, Shin (Sign)			
	Jan 07, 2025			
EMC Labs Co., Ltd.				

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# <u>Version</u>

TEST REPORT NO.	DATE	DESCRIPTION
KR0140-RF2501-001	Jan 07, 2025	Initial Issue

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## 1. Applicant & Manufacturer & Test Laboratory Information

#### 1.1 Applicant Information

Applicant	Helsel Co., Ltd	
Applicant Address	D-324, 520 Misa-daero, Hanam-si, Gyeonggi-do, South Korea	
Contact Person	Ricky Chang	
Telephone No.	13538214502	
Fax No.	_	
E-mail	sales@helsel.co.kr	

#### 1.2. Manufacturer Information

Manufacturer	Helsel Co., Ltd	
Manufacturer Address	D-324, 520 Misa-daero, Hanam-si, Gyeonggi-do, South Korea	

#### 1.3 Test Laboratory Information

Laboratory         EMC Labs Co., Ltd.	
Laboratory Address	100, Jangjateo-ro, Hobeop-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Contact Person	Jong-Myoung, Shin
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FCC Designation No.	KR0140
FCC Registration No.	580000
IC Site Registration No.	28751



## 2. Equipment under Test(EUT) Information

#### 2.1 General Information

Product Name	FEEBY Remote Controller		
Model Name FEEBY			
FCC ID 2BHA9-FEEBY			
Rated Voltage DC 4.5 V			

#### 2.2 Additional Information

Operating Frequency	2 404 MHz ~ 2 481 MHz		
Number of channel	62		
Modulation Type	GFSK		
Antenna Type	Wire Antenna		
Antenna Gain 0.17 dBi			
Firmware Version	1.0		
Hardware Version 1.0			
Test software	-		

#### 2.3 Test Frequency

Test mode	Test Frequency (MHz)		
	Low Frequency	Middle Frequency	High Frequency
BLE 1M	2 404	2 444	2 481

#### 2.4 Used Test Software Setting Value

Test Mode	Setting Item
Test Mode	Power
2.4 GHz Transmitter	_

#### 2.5 Mode of operation during the test

- The EUT continuous transmission mode during the test with set at Low Channel, Middle Channel, and High Channel. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, YZ, XZ planes.

#### 2.6 Modifications of EUT

- None



## 3. Test Summary

Applied	FCC Rule	IC Rule	Test Items	Test Condition	Result
$\square$	15.203	-	Antenna Requirement		С
$\square$	15.247(a)	RSS-247 (5.2)	6 dB Bandwidth		С
$\square$	_	RSS GEN (6.7)	Occupied Bandwidth (99%)	Canduated	С
$\square$	15.247(b)	RSS-247 (5.4)	Maximum Peak Output Power	С	
$\square$	15.247(e)	RSS-247 (5.2)	Peak Power Spectral Density		С
$\square$	15.247(d)	RSS-247 (5.5)	Conducted Spurious Emission		С
	15.247(d) 15.205 & 15.209	RSS-247 (5.5) RSS-GEN (8.9 & 8.10)	Radiated Spurious Emission	Radiated	С
	15.207	RSS-GEN (8.8)	Conducted Emissions	AC Line Conducted	NA <sup>Note 2</sup>

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: This products is only using Battery(1.5 V AAA \* 3) power. So, AC conducted emission test has not been performed.

The sample was tested according to the following specification: ANSI C63.10:2013. Compliance was determined by specification limits of the applicable standard according to customer requirements.



#### 4. Used equipment on test

Description	Manufacturer	Model Name	Serial Name	Next Cal.
Balanced Temperature and Humidity Control System	ESPEC CORP.	SH-241	92004650	2025.06.13
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	MY45304057	2025.11.07
MXG ANALOG SIGNAL GENERATOR	AGILENT	N5183A	MY50141890	2025.11.07
SYSTEM DC POWER SUPPLY	AGILENT	6674A	MY53000118	2025.11.07
VECTOR SIGNAL GENERATOR	ROHDE & SCHWARZ	SMBV100A	257524	2025.11.07
DIRECTIONAL COUPLER	AGILENT	773D	2839A01855	2025.11.07
ATTENUATOR	AGILENT	8493C	73193	2025.11.07
TERMINATION	HEWLETT PACKARD	909D	07492	2025.11.07
POWER DIVIDER	HEWLETT PACKARD	11636A	06916	2025.11.07
SLIDE-AC	DAEKWANG TECH	SV-1023	NONE	2025.11.07
DIGITAL MULTIMETER	HUMANTECHSTORE	15B+	50561541WS	2025.11.07
ATTENUATOR	ACE RF COMM	ATT SMA 20W 20dB 8GHz	A-0820.SM20.2	2025.04.04
DC POWER SUPPLY	AGILENT	E3634A	MY40012120	2025.02.22
USB Peak Power Sensor	Anritsu	MA24408A	12321	2025.11.08
High Pass Filter	WT Microwave INC.	WT-A3314-HS	WT22111804-1	2025.11.07
High Pass Filter	WT Microwave INC.	WT-A1935-HS	WT22111804-2	2025.12.06
SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSU26	200444	2025.02.22
ATTENUATOR	Mini-Circuits	BW-K3-2W44+	2318-1	2025.06.28
ATTENUATOR	Mini-Circuits	BW-K3-2W44+	2318-2	2025.06.28
Balanced Temperature and Humidity Control System	ESPEC CORP.	SH-241	92004650	2025.06.13
ACTIVE LOOP ANTENNA	TESEQ	HLA 6121	55685	2026.12.20
Biconilog ANT	Schwarzbeck	VULB 9160	3260	2026.04.01
Biconilog ANT	Schwarzbeck	VULB9168	902	2026.08.28
Horn ANT	Schwarzbeck	BBHA9120D	974	2025.11.29
Horn ANT	Schwarzbeck	BBHA9120D	1497	2025.01.04
Amplifier	TESTEK	TK-PA18H	200104-L	2025.03.14
Horn ANT	Schwarzbeck	BBHA9170	01188	2025.03.19
Horn ANT	Schwarzbeck	BBHA9170	01189	2025.03.19
AMPLIFIER	TESTEK	TK-PA1840H	220105-L	2025.03.14
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW44	101952	2025.03.14
Test Receiver	ROHDE & SCHWARZ	ESR7	101616	2025.06.27
TWO LINE V-NETWORK	ROHDE & SCHWARZ	ENV216	102596	2025.08.20
PULSE LIMITER	lignex1	EPL-30	NONE	2026.01.04



#### 5. Antenna Requirement

Accoding to §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Accoding to §15.247(b)(4) e conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 5.1 Result

#### Complies

(The transmitter has a Wire Antenna. The directional peak gain of the antenna is 0.17 dBi.)



## 6. 6 dB Bandwidth & Occupied Bandwidth (99%)

#### 6.1 Test Setup

Refer to the APPENDIX I.

#### 6.2 Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

#### 6.3 Test Procedure

The bandwidth at 6 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the EUT's antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = Max Hold.
- 5. Sweep = Auto
- 6. Allow the trace to stabilize.
- 7. Option 1 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.
  - Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW ≥ 3 x RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

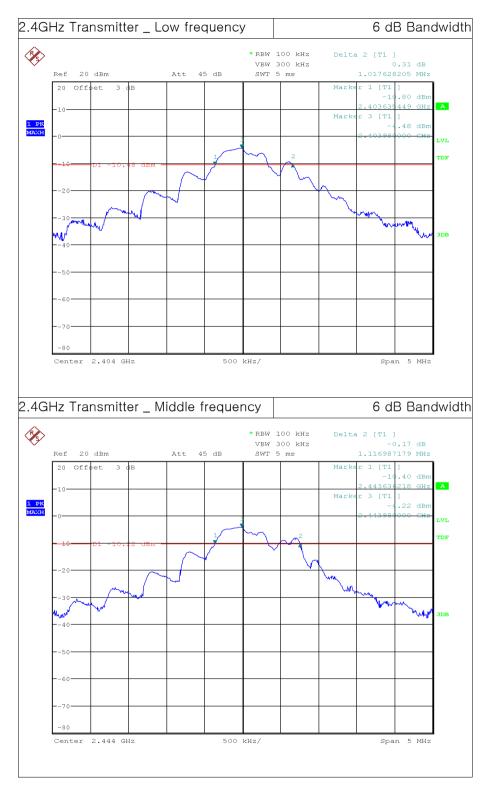
#### 6.4 Test Result

Test Mode	Test Frequency	6 dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
	Low	1.018	2.240
2.4 GHz Transmitter	Middle	1.117	2.075
	High	0.962	2.010

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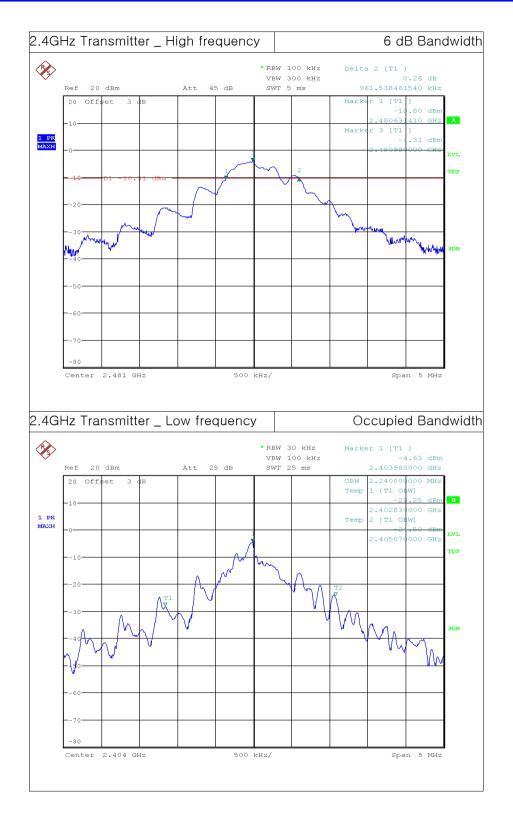


#### 6.5 Test Plot



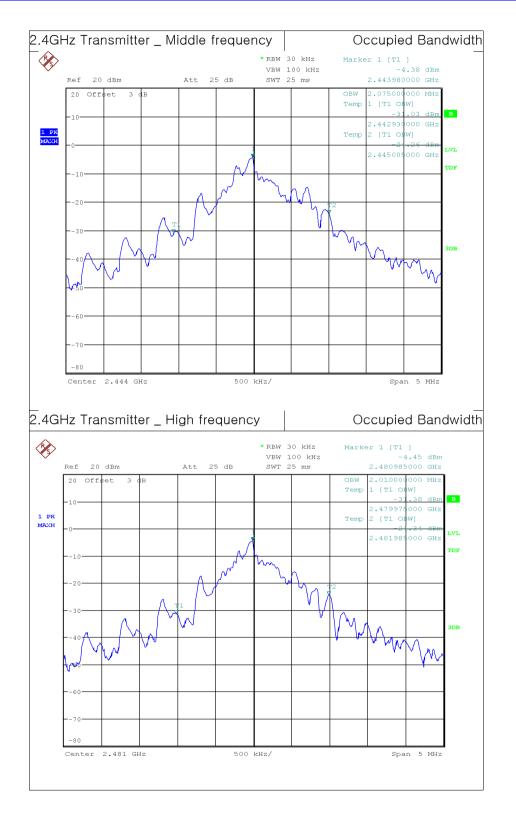
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## 7. Maximum Peak Output Power

## 7.1 Test Setup

Refer to the APPENDIX I.

## 7.2 Limit

The maximum permissible conducted output power is 1 Watt.

#### 7.3 Test Procedure

A transmitter antenna terminal of EUT is connected to the input of a spectrum analyzer. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

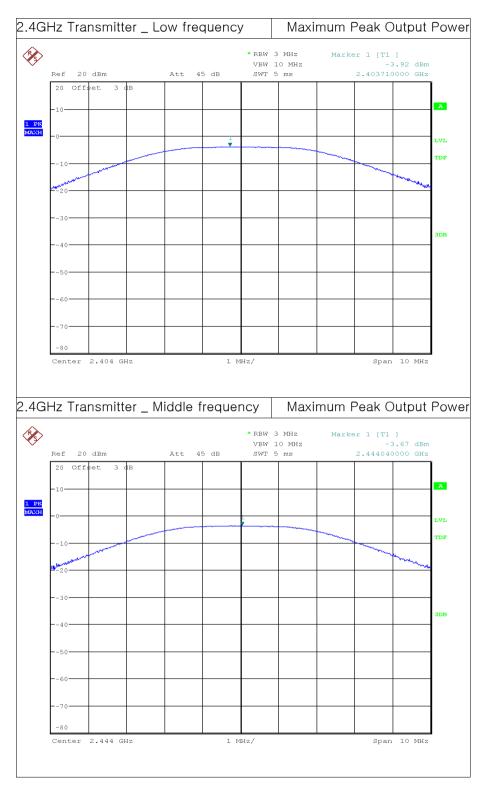
- 1. Set the RBW  $\geq$  DTS bandwidth
- 2. Set VBW  $\geq$  3 x RBW
- 3. Set span  $\geq$  3 x RBW.
- 4. Sweep time = auto couple
- 5. Detector = peak
- 6. Trace mode = max hold
- 7. Allow trace to fully stabilize
- 8. Use peak search function to determine the peak amplitude level.

#### 7.4 Test Result

Test Mode	Test Frequency	Peak Out	put Power
iest mode	Test Frequency	dBm	mW
	Low	-3.92	0.41
2.4 GHz Transmitter	Middle	-3.67	0.43
	High	-3.74	0.42



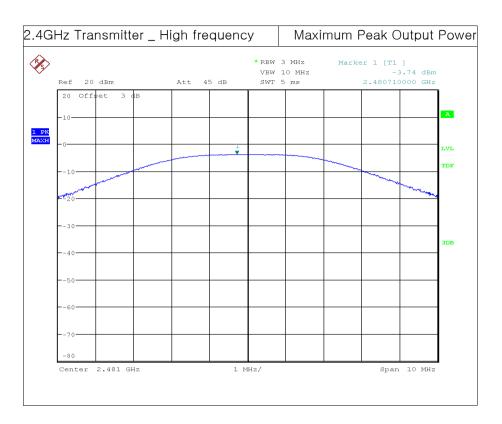
## 7.5 Test Plot



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## 8. Peak Power Spectral Density

## 8.1 Test Setup

Refer to the APPENDIX I.

## 8.2 Limit

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

#### 8.3 Test Procedure

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

(ANSI C63.10-2013 \_ Section 11.10.2 - Method PKPSD)

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS bandwidth.
- 3. Set the RBW : 3 kHz  $\leq$  RBW  $\leq$  100 kHz.
- 4. Set the VBW  $\geq$  3 x RBW.
- 5. Detector = Peak.
- 6. Sweep time = Auto
- 7. Trace mode = Max Hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

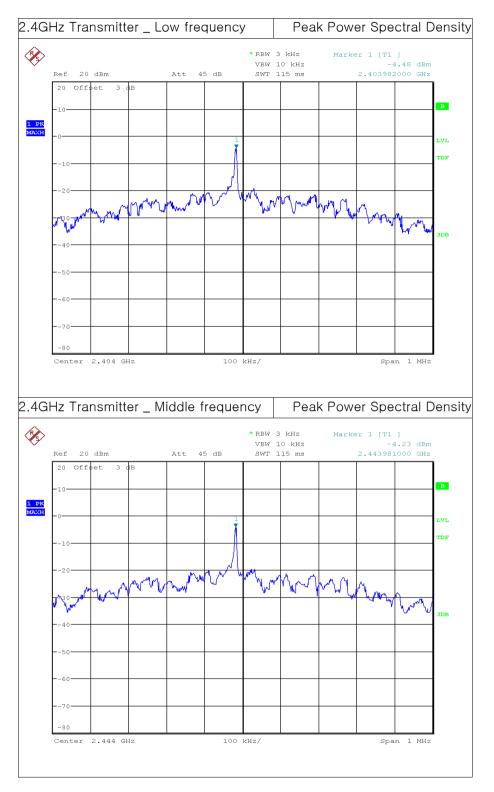
8.4 Test Result
-----------------

Test Mode	Test Frequency	Peak Power Spectral Density (dBm)
	Low	-4.48
2.4 GHz Transmitter	Middle	-4.23
	High	-4.25

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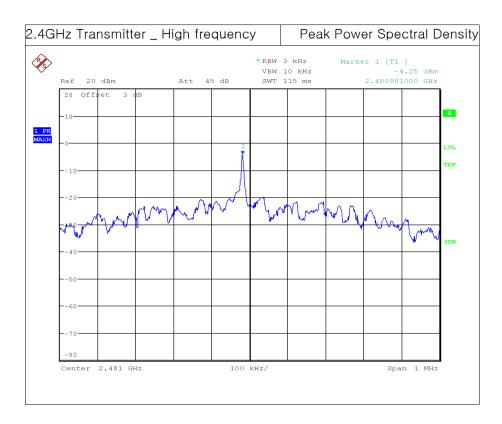
#### 8.5 Test Plot



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## 9. TX Radiated Spurious Emission and Conducted Spurious Emission

## 9.1 Test Setup

Refer to the APPENDIX I.

## 9.2 Limit

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in section §15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section §15.205(a), must also comply the radiated emission limits specified in section §15.209(a) (see section §15.205(c))

According to § 15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional

	ia otioligti lovolo opocilioa il t	no ronowing table
Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1705	24000/F (kHz)	30
1705 ~ 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

radiator shall not exceed the field strength levels specified in the following table

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54 - 72 MHz, 76 - 88 MHz, 174 - 216 MHz or 470 - 806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.



According to § 15.205(a) and (b), only spurious emissions are permitted in any of the frequency bands listed below:

6
6
-
5
5
7
.4
.5
.2
4
12
0
8
.5
6
()

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.



#### 9.3 Test Procedure for Radiated Spurious Emission

- 1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3.75 meter away from the interference-receiving antenna.
- 3. For measurements above 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.
- 4. The antenna is a Broadband antenna, and its 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.
- 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 and the table was turned from 0 degrees to 360 degrees to find the maximum reading. (The EUT was pre-tested with three axes (X, Y, Z) and the final test was performed at the worst case.)
- 6. Repeat above procedures until the measurements for all frequencies are complete.

#### Measurement Instrument Setting

- 1. Frequency Range: Below 1 GHz RBW = 100 or 120 kHz, VBW = 3 x RBW, Detector = Peak or Quasi Peak
- 2. Frequency Range: Above 1 GHz

```
Peak Measurement
RBW = 1 MHz, VBW = 3 MHz, Detector = Peak, Sweep time = Auto,
Trace mode = Max Hold until the trace stabilizes
```

Average Measurement RBW = 1 MHz, VBW = 3 MHz, Detector = RMS (Number of points ≥ 2 x Span / RBW), Trace Mode = Average (Averaging type = power(i.e. RMS)), Sweep Time = Auto, Sweep Count = at least 100 traces

A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

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- 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is 10 log(1/x), where x is the duty cycle.
- 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is 20 log(1/x), where x is the duty cycle.
- If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than tuning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

#### 9.4 Test Procedure for Conducted Spurious Emission

- 1. The transmitter output was connected to the spectrum analyzer.
- 2. The reference level of the fundamental frequency was measured with the spectrum analyzer using RBW = 100 kHz, VBW = 300 kHz.
- 3. The conducted spurious emission was tested each ranges were set as below. Frequency range: 30 MHz ~ 26.5 GHz
   RBW = 100 kHz, VBW = 300 kHz, Sweep Time = Auto, Detector = Peak, Trace = Max Hold

LIMIT LINE = 20 dB below of the reference level of above measurement procedure Step 2. (RBW = 100 kHz, VBW = 300 kHz)



#### 9.5 Test Result

#### 9 kHz $\sim$ 25 GHz Data for 2.4 GHz Transmitter

#### • Low frequency

	Rea	ding		<b></b>	0.05	Lin	nits	Re	sult	Ма	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCF (dB)	(dBu	V/m)	(dBu	V/m)	(d	B)
(MHz)	AV ,	<sup>/</sup> Peak		(00)	(00)	AV /	Peak	AV /	Peak	AV /	Peak
2 389.08	15.26	30.78	Н	9.51	7.74	54.0	74.0	32.5	40.3	21.5	33.7
4 808.00	39.92	49.87	Н	-1.18	7.74	54.0	74.0	46.5	48.7	7.5	25.3
7 211.87	34.02	44.67	Н	8.33	7.74	54.0	74.0	50.1	53.0	3.9	21.0

#### • Middle frequency

Fraguanay	Rea	ding		<b></b>	2.05	Lin	nits	Re	sult	Mai	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCF (dB)	(dBu	V/m)	(dBu	V/m)	(d	B)
(MHz)	AV ,	/ Peak			(48)	AV /	Peak	AV /	Peak	AV /	Peak
4 888.05	38.34	48.28	Н	-1.08	7.74	54.0	74.0	45.0	47.2	9.0	26.8
7 332.15	34.18	44.88	Н	8.34	7.74	54.0	74.0	50.3	53.2	3.7	20.8

#### • High frequency

Fraguaday	Rea	ding		<b>T C</b>	0.05	Lin	nits	Re	sult	Ма	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCF (dB)	(dBu	V/m)	(dBu	ıV/m)	(d	B)
(MHz)	AV ,	/ Peak		(00)	(48)	AV /	Peak	AV /	Peak	AV /	Peak
2 483.51	28.25	51.25	Н	9.25	7.74	54.0	74.0	45.2	60.5	8.8	13.5
4 961.96	40.79	50.72	Н	-1.14	7.74	54.0	74.0	47.4	49.6	6.6	24.4
7 442.99	34.47	45.42	Н	8.49	7.74	54.0	74.0	50.7	53.9	3.3	20.1

Note 1: The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found above listed frequencies.

Note 2: DCF(Duty Cycle Factor)

-  $T_{on}$  = 0.683 ms /  $T_{off}$  = 3.379 ms

- Duty Cycle =  $T_{on}$  / ( $T_{on}+T_{off}$ ) = 0.683 / (0.683+3.379) = 0.168

- DCF =  $10 \times \log(1/\text{Duty Cycle}) \text{ dB} = 10 \times \log(1/0.168) \text{ dB} = 7.74 \text{ dB}$ 

Note 3: Sample Calculation.

Margin = Limit - Result / Peak Result = Peak Reading + TF / Average Result = Average Reading + TF + DCF TF = Ant factor + Cable Loss + Filter Loss - Amp Gain + Distance Factor

Distance Factor = 20log(applied distance/required distance) = 20log(3.75m/3m) = 1.94



## 9.6 Test Plot for Radiated Spurious Emission

#### • 2.4 GHz Transmitter \_ Low frequency

					F	165thCt	ed Ban	u – rea
IultiView ↔ Spectrum Ref Level 97.00 dBμV	Spectrum RBW	1 MH-	Spectrum 3	X Spectru	um 4 🛛 🕱	l		V
Att 0 dB SV Input 1 AC PS Frequency Sweep	WT 1.01 ms = VBW S On Notch	3 MHz Mode n Off	Auto Sweep			Fn	equency 2.3	500000 GH
Frequency sweep							M1[1]	
0 dBµV								2.3890810 GH
) dBµV								
I dBµV								
d8µV								
dBµV								
ι d8μV								
								м
I dBµV		an me he we	المحمد المتعرب (المحمد المحمد الم	mandender	anna an that an	and a strange with the state	Marganangagha	1 Maron with
dBµV								
dBµV-								
dBµV					.0 MHz/			2.39 GH
·		1001 pts		8		tricted	Band –	
.31 GHz		·2 🕱 S	Spectrum 3	X Spectra	Res	tricted	Band -	
Altiview C Spectrum Ref Level 97.00 dBy/ Att 0 dB St Input 1 AC PS	X Spectrum RBW WT 1.01 ms = VBW S On Notch	2 X S	Spectrum 3		Res m 4 x	l		Averac
altiView C Spectrum Ref Level 97.00 dB <sub>U</sub> /J Att 0 dB SS Input 1 AC PS Frequency Sweep		2 X S	Spectrum 3	X Spectra	Res m 4 x	l		Averaç
altiView C Spectrum Ref Level 97.00 dB <sub>U</sub> /J Att 0 dB SS Input 1 AC PS Frequency Sweep		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
altiView - Spectrum Ref Level 97.00 dB <sub>4</sub> V Att 0 dB St Frequency Sweep		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
Idtiview = Spectrum Ref Level 97.00 dB <sub>4</sub> V Att 0 dB S Input 1 AC PS Triculency Sweep		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
Idtiview = Spectrum Ref Level 97.00 dB <sub>4</sub> V Att 0 dB S Input 1 AC PS Triculency Sweep		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
al GHz		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
31 GHz           altiView         Spectrum           Ref Level         97.00 dB <sub>4</sub> /V           Att         0 dB           Input         1 AC           I dB <sub>4</sub> V         0           I dB <sub>4</sub> V         0		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
31 GHz           altiView         Spectrum           Ref Level         97.00 dB <sub>4</sub> /V           Att         0 dB           Input         1 AC           I dB <sub>4</sub> V         0           I dB <sub>4</sub> V         0		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averaç
31 GHz           alfövlew 2         Spectrum           Ref Level 97.00 dBy/           Att 0 dB St           Input 1 AC PS           Frequency Sweep           i dBy/           i dBy/           i dBy/           i dBy/		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
31 GHz           ultiView C:         Spectrum           Ref Level 97.00 dBµV           Att 0 dB St           Input 1 AC PS           Frequency Sweep           i dBµV           i dBµV           i dBµV           i dBµV           i dBµV		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
31 GHz           ultiView C:         Spectrum           Ref Level 97.00 dBµV           Att 0 dB St           Input 1 AC PS           Frequency Sweep           i dBµV           i dBµV           i dBµV           i dBµV           i dBµV		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
31 GHz           Idliview         Spectrum           Ref Level         97.00 dB <sub>0</sub> V           Att         0 dB           1 dB <sub>0</sub> V         1 AC           0 dB <sub>0</sub> V         0		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
31 GHz           Altiview ::         Spectrum           Ref Level 97.00 dBy/           Att 0 dB         Spectrum           1 AC         0 dB           Spectrum         0 dB           I Autor         0 dB           I Ac         9           Spectrum         0 dB           J By/v         0		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
31 GHz           Altiview ::         Spectrum           Ref Level 97.00 dBy/           Att 0 dB         Spectrum           1 AC         0 dB           Spectrum         0 dB           I Autor         0 dB           I Ac         9           Spectrum         0 dB           J By/v         0		2 X S	Spectrum 3	X Spectra	Res m 4 x	l	equency 2.3	Averac v 500000 GH 18m Avg 15.26 dBp
IultiView         Clipton           .31 GHz         Spectrum           Ref Level         97.00 dBµ/V           Att         0 dB SN           Jobph         1 AC PS           Frequency         Sweep           Jobph         1 AC PS           Frequency         Sweep           Jobph         Jobph           Jobph         Jobph </td <td></td> <td>2 X S</td> <td>ipectrum 3 Auto Sweep</td> <td>SGL Count 100/100</td> <td>Res m 4 x</td> <td>l</td> <td>equency 2.3</td> <td>Averaç • 500000 GH</td>		2 X S	ipectrum 3 Auto Sweep	SGL Count 100/100	Res m 4 x	l	equency 2.3	Averaç • 500000 GH

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								Spuriou	s – Pe
ultiView 🔠	Spectrum	x S	pectrum 2	X Spec	trum 3 🛛 🔉	7			
Ref Level 97.0	10 dBµV	= RB	W 1 MHz			<u> </u>			
Att Input Frequency Sw	1 AC PS	1.01 ms ⊕ VB On No	tch Off	de Auto Sweep			Fre	equency 4.80	• 1Pk Max
								M1[1]	49.87 dBµ 80800000 G⊦
dBµV									
dвµv									
dBµV									
dBµV									
dBµV					M1				
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dBµV	Werker	NA MARKAN					- Yu	Mr. Martin	
h <b>iller and a state of the stat</b>	aller and							Jank	Anger Marchand
0000									
dBµV									
dBµV									
<sup>Βμν</sup> 4.808 GHz			1001 g			.0 MHz/			Span 10.0 MH
							Spu	rious –	Avera
							Spu	rious –	Avera
	Spectrum		pectrum 2	∭ Spec	trum 3		Spu	rious –	Avera
tef Level 97.0 Att nput	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo	Spect Sode Auto Sweep	trum 3 SGL Count 100/100			rious — equency 4.80	Ţ
tef Level 97.0 Att nput	0 dBµV 0 dB SWT 1 AC PS		W 1 MHz W 3 MHz Mo		SGL				♥ 080000 GH ● 1Rm Avg
tef Level 97.0 Att nput requency Sw	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39.92 dBj
tef Level 97.0 att nput requency Sw	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39.92 dBj
tef Level 97.0 ttt nput requency Sw	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39.92 dBj
tef Level 97.0 tt nput requency Sw dBμV dBμV	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
Ref Level 97.0 Att nput requency Sw dBµV dBµV dBµV	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	Ÿ
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Ref Level 97.0           ttt           приt           гесциелся Sw           d8µv           d8µv           d8µv           d8µv           d8µv           d8µv           d8µv	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo		SGL			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
Xef Level 97.0           hput           nput           d8µv           d8µv           d8µv           d8µv           d8µv           d8µv           d8µv	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo	Auto Sweep	SGL Count 100/100			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
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teftevel 97.0 ч прит прит гециенсу Sw d8µV d8µV d8µV d8µV d8µV d8µV	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mo	Auto Sweep	SGL Count 100/100			equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
tef tevel 97.0 tevel 9	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	WW 1 MHz Met	Auto Sweep	SGL Count 100/100		Fre	equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
tet f evel 97.0 v tit mput Frequency Sw dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	WW 1 MHz Met	Auto Sweep	SGL Count 100/100		Fre	equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
tet f evel 97.0 v tit mput Frequency Sw dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV dBµV	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	WW 1 MHz Met	Auto Sweep	SGL Count 100/100		Fre	equency 4.80	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ
ultiView           Ref Level 97.0           ttt           requency Sw           d8µ/	0 dBµV 0 dB SWT 1 AC PS	= RB 1.01 ms = VB	WW 1 MHz Met	Auto Sweep	SGL Count 100/100		Fre	Equency 4.8(	⊽ 080000 GH ● 1Rm Avg 39,92 dBµ

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				Spurious –	Pe
					_
ultiView :: Spectru ef Level 97.00 dBµV	RBW 1 MHz	🗙 Spectrum 3 🔋 🖓 🗶			
tt 0 dB ⊕ SM nput 1 AC PS requency Sweep		Auto Sweep	Fra	equency 7.212000	0 GI
				M1[1] 44.6 7.211870	57 dBj
dBµV					
dвµv					
dвµV					
dBµV					
dBµV		M1			
BUV - Manadaman	And a			M. S. Markey	
ининикалининининининининининининининининининин					al All
dBµV					
1017 V					
dBhA					
<sub>вµV</sub> 7.212 GHz				Span 10	
			Spu	rious – Ave	era
			Spu	rious – Ave	era
ef Level 97.00 dBµV	RBW 1 MHz	Spectrum 3 SGL			,
tef Level 97.00 dBμV tt 0 dB SW nput 1 AC PS	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode			equency 7.212000	, 0 GI
tef Level 97.00 dBµV htt 0 dB SW nput 1 AC PS requency Sweep	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.212000	0 GI
ef Level 97.00 dBµV tt 0 dB SW nput 1AC PS requency Sweep	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef Level 97.00 dBµV ttt 0 dB SW nput 1AC PS requency Sweep	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef Level 97.00 dBµV tt 0 dB SW nput 1 AC PS requency Sweep dBµV	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef tevel 97.00 dBj// 0 dB Sw nput 1AC PS requency Sweep dBj// dBj// dBj//	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef Level 97.00 dBµ/ tt 0 166 yr requency Sweep dBµ/ dBµ/ dBµ/	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef Level 97.00 dBµ/ tt 0 166 yr requency Sweep dBµ/ dBµ/ dBµ/	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tef Level 97.00 dBµV ttt 0 dB SW nput 1 AC PS requency Sweep dBµV dBµV dBµV dBµV dBµV	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	SGL		equency 7.2120000 •187 M1[1] 34.0	0 GI
tet fevel 97.00 dBµ/           to dB Sw           mput         1 AC PS           requency Sweep           dBµ/           dBµ/           dBµ/           dBµ/           dBµ/           dBµ/           dBµ/           dBµ/		Auto Sweep SGL Count 100/100	Fr	equency 7.2120000 •187 M1[1] 34.0	0 Gł m Avg 02 dBj
tef Level 97.00 dBµ/ tt 0 dB SW mput 1 AC SW requency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/		Auto Sweep SGL Count 100/100	Fr	equency 7.2120000 •187 M1[1] 34.0	0 GI
tet f evel 97.00 dBµ/ tet f evel 97.00 dBµ/ mput 0 dB yw mput 1 AC PS requency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/	● RBW 1 MHz /T 1.01 ms ● VBW 3 MHz Mode	Auto Sweep SGL Count 100/100	Fr	equency 7.2120000 •187 M1[1] 34.0	0 GI
tet f evel 97.00 dBµ/ tet f evel 97.00 dBµ/ mput 0 dB yw mput 1 AC PS requency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/		Auto Sweep SGL Count 100/100	Fr	equency 7.2120000 •187 M1[1] 34.0	0 GI
tefLevel 97.00 dBµV		Auto Sweep SGL Count 100/100	Fr	equency 7.2120000 •187 M1[1] 34.0	v GH

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## • 2.4 GHz Transmitter \_ Middle frequency

ultiView E	O dBull		ectrum 2	X Spect	rum 3 🛛 🛛 🛛				
Att Input	0 dB = SWT 1 AC PS	= RBW 10 ms = VBW On Note	3 MHz Mode h Off	Auto Sweep			Fn	equency 4.88	980000 GI
	veep							M1[1]	48.28 dB 88805000 G
dBµV									
dBµV									
dBµV									
dBµV									
dBµV					41				
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dBuv-huyhuhaw	where where the work where the second								and the second second
dBµV									
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4.888 GHz			1001 pt	S	1	.0 MHz/		5	Span 10.0 MH
							Spu	rious –	Avera
							Spu	rious –	Avera
ef Level 97.0	0 dB SWT	= RB 1.01 ms = VB	W 3 MHz Mod		rum 3 SGL Count 100/100				, The second sec
ultiView tef Level 97.0 tt nput requency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		W 1 MHz W 3 MHz Mod		_			equency 4.88	380000 GI
ef Level 97.0 .tt nput requency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0 itt nput requency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI
tef Level 97.0 tt nput requency Sw d8μν d8μν	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0 htt nput requency Sw d8μν d8μν d8μν d8μν	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0 ttt приt requency Sw d8µv d8µv d8µv d8µv	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0           ttt           nput           ggμv           dgμv           dgμv           dgμv           dgμv           dgμv           dgμv	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0 Att nput	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL Count 100/100			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
tef Level 97.0           ttt           nput           ggμv           dgμv           dgμv           dgμv           dgμv           dgμv           dgμv	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1 MHz W 3 MHz Mod		SGL		Fr	equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
ef Level 97.0 при трит сеquency Sw dвµv dвµv dвµv dвµv dвµv dвµv dвµv dвµv	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1.1MHz Mod 3.0HHz Mod cth Off		SGL Count 100/100			equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB
ef Level 97.0. прит гадиался SW dsµv dsµv dsµv dsµv dsµv dsµv	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>	= RB 1.01 ms = VB	W 1.1MHz Mod 3.0HHz Mod cth Off		SGL		Fr	equency <b>4.8</b> 8	380000 GI 91Rm Av 38.34 dB

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#### • 2.4 GHz Transmitter \_ High frequency

						ſ	Restrict		
	Spectrum	Spectrur		Spectrum 3	X Spectri	um 4 🛛 🕱	l		$\nabla$
Ref Level 97.0 Att	0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW On Note	V 1 MHz V 3 MHz Mode ch Off	e Auto Sweep			Fr	requency 2.4	917500 GH
Input Frequency Sw		On Note			1				1Pk Max
0 dBµV								M1[1]	51.25 dBµV 2.4835080 GHz
0 dBµV									
0 dBµV									
0 dBµV									
0 dBµV									
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O dBµV	well when the second								-
	March Marca	where we are a second	www.www.www	Mande de a - 1					
0 dBµV				- water to be	to show which a	W/MMW/W/W/	an the second second	Mahamenhard	handerman
0 dBµV									a set on drama
0 dBµV									-
dBμV .4835 GHz			1001 pt	0	1	.65 MHz/			2.5 GHz
						Res	tricted	Band -	- Averaç
							tricted	Band -	
Ref Level 97.0	0 dBµV	Spectrum • RBW	V 1 MHz	Spectrum 3	SGL Spectra	um 4 🛛 🕱	L		Ţ
Ref Level 97.0 Att Input	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod			um 4 🛛 🕱	L		₹ 1917500 GH
Ref Level 97.0 Att Input	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr		▼ 1917500 GH: 18m Avg 28.25 dBµV
Ref Level 97.0 Att Input Frequency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	▼ 1917500 GH: 18m Avg 28.25 dBµV
Ref Level 97.0 Att Input Frequency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 917500 GH: ●1Rm Avg
Ref Level 97.0 Att Input Frequency Sw	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0 Att Input Ггециенсу Sw 0 dBµV 0 dBµV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0 Att Input Ггециенсу Sw 0 dBµV 0 dBµV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0           Att           Input           Bay           0 dBµV           0 dBµV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0           Att           Input           Build of the second s	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0           Att           Input           Build of the second s	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Ref Level 97.0           Input           Input           Frequency SW           0 dBµV           0 dBµV           0 dBµV           0 dBµV           0 dBµV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reflevel 97.0           Att           Input           Frequency Sw           0 d8µV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reftevel 97.0           Att           Input           Frequency SW           0 d8µV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reflevel 97.0           Att           Input           Income           Intervention           0 d8µV	0 dBµV 0 dB <b>SWT</b> 1 AC <b>PS</b>		V 1 MHz V 3 MHz Mod		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reftevel 97.0           Att           Input           Frequency Sw           0 dbµV	0 dBu 0 dB SWT 1 AC PS 1 AC PS 7 CCCP	RBW     RBW     On Note	y 1 MHz Mod 3 MHz Mod Off		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
AultiView         E           Sef tevel 97.0           Att           Ioput           Frequency SW           0 d8µV	0 dBu 0 dB SWT 1 AC PS 1 AC PS 7 CCCP		y 1 MHz Mod 3 MHz Mod Off		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reftevel 97.0           Att           Input           Frequency SW           0 dbµv	0 dBu 0 dB SWT 1 AC PS 1 AC PS 7 CCCP	RBW     RBW     On Note	y 1 MHz Mod 3 MHz Mod Off		SGL	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V
Reftevel 97.0           Att           Input           Frequency SW           0 dbµv	0 dBu 0 dB SWT 1 AC PS 1 AC PS 7 CCCP	RBW     RBW     On Note	y 1 MHz Mod 3 MHz Mod Off	e Auto Sweep	SGL Count 100/100	um 4 🛛 🕱	Fr	requency 2.4	₹ 9917500 GH: 18m Avg 28.25 dB/V

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						C C	Spuriou	s – Pe
MultiView Spectru	ım 🕱 Spe	ectrum 2	X Spect	rum 3 🏾 🛛	Ð			
Ref Level 97.00 dBuV	• RBW • WT 10 ms • VBW	1 MHz	Auto Sweep			Err	equency 4.9	620000 GL
Input 1 AC P	S On Notch	Off	Adto Sweep			Fre	equency 4.9	• 1Pk Max
							M1[1] 4	50.72 dBj .96196000 GF
0 dBµV								
D dBµV								
) dвµV								
1 00 µV								
I dBµV								
і dвµV			,					
	and	and the second				Section Sec	man and a man	
dBµV							and a second	and hoursen
Man Marine Marin								
dBµV								
dBµV								
<sup>dBμV</sup> 4.962 GHz		1001 pt	s	1	.0 MHz/			Span 10.0 MF
						Spu	rious -	Avera
						Spu	rious –	Avera
Ref Level 97.00 dBµV	= RBW	ectrum 2	x Spect	SGL				4
RefLevel 97.00 dBµV Att 0 dB SV Input 1 AC PS	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		_			rious — equency 4.94	620000 GH
Ref Level 97.00 dBµV Att 0 dB SV Input 1 AC PS Frequency Sweep	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL				520000 GF
Ref Level 97.00 dBµV Att 0 dB SV Input 1 AC PS Frequency Sweep	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GI • 18m Av 40,79 dB
Ref Level 97.00 dBµV Att 0 dB SV input 1 AC PS requency Sweep dBµV-	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	620000 GI • 18m Av 40.79 dB
Ref Level 97.00 dBμ/       tt     0 dB SV       nput     1 AC PE       requency Sweep     dBμ/       dBμ/     dBμ/	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GI • 18m Av 40,79 dB
Ref Level 97.00 dBμ/       tt     0 dB SV       nput     1 AC PE       requency Sweep     dBμ/       dBμ/     dBμ/	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GI • 18m Av 40,79 dB
Ref Level 97.00 BW/ Att 0 dB SY Input 1 AC PS Frequency Sweep dBy/	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GF
Ref Level 97.00 dB/V           Att         0 dB         SK           Input         JAC         PS           Tecquency Sweep	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GI • 18m Av 40,79 dB
Ref Level 97.00 dB,W           Att 0 dB 00 dB 0	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GF
Ref Level 97.00 dB,W           Att 0 dB 00 dB 0	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GF
Ref Level 97.00 B/V           Att         0 B         SY           Input         1 AC         PS           Frequency Sweep	● RBW WT 1.01 ms ● VBW	f 1.hH≥ 3.MH≥ Mode h Off		SGL	, , , , , ,	Fre	equency 4.9	520000 GF
Ref Level 97.00 BW/           Aft evel 97.00 BW/           JAC 95           Input         JAC 95           Teduency Sweep           dBµV	● RBW WT 1.01 ms ● VBW	1 MHz 3 MHz Mod		SGL			equency 4.9	520000 GF
Ref Level 97.00 BW/           Aft evel 97.00 BW/           JAC 95           Input         JAC 95           Teduency Sweep           dBµV	● RBW WT 1.01 ms ● VBW	f 1.hH≥ 3.MH≥ Mode h Off		SGL	, , , , , ,	Fre	equency 4.9	520000 GF
Ref Level 97.00         Bµ//           Att         0 dB           0 dB         SK           Input         1 AC           PS         SK           dBµ//         dB           dBµ//         dBµ//           dBµ//         dBµ//           dBµ//         dBµ//           dBµ//         dBµ//           dBµ//         dBµ//           dBµ//         dBµ//           dBµ//         dBµ///           dBµ//         dBµ///           dBµ//         dBµ///           dBµ//         dBµ///	● RBW WT 1.01 ms ● VBW	f 1.hH≥ 3.MH≥ Mode h Off		SGL	, , , , , ,	Fre	equency 4.9	520000 GF
Ref Level 97.00 BB/V           Att         0 BB SY           Input         1 AC PS           Fracturency Swacp	● RBW WT 1.01 ms ● VBW	f 1.hH≥ 3.MH≥ Mode h Off		SGL	, , , , , ,	Fre	equency 4.9	€20000 GH •1Rm Avg 40.79 dB
Ref Level 97.00 dBµV Att 0 dB SV	● RBW WT 1.01 ms ● VBW	f 1.hH≥ 3.MH≥ Mode h Off	e Auto Sweep	SGL Count 100/100	, , , , , ,	Fre	MJ[1] 4	Ý

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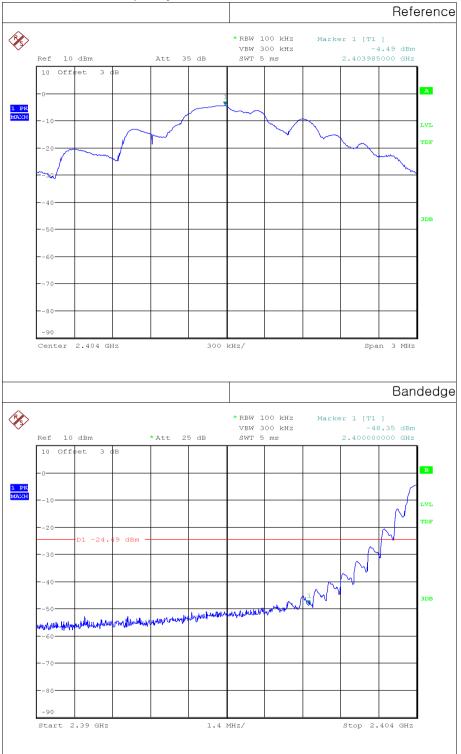
					Sp	urious – F	'ea
MultiView Spectr	um 🕱 Spec	ctrum 2 🛛	Spectrum 3	X		ſ	~
Ref Level 97.00 dBµV           Att         0 dB ●           Input         1 AC			<u> </u>		Freque	ncy 7.4430000	GHz
Frequency Sweep						• 1Pk   M1[1] 45,42	dBµV
0 dBµV						7.44299000	GHZ
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F 7.443 GHz				1.0 Winz/	Spuric	ous - Aver	
F 7.443 GHz				1.0 WEZ/	Spuric		
IultīView :: Spectr		ctrum 2 🛛	Spectrum 3 SGL	X		ous – Aver	aç
IultiView : Spectr Ref Level 97.00 dB/V Att 0 dB S Input 1 AC P	um Spec • RBW WT 1.01 ms • VBW S On Notch	ctrum 2 I 1 MHz 3 MHz Mode Au		X		ous – Aver ncy 7.4430000	a( GH
IultiView :: Spectr Ref Level 97.00 dBy/ Att 0 dB s Input 1 AC P Frequency Sweep	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous - Aver	a(
ultiView :- Spectr Ref Level 97.00 dB <sub>M</sub> / Att 0 dB S Frequency Sweep dB <sub>M</sub> /	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	a(
IultiView II Spectr Ref Level 97.00 dBµ/ Att. 0 dB S Input 1 AC P Tequency Sweep dBµ/ dBµ/	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	a(
IultiView E Spectr Ref Level 97.00 dB,V Att 0 dB S Input 1 AC P Frequency Sweep dB,V dB,V	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	aç GH:
fult/View         Spectr           Ref Level 97.00 dB <sub>0</sub> /v         0 dB s           Att         0 dB s           Frequency Sweep         0           0 dB <sub>0</sub> /v         0	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	aç GH:
IultiView #         Spectr           Ref Level 97.00 dBµV         0 dB S           Input         0 dB S           Input         1 AC P           Frequency Sweep         0           0 dBµV         0	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	aç GH:
IultiView #         Spectr           Ref Level 97.00 dBµV         0 dB S           Input         0 dB S           Input         1 AC P           Frequency Sweep         0           0 dBµV         0	● RBW SWT 1.01 ms ● VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL	X		ous – Aver	aç GH:
fultiView         Spectr           Ref Level         97.00 dB <sub>0</sub> V           Att         0 dB           0 dB         1 AC           Frequency         Sweep           0 dB <sub>0</sub> V         0	Series VBW	ctrum 2 2 1 MHz 3 MHz Mode Au Off	SGL Count 1	00/100	Freque	ous – Aver	aç GH:
tultiView         Spectr           Ref Level 97.00 dB <sub>U</sub> /         Att         0 dB         Spectr           Japat         1 AC         P         Frequency         P           J dB <sub>U</sub> /         -         -         -         -           J dB <sub>U</sub> /         -         -         -         -         -           J dB <sub>U</sub> /         - <td>Series VBW</td> <td>ctrum 2 I 1 MHz 3 MHz Mode Au</td> <td>SGL Count 1</td> <td>X</td> <td></td> <td>ous – Aver</td> <td>aç GH:</td>	Series VBW	ctrum 2 I 1 MHz 3 MHz Mode Au	SGL Count 1	X		ous – Aver	aç GH:
fultiview         Spectric           Ref Level         97.00 dBµV           0 dB         3           Input         1 AC           1 dBµV         1 AC           0 dBµV         1 AC           1 dBµV         1 AC           1 dBµV         1 AC           1 dBµV         1 AC	Series VBW	ctrum 2 2 1 MHz 3 MHz Mode Au Off	SGL Count 1	00/100	Freque	ous – Aver	aç GH:
AultiView # Spectr RefLevel 97.00 dB <sub>M</sub> Att 0 dB S	Series VBW	ctrum 2 2 1 MHz 3 MHz Mode Au Off	SGL Count 1	00/100	Freque	ous – Aver	GH2

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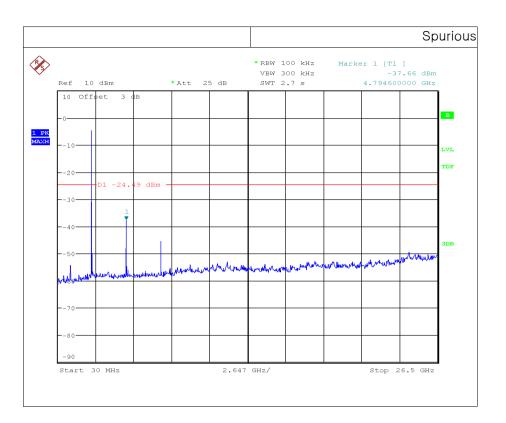
#### 9.7 Test Plot for Conducted Spurious Emission





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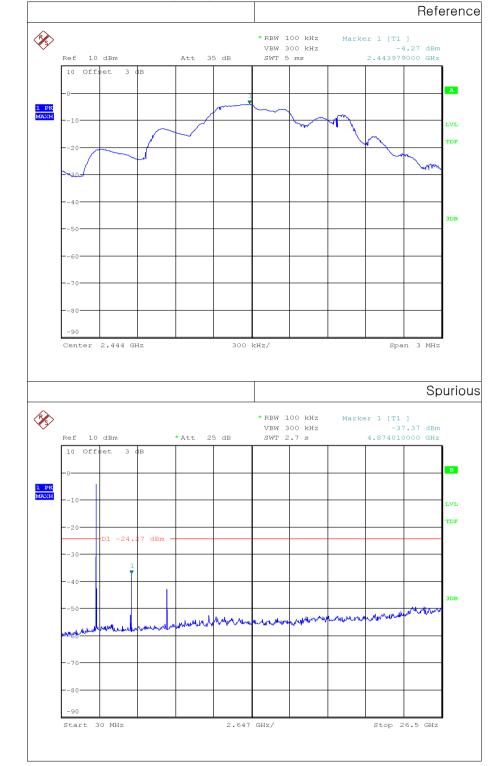




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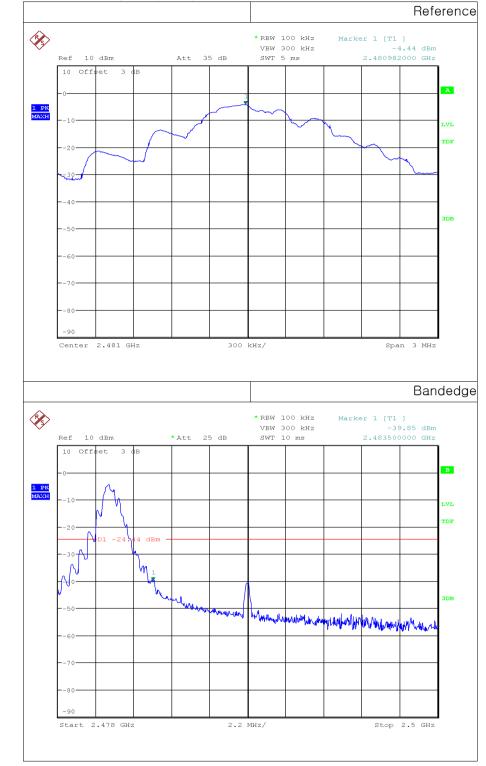
#### • 2.4 GHz Transmitter \_ Middle frequency



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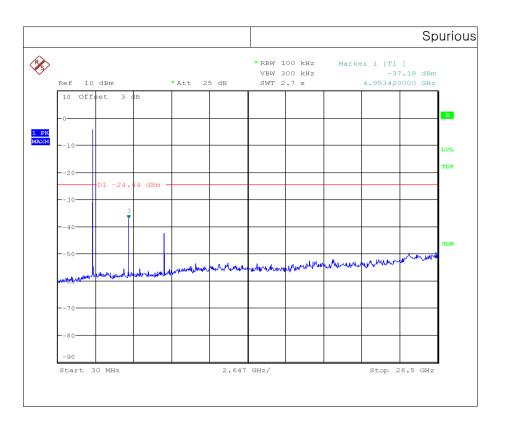


#### • 2.4 GHz Transmitter \_ High frequency



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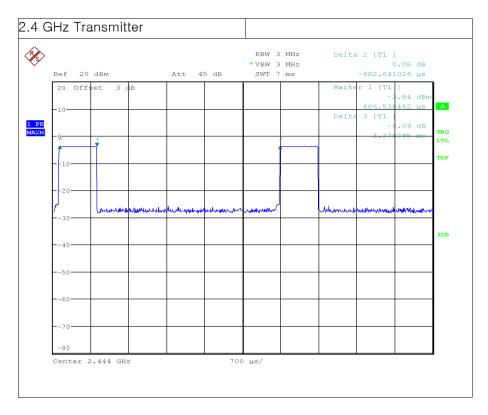




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## 9.8 Test Plot for Duty Cycle



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## 10. Conducted Emission

#### 10.1 Test Setup

See test photographs for the actual connections between EUT and support equipment.

#### 10.2 Limit

According to §15.207(a) for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Fraguanay Danga (MHz)	Conducted 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 logarithm of the frequency

## 10.3 Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10.

- The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
- 2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
- 3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
- 4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

#### 10.4 Test Result

#### Not Applicable

(This products is only using Battery(1.5 V AAA \* 3) power. So, AC conducted emission test has not been performed.)

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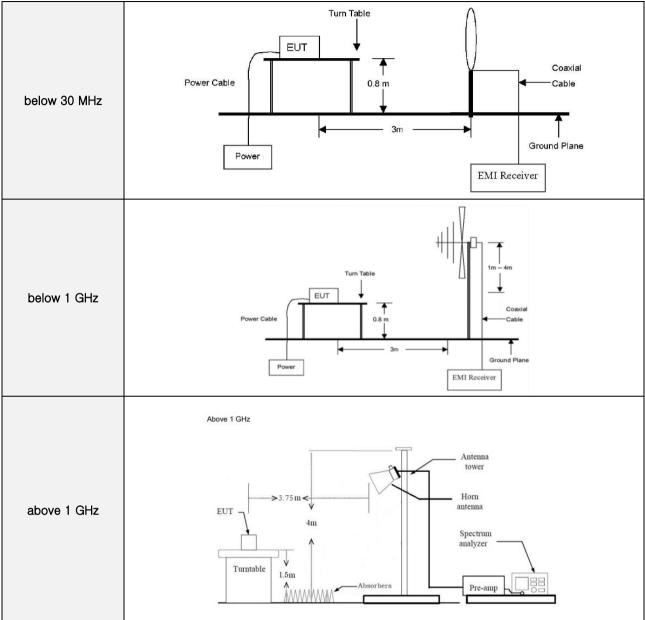
APPENDIX I

TEST SETUP

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#### • Radiated Measurement



#### • Conducted Measurement

		_			
Conducted	EUŢ		Attenuator	Spectrum Analyzer	

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APPENDIX II

UNCERTAINTY

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Measurement Item	Expanded Uncertainty U = <i>k</i> Uc ( <i>k</i> =2)
Conducted RF power	0.34 dB
Conducted Spurious Emissions	0.34 dB
Radiated Spurious Emissions	5.82 dB
Conducted Emissions	2.00 dB