

FCC 15.249 2.4 GHz Report

for

Chungear Industrial Co., Ltd

12 Jingke 8th Rd Nantun District Taichung 40852 Taiwan

Product Name : Ceiling Fan Remote Controller
Model Name : JY1126B
FCC ID : KUJCE10717

**Prepared by: : AUDIX Technology Corporation,
EMC Department**



The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, TAF or any government agencies.

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APPENDIX B EUT PHOTOGRAPHS

TEST REPORT CERTIFICATION

Applicant : Chungear Industrial Co., Ltd
Manufacturer #1 : Chungear Industrial Co., Ltd
Manufacturer #2 : Satellite Electronic (Zhongshan) Ltd.
Manufacturer #3 : Zhongshan Amity Electronic Ltd.
EUT Description
(1) Product : Ceiling Fan Remote Controller
(2) Model : JY1126B
(3) Power Supply : AC 120V, 60Hz

Applicable Standards:

47 CFR FCC Part 15 Subpart C
ANSI C63.10:2013

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2018. 07. 25

Reviewed by: Sabrina Wang (Sabrina Wang/Administrator)

Approved by: Ben Cheng (Ben Cheng/Manager)

1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2018. 07. 25	Original Report	EM-F180322

2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207	Conducted Emission	PASS
15.205/ 15.209/ 15.249(a)	Radiated Band Edge and Radiated Spurious Emission Fundamental Frequency	PASS
----	Occupied Bandwidth 99% Power	Reference only
15.203	Antenna Requirement	PASS

3. GENERAL INFORMATION

3.1. Description of Application

Applicant	Chungear Industrial Co., Ltd 12 Jingke 8th Rd Nantun District Taichung 40852 Taiwan
Manufacture #1	Chungear Industrial Co., Ltd 12 Jingke 8th Rd Nantun District Taichung 40852 Taiwan
Manufacture #2	Satellite Electronic (Zhongshan) Ltd. 8 CHUANG YE RD.TORCH DEVELOPMENT ZONE..ZHONGSHAN.GUANGDONG.528437 CHINA
Manufacture #3	Zhongshan Amity Electronic Ltd. No. 16 Torch Hi-Tech Industrial Development Zone, Zhong Shan City Guangdong Province China.
Product	Ceiling Fan Remote Controller
Model	JY1126B

3.2. Description of EUT

Test Model	JY1126B
Serial Number	N/A
Power Rating	AC 120V, 60Hz
RF Features	Bluetooth Low Energy (BLE)
Sample Status	Production
Date of Receipt	2018. 06. 21
Date of Test	2018. 07. 23 ~ 25
Interface Ports of EUT	N/A
Accessories Supplied	Power Wire x 1set: Unshielded, Undetachable , 0.15m, Bonded a ferrite core

3.3. Antenna Information

Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
---	---	PCB Antenna	2.4GHz	4.33

3.4. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate
BLE	2402-2480	40	GFSK	1

Channel List							
BLE							
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
37	2402	09	2422	18	2442	28	2462
00	2404	10	2424	19	2444	29	2464
01	2406	38	2426	20	2446	30	2466
02	2408	11	2428	21	2448	31	2468
03	2410	12	2430	22	2450	32	2470
04	2412	13	2432	23	2452	33	2472
05	2414	14	2434	24	2454	34	2474
06	2416	15	2436	25	2456	35	2476
07	2418	16	2438	26	2458	36	2478
08	2420	17	2440	27	2460	39	2480

3.5. Description of Key Components

None

3.6. Test Configuration

Mode	Duty Cycle (x)	T (ms)	Duty Cycle Factor (dB)
BLE	100%	N/A	N/A

Note: When duty cycle is less than 98% (0.98) that duty cycle factor $10\log(1/x)$ is needed to add in conducted test items measured in average detector.

AC Conduction	
Test Case	Normal operation

Item		Mode	Test Channel
Radiated Test Case	Radiated Band Edge ^{Note1}	BLE	37/39
	Radiated Spurious Emission(30MHz-1GHz) ^{Note1}	BLE	37/17/39
	Radiated Spurious Emission(Above 1GHz) ^{Note1}	BLE	37/17/39
	Fundamental Frequency	BLE	37/17/39
	Occupied Bandwidth 99% Power	BLE	37/17/39

Note 1: ☒ Mobile Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow: ☒ Lie ☐ Side ☐ Stand

☐ Portable Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow: ☐ Lie ☐ Side ☐ Stand

3.7. Tested Supporting System List

None

3.8. Setup Configuration



3.9. Operating Condition of EUT

To set EUT RF function under continues transmitting and choosing channel.

3.10. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2005 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is: TW1724 (1) No. 8 Shielded Room (2) Semi-Anechoic Chamber (IC Test Site Registration No.: 5183B-1) (3) Fully Anechoic Chamber (IC Test Site Registration No.: 5183B-4)

3.11. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	±3.50dB
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark : Uncertainty = $ku_c(y)$

Test Item	Uncertainty
Occupied Bandwidth 99% Power	± 1kHz

4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2018. 01. 24	1 Year
2.	A.M.N.	R&S	ENV4200	100169	2017. 11. 12	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2017. 12. 14	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2018. 01. 16	1 Year
5.	Signal Cable	Yeida	RG/58AU	CE-08	2017. 09. 22	1 Year
6.	Digital Thermo- Hygro Meter	iMax	HTC-1	No.8 S/R	2018. 04. 20	1 Year
7.	Test Software	Audix	e3	V.6.120424	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2017. 09. 13	1 Year
2.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2018. 01. 04	1 Year
3.	Test Receiver	R & S	ESCS30	100338	2018. 06. 20	1 Year
4.	Amplifier	HP	8447D	2944A06305	2018. 01. 30	1 Year
5.	Amplifier	HP	8449B	3008A02678	2018. 03. 06	1 Year
6.	Loop Antenna	R&S	HFH2-Z2	891847/27	2017. 12. 18	1 Year
7.	Bilog Antenna	CHASE	CBL6112D	33821	2018. 01. 21	1 Year
8.	Horn Antenna	COM-POWER	AH-840	101092	2018 .05. 07	1 Year
9.	Horn Antenna	ETS-Lindgren	3117	00135902	2018. 03. 08	1 Year
10.	2.4GHz Notch Filter	K&L	7NSL10-2441.5 E130.5-00	1	2017. 07. 26	1 Year
11.	3GHz Notch Filter	Microwave	H3G018G1	484796	2017. 08. 22	1 Year
12.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.1 3m A/C	2018. 04. 20	1 Year
13.	Digital Thermo-Hygro Meter	iMax	E-512	RF-02	2018. 04. 20	1 Year
14.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

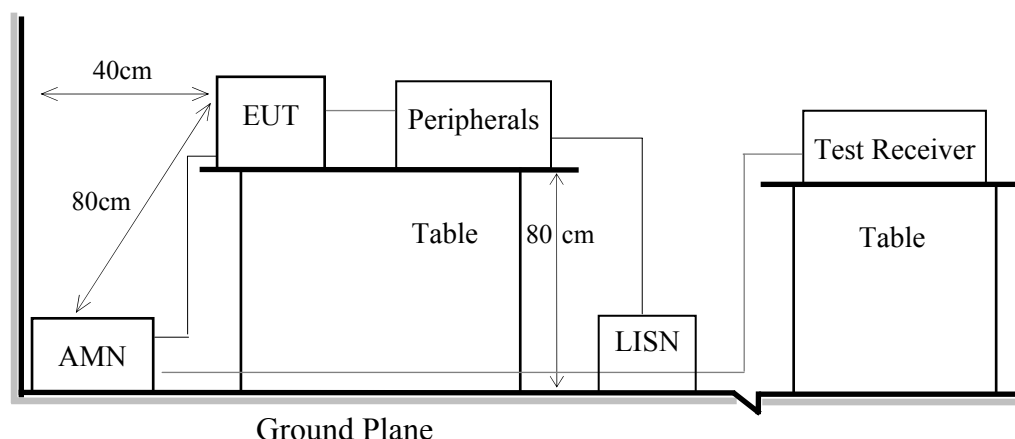
5. CONDUCTED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.8

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.

2.: The lower limit applies to the band edges.

5.3. Test Procedure

- 5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
- 5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
- 5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
- 5.3.4. To Check frequency range from 150 kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

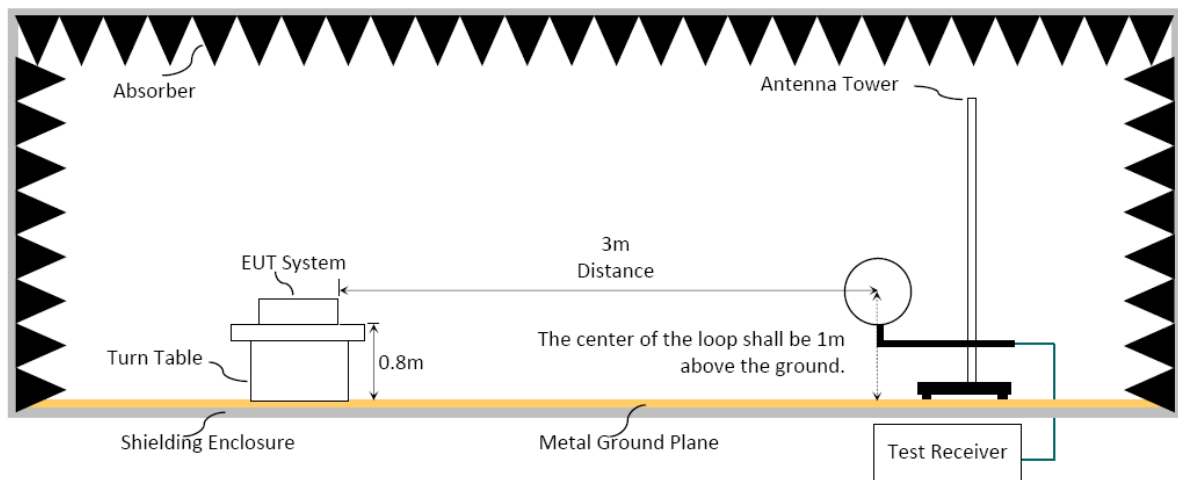
6. RADIATED EMISSION

6.1. Block Diagram of Test Setup

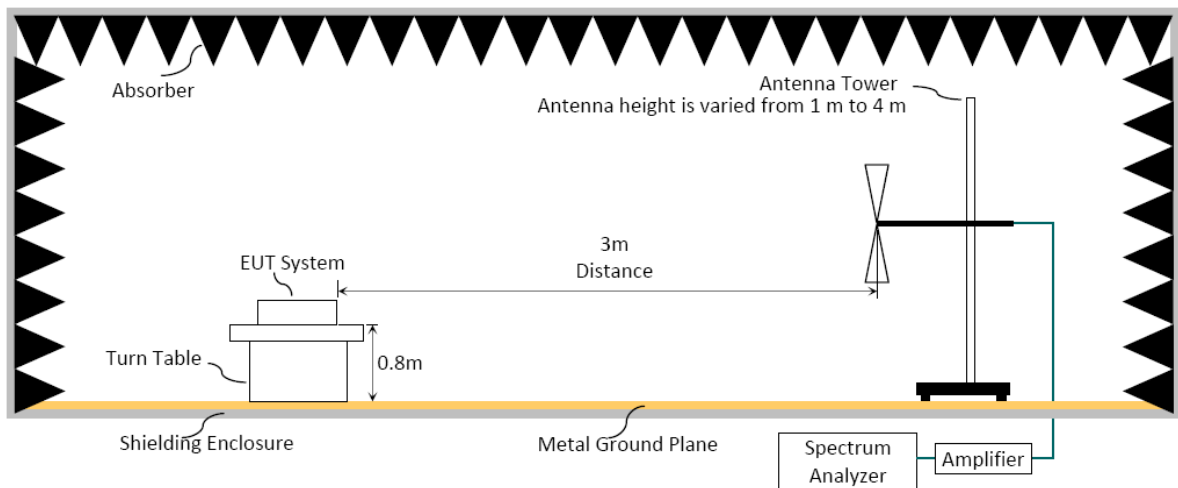
6.1.1. Block Diagram of EUT

Indicated as section 3.8

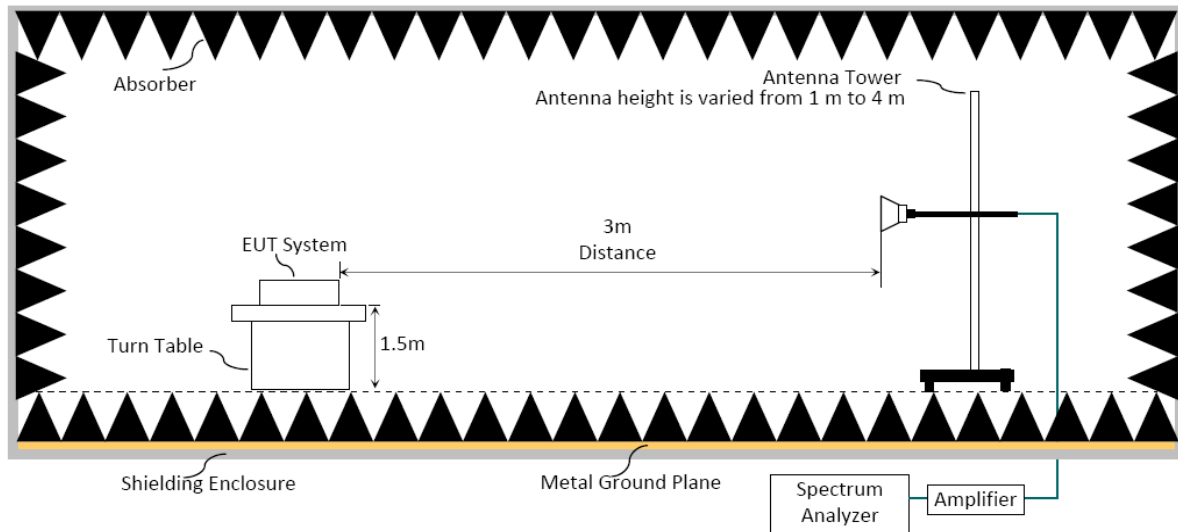
6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30-1000 MHz



6.1.4. Setup Diagram for above 1GHz



6.2. Radiated Emission Limits

6.2.1. General Limit

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in FCC Section 15.205, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6-20 log f(kHz)	2400/f kHz
0.490 - 1.705	30	87.6-20 log f(kHz)	24000/f kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark : (1) $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$

- (2) The tighter limit applies to the edge between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (4) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

6.2.2. Limite for Fundamental & Harmonics Frequency

Fundamental Frequency	Field strength of fundamental		Field strength of harmonics	
	mV/m	dB μ V/m	mV/m	dB μ V/m
902-928MHz	50	94 (Quasi-Peak)	500	74 (Peak)
				54 (Average)
2400-2483.5MHz	50	114 (Peak)	500	74 (Peak)
		94 (Average)		54 (Average)
5725-5875MHz	50	114 (Peak)	500	74 (Peak)
		94 (Average)		54 (Average)
24.0-24.25GHz	250	128 (Peak)	2500	88 (Peak)
		108 (Average)		68 (Average)

Remark: mV/m=1000 μ V/m; dB μ V/m = 20 log (μ V/m)

6.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 25GHz:

The EUT setup on the turn table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1 GHz:

Spectrum Analyzer is used for pre-testing with following setting:

- (1)RBW = 120KHz
- (2)VBW $\geq$ 3 x RBW.
- (3)Detector = Peak.
- (4)Sweep time = auto.
- (5)Trace mode = max hold.
- (6)Allow sweeps to continue until the trace stabilizes.
- (7)When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required, otherwise using Q.P. for final measurement.

Frequency above 1GHz to 10th harmonic (up to 25 GHz):**Peak Detector:**

- (1)RBW = 1MHz
- (2)VBW $\geq 3 \times$ RBW.
- (3)Detector = Peak.
- (4)Sweep time = auto.
- (5)Trace mode = max hold.
- (6)Allow sweeps to continue until the trace stabilizes.
- (7)When peak-detected value is lower than limit that the measurement using the average detector is not required, otherwise using average detector for final measurement.

Average Detector:**■ Option 1:**

- (1)RBW = 1MHz
- (2)VBW $\geq 1/ T$.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting (kHz)
BLE	---	---	10Hz

N/A: 1/ T is not implemented when duty cycle presented in section 3.7 is $\geq 98\%$.

- (1)Detector = Peak.
- (2)Sweep time = auto.
- (3)Trace mode = max hold.
- (4)Allow sweeps to continue until the trace stabilizes.

□ Option 2:

Average Emission Level= Peak Emission Level+ D.C.C.F.

6.4. Measurement Result Explanation

■ Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading

■ Average Emission Level=Antenna Factor + Cable Loss + Meter Reading

□ Average Emission Level= Peak Emission Level+ DCCF

Duty Cycle Correction Factor (DCCF)= $20\log(TX_{on}/TX_{on+off})$ presented in section 3.7

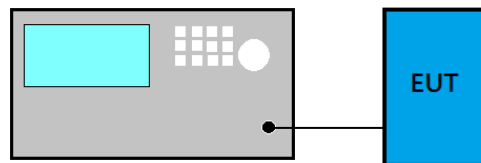
□ ERP= Peak Emission Level-95.2dB-2.14dB

6.5. Test Results

Please refer to Appendix A.

7. EMISSION BANDWIDTH MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Test Procedure

- (1) Set RBW close to 1-5 % of OBW.
- (2) Set $VBW \geq RBW$.
- (3) Detector = Peak.
- (4) Trace mode = max hold.
- (5) Sweep = auto couple.
- (6) Allow the trace to stabilize.
- (7) Setting channel bandwidth function x dB to -6 dB to record the final bandwidth.

7.3. Test Results

Please refer to Appendix A

8. DEVIATION TO TEST SPECIFICATIONS

【NONE】



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APPENDIX A

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APPDNDIX A

TEST DATA AND PLOTS

(Model: JY1126B)

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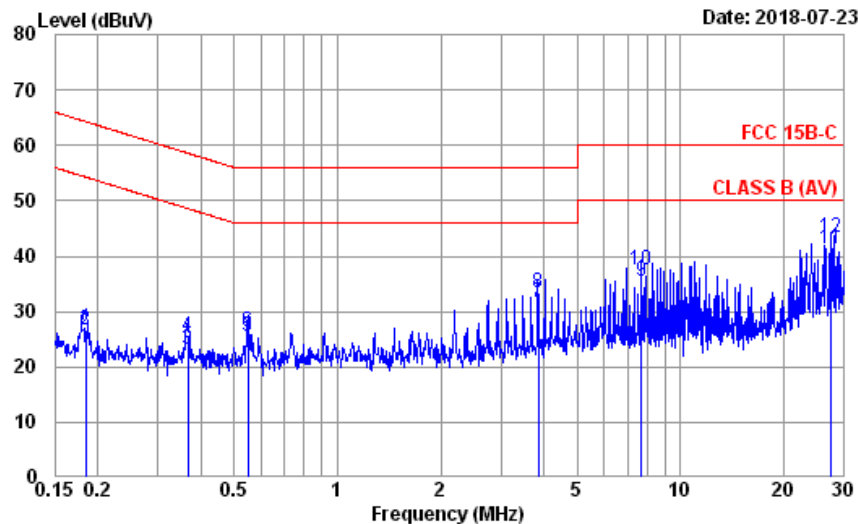
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A.1 CONDUCTED EMISSION

Test Date	2018/07/23	Temp./Hum.	25°C/54%
Test Voltage	AC 120V 60Hz		



Site no. : No.8 Shielded Room Data no. : 2
Condition : ENV4200 100169 LISN Phase : NEUTRAL
Limit : FCC 15B-C
Env. / Ins. : 25°C / 54% ESR3 (1774) Engineer : Nick Du
EUT : JY1126B
Power Rating : 120Vac/60Hz
Test Mode : Operating

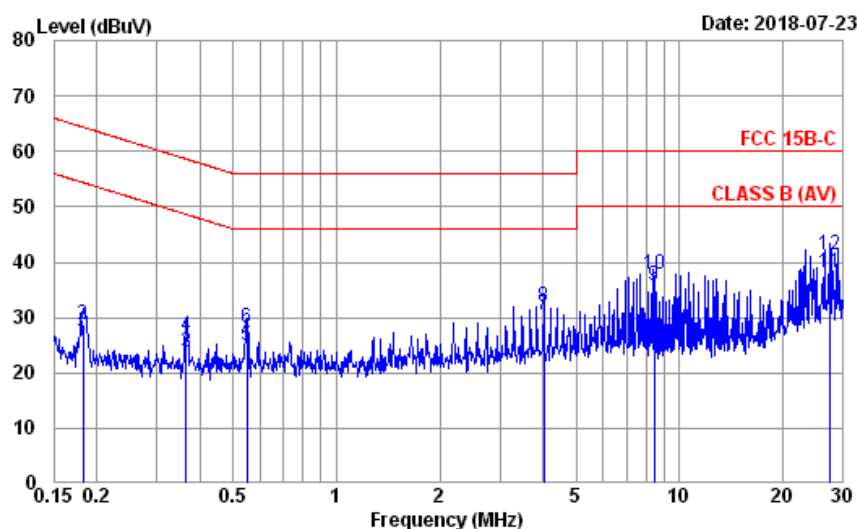
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.184	10.53	0.03	9.98	2.79	23.33	54.28	30.95	Average
2	0.184	10.53	0.03	9.98	6.07	26.61	64.28	37.67	QP
3	0.367	10.44	0.04	9.98	2.60	23.06	48.56	25.50	Average
4	0.367	10.44	0.04	9.98	4.92	25.38	58.56	33.18	QP
5	0.549	10.43	0.05	9.98	4.93	25.39	46.00	20.61	Average
6	0.549	10.43	0.05	9.98	6.00	26.46	56.00	29.54	QP
7	3.844	10.58	0.11	10.00	11.01	31.70	46.00	14.30	Average
8	3.844	10.58	0.11	10.00	12.80	33.49	56.00	22.51	QP
9	7.691	11.09	0.17	10.01	14.22	35.49	50.00	14.51	Average
10	7.691	11.09	0.17	10.01	16.37	37.64	60.00	22.36	QP
11	27.285	15.61	0.32	10.09	15.20	41.22	50.00	8.78	Average
12	27.285	15.61	0.32	10.09	17.29	43.31	60.00	16.69	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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Test Date	2018/07/23	Temp./Hum.	25°C/54%
Test Voltage	AC 120V 60Hz		



Site no. : No.8 Shielded Room Data no. : 1
Condition : ENV4200 100169 LISN Phase : LINE
Limit : FCC 15B-C
Env. / Ins. : 25°C / 54% ESR3 (1774) Engineer : Nick Du
EUT : JY1126B
Power Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.182	10.58	0.03	9.98	5.06	25.65	54.37	28.72	Average
2	0.182	10.58	0.03	9.98	8.20	28.79	64.37	35.58	QP
3	0.365	10.46	0.04	9.98	3.11	23.59	48.61	25.02	Average
4	0.365	10.46	0.04	9.98	6.25	26.73	58.61	31.88	QP
5	0.549	10.45	0.05	9.98	4.51	24.99	46.00	21.01	Average
6	0.549	10.45	0.05	9.98	7.67	28.15	56.00	27.85	QP
7	4.028	10.59	0.11	10.00	9.91	30.61	46.00	15.39	Average
8	4.028	10.59	0.11	10.00	11.31	32.01	56.00	23.99	QP
9	8.424	11.16	0.17	10.01	14.43	35.77	50.00	14.23	Average
10	8.424	11.16	0.17	10.01	16.54	37.88	60.00	22.12	QP
11	27.279	15.70	0.32	10.09	12.13	38.24	50.00	11.76	Average
12	27.279	15.70	0.32	10.09	15.10	41.21	60.00	18.79	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

A.2 RADIATED EMISSION

Test Date	2018/07/24	Temp./Hum.	25°C/51%
Test Voltage	AC 120V 60Hz		

A.2.1 Emissions Applied to General Requirement

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1 GHz

Mode	BLE	Frequency	TX 2402MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.00	24.77	1.20	1.38	27.35	40.00	12.65	Peak
86.26	14.93	2.09	6.28	23.30	40.00	16.70	Peak
123.12	18.64	2.54	2.45	23.63	43.50	19.87	Peak
161.92	16.25	2.95	5.02	24.22	43.50	19.28	Peak
201.69	15.86	3.35	8.25	27.46	43.50	16.04	Peak
985.45	27.69	8.74	1.83	38.26	54.00	15.74	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
34.85	22.37	1.31	8.00	31.68	40.00	8.32	Peak
67.83	12.73	1.85	16.77	31.35	40.00	8.65	Peak
85.29	14.79	2.08	15.01	31.88	40.00	8.12	Peak
151.25	16.97	2.84	7.88	27.69	43.50	15.81	Peak
326.82	20.25	4.68	4.76	29.69	46.00	16.31	Peak
967.99	27.52	8.63	2.29	38.44	54.00	15.56	Peak

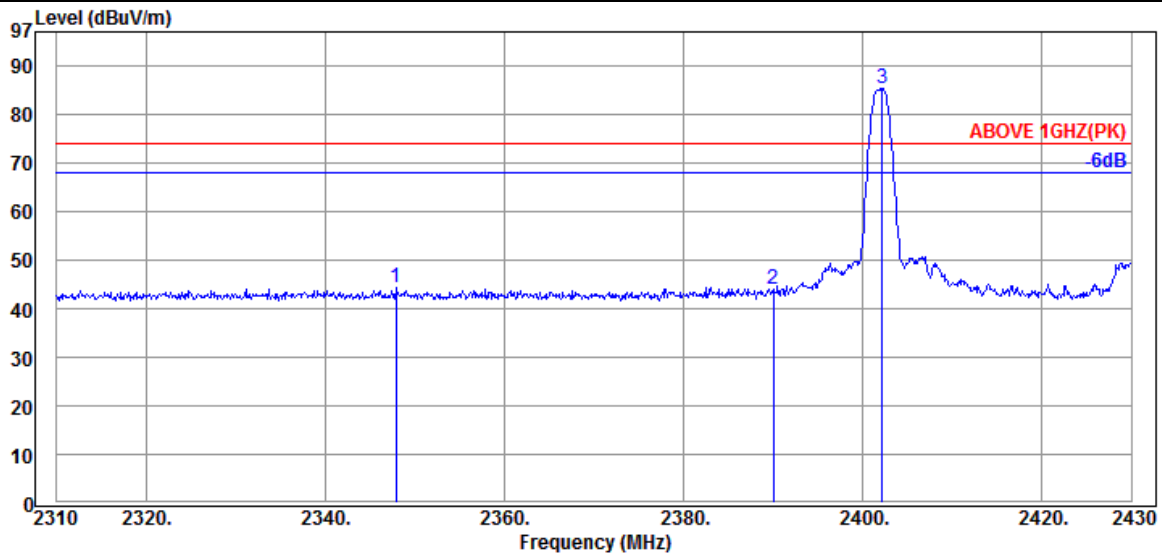
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A.2.1.3 Frequency Above 1 GHz to 10th harmonics

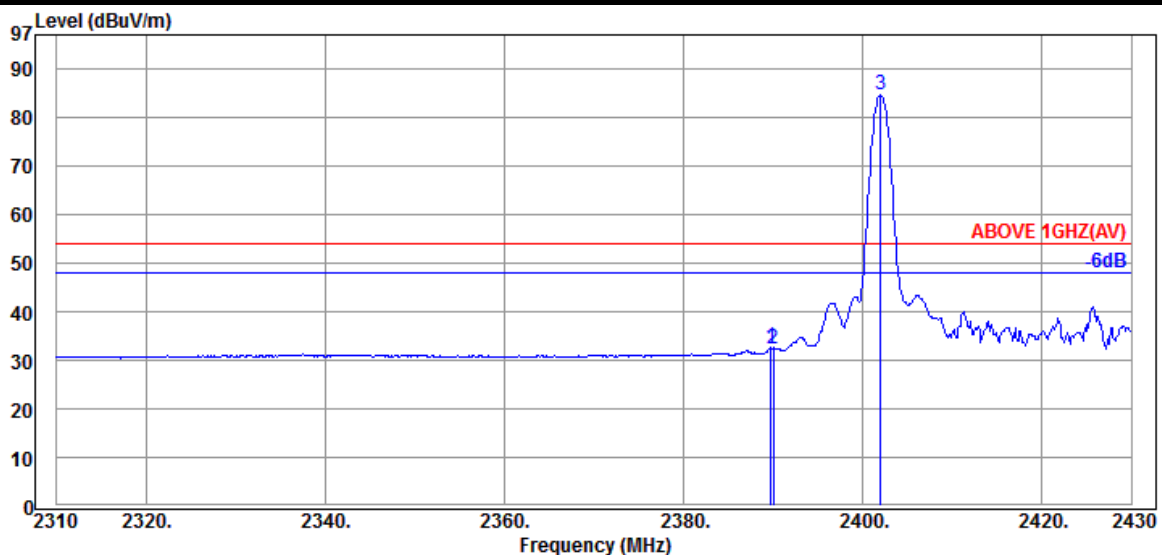
Band Edge:

Mode	BLE	Frequency	TX 2402MHz
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Antenna at Horizontal Polarization

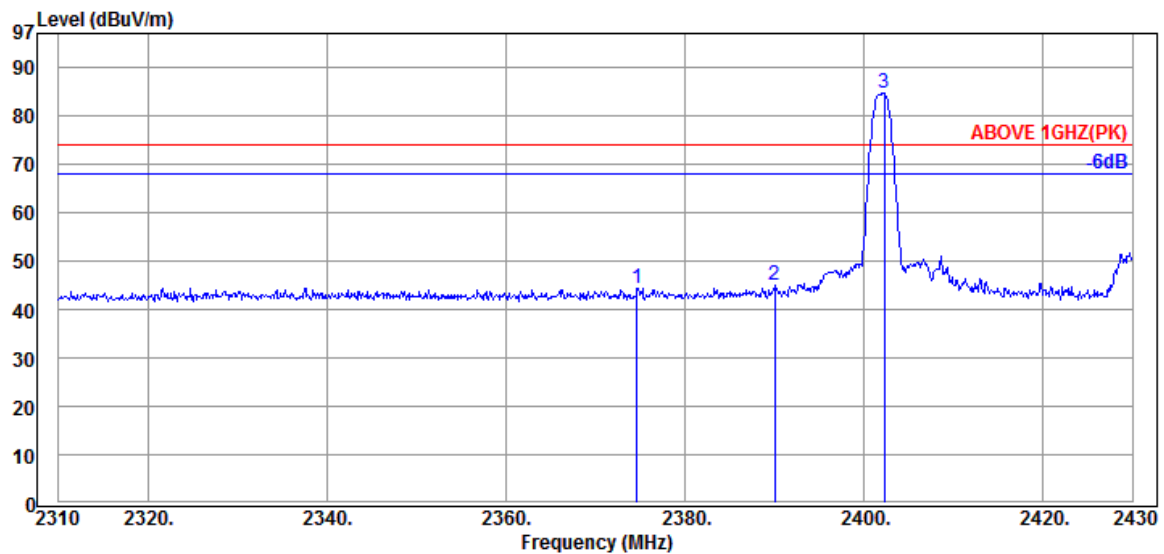
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2347.92	32.08	6.51	5.81	44.40	74.00	29.60	Peak
2390.04	32.16	6.57	5.32	44.05	74.00	29.95	Peak
2402.16	32.16	6.57	46.65	85.38	---	---	Peak



Antenna at Horizontal Polarization

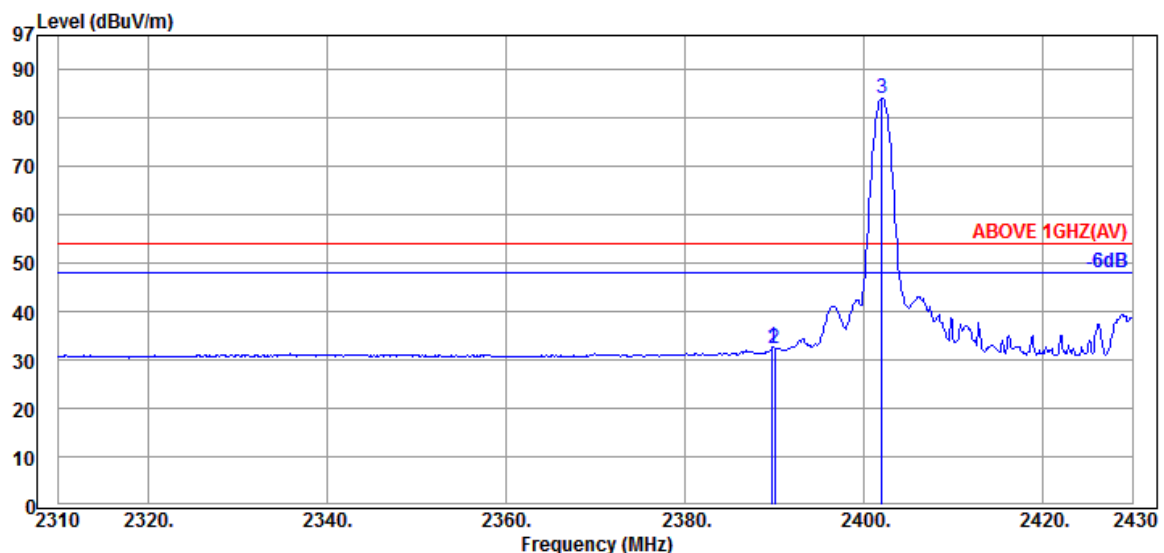
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.80	32.16	6.57	-6.08	32.65	54.00	21.35	Average
2390.04	32.16	6.57	-6.33	32.40	54.00	21.60	Average
2402.04	32.16	6.57	45.89	84.62	---	---	Average

Mode	BLE	Frequency	TX 2402MHz
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Antenna at Vertical Polarization

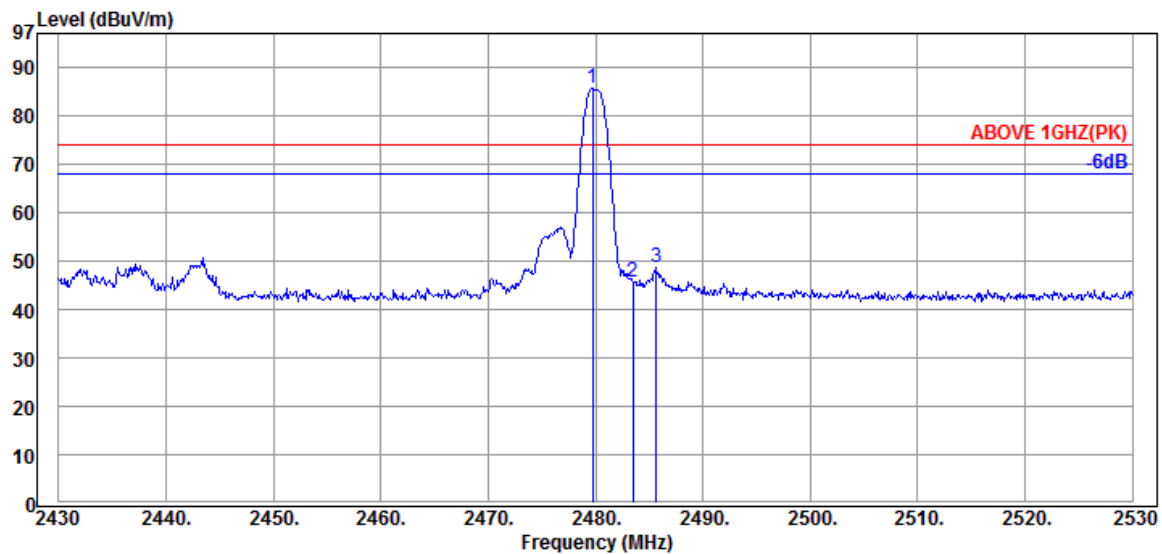
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector
2374.68	32.13	6.55	5.82	44.50	74.00	29.50	Peak
2390.04	32.16	6.57	6.14	44.87	74.00	29.13	Peak
2402.28	32.16	6.57	46.00	84.73	---	---	Peak



Antenna at Vertical Polarization

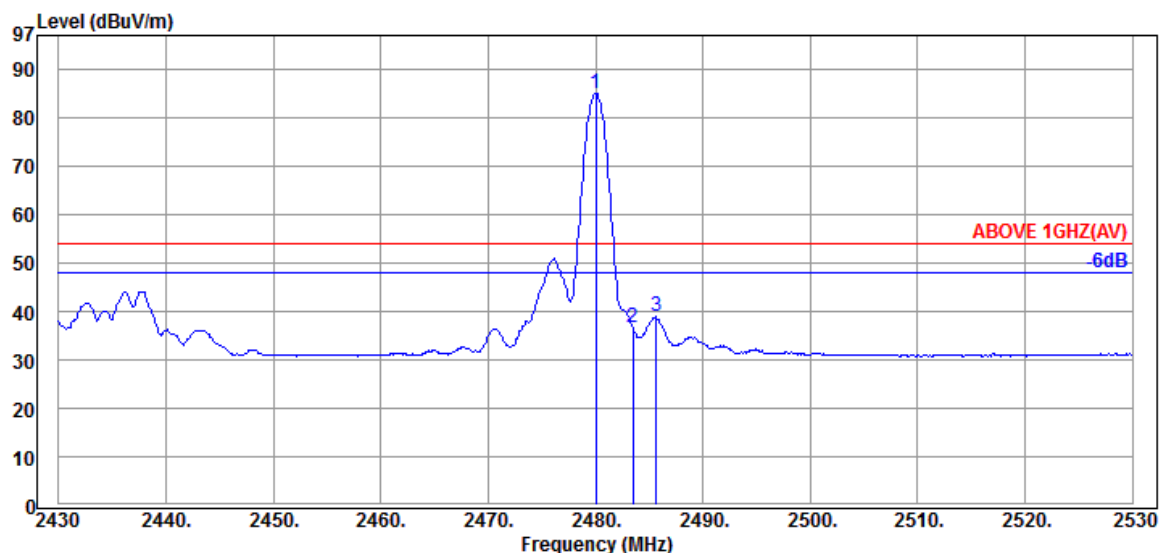
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector
2389.80	32.16	6.57	-6.11	32.62	54.00	21.38	Average
2390.04	32.16	6.57	-6.27	32.46	54.00	21.54	Average
2402.04	32.16	6.57	45.29	84.02	---	---	Average

Mode	BLE	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector
2479.70	32.28	6.67	46.73	85.68	---	---	Peak
2483.50	32.28	6.67	6.66	45.61	74.00	28.39	Peak
2485.70	32.28	6.67	9.77	48.72	74.00	25.28	Peak



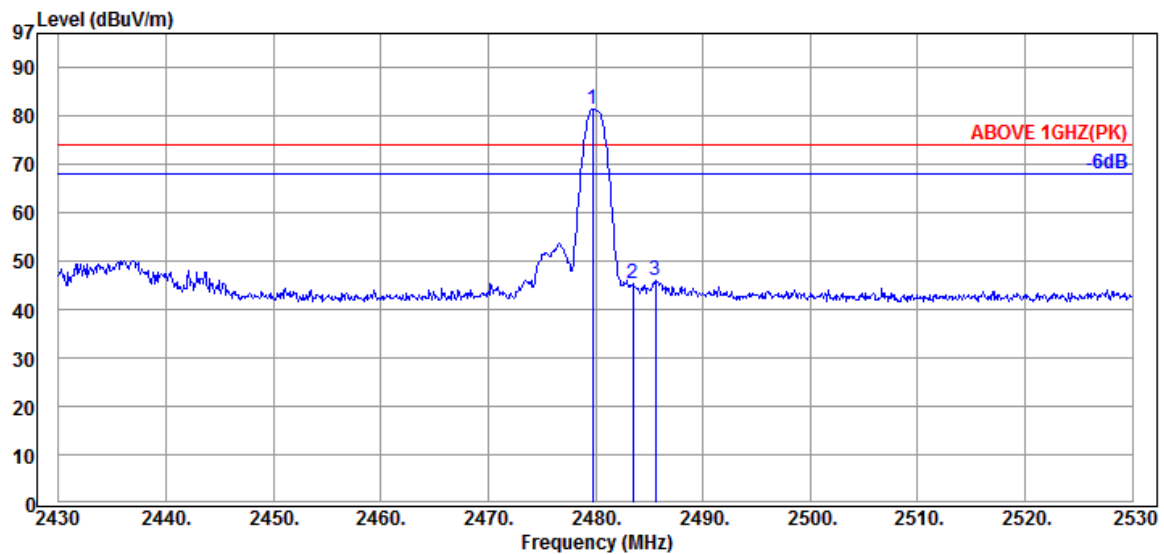
Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector
2480.00	32.28	6.67	46.06	85.01	---	---	Average
2483.50	32.28	6.67	-2.24	36.71	54.00	17.29	Average
2485.70	32.28	6.67	-0.08	38.87	54.00	15.13	Average

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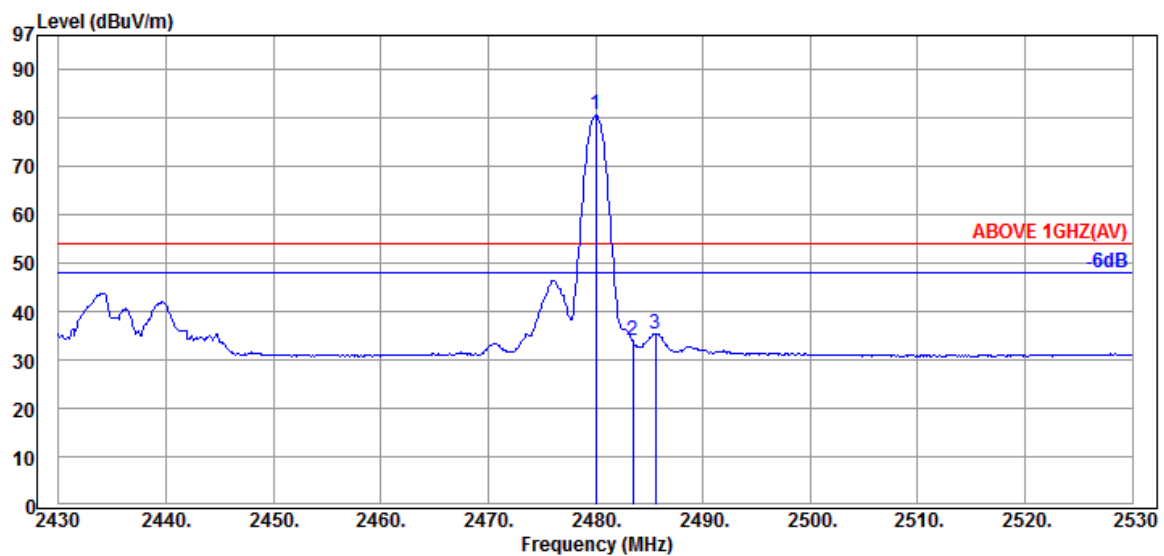
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Mode	BLE	Frequency	TX 2480MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.70	32.28	6.67	42.46	81.41	---	---	Peak
2483.50	32.28	6.67	6.33	45.28	74.00	28.72	Peak
2485.60	32.28	6.67	7.13	46.08	74.00	27.92	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.00	32.28	6.67	41.61	80.56	---	---	Average
2483.50	32.28	6.67	-5.05	33.90	54.00	20.10	Average
2485.60	32.28	6.67	-3.47	35.48	54.00	18.52	Average

A.2.1.3 Frequency Above 1 GHz

Mode	BLE	Frequency	TX 2402MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	9.54	-0.29	43.47	54.00	10.53	Peak
7205.00	35.80	11.80	-2.87	44.73	54.00	9.27	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	9.54	1.02	44.78	54.00	9.22	Peak
7205.00	35.80	11.80	-3.79	43.81	54.00	10.19	Peak

Mode	BLE	Frequency	TX 2440MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	-1.47	42.34	54.00	11.66	Peak
7320.00	35.80	11.92	-2.38	45.34	54.00	8.66	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	-1.84	41.97	54.00	12.03	Peak
7320.00	35.80	11.92	-2.60	45.12	54.00	8.88	Peak

Mode	BLE	Frequency	TX 2480MHz
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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	-0.77	43.12	54.00	10.88	Peak
7440.00	35.80	12.04	-2.54	45.30	54.00	8.70	Peak

Antenna at Vertical Polarization

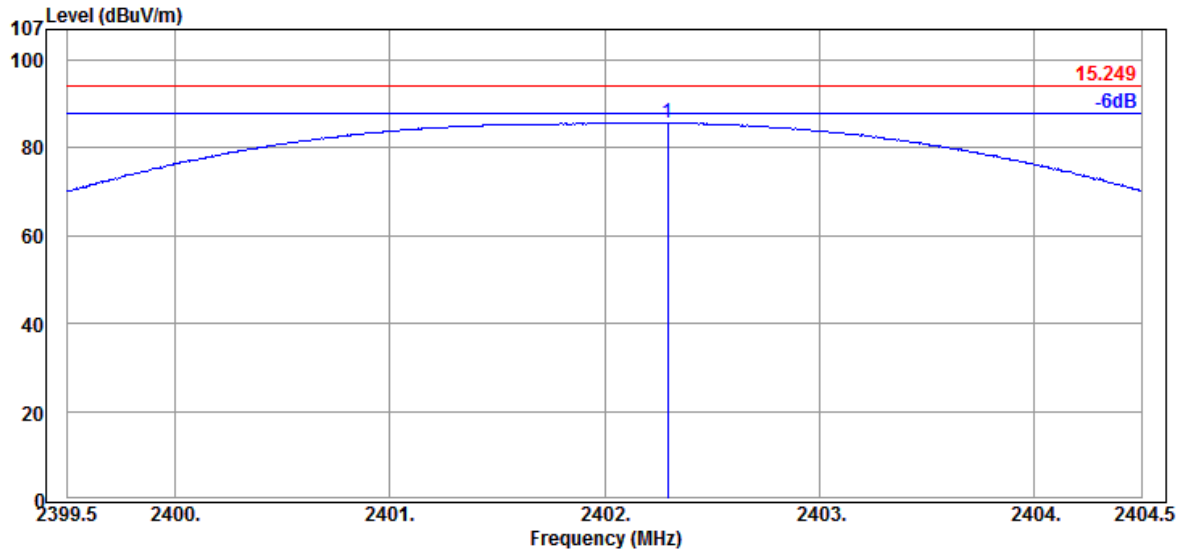
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	0.74	44.63	54.00	9.37	Peak
7440.00	35.80	12.04	-2.45	45.39	54.00	8.61	Peak

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A.2.2 Fundamental Frequency

Mode	BLE	Frequency	TX 2402MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2402.30	32.16	6.57	47.05	85.78	94.00	8.22	Peak

Remark: Vertical is the strongest polarization and peak value has complied with average limit, so horizontal won't be listed in test report.

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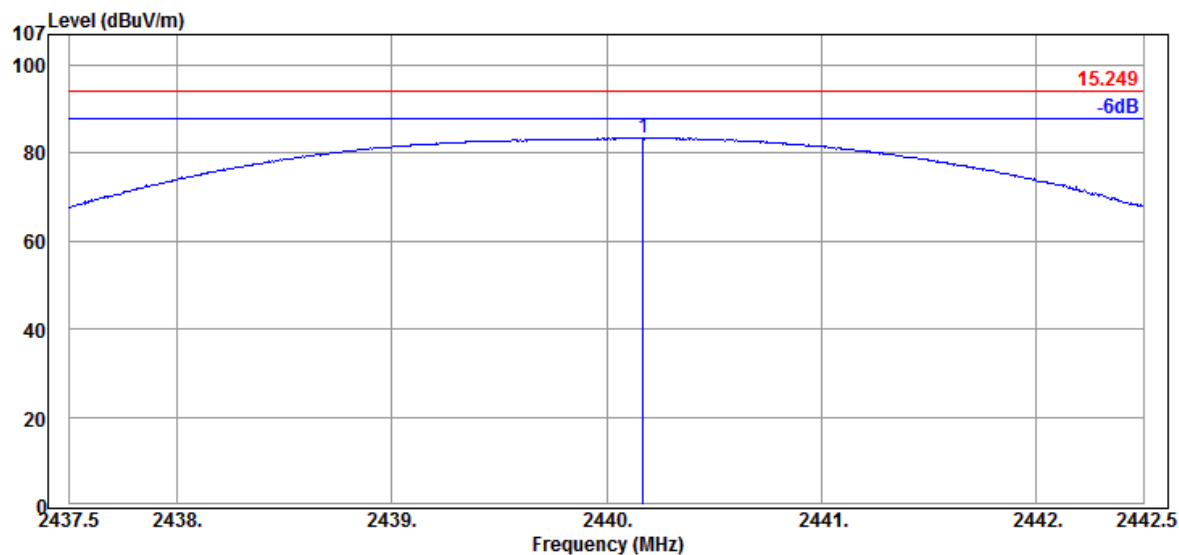
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Mode	BLE	Frequency	TX 2440MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2440.17	32.23	6.63	44.60	83.46	94.00	10.54	Peak

Remark: Vertical is the strongest polarization and peak value has complied with average limit, so horizontal won't be listed in test report.

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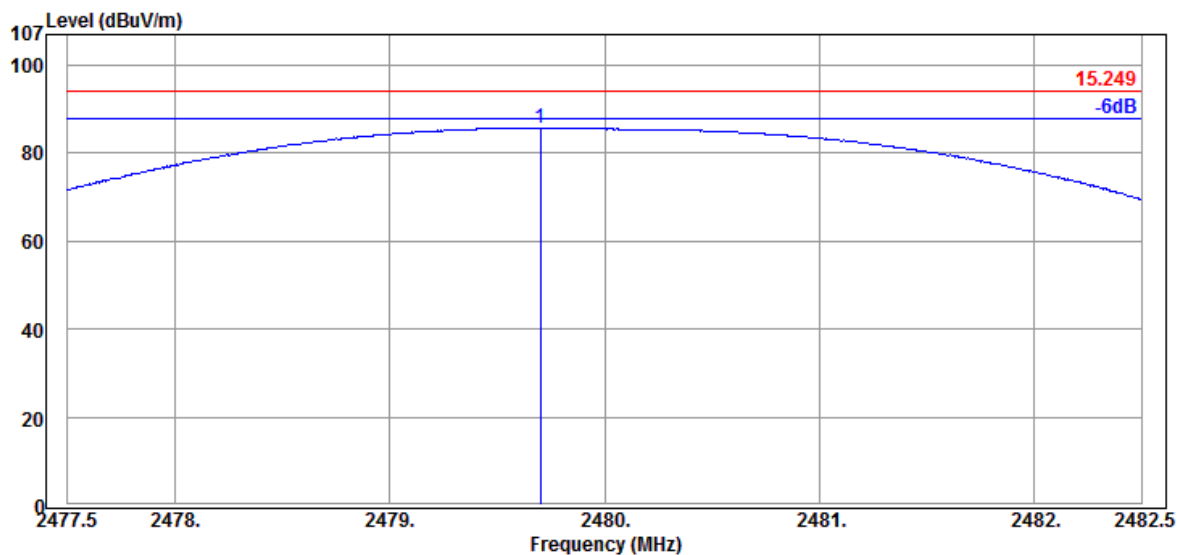
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Mode	BLE	Frequency	TX 2480MHz
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Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.70	32.28	6.67	46.81	85.76	94.00	8.24	Peak

Remark: Vertical is the strongest polarization and peak value has complied with average limit, so horizontal won't be listed in test report.

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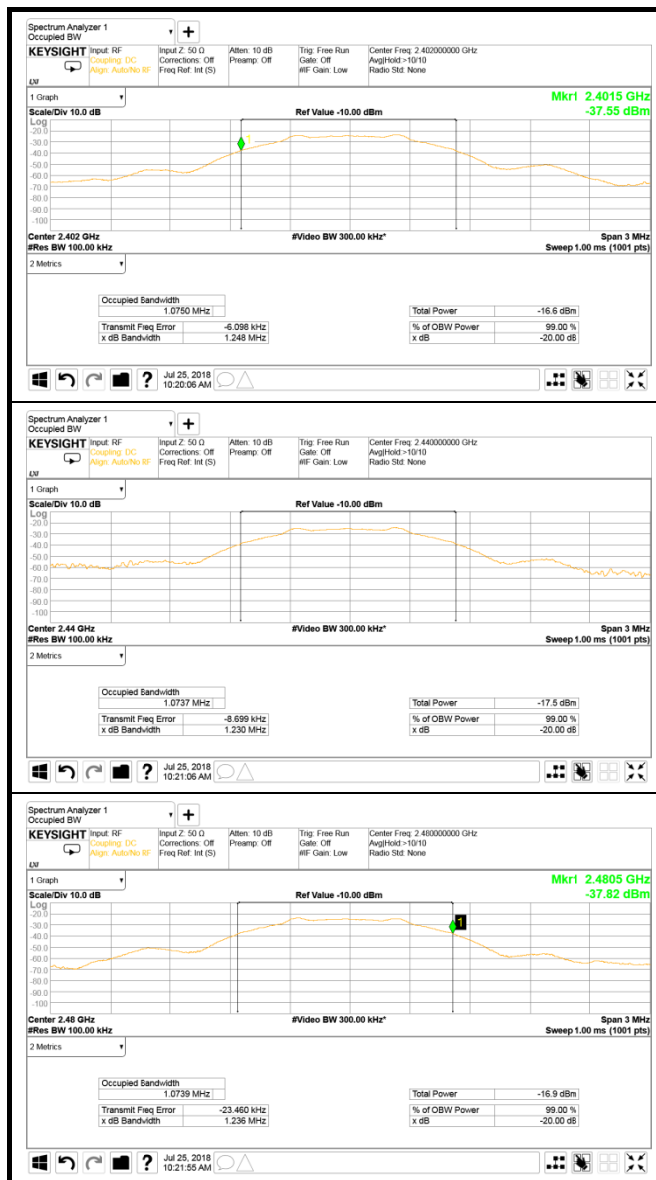
A.3 EMISSION BANDWIDTH MEASUREMENT

Test Date	2018/07/25	Temp./Hum.	24°C/54%
Test Voltage	AC 120V 60Hz		

A.3.1 Emission Bandwidth

Mode	Centre Frequency (MHz)	99% Occupied Bandwidth (MHz)
BLE	2402	1.0750
	2440	1.0737
	2480	1.0739

A.3.2 Measurement Plots





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APPENDIX B

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APPDNDIX B

TEST PHOTOGRAPHS

(Model: JY1126B)