FCC Radio Test Report

FCC ID: BEJDG6880

Report No.	:	BTL-FCCP-1-2105T035
Equipment	:	Dongle
Model Name	:	SD-6880
Brand Name	:	LG
Applicant	:	LG Electronics USA
Address	:	111 Sylvan Avenue North Building, Englewood Cliffs, United States
Radio Function	:	Short Range Devices
FCC Rule Part(s)	:	FCC Part15, Subpart C (15.247)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2021/5/5
Date of Test	:	2021/5/5 ~ 2021/5/24
Issued Date	:	2021/6/17

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REVISON HISTORY

Report No.	Version	Description	Issued Date
BTL-FCCP-1-2105T035	R00	Original Report.	2021/6/15
BTL-FCCP-1-2105T035	R01	Revised applicant address.	2021/6/17

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Part 15, Subpart C (15.247)				
Standard(s) Section	**Description**	**Test Result**	**Judgement**	**Remark**
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	------
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C	Pass	------
15.215(c)	Bandwidth	APPENDIX D	Pass	------
15.247(b)(3)	Output Power	APPENDIX E	Pass	------
15.247(e)	Power Spectral Density	APPENDIX F	Pass	------
15.247(d)	Antenna conducted Spurious Emission	APPENDIX G	Pass	------
15.203	Antenna Requirement	------	Pass	------

NOTE:
(1) ”N/A” denotes test is not applicable in this Test Report.
(2) The report format version is TP.1.1.1.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.

☒ C05 ☐ CB08 ☐ CB11 ☒ CB15 ☐ CB16
☒ SR06

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan
The test sites and facilities are covered under FCC RN: 325517 and DN: TW1115.

☐ C03 ☐ CB18 ☐ CB19

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k = 2**, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB15	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

C. Conducted test :

Test Item	U,(dB)
Bandwidth	1.13
Output power	1.06
Power Spectral Density	1.20
Conducted Spurious emissions	1.14
Conducted Band edges	1.13

NOTE:
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	24 °C, 56 %	AC 120V	William Wei
Radiated emissions below 1 GHz	21 °C, 68 %	DC 3V	Hunter Chiang
Radiated emissions above 1 GHz	21 °C, 68 %	DC 3V	Hunter Chiang
Bandwidth	23.9 °C, 56 %	DC 3V	Paul Shen
Output Power	23.9 °C, 56 %	DC 3V	Paul Shen
Power Spectral Density	23.9 °C, 56 %	DC 3V	Paul Shen
Antenna conducted Spurious Emission	23.9 °C, 56 %	DC 3V	Paul Shen

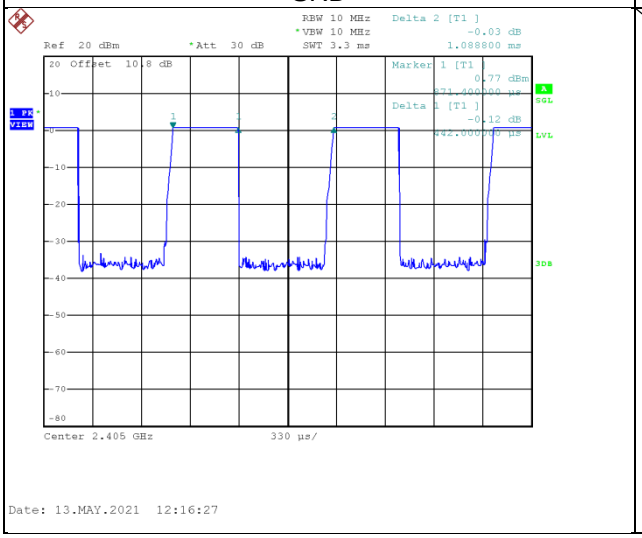
1.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

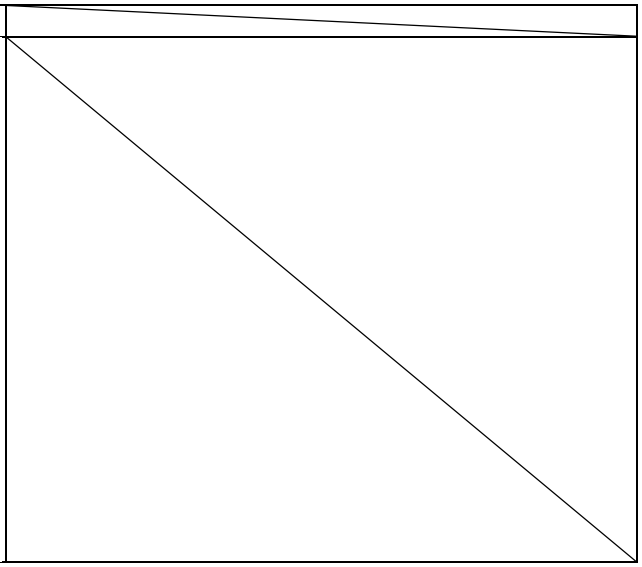
Test Software	Pixart EMI Test Tool v.1.2.8			
Modulation Mode	2405 MHz	2442 MHz	2474 MHz	Data Rate
GFSK	+4	+4	+4	1 Mbps

1.5 DUTY CYCLE

If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

SRD





Remark	Delta 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)
SRD	0.442	1	0.442	1.089	40.59%	3.92

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Dongle
Model Name	SD-6880
Brand Name	LG
Model Difference	N/A
Power Source	DC voltage supplied from host system.
Power Rating	DC 5V, 100mA
Products Covered	N/A
Frequency Range	2400 MHz ~ 2483.5 MHz
Operation Frequency	2405 MHz ~ 2474 MHz
Modulation Technology	GFSK
Transfer Rate	1Mbps
Output Power Max.	3.12 dBm (0.0021 W)
Test Model	SD-6880
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:
(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
(2) Channel List:

Channel	Frequency (MHz)
01	2405
02	2407
03	2418
04	2426
05	2430
06	2437
07	2442
08	2447
09	2458
10	2469
11	2471
12	2474

(3) Table for Filed Antenna:

Ant.	Brand	Test Model	Antenna Type	Connector	Gain (dBi)
1	N/A	SD-6860	PCB	N/A	3.58

2.2 TEST MODES

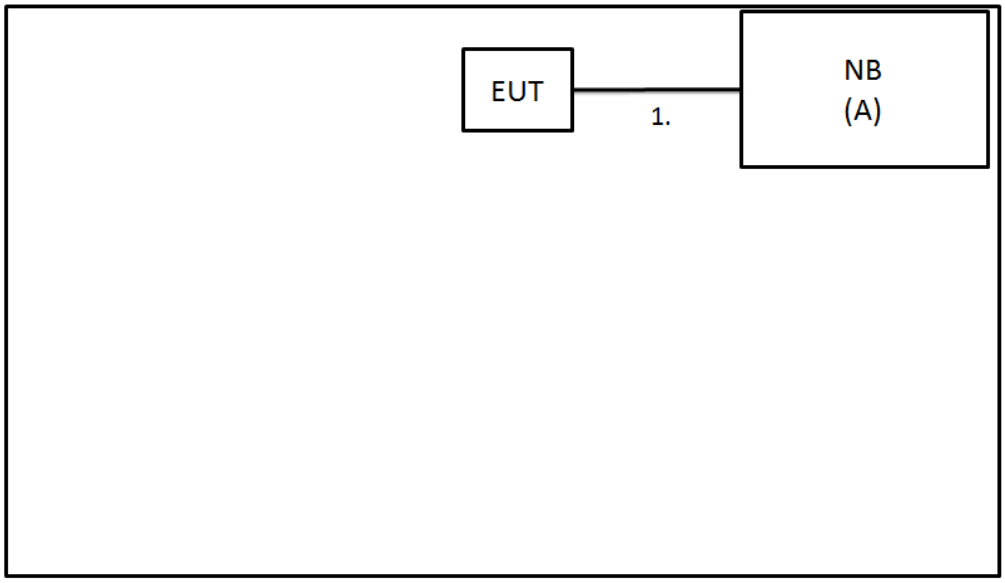
Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	1 Mbps	07	-
Transmitter Radiated Emissions (above 1GHz)	1 Mbps	01/12	Bandedge
	1 Mbps	01/07/12	Harmonic
Bandwidth	1 Mbps	01/07/12	-
Output Power	1 Mbps	01/07/12	-
Power Spectral Density	1 Mbps	01/07/12	-
Antenna conducted Spurious Emission	1 Mbps	01/07/12	-

NOTE:
(1) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.
(2) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.
(3) There were no emissions found below 30 MHz within 20 dB of the limit.

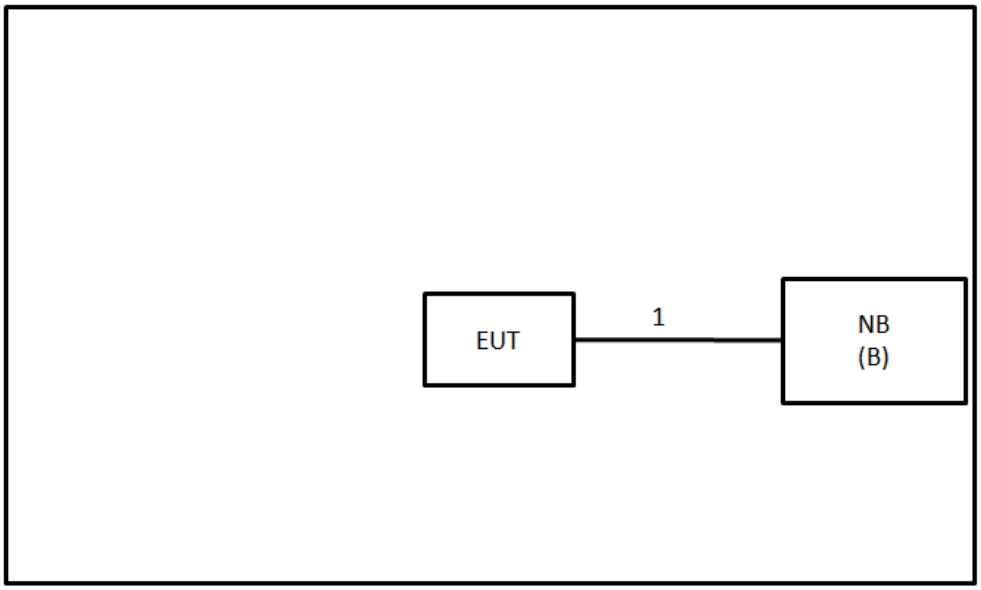
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

AC power line conducted emissions



Radiated Emissions



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Notebook	HP	TPN-I119	N/A	Furnished by test lab.
B	NB	ASUS	ASUS X450 JN	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1m	USB extension Cable	Furnished by test lab.

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:
(1) The tighter limit applies at the band edges.
(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
Margin Level = Measurement Value – Limit Value
Calculation example:

Reading Level		Correct Factor		Measurement Value
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

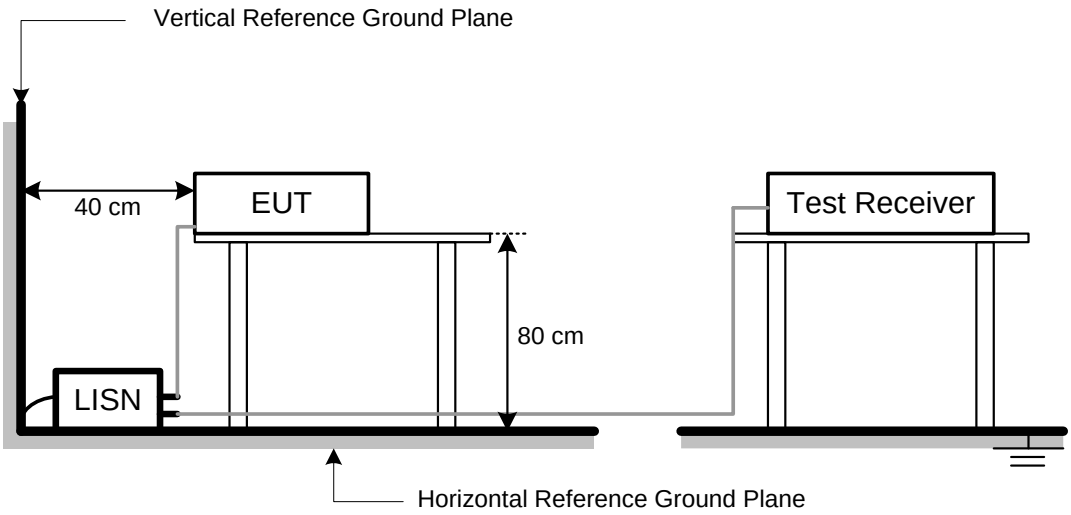
a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
All other support equipment were powered from an additional LISN(s).
The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.
The end of the cable will be terminated, using the correct terminating impedance.
The overall length shall not exceed 1 m.
d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
e. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

NOTE:
(1) In the results, each reading is marked as Peak, QP or AVG per the detector used.
BW=9 kHz (6 dB Bandwidth)
(2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 TEST RESULT

Please refer to the APPENDIX A.

4 RADIATED EMISSIONS TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated Emissions (dBuV/m)		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

NOTE:
(1) The limit for radiated test was performed according to FCC Part 15, Subpart C.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).
(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

Reading Level		Correct Factor		Measurement Value
19.11	+	2.11	=	21.22

Measurement Value		Limit Value		Margin Level
21.22	-	54	=	-32.78

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2 TEST PROCEDURE

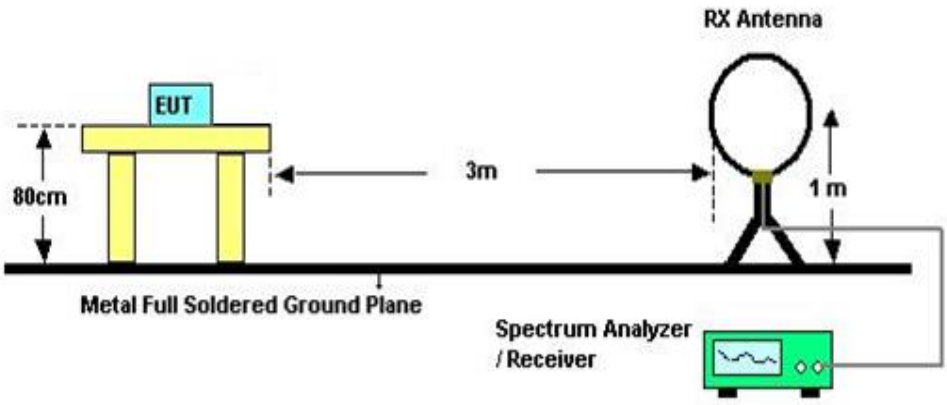
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. 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 find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

4.3 DEVIATION FROM TEST STANDARD

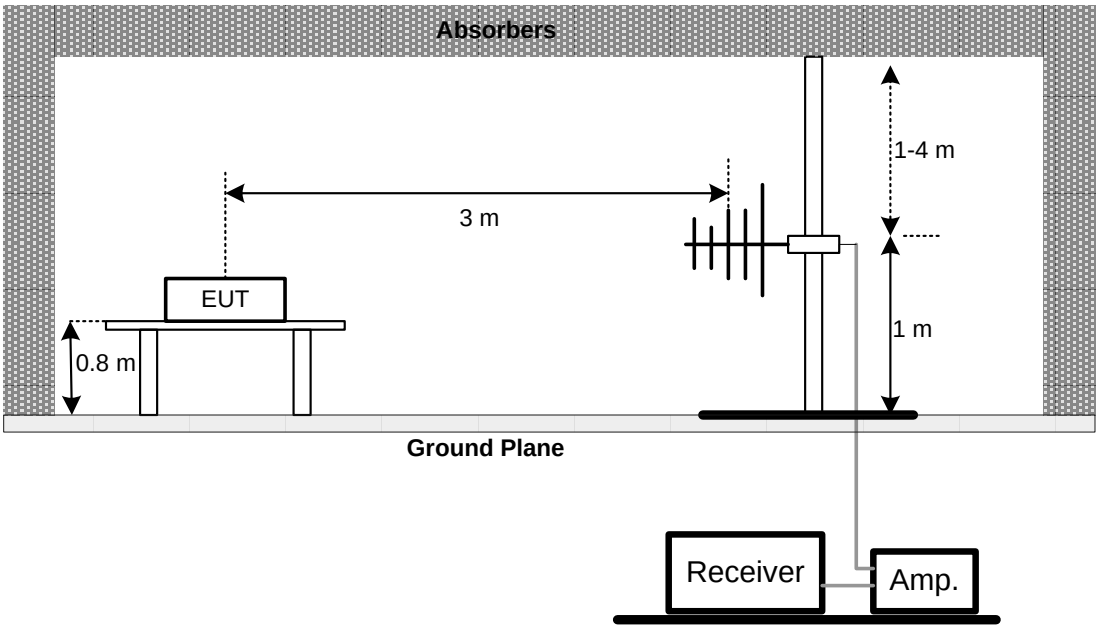
No deviation.

4.4 TEST SETUP

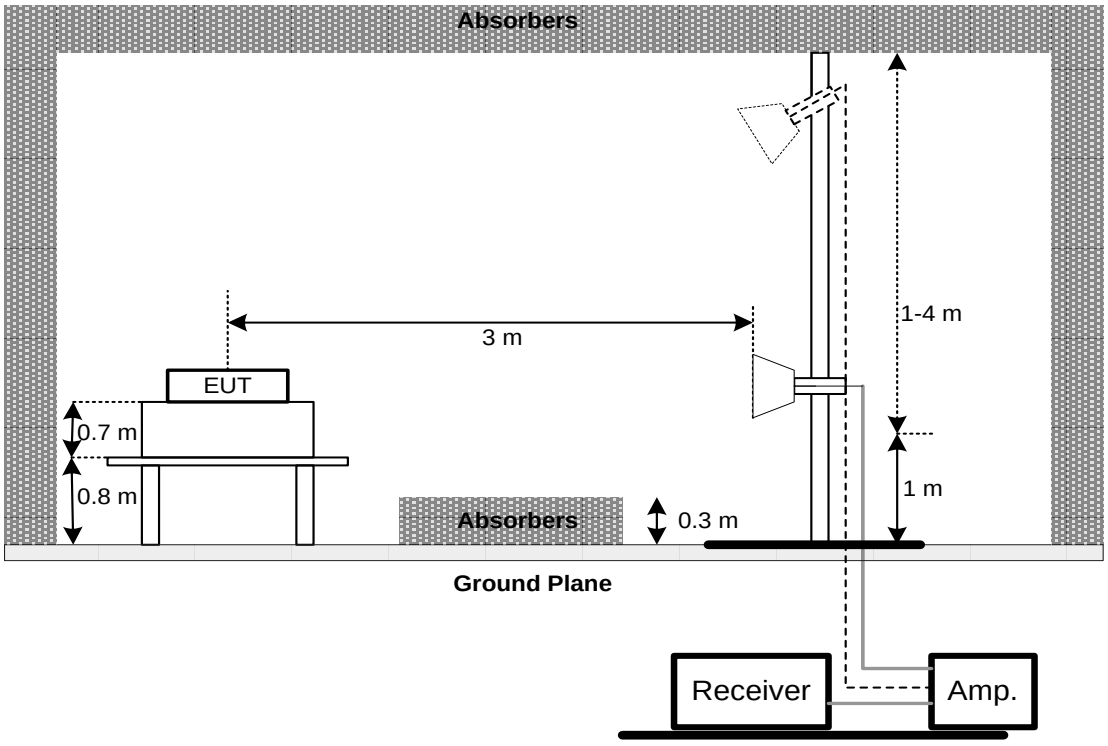
9 kHz to 30 MHz



30 MHz to 1 GHz



Above 1 GHz



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

NOTE:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5 BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

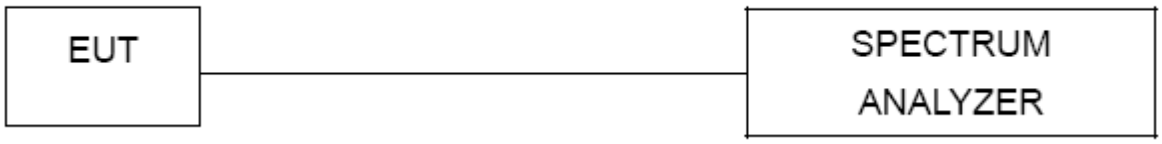
5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

Please refer to the APPENDIX D.

6 OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 watt or 30dBm	2400-2483.5	PASS

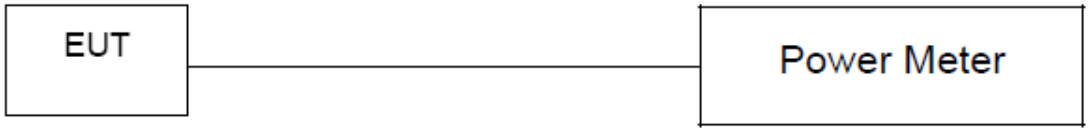
6.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

Please refer to the APPENDIX E.

7 POWER SPECTRAL DENSITY TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

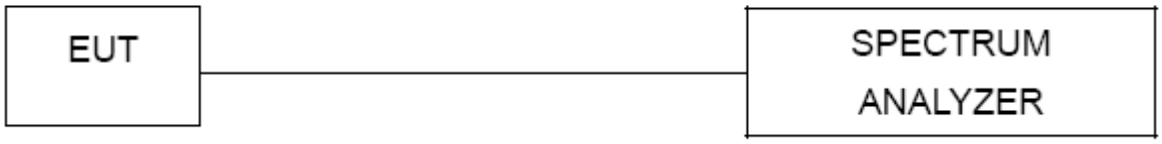
7.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW=3KHz, VBW=10 KHz, Sweep time = auto.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULTS

Please refer to the APPENDIX F.

8 ANTENNA CONDUCTED SPURIOUS EMISSION

8.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits.

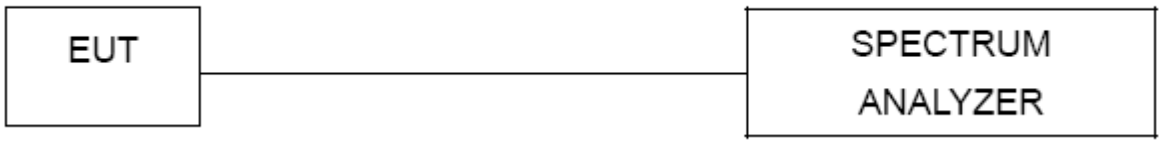
8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = 10 ms.
c. Offset=antenna gain+cable loss

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

8.6 TEST RESULTS

Please refer to the APPENDIX G.

9 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	2020/6/11	2021/6/10
2	Test Cable	EMCI	EMC400-BM-BM-5000	170501	2020/6/8	2021/6/7
3	EMI Test Receiver	R&S	ESCI	100080	2020/6/15	2021/6/14
4	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC02325B	980217	2021/4/8	2022/4/7
2	Preamplifier	EMCI	EMC012645B	980267	2021/4/8	2022/4/7
3	Preamplifier	EMCI	EMC001340	980555	2021/4/8	2022/4/7
4	Test Cable	EMCI	EMC-SM-SM-1000	180809	2021/4/8	2022/4/7
5	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2021/4/8	2022/4/7
6	Test Cable	EMCI	EMC-SM-SM-7000	180408	2021/4/8	2022/4/7
7	MXE EMI Receiver	Agilent	N9038A	MY554200087	2020/6/10	2021/6/9
8	Signal Analyzer	Agilent	N9010A	MY56480554	2020/8/25	2021/8/24
9	Loop Ant	Electro-Metrics	EMCI-LPA600	274	2020/6/16	2021/6/15
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2020/6/12	2021/6/11
11	Horn Ant	Schwarzbeck	BBHA 9170	BBHA 9170340	2020/7/9	2021/7/8
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	VULB 9168-352	2020/7/24	2021/7/23
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0625	2020/7/24	2021/7/23
14	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2020/6/15	2021/6/14

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2487A	6K00004714	2020/9/3	2021/9/2
2	Power Sensor	Anritsu	MA2491A	034138	2020/9/3	2021/9/2

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2020/6/15	2021/6/14

Antenna conducted Spurious Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP 40	100129	2020/6/15	2021/6/14

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

10 EUT TEST PHOTO

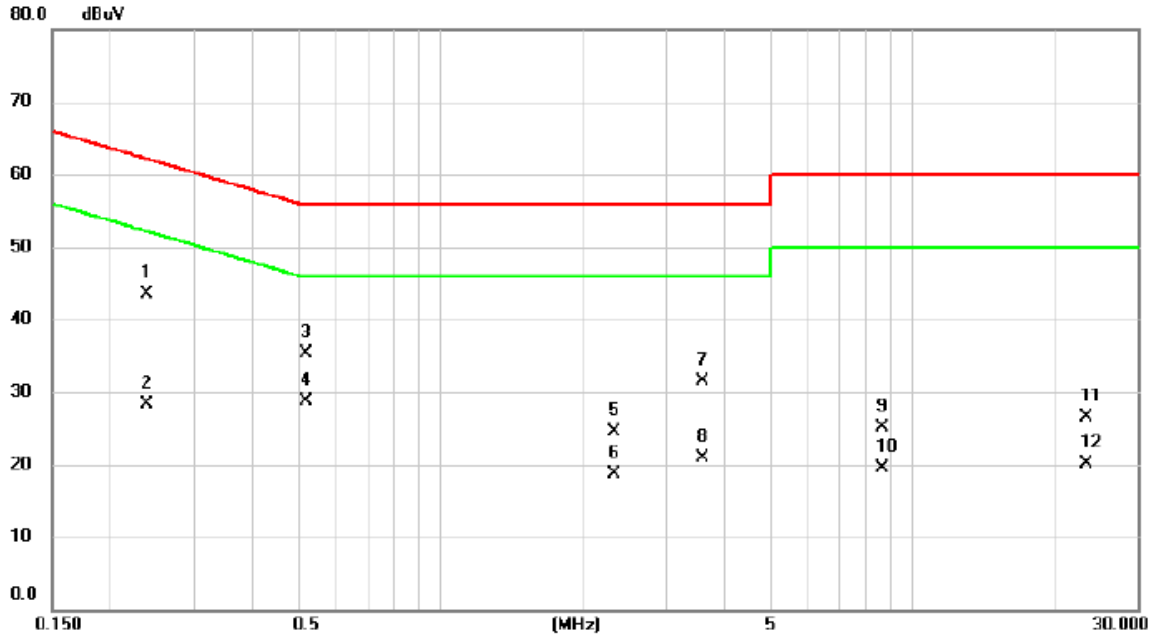
Please refer to document Appendix No.: TP-2105T035-FCCP-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-2105T035-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

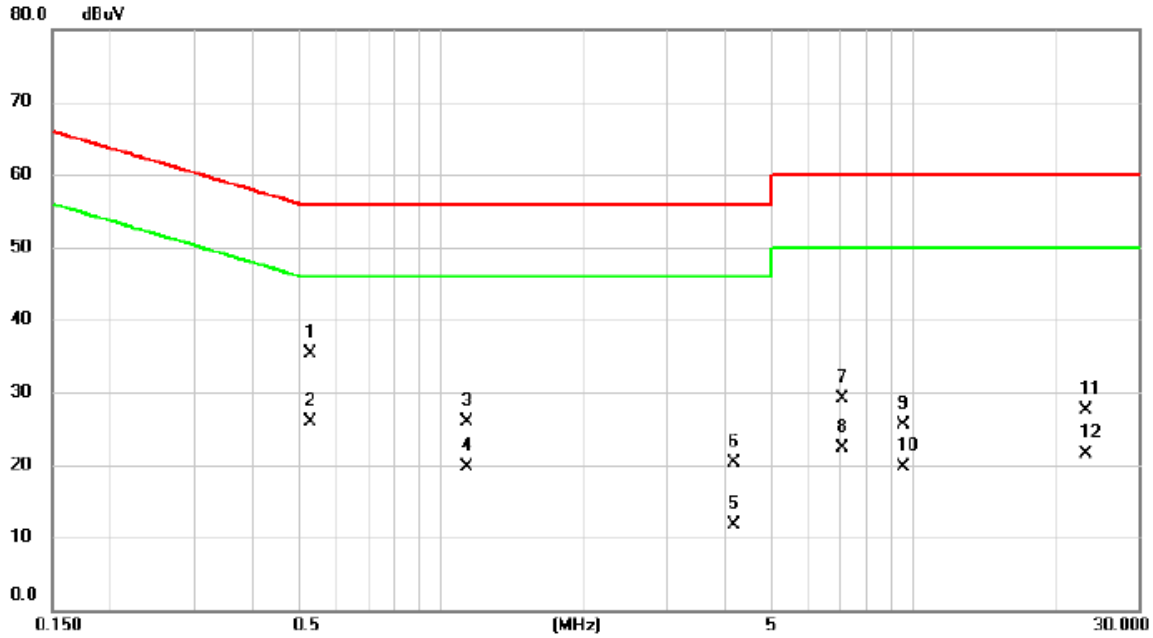
Test Mode	Normal	Tested Date	2021/5/12
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2378	33.90	9.70	43.60	62.17	-18.57	QP	
2		0.2378	18.70	9.70	28.40	52.17	-23.77	AVG	
3		0.5167	25.66	9.70	35.36	56.00	-20.64	QP	
4	*	0.5167	19.01	9.70	28.71	46.00	-17.29	AVG	
5		2.3415	14.75	9.76	24.51	56.00	-31.49	QP	
6		2.3415	8.91	9.76	18.67	46.00	-27.33	AVG	
7		3.5970	21.63	9.79	31.42	56.00	-24.58	QP	
8		3.5970	11.20	9.79	20.99	46.00	-25.01	AVG	
9		8.6460	15.13	9.90	25.03	60.00	-34.97	QP	
10		8.6460	9.56	9.90	19.46	50.00	-30.54	AVG	
11		23.3520	16.69	9.84	26.53	60.00	-33.47	QP	
12		23.3520	10.27	9.84	20.11	50.00	-29.89	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

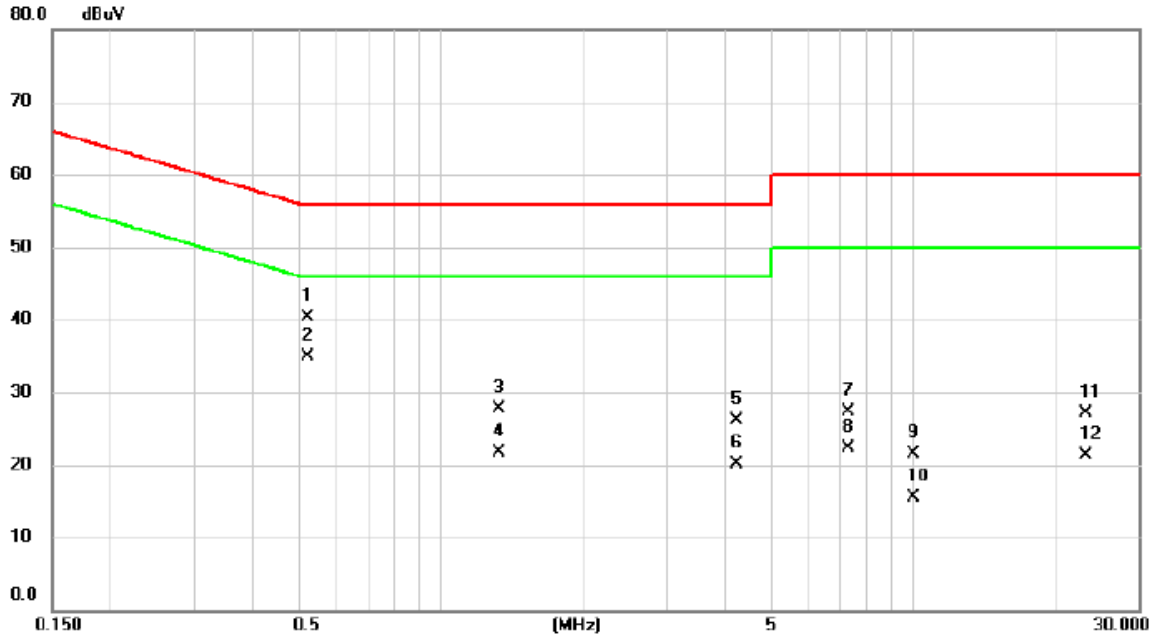
Test Mode	Normal	Tested Date	2021/5/12
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5302	25.63	9.71	35.34	56.00	-20.66	QP	
2	*	0.5302	16.21	9.71	25.92	46.00	-20.08	AVG	
3		1.1355	16.24	9.73	25.97	56.00	-30.03	QP	
4		1.1355	10.03	9.73	19.76	46.00	-26.24	AVG	
5		4.1617	1.83	9.82	11.65	56.00	-44.35	QP	
6		4.1617	10.54	9.82	20.36	46.00	-25.64	AVG	
7		7.0845	19.30	9.90	29.20	60.00	-30.80	QP	
8		7.0845	12.37	9.90	22.27	50.00	-27.73	AVG	
9		9.4920	15.63	9.95	25.58	60.00	-34.42	QP	
10		9.4920	9.74	9.95	19.69	50.00	-30.31	AVG	
11		23.1315	17.41	10.00	27.41	60.00	-32.59	QP	
12		23.1315	11.54	10.00	21.54	50.00	-28.46	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

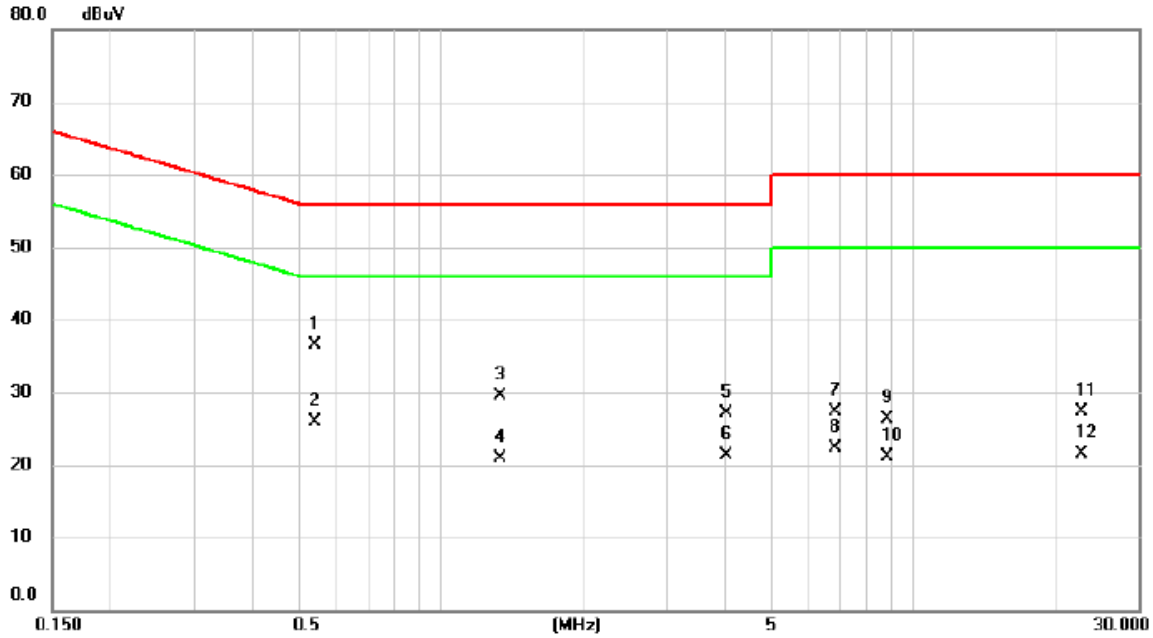
Test Mode	Idle	Tested Date	2021/5/12
Test Frequency	-	Phase	Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5212	30.62	9.71	40.33	56.00	-15.67	QP	
2	*	0.5212	25.17	9.71	34.88	46.00	-11.12	AVG	
3		1.3245	17.98	9.73	27.71	56.00	-28.29	QP	
4		1.3245	11.88	9.73	21.61	46.00	-24.39	AVG	
5		4.2113	16.38	9.82	26.20	56.00	-29.80	QP	
6		4.2113	10.23	9.82	20.05	46.00	-25.95	AVG	
7		7.2623	17.48	9.90	27.38	60.00	-32.62	QP	
8		7.2623	12.36	9.90	22.26	50.00	-27.74	AVG	
9		10.0050	11.63	9.96	21.59	60.00	-38.41	QP	
10		10.0050	5.60	9.96	15.56	50.00	-34.44	AVG	
11		23.1473	17.17	10.00	27.17	60.00	-32.83	QP	
12		23.1473	11.22	10.00	21.22	50.00	-28.78	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2021/5/12
Test Frequency	-	Phase	Neutral

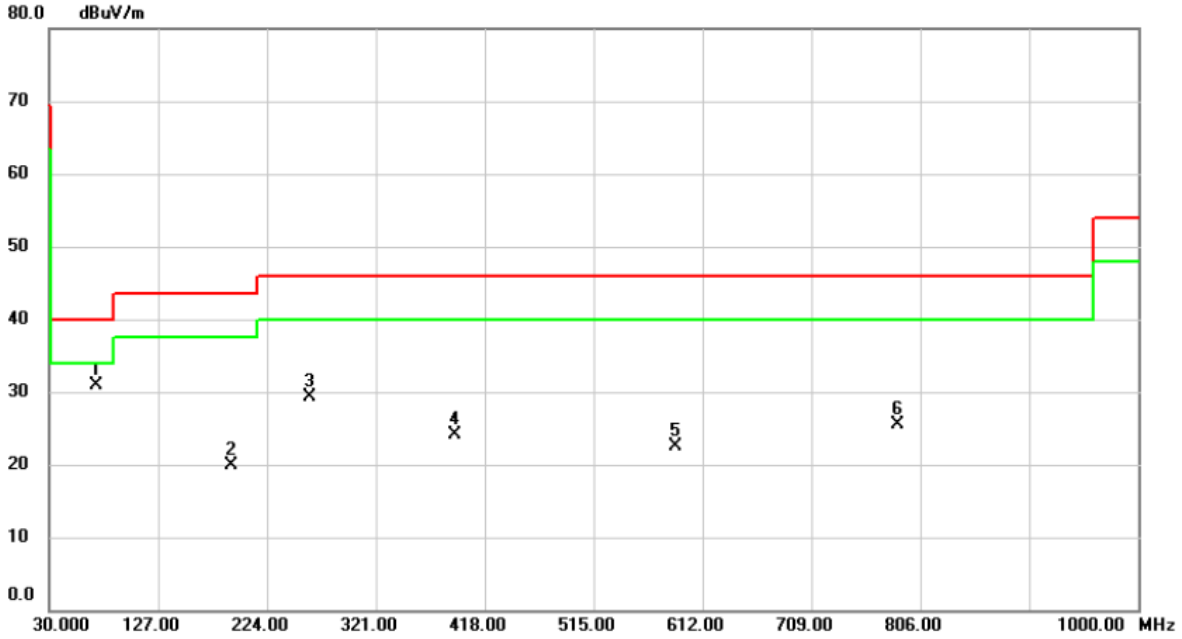


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.5392	26.87	9.71	36.58	56.00	-19.42	QP	
2		0.5392	16.25	9.71	25.96	46.00	-20.04	AVG	
3		1.3335	19.84	9.73	29.57	56.00	-26.43	QP	
4		1.3335	11.20	9.73	20.93	46.00	-25.07	AVG	
5		4.0065	17.36	9.82	27.18	56.00	-28.82	QP	
6		4.0065	11.43	9.82	21.25	46.00	-24.75	AVG	
7		6.8190	17.36	9.89	27.25	60.00	-32.75	QP	
8		6.8190	12.37	9.89	22.26	50.00	-27.74	AVG	
9		8.8103	16.37	9.93	26.30	60.00	-33.70	QP	
10		8.8103	11.22	9.93	21.15	50.00	-28.85	AVG	
11		22.7354	17.38	10.00	27.38	60.00	-32.62	QP	
12		22.7354	11.56	10.00	21.56	50.00	-28.44	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX B RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

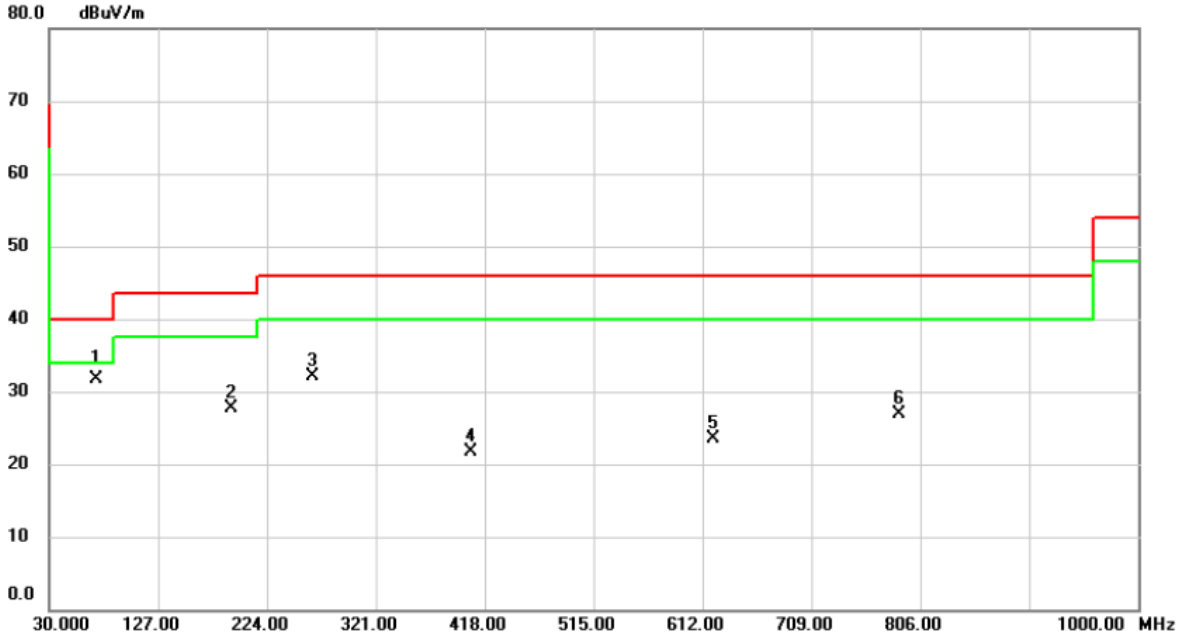
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH07: 2442 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	72.1627	41.97	-11.04	30.93	40.00	-9.07	peak	
2		191.8607	30.57	-10.63	19.94	43.50	-23.56	peak	
3		262.2180	38.18	-8.87	29.31	46.00	-16.69	peak	
4		391.4867	29.09	-5.05	24.04	46.00	-21.96	peak	
5		587.7500	23.41	-0.91	22.50	46.00	-23.50	peak	
6		786.5353	23.04	2.39	25.43	46.00	-20.57	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH07: 2442 MHz	Polarization	Horizontal

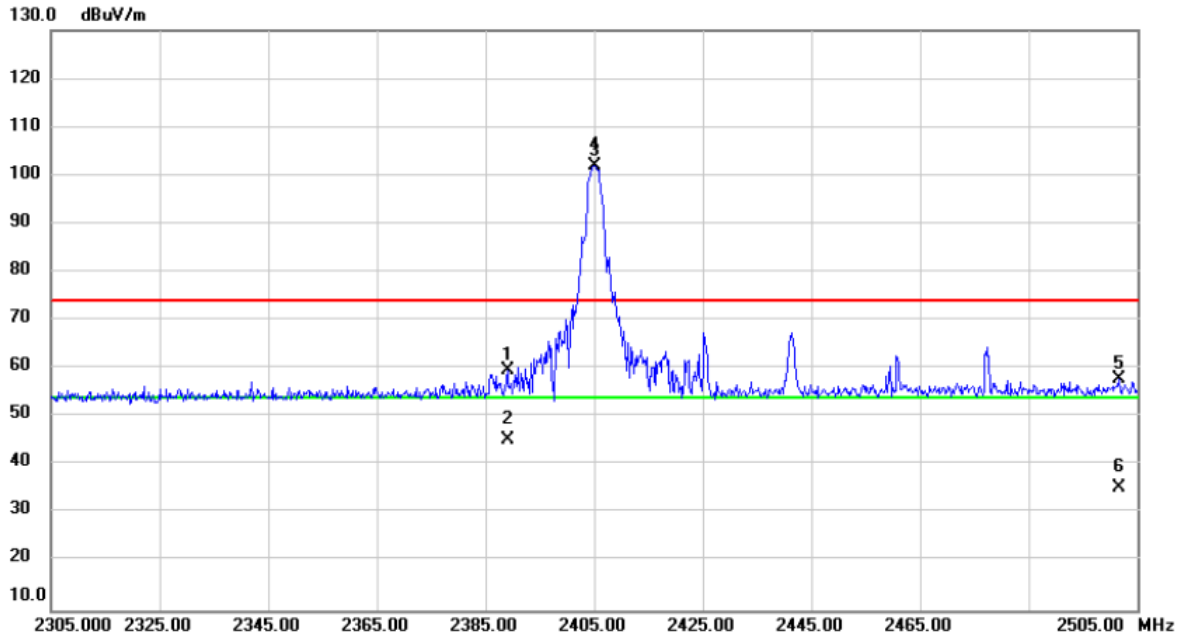


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	71.9363	42.72	-11.00	31.72	40.00	-8.28	QP	
2		191.8283	38.33	-10.63	27.70	43.50	-15.80	peak	
3		264.5136	40.85	-8.71	32.14	46.00	-13.86	peak	
4		405.7456	26.41	-4.71	21.70	46.00	-24.30	peak	
5		622.1850	23.78	-0.34	23.44	46.00	-22.56	peak	
6		787.0850	24.44	2.40	26.84	46.00	-19.16	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ

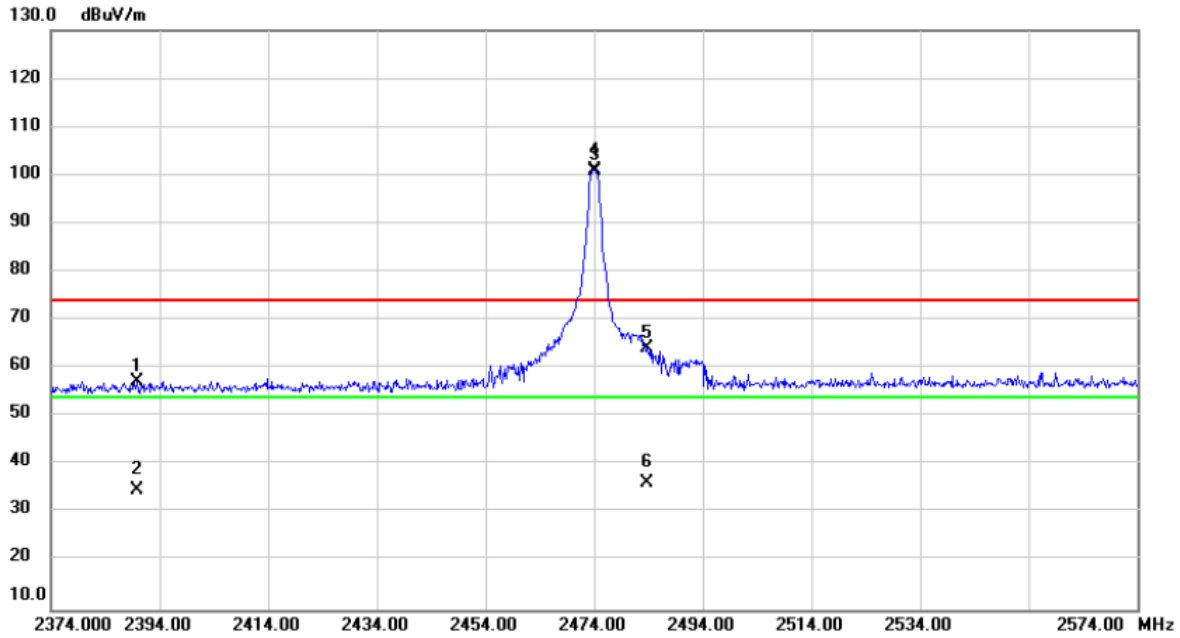
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH01: 2405 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.167	28.86	30.78	59.64	74.00	-14.36	peak	
2		2389.167	14.42	30.78	45.20	54.00	-8.80	AVG	
3	X	2405.000	71.15	30.85	102.00	74.00	28.00	peak	No Limit
4	*	2405.000	70.96	30.85	101.81	54.00	47.81	AVG	No Limit
5		2501.600	26.57	31.24	57.81	74.00	-16.19	peak	
6		2501.600	4.23	31.24	35.47	54.00	-18.53	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

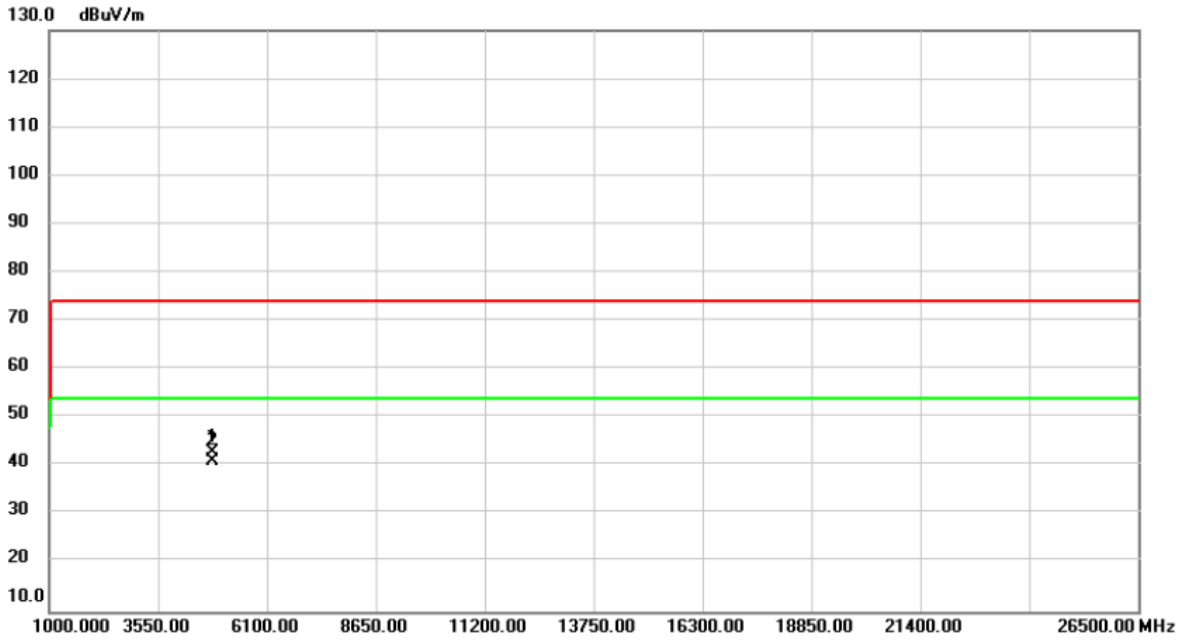
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH12: 2474 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2389.853	26.33	30.79	57.12	74.00	-16.88	peak	
2		2389.853	3.81	30.79	34.60	54.00	-19.40	AVG	
3	X	2474.000	69.93	31.12	101.05	74.00	27.05	peak	No Limit
4	*	2474.000	69.68	31.12	100.80	54.00	46.80	AVG	No Limit
5		2483.700	33.13	31.16	64.29	74.00	-9.71	peak	
6		2483.700	5.12	31.16	36.28	54.00	-17.72	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

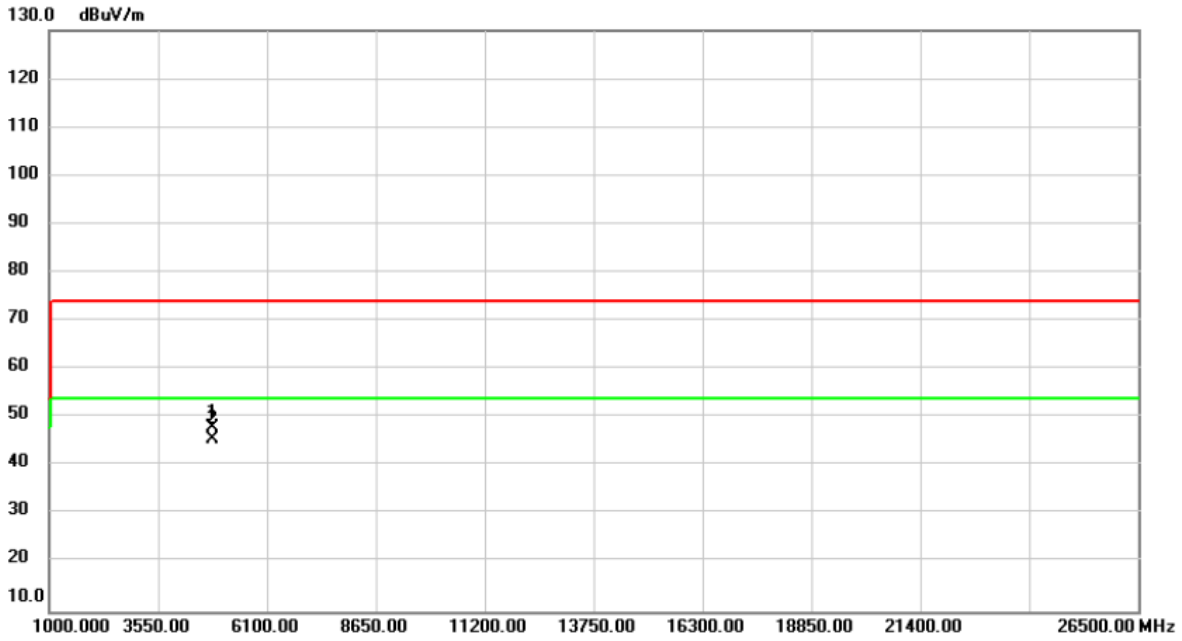
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH01: 2405 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4810.000	52.86	-10.00	42.86	74.00	-31.14	peak	
2	*	4810.000	51.10	-10.00	41.10	54.00	-12.90	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

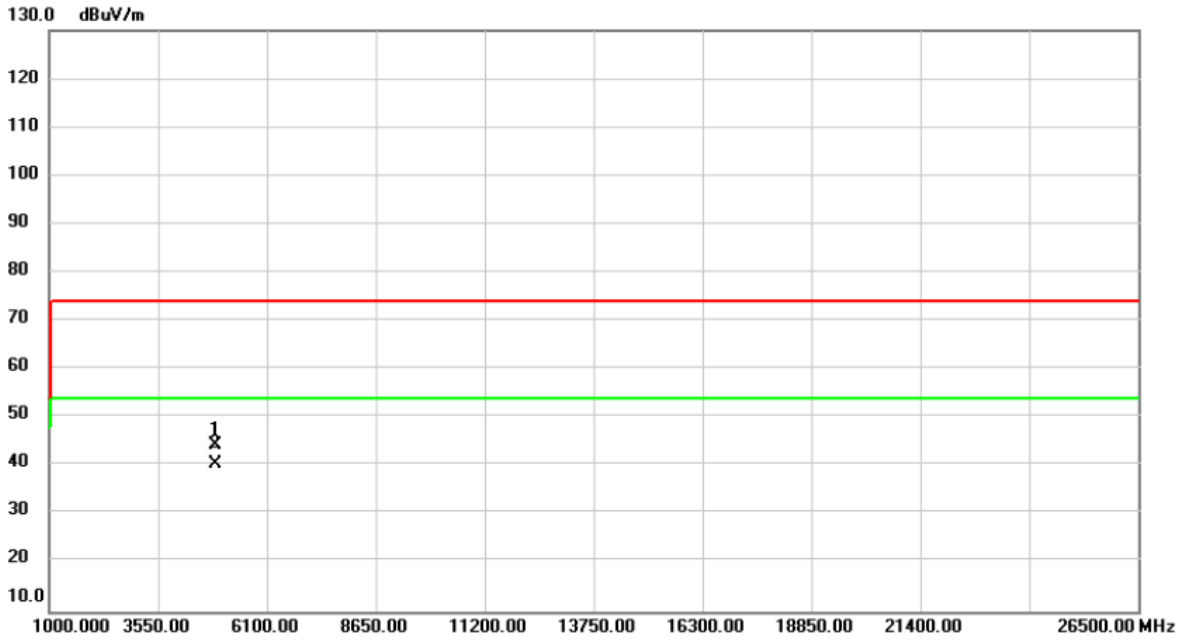
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH01: 2405 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4810.000	58.06	-10.00	48.06	74.00	-25.94	peak	
2	*	4810.000	55.55	-10.00	45.55	54.00	-8.45	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

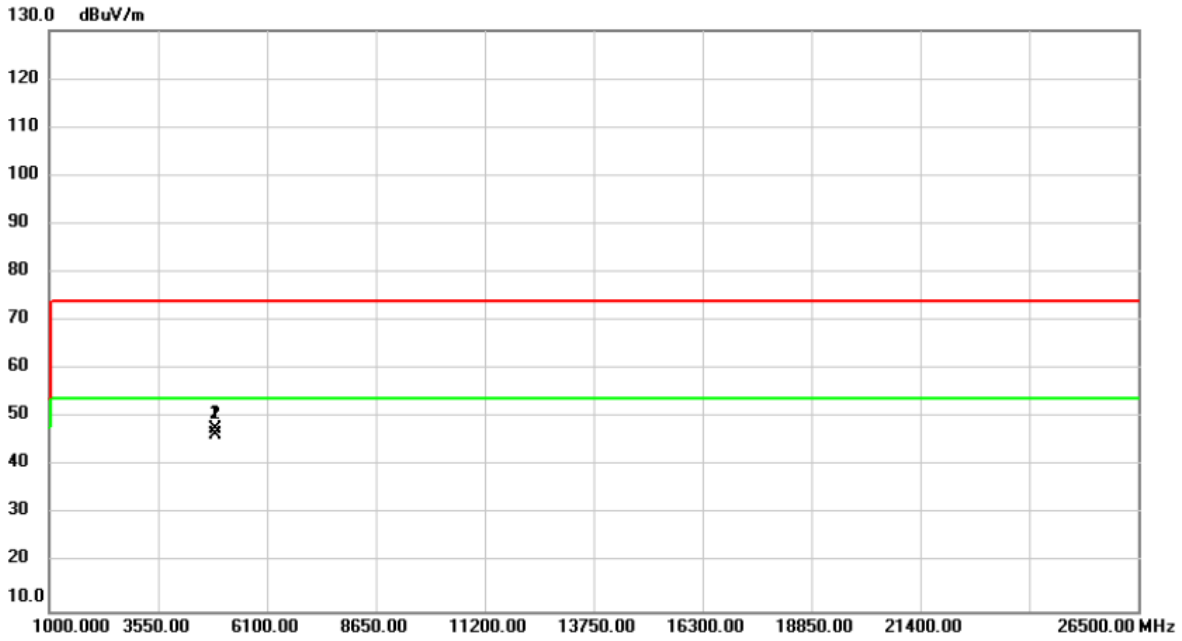
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH07: 2442 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4884.000	54.02	-9.76	44.26	74.00	-29.74	peak	
2	*	4884.000	50.23	-9.76	40.47	54.00	-13.53	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

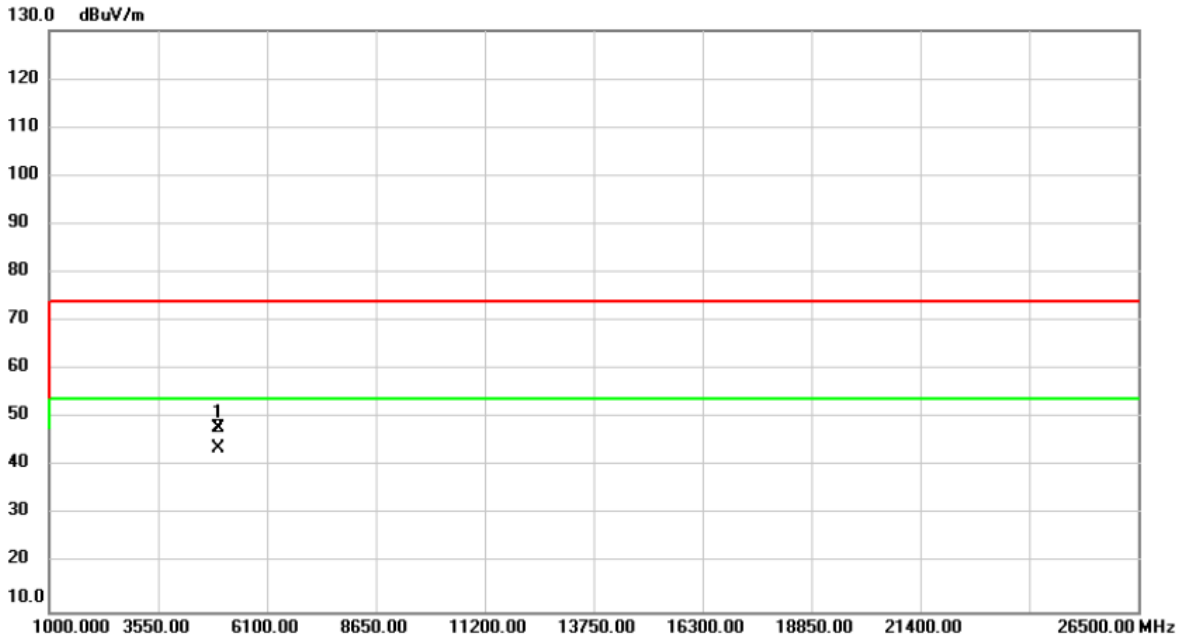
Test Mode	SRD	Test Date	2021/5/11
Test Frequency	CH07: 2442 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4884.000	57.52	-9.76	47.76	74.00	-26.24	peak	
2	*	4884.000	56.23	-9.76	46.47	54.00	-7.53	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

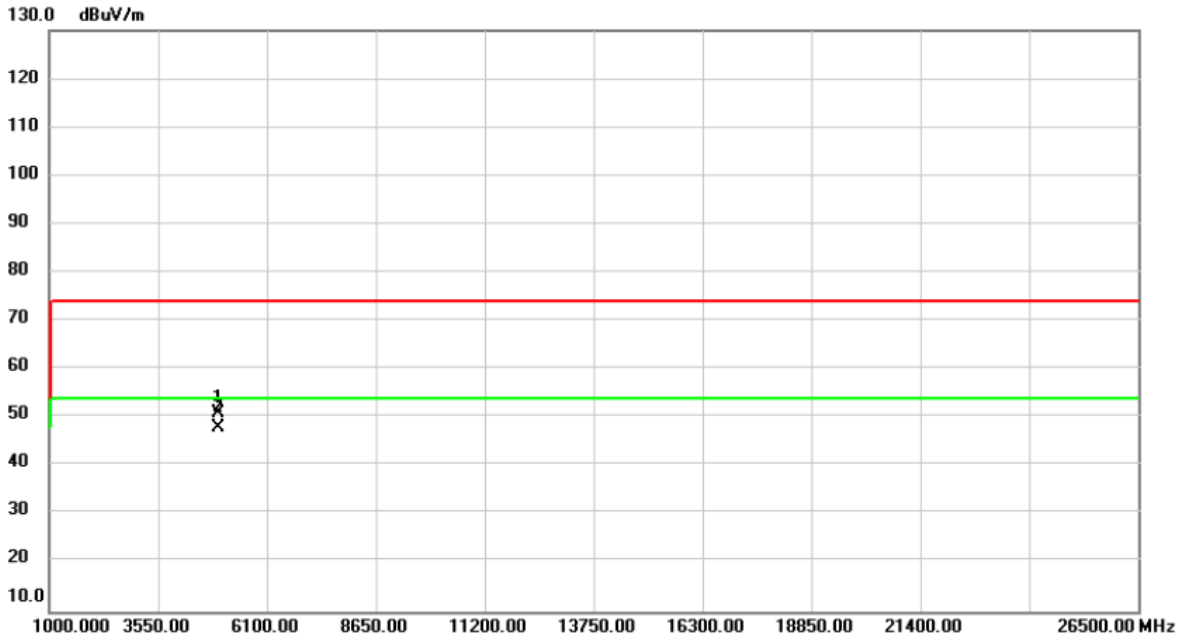
Test Mode	SRD	Test Date	2021/5/10
Test Frequency	CH12: 2474 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4948.000	57.41	-9.53	47.88	74.00	-26.12	peak	
2	*	4948.000	53.31	-9.53	43.78	54.00	-10.22	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	SRD	Test Date	2021/5/10
Test Frequency	CH12: 2474 MHz	Polarization	Horizontal



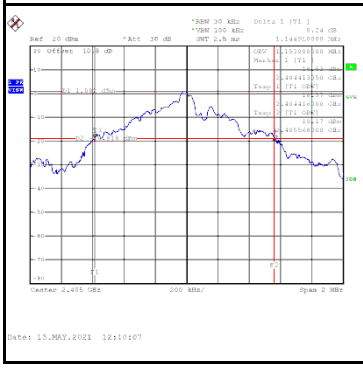
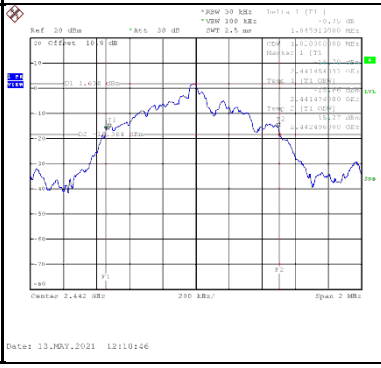
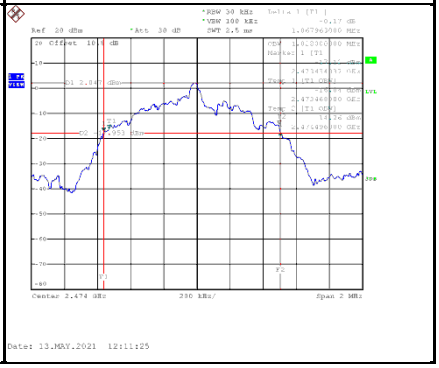
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4948.000	60.53	-9.53	51.00	74.00	-23.00	peak	
2	*	4948.000	57.51	-9.53	47.98	54.00	-6.02	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D BANDWIDTH

Test Mode:	TX Mode _1Mbps

Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2405	1.14	1.15	500	Pass
2442	1.05	1.02	500	Pass
2474	1.07	1.03	500	Pass

2405 MHz	2442 MHz	2474 MHz
		

APPENDIX E OUTPUT POWER

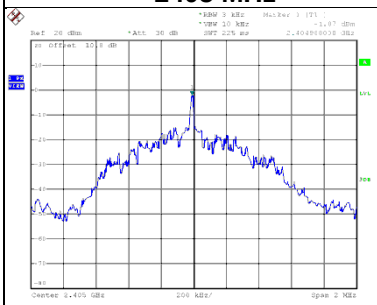
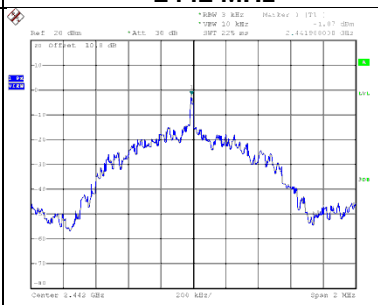
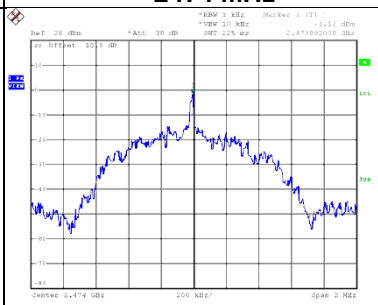
Test Mode :	TX Mode _1Mbps	Tested Date	2021/5/12

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2405	2.35	0.0017	30.00	1.0000	Pass
2442	2.46	0.0018	30.00	1.0000	Pass
2474	3.12	0.0021	30.00	1.0000	Pass

APPENDIX F POWER SPECTRAL DENSITY TEST

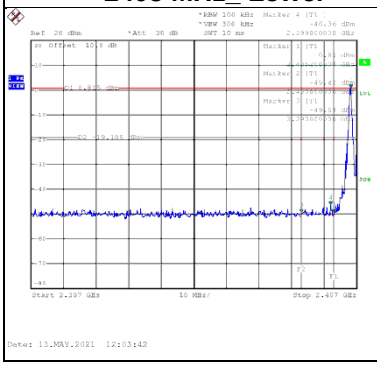
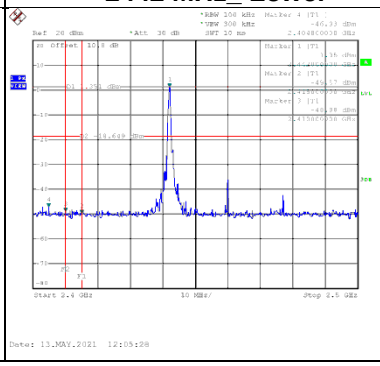
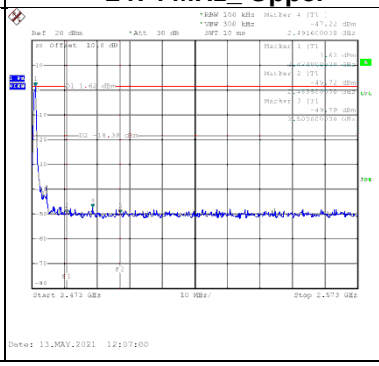
Test Mode:	TX Mode _1Mbps

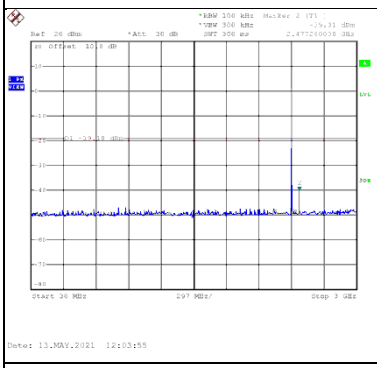
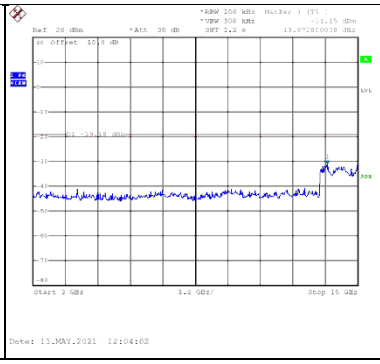
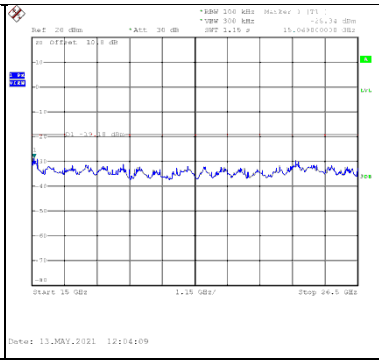
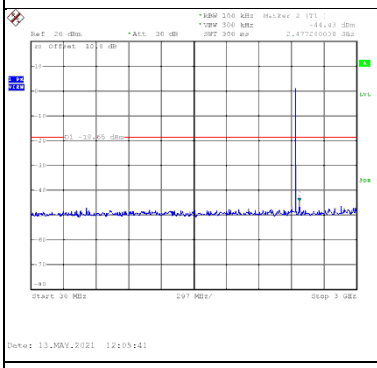
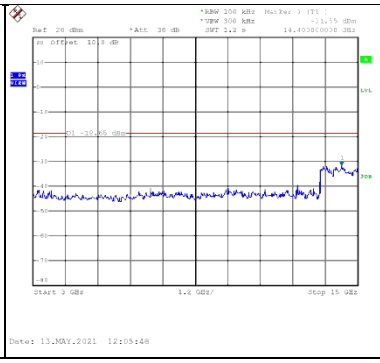
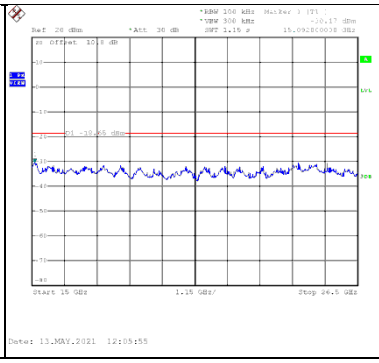
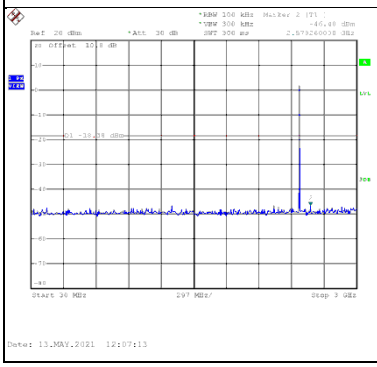
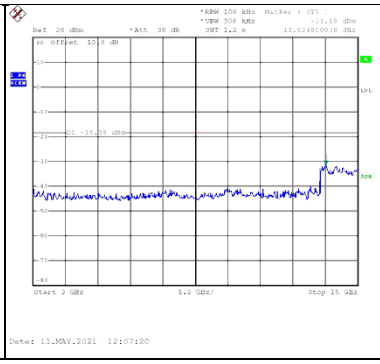
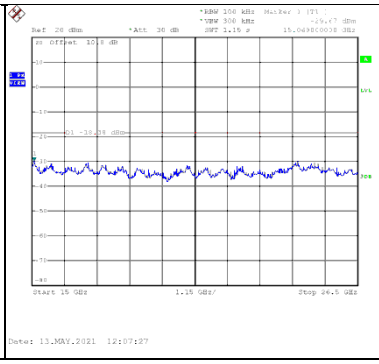
Frequency (MHz)	Power Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Test Result
2405	-1.87	8.00	Pass
2442	-1.87	8.00	Pass
2474	-1.12	8.00	Pass

2405 MHz	2442 MHz	2474 MHz
		

APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode :	TX Mode _1Mbps

2405 MHz_ Lower	2442 MHz_ Lower	2474 MHz_ Upper
		

2405 MHz – 10th Harmonics		
		
2442 MHz – 10th Harmonics		
		
2474 MHz – 10th Harmonics		
		

End of Test Report