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TESTING  
CNAS L7649

## RADIO TEST REPORT

Report No.: STS2103127W02

Issued for

GODOX PHOTO EQUIPMENT CO.LTD

1st to 4th Floor, Building 2/1st to 4th Floor, Building 4 , Yaochuan  
Industrial Zone, Tangwei Community, Fuhai Street, Bao'an  
District, Shenzhen 518103, China

<b>Product Name:</b>	Pioneering Li-ion Camera Flash
<b>Brand Name:</b>	Godox
<b>Model Name:</b>	V850III
<b>Series Model:</b>	N/A
<b>FCC ID:</b>	2ABYN011
<b>Test Standard:</b>	FCC Part 15.249

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Shenzhen STS Test Services Co., Ltd.  
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TEST RESULT CERTIFICATION

Applicant's Name .....: GODOX PHOTO EQUIPMENT CO.LTD
Address .....: 1st to 4th Floor,Building 2/1st to 4th Floor, Building 4 ,Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Bao'an District, Shenzhen 518103, China
Manufacture's Name .....: GODOX PHOTO EQUIPMENT CO.LTD
Address .....: 4th Floor of Building 1, 1st to 4 th Floor of Building 2, 4th Floor of Building 3,1st to 4th Floor of Building 4, Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Bao'an District, Shenzhen 518103,China

Product Description

Product Name .....: Pioneering Li-ion Camera Flash
Brand Name .....: Godox
Model Name .....: V850III
Series Model .....: N/A

Test Standards.....: FCC Part15.249
Test Procedure .....: ANSI C63.10-2013

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test .....:
Date of receipt of test item .....: 17 Mar. 2021
Date of performance of tests ...: 17 Mar. 2021 ~ 16 Aug. 2021
Date of Issue .....: 16 Aug. 2021
Test Result.....: Pass

Testing Engineer : Chris Chen
(Chris Chen)

Technical Manager : Sean she
(Sean she)

Authorized Signatory : Vita Li
(Vita Li)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	16 May 2021	STS2103127W02	ALL	Initial Issue





## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 15.249 , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.203	Antenna Requirement	Pass	
15.249	Radiated Spurious Emission	Pass	
15.205	Radiated Band Edge Emission	Pass	
15.249	20dB Bandwidth	Pass	

**NOTE:**

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.





### 1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , 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 %**.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.68\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 2.84\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.39\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 5.10\text{dB}$
6	All emissions, radiated >6G	$\pm 5.48\text{dB}$
7	Conducted Emission (9KHz-150KHz)	$\pm 2.79\text{dB}$
8	Conducted Emission (150KHz-30MHz)	$\pm 2.80\text{dB}$



## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Pioneering Li-ion Camera Flash
Trade Name	Godox
Model Name	V850III
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a Pioneering Li-ion Camera Flash
	Operation Frequency: 2412.999634-2464.499756 MHz
	Modulation Type: MSK
	Antenna Designation: Please refer to the Note 3.
	Antenna Gain(Peak): 0dBi
	Based on the application, features, or specification exhibited in User Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User Manual.
Channel List	Please refer to the Note 2.
Battery	Rated Voltage:7.2V Charge Limit Voltage:8.4V Capacity: 2600mAh
Hardware version number	20210105E01
Software version number	V1.0
Connecting I/O Port(s)	Please refer to the Note 1.

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.



2.

Channel List							
CH	Frequency (GHz)	CH	Frequency (GHz)	CH	Frequency (GHz)	CH	Frequency (GHz)
1	2.412999634	9	2.425999634	17	2.439499908	25	2.452999786
2	2.414499664	10	2.427999939	18	2.440999939	26	2.454499817
3	2.415999695	11	2.429499969	19	2.442999847	27	2.455999847
4	2.418000000	12	2.431000000	20	2.444499878	28	2.457999756
5	2.419499634	13	2.432999908	21	2.445999908	29	2.459499786
6	2.420999664	14	2.434499939	22	2.447999817	30	2.460999817
7	2.422999969	15	2.435999969	23	2.449499847	31	2.462999725
8	2.424500000	16	2.437999878	24	2.450999878	32	2.464499756

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	Godox	V850III	PCB	N/A	0dBi	Antenna

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.



## 2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions  
 Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively.

Pretest Mode	Description	Data/Modulation
Mode 1	TX Low channel	MSK
Mode 2	TX Mid channel	MSK
Mode 3	TX High channel	MSK

Note:

(1) All above mode have been measurement, only worst data was reported.

## 2.3 TEST SOFTWARE AND POWER LEVEL

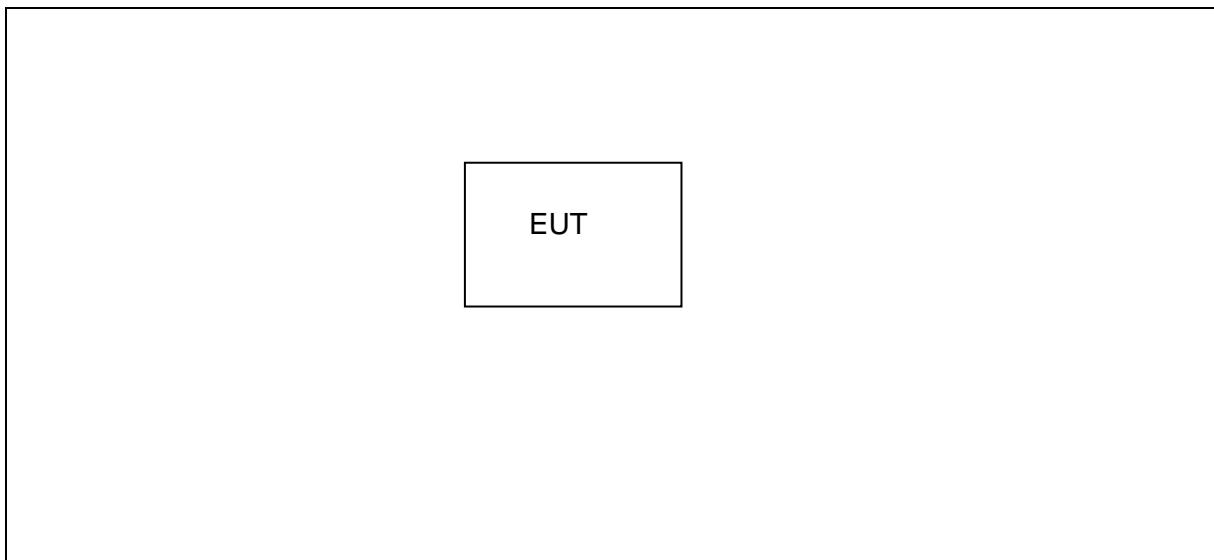
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
Other SRD	2.4 GHz	MSK	0	Default	The sample is already in the test mode, the transmit and receive are switched by the button of the sample

## 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters.

### Radiated Spurious Emission Test





## 2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

### Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
/	Battery	Godox	VB26	N/A	N/A
/	Battery Charger	Aohai	A102-502000 US	N/A	N/A
/	Mini Stand	N/A	N/A	N/A	N/A
/	USB Cable	N/A	N/A	N/A	N/A

### Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

#### Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2020.10.12	2021.10.11
Signal Analyzer	R&S	FSV 40-N	101823	2020.10.10	2021.10.09
Active loop Antenna	ZHINAN	ZN30900C	16035	2021.04.11	2022.04.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2019.10.15	2021.10.14
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier(0.1M-3 GHz)	EM	EM330	060665	2020.10.12	2021.10.11
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2020.10.12	2021.10.11
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2020.10.10	2021.10.09
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

### Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2020.10.12	2021.10.11
LISN	R&S	ENV216	101242	2020.10.12	2021.10.11
LISN	EMCO	3810/2NM	23625	2020.10.12	2021.10.11
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 CE)			



## RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Power Sensor	Keysight	U2021XA	MY55520005	2020.10.10	2021.10.09
			MY55520006	2020.10.10	2021.10.09
			MY56120038	2020.10.10	2021.10.09
			MY56280002	2020.10.10	2021.10.09
Signal Analyzer	Agilent	N9020A	MY51110105	2021.03.04	2022.03.03
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			



### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

##### 3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.249 limit in the table below has to be followed.

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

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.

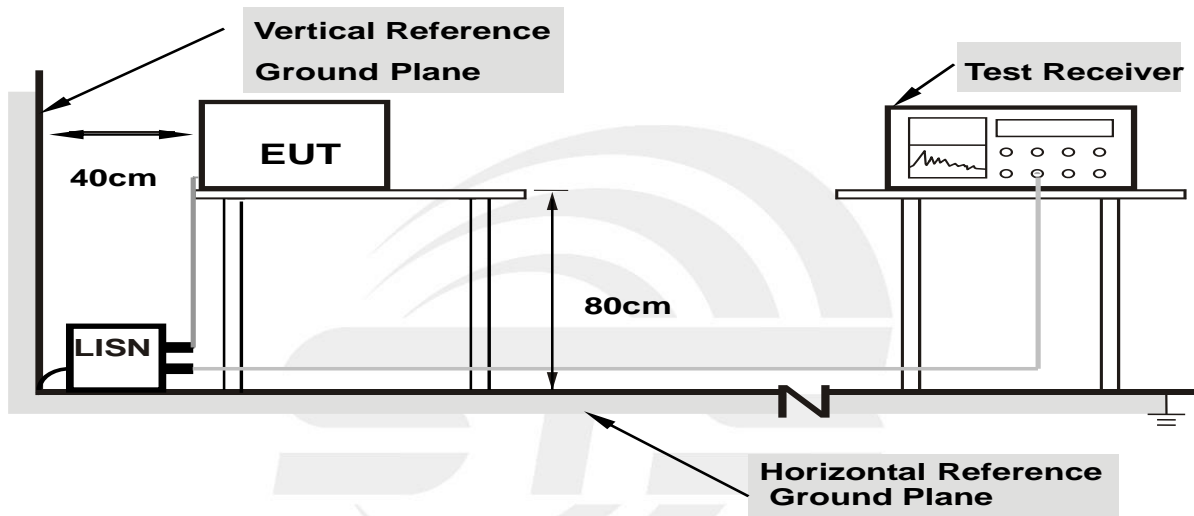
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

### 3.1.2 TEST PROCEDURE

- a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling 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 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.1.3 TEST SETUP



- Note: 1.Support units were connected to second LISN.  
 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

### 3.1.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

### 3.1.5 TEST RESULT

Temperature:	N/A	Relative Humidity:	N/A
Test Voltage:	N/A	Phase:	L/N
Test Mode:	N/A		

Note: EUT is only powered by battery, this test is not applicable.



### 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 RADIATED EMISSION LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15.249 and the Part 15.209(a) limit in the table below has to be followed.

Standard FCC 15.209

Frequencies (MHz)	Field Strength (micovolts/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
Above 1000	Other:74.0 dB( $\mu$ V)/m (Peak) 54.0 dB( $\mu$ V)/m (Average)	3

Standard FCC 15.249

Frequency of Emission (MHz)	Field Strength of fundamental (millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
900~928	50	500
2400~2483.5	50	500
5725~5875	50	500
24000~242500	250	2500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5



8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Spectrum Parameter	Setting
Detector	Peak/AV
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB (emission in restricted band)	>20BW
VB (emission in restricted band)	=3xRB

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
	90kHz~110kHz / RB 200Hz for QP
	110kHz~490kHz / RB 200Hz for PK & AV
	490kHz~30MHz / RB 9kHz for QP
	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- a. The measuring distance of 3m 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 3m 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 test antenna shall vary between 1m to 4m.Both horizontal and vertical polarization Of the antenna are set to make the measurement.
- d. The initial step in collecting radiated emission data is a receive peak detector mode. Pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are peak unless otherwise stated QP in column of Note. Peak denoted that the Peak reading compliance with the QP limits and then QP Mode measurement didn't perform (Below 1GHz)





f. 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 Peak & AVG limits and then only Peak mode was measured, but AVG mode didn't perform.(Above 1GHz)

9. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

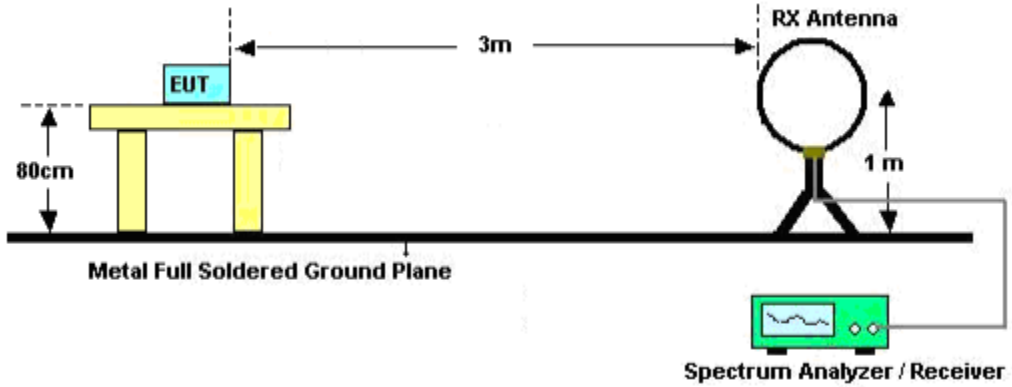
### 3.2.3 DEVIATION FROM TEST STANDARD

No deviation

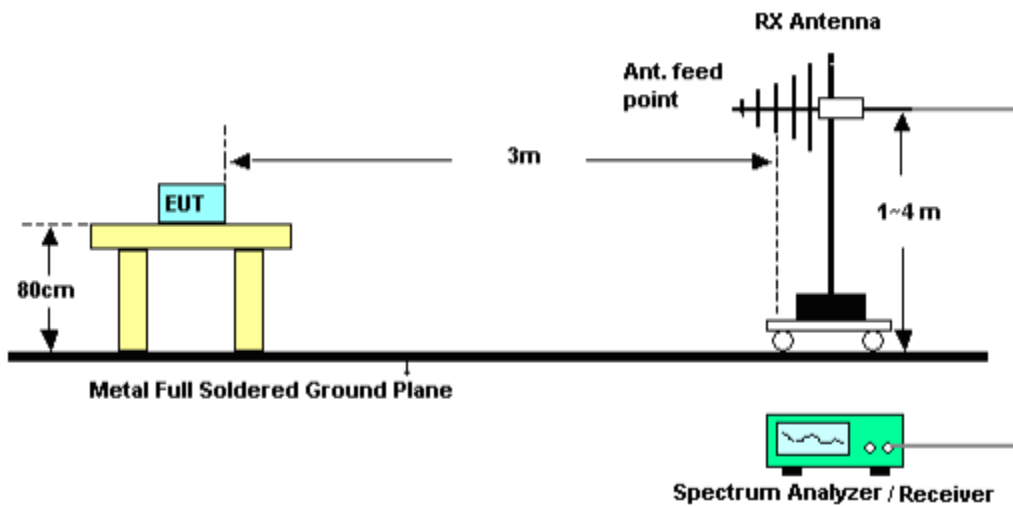


### 3.2.4 TEST SETUP

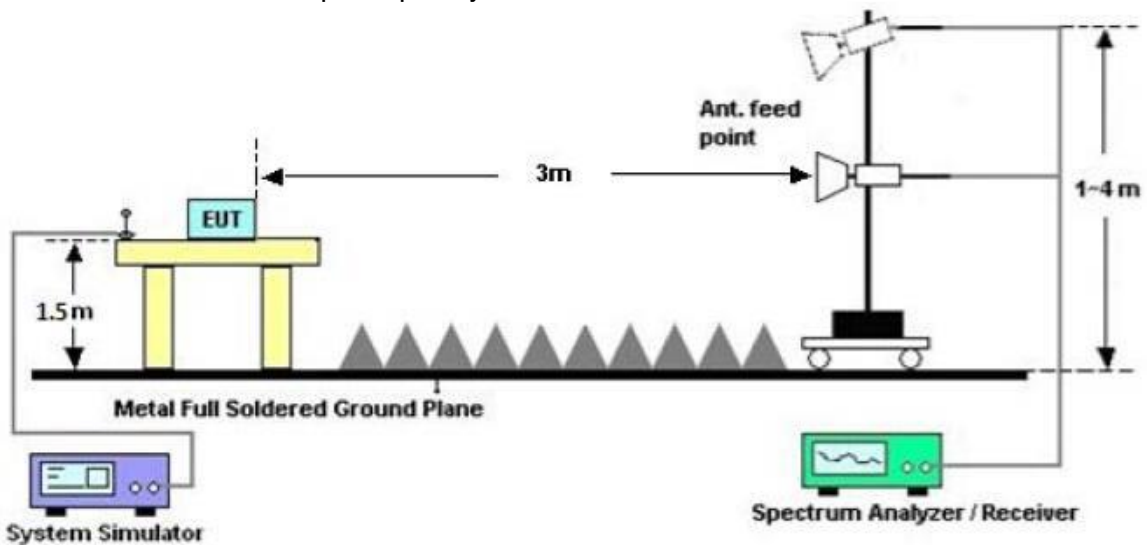
#### (A) Radiated Emission Test-Up Frequency Below 30MHz



#### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



#### (C) Radiated Emission Test-Up Frequency Above 1GHz





### 3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

Margin=PL-PK L or AL- AV L; Margin only shown the worst case.

Where

PR = Peak Reading

AR = Average Reading

PL = Peak Level

AL = Average Level

AF = Antenna Factor

PK L = Peak Limit

AV L = AV Limit

For example

Frequency	PR	AR	AF	PL	AL	PK L	AV L	Margin
(MHz)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
2178	40.23	30.31	9.83	50.06	40.14	74.00	54.00	-13.86





### 3.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

Below 30 MHz

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 7.2V	Polarization:	---
Test Mode:	TX Mode		

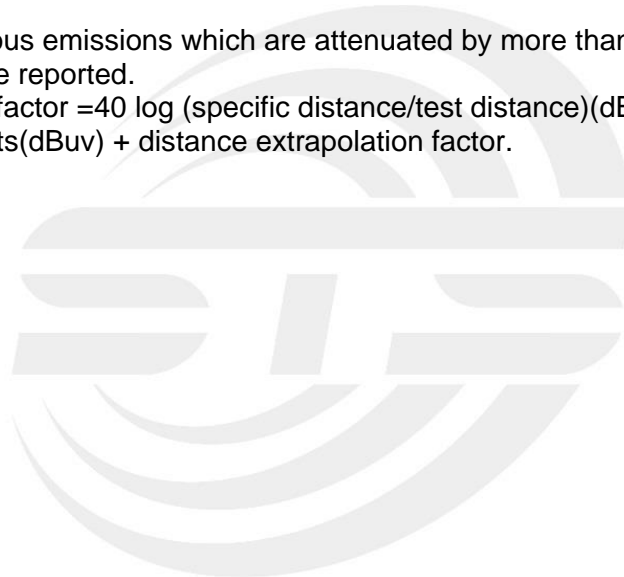
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

**NOTE:**

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$ ;

Limit line = specific limits(dBuv) + distance extrapolation factor.





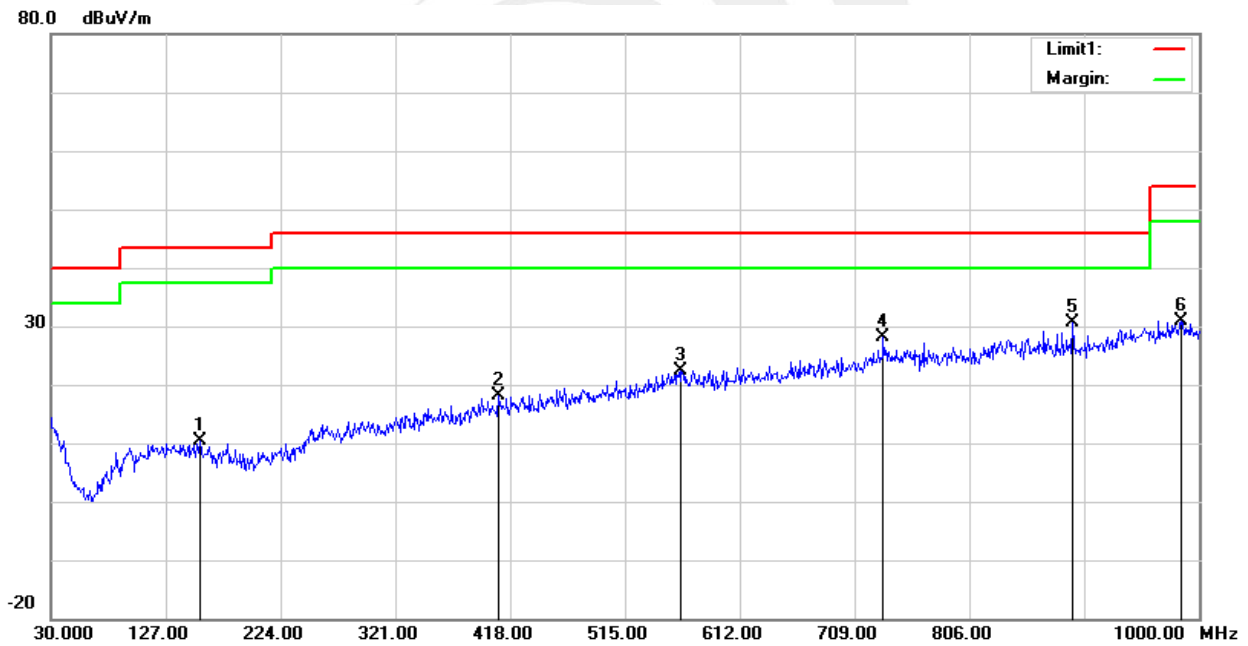
Between 30MHz – 1000 MHz Radiation Spurious

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 7.2V	Phase:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	156.1000	28.92	-18.66	10.26	43.50	-33.24	peak
2	408.3000	28.80	-10.66	18.14	46.00	-27.86	peak
3	562.5300	27.98	-5.52	22.46	46.00	-23.54	peak
4	733.2500	30.57	-2.35	28.22	46.00	-17.78	peak
5	893.3000	31.18	-0.61	30.57	46.00	-15.43	peak
6	984.4800	28.56	2.40	30.96	54.00	-23.04	peak

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit



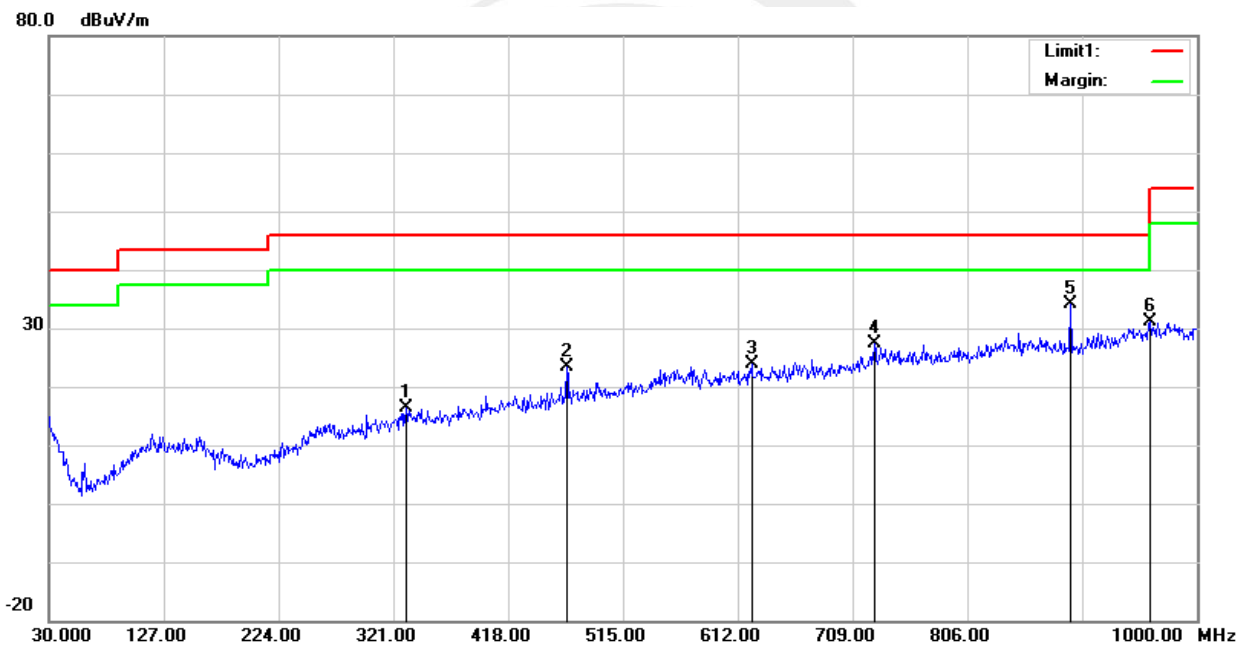


Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 7.2V	Phase:	Vertical
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	331.6700	29.92	-13.65	16.27	46.00	-29.73	peak
2	467.4700	32.57	-9.11	23.46	46.00	-22.54	peak
3	623.6400	29.12	-5.33	23.79	46.00	-22.21	peak
4	727.4300	29.95	-2.68	27.27	46.00	-18.73	peak
5	893.3000	34.75	-0.61	34.14	46.00	-11.86	peak
6	960.2300	29.44	1.76	31.20	54.00	-22.80	peak

Remark:

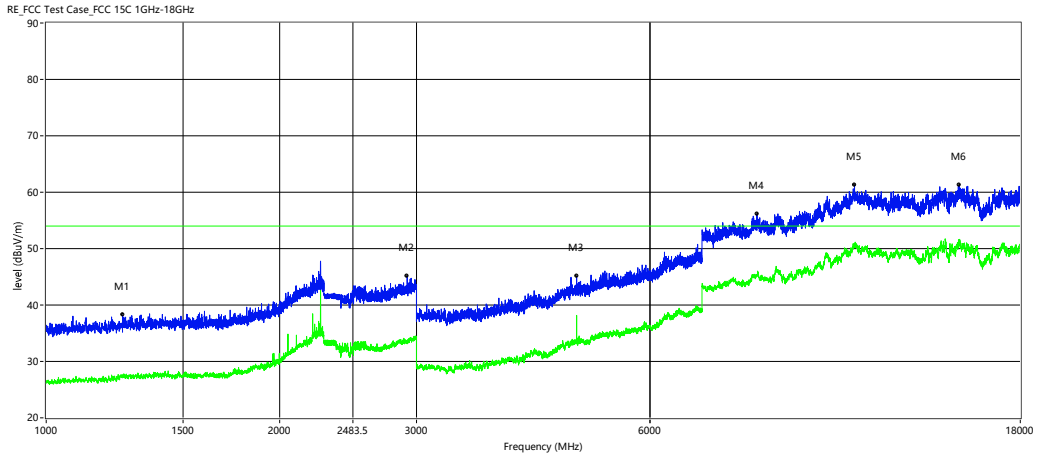
1. Margin = Result (Result =Reading + Factor )–Limit





Above 1G Radiation Spurious

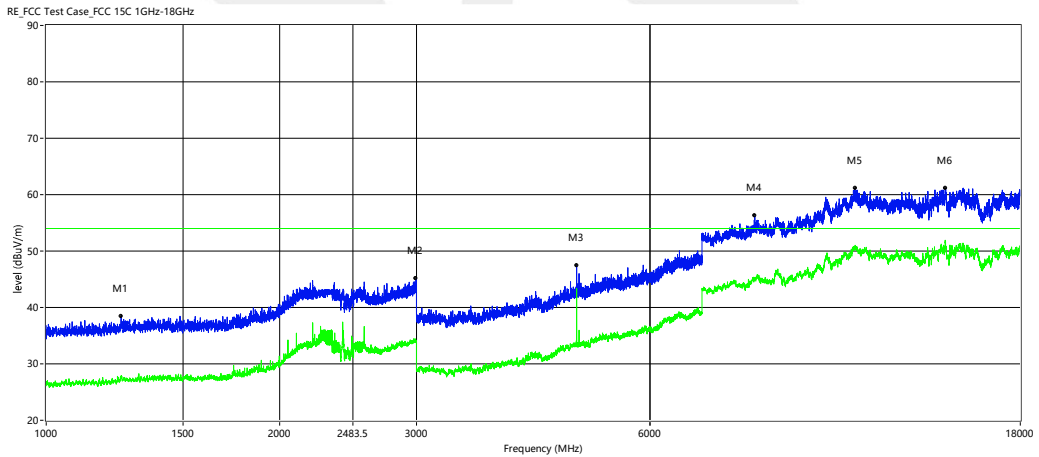
Lowest channel



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1254.500	38.22	27.31	-0.91	74.0	54.0	-26.69	Horizontal	Pass
2918.500	45.17	33.29	5.72	74.0	54.0	-20.71	Horizontal	Pass
8240.250	56.11	45.41	4.22	74.0	54.0	-8.59	Horizontal	Pass
11006.750	61.24	50.42	10.18	74.0	54.0	-3.58	Horizontal	Pass
15016.250	61.24	50.88	10.38	74.0	54.0	-3.12	Horizontal	Pass

Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4826.000	45.10	5.38	39.72	74.0	54.0	-14.28	Horizontal	Pass

Note: AV = Peak - DCCF



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1249.000	38.47	27.56	-0.92	74.0	54.0	-26.44	Vertical	Pass
2996.000	45.09	34.15	6.09	74.0	54.0	-19.85	Vertical	Pass
8188.000	56.25	45.22	4.20	74.0	54.0	-8.78	Vertical	Pass
11020.500	61.10	50.62	10.11	74.0	54.0	-3.38	Vertical	Pass
14405.750	61.13	50.37	11.36	74.0	54.0	-3.63	Vertical	Pass

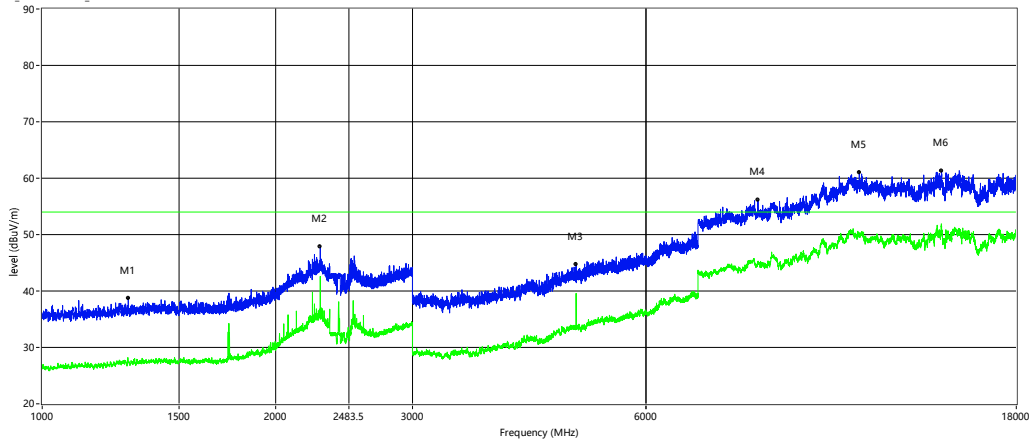
Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4826.000	47.42	5.38	42.04	74.0	54.0	-11.96	Vertical	Pass

Note: AV = Peak - DCCF



Middle channel

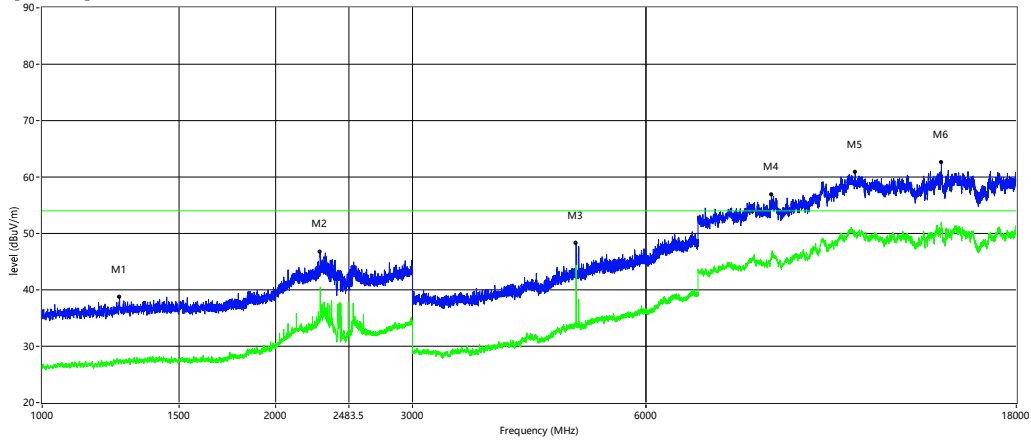
RE\_FCC Test Case\_FCC 15C 1GHz-18GHz



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1291.000	38.77	27.28	-0.93	74.0	54.0	-26.72	Horizontal	Pass
2282.000	47.85	42.60	4.60	74.0	54.0	-11.40	Horizontal	Pass
8364.000	56.14	45.04	4.26	74.0	54.0	-8.96	Horizontal	Pass
11298.250	61.07	50.05	9.53	74.0	54.0	-3.95	Horizontal	Pass
14419.500	61.23	50.54	11.19	74.0	54.0	-3.46	Horizontal	Pass

Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4876.000	44.66	5.38	39.28	74.0	54.0	-14.72	Horizontal	Pass

RE\_FCC Test Case\_FCC 15C 1GHz-18GHz



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1258.000	38.66	27.36	-0.92	74.0	54.0	-26.64	Vertical	Pass
2281.500	46.67	38.81	4.60	74.0	54.0	-15.19	Vertical	Pass
8707.750	56.83	46.47	5.14	74.0	54.0	-7.53	Vertical	Pass
11160.750	60.82	50.11	9.63	74.0	54.0	-3.89	Vertical	Pass
14414.000	62.52	50.53	11.26	74.0	54.0	-3.47	Vertical	Pass

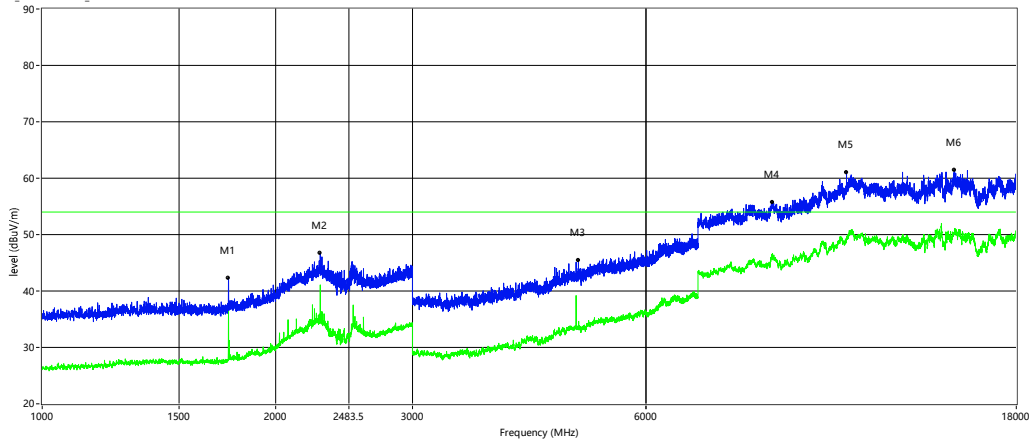
Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4876.000	48.32	5.38	42.94	74.0	54.0	-11.06	Vertical	Pass





### Highest channel

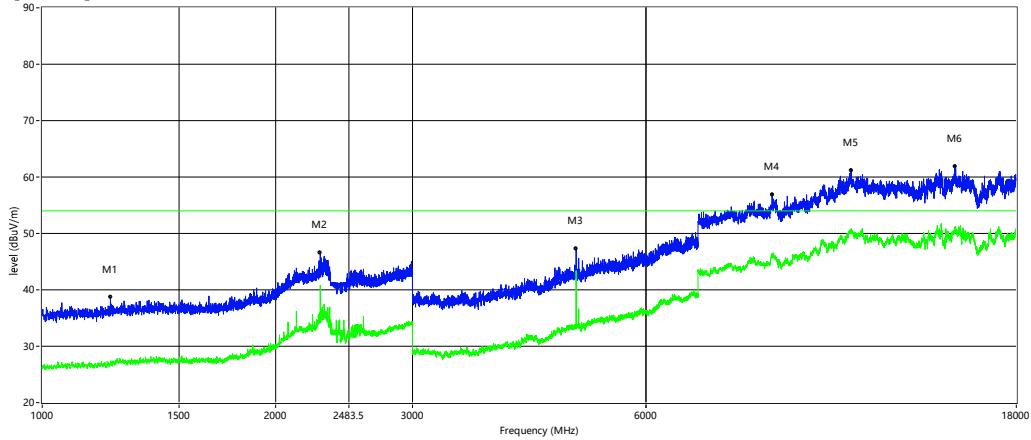
RE\_FCC Test Case\_FCC 15C 1GHz-18GHz



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1738.000	42.32	36.42	-0.07	74.0	54.0	-17.58	Horizontal	Pass
2282.000	46.75	41.08	4.60	74.0	54.0	-12.92	Horizontal	Pass
8718.750	55.66	46.52	5.10	74.0	54.0	-7.48	Horizontal	Pass
10877.500	60.99	49.72	9.18	74.0	54.0	-4.28	Horizontal	Pass
14991.500	61.38	51.02	10.36	74.0	54.0	-2.98	Horizontal	Pass

Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4929.000	45.41	5.38	40.03	74.0	54.0	-13.97	Horizontal	Pass

RE\_FCC Test Case\_FCC 15C 1GHz-18GHz

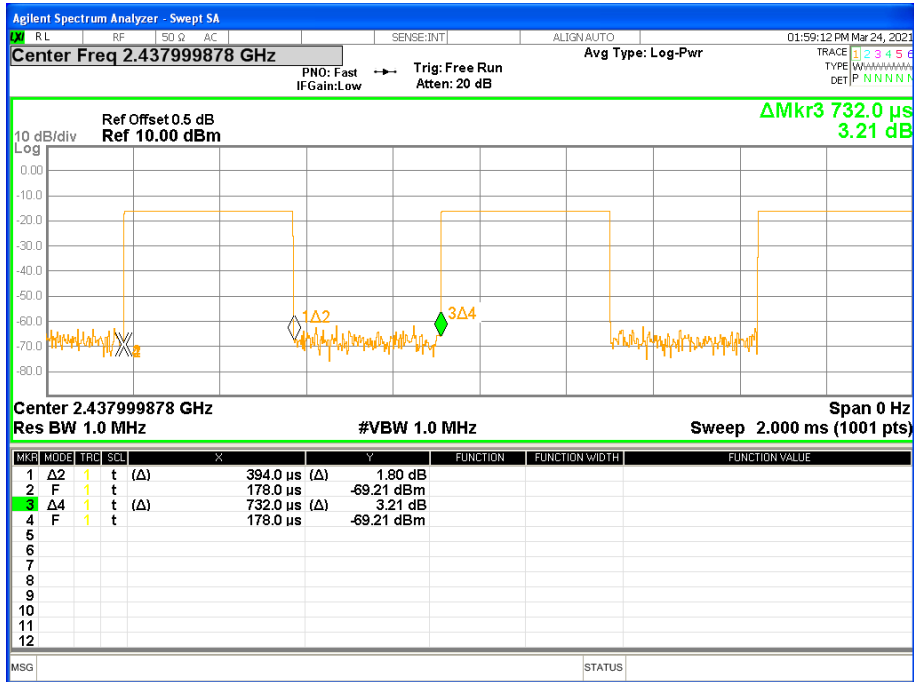


Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1224.500	38.68	27.13	-1.06	74.0	54.0	-26.87	Vertical	Pass
2282.000	46.59	40.78	4.60	74.0	54.0	-13.22	Vertical	Pass
8721.500	56.86	46.50	5.09	74.0	54.0	-7.50	Vertical	Pass
11026.000	61.11	50.62	10.08	74.0	54.0	-3.38	Vertical	Pass
15005.250	61.84	50.67	10.40	74.0	54.0	-3.33	Vertical	Pass

Frequency (MHz)	Peak Level (dBuV/m)	DCCF (dB)	Average Level (dBuV/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
4929.000	47.24	5.38	41.86	74.0	54.0	-12.14	Vertical	Pass



Duty cycle



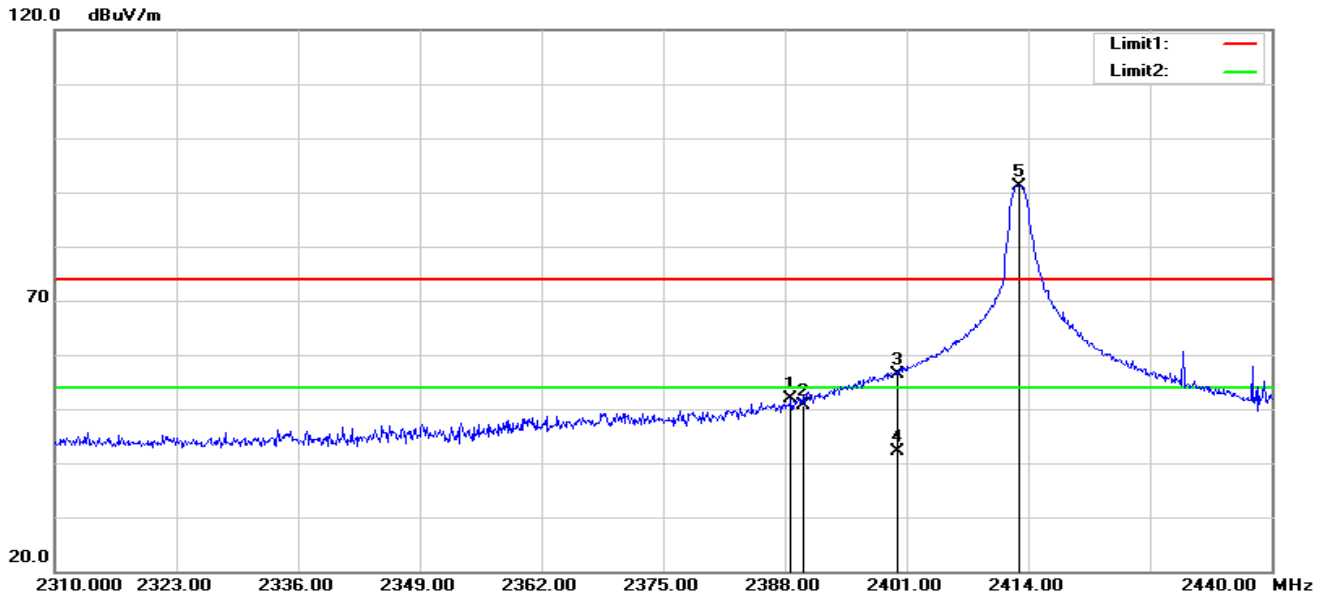
Ton	Tp	Duty cycle(%)	DCCF (dB)
0.394	0.732	53.83%	5.38

Note: DCCF (Duty Cycle Correction Factor) =  $20 * \log(1 / \text{Duty cycle})$



(Radiation Band edge)

**Low channel**  
Horizontal



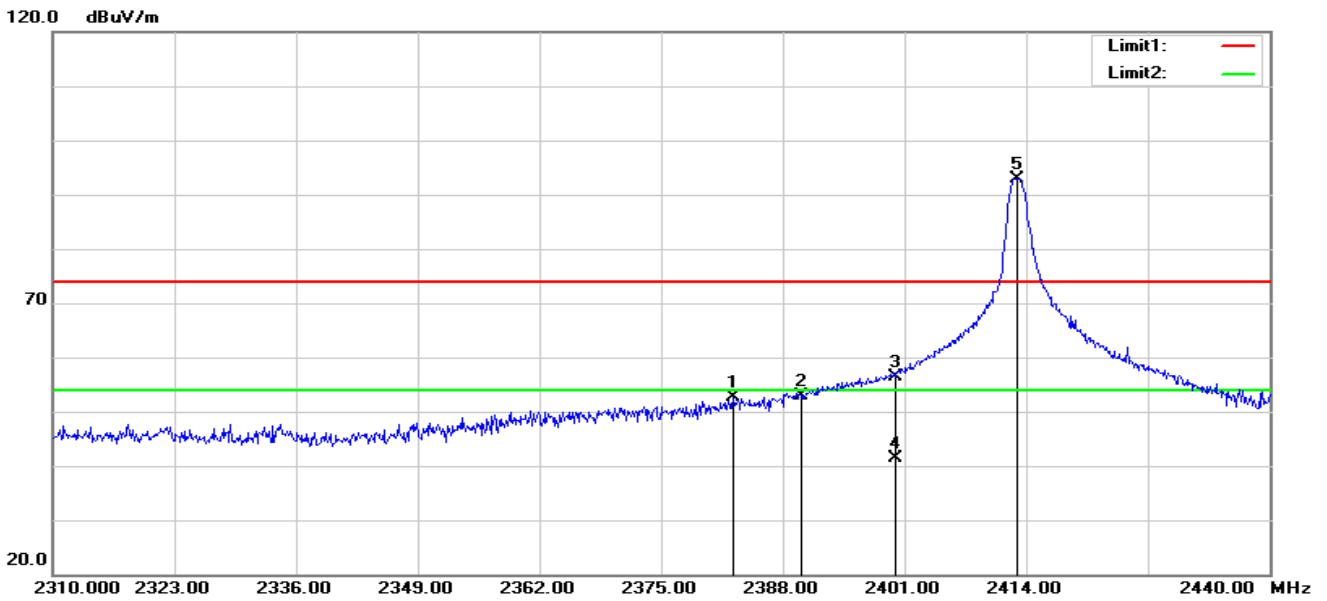
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.650	47.48	4.32	51.80	74.00	-22.20	peak
2	2390.000	46.25	4.34	50.59	74.00	-23.41	peak
3	2400.000	51.93	4.49	56.42	74.00	-17.58	peak
4	2400.000	37.54	4.49	42.03	54.00	-11.97	AVG

**Fundamental Frequency**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5	2412.996	86.73	4.49	-	91.22	114	-22.78	peak
5	2412.996	91.22	-	5.38	84.84	94	-8.16	AVG



Vertical



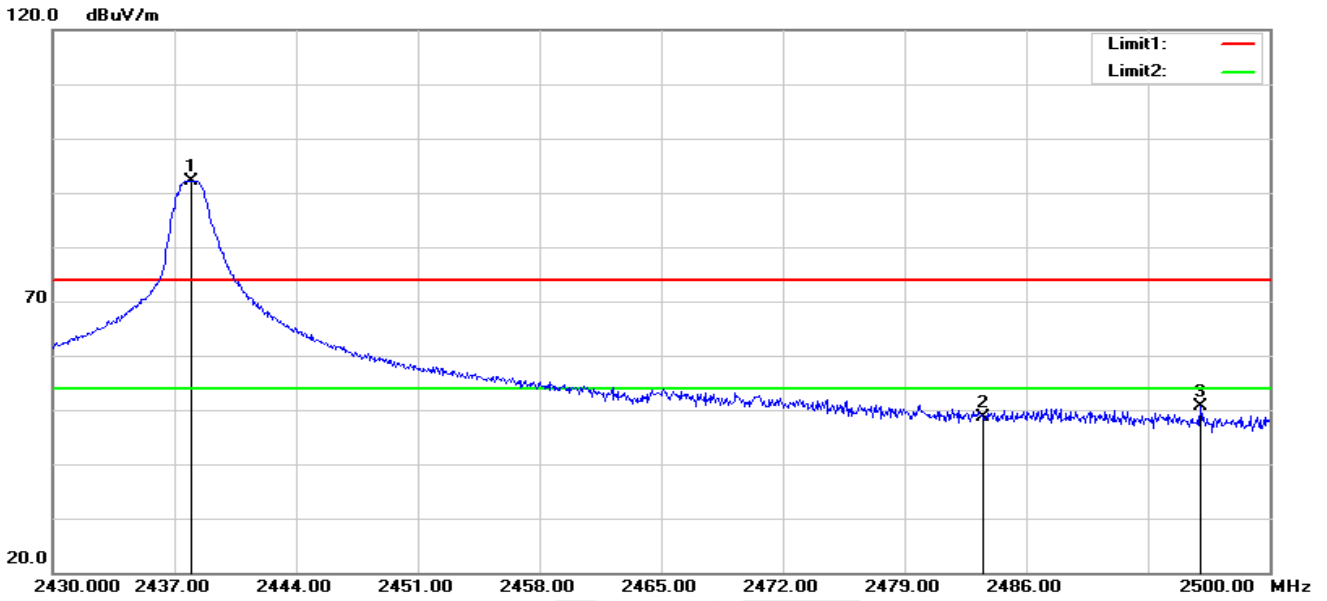
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.670	48.30	4.23	52.53	74.00	-21.47	peak
2	2390.000	48.52	4.34	52.86	74.00	-21.14	peak
3	2400.000	51.82	4.49	56.31	74.00	-17.69	peak
4	2400.000	36.87	4.49	41.36	54.00	-12.64	AVG

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5	2412.996	88.44	4.49	-	92.93	114	-21.07	peak
5	2412.996	92.93	-	5.38	87.55	94	-6.45	AVG



**Mid channel**  
Horizontal



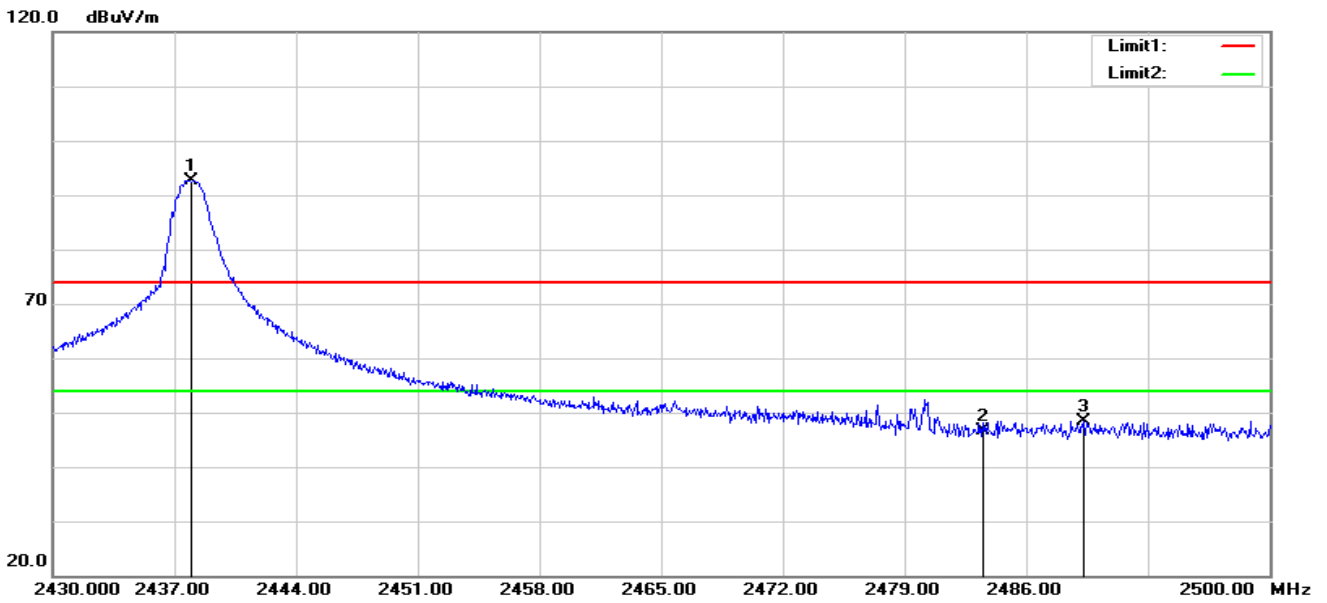
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2483.500	43.99	4.60	48.59	74.00	-25.41	peak
3	2496.010	45.92	4.64	50.56	74.00	-23.44	peak

**Fundamental Frequency**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2438.000	87.68	4.51	-	92.19	114	-21.81	peak
1	2438.000	92.19	-	5.38	86.81	94	-7.19	AVG



Vertical



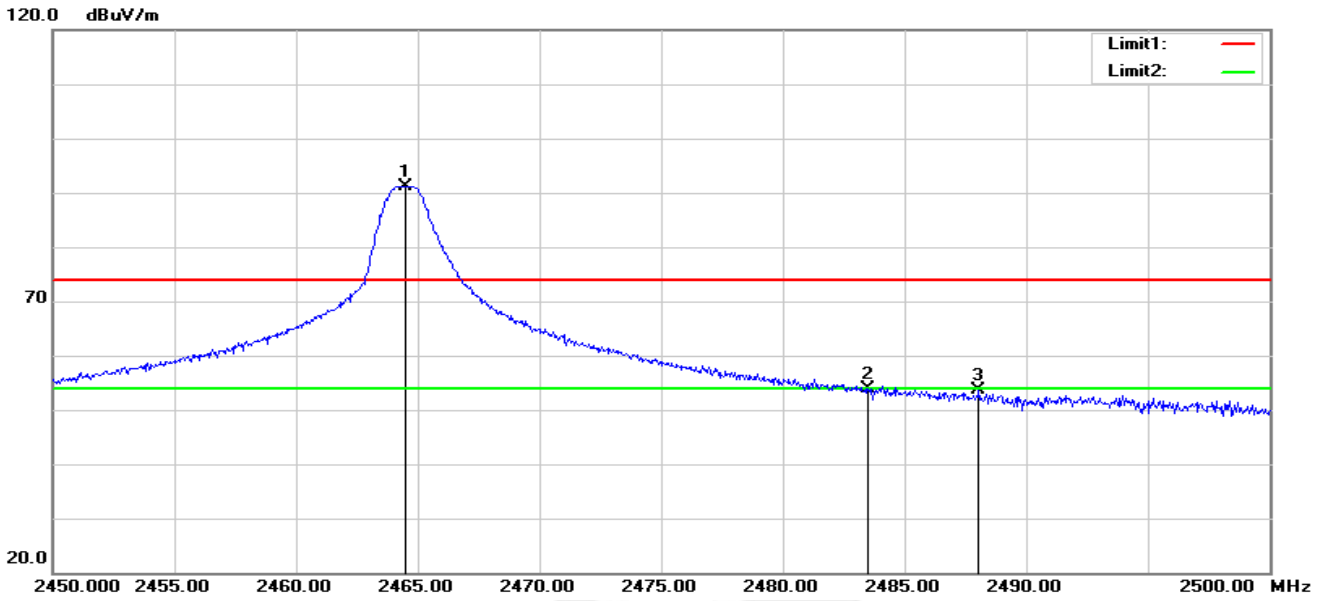
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2483.500	41.93	4.60	46.53	74.00	-27.47	peak
3	2489.290	43.72	4.62	48.34	74.00	-25.66	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2438.000	88.03	4.51	-	92.54	114	-21.46	peak
1	2438.000	92.54	-	5.38	87.16	94	-6.84	AVG



### High channel Horizontal



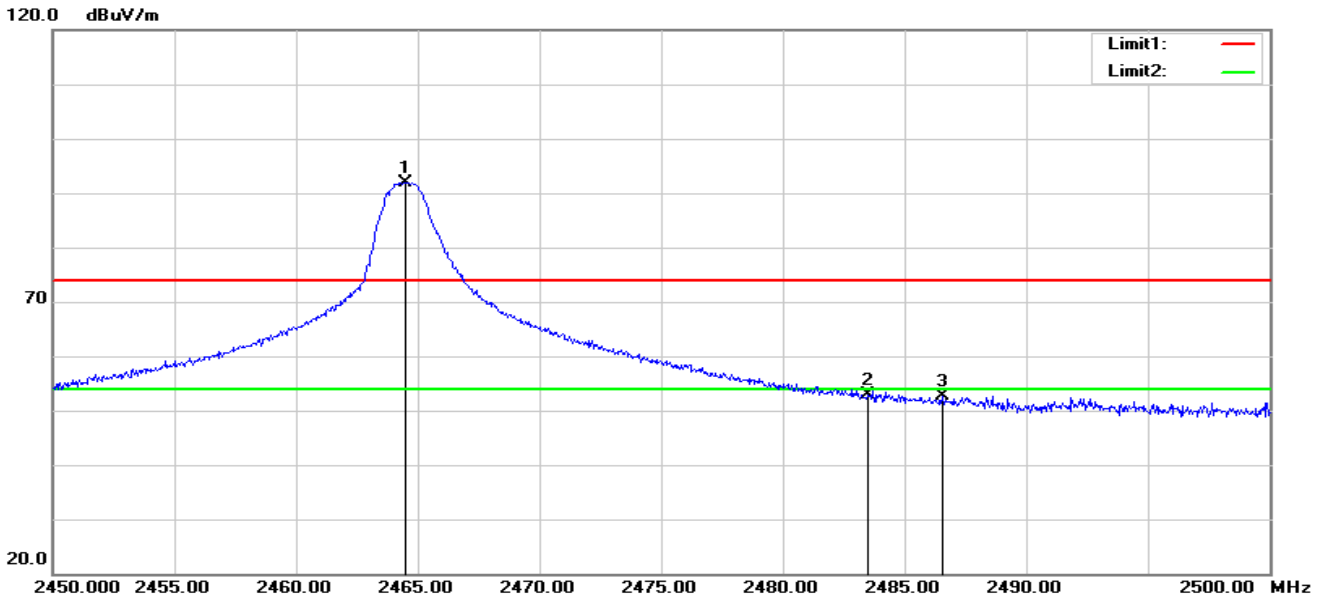
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2483.500	49.34	4.60	53.94	74.00	-20.06	peak
3	2488.050	49.08	4.62	53.70	74.00	-20.30	peak

### Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2464.500	86.65	4.56	-	91.21	114	-22.79	peak
1	2464.500	91.21	-	5.38	85.53	94	-8.17	AVG



Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2483.500	48.29	4.60	52.89	74.00	-21.11	peak
3	2486.550	48.06	4.61	52.67	74.00	-21.33	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	DCCF (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2464.500	87.22	4.56	-	91.78	114	-22.22	peak
1	2464.500	91.78	-	5.38	86.40	94	-7.60	AVG



#### 4. BANDWIDTH TEST

##### 4.1 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 :  $RBW= 30\text{KHz}$ ,  $VBW \geq RBW$ , Sweep time = Auto.

##### 4.2 TEST SETUP



##### 4.3 EUT OPERATION CONDITIONS

TX mode.



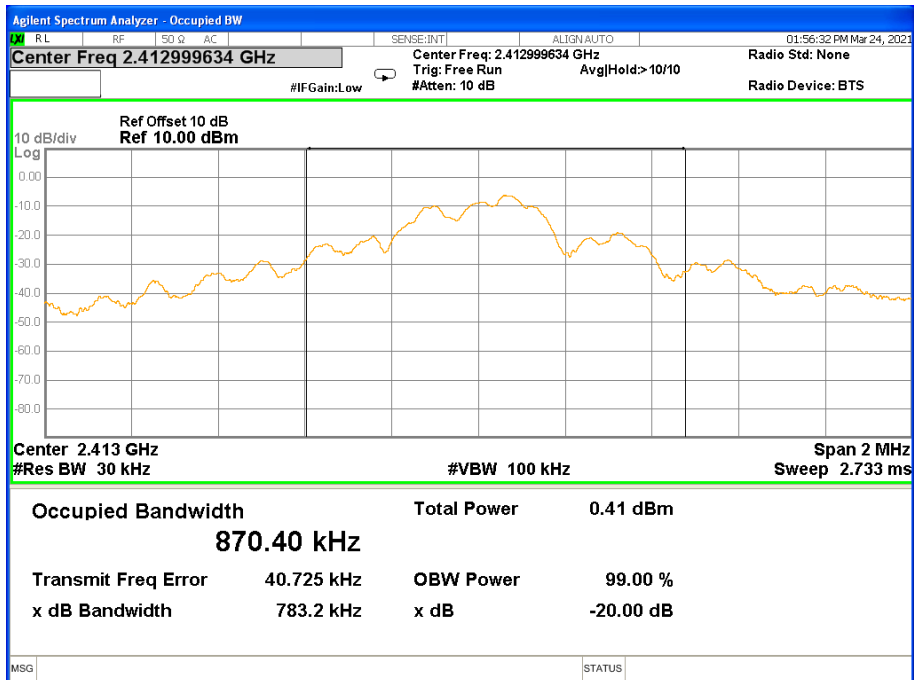


### 4.4 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	50%
Test Voltage:	DC 7.2V		

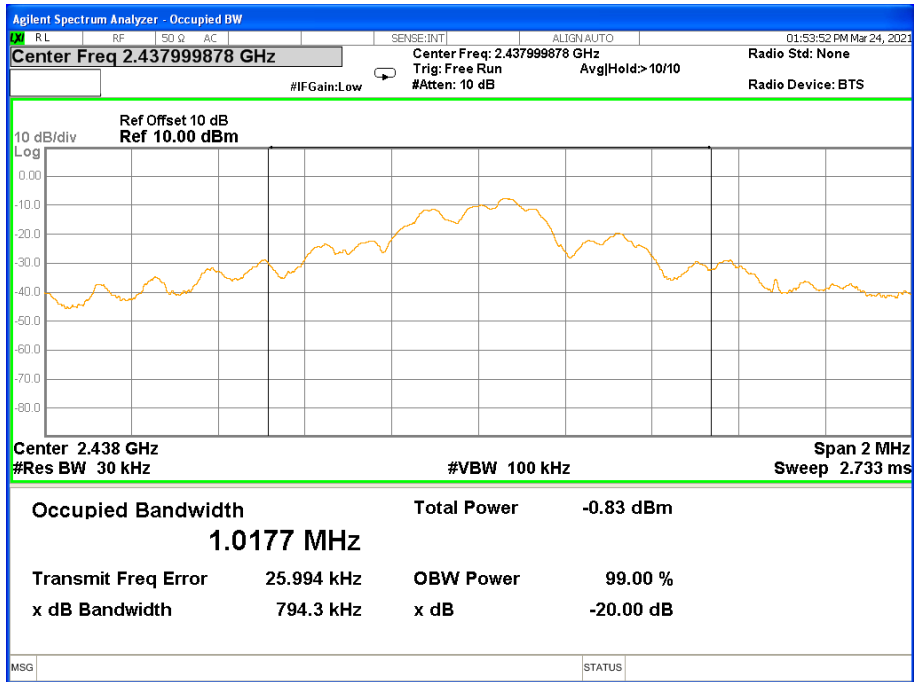
Frequency(MHz)	20 dB Bandwidth(MHz)	99% Bandwidth(MHz)
2412.999634	0.783	0.870
2437.999878	0.794	1.018
2464.499756	0.793	0.999

### Low Channel

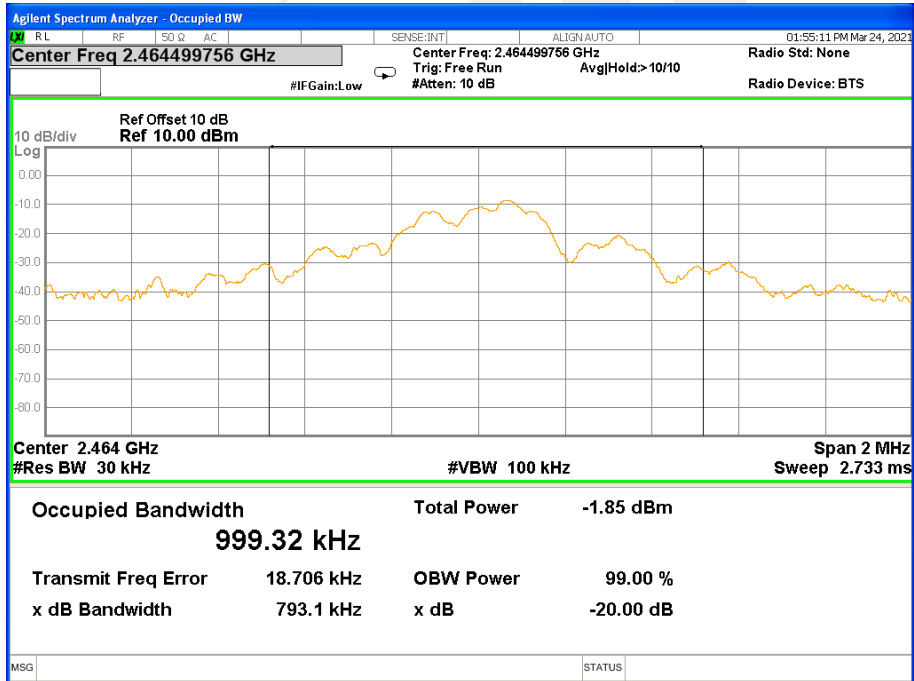




### Mid Channel



### High Channel





## 5. ANTENNA REQUIREMENT

### 5.1 STANDARD REQUIREMENT

According to the FCC Part 15 Paragraph 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.

### 5.2 EUT ANTENNA

The EUT antenna is PCB Antenna. It conforms to the standard requirements.





## APPENDIX- PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

XXXXXXXXEND OF THE REPORTXXXXXXXX

