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检测
TESTING
CNAS L7649

RADIO TEST REPORT

Report No.: STS2010172W01

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,Baoan District,Shenzhen 518103,China

Product Name:	TTL Li-ion Camera Flash
Brand Name:	Godox
Model Name:	V860IIIC
Series Model:	V860IIIN, V860IIIO, V860IIIP, V860IIIS, V860IIIF
FCC ID:	2ABYNV8603
Test Standard:	FCC Part 15.249

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Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ
Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail: sts@stsapp.com



**TEST RESULT CERTIFICATION**

Applicant's Name: GODOX Photo Equipment Co.,Ltd.
1st to 4th Floor,Building 2/1st to 4th Floor,Building 4 ,Yaochuan
Address: Industrial Zone,Tangwei Community,Fuhai Street,Baoan
District,Shenzhen 518103,China

Manufacture's Name: GODOX Photo Equipment Co.,Ltd.
1st to 4th Floor,Building 2/1st to 4th Floor,Building 4 ,Yaochuan
Address: Industrial Zone,Tangwei Community,Fuhai Street,Baoan
District,Shenzhen 518103,China

Product Description

Product Name: TTL Li-ion Camera Flash

Brand Name: Godox

Model Name: V860IIIC

Series Model: V860IIIN, V860IIIO, V860IIIP, V860IIIS, V860IIIF

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: 02 Nov. 2020

Date of performance of tests...: 02 Nov. 2020 ~ 27 Nov. 2020

Date of Issue: 27 Nov. 2020

Test Result.....: **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	27 Nov. 2020	STS2010172W01	ALL	Initial Issue





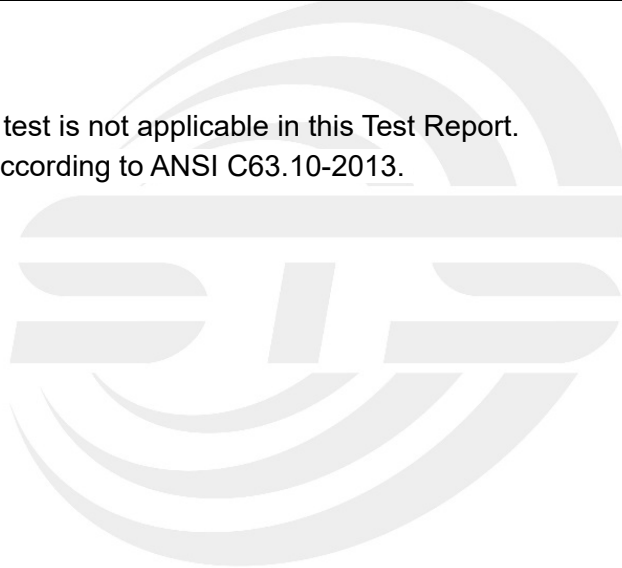
1. SUMMARY OF TEST RESULTS

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 expended 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 30-1GHz	$\pm 5.6\text{dB}$
4	All emissions, radiated 1G-6GHz	$\pm 5.5\text{dB}$
5	All emissions, radiated >6G	$\pm 5.8\text{dB}$
6	Conducted Emission (9KHz-150KHz)	$\pm 3.37\text{dB}$
7	Conducted Emission (150KHz-30MHz)	$\pm 3.83\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	TTL Li-ion Camera Flash	
Trade Name	Godox	
Model Name	V860IIIC	
Series Model	V860IIIN, V860IIIO, V860IIIP, V860IIIS, V860IIIF	
Model Difference	V860IIIC, V860IIIN, V860IIIO, V860IIIP, V860IIIS, V860IIIF only have a different hot shoe at the bottom, so that it can be used with Canon, Nikon, Olympus, Pentax, Sony, Fujifilm cameras, and the others are exactly the same.	
Product Description	The EUT is a TTL Li-ion Camera Flash	
	Operation Frequency:	2412.999634 ~ 2464.499756MHz
	Modulation Type:	MSK
	Antenna Designation:	Please refer to the Note 3.
	Antenna Gain(Peak):	0dBi/PCB
	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.	
Adapter	Input: DC5V-2.0A Output: DC8.4V-1.0A	
Battery	Rated Voltage: 7.2V Charge Limit: 7.2V Capacity: 2600mAh	
Hardware version number	20200728B02	
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					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412.999634	13	2432.999908	25	2452.999786
2	2414.499664	14	2434.499939	26	2454.499817
3	2415.999695	15	2435.999969	27	2455.999847
4	2418.000000	16	2437.999878	28	2457.999756
5	2419.499634	17	2439.499908	29	2459.499786
6	2420.999664	18	2440.999939	30	2460.999817
7	2422.999969	19	2442.999847	31	2462.999725
8	2424.500000	20	2444.499878	32	2464.499756
9	2425.999634	21	2445.999908	33	--
10	2427.999939	22	2,447.999817	34	--
11	2429.499969	23	2449.499847	35	--
12	2431.000000	24	2450.999878	36	--

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	Godox	V860IIIC	PCB	N/A	0dBi	Antenna

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

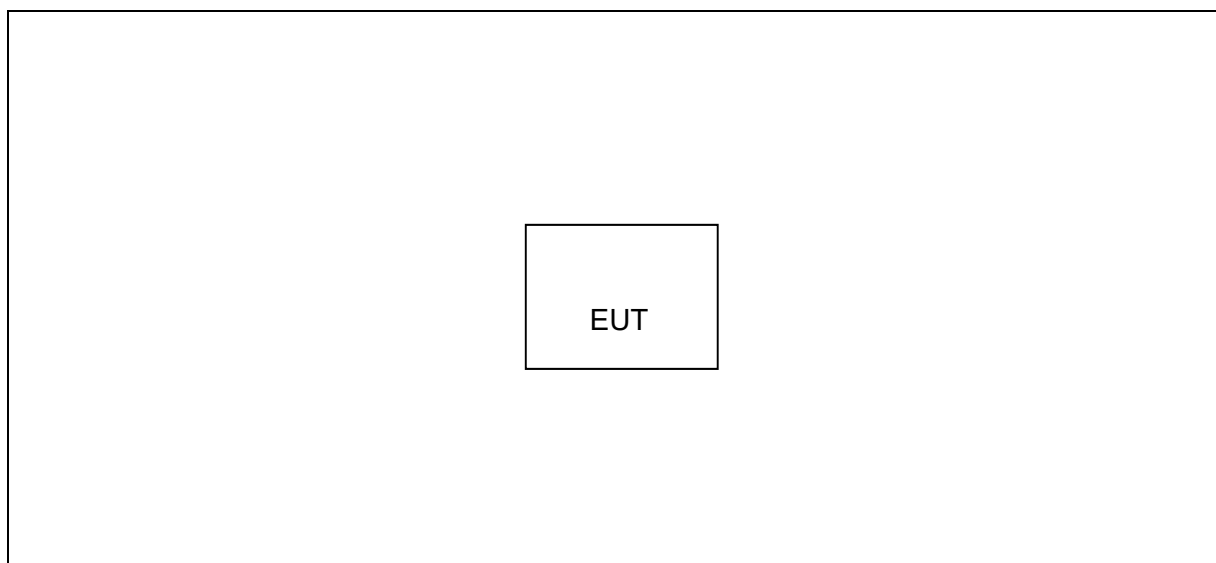
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
Other SRD	2.4G	MSK	0	Default	No software is required, the EUT has signal transmission when it is powered on

2.4 BLOCK DIGRAM 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





2.5 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
N/A	N/A	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) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.6EQUIPMENTS 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	2019.07.11	2021.07.10
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-3GHz)	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 RE)			



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	2020.03.05	2021.03.04
Temperature & Humidity	HH660	Mieo	N/A	2020.10.13	2021.10.12
MIMO Power measurement test Set	Keysight	U2021XA	MY55520005	2020.10.10	2021.10.09
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.

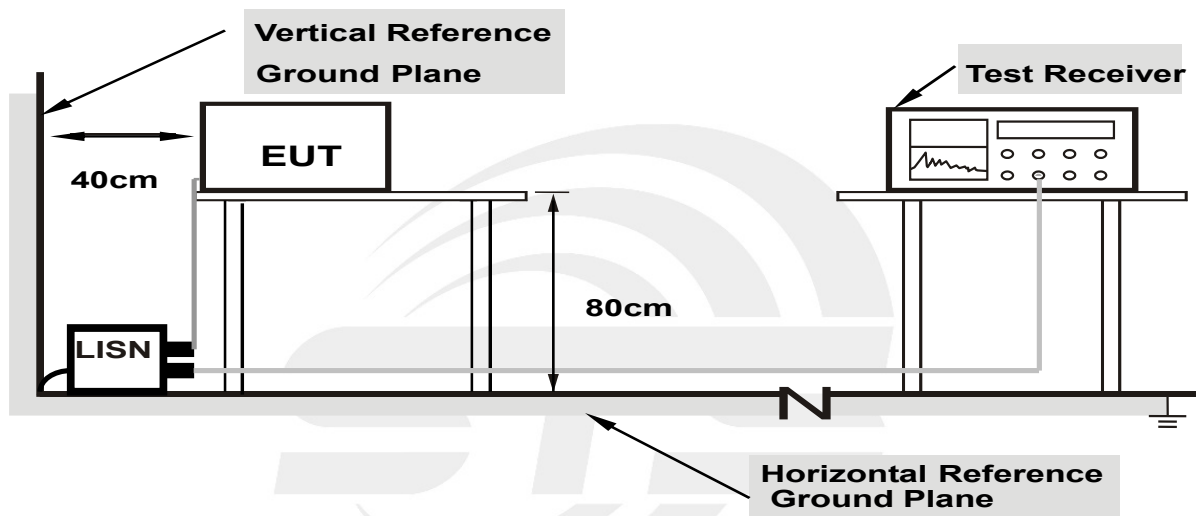
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

- 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.
- 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.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- 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 cm 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:	22.8(C)	Relative Humidity:	66%RH
Test Voltage:	N/A	Phase:	L/N
Test Mode:	N/A		

Note: EUT is only power by Battery, So it is not applicable for this test.



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 (micorvolts/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(μV)/m (Peak) 54.0 dB(μV)/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.

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

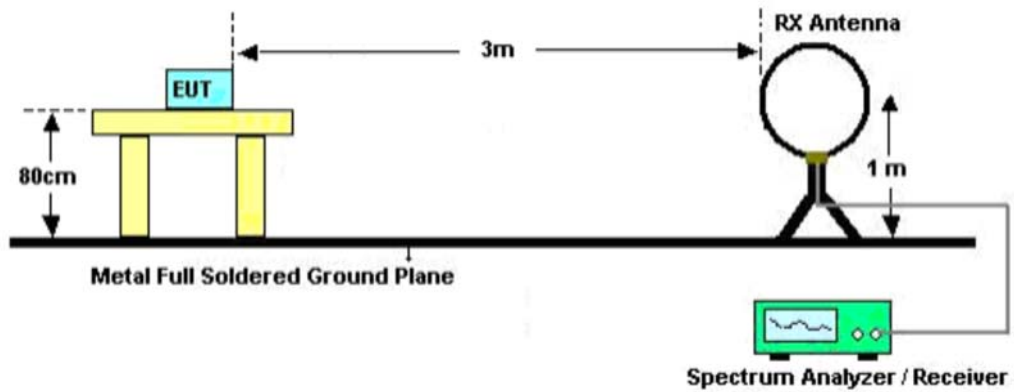
- The measuring distance of 3m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation (Below 1GHz)
 - The measuring distance of 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)
 - 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.
 - 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.
 - All readings are peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading complies with the QP limits and then QP Mode measurement didn't perform (Below 1GHz)
 - All readings are Peak mode value unless otherwise stated AVG in column of Note. If the Peak mode measured value complies 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 axes. The worst case emissions were reported.

3.2.3 DEVIATION FROM TEST STANDARD

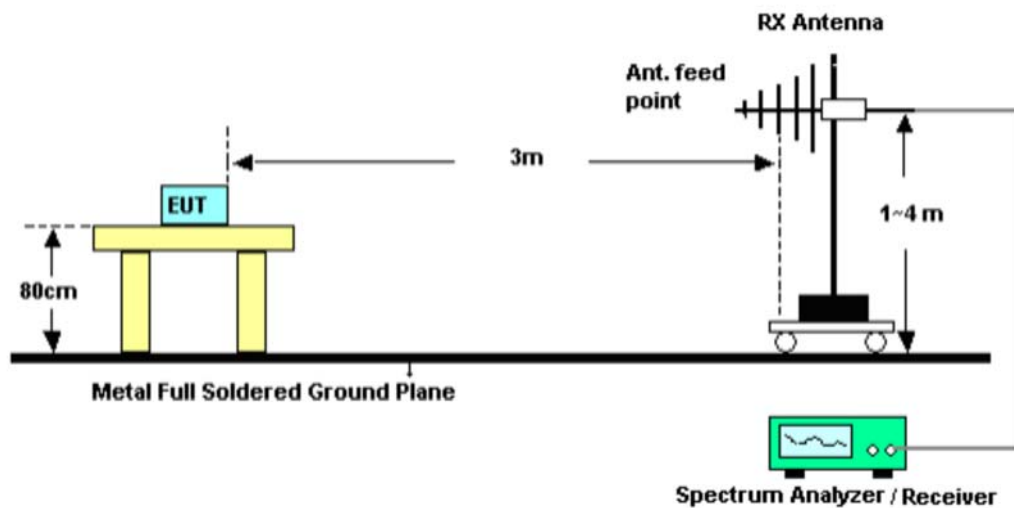
No deviation

3.2.4 TEST SETUP

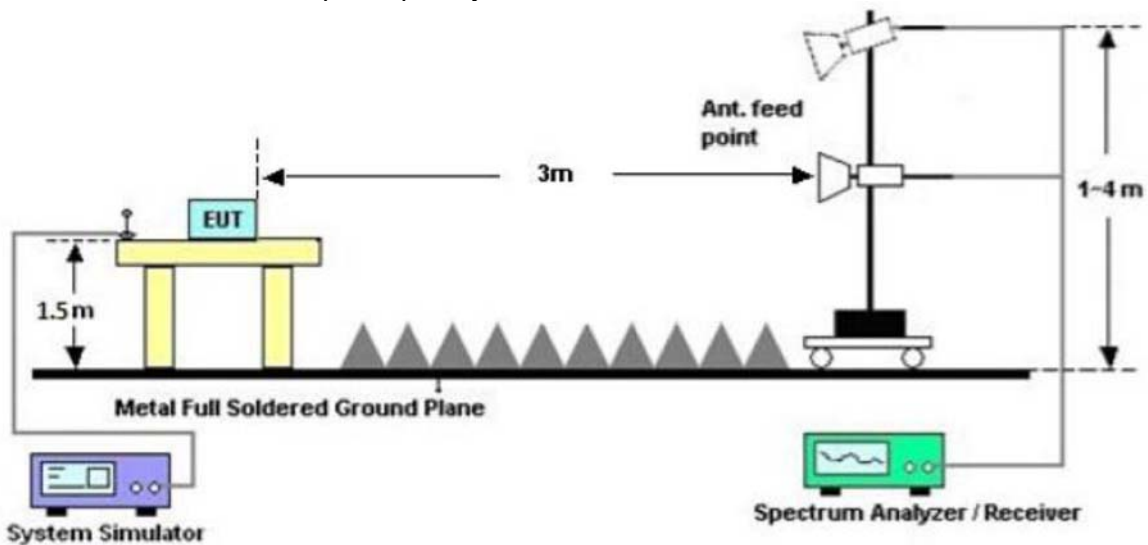
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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)	(dBμV/m)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dBμV/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		

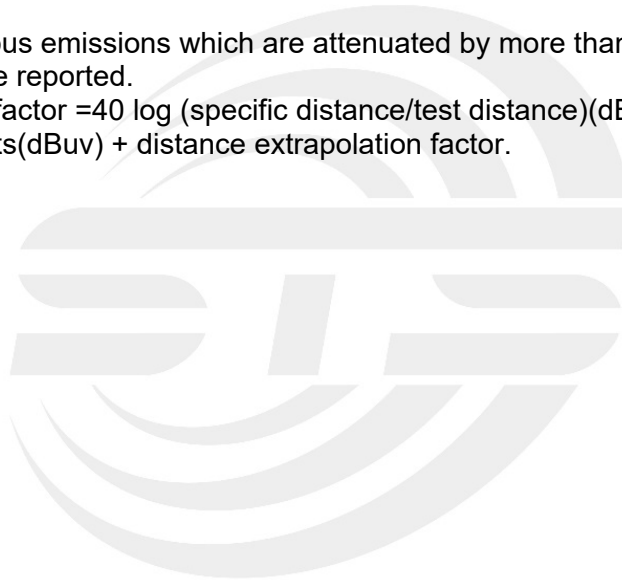
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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

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





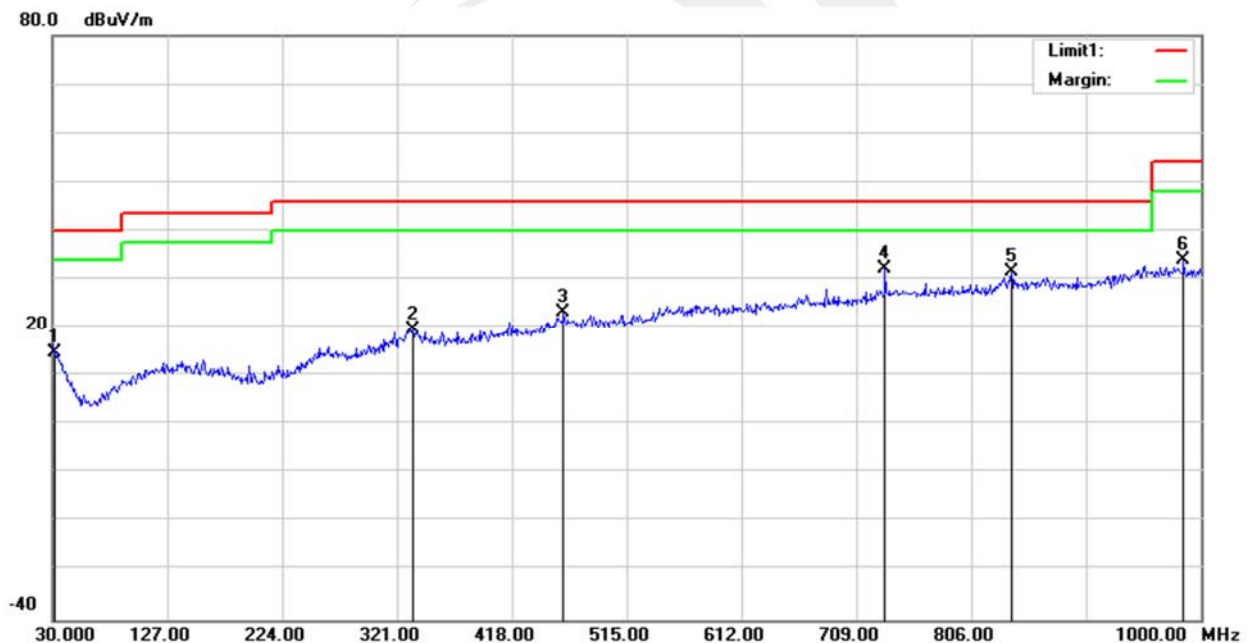
Between 30MHz – 1000 MHz Radiation Spurious

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	31.9400	28.67	-13.86	14.81	40.00	-25.19	QP
2	334.5800	32.98	-13.56	19.42	46.00	-26.58	QP
3	461.6500	32.51	-9.39	23.12	46.00	-22.88	QP
4	733.2500	34.44	-2.35	32.09	46.00	-13.91	QP
5	839.9500	31.98	-0.34	31.64	46.00	-14.36	QP
6	985.4500	31.68	2.33	34.01	54.00	-19.99	QP

Remark:

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



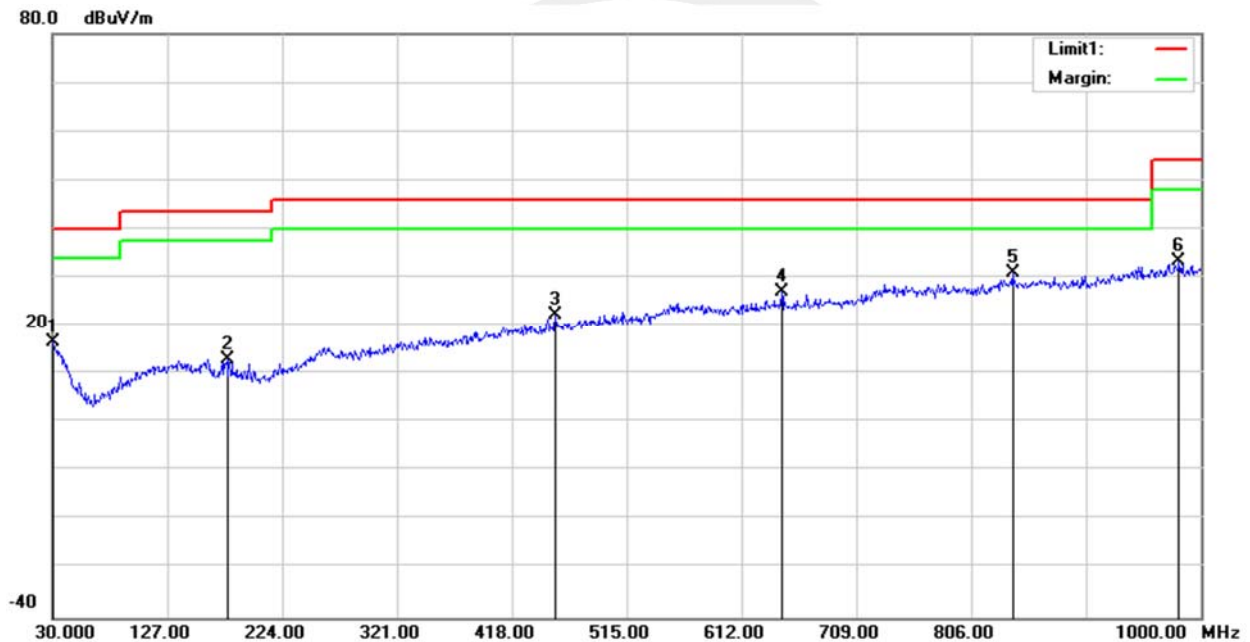


Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	DC 7.2V	Phase:	Vertical
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.9700	29.95	-13.35	16.60	40.00	-23.40	QP
2	177.4400	33.00	-20.03	12.97	43.50	-30.53	QP
3	454.8600	31.74	-9.57	22.17	46.00	-23.83	QP
4	645.9500	31.97	-4.87	27.10	46.00	-18.90	QP
5	840.9200	31.19	-0.38	30.81	46.00	-15.19	QP
6	981.5700	30.82	2.57	33.39	54.00	-20.61	QP

Remark:

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





Above 1G Radiation Spurious

MSK--Low
PK

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4826.00	68.34	PK	50.33	8.84	31.22	-10.27	58.07	74	-15.93	H
4826.00	67.50	PK	50.33	8.84	31.22	-10.27	57.23	74	-16.77	V
7239.19	67.15	PK	55.48	9.31	34.05	-12.12	55.03	74	-18.97	H
7239.19	65.43	PK	55.48	9.31	34.05	-12.12	53.31	74	-20.69	V
9651.91	69.85	PK	59.13	9.89	36.99	-12.25	57.60	74	-16.40	H
9651.91	69.14	PK	59.13	9.89	36.99	-12.25	56.89	74	-17.11	V

AV

Frequency	PK Reading	Duty cycle factor	AV Reading	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
						Limit	Margin	Polar
(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4826.00	68.34	4.75	63.59	-10.27	53.32	54.00	-0.68	H
4826.00	67.50	4.75	62.75	-10.27	52.48	54.00	-1.52	V
7239.19	67.15	4.75	62.40	-12.12	50.28	54.00	-3.72	H
7239.19	65.43	4.75	60.68	-12.12	48.56	54.00	-5.44	V
9651.91	69.85	4.75	65.10	-12.25	52.85	54.00	-1.15	H
9651.91	69.14	4.75	64.39	-12.25	52.14	54.00	-1.86	V

AV = Peak +20Log10(duty cycle factor) =PK-4.75

**MSK--Mid****PK**

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4875.92	68.29	PK	50.33	8.84	31.22	-10.27	58.02	74	-15.98	H
4875.92	68.55	PK	50.33	8.84	31.22	-10.27	58.28	74	-15.72	V
7314.26	67.42	PK	55.48	9.31	34.05	-12.12	55.30	74	-18.70	H
7314.26	65.75	PK	55.48	9.31	34.05	-12.12	53.63	74	-20.37	V
9751.94	69.91	PK	59.13	9.89	36.99	-12.25	57.66	74	-16.34	H
9751.94	69.54	PK	59.13	9.89	36.99	-12.25	57.29	74	-16.71	V

AV

Frequency	PK Reading	Duty cycle factor	AV Reading	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
						Limit	Margin	Polar
(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4875.92	68.29	4.75	63.54	-10.27	53.27	54.00	-0.73	H
4875.92	68.55	4.75	63.80	-10.27	53.53	54.00	-0.47	V
7314.26	67.42	4.75	62.67	-12.12	50.55	54.00	-3.45	H
7314.26	65.75	4.75	61.00	-12.12	48.88	54.00	-5.12	V
9751.94	69.91	4.75	65.16	-12.25	52.91	54.00	-1.09	H
9751.94	69.54	4.75	64.79	-12.25	52.54	54.00	-1.46	V

AV = Peak +20Log10(duty cycle factor) =PK-4.75

**MSK--High
PK**

Frequency	Meter Reading	Detector	Amplifier	Loss	Antenna Factor	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
								Limit	Margin	Polar
(MHz)	(dBμV/m)	(PK/QP/AV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4929.06	68.84	PK	50.33	8.84	31.22	-10.27	58.57	74	-15.43	H
4929.06	68.57	PK	50.33	8.84	31.22	-10.27	58.30	74	-15.70	V
7393.52	67.34	PK	55.48	9.31	34.05	-12.12	55.22	74	-18.78	H
7393.52	65.41	PK	55.48	9.31	34.05	-12.12	53.29	74	-20.71	V
9858.01	68.33	PK	59.13	9.89	36.99	-12.25	56.08	74	-17.92	H
9858.01	69.26	PK	59.13	9.89	36.99	-12.25	57.01	74	-16.99	V

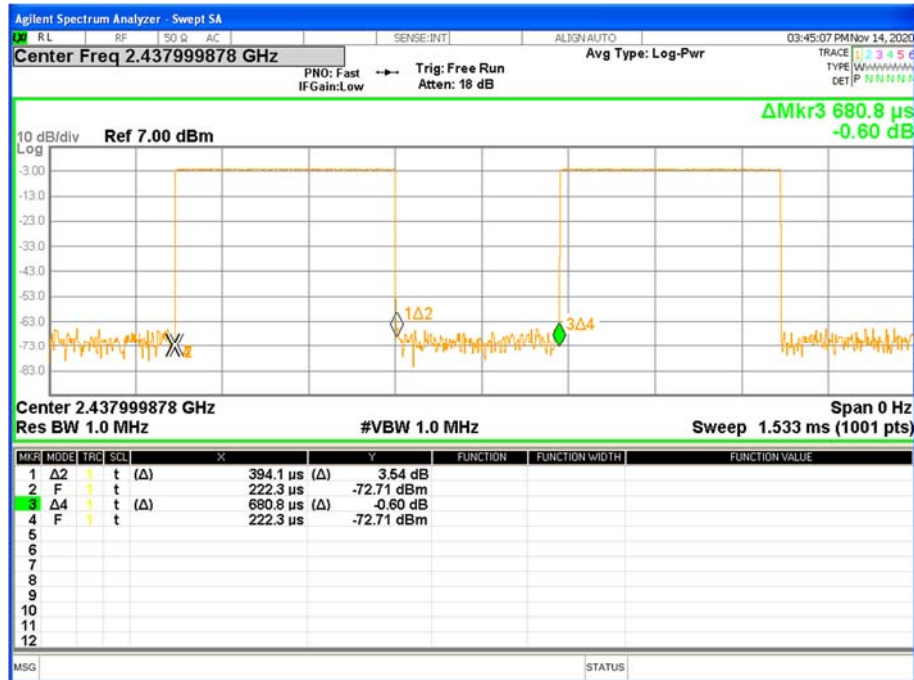
AV

Frequency	PK Reading	Duty cycle factor	AV Reading	Corrected Factor	Corrected Amplitude	FCC Part 15.249/15.209/205		RX Antenna
						Limit	Margin	Polar
(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	(H/V)
4929.06	68.84	4.75	64.09	-10.27	53.82	54.00	-0.18	H
4929.06	68.57	4.75	63.82	-10.27	53.55	54.00	-0.45	V
7393.52	67.34	4.75	62.59	-12.12	50.47	54.00	-3.53	H
7393.52	65.41	4.75	60.66	-12.12	48.54	54.00	-5.46	V
9858.01	68.33	4.75	63.58	-12.25	51.33	54.00	-2.67	H
9858.01	69.26	4.75	64.51	-12.25	52.26	54.00	-1.74	V

AV = Peak +20Log10(duty cycle factor) =PK-4.75



Duty cycle

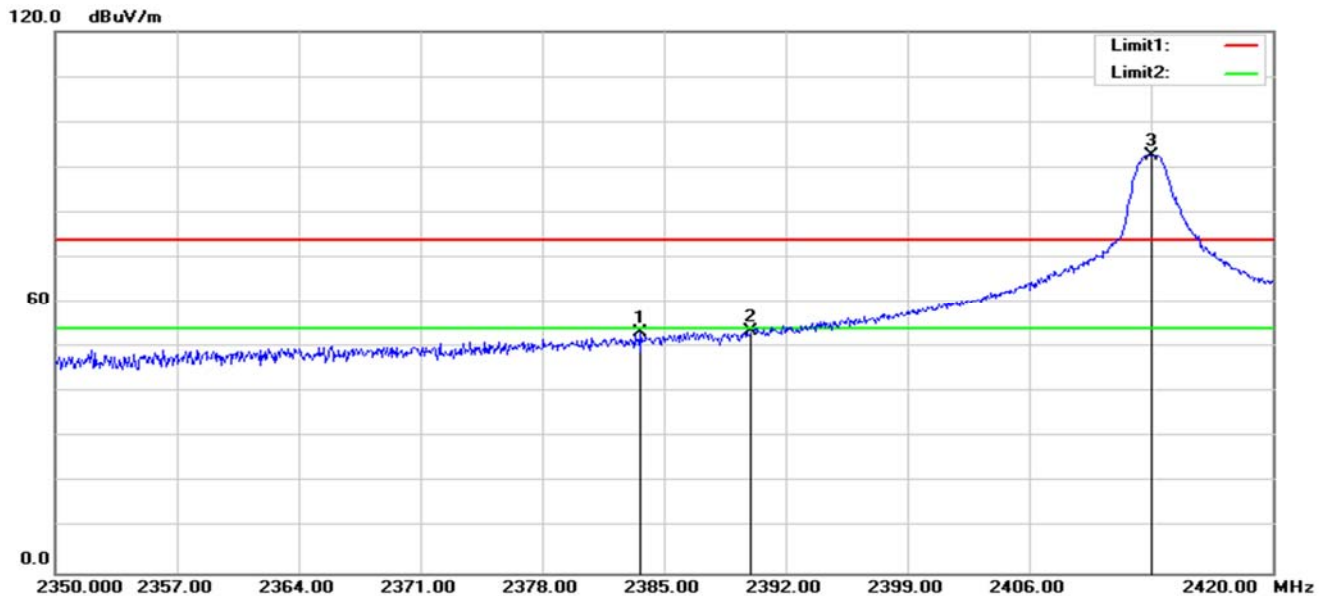


Ton	Tp	Duty factor(dB)
394.1	680.8	4.75

Note: Duty Factor=20*LOG10(1/(Ton/Tp))



(Radiation Band edge)

Low channel
Horizontal

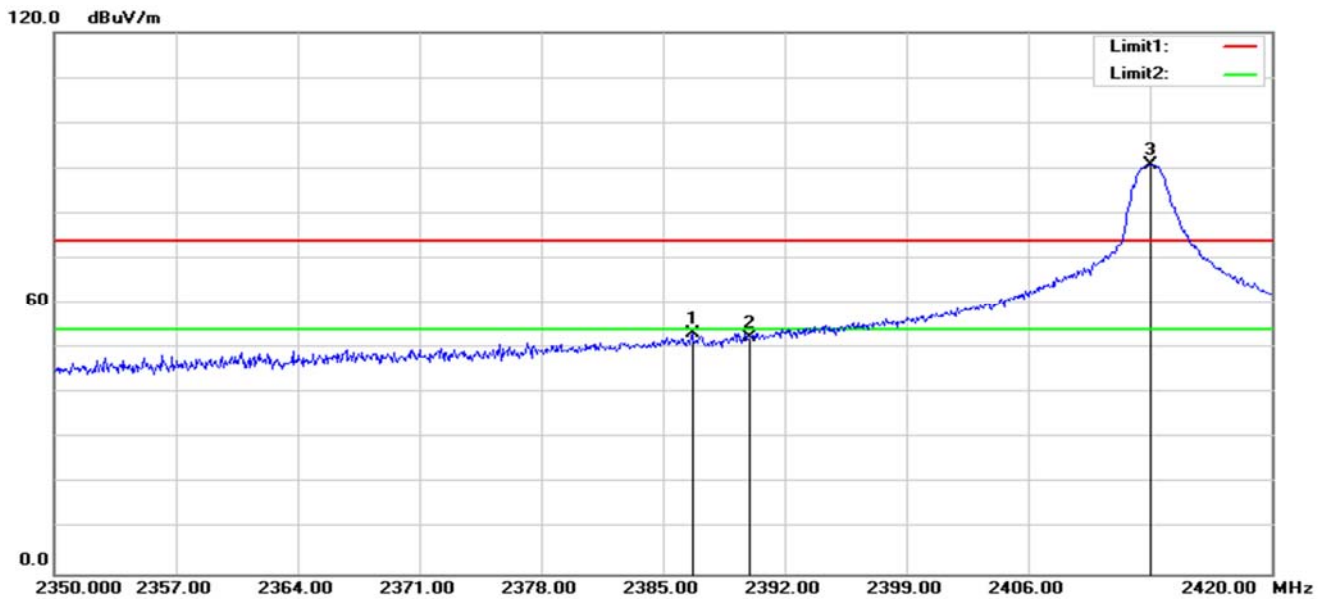
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.670	49.10	4.24	53.34	74.00	-20.66	peak
2	2390.000	49.11	4.34	53.45	74.00	-20.55	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3	2413.000	88.13	4.49	-	92.62	114.00	-21.38	peak
4	2413.000	88.13	4.49	4.75	87.87	94.00	-6.13	AV



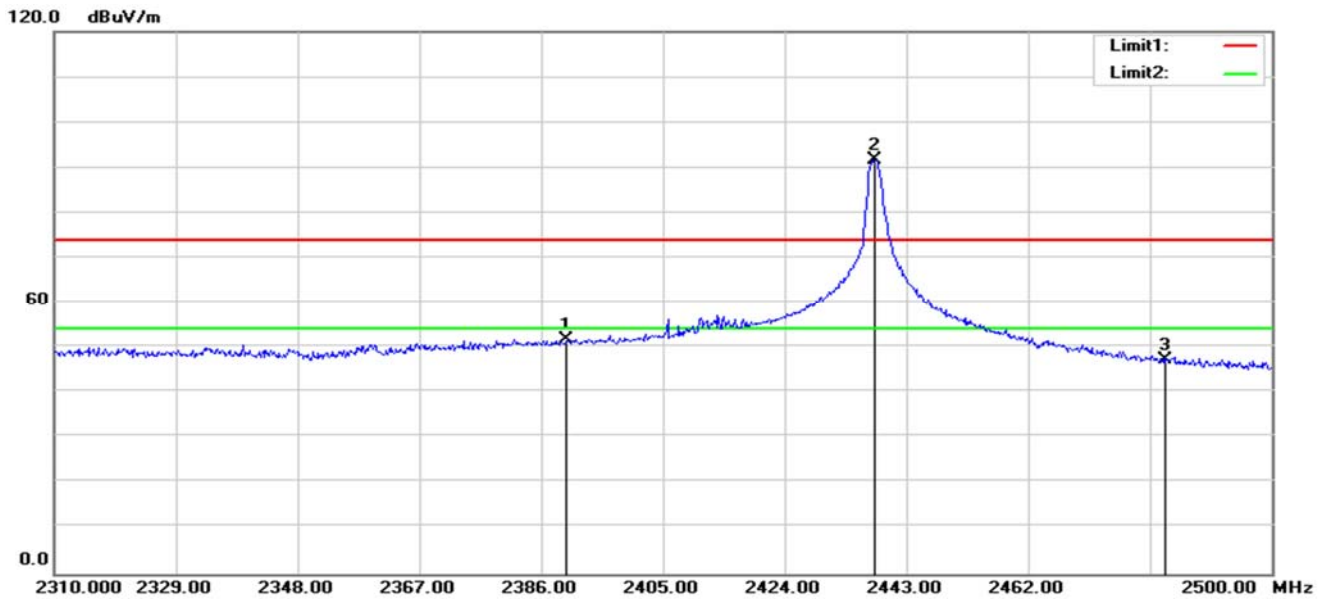
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.680	48.96	4.29	53.25	74.00	-20.75	peak
2	2390.000	47.98	4.34	52.32	74.00	-21.68	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
3	2413.000	86.20	4.49	-	90.69	114.00	-23.31	peak
4	2413.000	86.20	4.49	4.75	85.94	94.00	-8.06	AV

**Mid channel**
Horizontal

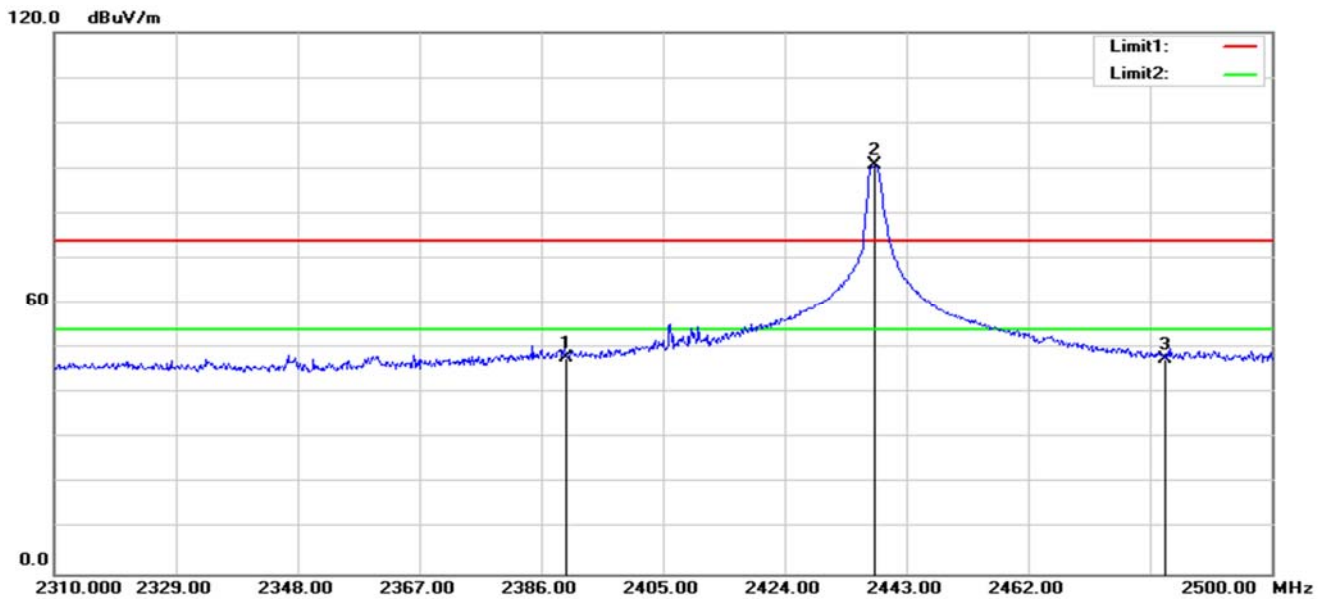
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	47.44	4.34	51.78	74.00	-22.22	peak
3	2483.500	42.54	4.60	47.14	74.00	-26.86	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2438.000	87.06	4.51	-	91.57	114.00	-22.43	peak
4	2438.000	87.06	4.51	4.75	86.82	94.00	-7.18	AV



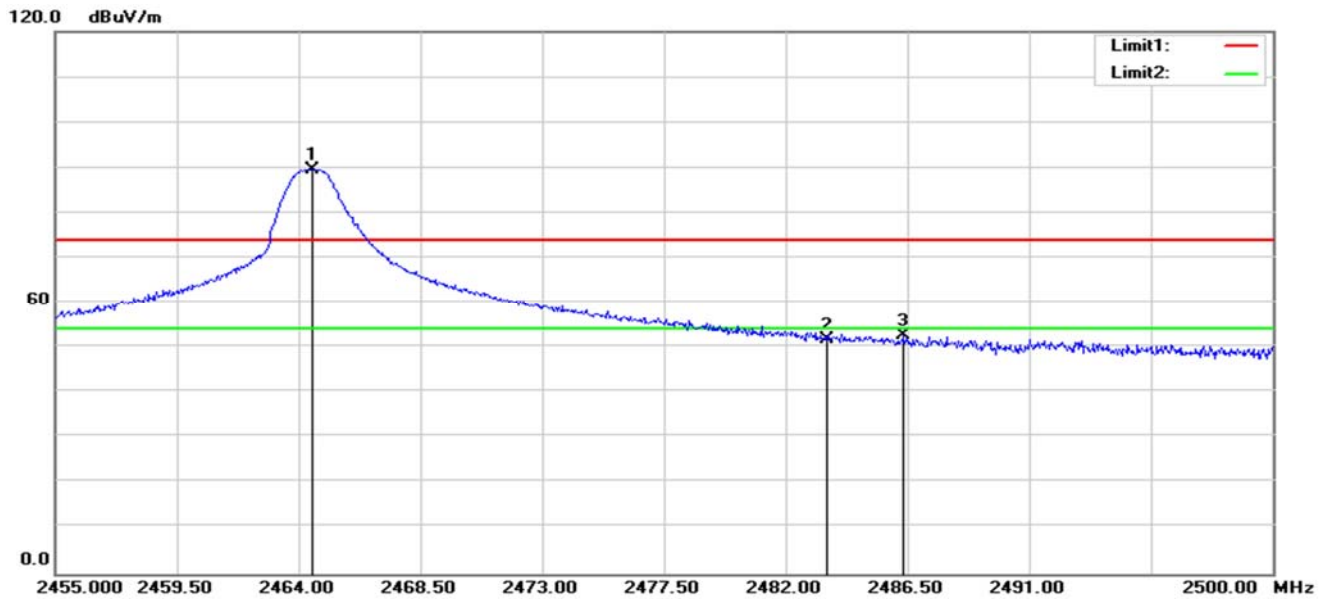
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	43.49	4.34	47.83	74.00	-26.17	peak
3	2483.500	42.87	4.60	47.47	74.00	-26.53	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2438.000	86.10	4.51	-	90.61	114.00	-23.39	peak
4	2438.000	86.10	4.51	4.75	85.86	94.00	-8.14	AV

**High channel**
Horizontal

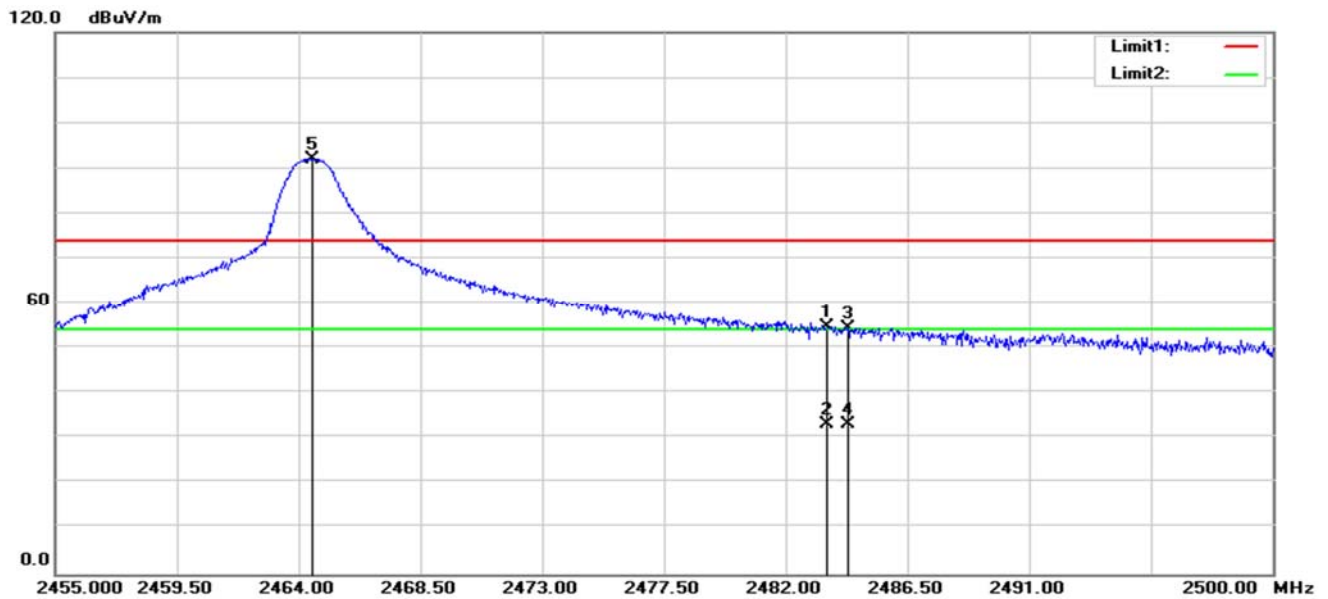
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2	2483.500	47.26	4.60	51.86	74.00	-22.14	peak
3	2486.365	48.15	4.61	52.76	74.00	-21.24	peak

Fundamental Frequency

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2464.500	85.00	4.56	-	89.56	114.00	-24.44	peak
4	2464.500	85.00	4.56	4.75	84.81	94.00	-9.19	AV



Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	50.05	4.60	54.65	74.00	-19.35	peak
2	2483.500	28.54	4.60	33.14	54.00	-20.86	AVG
3	2484.295	49.99	4.61	54.60	74.00	-19.40	peak
4	2484.295	28.46	4.61	33.07	54.00	-20.93	AVG

Fundamental Frequency

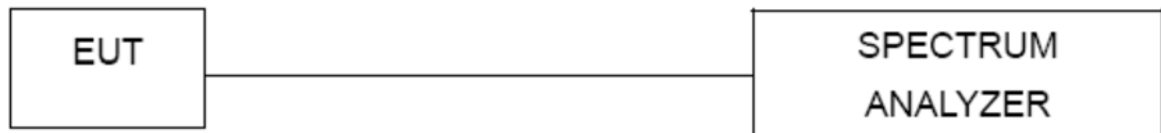
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Duty cycle Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5	2464.500	87.31	4.56	-	91.87	114.00	-22.13	peak
6	2464.500	87.31	4.56	4.75	87.12	94.00	-6.88	AV

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.



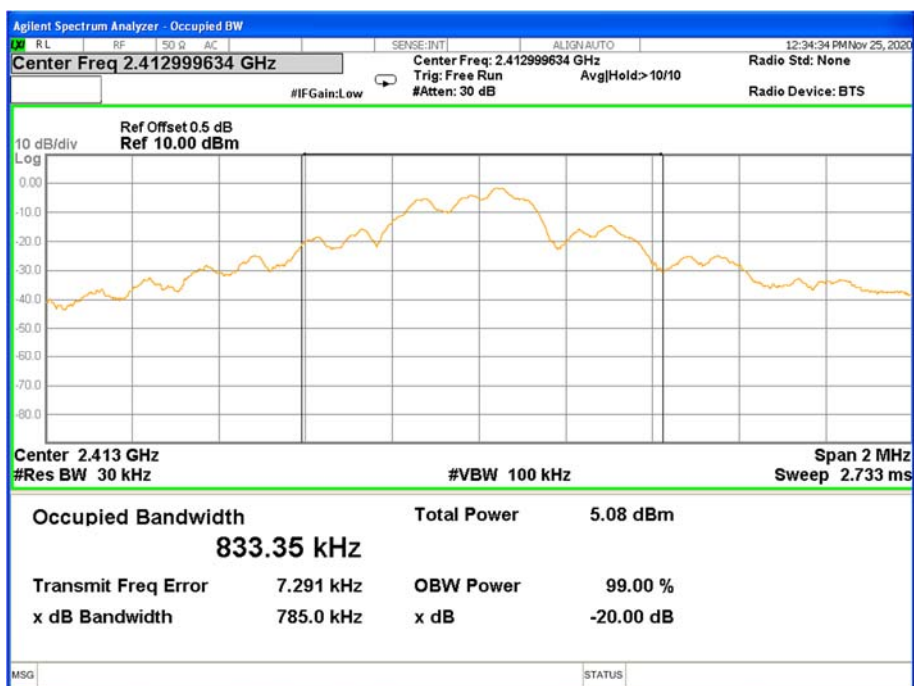


4.4 TEST RESULTS

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

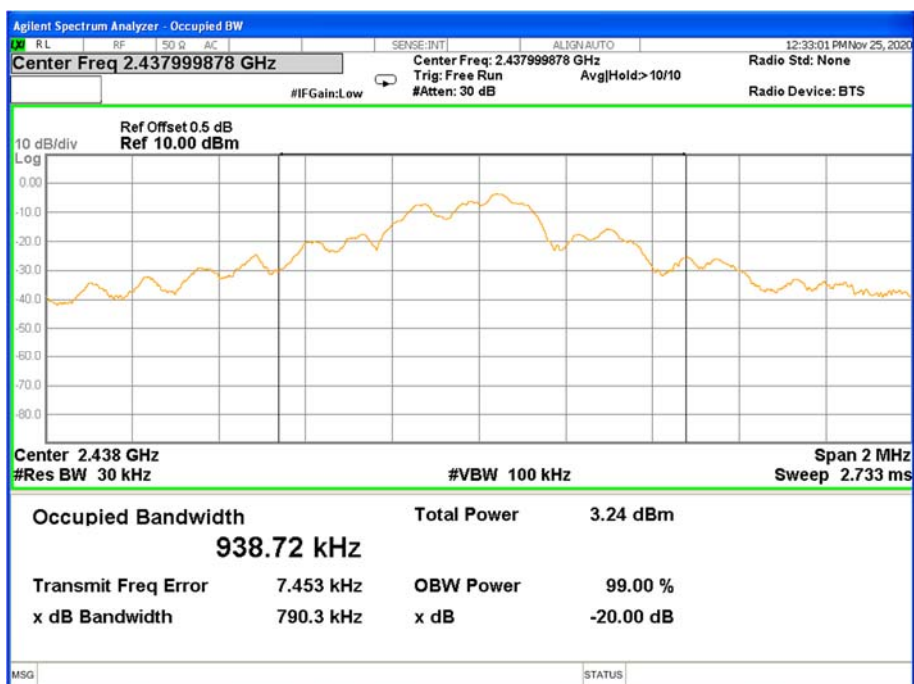
Test Channel	Frequency(MHz)	20 dB Bandwidth(KHz)	99% Bandwidth(KHz)
CH01	2413	785.0	833.35
CH02	2438	790.3	938.72
CH03	2464	774.16	777.16

Low Channel

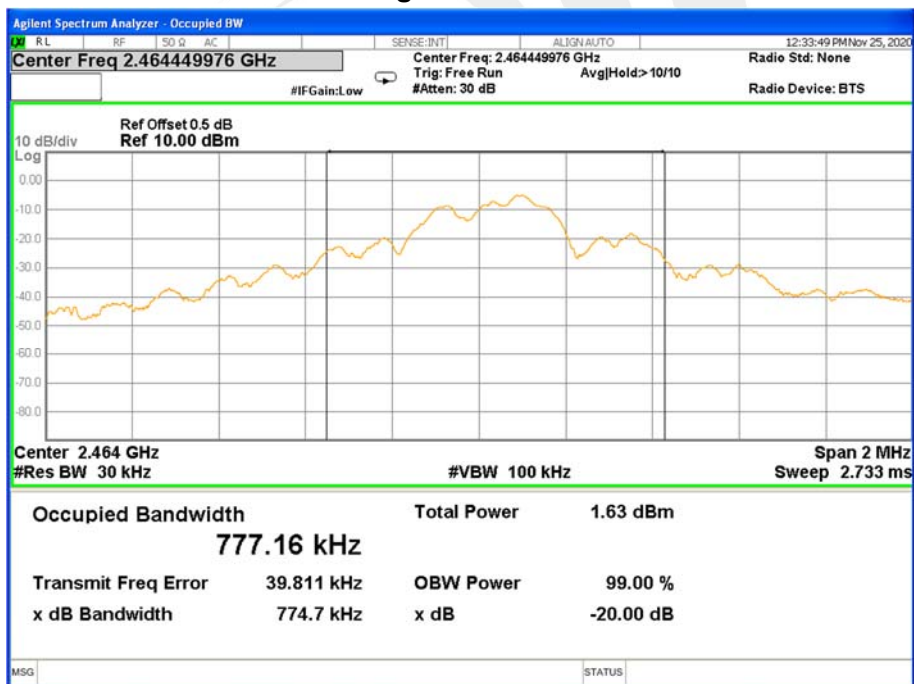




Mid Channel



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

