

TEST REPORT

Reference No...... : WTN16S0653066-4E
FCC ID : 2AFOYD85XUCNN
Applicant..... : Le Shi Zhi Xin Electronic Technology (Tian jin) Limited
Address..... : 201-427 2F B1 District, Anime building, No.126 Anime Middle Road,
Eco-city Tianjin, China
Manufacturer : Coretronic (Guangzhou) Co.,LTD.
Address..... : Building 1, No.2 Guoyuan 1st Road, East Zone, Guangzhou Economic
and Technological Development District, Guangzhou, Guangdong
Province, P.R.China
Product Name..... : LED TV
Model No...... : D85XUCNN
Brand..... : N/A
Standards..... : FCC CFR47 Part 15 Section 15.247:2015
Date of Receipt sample : Jul. 14, 2016
Date of Test : Jul. 15 – Aug. 05, 2016
Date of Issue..... : Aug. 06, 2016
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

Waltek Services (Shenzhen) Co., Ltd.

Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen,
Guangdong, China

Tel :+86-755-83551033

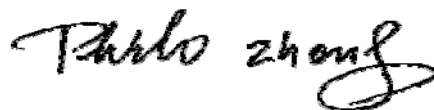
Fax:+86-755-83552400

Compiled by:



Zero Zhou / Test Engineer

Approved by:



Philo Zhong / Manager

2 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.205(a) 15.209(a)	PASS
Conducted Emissions	15.207(a)	PASS
6dB Bandwidth	15.247(a)(2)	PASS
Maximum Peak Output Power	15.247(b)(3),(4)	PASS
Power Spectral Density	15.247(e)	PASS
Band Edge	15.247(d)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

3 Contents

	Page
1 COVER PAGE.....	1
2 TEST SUMMARY	2
3 CONTENTS	3
4 GENERAL INFORMATION.....	4
4.1 GENERAL DESCRIPTION OF E.U.T.	4
4.2 DETAILS OF E.U.T.	4
4.3 CHANNEL LIST	5
4.4 TEST MODE	5
4.5 TEST FACILITY.....	5
5 EQUIPMENT USED DURING TEST	6
5.1 EQUIPMENTS LIST	6
5.2 MEASUREMENT UNCERTAINTY	7
5.3 TEST EQUIPMENT CALIBRATION	7
6 CONDUCTED EMISSIONS.....	8
6.1 E.U.T. OPERATION	8
6.2 EUT SETUP.....	8
6.3 MEASUREMENT DESCRIPTION	8
6.4 CONDUCTED EMISSION TEST RESULT	9
7 RADIATED EMISSIONS.....	11
7.1 EUT OPERATION.....	11
7.2 TEST SETUP	12
7.3 SPECTRUM ANALYZER SETUP	13
7.4 TEST PROCEDURE	14
7.5 SUMMARY OF TEST RESULTS	15
8 BAND EDGE MEASUREMENT	18
8.1 TEST PRODUCE.....	18
8.2 TEST RESULT	19
9 6 DB BANDWIDTH MEASUREMENT	20
9.1 TEST PROCEDURE	20
9.2 TEST RESULT	20
10 MAXIMUM PEAK OUTPUT POWER	22
10.1 TEST PROCEDURE.....	22
10.2 TEST RESULT	22
11 POWER SPECTRAL DENSITY	24
11.1 TEST PROCEDURE.....	24
11.2 TEST RESULT	24
12 ANTENNA REQUIREMENT	26
13 RF EXPOSURE.....	27
13.1 REQUIREMENTS.....	27
13.2 THE PROCEDURES / LIMIT	27
13.3 MPE CALCULATION METHOD	28

4 General Information

4.1 General Description of E.U.T.

Product Name:	LED TV
Model No.:	D85XUCNN
Model Description:	N/A
Operation Frequency:	IEEE 802.11b/g/n(HT20):2412MHz ~ 2462MHz IEEE 802.11a/ n(HT20/40)/ac(HT20/40/80): 5150MHz to 5250MHz IEEE 802.11a/ n(HT20/40)/ac(HT20/40/80): 5725MHz to 5850MHz BT: 2402-2480MHz SRD: 2403-2480MHz
The Lowest Oscillator:	32.768KHz
Antenna Gain:	ANT 0 2.4GHz WIFI:3.2 dBi 5.2GHz WIFI:4.1 dBi 5.8GHz WIFI:4.0 dBi ANT 1 2.4GHz WIFI:3.7 dBi 5.2GHz WIFI:4.0 dBi 5.8GHz WIFI:4.9 dBi ANT 2 2.4GHz BT:3.7 dBi ANT 3 2.4GHz SRD:3.7 dBi
Type of modulation:	IEEE 802.11b DSSS(CCK/QPSK/BPSK) IEEE 802.11g OFDM(BPSK/QPSK/16QAM/64QAM) IEEE 802.11n OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11a: OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11n : OFDM(BPSK/QPSK/16QAM/64QAM) IEEE for 802.11ac : OFDM (BPSK/QPSK/16QAM/64QAM/256QAM) BT: GFSK,PI/4-DQPSK,8DPSK SRD: GFSK
Number of transmitter chains:	WIFI:2*2 (MIMO) BT: 1 SRD: 1

4.2 Details of E.U.T.

Technical Data:	AC 120V~60Hz, 400W
-----------------	--------------------

4.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2472
36	2474	37	2476	38	2478	39	2480

4.4 Test Mode

Test Mode Description:

During testing, Channel and 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.

Transmitting duty cycle is normal.

The software is installed in operation system, named "RFTestTool.apk", Version 1, date 20160518.

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Table 1 Tests carried out under FCC part 15.247

Test mode	Low channel	Middle channel	High channel
Transmitting	2402MHz	2440MHz	2480MHz

Table 2 Tests carried out under FCC part 15.209

Test Item	Test Mode
Radiated Emissions	Communication

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, July 12, 2012.

- **FCC Test Site 1#– Registration No.: 880581**

Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 328995, December 3, 2014.

Waltek Services (Shenzhen) Co.,Ltd.

<http://www.waltek.com.cn>

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	100947	Sep.14,2015	Sep.13,2016
2.	LISN	R&S	ENV216	101215	Sep.14,2015	Sep.13,2016
3.	Cable	Top	TYPE16(3.5M)	-	Sep.14,2015	Sep.13,2016
Conducted Emissions Test Site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.14,2015	Sep.13,2016
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.14,2015	Sep.13,2016
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.14,2015	Sep.13,2016
4.	Cable	LARGE	RF300	-	Sep.14,2015	Sep.13,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.14,2015	Sep.13,2016
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.14,2015	Sep.13,2016
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Sep.14,2015	Sep.13,2016
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.14,2015	Sep.13,2016
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Sep.14,2015	Sep.13,2016
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Sep.14,2015	Sep.13,2016
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Sep.14,2015	Sep.13,2016
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Sep.14,2015	Sep.13,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	Sep.14,2015	Sep.13,2016
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Sep.14,2015	Sep.13,2016
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Sep.14,2015	Sep.13,2016
4	Cable	HUBER+SUHNER	CBL2	525178	Sep.14,2015	Sep.13,2016

RF Conducted Testing						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Sep.14,2015	Sep.13,2016
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Sep.14,2015	Sep.13,2016
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	Sep.14,2015	Sep.13,2016

5.2 Measurement Uncertainty

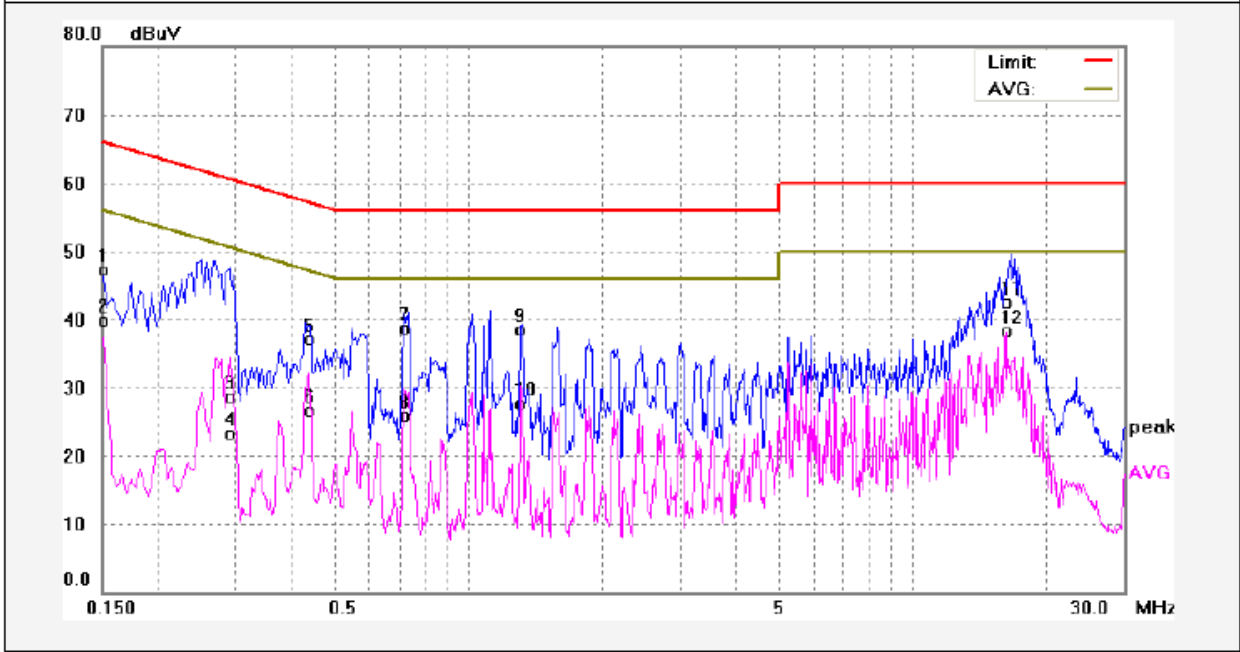
Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

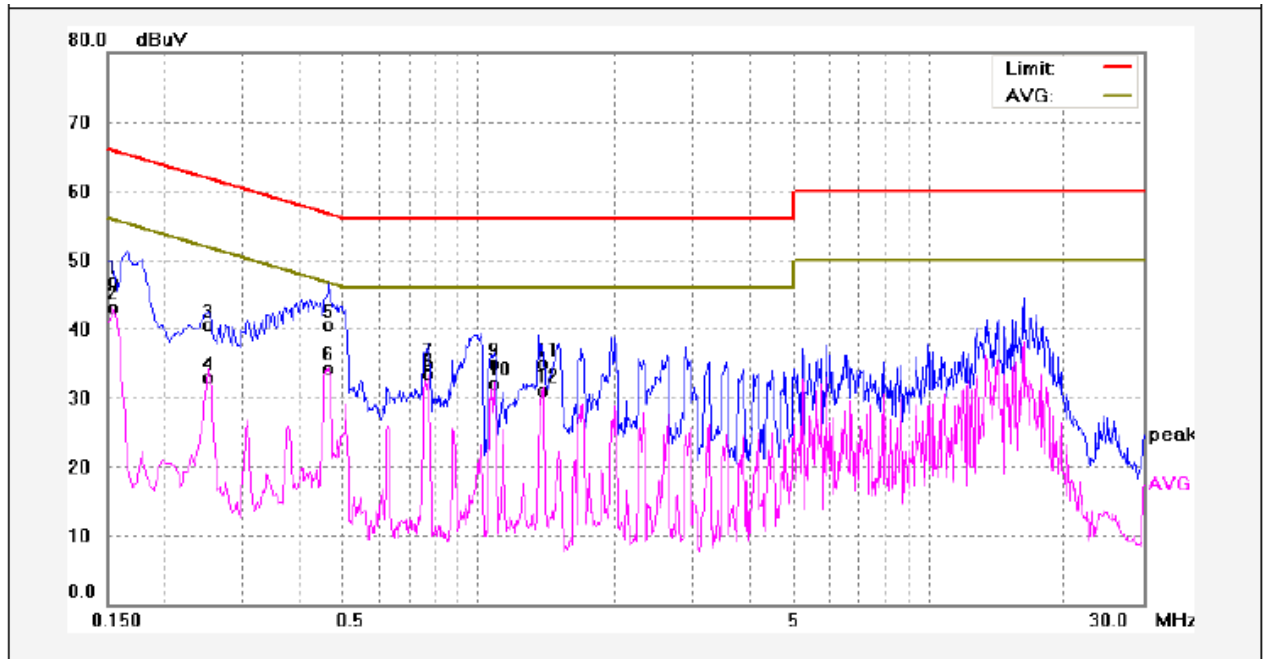
6.4 Conducted Emission Test Result

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	37.60	9.75	47.35	65.99	-18.64	QP	
2	0.1500	30.24	9.75	39.99	55.99	-16.00	AVG	
3	0.2900	18.95	9.75	28.70	60.52	-31.82	QP	
4	0.2900	13.56	9.75	23.31	50.52	-27.21	AVG	
5	0.4380	27.37	9.75	37.12	57.10	-19.98	QP	
6	0.4380	17.01	9.75	26.76	47.10	-20.34	AVG	
7	0.7180	28.91	9.77	38.68	56.00	-17.32	QP	
8	0.7180	16.11	9.77	25.88	46.00	-20.12	AVG	
9	1.3140	28.78	9.82	38.60	56.00	-17.40	QP	
10	1.3140	17.92	9.82	27.74	46.00	-18.26	AVG	
11	16.2300	32.11	10.48	42.59	60.00	-17.41	QP	
12	16.2300	27.75	10.48	38.23	50.00	-11.77	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	37.23	9.75	46.98	65.78	-18.80	QP	
2	0.1539	33.34	9.75	43.09	55.78	-12.69	AVG	
3	0.2500	30.80	9.74	40.54	61.75	-21.21	QP	
4	0.2500	23.11	9.74	32.85	51.75	-18.90	AVG	
5	0.4620	30.76	9.76	40.52	56.66	-16.14	QP	
6	0.4620	24.50	9.76	34.26	46.66	-12.40	AVG	
7	0.7740	25.11	9.78	34.89	56.00	-21.11	QP	
8	0.7740	23.64	9.78	33.42	46.00	-12.58	AVG	
9	1.0820	25.14	9.81	34.95	56.00	-21.05	QP	
10	1.0820	22.24	9.81	32.05	46.00	-13.95	AVG	
11	1.3900	25.01	9.83	34.84	56.00	-21.16	QP	
12	1.3900	21.24	9.83	31.07	46.00	-14.93	AVG	

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Distance	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure: 1016 mbar

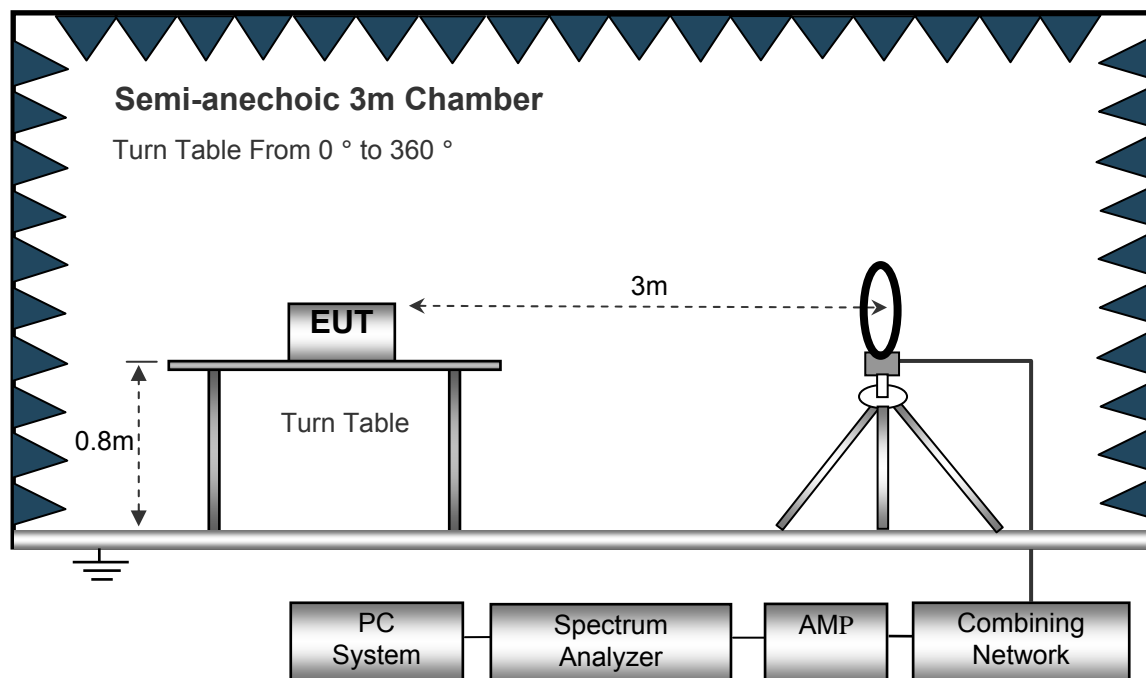
EUT Operation:

The test was performed in transmitting mode, the test data were shown in the report.

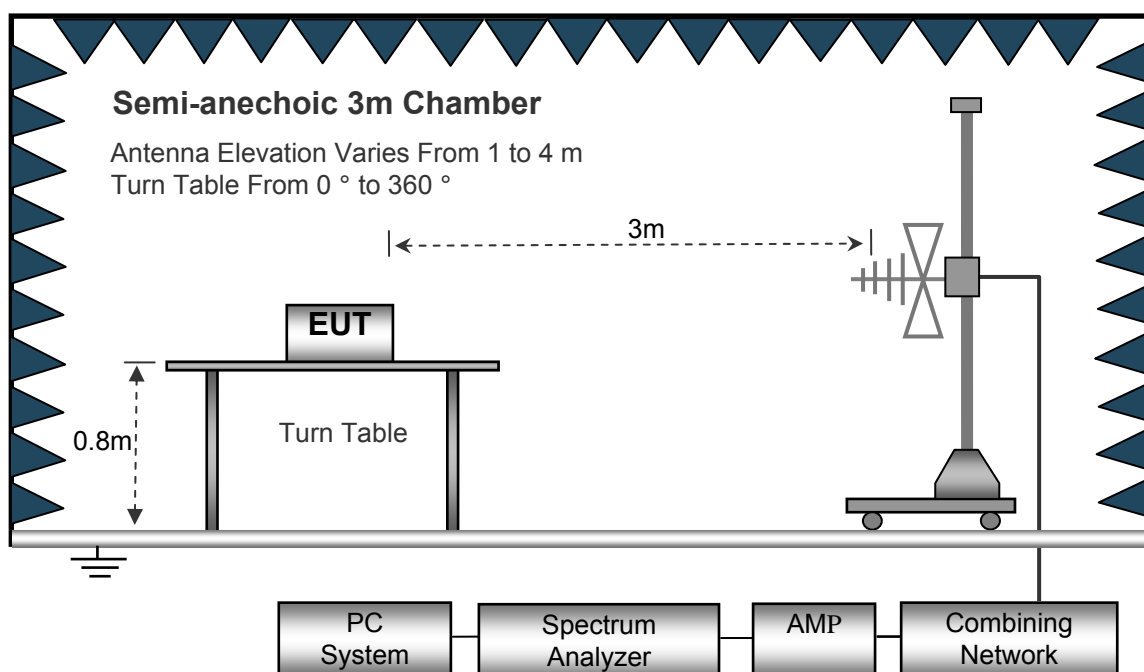
7.2 Test Setup

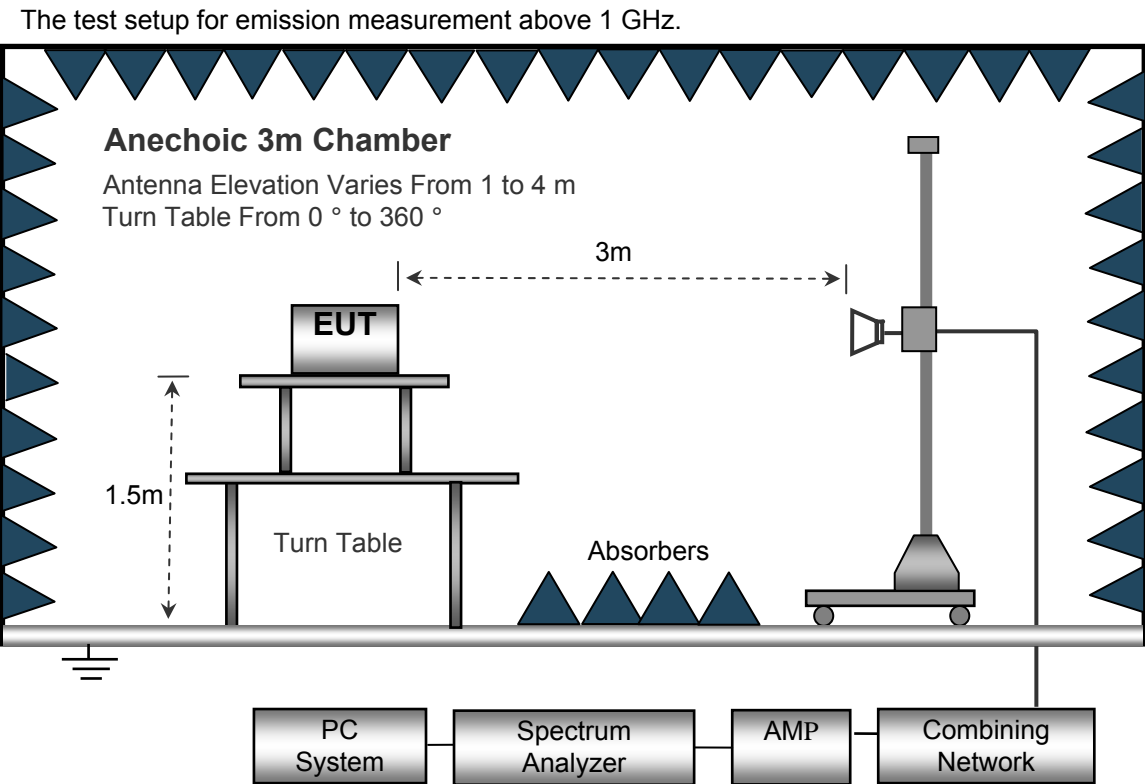
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.

The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.





7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed Auto
IF Bandwidth.....10kHz
Video Bandwidth.....10kHz
Resolution Bandwidth.....10kHz

30MHz ~ 1GHz

Sweep Speed Auto
DetectorPK
Resolution Bandwidth.....100kHz
Video Bandwidth.....300kHz

Above 1GHz

Sweep Speed Auto
DetectorPK
Resolution Bandwidth.....1MHz
Video Bandwidth.....3MHz
DetectorAve.
Resolution Bandwidth.....1MHz
Video Bandwidth.....10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8/1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. A 2.4GHz high –pass filter is used during radiated emissions above 1GHz measurement.

7.5 Summary of Test Results

Test Frequency: 32.768kHz~30MHz

Frequency (MHz)	Measurement results	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
	dB μ V @3m	PK/QP	dB/m	dB	dB μ V/m @30m	dB μ V/m @30m	dB
26.127	24.02	QP	20.55	40.00	4.57	29.54	-24.97

Test Frequency: 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	Height	Polar	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
GFSK Low Channel									
268.32	36.89	QP	298	1.4	H	-13.35	23.54	46.00	-22.46
268.32	41.33	QP	137	1.5	V	-13.35	27.98	46.00	-18.02
4804.00	46.15	PK	289	1.4	V	-1.06	45.09	74.00	-28.91
4804.00	43.52	Ave	289	1.4	V	-1.06	42.46	54.00	-11.54
7206.00	40.62	PK	116	1.5	H	1.33	41.95	74.00	-32.05
7206.00	35.37	Ave	116	1.5	H	1.33	36.70	54.00	-17.30
2324.97	46.07	PK	313	1.3	V	-13.19	32.88	74.00	-41.12
2324.97	39.44	Ave	313	1.3	V	-13.19	26.25	54.00	-27.75
2380.65	43.36	PK	272	1.4	H	-13.14	30.22	74.00	-43.78
2380.65	37.72	Ave	272	1.4	H	-13.14	24.58	54.00	-29.42
2496.56	42.53	PK	240	1.9	V	-13.08	29.45	74.00	-44.55
2496.56	37.10	Ave	240	1.9	V	-13.08	24.02	54.00	-29.98

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK Middle Channel									
268.32	36.59	QP	282	1.6	H	-13.35	23.24	46.00	-22.76
268.32	42.79	QP	285	1.0	V	-13.35	29.44	46.00	-16.56
4882.00	45.71	PK	26	1.7	V	-0.62	45.09	74.00	-28.91
4882.00	42.83	Ave	26	1.7	V	-0.62	42.21	54.00	-11.79
7323.00	39.29	PK	355	1.8	H	2.21	41.50	74.00	-32.50
7323.00	35.13	Ave	355	1.8	H	2.21	37.34	54.00	-16.66
2313.79	46.51	PK	231	1.7	V	-13.19	33.32	74.00	-40.68
2313.79	39.39	Ave	231	1.7	V	-13.19	26.20	54.00	-27.80
2357.96	42.54	PK	208	1.0	H	-13.14	29.40	74.00	-44.60
2357.96	37.26	Ave	208	1.0	H	-13.14	24.12	54.00	-29.88
2494.13	42.83	PK	212	2.0	V	-13.08	29.75	74.00	-44.25
2494.13	38.80	Ave	212	2.0	V	-13.08	25.72	54.00	-28.28

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dB μ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
GFSK High Channel									
268.32	37.97	QP	15	1.0	H	-13.35	24.62	46.00	-21.38
268.32	41.52	QP	275	1.5	V	-13.35	28.17	46.00	-17.83
4960.00	45.94	PK	280	1.6	V	-0.24	45.70	74.00	-28.30
4960.00	42.83	Ave	280	1.6	V	-0.24	42.59	54.00	-11.41
7440.00	39.72	PK	163	1.0	H	2.84	42.56	74.00	-31.44
7440.00	35.92	Ave	163	1.0	H	2.84	38.76	54.00	-15.24
2338.34	45.97	PK	216	1.3	V	-13.19	32.78	74.00	-41.22
2338.34	37.39	Ave	216	1.3	V	-13.19	24.20	54.00	-29.80
2367.94	43.65	PK	212	1.1	H	-13.14	30.51	74.00	-43.49
2367.94	38.59	Ave	212	1.1	H	-13.14	25.45	54.00	-28.55
2494.05	44.66	PK	60	1.7	V	-13.08	31.58	74.00	-42.42
2494.05	37.21	Ave	60	1.7	V	-13.08	24.13	54.00	-29.87

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported

8 Band Edge Measurement

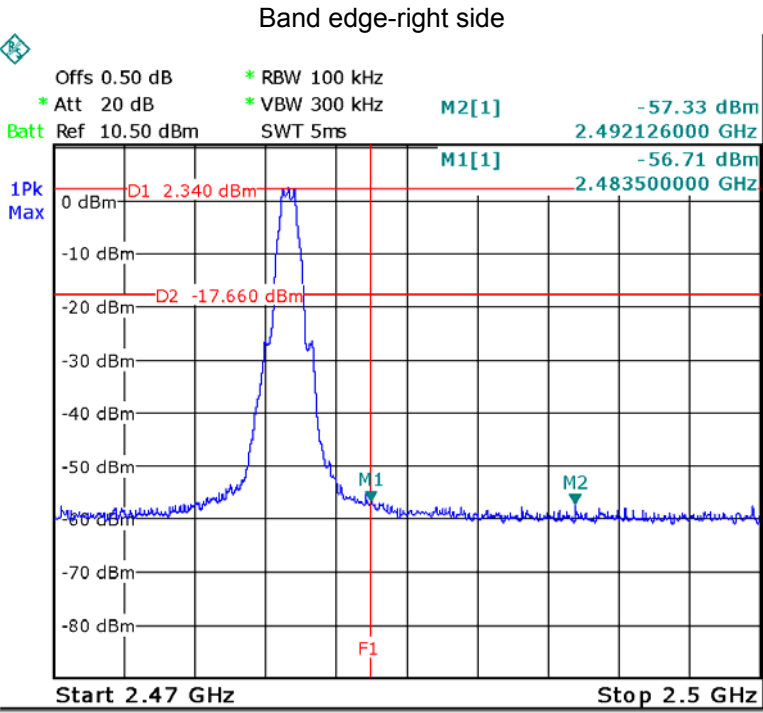
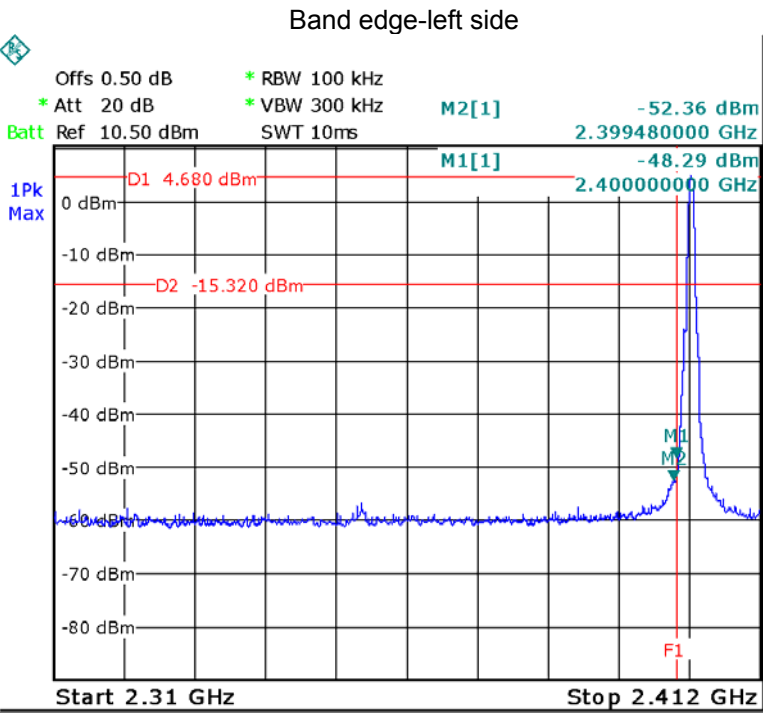
Test Requirement:	Section 15.247(d) In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) and 15.205(c).
Test Method:	KDB558074 D01 DTS Meas Guidance v03r05
Test Limit:	Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
Test Mode:	Transmitting

8.1 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

8.2 Test Result



9 6 dB Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.247
Test Method: KDB558074 D01 DTS Meas Guidance v03r05

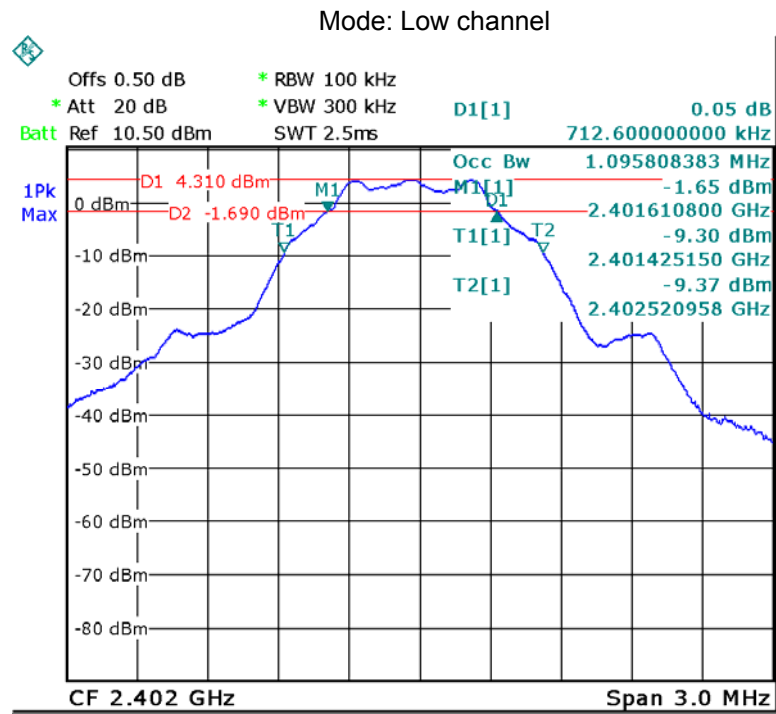
9.1 Test Procedure

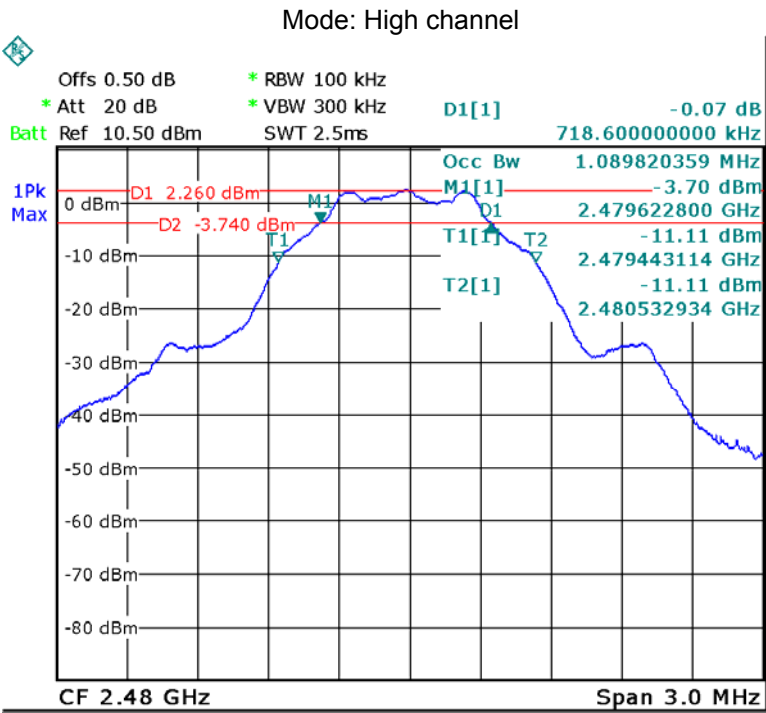
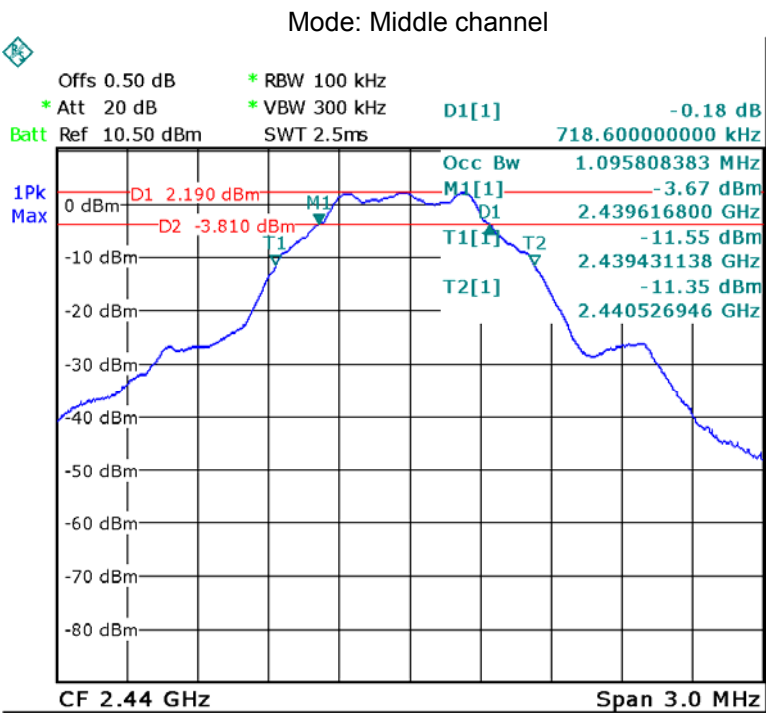
- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- 2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

9.2 Test Result

Operation mode	Bandwidth (MHz)
Low channel	0.713
Middle channel	0.719
High channel	0.719

Test result plot as follows:





10 Maximum Peak Output Power

Test Requirement:

FCC CFR47 Part 15 Section 15.247

Test Method:

KDB558074 D01 DTS Meas Guidance v03r05

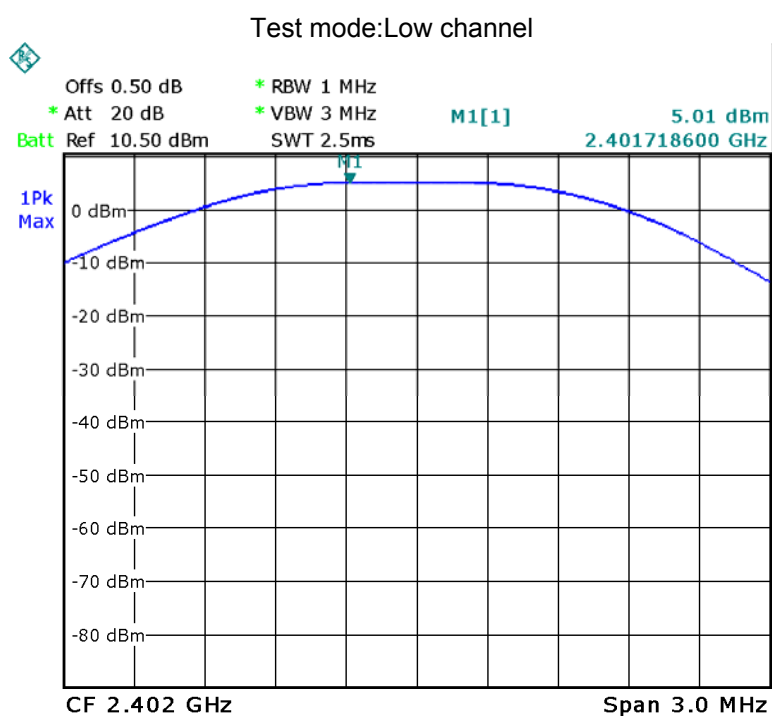
10.1 Test Procedure

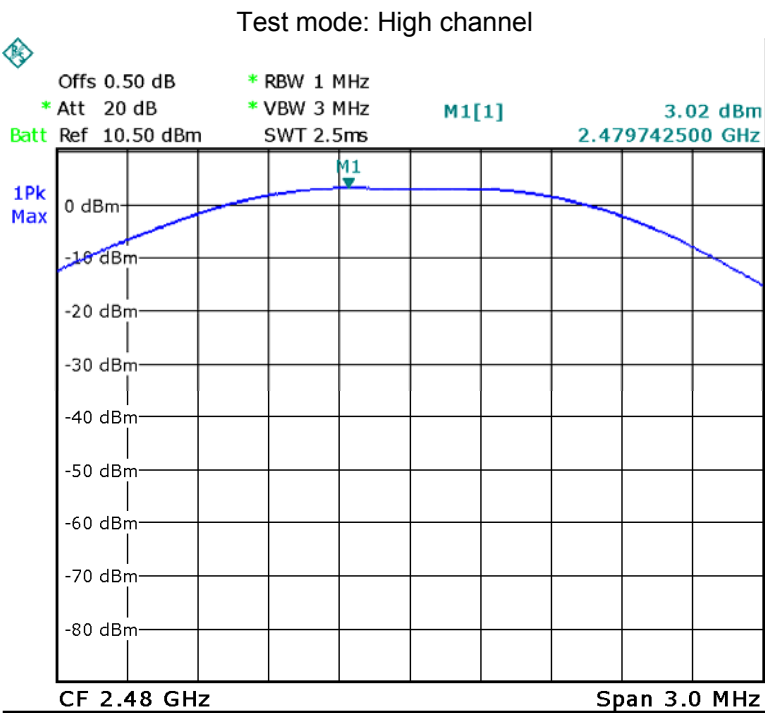
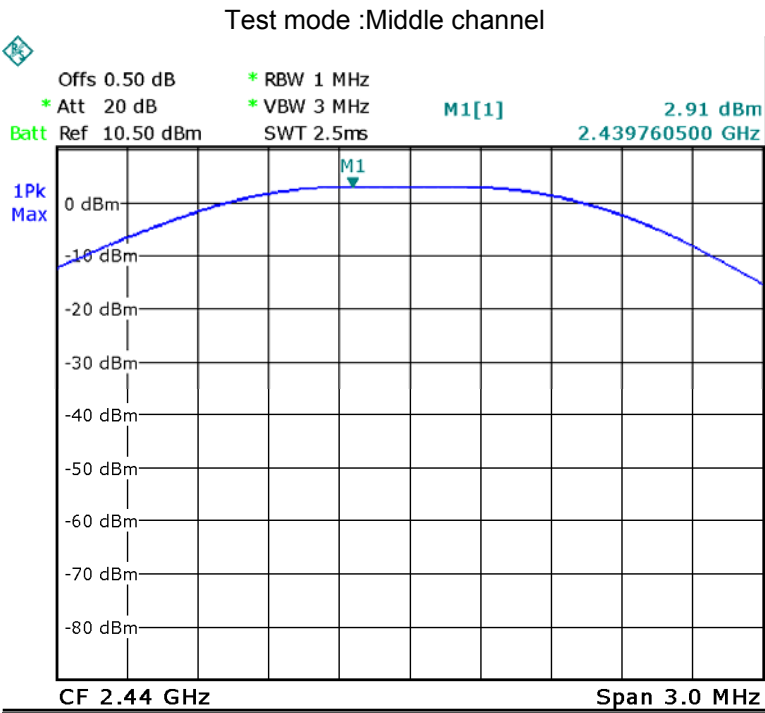
KDB558074 D01 DTS Meas Guidance v03r05 section 8.1.2 Option 2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

10.2 Test Result

Test Mode	Data Rate	Peak Power(dBm)		
		CH00	CH19	CH39
GFSK BLE	1Mbps	5.01	2.91	3.02





11 Power Spectral density

Test Requirement:

FCC CFR47 Part 15 Section 15.247

Test Method:

KDB558074 D01 DTS Meas Guidance v03r05

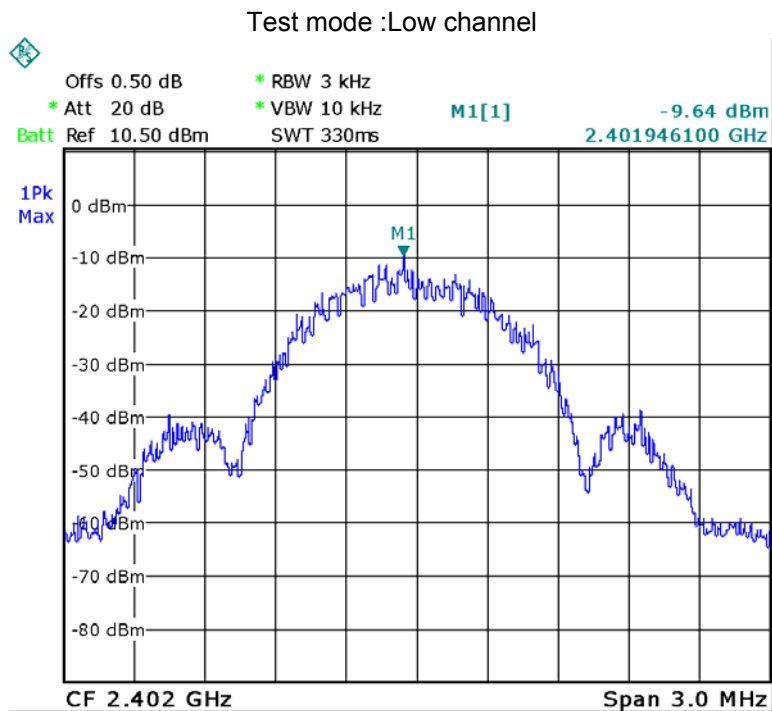
11.1 Test Procedure

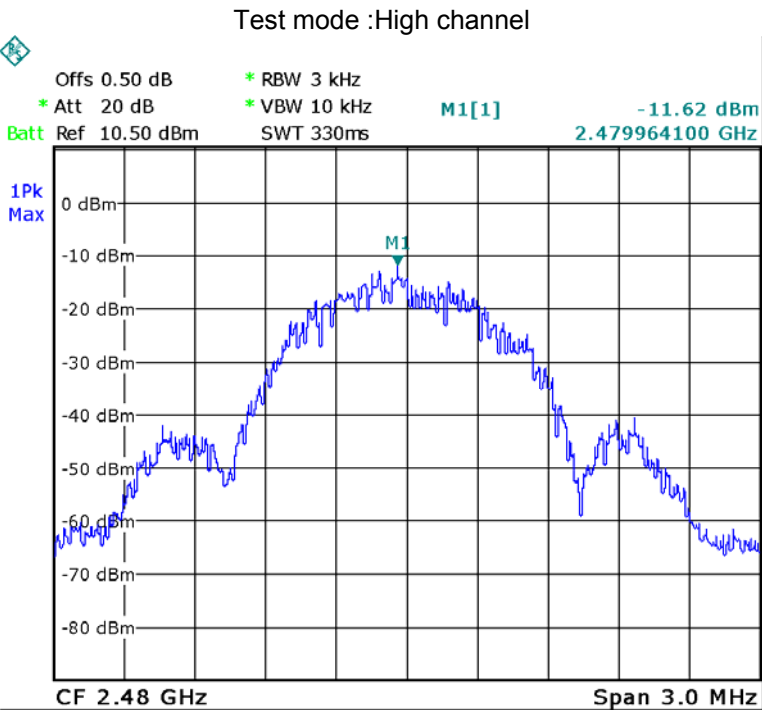
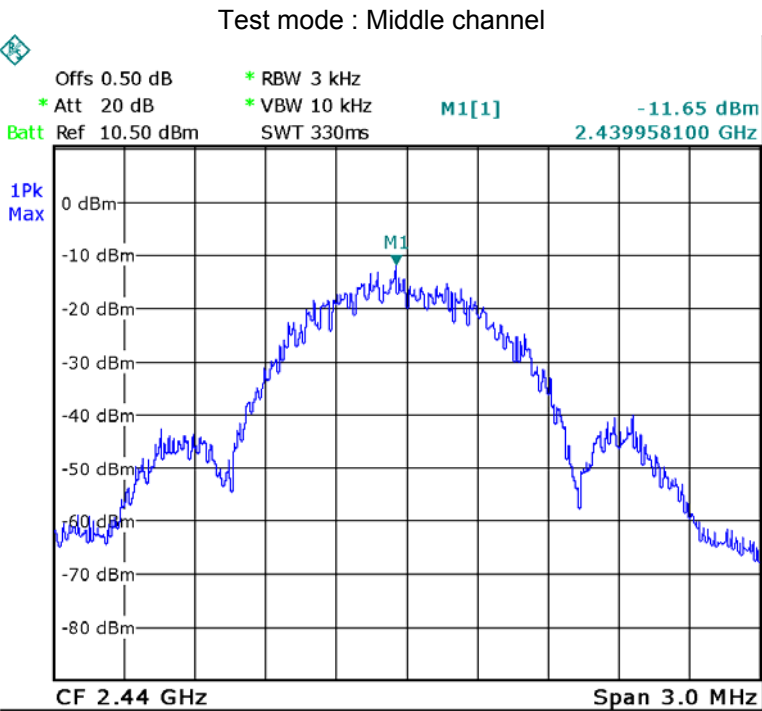
KDB558074 D01 DTS Meas Guidance v03r05 section 9.1 Option 1

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section
Submit this plot.

11.2 Test Result

Power Spectral Density (dBm per 3kHz)		
Low channel	Middle channel	High channel
-9.64	-11.65	-11.62
Limit		
8dBm per 3kHz		





12 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This device uses of an antenna that uses a unique coupling to the intentional radiator. Antenna connector complied with the requirement.

13 RF Exposure

Test Requirement: FCC Part 1.1307

Test Mode: The EUT work in test mode(Tx).

13.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

13.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

13.3 MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

Antenna Gain (dBi)	Antenna Gain (numeric)	Max.Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)
3.70	2.344	5.01	3.17	0.001478	1

=====End of Report=====