

FCC RADIO TEST REPORT

FCC ID:RSBPBBT2709

Product : Portable Boombox

Trade Name : AXESS

Model Name : PBBT2709,BK-222A, BK-222B,
BK-222C, BK-222D, BK-222E, BK-222F, BK-222G, BK-222H, BK-222N

Prepared for

BK Pride Electronics Co.,Ltd

Book Digital Industry Park,Meilin District,Dalingshan Town,Dongguan
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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name BK Pride Electronics Co.,Ltd
Address Book Digital Industry Park,Meilin District,Dalingshan Town,
Dongguan City,Guangdong Province,China.,P.R.C.523820

Manufacture's Name... BK Pride Electronics Co.,Ltd
Address Book Digital Industry Park,Meilin District,Dalingshan Town,
Dongguan City,Guangdong Province,China.,P.R.C.523820

Product description

Product name Portable Boombox
Model and/or type
reference PBBT2709,BK-222A, BK-222B, BK-222C, BK-222D, BK-222E,
BK-222F, BK-222G, BK-222H, BK-222N

In all, the original product and the alternative product are the same.

Standards FCC Part15.249

Test procedure ANSI C63.4-2014

This device described above has been tested by PTS, and 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

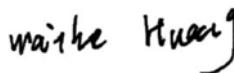
Date (s) of performance of tests Mar. 20, 2015 ~ Mar. 31, 2015

Date of Issue Apr. 3, 2015

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

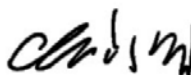
Tested by

:



Maiké Huang / Engineer

Authorized
Signatory :



Chris Du / Manager

2 Test Summary

Test Items	Test Requirement	Result
Spurious Radiated Emissions	15.205(a) 15.209 15.249(d)	PASS
Band edge Emissions	15.249(d)	PASS
Conducted Emissions	15.207	PASS
20dB Bandwidth	15.215c 15.249	PASS

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3 General Information

3.1 General Description of E.U.T.

Product Name	: Portable Boombox
Model No.	: PBBT2709,BK-222A, BK-222B, BK-222C, BK-222D, BK-222E, BK-222F, BK-222G, BK-222H, BK-222N
Brand Name	: AXESS
Operation Frequency	: 2402MHz ~ 2480MHz,79 channels in total, separated by 1MHz
Type of Modulation	: GFSK, Pi/4DQPSK, 8DPSK
Antenna installation	: PCB Printed Antenna
Antenna Gain	: 0 dBi
Bluetooth version	: 2.1+EDR
hardware version	:BKV0.1
software version	:V1.0
Serial number	:01

3.2 Details of E.U.T.

Technical Data	: (1)AC 120V/60Hz
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3.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2402	2	2403	3	2404	4	2405
5	2406	6	2407	7	2408	8	2409
9	2410	10	2411	11	2412	12	2413
13	2414	14	2415	15	2416	16	2417
17	2418	18	2419	19	2420	20	2421
21	2422	22	2423	23	2424	24	2425
25	2426	26	2427	27	2428	28	2429
29	2430	30	2431	31	2432	32	2433
33	2434	34	2435	35	2436	36	2437
37	2438	38	2439	39	2440	40	2441
41	2442	42	2443	43	2444	44	2445
45	2446	46	2447	47	2448	48	2449
49	2450	50	2451	51	2452	52	2453
53	2454	54	2455	55	2456	56	2457
57	2458	58	2459	59	2460	60	2461
61	2462	62	2463	63	2464	64	2465
65	2466	66	2467	67	2468	68	2469
69	2470	70	2471	71	2472	72	2473
73	2474	74	2475	75	2476	76	2477
77	2478	78	2479	79	2480	-	-

3.4 Description of Support Units

No.	Equipment	Manufacturer	Model No.	Serial No.
1.	N/A	N/A	N/A	N/A

3.5 Test Facility

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

Dongguan Quality Supervision Testing Center

Add.: B#, Dongguan Quality Supervision Testing Center, NO.2 South Industry Road,
Songshan Lake, Dongguan City, 523808, China.

FCC Registration No.: 817095

4 Equipment Used during Test

4.1 Equipments List

Mains Terminal Disturbance Voltage (Conducted Emission)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Due CAL Date
1.	EMI Test Receiver	R&S	ESCI	100229	2014/10/25	2015/10/24
2	LISN	SCHWARZBECK	NSLK8127	8127437	2014/10/25	2015/10/24
3	LISN	R&S	ESH3-Z6	100690	2014/10/25	2015/10/24
4	Pulse Limiter	R&S	ESH3-Z2	101242	2014/10/25	2015/10/24
5	Cable	DTB	944 cable 1#	944001	2014/10/25	2015/10/24
3m Semi-anechoic Chamber for Radiation						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Due CAL Date
1	EMI Test Receiver	R&S	ESCI	100229	2014/10/25	2015/10/24
2	Trilog-Broadband Antenna	SCHWARZBECK	VULB9163	9613-248	2014/11/01	2015/10/31
3	Horn antenna (1~18GHz)	R&S	HF906	EC348	2014/11/01	2015/10/31
4	Horn antenna (18~25GHz)	SCHWARZBECK	BBHA9170	9170517	2014/10/25	2015/10/24
5	Pre-amplifier	SCHWARZBECK	BBHA9170	9170517	2014/10/25	2015/10/24
6	Signal Conditioning Unit	R&S	SCU-08	10008	2014/10/25	2015/10/24
7	Pre-amplifier	Agilent	83006A	5241A1	2014/10/25	2015/10/24
8	Pre-amplifier	R&S	SCU-01	10049	2014/10/25	2015/10/24
9	Active Loop Antenna	DAZE	ZN30900A	DZ026	2014/11/01	2015/10/31
10	Spectrum Analyzer	Agilent	E4408B	MY44211125	2014/10/25	2015/10/24
11	Antenna connector	Top	DQT011	032	2014/10/25	2015/10/24
12	Coaxial Cable (below 1GHz)	DTB	966 cable 2#	-	2014/11/01	2015/10/31
13	Coaxial Cable (above 1GHz)	DTB	966 cable 3#	EW02014-7	2014/11/01	2015/10/31

4.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Temperature	± 1 °C
DC Source	$\pm 0.05\%$
Radiated Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Emissions test	3.64dB (150kHz~30MHz)

4.3 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.

5 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.4:2014
Test Result:	PASS
Frequency Range:	150 kHz to 30 MHz
Class:	Class B
Limit:	66-56 dB μ V between 0.15 MHz & 0.5 MHz 56 dB μ V between 0.5 MHz & 5MHz 60 dB μ V between 5 MHz & 30MHz
Detector:	Peak for pre-scan (9 kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure: 1012 mbar

Voltage: AC 120V/60Hz

EUT Operation:

The pre-test was performed in transmitting mode, and the data were shown as follow.

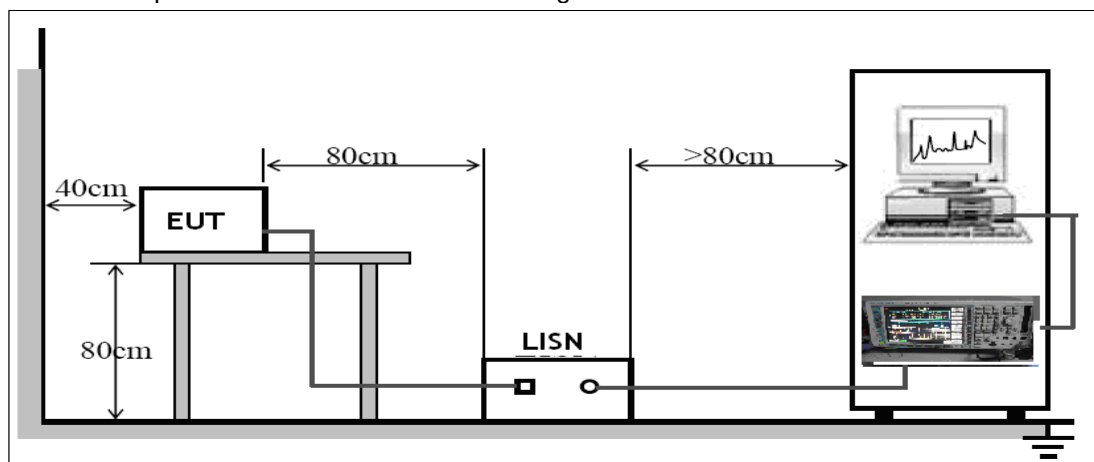
The EUT was tested according to ANSI C63.4:2014. The frequency spectrum from 150 kHz to 30MHz was investigated.

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

The EUT was in transmitting mode, The worst mode was GFSK low channel, the data was recording in the report.

5.2 EUT Setup

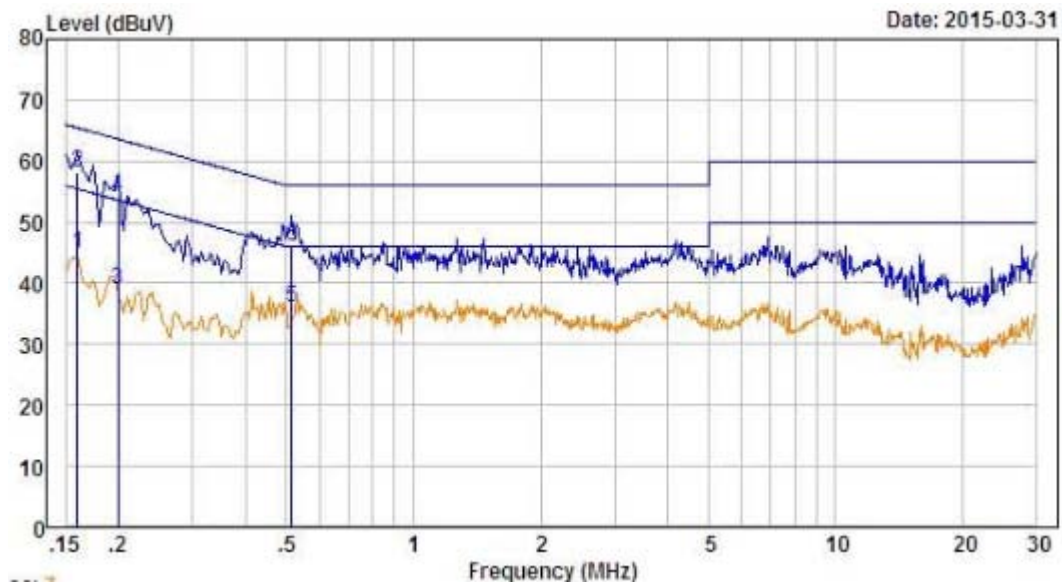
The EUT was placed on the test table in shielding room.



5.3 Conducted Emission Test Result

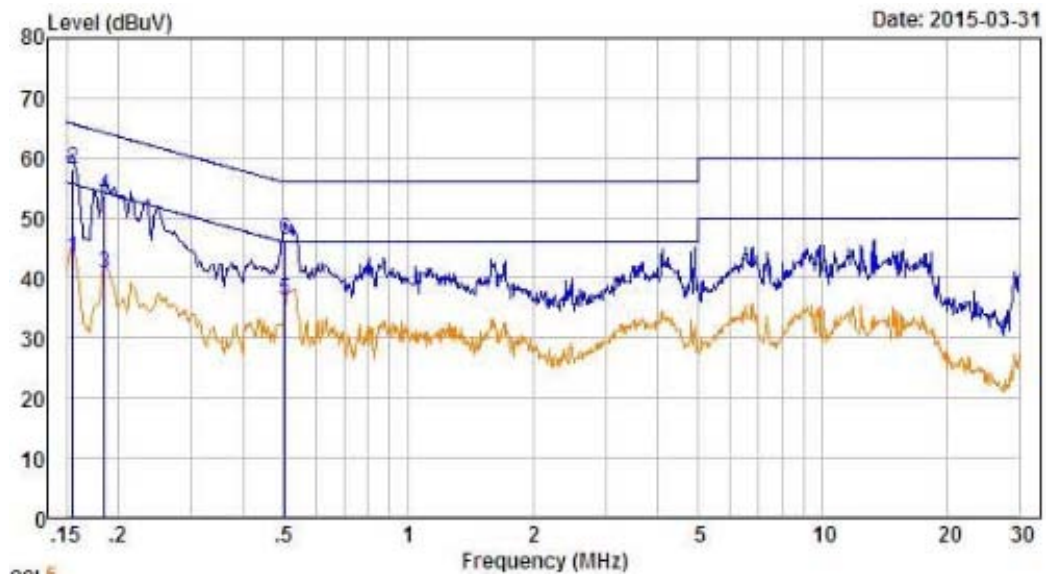
Test Mode: transmitting

Line:



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.160	10.60	0.60	33.68	44.88	55.47	-10.59	Average
2.	0.160	10.60	0.60	46.98	58.18	65.47	-7.29	QP
3.	0.200	10.61	0.60	27.75	38.96	53.62	-14.66	Average
4.	0.200	10.61	0.60	42.75	53.96	63.62	-9.66	QP
5.	0.516	10.65	0.60	24.82	36.07	46.00	-9.93	Average
6.	0.516	10.65	0.60	34.82	46.07	56.00	-9.93	QP

Neutral:



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.155	10.60	0.60	32.34	43.54	55.74	-12.20	Average
2.	0.155	10.60	0.60	46.89	58.09	65.74	-7.65	QP
3.	0.185	10.61	0.60	29.57	40.78	54.24	-13.46	Average
4.	0.185	10.61	0.60	42.57	53.78	64.24	-10.46	QP
5.	0.505	10.65	0.60	25.15	36.40	46.00	-9.60	Average
6.	0.505	10.65	0.60	35.15	46.40	56.00	-9.60	QP

6 Spurious Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.249

Test Method: DA 00-705

Test Result: PASS

Measurement Distance: 3m

Limit:

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

6.1 EUT Operation :

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure: 1010 mbar

Voltage: AC 120V/60Hz

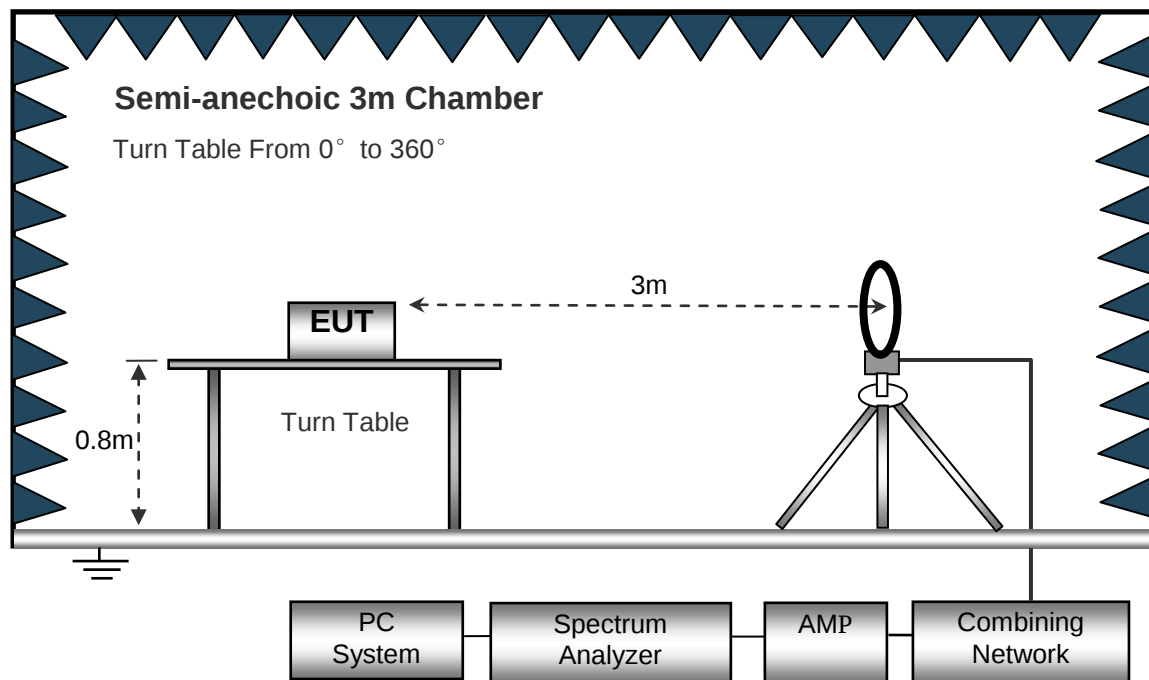
Operation Mode:

The EUT was tested in transmitting mode, and the data were shown as follow.

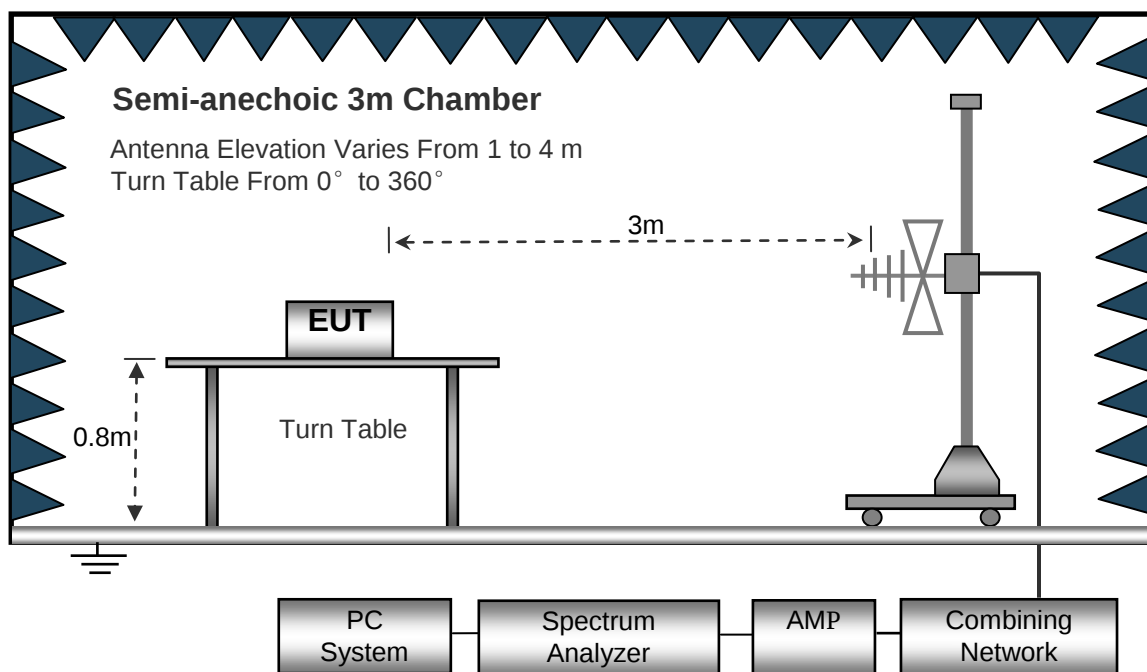
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4:2014.

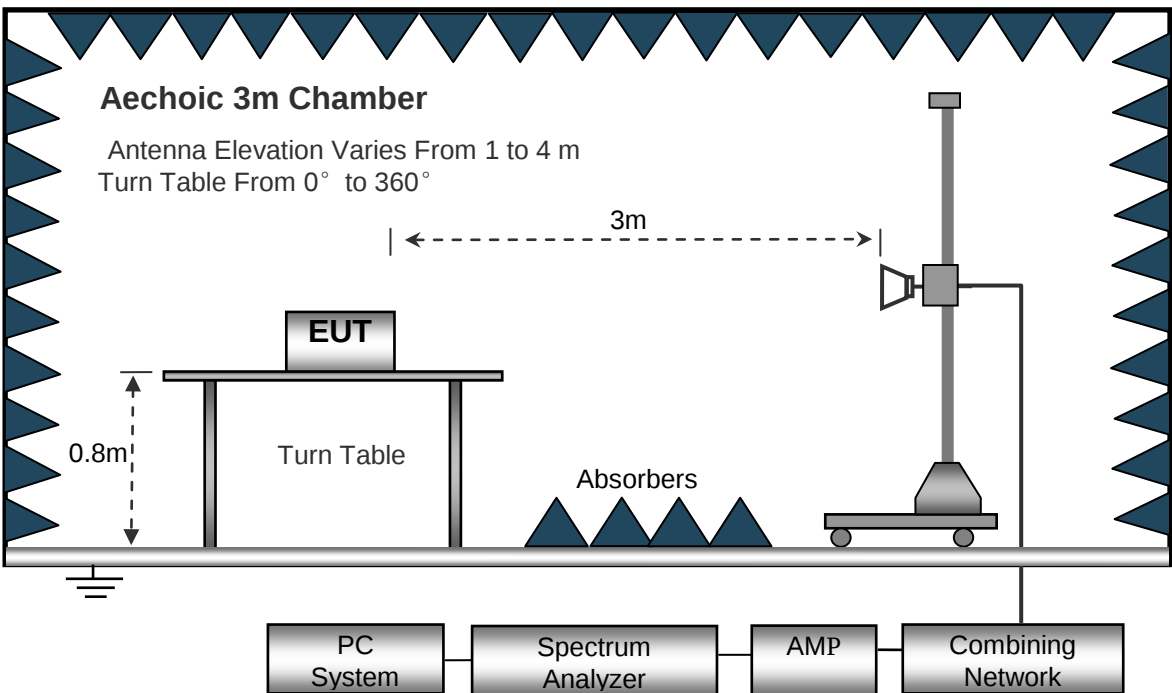
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1 GHz.



6.3 Spectrum Analyzer Setup

According to FCC Part15 Rules, the system was tested 9kHz to 25000MHz.

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

6.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m 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.

6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

6.6 Summary of Test Results

Test Frequency: Below 30MHz

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

Test Frequency: 30MHz ~ 18GHz

Test mode: transmitting

Test Frequency: Above 18GHz

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

All the modulation modes were tested, the data of the worst mode were recorded in the following pages.

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	Height (m)	Polar (H/V)	(dB)	(dBμV/m)	Limit (dBμV/m)	Result
GFSK Lower Channel 2402MHz	46.35	14.21	QP	105	2.3	H	16.35	30.56	40.00	Pass
	86.95	16.53	QP	135	1.2	H	16.87	33.40	40.00	Pass
	108.53	15.32	QP	135	2.1	H	17.07	32.09	43.50	Pass
	342.15	17.49	QP	89	2.6	H	17.53	35.02	43.50	Pass
	415.21	16.53	QP	53	2.8	H	17.58	34.11	46.00	Pass
	502.14	15.28	QP	69	3.3	H	17.62	32.90	46.00	Pass
	53.26	17.15	QP	124	1.3	V	16.58	33.73	40.00	Pass
	109.63	18.21	QP	9	1.1	V	16.62	34.83	43.50	Pass
	187.68	16.97	QP	181	1.0	V	16.78	33.75	43.50	Pass
	286.35	18.21	QP	9	2.1	V	17.12	35.33	43.50	Pass
	516.63	15.97	QP	27	1.0	V	17.85	33.82	46.00	Pass
	802.32	16.68	QP	36	1.0	V	17.93	34.61	46.00	Pass

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	Height (m)	Polar (H/V)	(dB)	(dBμV/m)	Limit (dBμV/m)	Result
GFSK Low Channel 2402MHz	2402.00	108.63	PK	112	1.3	H	1.31	109.94	114.00	Pass
	2402.00	89.63	Ave	112	1.3	H	1.31	90.94	94.00	Pass
	4804.00	58.32	PK	33	1.7	H	-1.06	57.26	74.00	Pass
	4804.00	47.25	Ave	33	1.7	H	-1.06	46.19	54.00	Pass
	2402.00	107.94	PK	135	1.3	V	1.31	109.25	114.00	Pass
	2402.00	88.59	Ave	135	1.3	V	1.31	89.90	94.00	Pass
	4804.00	58.12	PK	324	1.4	V	-1.06	57.06	74.00	Pass
	4804.00	46.63	Ave	324	1.4	V	-1.06	45.57	54.00	Pass

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
					Height	Polar			Limit	Margin
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK Middle Channel 2441MHz	2441.00	108.02	PK	124	2.3	H	0.85	108.87	114.00	Pass
	2441.00	88.59	Ave	124	2.3	H	0.85	89.44	94.00	Pass
	4882.00	55.63	PK	325	1.9	H	-0.62	55.01	74.00	Pass
	4882.00	44.87	Ave	325	1.9	H	-0.62	44.25	54.00	Pass
	2441.00	107.53	PK	78	1.0	V	0.85	108.38	114.00	Pass
	2441.00	88.94	Ave	78	1.0	V	0.85	89.79	94.00	Pass
	4882.00	54.87	PK	124	1.2	V	-0.62	54.25	74.00	Pass
	4882.00	45.28	Ave	124	1.2	V	-0.62	44.66	54.00	Pass

GFSK Upper Channel 2480MHz	2480.00	107.68	PK	148	1.6	H	0.53	108.21	114.00	Pass
	2480.00	88.29	Ave	148	1.6	H	0.53	88.82	94.00	Pass
	4960.00	53.29	PK	31	2.4	H	-0.24	53.05	74.00	Pass
	4960.00	42.87	Ave	31	2.4	H	-0.24	42.63	54.00	Pass
	2480.00	108.65	PK	350	1.0	V	0.53	109.18	114.00	Pass
	2480.00	88.76	Ave	350	1.0	V	0.53	89.29	94.00	Pass
	4960.00	54.28	PK	69	1.2	V	-0.24	54.04	74.00	Pass
	4960.00	43.94	Ave	69	1.2	V	-0.24	43.70	54.00	Pass

PI/4 DPSK Lower Channel 2402MHz	2402.00	108.67	PK	135	1.3	H	1.31	109.98	114.00	Pass
	2402.00	88.97	Ave	135	1.3	H	1.31	90.28	94.00	Pass
	4804.00	56.75	PK	324	1.4	H	-1.06	55.69	74.00	Pass
	4804.00	45.31	Ave	324	1.4	H	-1.06	44.25	54.00	Pass
	2402.00	108.29	PK	135	1.3	V	1.31	109.60	114.00	Pass
	2402.00	88.53	Ave	135	1.3	V	1.31	89.84	94.00	Pass
	4804.00	54.29	PK	324	1.4	V	-1.06	53.23	74.00	Pass
	4804.00	43.57	Ave	324	1.4	V	-1.06	42.51	54.00	Pass

Note: Other harmonics emissions are lower than 20dB below the allowable limit.

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	Height (m)	Polar (H/V)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
PI/4 DPSK Middle Channel 2441MHz	2441.00	108.36	PK	72	2.2	H	0.85	109.21	114.00	Pass
	2441.00	88.94	Ave	72	2.2	H	0.85	89.79	94.00	Pass
	4882.00	57.26	PK	29	1.7	H	-0.62	56.64	74.00	Pass
	4882.00	45.21	Ave	29	1.7	H	-0.62	44.59	54.00	Pass
	2441.00	108.04	PK	181	2.3	V	0.85	108.89	114.00	Pass
	2441.00	88.23	Ave	181	2.3	V	0.85	89.08	94.00	Pass
	4882.00	55.84	PK	93	1.1	V	-0.62	55.22	74.00	Pass
	4882.00	46.31	Ave	93	1.1	V	-0.62	45.69	54.00	Pass

PI/4 DPSK Upper Channel 2480MHz	2480.00	108.27	PK	201	1.6	H	0.53	108.80	114.00	Pass
	2480.00	87.97	Ave	201	1.6	H	0.53	88.50	94.00	Pass
	4960.00	53.29	PK	78	1.9	H	-0.24	53.05	74.00	Pass
	4960.00	44.04	Ave	78	1.9	H	-0.24	43.80	54.00	Pass
	2480.00	108.23	PK	63	1.0	V	0.53	108.76	114.00	Pass
	2480.00	88.48	Ave	63	1.0	V	0.53	89.01	94.00	Pass
	4960.00	55.18	PK	22	1.2	V	-0.24	54.94	74.00	Pass
	4960.00	44.07	Ave	22	1.2	V	-0.24	43.83	54.00	Pass

8DPSK Low Channel 2402MHz	2402.00	108.57	PK	86	1.2	H	1.31	109.88	114.00	Pass
	2402.00	88.68	Ave	86	1.2	H	1.31	89.99	94.00	Pass
	4804.00	55.24	PK	147	1.8	H	-1.06	54.18	74.00	Pass
	4804.00	44.31	Ave	147	1.8	H	-1.06	43.25	54.00	Pass
	2402.00	108.34	PK	351	1.0	V	1.31	109.65	114.00	Pass
	2402.00	88.71	Ave	351	1.0	V	1.31	90.02	94.00	Pass
	4804.00	55.29	PK	93	1.2	V	-1.06	54.23	74.00	Pass
	4804.00	45.06	Ave	93	1.2	V	-1.06	44.0	54.00	Pass

Note: Other harmonics emissions are lower than 20dB below the allowable limit.

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	Height (m)	Polar (H/V)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
8DPSK Middle Channel 2441MHz	2441.00	108.05	PK	201	2.0	H	0.85	108.90	114.00	Pass
	2441.00	87.36	Ave	201	0.0	H	0.85	88.21	94.00	Pass
	4882.00	54.87	PK	78	1.8	H	-0.62	54.25	74.00	Pass
	4882.00	46.28	Ave	78	1.8	H	-0.62	45.66	54.00	Pass
	2441.00	108.12	PK	201	1.3	V	0.85	108.97	114.00	Pass
	2441.00	87.58	Ave	201	1.3	V	0.85	88.43	94.00	Pass
	4882.00	53.69	PK	78	1.1	V	-0.62	53.07	74.00	Pass
	4882.00	42.18	Ave	78	1.1	V	-0.62	41.56	54.00	Pass

8DPSK Upper Channel 2480MHz	2480.00	107.68	PK	326	2.3	H	0.53	108.21	114.00	Pass
	2480.00	87.28	Ave	326	2.3	H	0.53	87.81	94.00	Pass
	4960.00	53.33	PK	74	3.6	H	-0.24	53.09	74.00	Pass
	4960.00	42.28	Ave	74	3.6	H	-0.24	42.04	54.00	Pass
	2480.00	107.69	PK	12	1.2	V	0.53	108.22	114.00	Pass
	2480.00	86.98	Ave	12	1.2	V	0.53	87.51	94.00	Pass
	4960.00	52.37	PK	37	1.5	V	-0.24	52.13	74.00	Pass
	4960.00	40.94	Ave	37	1.5	V	-0.24	40.70	54.00	Pass

Note: Other harmonics emissions are lower than 20dB below the allowable limit.

7 Band Edge Measurement

Test Requirement:	Section 15.249(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) (see Section 15.205(c)).
Test Method:	DA 00-705
Limit:	40.0 dBuV/m between 30MHz & 88MHz; 43.5 dBuV/m between 88MHz & 216MHz; 46.0 dBuV/m between 216MHz & 960MHz; 54.0 dBuV/m above 960MHz. 74.0 dBuV/m for peak above 1GHz 54.0 dBuV/m for AVG above 1GHz

7.1 Test Procedure

1. The EUT was placed on a turntable which is 0.8m above ground plane
2. Measurement Distance is 3m
3. Detector:
 - For Peak value:
RBW = 1 MHz for $f \geq 1$ GHz
VBW $\geq$ RBW; Sweep = auto
Detector function = peak
Trace = max hold
 - For AVG value:
RBW = 1 MHz for $f \geq 1$ GHz
VBW = 10Hz; Sweep = auto
Detector function = AVG
Trace = max hold
4. Continuous transmitting

7.2 Test Result:

Test result shown as follows:

GFSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	
Hopping	<2400	H	2387.51	50.33	74.00	54.00	Pass
	<2400	V	2387.29	50.29	74.00	54.00	Pass
	>2483.5	H	2485.74	50.34	74.00	54.00	Pass
	>2483.5	V	2485.59	49.97	74.00	54.00	Pass
Unhopping	<2400	H	2387.63	50.03	74.00	54.00	Pass
	<2400	V	2388.02	50.25	74.00	54.00	Pass
	>2483.5	H	2484.44	50.27	74.00	54.00	Pass
	>2483.5	V	2486.58	50.17	74.00	54.00	Pass

PI/4 DPSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	
Hopping	<2400	H	2389.33	50.19	74.00	54.00	Pass
	<2400	V	2389.67	50.27	74.00	54.00	Pass
	>2483.5	H	2486.03	49.58	74.00	54.00	Pass
	>2483.5	V	2485.79	49.83	74.00	54.00	Pass
Unhopping	<2400	H	2388.26	50.25	74.00	54.00	Pass
	<2400	V	2389.09	49.97	74.00	54.00	Pass
	>2483.5	H	2485.36	50.13	74.00	54.00	Pass
	>2483.5	V	2485.27	50.32	74.00	54.00	Pass

8-DPSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	
Hopping	<2400	H	2386.98	50.12	74.00	54.00	Pass
	<2400	V	2387.21	49.85	74.00	54.00	Pass
	>2483.5	H	2485.29	49.86	74.00	54.00	Pass
	>2483.5	V	2485.18	50.12	74.00	54.00	Pass
Unhopping	<2400	H	2386.29	50.33	74.00	54.00	Pass
	<2400	V	2487.18	49.86	74.00	54.00	Pass
	>2483.5	H	2484.61	50.12	74.00	54.00	Pass
	>2483.5	V	2486.74	50.36	74.00	54.00	Pass

8 20 dB Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.249

Test Method: DA 00-705

Test Mode: Test in fixing operating frequency at low, Middle, high channel.

8.1 Test Procedure:

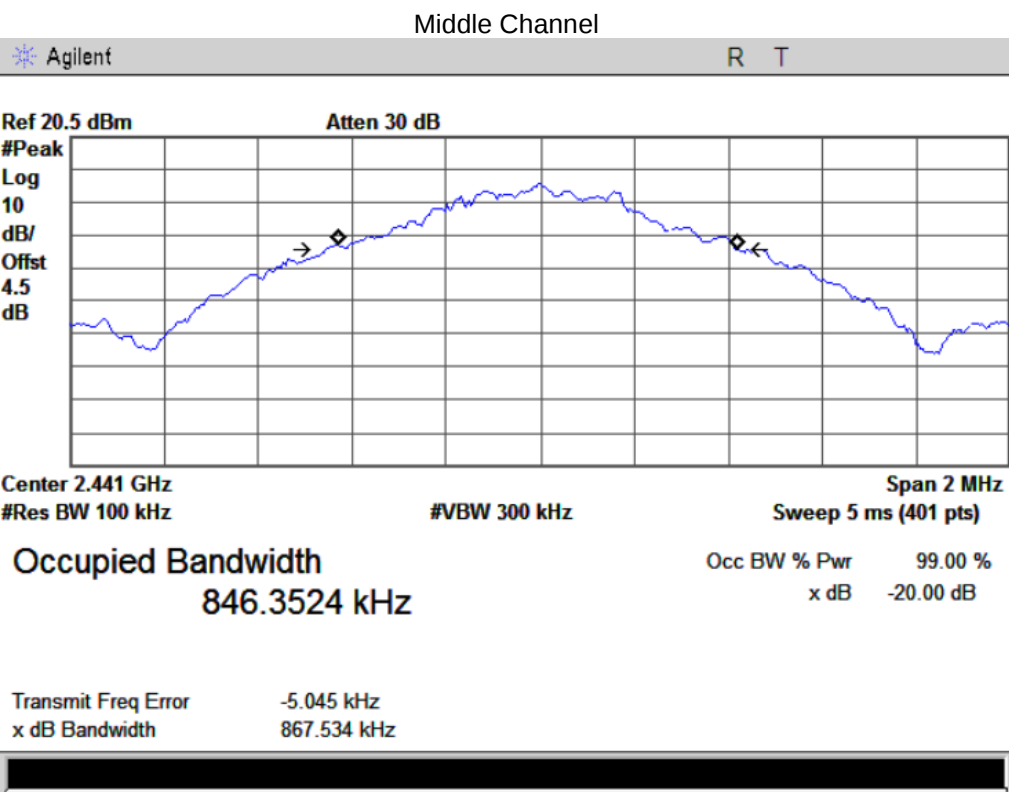
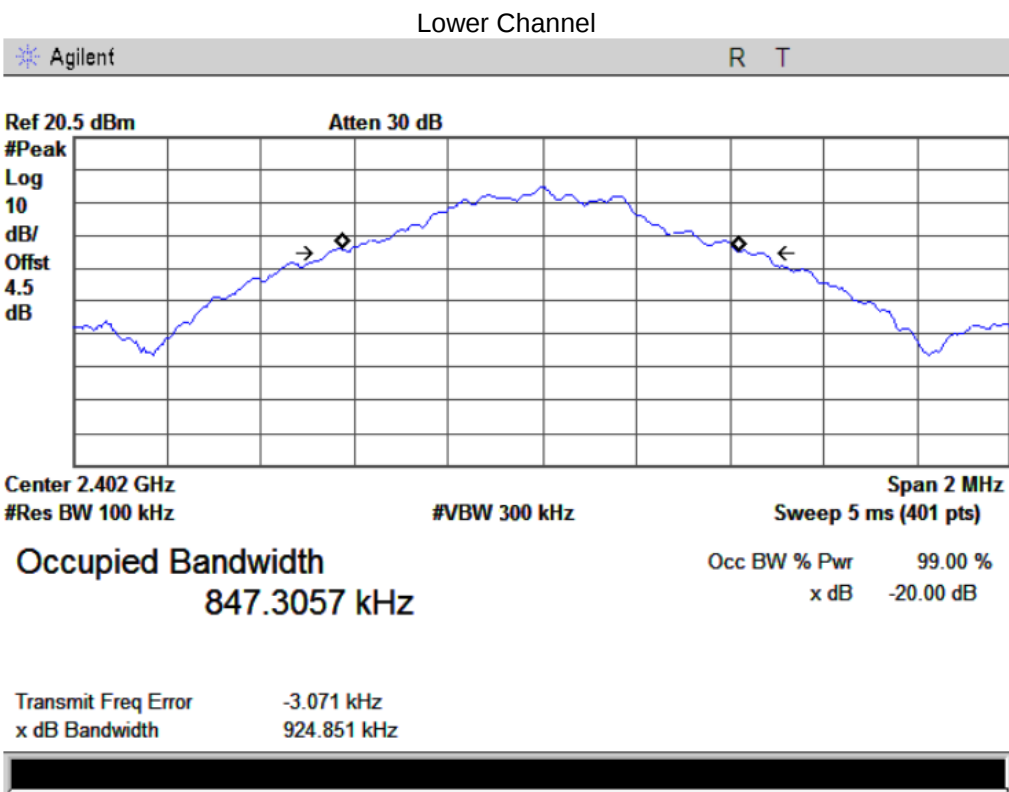
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

8.2 Test Result:

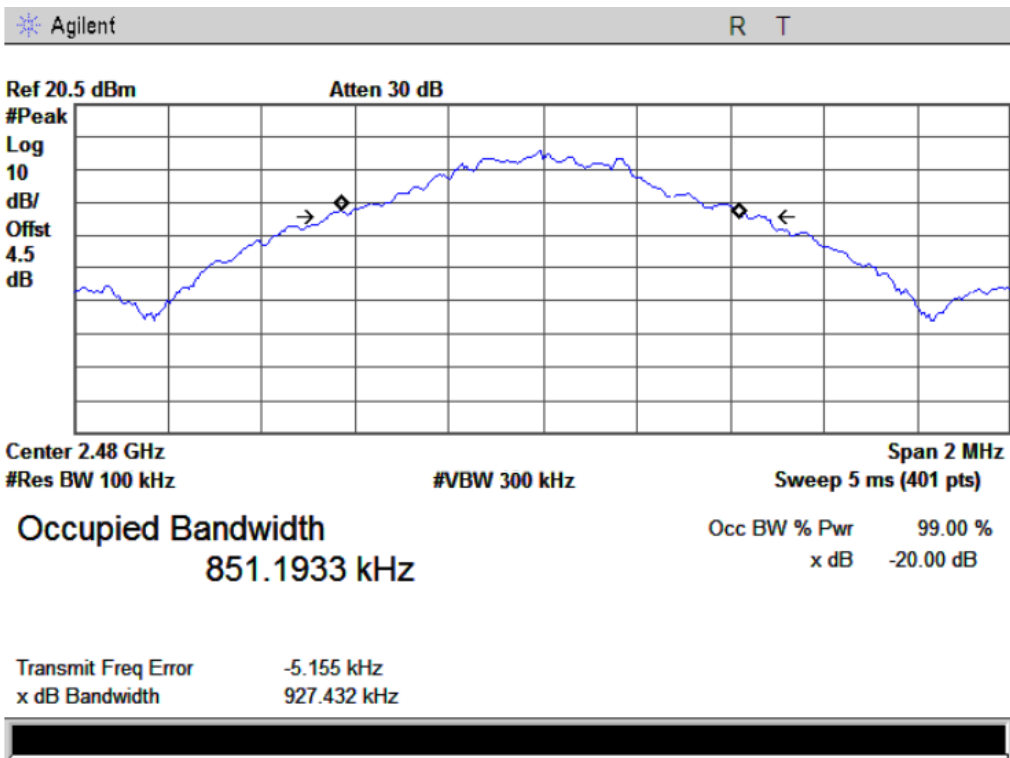
Modulation	Test Channel	Bandwidth(MHz)
GFSK	Lower	0.925
	Middle	0.868
	Upper	0.927
Pi/4DQPSK	Lower	1.284
	Middle	1.282
	Upper	1.284
8DPSK	Lower	1.292
	Middle	1.304
	Upper	1.299

Test result plot as follows:

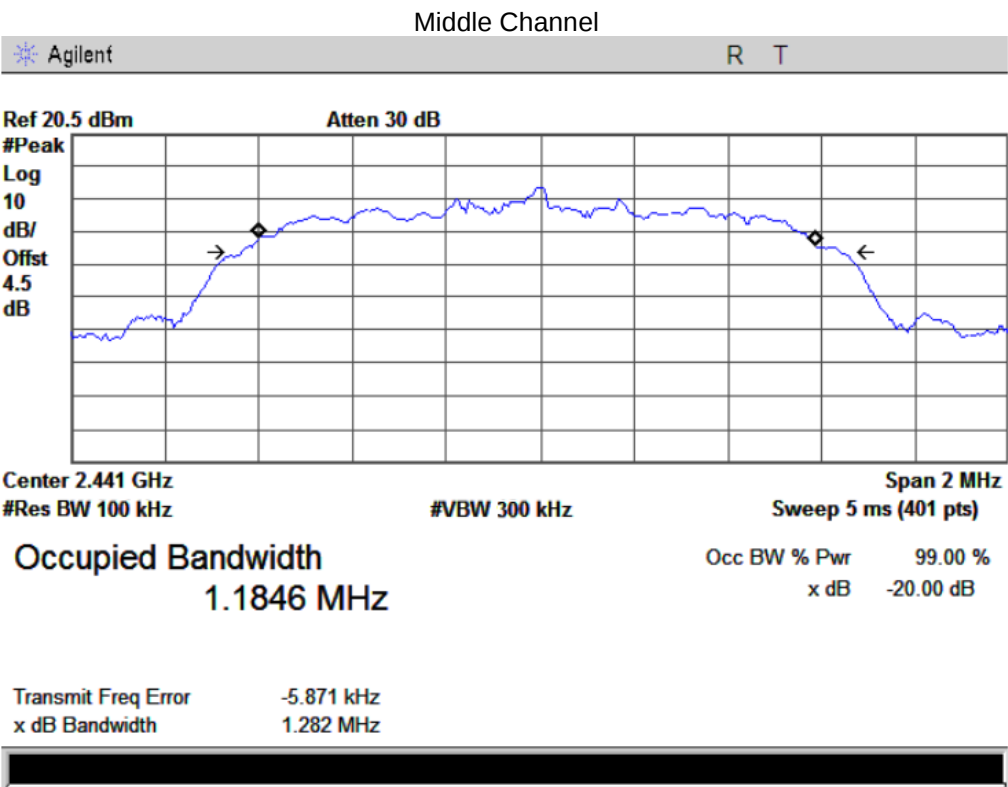
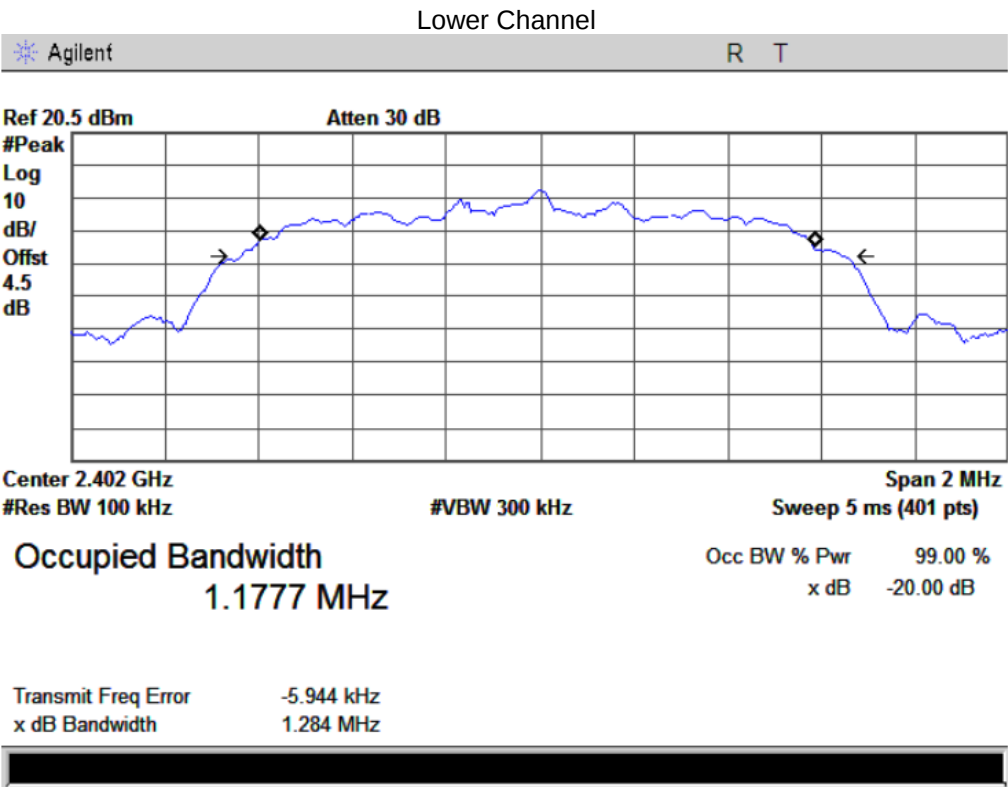
Modulation: GFSK



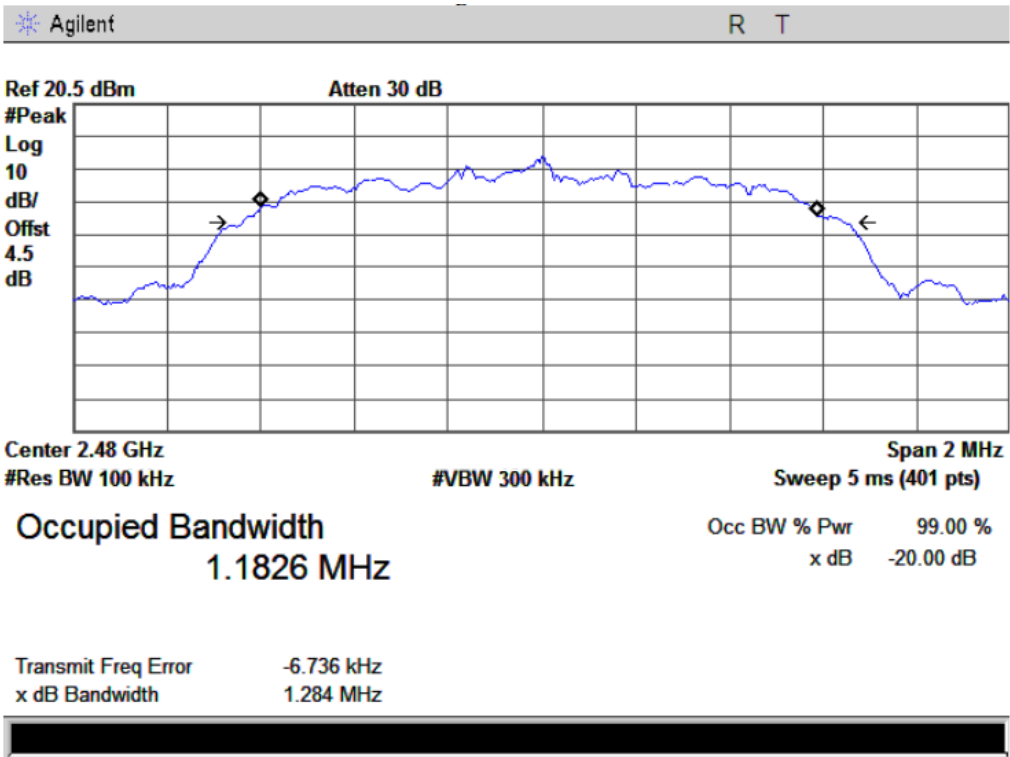
Upper Channel



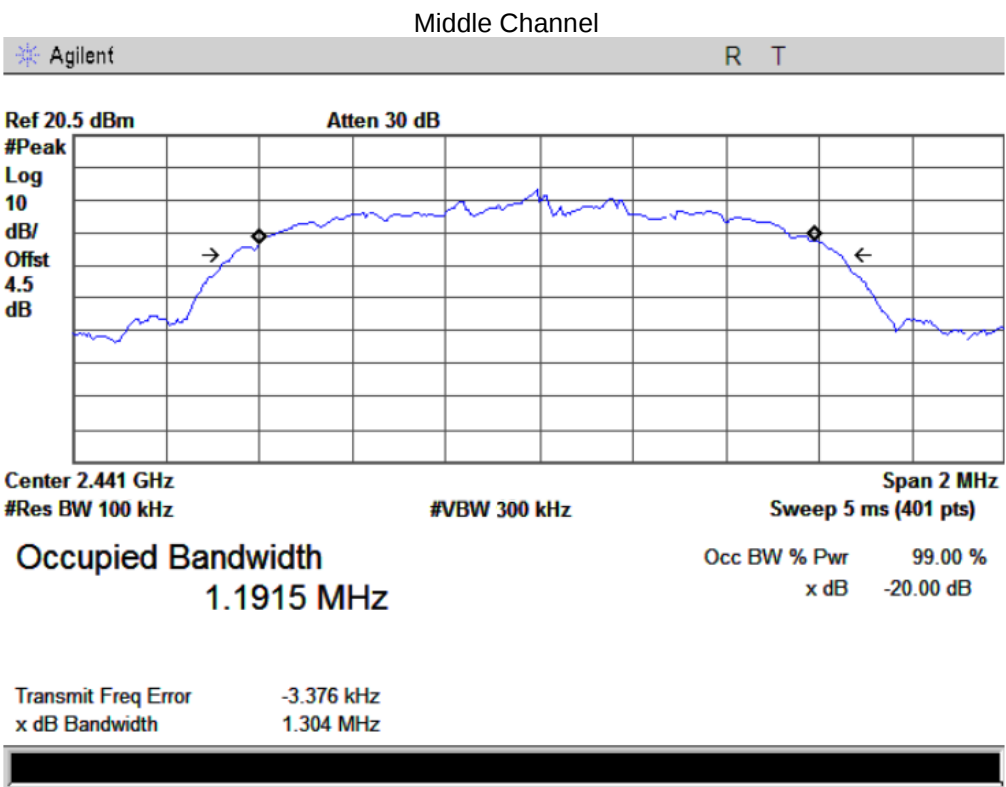
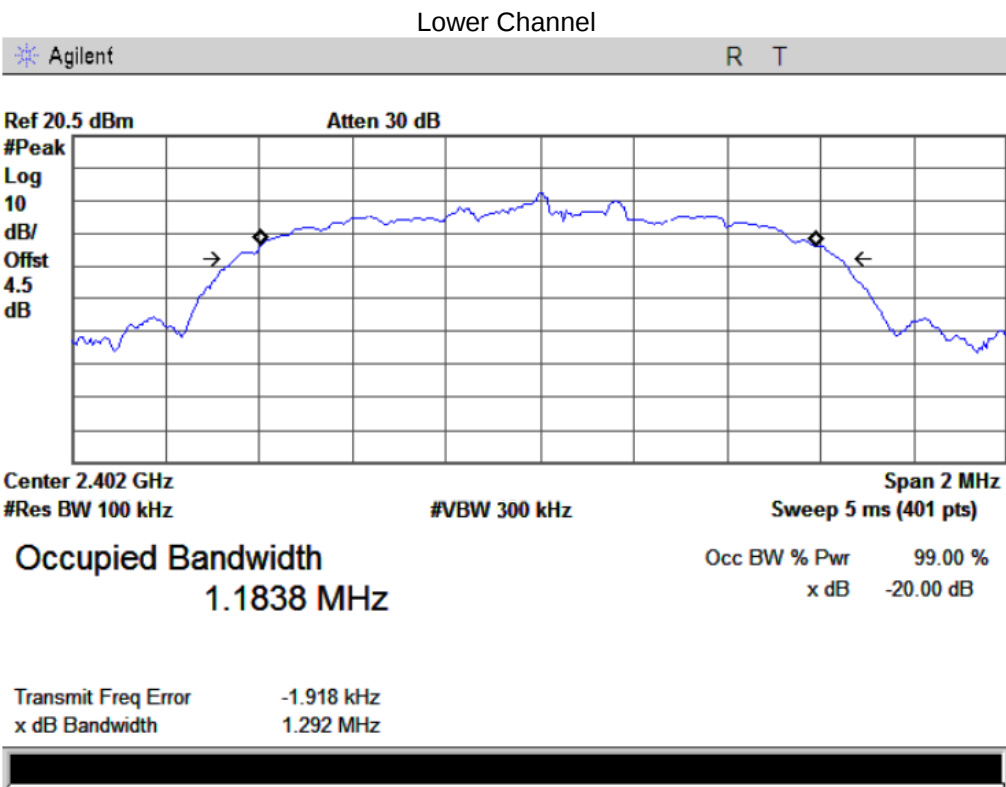
Modulation: PI/4 DPSK



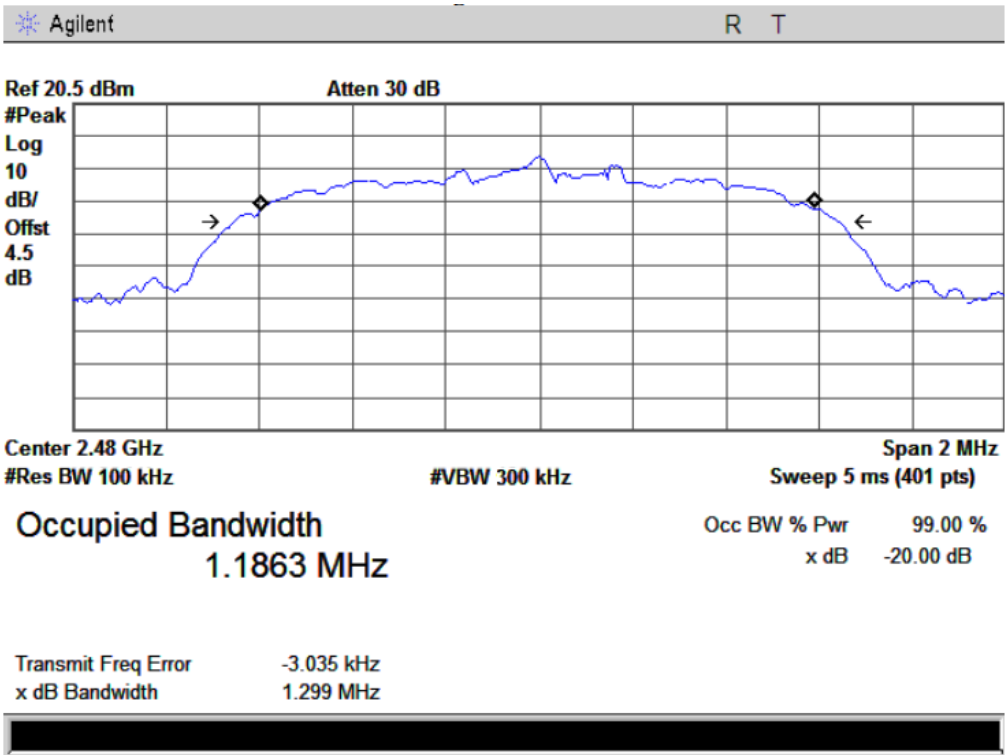
Upper Channel



Modulation: 8DPSK



Upper Channel



9 Antenna 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. This product has a PCB printed antenna, fulfill the requirement of this section.

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