FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Superior communications.

Bluetooth Headphone

Model Number: 08019AU

Additional Model: 07958PG, 07959SM, 08057SM, 08058SM

FCC ID:YJW08019AU

Prepared for:	Superior communications .
	5027 Irwindale Ave. Suite, Irwindale Ave, California, United States, 91706.
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
	Tel: 86-769-83081888-808

Report Number:	ESTE-R1807004		
Date of Test:	June 20 ~ July 02, 2018		
Date of Report:	July 04, 2018		



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EST Technology Co., Ltd.

Applicant: Address:	Superior communications 5027 Irwindale Ave. Suite,		ifornia, United States, 91706.	
Manufacturer: Address:	Dong Guan Superior Communications Co.,Ltd NO 100 Li xiang East Road Shui Ping Village Dalang Town, Dong Guan City, Guang Dong Province.			
E.U.T:	Bluetooth Headphone			
Model Number:	08019AU			
Additional Model:	diagram, PCB Layout, conconstruction and mechanic number, colour and trade The "08019AU" with trad The "07958PG" with trad	the same technical of imponents and components and components and components construction, examinately and the construction of		
Power Supply:	DC 5V From Adapter			
Test Voltage:	DC 5V From Adapter Inp DC 5V From Adapter Inp			
Trade Name:	Audity/Pureboom/SoMi	Serial No.:		
Date of Receipt:	Jun. 19, 2018	Date of Test:	June 20 ~ July 02, 2018	
Test Specification:	FCC Rules and Regulation ANSI C63.10:2013	ns Part 15 Subpart (C:2017	
Test Result:	Ltd. was assumed full resp	contained in this te consibility for the ac- report shows that the	st report and EST Technology Co., ccuracy and completeness of these e EUT to be technically compliance	
	This report applies to abore part without written appro-		y and shall not be reproduced in ogy Co., Ltd.	
			Date: July 04, 2018	
Prepared by:	Reviewed b	y:	Approved by:	
ling	Tom		hundts	
Ring / Assistant	Tony / Engine	er	Iceman Hu/IManager	
Other Aspects: None.				
Abbreviations: OK/P=pa	ssed fail/F=failed n.a/N	=not applicable E.	U.T=equipment under tested	

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	:	: Bluetooth Headphone			
FCC ID	:	YJW08019AU			
Model Number	:	08019AU			
Operation frequency	:	2402MHz~2	480MHz		
Number of channel :		79	40		
Antenna :		PCB antenna,0dBi Gain			
Modulation :		Dual-mode Bluetooth 4.0 BT BDR: GFSK BT EDR: π/4-DQPSK BT EDR: 8-DPSK	Dual-mode Bluetooth 4.0 BLE: GFSK		
Sample Type	:	Prototype pro	oduction		



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2. SUMMARY OF TEST

2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.247a1 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Radiated Emissions	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013 DA 00-705	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) DA 00-705	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013 DA 00-705	PASS
Antenna requirement	FCC Part 15: 15.203	PASS



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2.2. Test Facilities

EMC Lab	:	Certificated by CNAS, CHINA Registration No.: L5288 Date of registration: November 13, 2017 Certificated by A2LA, USA Registration No.: 4366.01 Date of registration: November 07, 2017 Certificated by FCC, USA Designation Number: CN1215 Registration No.: 722932 Date of registration: November 21, 2017 Certificated by Industry Canada Registration No.: 9405A Date of registration: December 03, 2015 Certificated by VCCI, Japan Registration No.: R-13663; C-14103 Date of registration: July 25, 2017 This Certificate is valid until: July 24, 2020 Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001
		Date of registration: February 07, 2015 Certificated by TUV/PS, Shenzhen Registration No.: SCN1017 Date of registration: January 27, 2011 Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L2-64 Date of registration: April 28, 2011
		Certificated by Nemko, Hong Kong Registration No.: 175193 Date of registration: May 4, 2011
Name of Firm	:	EST Technology Co., Ltd.
Site Location	•	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China



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2.3. Measurement uncertainty

Test Item	Uncertainty	
Uncertainty for Conduction emission test	±3.48dB	
Uncertainty for spurious emissions test	±4.60 dB(Polarize: H)	
(30MHz-1GHz)	±4.68 dB(Polarize: V)	
Uncertainty for spurious emissions test (1GHz to 18GHz)	±4.96dB	
Uncertainty for radio frequency	7×10 ⁻⁸	
Uncertainty for conducted RF Power	0.20dB	
Uncertainty for Power density test	0.26dB	

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

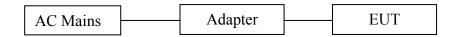
2.4. Assistant equipment used for test

2.4.1. Adapter

M/N	:	TEKA012-0502000UK		
Input	:	AC 100-240V, 50/60Hz, 0.35AMAX		
Output	:	DC 5V/2A		
Note: Don't configuration adapter when it sales on the market,				
The adapter provided by the laboratory.				

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into Bluetooth test mode by software before test.



(EUT: Bluetooth Headphone)



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2.6. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency	
	Low	2402MHz	
GFSK	Middle	2441MHz	
	High	2480MHz	
	Low	2402MHz	
8-DPSK	Middle	2441MHz	
	High	2480MHz	

2.7. Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
No.	(MHz)	No.	(MHz)	No.	(MHz)	No.	(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	-	-



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2.8. Test Equipment

2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
EMI Test Receiver	Rohde	ESHS30	832354	CEPREI	June 15,18	1 Year
	& Schwarz					
Artificial Mains Network	Rohde	ENV216	101260	CEPREI	June 15,18	1 Year
	& Schwarz					
Pulse Limiter	Rohde	ESH3-Z2	101100	CEPREI	June 15,18	1 Year
	& Schwarz					
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.2. For radiated emission test(9 kHz-30MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
EMI Test	Rohde	ESR7	101780	CEPREI	June 15,18	1 Year
Receiver	& Schwarz					
Active Loop Antenna	SCHWARZB	FMZB1519	1519-038	CEPREI	October	1 Year
	ECK				08,17	
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.3. For radiated emissions test (30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
EMI Test	Rohde	ESR7	101780	CEPREI	June 15,18	1 Year
Receiver	& Schwarz					
Bilog Antenna	Teseq	CBL 6111D	27090	CEPREI	June 15,18	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.4. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration	Last Cal.	Next Cal.
				Body		
Horn Antenna	SCHWARZB	BBHA 9120 D	BBHA912	CEPREI	June 18,18	1 Year
	ECK		0D1002			
Horn Antenna	SCHWARZB	BBHA9170	BBHA917	CEPREI	June 18,18	1Year
	ECK		0242			
Signal Amplifier	SCHWARZB	BBV9718	9718-212	CEPREI	June 15,18	1 Year
	ECK					
Spectrum Analyzer	Rohde	FSV	103173	CEPREI	June 15,18	1 Year
	&Schwarz					
PSA Series Spertrum	Agilent	E4447A	MY50180	CEPREI	June 15,18	1Year
Analyzer			031			
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A



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2.8.5. For connect EUT antenna terminal test

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde &Schwarz	FSV	103173	CEPREI	June 15,18	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211 139	CEPREI	June 15,18	1 Year



3. MAXIMUM PEAK OUTPUT POWER

3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

3.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

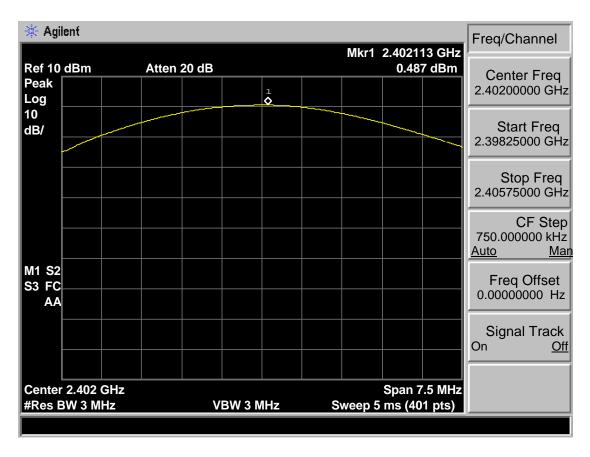
3.3. Test Result

EUT: Bluetooth Headphone								
M/N: 08019AU								
Test date: 2018-06-27 Test site: RF site Tested by: Viking								
Mode	Freq	Result	L	imit	Conclusion			
(MHz)		(dBm)	dBm	W	Conclusion			
	2402	0.487	30.00	1	Pass			
GFSK	2441	2.898	30.00	1	Pass			
	2480	3.145	30.00	1	Pass			
	2402	-1.343	21.00	0.125	Pass			
8-DPSK	2441	1.169	21.00	0.125	Pass			
	2480	1.301	21.00	0.125	Pass			

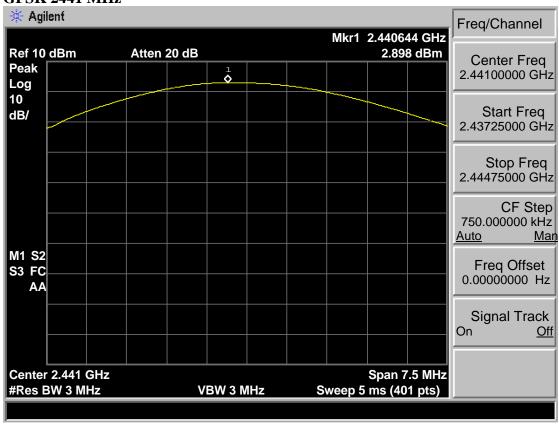


3.4. Test Data

GFSK 2402 MHz



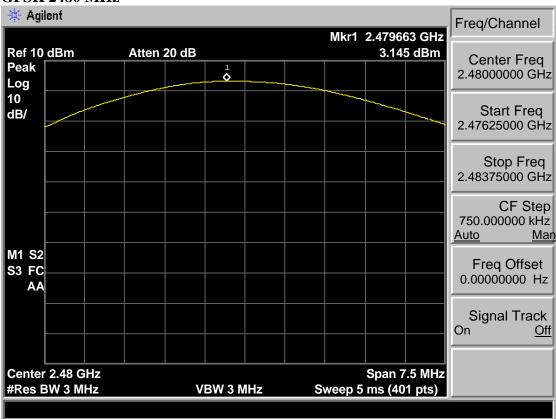
GFSK 2441 MHz





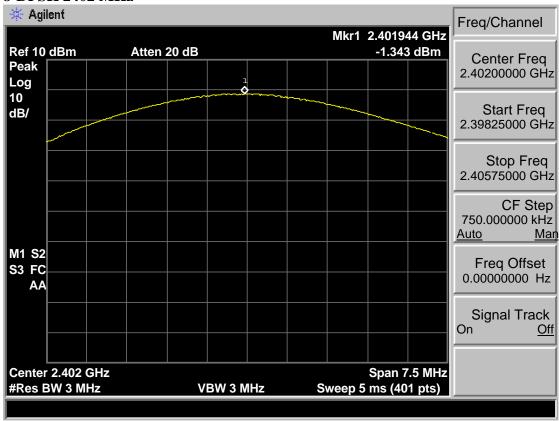
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GFSK 2480 MHz

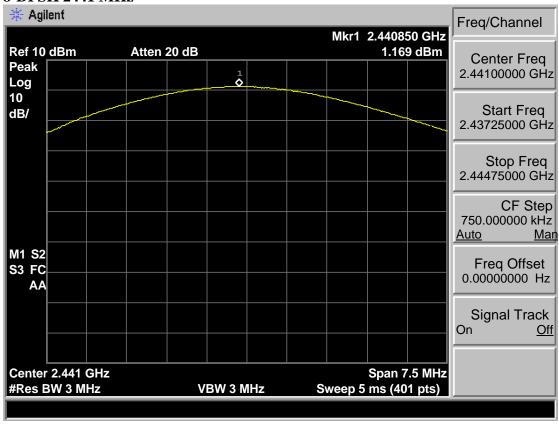




8-DPSK 2402 MHz



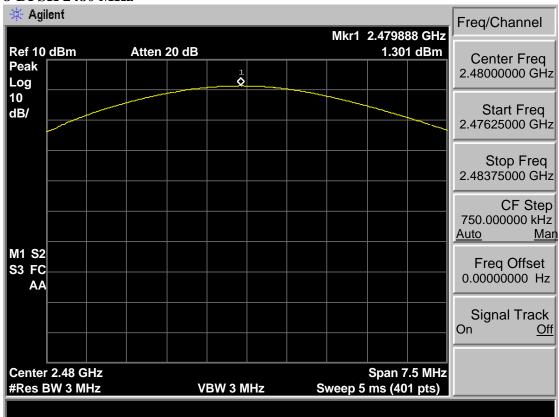
8-DPSK 2441 MHz





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8-DPSK 2480 MHz





4. 20 DB BANDWIDTH

4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

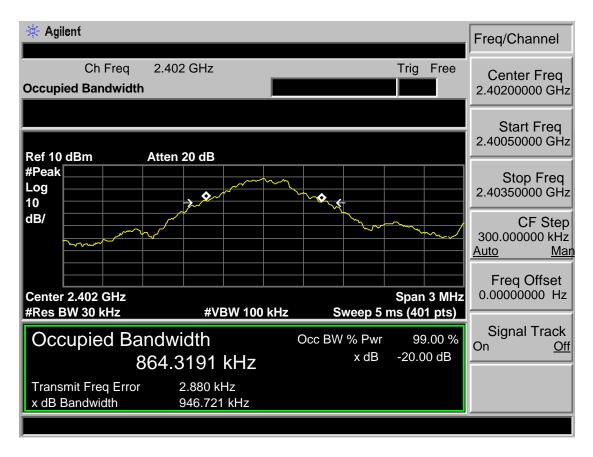
EUT: Bluetooth Headphone							
M/N: 08019AU							
Test date: 20	18-06-27	Test site: RF site	Test site: RF site Tested by: V				
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion			
	2402	0.947	/	PASS			
GFSK	2441	0.941	/	PASS			
	2480	0.943	/	PASS			
	2402	1.271	/	PASS			
8-DPSK	2441	1.268	/	PASS			
	2480	1.267	/	PASS			



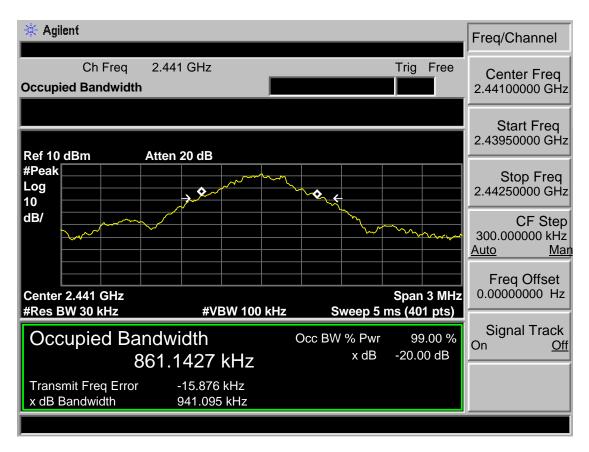
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4.4. Test Data

GFSK 2402MHz

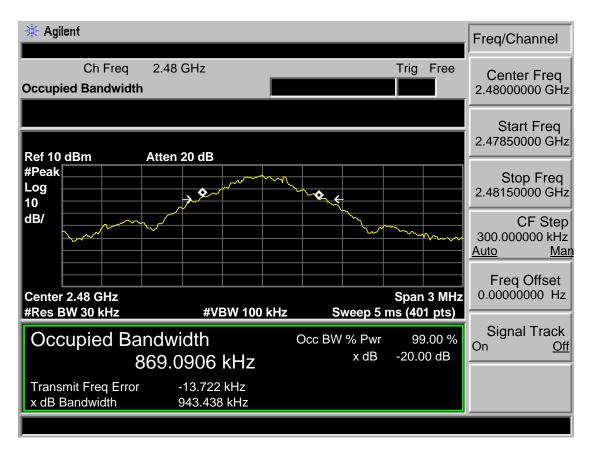


GFSK 2441MHz



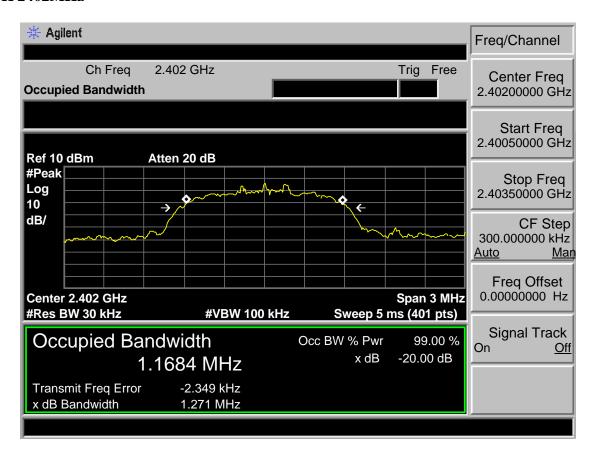


GFSK 2480MHz

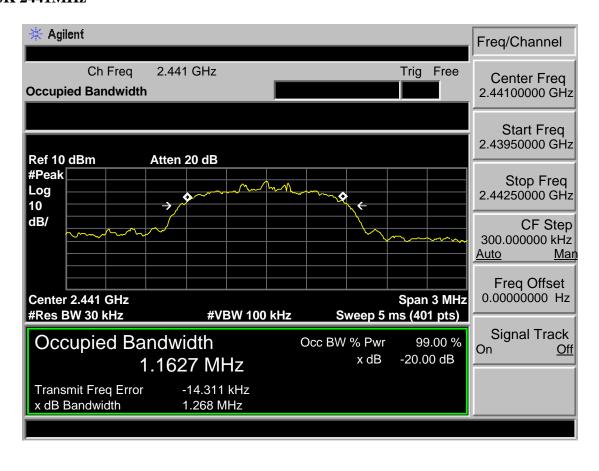




8-DPSK 2402MHz

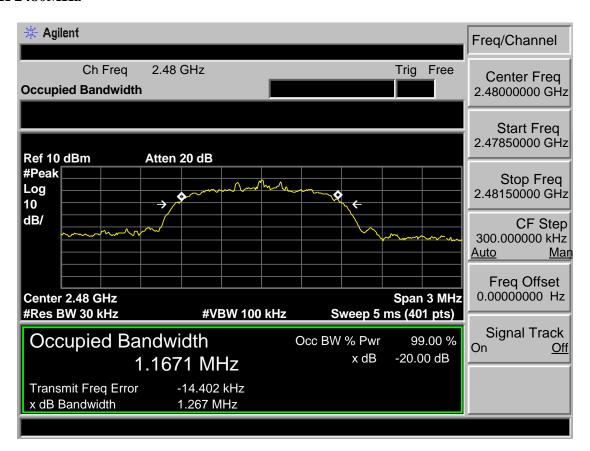


8-DPSK 2441MHz





8-DPSK 2480MHz





5. CARRIER FREQUENCY SEPARATION

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

5.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

5.3. Test Result

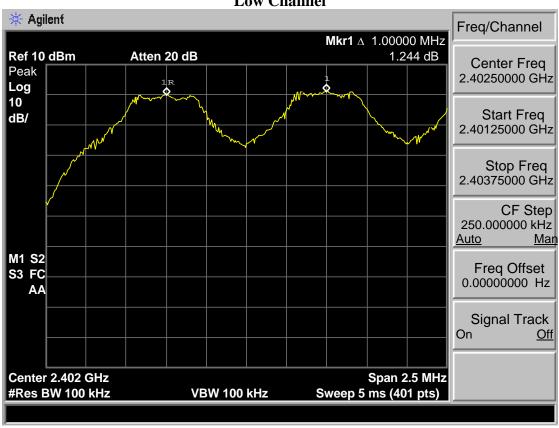
EUT: Bluetooth Headphone							
M/N: 08019AU							
Test date: 20	018-06-27		Test site: RF site Tested by: Viking				
Mode	Channel	Channel		a 1 :			
	separation		Limit	Conclusion			
		(MHz)					
	Low CH	1.000	0.947MHz	PASS			
GFSK	Mid CH	1.000	0.941MHz	PASS			
	High CH	1.000	0.943MHz	PASS			
	Low CH	1.000	> 2/3 of the 20dB Bandwidth or	PASS			
8-DPSK	Mid CH	1.000	25[kHz](whichever is greater)	PASS			
High CH		1.000	23[K112](WITICHEVEL IS gleater)	PASS			



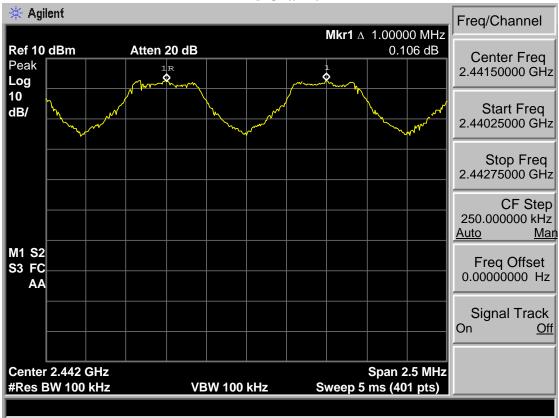
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5.4. Test Data

GFSKLow Channel

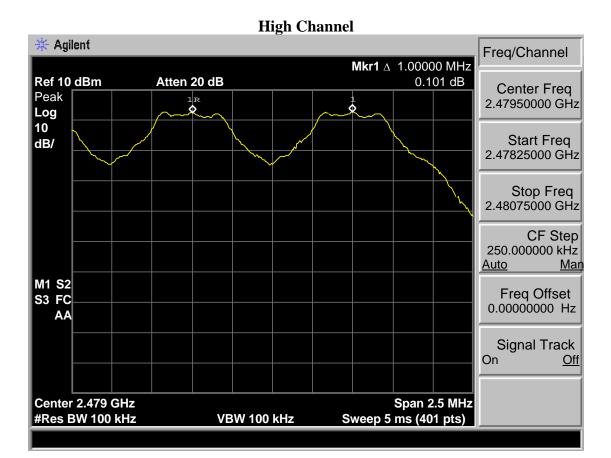


Mid Channel



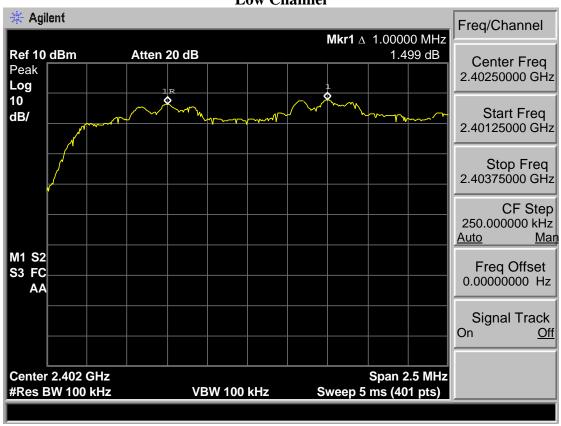


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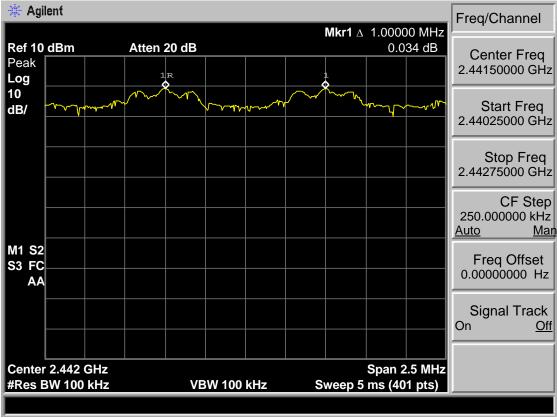




8-DPSK Low Channel

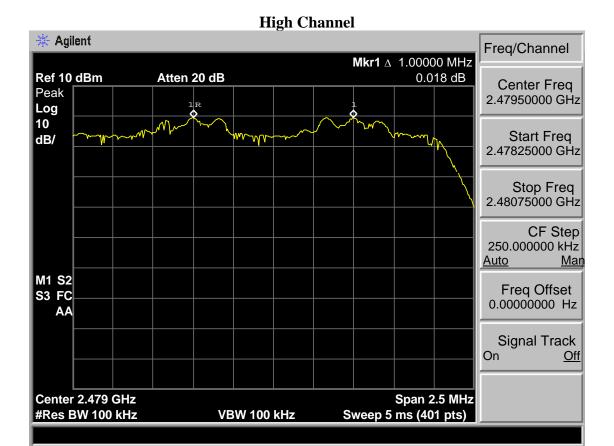


Mid Channel





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6. NUMBER OF HOPPING CHANNEL

6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

6.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

6.3. Test Result

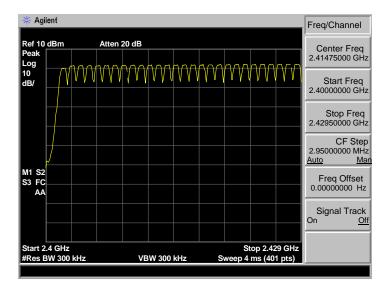
EUT: Bluetooth Headphone						
M/N: 08019AU						
Test date: 2018-06-27 Test site: RF site Tested by: Viking						
Mode	Number of hopping channel		Limit	Conclusion		
GFSK	SK 79		>15	PASS		
8-DPSK	79	>15	PASS			

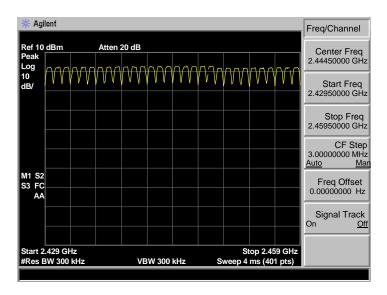


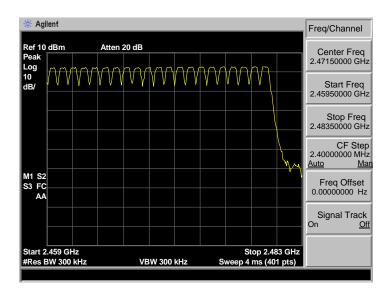
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6.4. Test Data

GFSK



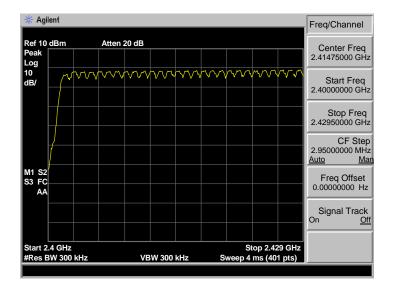


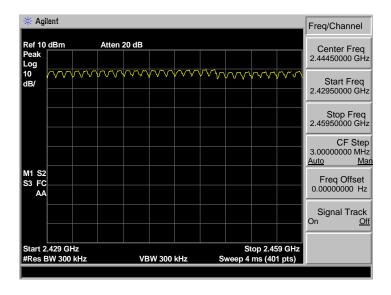


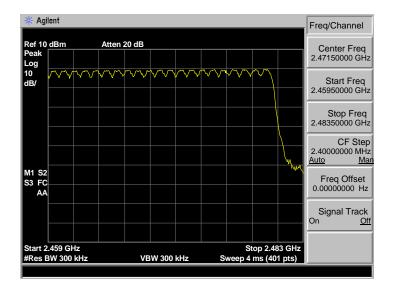


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8-DPSK









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7. DWELL TIME

7.1. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

7.2. Test Procedure

- 1. The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.
- 2. Set the EUT to proper test mode with relative test software and hardware.
- 3. Spectrum analyzer setting: Centered Frequency = measured channel, RBW = 1MHz, VBW= 1MHz, Frequency Span = 0 Hz.
- 4. Set sweep time properly to capture the entire dwell time per hopping channel.
- 5. Set detector type to Peak and trace mode to Max Hold and make the measurement.
- 6. Repeat step 3-5 until all channels measured were complete.

7.3. Test Result

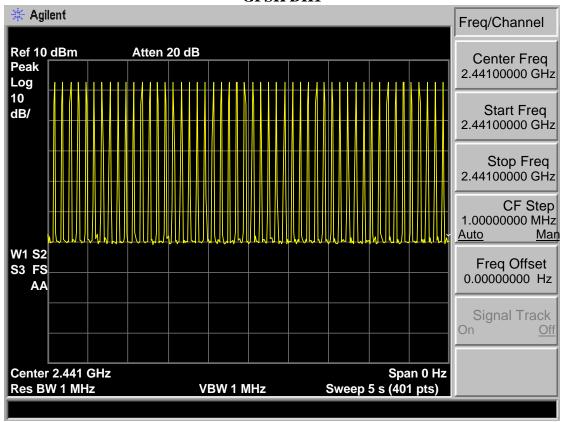
EUT: Bluetooth Headphone						
M/N: 08019AU						
Test date: 2018-06-27 Test site: RF site Tested by: Viking						
Mode	Hopping number	Measure time (s)	Burst on time (ms)	Dwell time (ms)	Limit	Conclusion
GFSK DH1	50	5	0.45	142.20	<400ms	PASS
GFSK DH3	25	5	1.70	268.60	<400ms	PASS
GFSK DH5	17	5	2.95	316.95	<400ms	PASS
8-DPSK 3DH1	50	5	0.46	145.36	<400ms	PASS
8-DPSK 3DH3	25	5	1.71	270.18	<400ms	PASS
8-DPSK 3DH5	17	5	2.95	316.95	<400ms	PASS
Dwell time = Hop	ping numbe	r/measure	time *0.4*79*	burst on tim	ie.	

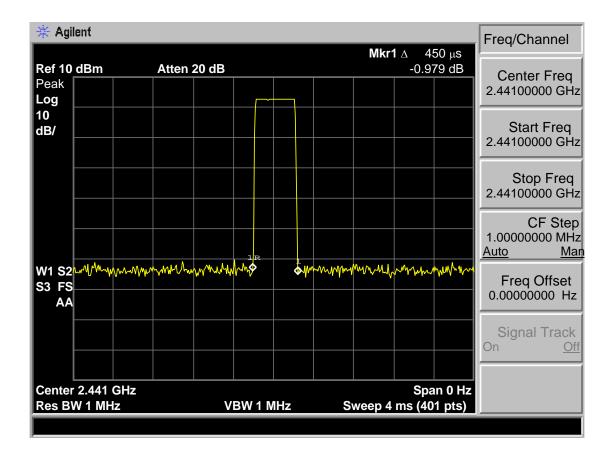


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7.4. Test Data

GFSK DH1

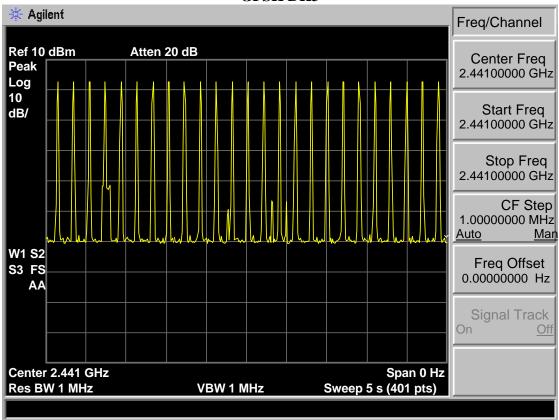


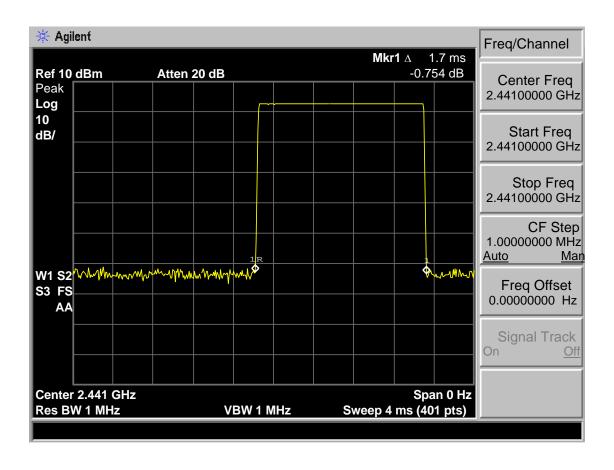




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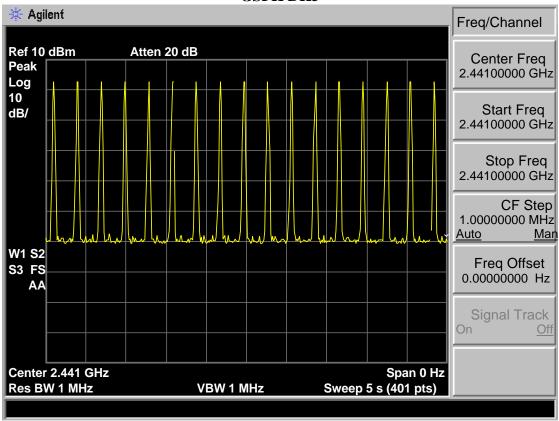
GFSK DH3

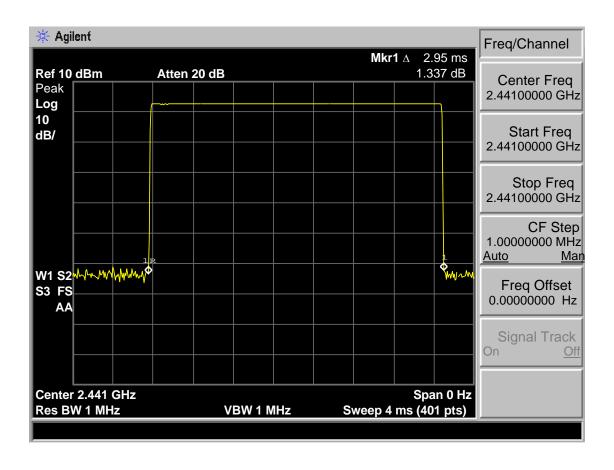






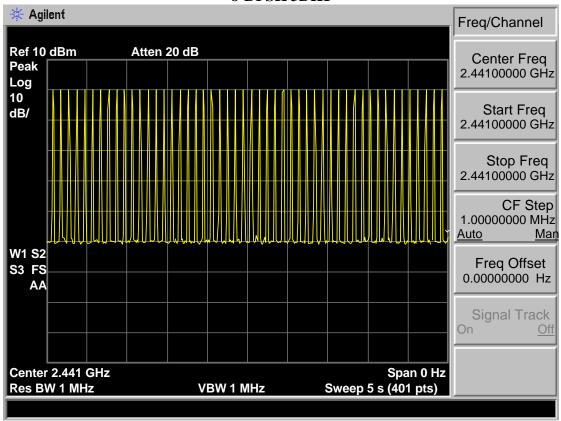
GSFK DH5

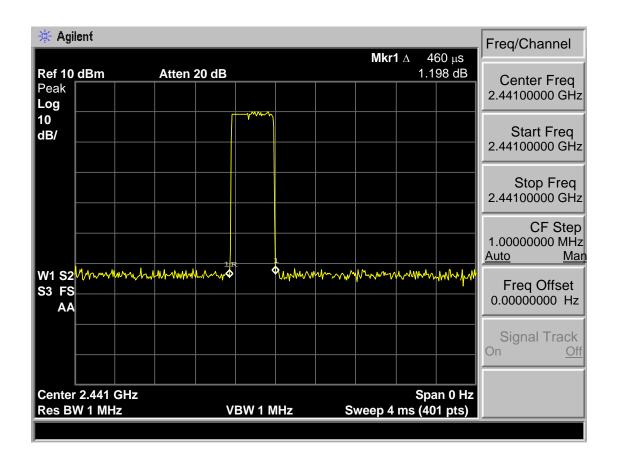






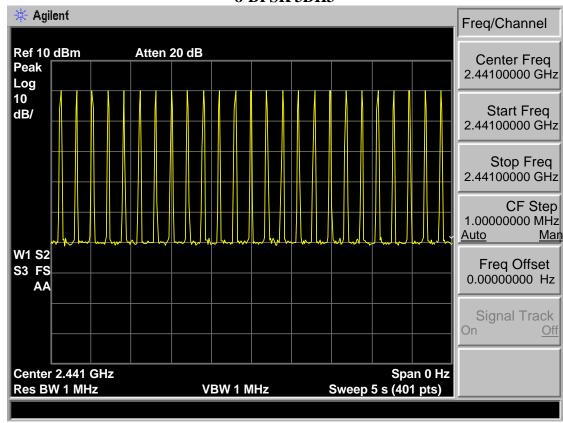
8-DPSK 3DH1

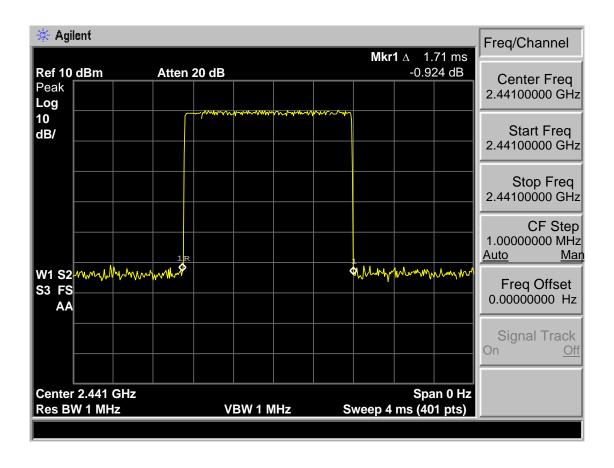






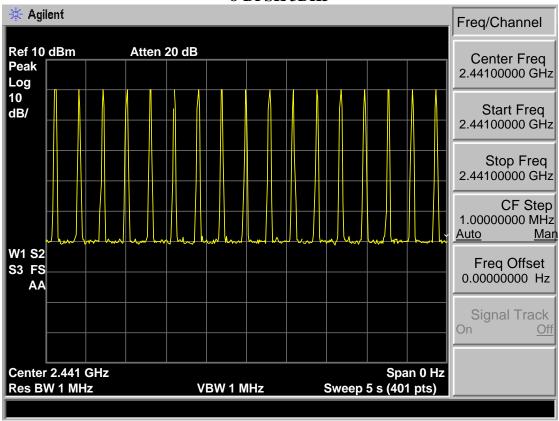
8-DPSK 3DH3

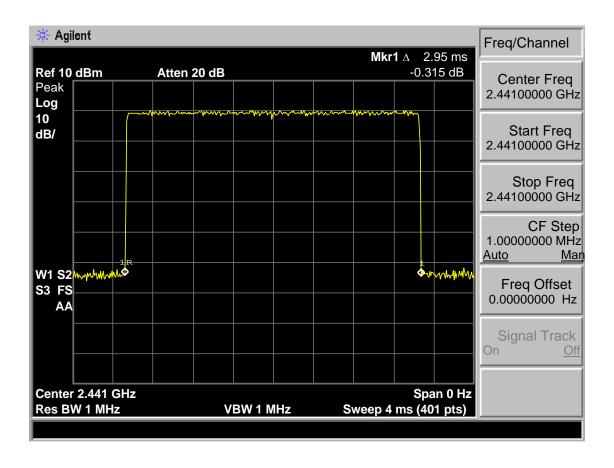






8-DPSK 3DH5







8. RADIATED EMISSIONS

8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 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	(2)

15.209 Limit

Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark : (1) Emission level $dB\mu V = 20 \log Emission level \mu V/m$

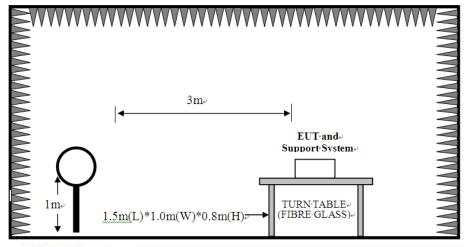
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



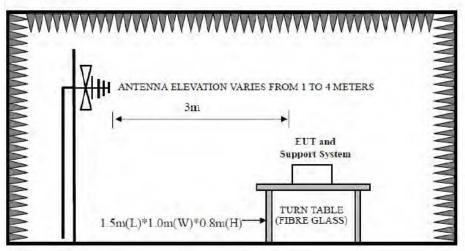
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8.2. Block Diagram of Test setup

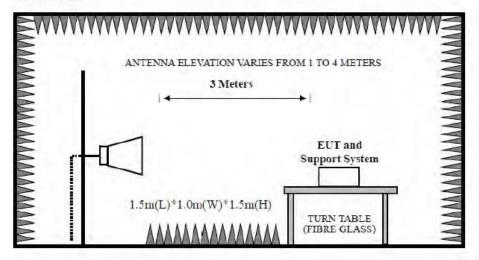
9kHz~30MHz



30~1000MHz



Above 1GHz





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8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement, PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

8.4. Test Result

Pass

Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2. The frequency 2402MHz \ 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.



8.5. Test Data

9 kHz – 30 MHz

Pass

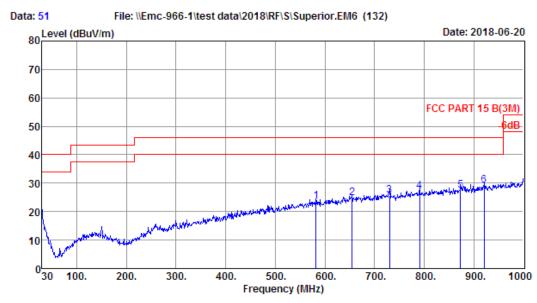
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.



30 MHz - 1000 MHz

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Site no. : 1# 966 Chamber Data no. : 51
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL

Limit : FCC PART 15 B(3M)

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU Test Mode : TX Mode

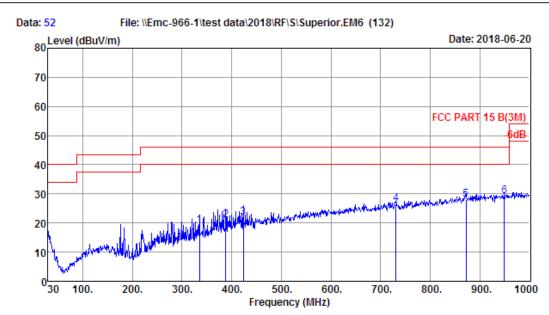
ANT Cable Emission Freq. Factor Loss Reading Level Limit Margin Remark (MHz) (dB/m) (dB) (dBuV) (dBuV/m) (dBuV/m) (dB)

						,		
1	581.93	19.74	3.14	0.63	23.51	46.00	22.49	QP
2	654.68	21.00	3.41	0.37	24.78	46.00	21.22	QP
3	730.34	21.70	3.71	0.32	25.73	46.00	20.27	QP
4	790.48	22.80	3.73	0.59	27.12	46.00	18.88	QP
5	872.93	23.43	4.04	0.11	27.58	46.00	18.42	QP
6	920.46	24.20	4.15	0.87	29.22	46.00	16.78	QP

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



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: 1# 966 Chamber Site no. Data no. : 52

Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL

: FCC PART 15 B (3M)

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V

: 08019AU M/N Test Mode : TX Mode

	Freq.	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	335.55	14.56	2.23	2.53	19.32	46.00	26.68	QP
2	387.93	15.74	2.34	2.79	20.87	46.00	25.13	QP
3	423.82	16.58	2.46	2.83	21.87	46.00	24.13	QP
4	731.31	21.72	3.72	1.00	26.44	46.00	19.56	QP
5	871.96	23.42	4.03	0.70	28.15	46.00	17.85	QP
6	949.56	24.40	4.63	0.23	29.26	46.00	16.74	QP

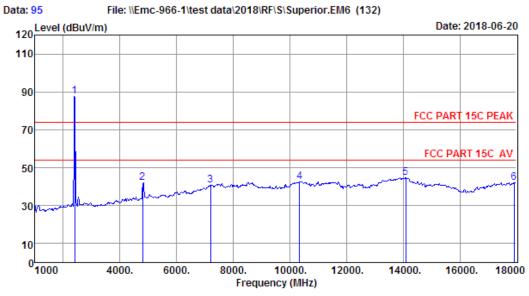
- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



1000-18000MHz

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Site no. : 1# 966 Chamber Data no. : 95

Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

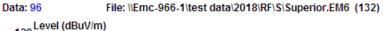
Test Mode : GFSK TX 2402MHz

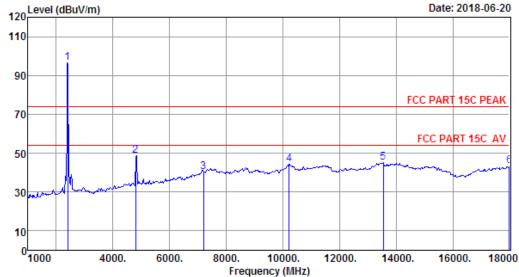
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.35	3.21	34.94	92.09	87.71	74.00	-13.71	Peak
2	4804.00	32.06	4.67	35.06	40.25	41.92	74.00	32.08	Peak
3	7206.00	36.56	5.99	33.45	31.71	40.81	74.00	33.19	Peak
4	10350.00	39.24	10.10	34.30	27.42	42.46	74.00	31.54	Peak
5	14090.00	41.61	10.14	32.99	26.07	44.83	74.00	29.17	Peak
6	17915.00	44.48	12.45	31.40	16.49	42.02	74.00	31.98	Peak

- 2. Margin= Limit Emission Level.



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Site no. : 1# 966 Chamber Data no. : 96
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU Test Mode : GFSK TX 2402MHz

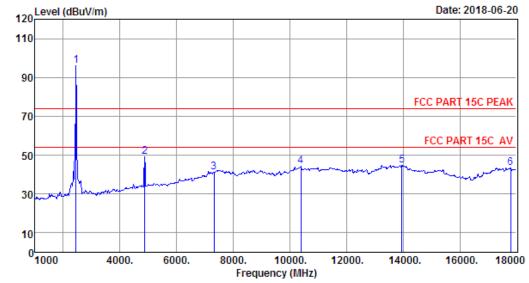
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.35	3.21	34.94	100.80	96.42	74.00	-22.42	Peak
2	4804.00	32.06	4.67	35.06	47.23	48.90	74.00	25.10	Peak
3	7206.00	36.56	5.99	33.45	31.13	40.23	74.00	33.77	Peak
4	10214.00	39.19	9.77	34.43	29.88	44.41	74.00	29.59	Peak
5	13546.00	41.34	9.73	32.54	26.43	44.96	74.00	29.04	Peak
6	18000.00	44.70	12.64	31.56	17.56	43.34	74.00	30.66	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 97
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

M/N : 08019AU Test Mode : GFSK TX 2441MHz

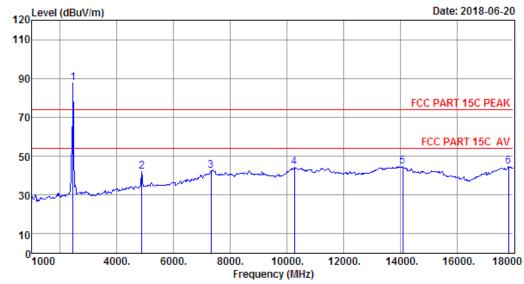
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.48	3.26	35.07	100.44	96.11	74.00	-22.11	Peak
2	4882.00	32.18	4.73	35.14	47.57	49.34	74.00	24.66	Peak
3	7323.00	36.82	6.10	33.28	31.54	41.18	74.00	32.82	Peak
4	10384.00	39.25	10.00	34.26	29.10	44.09	74.00	29.91	Peak
5	13954.00	41.66	10.12	32.84	25.97	44.91	74.00	29.09	Peak
6	17796.00	44.16	12.19	31.13	18.24	43.46	74.00	30.54	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 98

Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

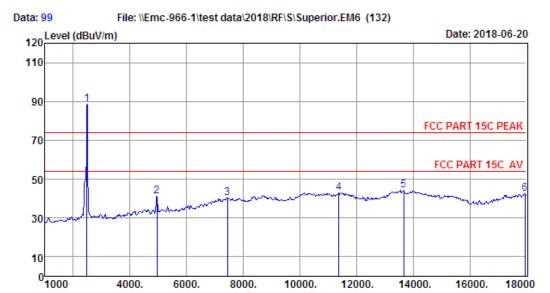
Test Mode : GFSK TX 2441MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.48	3.26	35.07	92.06	87.73	74.00	-13.73	Peak
2	4882.00	32.18	4.73	35.14	40.45	42.22	74.00	31.78	Peak
3	7323.00	36.82	6.10	33.28	32.68	42.32	74.00	31.68	Peak
4	10265.00	39.21	9.98	34.39	29.45	44.25	74.00	29.75	Peak
5	14090.00	41.61	10.14	32.99	25.91	44.67	74.00	29.33	Peak
6	17830.00	44.25	12.27	31.21	19.46	44.77	74.00	29.23	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Frequency (MHz)

: 1# 966 Chamber Data no. : 99 Site no.

Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

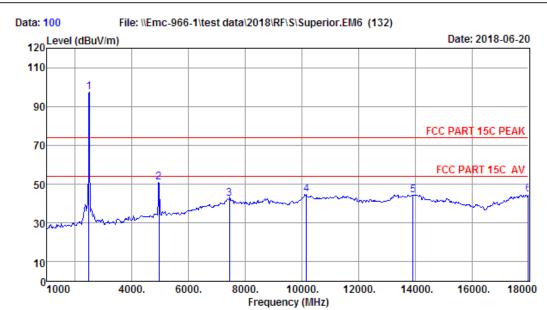
Test Mode : GFSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.56	3.29	35.21	92.87	88.51	74.00	-14.51	Peak
2	4960.00	32.34	4.80	35.24	39.20	41.10	74.00	32.90	Peak
3	7440.00	37.09	6.13	33.08	30.30	40.44	74.00	33.56	Peak
4	11370.00	40.05	8.30	32.78	27.54	43.11	74.00	30.89	Peak
5	13665.00	41.43	9.89	32.62	25.62	44.32	74.00	29.68	Peak
6	17949.00	44.57	12.53	31.44	16.72	42.38	74.00	31.62	Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 100
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU Test Mode : GFSK TX 2480MHz

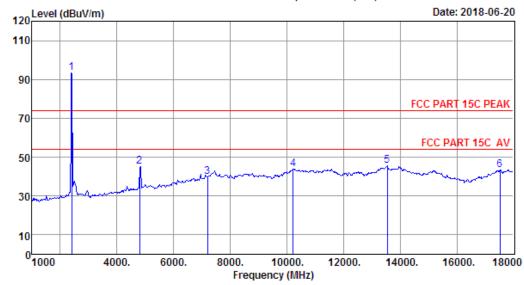
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.56	3.29	35.21	101.92	97.56	74.00	-23.56	Peak
2	4960.00	32.34	4.80	35.24	48.94	50.84	74.00	23.16	Peak
3	7440.00	37.09	6.13	33.08	32.51	42.65	74.00	31.35	Peak
4	10163.00	39.17	9.55	34.49	30.43	44.66	74.00	29.34	Peak
5	13920.00	41.63	10.11	32.83	25.56	44.47	74.00	29.53	Peak
6	18000.00	44.70	12.64	31.56	19.04	44.82	74.00	29.18	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 101
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

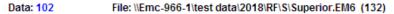
Test Mode : 8-DPSK TX 2402MHz

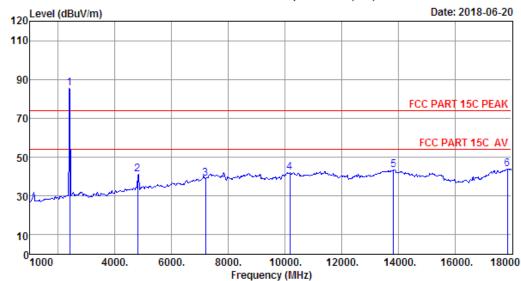
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.35	3.21	34.94	97.75	93.37	74.00	-19.37	Peak
2	4804.00	32.06	4.67	35.06	43.39	45.06	74.00	28.94	Peak
3	7206.00	36.56	5.99	33.45	30.78	39.88	74.00	34.12	Peak
4	10214.00	39.19	9.77	34.43	29.22	43.75	74.00	30.25	Peak
5	13546.00	41.34	9.73	32.54	27.01	45.54	74.00	28.46	Peak
6	17524.00	43.44	11.60	31.18	19.64	43.50	74.00	30.50	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 102
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2402MHz

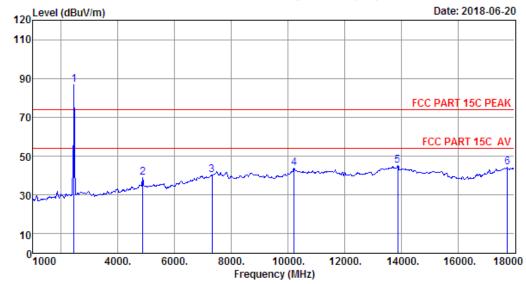
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.35	3.21	34.94	89.93	85.55	74.00	-11.55	Peak
2	4804.00	32.06	4.67	35.06	39.41	41.08	74.00	32.92	Peak
3	7206.00	36.56	5.99	33.45	29.92	39.02	74.00	34.98	Peak
4	10180.00	39.17	9.62	34.47	27.93	42.25	74.00	31.75	Peak
5	13835.00	41.57	10.10	32.76	24.51	43.42	74.00	30.58	Peak
6	17864.00	44.34	12.34	31.29	18.45	43.84	74.00	30.16	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 103
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

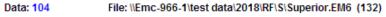
Test Mode : 8-DPSK TX 2441MHz

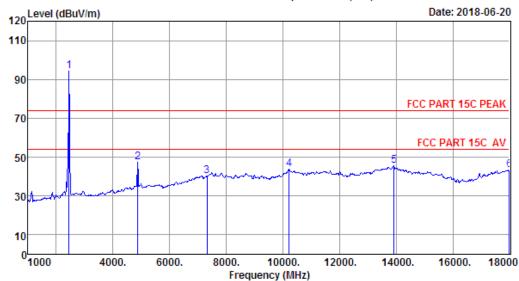
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	27.48	3.26	35.07	90.90	86.57	74.00	-12.57	Peak
2	4882.00	32.18	4.73	35.14	37.39	39.16	74.00	34.84	Peak
3	7323.00	36.82	6.10	33.28	30.74	40.38	74.00	33.62	Peak
4	10214.00	39.19	9.77	34.43	29.49	44.02	74.00	29.98	Peak
5	13886.00	41.61	10.11	32.80	26.26	45.18	74.00	28.82	Peak
6	17745.00	44.03	12.08	31.18	19.49	44.42	74.00	29.58	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 104
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

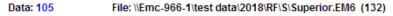
Test Mode : 8-DPSK TX 2441MHz

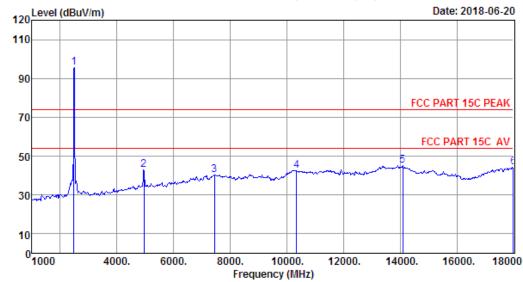
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
2441.00	27.48	3.26	35.07	98.55	94.22	74.00	-20.22	Peak
4882.00	32.18	4.73	35.14	45.53	47.30	74.00	26.70	Peak
7323.00	36.82	6.10	33.28	30.74	40.38	74.00	33.62	Peak
10214.00	39.19	9.77	34.43	29.49	44.02	74.00	29.98	Peak
13920.00	41.63	10.11	32.83	26.78	45.69	74.00	28.31	Peak
18000.00	44.70	12.64	31.56	17.60	43.38	74.00	30.62	Peak
	(MHz) 2441.00 4882.00 7323.00 10214.00 13920.00	Freq. Factor (MHz) (dB/m) 2441.00 27.48 4882.00 32.18 7323.00 36.82 10214.00 39.19 13920.00 41.63	Freq. Factor Loss (MHz) (dB/m) (dB) 2441.00 27.48 3.26 4882.00 32.18 4.73 7323.00 36.82 6.10 10214.00 39.19 9.77 13920.00 41.63 10.11	Freq. Factor Loss Factor (MHz) (dB/m) (dB) (dB) 2441.00 27.48 3.26 35.07 4882.00 32.18 4.73 35.14 7323.00 36.82 6.10 33.28 10214.00 39.19 9.77 34.43 13920.00 41.63 10.11 32.83	Freq. Factor Loss Factor Reading (MHz) (dB/m) (dB) (dB) (dBuV) 2441.00 27.48 3.26 35.07 98.55 4882.00 32.18 4.73 35.14 45.53 7323.00 36.82 6.10 33.28 30.74 10214.00 39.19 9.77 34.43 29.49 13920.00 41.63 10.11 32.83 26.78	Freq. Factor Loss Factor Reading Level (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) 2441.00 27.48 3.26 35.07 98.55 94.22 4882.00 32.18 4.73 35.14 45.53 47.30 7323.00 36.82 6.10 33.28 30.74 40.38 10214.00 39.19 9.77 34.43 29.49 44.02 13920.00 41.63 10.11 32.83 26.78 45.69	Freq. Factor Loss Factor Reading Level Limits (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) 2441.00 27.48 3.26 35.07 98.55 94.22 74.00 4882.00 32.18 4.73 35.14 45.53 47.30 74.00 7323.00 36.82 6.10 33.28 30.74 40.38 74.00 10214.00 39.19 9.77 34.43 29.49 44.02 74.00 13920.00 41.63 10.11 32.83 26.78 45.69 74.00	Freq. Factor Loss Factor Reading Level Limits Margin (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) (dB) 2441.00 27.48 3.26 35.07 98.55 94.22 74.00 -20.22 4882.00 32.18 4.73 35.14 45.53 47.30 74.00 26.70 7323.00 36.82 6.10 33.28 30.74 40.38 74.00 33.62 10214.00 39.19 9.77 34.43 29.49 44.02 74.00 29.98 13920.00 41.63 10.11 32.83 26.78 45.69 74.00 28.31

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 105
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

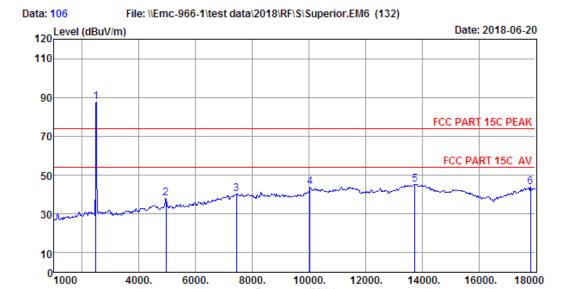
Test Mode : 8-DPSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.56	3.29	35.21	99.80	95.44	74.00	-21.44	Peak
2	4960.00	32.34	4.80	35.24	41.20	43.10	74.00	30.90	Peak
3	7440.00	37.09	6.13	33.08	30.14	40.28	74.00	33.72	Peak
4	10350.00	39.24	10.10	34.30	27.53	42.57	74.00	31.43	Peak
5	14090.00	41.61	10.14	32.99	26.40	45.16	74.00	28.84	Peak
6	18000.00	44.70	12.64	31.56	18.39	44.17	74.00	29.83	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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10000.

Frequency (MHz)

12000.

14000.

16000.

18000

: 1# 966 Chamber Data no. : 106 Site no. Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

6000.

8000.

: FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

4000.

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2480MHz

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	27.56	3.29	35.21	91.92	87.56	74.00	-13.56	Peak
2	4960.00	32.34	4.80	35.24	36.00	37.90	74.00	36.10	Peak
3	7440.00	37.09	6.13	33.08	30.04	40.18	74.00	33.82	Peak
4	10044.00	39.12	9.04	34.63	30.26	43.79	74.00	30.21	Peak
5	13750.00	41.50	10.01	32.69	26.39	45.21	74.00	28.79	Peak
6	17830.00	44.25	12.27	31.21	18.58	43.89	74.00	30.11	Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



18000MHz - 25000MHz

Pass

Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

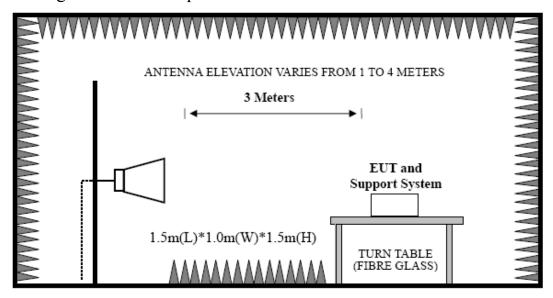


9. BAND EDGE COMPLIANCE

9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

9.2. Block Diagram of Test setup



9.3. Test Procedure

EUT was placed on a turn table, which is 1.5 m high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

Peak: RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto. AV: RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

9.4. Test Result

Pass (The testing data was attached in the next pages.)

Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2. The frequency 2402MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

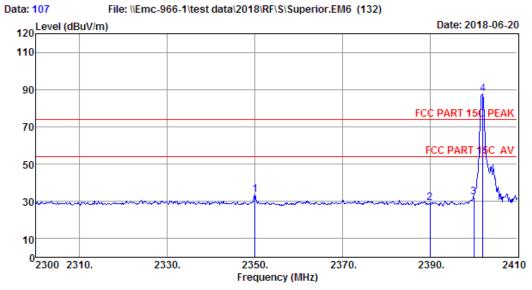


EST Technology Co., Ltd

9.5. Test Data

EST Technology

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Site no. : 1# 966 Chamber Data no. : 107 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

: Temp:23.3';Humi:51%;Press:101.52kPa Env. / Ins.

Engineer : Viking

EUT : Bluetooth Headphone

: DC 3.7V Power

M/N : 08019AU

Test Mode : GFSK TX 2402MHz(No Hopping)

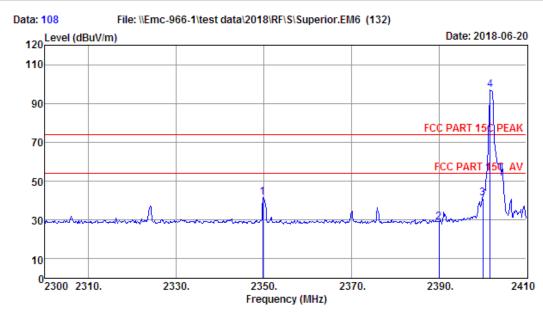
		Freq.		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	 L	2350.05	27.23	3.17	34.73	38.01	33.68	74.00	40.32	Peak
2	2	2390.00	27.35	3.21	34.87	33.35	29.04	74.00	44.96	Peak
3	3	2400.00	27.35	3.21	34.94	36.69	32.31	74.00	41.69	Peak
4	1	2402.08	27.35	3.21	34.94	92.13	87.75	74.00	-13.75	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading. 2. Margin= Limit - Emission Level.

- 3. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 108
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

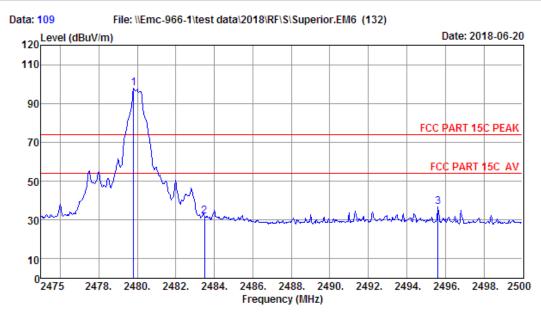
Test Mode : GFSK TX 2402MHz(No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
 1	2349.72	27.23	3.17	34.73	46.05	41.72	74.00	32.28	Peak
2	2390.00	27.35	3.21	34.87	33.28	28.97	74.00	45.03	Peak
3	2400.00	27.35	3.21	34.94	45.48	41.10	74.00	32.90	Peak
4	2401.75	27.35	3.21	34.94	101.15	96.77	74.00	-22.77	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 109
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

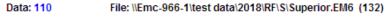
Test Mode : GFSK TX 2480MHz (No Hopping)

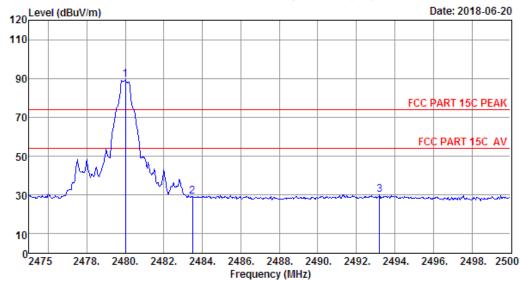
	Freq.			-		Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
 1	2479.80	27.56	3.29	35.21	102.29	97.93	74.00	-23.93	Peak
2	2483.50	27.56	3.29	35.21	36.07	31.71	74.00	42.29	Peak
3	2495.63	27.60	3.30	35.27	41.03	36.66	74.00	37.34	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 110
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : GFSK TX 2480MHz(No Hopping)

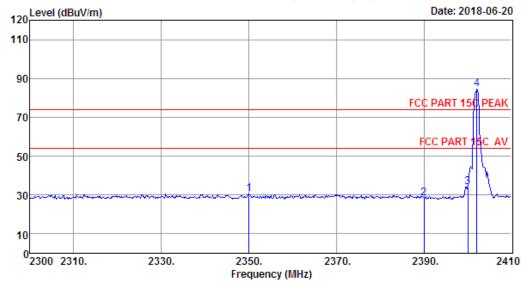
		Freq.			-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
_	1	2480.00	27.56	3.29	35.21	93.94	89.58	74.00	-15.58	Peak
	2	2483.50	27.56	3.29	35.21	33.53	29.17	74.00	44.83	Peak
	3	2493.20	27.60	3.30	35.27	34.55	30.18	74.00	43.82	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 111

Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2402MHz (No Hopping)

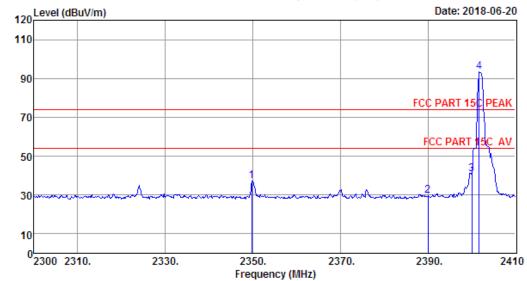
	Freq. (MHz)		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2350.05	27.23	3.17	34.73	34.88	30.55	74.00	43.45	Peak
2	2390.00	27.35	3.21	34.87	32.84	28.53	74.00	45.47	Peak
3	2400.00	27.35	3.21	34.94	38.43	34.05	74.00	39.95	Peak
4	2402.08	27.35	3.21	34.94	88.96	84.58	74.00	-10.58	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 112
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

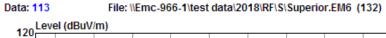
Test Mode : 8-DPSK TX 2402MHz (No Hopping)

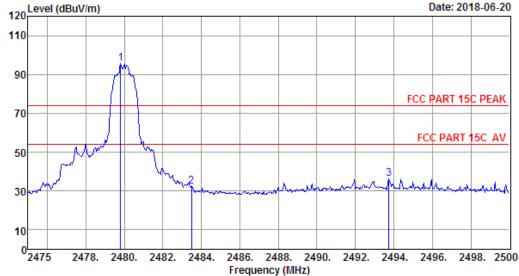
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2349.72	27.23			41.48	37.15	74.00	36.85	Peak
2	2390.00	27.35	3.21	34.87	33.86	29.55	74.00	44.45	Peak
3	2400.00	27.35	3.21	34.94	45.24	40.86	74.00	33.14	Peak
4	2401.75	27.35	3.21	34.94	97.61	93.23	74.00	-19.23	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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: 1# 966 Chamber Site no. Data no. : 113 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

: Bluetooth Headphone EUT

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2480MHz (No Hopping)

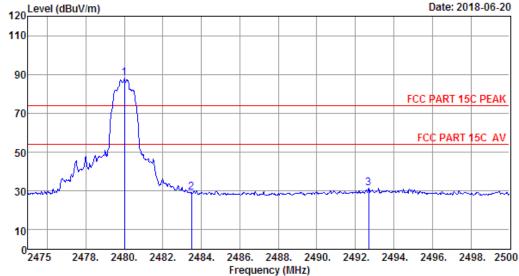
	Freq.		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.80	27.56	3.29	35.21	99.84	95.48	74.00	-21.48	Peak
2	2483.50	27.56	3.29	35.21	36.70	32.34	74.00	41.66	Peak
3	2493.75	27.60	3.30	35.27	40.54	36.17	74.00	37.83	Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



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: 1# 966 Chamber Site no. Data no. : 114 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

: Bluetooth Headphone EUT

Power : DC 3.7V M/N : 08019AU

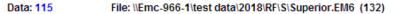
Test Mode : 8-DPSK TX 2480MHz (No Hopping)

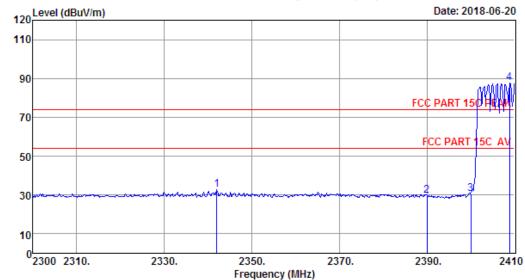
		Freq.			-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
_	1	2480.00	27.56	3.29	35.21	92.36	88.00	74.00	-14.00	Peak
	2	2483.50	27.56	3.29	35.21	33.62	29.26	74.00	44.74	Peak
	3	2492.70	27.60	3.30	35.27	35.87	31.50	74.00	42.50	Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 115
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

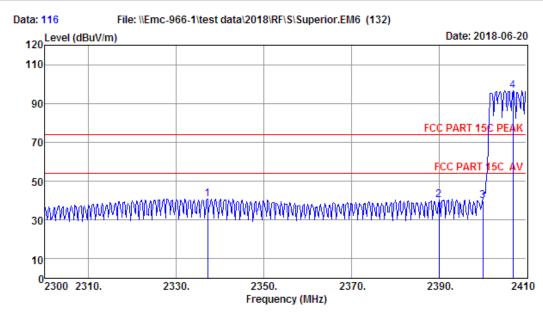
Test Mode : GFSK TX 2402MHz (Hopping On)

	Freq.		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
 1	2342.02	27.23	3.17	34.67	37.01	32.74	74.00	41.26	Peak
2	2390.00	27.35	3.21	34.87	34.15	29.84	74.00	44.16	Peak
3	2400.00	27.35	3.21	34.94	35.08	30.70	74.00	43.30	Peak
4	2408.90	27.39	3.23	34.94	91.97	87.65	74.00	-13.65	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 116
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

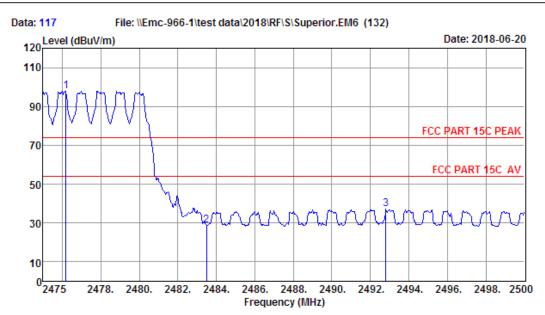
Test Mode : GFSK TX 2402MHz (Hopping On)

	Freq.		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2337.18	27.23	3.17	34.67	45.15	40.88	74.00	33.12	Peak
2	2390.00	27.35	3.21	34.87	44.46	40.15	74.00	33.85	Peak
3	2400.00	27.35	3.21	34.94	44.12	39.74	74.00	34.26	Peak
4	2406.92	27.39	3.23	34.94	101.07	96.75	74.00	-22.75	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 117
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

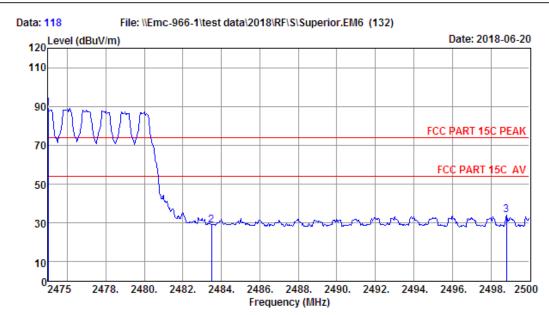
Test Mode : GFSK TX 2480MHz (Hopping On)

		Freq.			-	Reading	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
_	1	2476.20	27.56	3.29	35.21	102.28	97.92	74.00	-23.92	Peak
	2	2483.50	27.56	3.29	35.21	33.20	28.84	74.00	45.16	Peak
	3	2492.80	27.60	3.30	35.27	41.36	36.99	74.00	37.01	Peak

- 2. Margin= Limit Emission Level.
 - The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 118
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : GFSK TX 2480MHz (Hopping On)

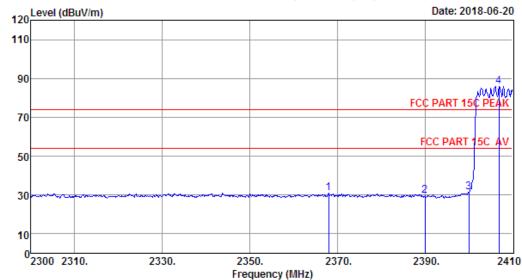
		Freq.			-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
_	1	2475.00	27.56	3.29	35.21	93.51	89.15	74.00	-15.15	Peak
	2	2483.50	27.56	3.29	35.21	33.17	28.81	74.00	45.19	Peak
	3	2498.80	27.60	3.30	35.27	38.49	34.12	74.00	39.88	Peak

- 2. Margin= Limit Emission Level.
 - The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 119
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

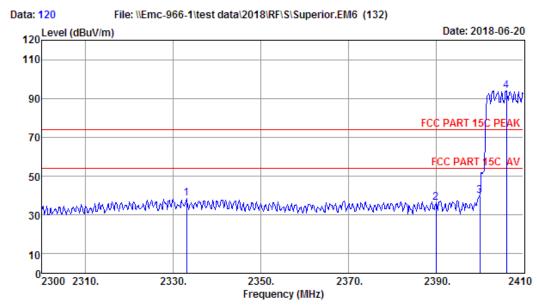
Test Mode : 8-DPSK TX 2402MHz (Hopping On)

	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2367.98	27.27	3.18	34.80	35.15	30.80	74.00	43.20	Peak
2	2390.00	27.35	3.21	34.87	33.91	29.60	74.00	44.40	Peak
3	2400.00	27.35	3.21	34.94	35.70	31.32	74.00	42.68	Peak
4	2406.92	27.39	3.23	34.94	90.15	85.83	74.00	-11.83	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 120
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

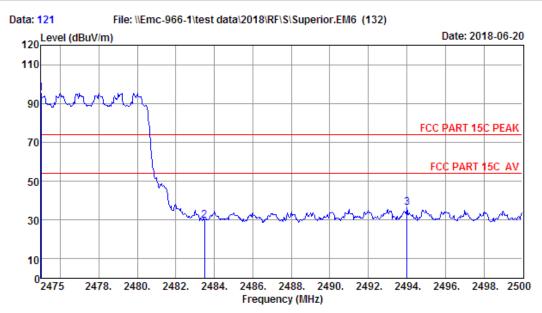
Test Mode : 8-DPSK TX 2402MHz (Hopping On)

	Freq.	Ant. Factor (dB/m)		-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2333.00	27.19	3.15	34.67	42.96	38.63	74.00	35.37	Peak
2	2390.00	27.35	3.21	34.87	40.56	36.25	74.00	37.75	Peak
3	2400.00	27.35	3.21	34.94	44.27	39.89	74.00	34.11	Peak
4	2406.15	27.39	3.23	34.94	98.18	93.86	74.00	-19.86	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 121
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2480MHz (Hopping On)

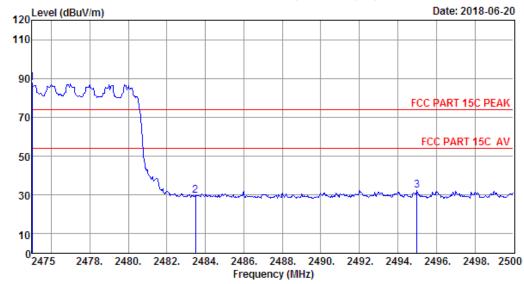
	Freq.		Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.00	27.56	3.29	35.21	99.45	95.09	74.00	-21.09	Peak
2	2483.50	27.56	3.29	35.21	34.22	29.86	74.00	44.14	Peak
3	2494.00	27.60	3.30	35.27	40.76	36.39	74.00	37.61	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



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Site no. : 1# 966 Chamber Data no. : 122
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:23.3'; Humi:51%; Press:101.52kPa

Engineer : Viking

EUT : Bluetooth Headphone

Power : DC 3.7V M/N : 08019AU

Test Mode : 8-DPSK TX 2480MHz (Hopping On)

	Freq.			-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.00	27.56	3.29	35.21	92.15	87.79	74.00	-13.79	Peak
2	2483.50	27.56	3.29	35.21	34.12	29.76	74.00	44.24	Peak
3	2495.00	27.60	3.30	35.27	36.71	32.34	74.00	41.66	Peak

- 2. Margin= Limit Emission Level.
 - The emission levels that are 20dB below the official limit are not reported.



10. POWER LINE CONDUCTED EMISSIONS

10.1.Limit

	Maximum RF Line Voltage			
Frequency	Quasi-Peak Level	Average Level		
	dB(µV)	dB(µV)		
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*		
500kHz ~ 5MHz	56	46		
$5MHz \sim 30MHz$	60	50		

Notes: 1. * Decreasing linearly with logarithm of frequency.

10.2.Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged form PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

10.3. Test Result

PASS. (All emissions not reported below are too low against the prescribed limits.)



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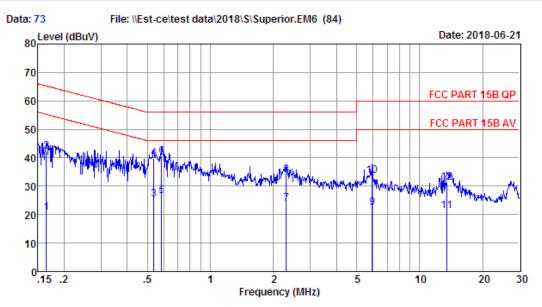
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^{2.} The lower limit shall apply at the transition frequencies.

10.4. Test data

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: 844 Shield Room Data no. Env. / Ins. : Temp:23.7°C Humi:49% Press:101.50kPa LINE Phase : LINE

: FCC PART 15B QP : Viking Limit

Engineer

EUT : Bluetooth Headphone

Power : DC 5V From Adapter Input AC 120V//60Hz

: 08019AU M/N Test Mode : TX Mode

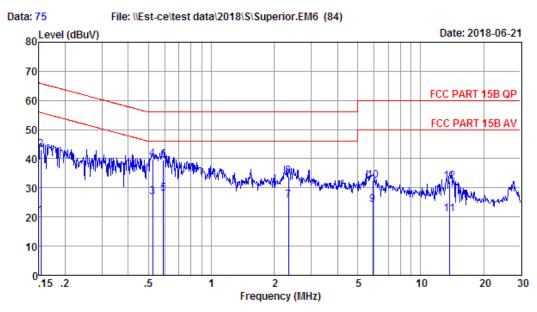
	Freq.	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.164	9.73	9.69	1.20	20.62	55.25	34.63	Average
2	0.164	9.73	9.69	22.71	42.13	65.25	23.12	QP
3	0.538	9.72	9.92	5.80	25.44	46.00	20.56	Average
4	0.538	9.72	9.92	20.23	39.87	56.00	16.13	QP
5	0.585	9.72	9.92	7.05	26.69	46.00	19.31	Average
6	0.585	9.72	9.92	20.93	40.57	56.00	15.43	QP
7	2.309	9.75	9.96	4.15	23.86	46.00	22.14	Average
8	2.309	9.75	9.96	14.38	34.09	56.00	21.91	QP
9	5.929	9.78	10.02	2.71	22.51	50.00	27.49	Average
10	5.929	9.78	10.02	13.93	33.73	60.00	26.27	QP
11	13.479	9.85	10.10	1.33	21.28	50.00	28.72	Average
12	13.479	9.85	10.10	11.29	31.24	60.00	28.76	QP

- 2. Margin= Limit Emission Level.
- 3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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: 844 Shield Room Data no. : 75 Env. / Ins. : Temp:23.7'C Humi:49% Press:101.50kPa LINE Phase : NEUTRAL

: FCC PART 15B QP : Viking

Engineer

EUT : Bluetooth Headphone

Power : DC 5V From Adapter Input AC 120V//60Hz

M/N : 08019AU : TX Mode Test Mode

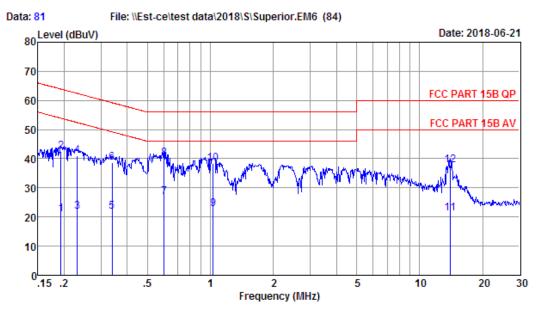
	Freq.	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.153	9.61	9.69	1.20	20.50	55.82	35.32	Average
2	0.153	9.61	9.69	23.91	43.21	65.82	22.61	QP
3	0.524	9.65	9.92	7.34	26.91	46.00	19.09	Average
4	0.524	9.65	9.92	20.36	39.93	56.00	16.07	QP
5	0.589	9.66	9.92	8.50	28.08	46.00	17.92	Average
6	0.589	9.66	9.92	20.11	39.69	56.00	16.31	QP
7	2.334	9.84	9.96	5.86	25.66	46.00	20.34	Average
8	2.334	9.84	9.96	14.25	34.05	56.00	21.95	QP
9	5.898	9.94	10.02	4.31	24.27	50.00	25.73	Average
10	5.898	9.94	10.02	12.55	32.51	60.00	27.49	QP
11	13.768	10.08	10.11	0.67	20.86	50.00	29.14	Average
12	13.768	10.08	10.11	11.90	32.09	60.00	27.91	QP

- 2. Margin= Limit Emission Level.
- 3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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: 844 Shield Room Data no. : 81 Env. / Ins. : Temp:23.7°C Humi:49% Press:101.50kPa LINE Phase : LINE

: FCC PART 15B QP : Viking

Engineer

EUT : Bluetooth Headphone

Power : DC 5V From Adapter Input AC 240V//60Hz

M/N : 08019AU Test Mode : TX Mode

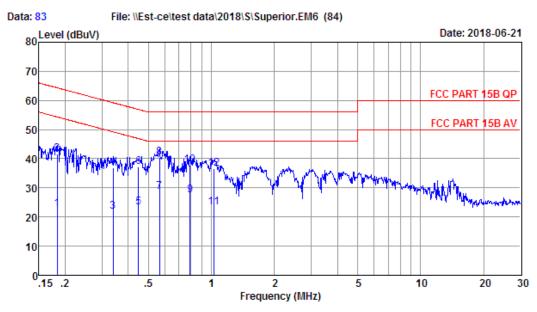
	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.193	9.73	9.77	1.43	20.93	53.89	32.96	Average
2	0.193	9.73	9.77	22.91	42.41	63.89	21.48	QP
3	0.232	9.73	9.84	2.17	21.74	52.39	30.65	Average
4	0.232	9.73	9.84	21.50	41.07	62.39	21.32	QP
5	0.339	9.72	9.92	2.20	21.84	49.22	27.38	Average
6	0.339	9.72	9.92	19.10	38.74	59.22	20.48	QP
7	0.601	9.72	9.92	7.30	26.94	46.00	19.06	Average
8	0.601	9.72	9.92	20.65	40.29	56.00	15.71	QP
9	1.032	9.72	9.94	3.16	22.82	46.00	23.18	Average
10	1.032	9.72	9.94	18.57	38.23	56.00	17.77	QP
11	14.063	9.86	10.11	1.28	21.25	50.00	28.75	Average
12	14.063	9.86	10.11	17.89	37.86	60.00	22.14	QP

- 2. Margin= Limit Emission Level.
- 3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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: 844 Shield Room Data no. : 83 Env. / Ins. : Temp:23.7'C Humi:49% Press:101.50kPa LINE Phase : NEUTRAL

: FCC PART 15B QP : Viking

Engineer

EUT : Bluetooth Headphone

Power : DC 5V From Adapter Input AC 240V//60Hz

M/N : 08019AU : TX Mode Test Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.183	9.62	9.77	3.43	22.82	54.33	31.51	Average
2	0.183	9.62	9.77	22.18	41.57	64.33	22.76	QP
3	0.339	9.63	9.92	2.20	21.75	49.22	27.47	Average
4	0.339	9.63	9.92	17.29	36.84	59.22	22.38	QP
5	0.449	9.64	9.92	3.87	23.43	46.89	23.46	Average
6	0.449	9.64	9.92	17.74	37.30	56.89	19.59	QP
7	0.564	9.66	9.92	9.05	28.63	46.00	17.37	Average
8	0.564	9.66	9.92	20.85	40.43	56.00	15.57	QP
9	0.792	9.70	9.93	7.93	27.56	46.00	18.44	Average
10	0.792	9.70	9.93	18.04	37.67	56.00	18.33	QP
11	1.032	9.73	9.94	3.59	23.26	46.00	22.74	Average
12	1.032	9.73	9.94	16.86	36.53	56.00	19.47	QP

- 2. Margin= Limit Emission Level.
- 3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



11. ANTENNA REQUIREMENTS

11.1.Limit

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2.Result

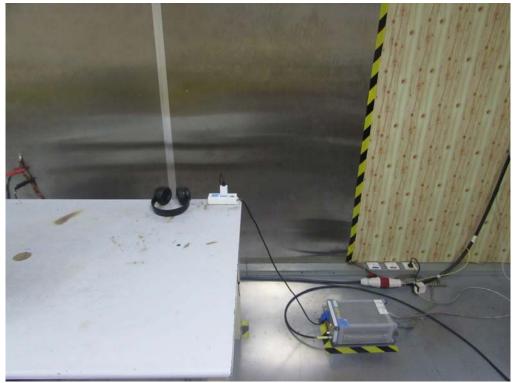
The antennas used for this product are PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0 dBi.



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12.TEST SETUP PHOTO

Conducted Test







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Radiated Test (30-1000 MHz)



Radiated Test (Above 1GHz)



13.PHOTO EUT

External Photos







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External Photos M/N: 08019AU







External Photos M/N: 08019AU

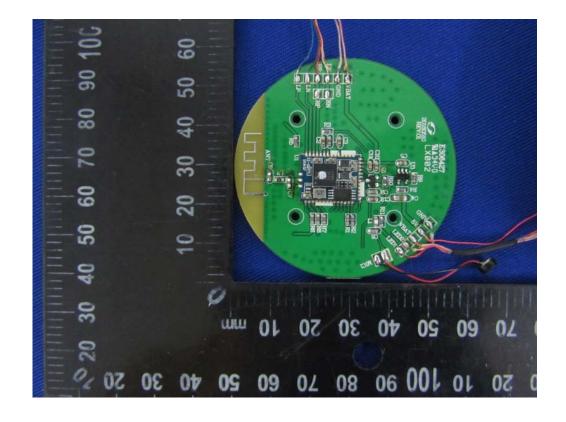






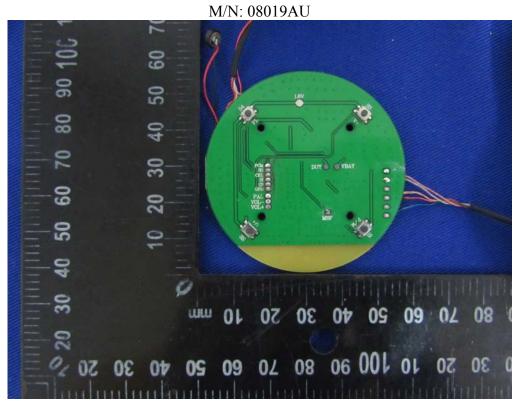
Internal Photos M/N: 08019AU

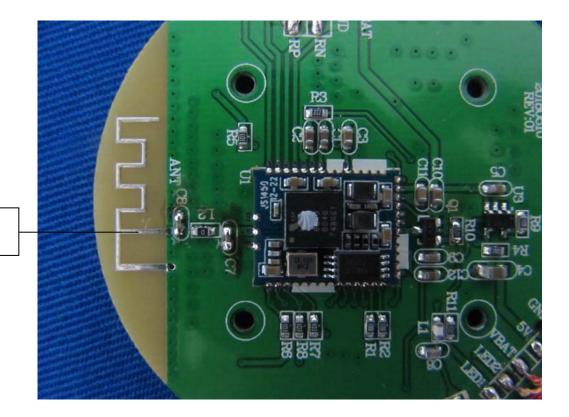






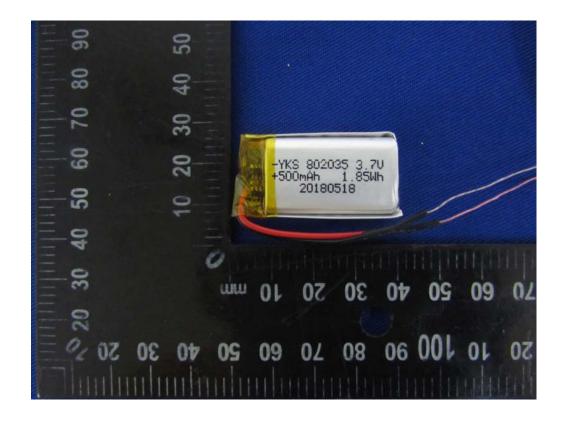
Internal Photos





Bluetooth Antenna **Internal Photos** M/N: 08019AU







Internal Photos

