TEST REPORT

Product	:	Mini Soundbar
Trade mark	:	N/A
Model/Type reference	:	CET-926
Serial Number	:	N/A
Report Number	:	EED32H000598
FCC ID	:	2AEYP-CET-926
Date of Issue	:	Jun. 03, 2015
Test Standards	:	47 CFR Part 15 Subpart C (2014)
Test result	:	PASS

Prepared for:

Shenzhen Common Endeavor Technology Co., Ltd.
East 5 Floor, Building A, Danli Industrial Park, 16 Kangzheng Road, Danzhutou Community, Longgang District, Shenzhen, China

Prepared by:

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Tested by: Ware Xin Reviewed by: Kevin Lan

Approved by: Sheek Luo Date: Jun. 03, 2015

Sheek Luo
Lab supervisor

Check No.: 1727838904

1 Version

Version No.	Date	Description
00	2015-04-01	Original

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2009	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10-2009	PASS
Conducted Peak Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(1)	ANSI C63.10-2009	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10-2009	PASS
Carrier Frequencies Separation	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10-2009	PASS
Hopping Channel Number	47 CFR Part 15, Subpart C Section 15.247 (b)	ANSI C63.10-2009	PASS
Dwell Time	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10-2009	PASS
Pseudorandom Frequency Hopping Sequence	47 CFR Part 15, Subpart C Section 15.247(b)(4)&TCB Exclusion List (7 July 2002)	ANSI C63.10-2009	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10-2009	PASS
Radiated Spurious emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10-2009	PASS

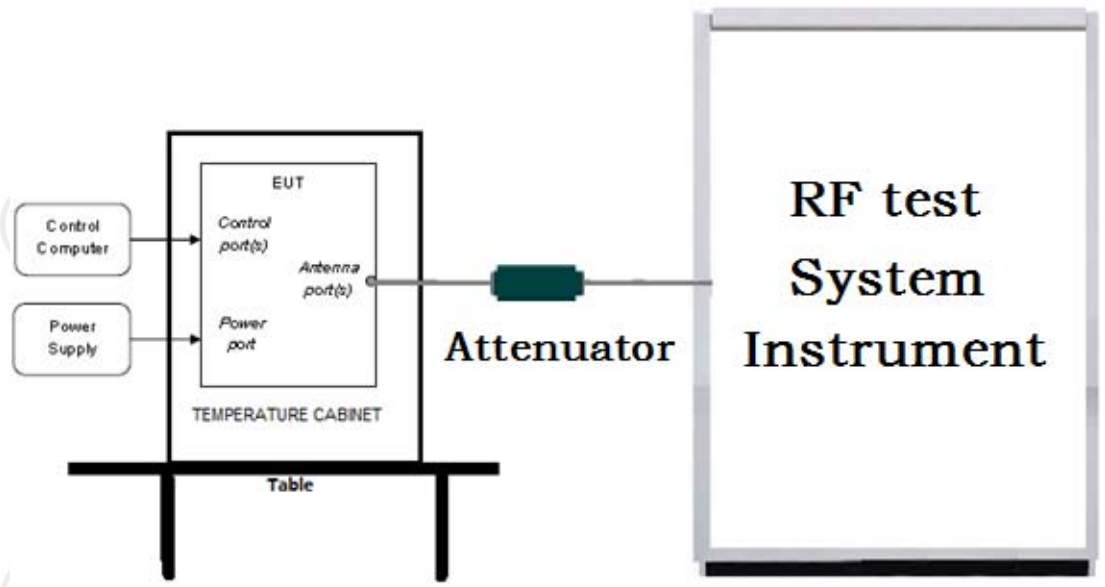
Test according to ANSI C63.4-2009 & ANSI C63.10-2009.

3 Content

4 Test Requirement

4.1 Test setup

4.1.1 For Conducted test setup



4.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

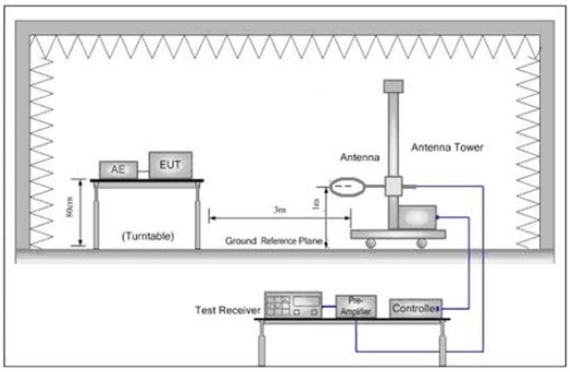


Figure 1. Below 30MHz

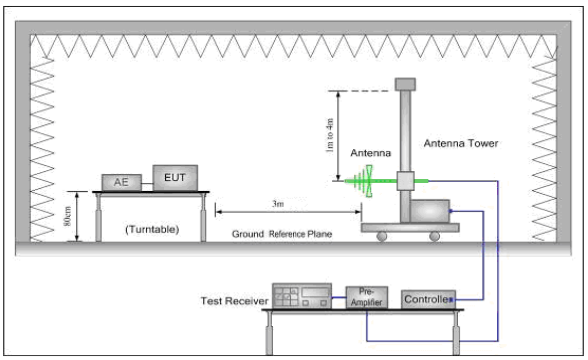


Figure 2. 30MHz to 1GHz

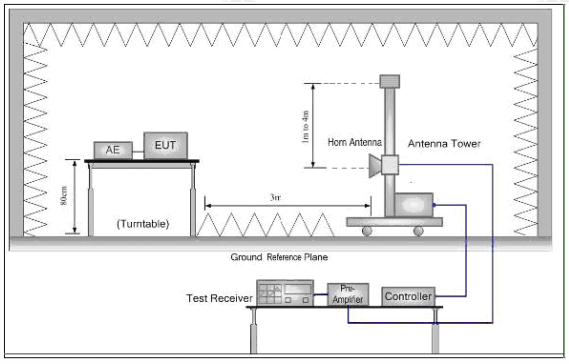
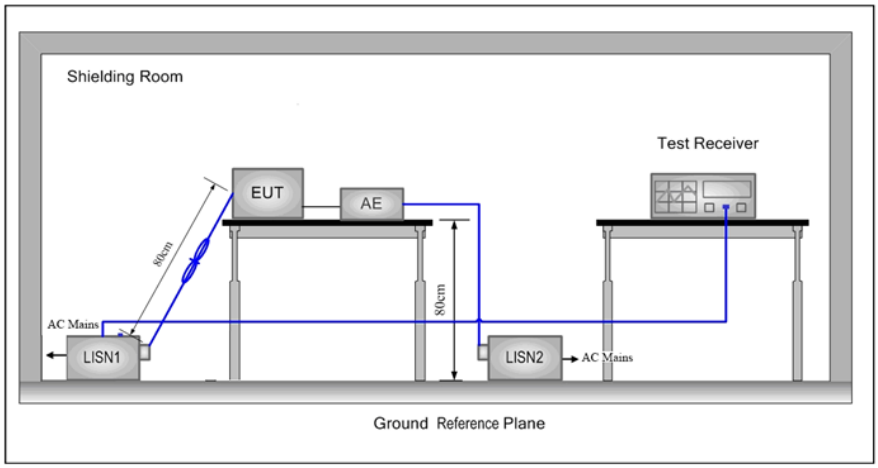


Figure 3. Above 1GHz

4.1.3 For Conducted Emissions test setup

Conducted Emissions setup



4.2 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	53 % RH
Atmospheric Pressure:	995mbar

4.3 Test Condition

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GFSK/π/4DQPSK/ 8DPSK(DH1,DH3,DH5)	2402MHz ~2480 MHz	Channel 1	Channel 40	Channel79
		2402MHz	2441MHz	2480MHz

5 General Information

5.1 Client Information

Applicant:	Shenzhen Common Endeavor Technology Co., Ltd.
Address of Applicant:	East 5 Floor, Building A, Danli Industrial Park, 16 Kangzheng Road, Danzhutou Community, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Common Endeavor Technology Co., Ltd.
Address of Manufacturer:	East 5 Floor, Building A, Danli Industrial Park, 16 Kangzheng Road, Danzhutou Community, Longgang District, Shenzhen, China

5.2 General Description of EUT

Product Name:	Mini Soundbar
Model No.(EUT):	CET-926
Trade mark:	N/A
Power Supply:	Charging input: 5V⎓ lithium Battery: 3,7V⎓
Sample Received Date:	May 12, 2015
Sample tested Date:	May 12, 2015 to Jun. 03, 2015

5.3 *Product Specification subjective to this standard*

Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Sample Type:	Portable production
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi
Test Voltage:	DC 3.7V

Operation Frequency each of channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz

7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

5.4 Description of Support Units

The EUT has been tested with associated equipment below:

Device Type	Brand	Model	Data Cable	Remark
Notebook	HP	G3	N/A	FCC DOC
Mouse	L.Selectron	M004	Un-shielded 1.2M	FCC DOC

5.5 Test Location

All tests were performed at:

Centre Testing International (Shenzhen) Corporation Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385

No tests were sub-contracted.

5.6 Test Facility

The test facility is recognized,certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 756231

Centre Testing International (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 756231.

IC-Registration No.: 7408A

The 3m Alternate Test Site of Centre Testing International (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A .

IC-Registration No.: 7408B

The 10m Alternate Test Site of Centre Testing International (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B.

NEMKO-Aut. No.: ELA503

Centre Testing International (Shenzhen) Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International (Shenzhen) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International (Shenzhen) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International (Shenzhen) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International (Shenzhen) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

6 Equipment List

Equipment	Manufacturer	Model	Serial No.	Due Date
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06/01/2016
Receiver	R&S	ESCI	100435	07/08/2015
Spectrum Analyzer	R&S	FSP40	100416	07/06/2015
Signal Generator	R&S	SMB 100A	3008A02145	01/15/2016
Vector Signal Generator	R&S	SMBV 100A	3636A01004	01/15/2016
Signal Analyzer	R&S	FSV	100263	01/15/2016
Communication test set test set	Agilent	N4010A	MY47230124	01/15/2016
Spectrum Analyzer	Keysight	N9010A	5522H-HY5KC-VL	01/15/2016
Signal Generator	Keysight	N5182B	MMAPJ-I6AC3	01/15/2016
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	618	06/17/2015
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	617	07/13/2015
Multi device Controller	maturo	NCD/070/107 11112	---	N/A
Horn Antenna	ETS-LINGREN	3117	00057407	07/07/2015
Horn Antenna	ETS-LINGREN	3117	00057362	07/07/2015
Microwave Preamplifier	Agilent	8449B	3008A02425	03/19/2016
ESG Vector signal generators	Agilent	E4438C	MY45095744	01/15/2016
Temperature & Humidity Chamber	ESPEC	EL-04KA	N/A	08/03/2015
Receiver	R&S	ESCI	100009	07/19/2015
LISN	R&S	ENV216	100098	07/19/2015

7 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C (2014)	Subpart C-Intentional Radiators
2	ANSI C63.10-2009	American National Standard for Testing Unlicesed Wireless Devices

Test Results List:

Test requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (a)(1)	ANSI 63.10:2009	20dB Occupied Bandwidth	PASS	Appendix A)
Part15C Section 15.247 (a)(1)	ANSI 63.10:2009	Carrier Frequencies Separation	PASS	Appendix B)
Part15C Section 15.247 (a)(1)	ANSI 63.10:2009	Dwell Time	PASS	Appendix C)
Part15C Section 15.247 (b)	ANSI 63.10:2009	Hopping Channel Number	PASS	Appendix D)
Part15C Section 15.247 (b)(1)	ANSI 63.10:2009	Conducted Peak Output Power	PASS	Appendix E)
Part15C Section 15.247(d)	ANSI 63.10:2009	Band-edge for RF Conducted Emissions	PASS	Appendix F)
Part15C Section 15.247(d)	ANSI 63.10:2009	RF Conducted Spurious Emissions	PASS	Appendix G)
Part15C Section 15.247 (a)(1)	ANSI 63.10:2009	Pseudorandom Frequency Hopping Sequence	PASS	Appendix H)
Part15C Section 15.203/15.247 (c)	ANSI 63.10:2009	Antenna Requirement	PASS	Appendix I)
Part15C Section 15.207	ANSI 63.10:2009	AC Power Line Conducted Emission	PASS	AppendixJ)
Part15C Section 15.205/15.209	ANSI 63.10:2009	Restricted bands around fundamental frequency (Radiated) Emission)	PASS	Appendix K)
Part15C Section 15.205/15.209	ANSI 63.10:2009	Radiated Spurious Emissions	PASS	Appendix K)

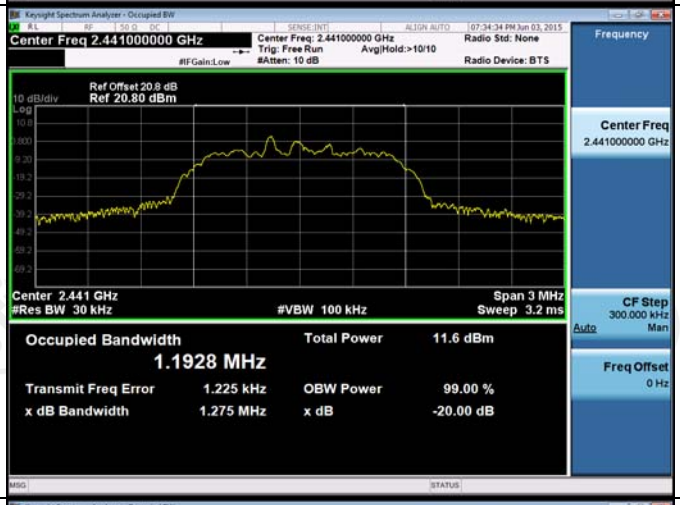
Appendix A): 20dB Occupied Bandwidth

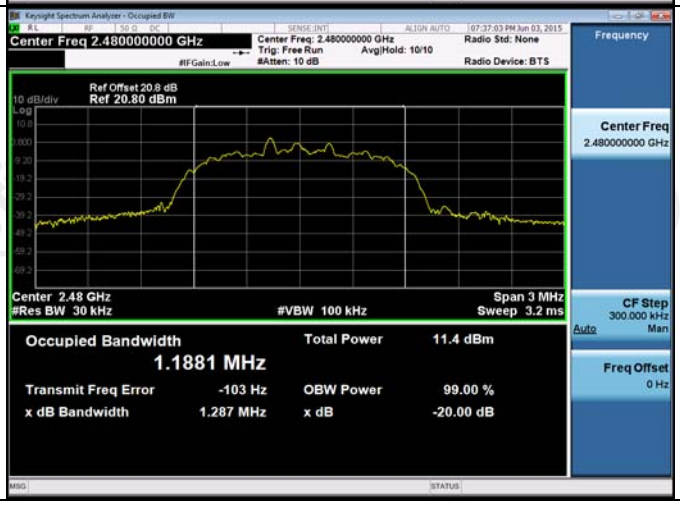
Test Result

Mode	Channel.	20dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
GFSK	LCH	0.9332	0.87481	PASS
GFSK	MCH	0.9327	0.87692	PASS
GFSK	HCH	0.9319	0.86841	PASS
π/4DQPSK	LCH	1.274	1.1899	PASS
π/4DQPSK	MCH	1.275	1.1928	PASS
π/4DQPSK	HCH	1.281	1.1937	PASS
8DPSK	LCH	1.287	1.1878	PASS
8DPSK	MCH	1.290	1.1888	PASS
8DPSK	HCH	1.287	1.1881	PASS

Test Graph

Graphs			
GFSK/LCH			
GFSK/MCH			
GFSK/HCH			

π/4DQPSK/LCH			
π/4DQPSK/MCH			
π/4DQPSK/HCH			

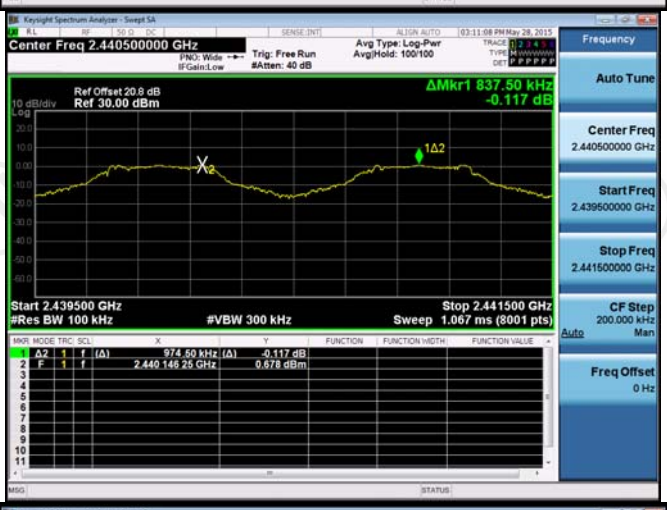
8DPSK/LCH			
8DPSK/MCH			
8DPSK/HCH			

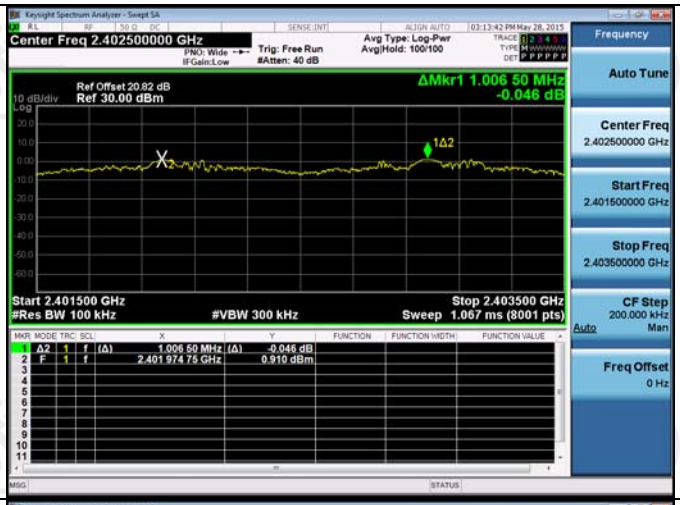
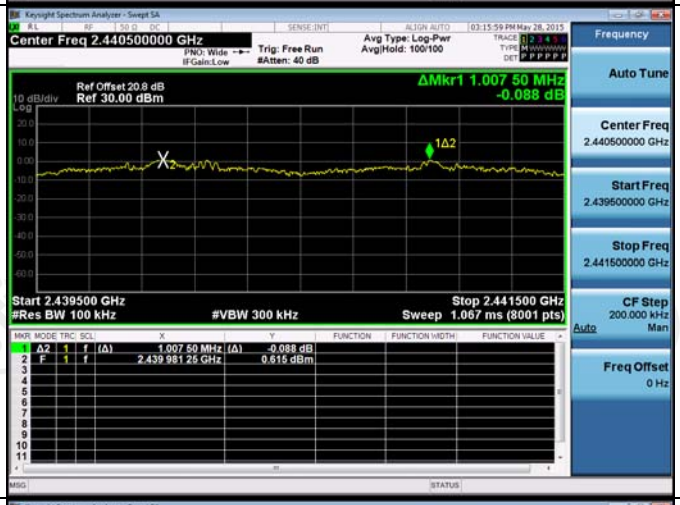
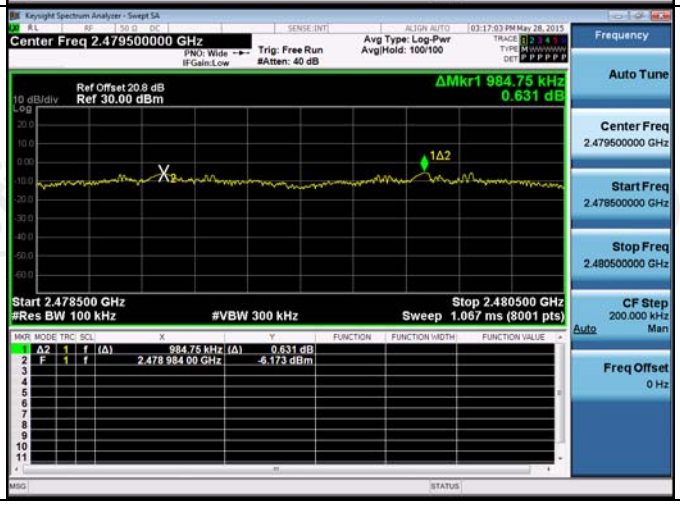
Appendix B): Carrier Frequency Separation

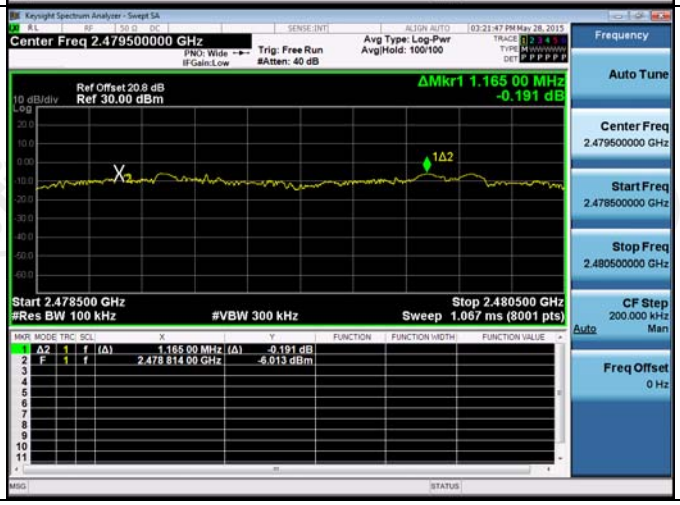
Result Table

Mode	Channel.	Carrier Frequency Separation [MHz]	Verdict
GFSK	LCH	1.004	PASS
GFSK	MCH	0.974	PASS
GFSK	HCH	1.004	PASS
π/4DQPSK	LCH	1.006	PASS
π/4DQPSK	MCH	1.008	PASS
π/4DQPSK	HCH	0.985	PASS
8DPSK	LCH	1.006	PASS
8DPSK	MCH	1.162	PASS
8DPSK	HCH	1.165	PASS

Test Graph

Graphs			
GFSK/LCH			
GFSK/MCH			
GFSK/HCH			

π/4DQPSK/LCH			
π/4DQPSK/MCH			
π/4DQPSK/HCH			

8DPSK/LCH			
8DPSK/MCH			
8DPSK/HCH			

Appendix C): Dwell Time

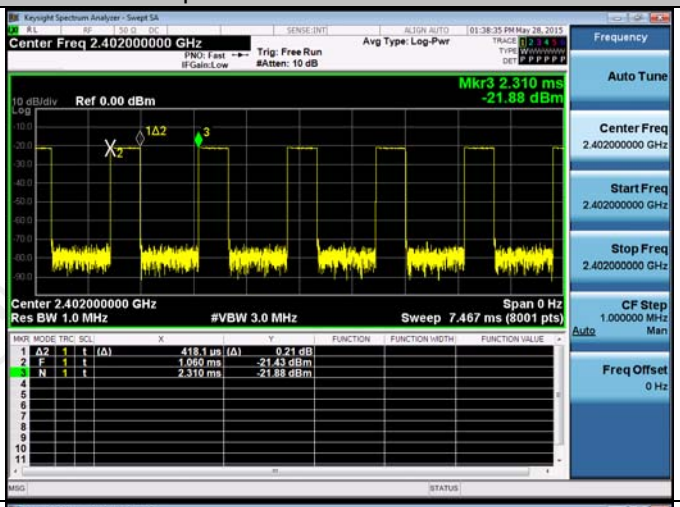
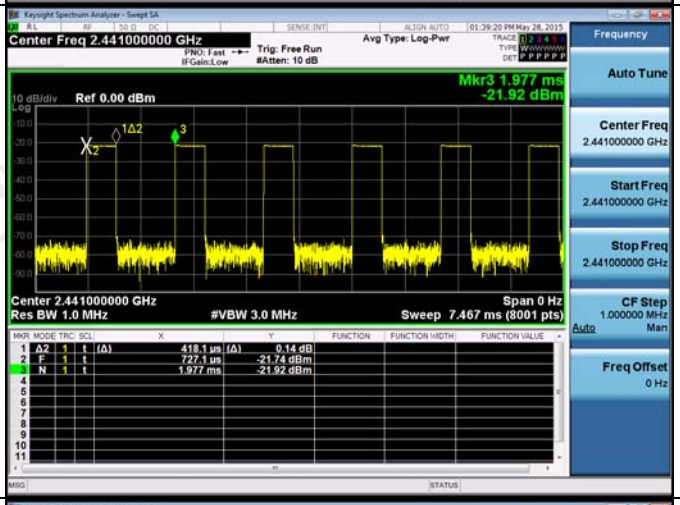
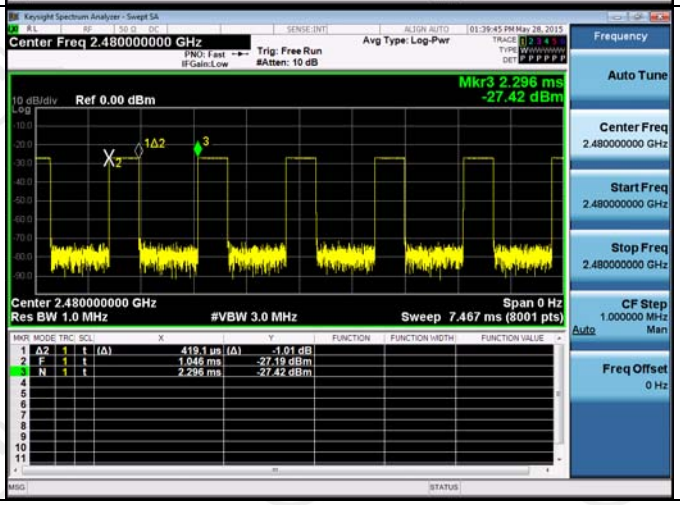
Result Table

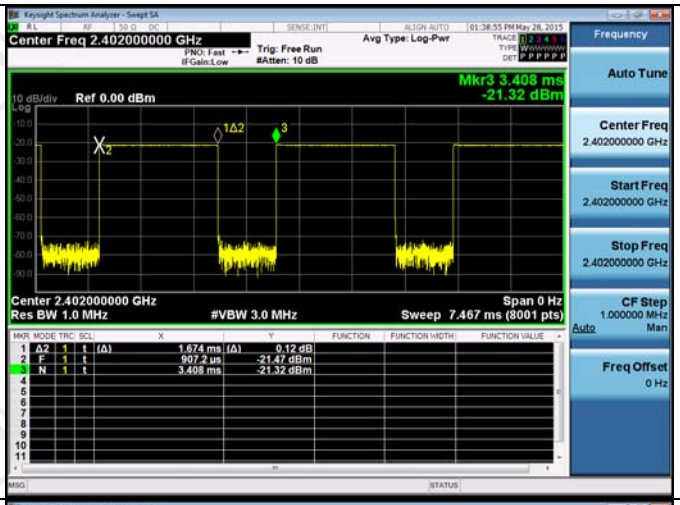
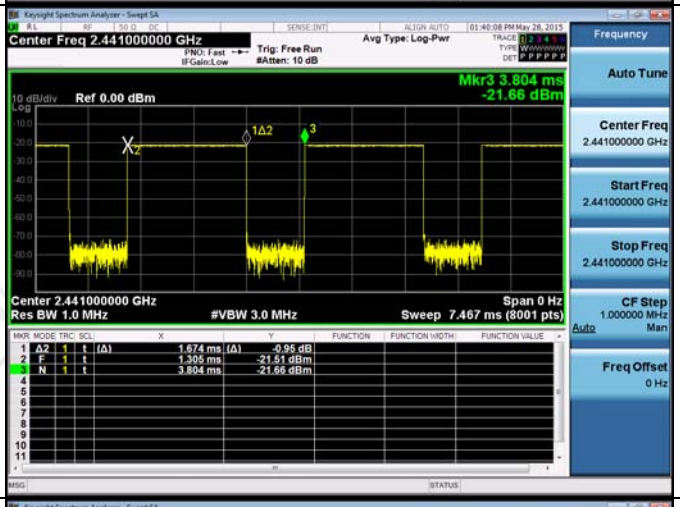
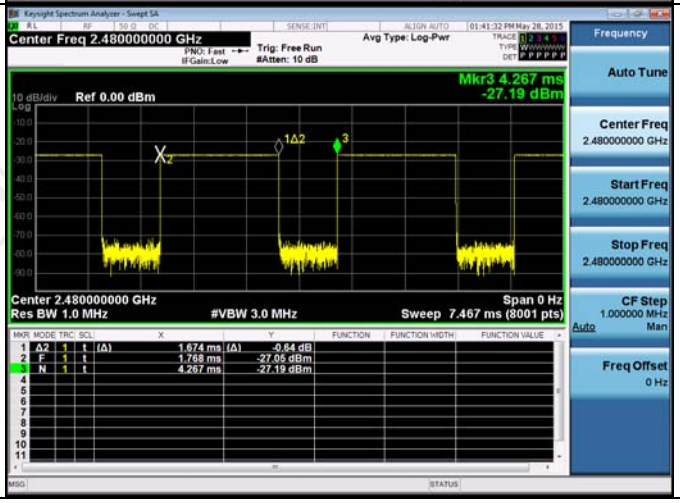
DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, total hops is 10.12 x 31.6 = 320
DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, total hops is 5.06 x 31.6 = 160
DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, total hops is 3.37 x 31.6 = 106.67

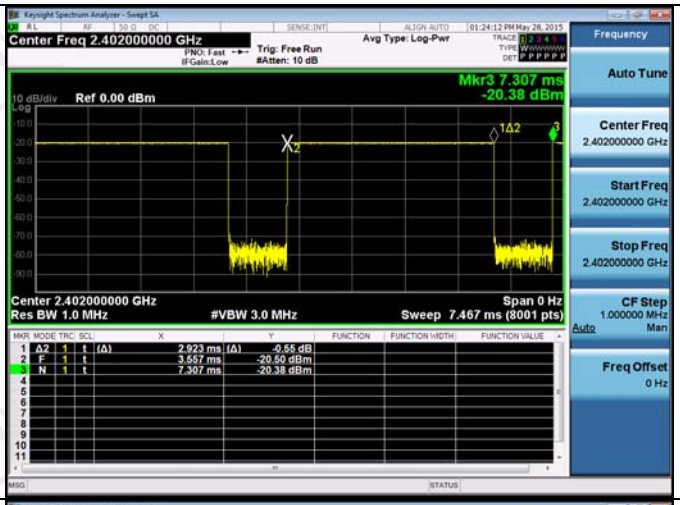
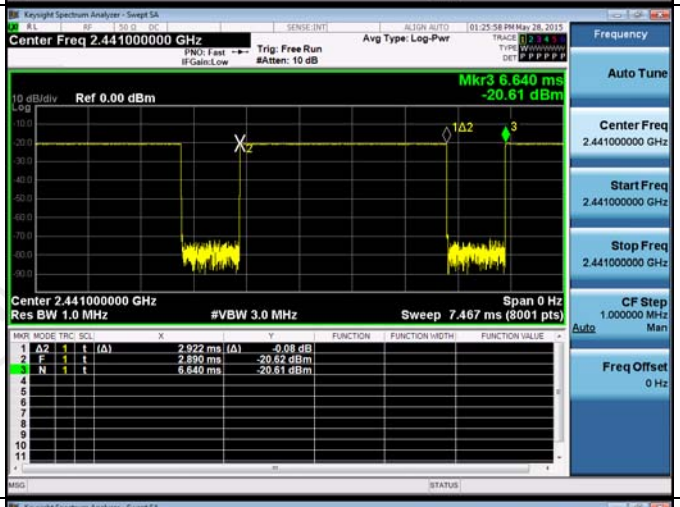
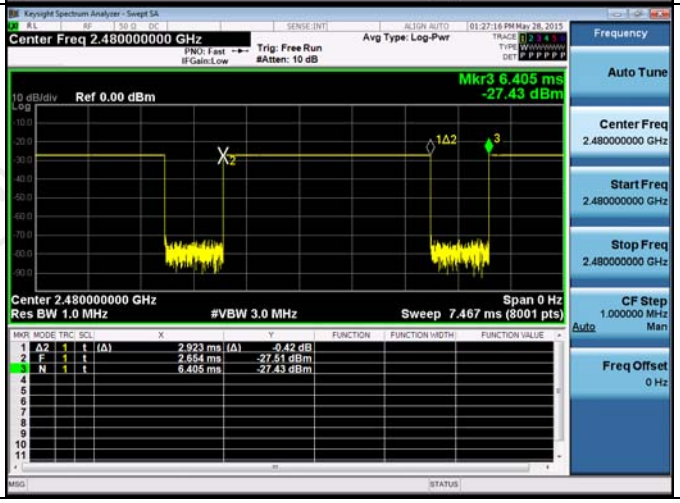
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Verdict
GFSK	DH1	LCH	0.418	320	133.76	PASS
GFSK	DH1	MCH	0.418	320	133.76	PASS
GFSK	DH1	HCH	0.419	320	134.08	PASS
GFSK	DH3	LCH	1.674	160	267.84	PASS
GFSK	DH3	MCH	1.674	160	267.84	PASS
GFSK	DH3	HCH	1.674	160	267.84	PASS
GFSK	DH5	LCH	2.923	106.7	311.884	PASS
GFSK	DH5	MCH	2.922	106.7	311.777	PASS
GFSK	DH5	HCH	2.923	106.7	311.884	PASS

GFSK is the worst case and only reported.

Test Graph

Graphs			
GFSK_DH1/LCH			
GFSK_DH1/MCH			
GFSK_DH1/HCH			

GFSK_DH3/LCH			
GFSK_DH3/MCH			
GFSK_DH3/HCH			

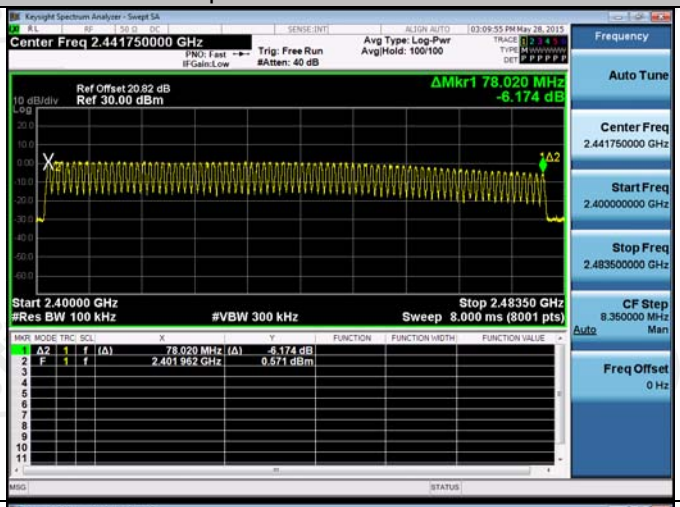
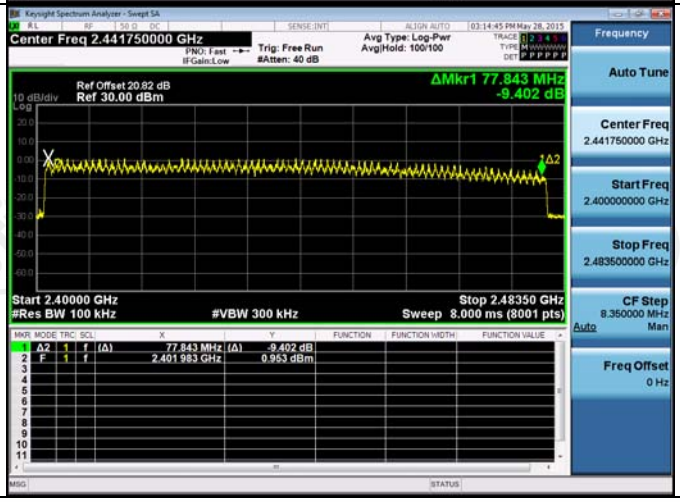
GFSK_DH5/LCH			
GFSK_DH5/MCH			
GFSK_DH5/HCH			

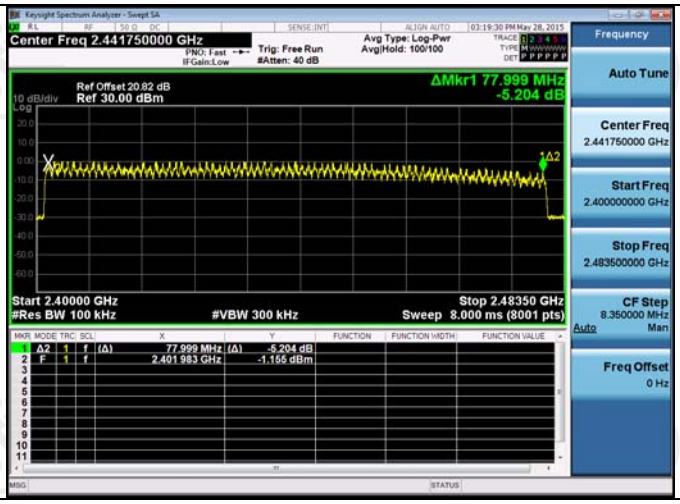
Appendix D): Hopping Channel Number

Result Table

Mode	Channel.	Number of Hopping Channel	Verdict
GFSK	Hop	79	PASS
π/4DQPSK	Hop	79	PASS
8DPSK	Hop	79	PASS

Test Graph

Graphs			
GFSK/Hop			
π/4DQPSK/Hop			

8DPSK/Hop		 Center Freq 2.441750000 GHz Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 Ref Offset 20.82 dB 10 dB/div Ref 30.00 dBm ΔMkr1 77.999 MHz -5.204 dB Start 2.40000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.48350 GHz Sweep 8.000 ms (8001 pts) 1 Δ2 1 f (Δ) 77.999 MHz (Δ) -5.204 dB 2 F 1 f 2.401 983 GHz -1.166 dBm Frequency Auto Tune Center Freq 2.441750000 GHz Start Freq 2.400000000 GHz Stop Freq 2.483500000 GHz CF Step 8.350000 MHz Auto Man Freq Offset 0 Hz	

Appendix E): Conducted Peak Output Power

Result Table

Mode	Channel.	Maximum Peak Output Power [dBm]	Verdict
GFSK	LCH	2.143	PASS
GFSK	MCH	1.648	PASS
GFSK	HCH	-3.611	PASS
π/4DQPSK	LCH	1.537	PASS
π/4DQPSK	MCH	2.008	PASS
π/4DQPSK	HCH	-3.081	PASS
8DPSK	LCH	1.653	PASS
8DPSK	MCH	1.266	PASS
8DPSK	HCH	-3.142	PASS

Test Graph

Graphs		
GFSK/LCH		
GFSK/MCH		

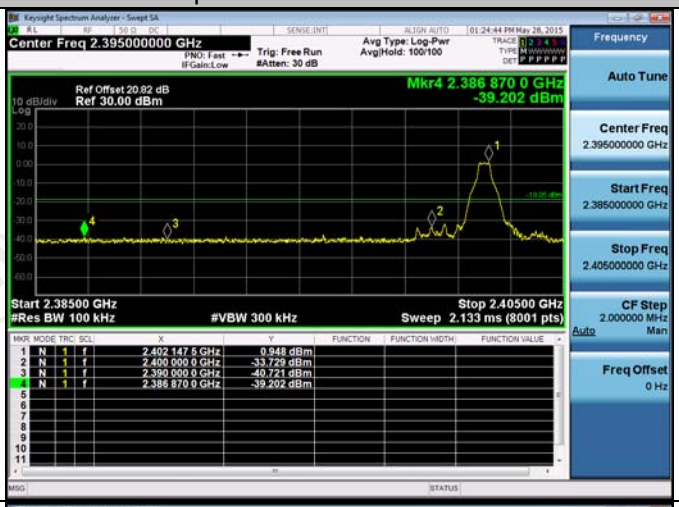
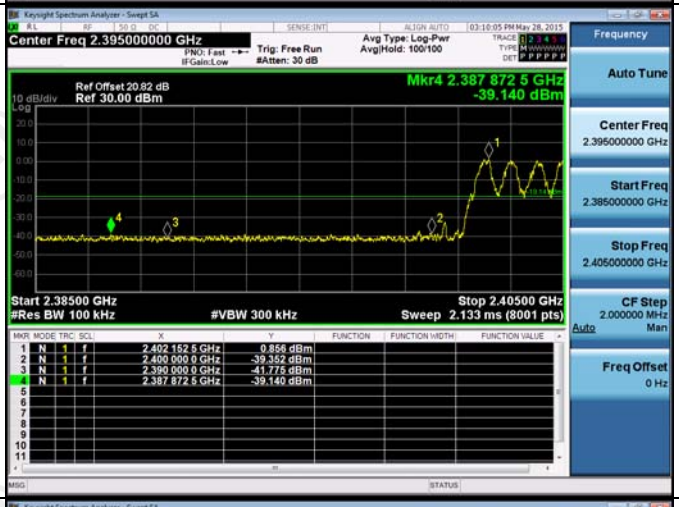
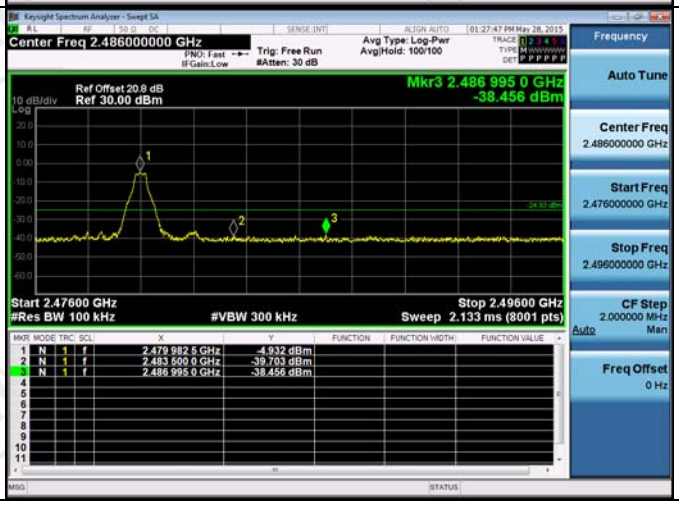
GFSK/HCH			
π/4DQPSK/LCH			
π/4DQPSK/MCH			

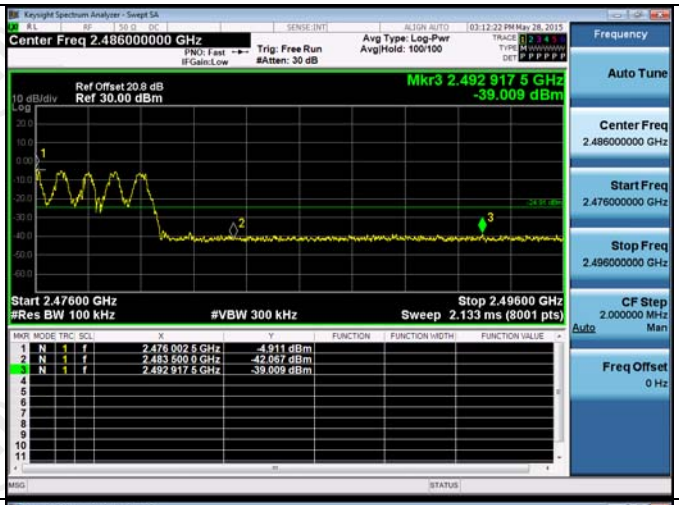
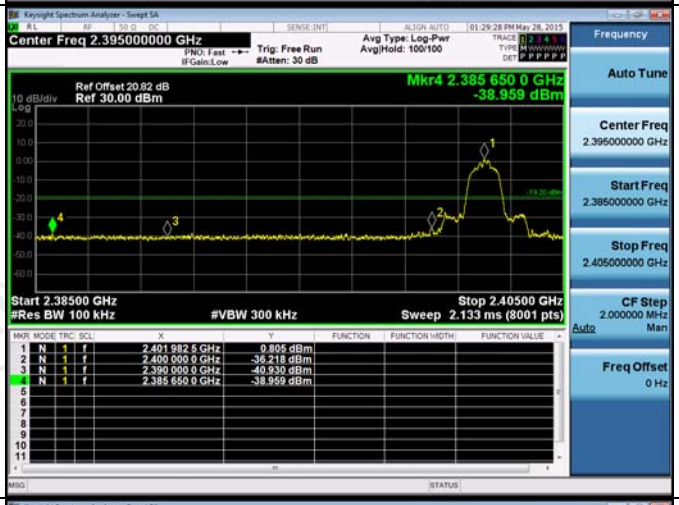
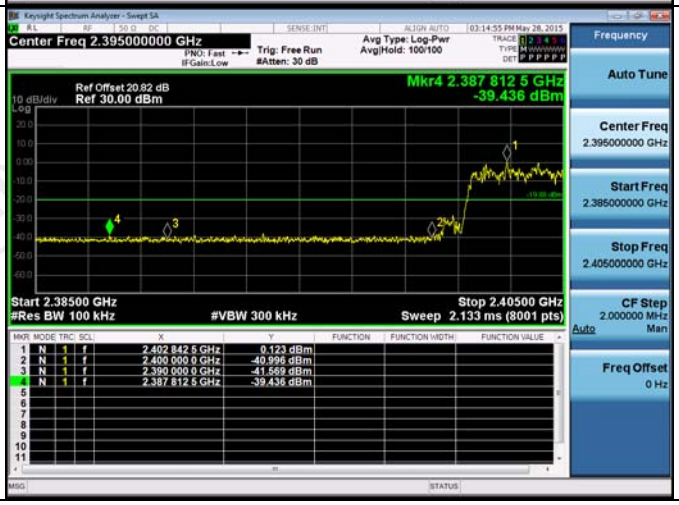
π/4DQPSK/HCH			
8DPSK/LCH			
8DPSK/MCH			

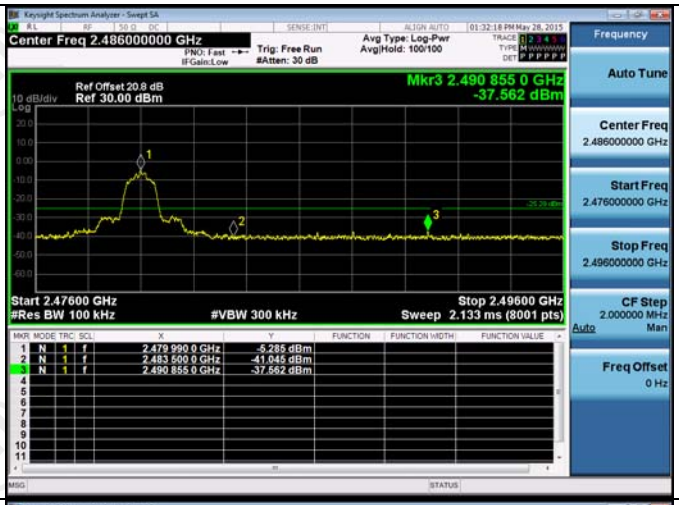
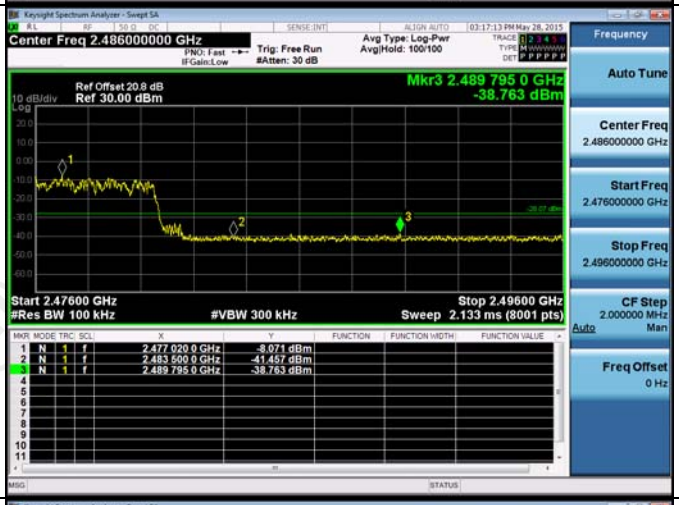
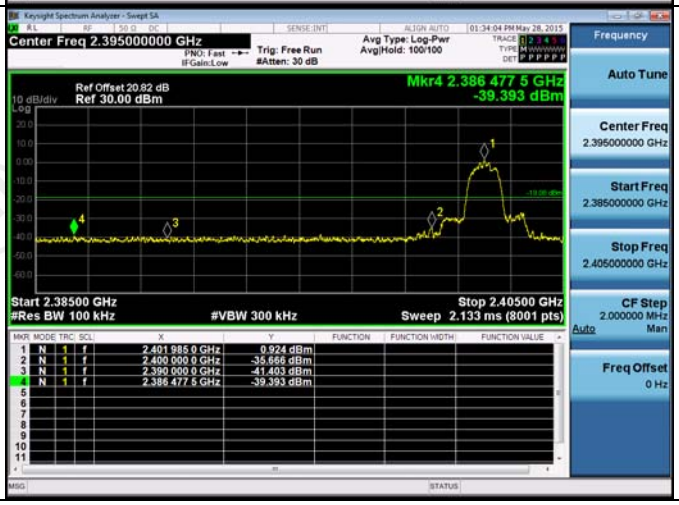
8DPSK/HCH	 Center Freq 2.480000000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 Ref Offset 20.8 dB 10 dB/div Ref 30.00 dBm Mkr1 2.480 195 625 GHz -3.142 dBm Center 2.480000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.477500000 GHz Stop Freq 2.482500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz	

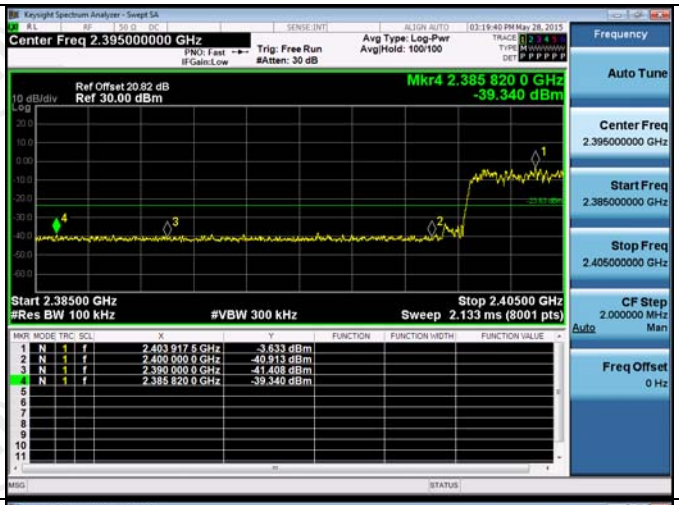
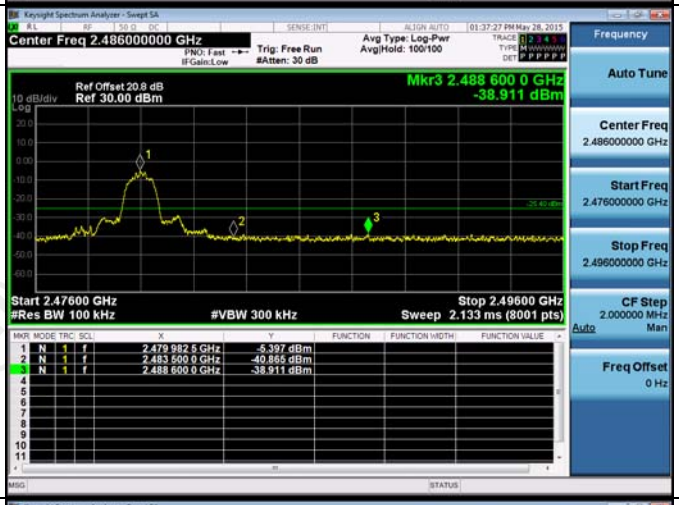
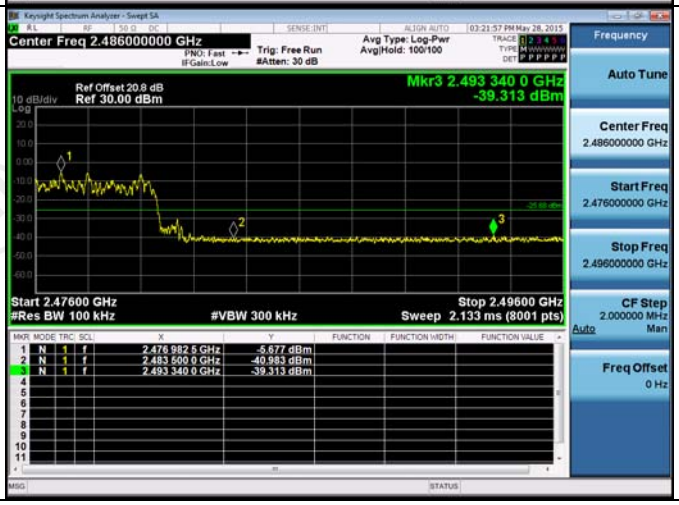
Appendix F): Band-edge for RF Conducted Emissions

Test Graph

Graphs		
GFSK/LCH/No Hop		
GFSK/LCH/Hop		
GFSK/HCH/No Hop		

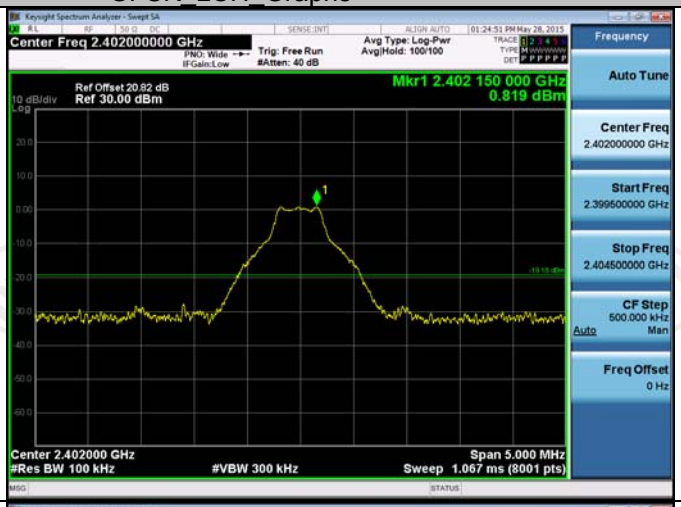
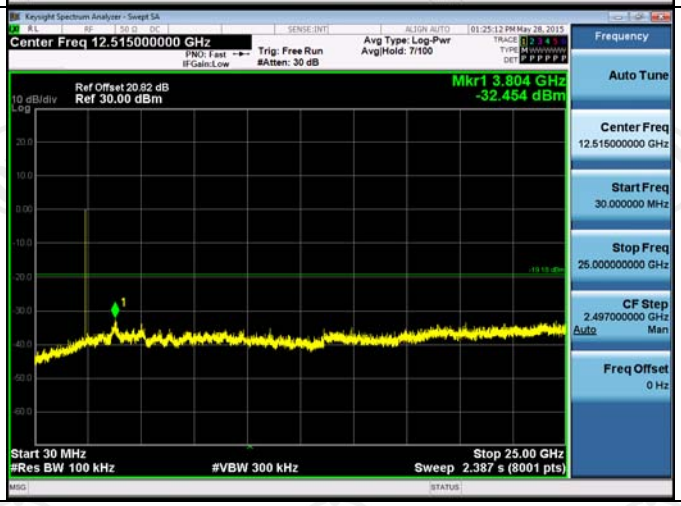
GFSK/HCH/Hop			
π/4DQPSK/LCH/No Hop			
π/4DQPSK/LCH/Hop			

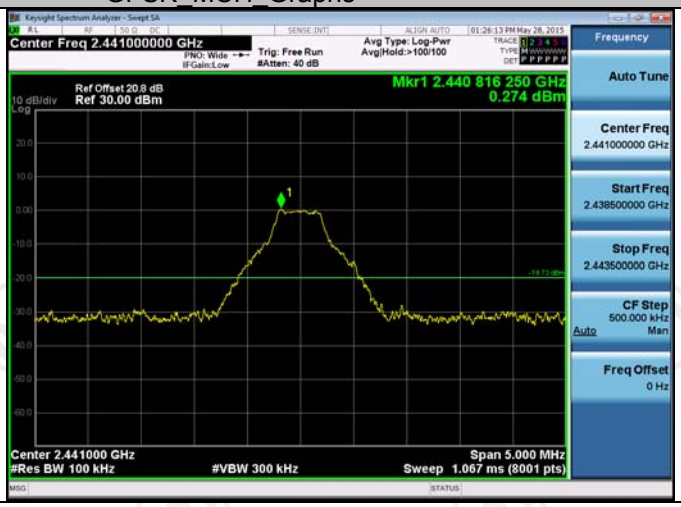
π/4DQPSK/HCH/No Hop			
π/4DQPSK/HCH/Hop			
8DPSK/LCH/No Hop			

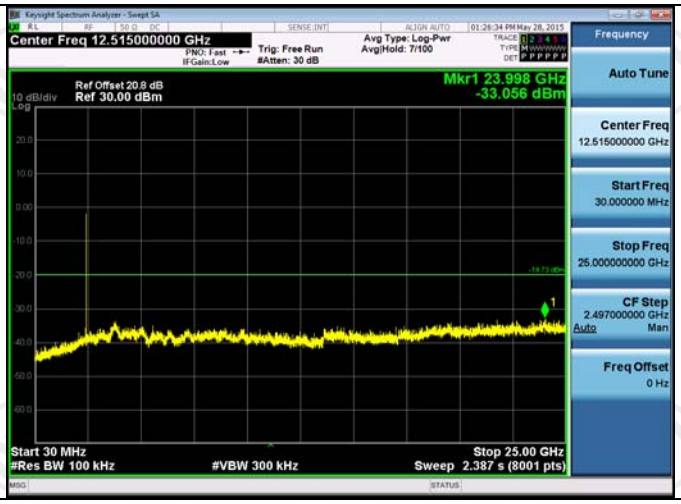
8DPSK/LCH/Hop			
8DPSK/HCH/No Hop			
8DPSK/HCH/Hop			

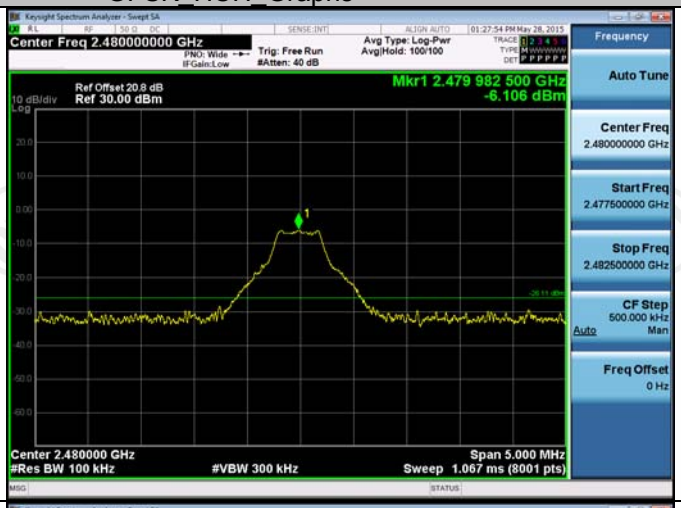
Appendix G): RF Conducted Spurious Emissions

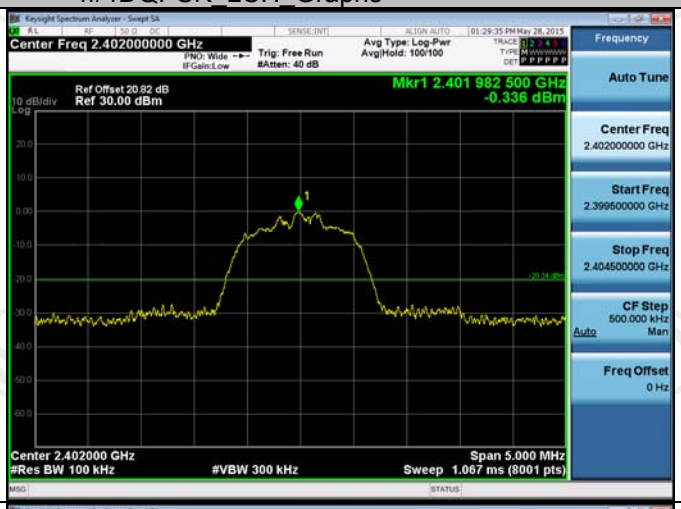
Test Graph

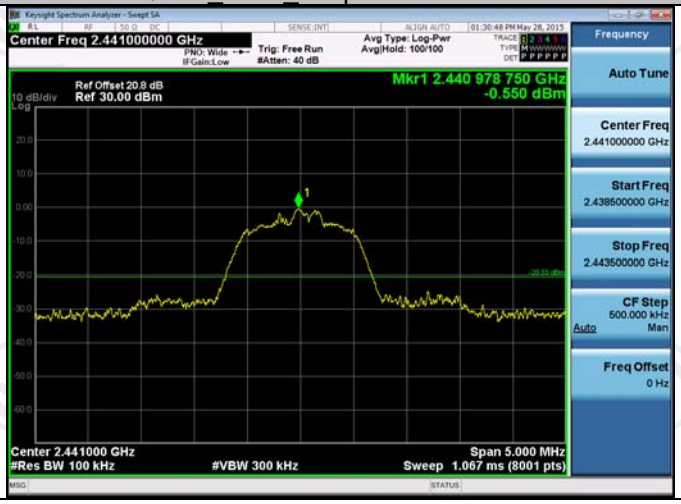
GFSK_LCH_Graphs			
Pref			
Puw			

GFSK_MCH_Graphs			
Pref			

Puw	

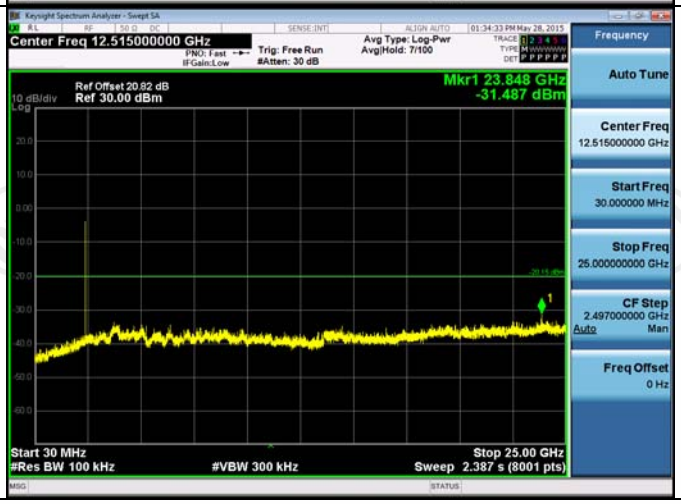
GFSK_HCH_Graphs	
Pref	
Puw	

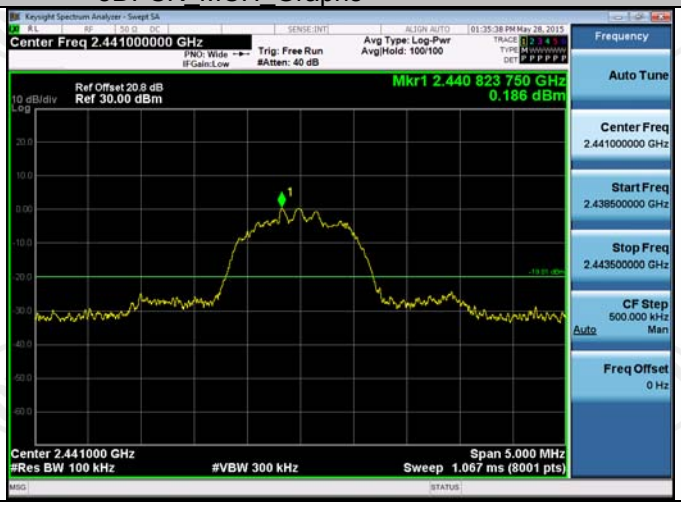
π/4DQPSK_LCH_Graphs			
Pref			
Puw			

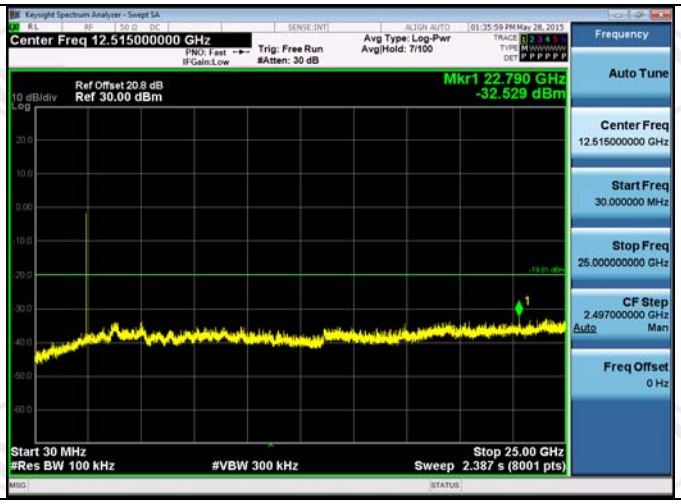
π/4DQPSK_MCH_Graphs			
Pref			

Puw		

π/4DQPSK_HCH_Graphs		
Pref		
Puw		

8DPSK_LCH_Graphs			
Pref			
Puw			

8DPSK_MCH_Graphs			
Pref			

Puw		

8DPSK_HCH_Graphs		
Pref		
Puw		

Appendix H) Pseudorandom Frequency Hopping Sequence

Test Requirement:	47 CFR Part 15**C Section 15.247 (a)(1) requirement:**

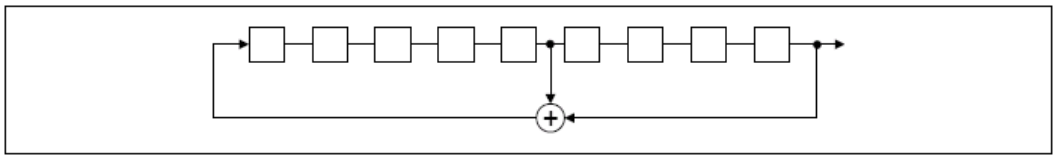
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

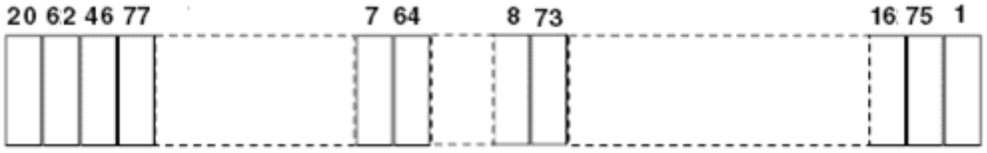
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: 2^9 -1 = 511 bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their Corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

The device does not have the ability to be coordinated with other FHSS systems in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

Appendix I) Antenna Requirement

15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.	

Appendix J) AC Power Line Conducted Emission

<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>Quasi-peak</th><th>Average</th></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE : The lower limit is applicable at the transition frequency</td></tr>
</table>

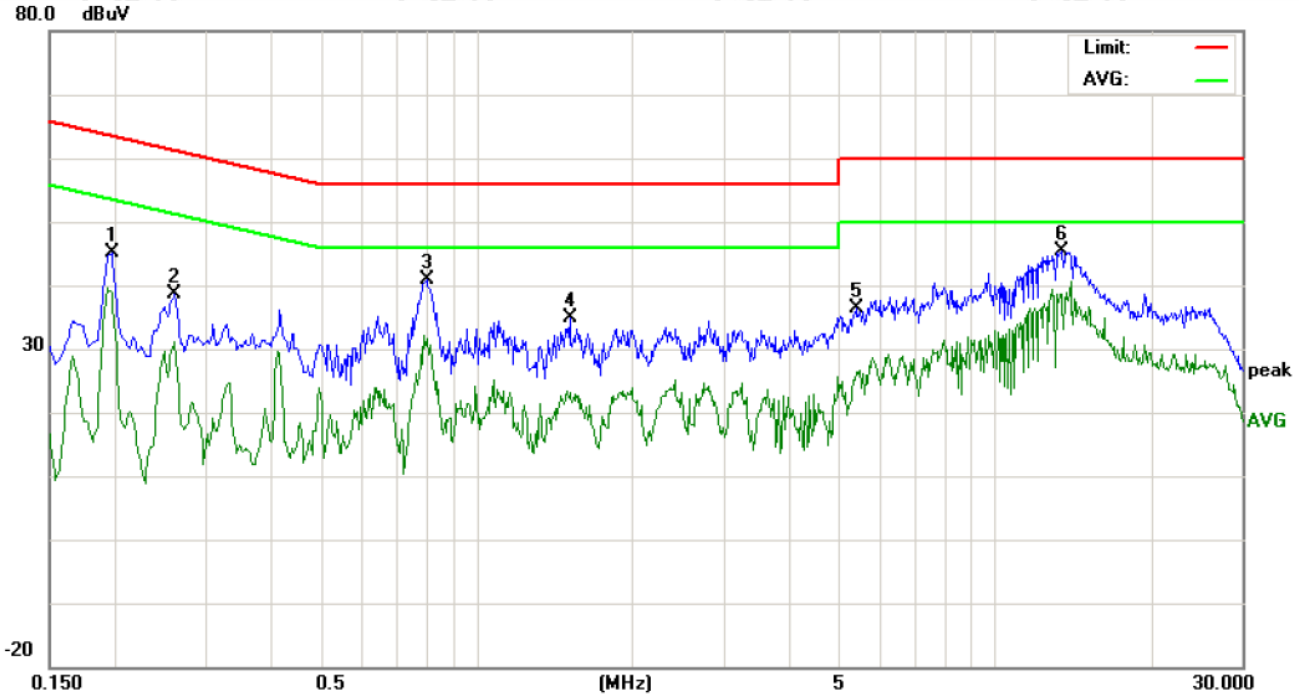
Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

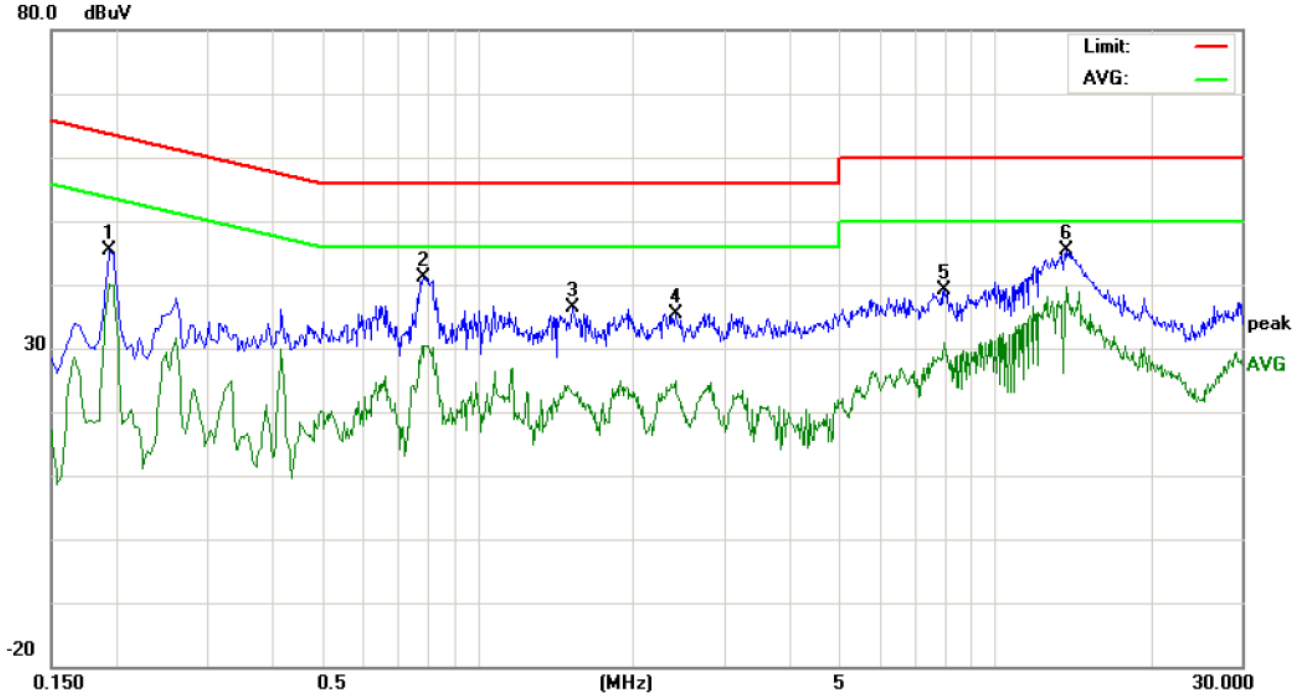
Product	:	Mini Soundbar	**Model/Type reference**	:	CET-926
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Keeping TX	**Humidity**	:	52%

Live line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1980	35.18		28.90	9.90	45.08		38.80	63.69	53.69	-18.61	-14.89	P	
2	0.2620	28.60		21.25	9.90	38.50		31.15	61.36	51.36	-22.86	-20.21	P	
3	0.8020	30.88		21.66	9.90	40.78		31.56	56.00	46.00	-15.22	-14.44	P	
4	1.5180	24.94		13.33	9.90	34.84		23.23	56.00	46.00	-21.16	-22.77	P	
5	5.4180	26.57		16.56	9.90	36.47		26.46	60.00	50.00	-23.53	-23.54	P	
6	13.4660	35.50		28.79	9.93	45.43		38.72	60.00	50.00	-14.57	-11.28	P	

Neutral line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1955	18.60		7.15	9.90	28.50		17.05	63.80	53.80	-35.30	-36.75	P	
2	0.7900	31.23		20.58	9.90	41.13		30.48	56.00	46.00	-14.87	-15.52	P	
3	1.5339	26.51		12.99	9.90	36.41		22.89	56.00	46.00	-19.59	-23.11	P	
4	2.4100	25.56		14.98	9.90	35.46		24.88	56.00	46.00	-20.54	-21.12	P	
5	7.9780	29.23		20.84	9.93	39.16		30.77	60.00	50.00	-20.84	-19.23	P	
6	13.7940	35.45		29.63	9.92	45.37		39.55	60.00	50.00	-14.63	-10.45	P	

Appendix K) Restricted bands around fundamental frequency (Radiated)/Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber.
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

All the modes of operation (X, Y, Z) were investigated and the worst-case emissions are reported.

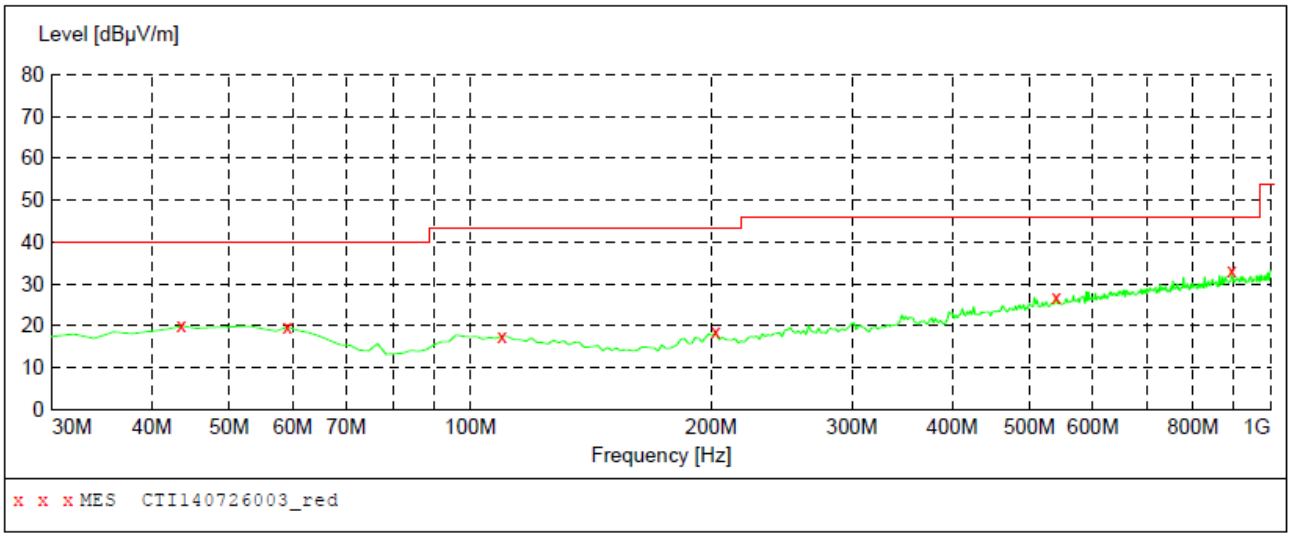
A. Below 30MHz:

No emissions were found higher than the background below 30MHz and background is lower than the limit, so it deems to compliance with the limit without recorded.

B. 30MHz ～ 1GHz:

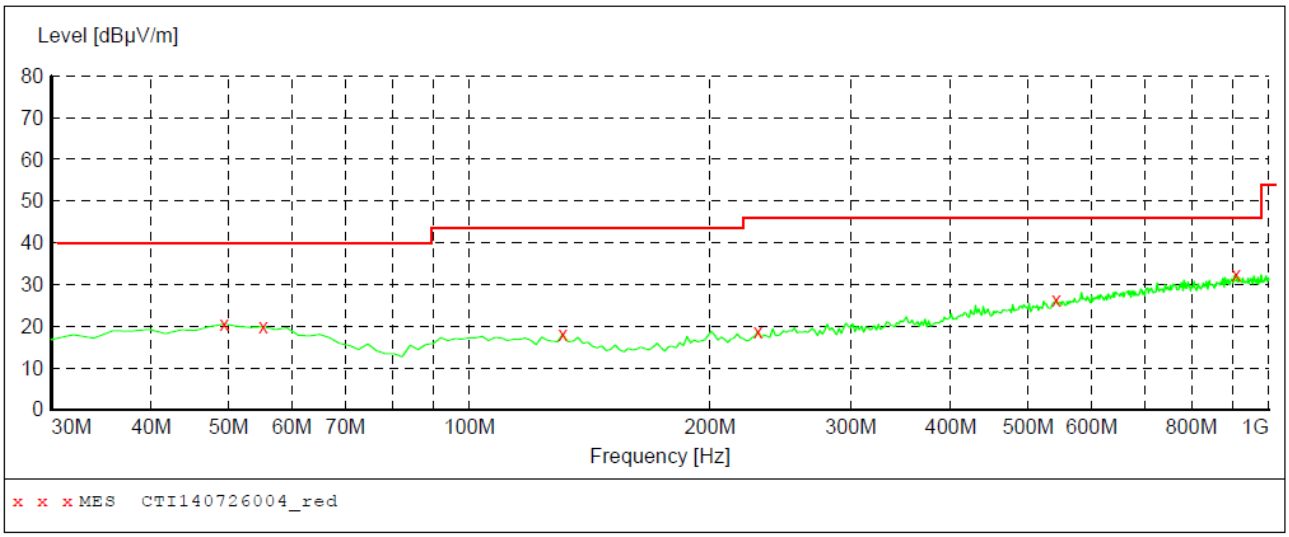
The test data of low channel, middle channel and high channel are almost same in frequency bands 30MHz to 1GHz, and the data of middle channel (GFSK mode) are chosen as representative in below:

H:



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
43.580000	19.90	14.2	40.0	20.1	---	100.0	226.00	HORIZONTAL
59.100000	19.60	13.9	40.0	20.4	---	200.0	316.00	HORIZONTAL
109.540000	17.50	12.4	43.5	26.0	---	200.0	29.00	HORIZONTAL
202.660000	18.50	13.2	43.5	24.0	---	100.0	226.00	HORIZONTAL
540.220000	26.80	20.9	46.0	19.2	---	200.0	316.00	HORIZONTAL
895.240000	33.10	26.2	46.0	12.9	---	100.0	0.00	HORIZONTAL

V:



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	20.50	15.0	40.0	19.5	---	200.0	288.00	VERTICAL
55.220000	19.90	14.3	40.0	20.1	---	100.0	125.00	VERTICAL
130.880000	18.20	11.4	43.5	25.3	---	100.0	212.00	VERTICAL
229.820000	18.80	13.3	46.0	27.2	---	200.0	25.00	VERTICAL
542.160000	26.50	20.9	46.0	19.5	---	100.0	40.00	VERTICAL
910.760000	32.40	26.3	46.0	13.6	---	200.0	249.00	VERTICAL

C. **Above 1GHz:**

Test Results-(Measurement Distance: 3m)_Channel low_2402MHz_GFSK mode:

Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2390.0	34.11	74	PK	H	P
2400.0	42.98	74	PK	H	P
2402.0*	85.34	---	PK	H	P
4804.0	40.56	74	PK	H	P
2390.0	35.23	74	PK	V	P
2400.0	40.88	74	PK	V	P
2402.0*	87.34	---	PK	V	P
4804.0	42.45	74	PK	V	P

*: fundamental frequency

Test Results-(Measurement Distance: 3m)_Channel middle_2441MHz_GFSK mode:

Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2441.0*	84.34	---	PK	H	P
4882.0	37.98	74	PK	H	P
2441.0*	85.45	---	PK	V	P
4882.0	35.89	74	PK	V	P

*: fundamental frequency

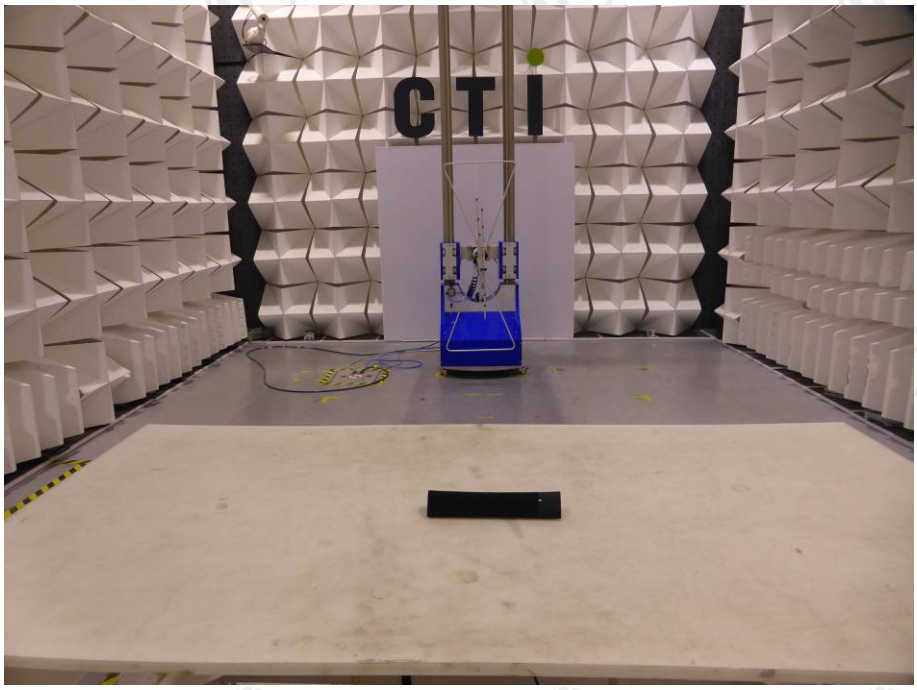
Test Results-(Measurement Distance: 3m)_Channel high_2480MHz_GFSK mode:

Frequency (MHz)	Measurement (dBμV/m)	Limit (dBμV/m)	Detector Type	Antenna (H/V)	Result (P/F)
2480.0*	83.45	---	PK	H	P
2483.5	34.45	74	PK	H	P
4960.0	40.23	74	PK	H	P
2480.0*	84.56	---	PK	V	P
2483.5	38.78	74	PK	V	P
4960.0	36.78	74	PK	V	P

*: fundamental frequency

Remark:
1. The above tables show that the frequencies peak data are all below the average limit, so the average data of these frequencies are deems to fulfill the average limits and not reported.
2. All the modes of GFSK, π/4-DQPSK and 8DPSK have been tested. The worst case is GFSK mode, and the worst data of GFSK mode are chosen as above.
3. No emission found from 18GHz to 25GHz.
4. All outside of operating frequency band and restricted band specified are below 15.209.

PHOTOGRAPHS OF TEST SETUP



Radiated spurious emission Test Setup-1 (Below 1GHz)

Radiated spurious emission Test Setup-2(Above 1GHz)

Conducted spurious emission Test Setup

PHOTOGRAPHS OF EUT Constructional Details

View of external EUT-1

View of external EUT-2

View of external EUT-3

View of external EUT-4

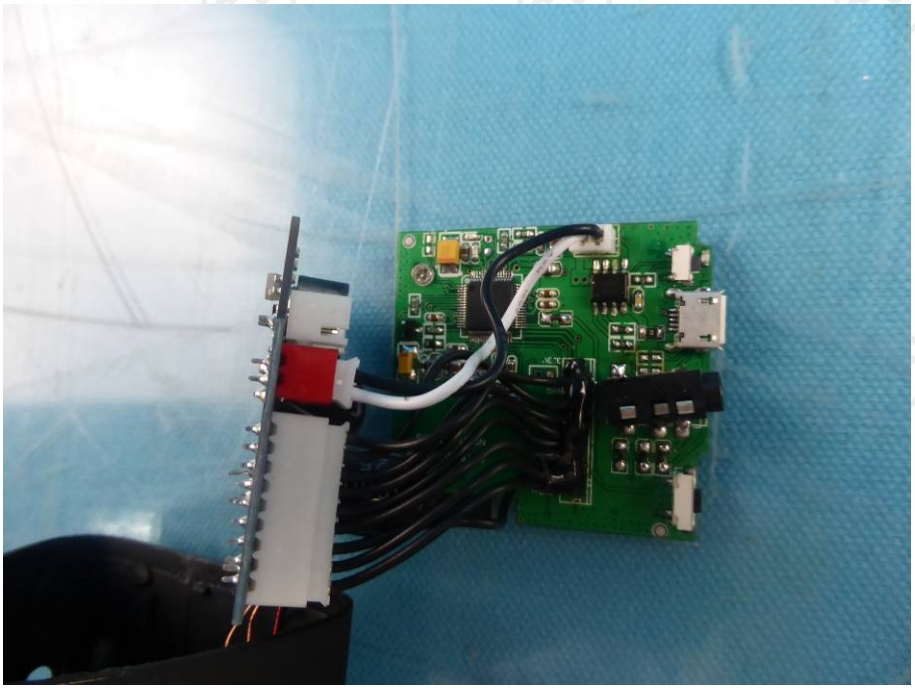
View of external EUT-5

View of external EUT-6

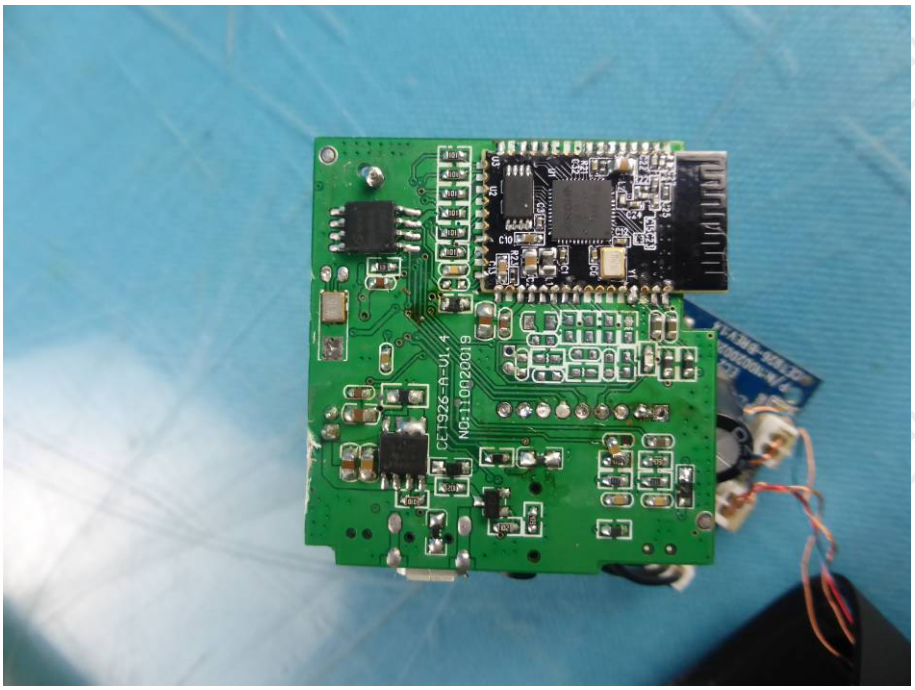
View of internal EUT-1

View of internal EUT-2

View of internal EUT-3

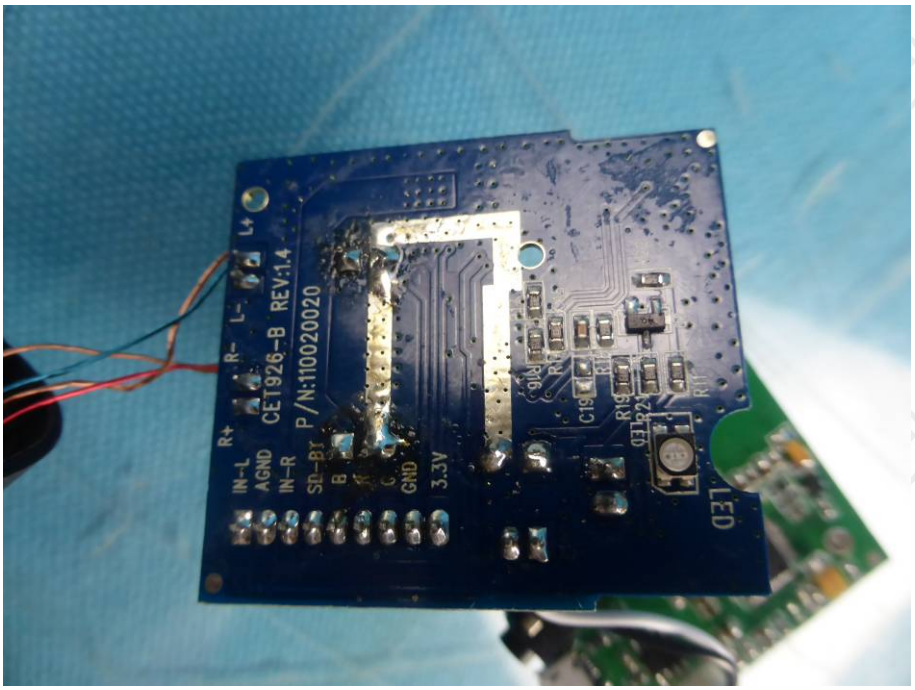


View of internal EUT-4

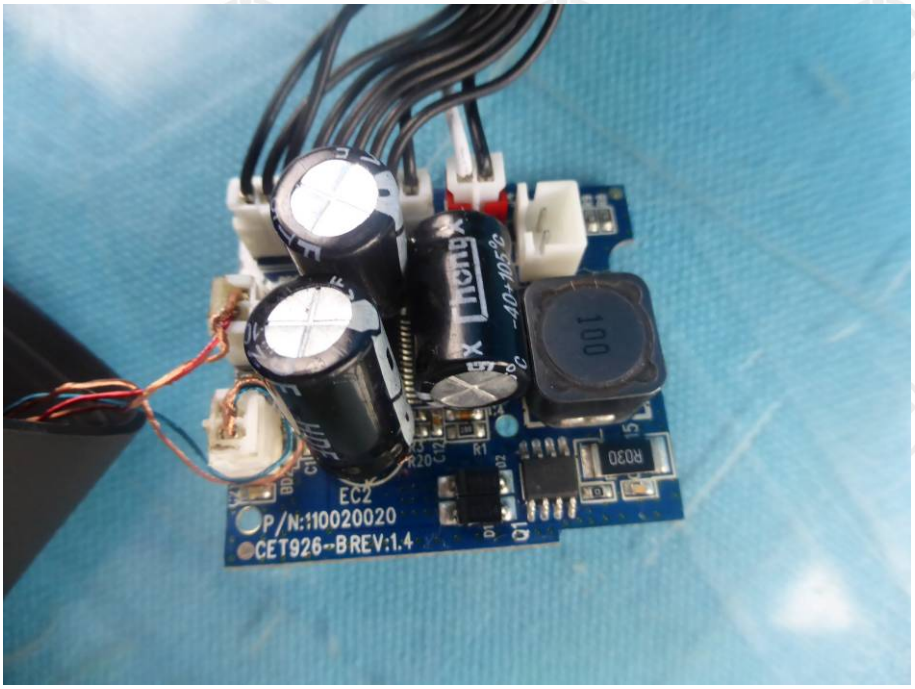


View of internal EUT-5

View of internal EUT-6



View of internal EUT-7



View of internal EUT-8

*** End of Report ***

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