

TEST REPORT

Product : WisePad 2 Plus
Trade mark : BBPOS
Model/Type reference : WPP23
Serial Number : N/A
Report Number : EED32J00113702
FCC ID : 2AB7X-WPP23
Date of Issue : Jul. 11, 2017
Test Standards : 47 CFR Part 15 Subpart C
Test result : PASS

Prepared for:

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Date:

Jul. 11, 2017

Check No.:2496595088



2 Version

Version No.	Date	Description
00	Jul. 11, 2017	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(1)	ANSI C63.10-2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Carrier Frequencies Separation	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Hopping Channel Number	47 CFR Part 15 Subpart C Section 15.247 (b)	ANSI C63.10-2013	PASS
Dwell Time	47 CFR Part 15 Subpart C Section 15.247 (a)(1)	ANSI C63.10-2013	PASS
Pseudorandom Frequency Hopping Sequence	47 CFR Part 15 Subpart C Section 15.247(b)(4)&TCB Exclusion List (7 July 2002)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

The tested sample and the sample information are provided by the client.

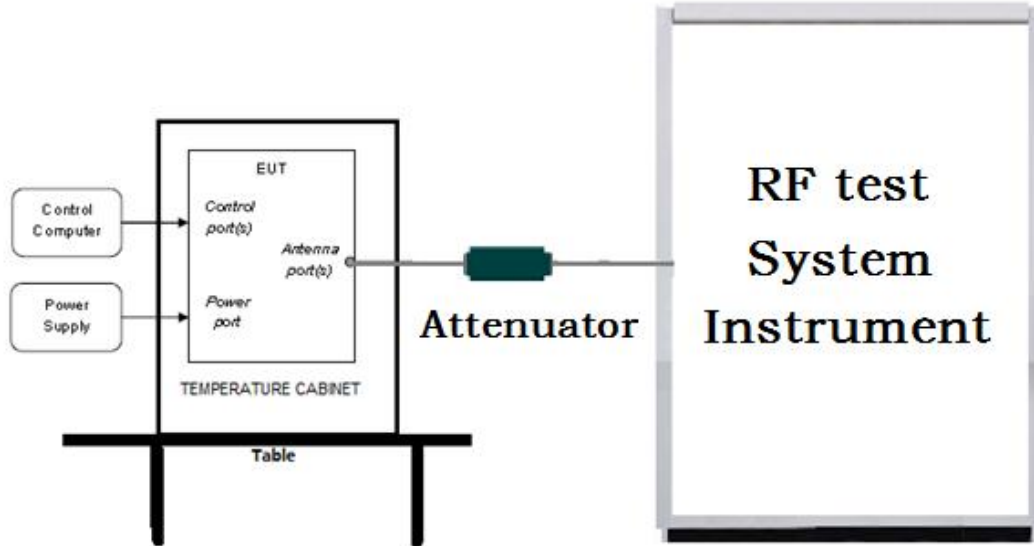
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5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

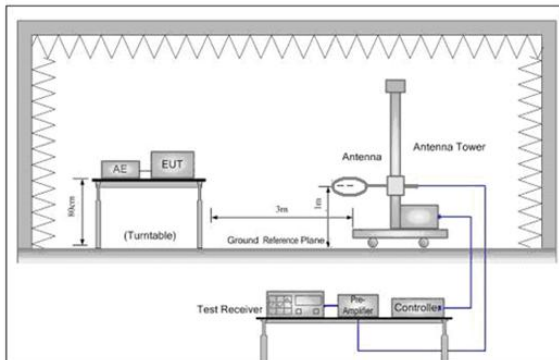


Figure 1. Below 30MHz

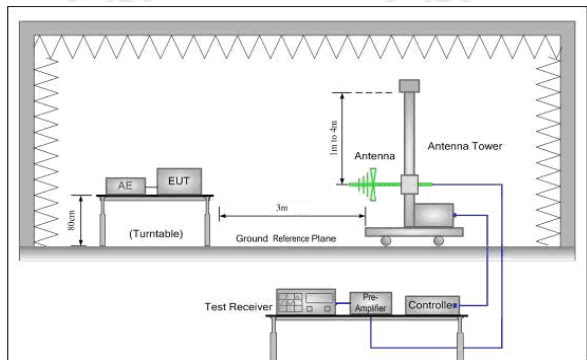


Figure 2. 30MHz to 1GHz

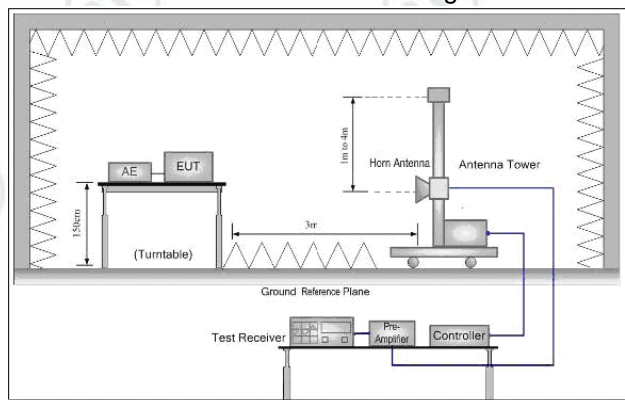
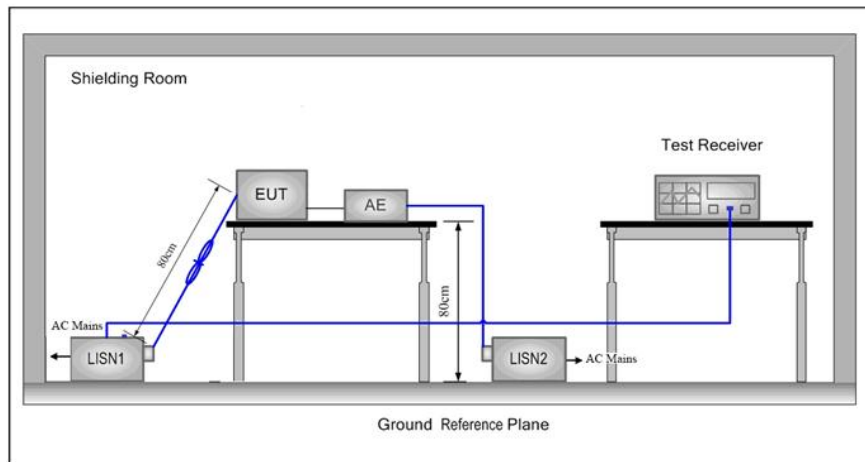


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	21°C
Humidity:	54% RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test Mode	Tx	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

Test mode:

Pre-scan under all rate at Highest channel 79

Mode	GFSK		
packets	1-DH1	1-DH3	1-DH5
Power(dBm)	4.910	5.022	5.195

Mode	π /4DQPSK		
packets	2-DH1	2-DH3	2-DH5
Power(dBm)	5.812	5.901	6.022
Mode	8DPSK		
packets	3-DH1	3-DH3	3-DH5
Power(dBm)	6.010	6.112	6.276

Through Pre-scan, 1-DH5 packet the power is the worst case of GFSK, 2-DH5 packet the power is the worst case of π /4DQPSK, 3-DH5 packet the power is the worst case of 8DPSK,

6 General Information

6.1 Client Information

Applicant:	BBPOS International Limited
Address of Applicant:	Suite 1602, 16/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road, Tsuen Wan, NT, Hong Kong
Manufacturer:	BBPOS International Limited
Address of Manufacturer:	Suite 1602, 16/F, Tower 2, Nina Tower, No. 8 Yeung Uk Road, Tsuen Wan, NT, Hong Kong

6.2 General Description of EUT

Product Name:	WisePad 2 Plus
Mode No.(EUT):	WPP23
Trade Mark:	BBPOS
EUT Supports Radios application:	Bluetooth V2.1+EDR
Firmware version of the sample:	0.06.01.03
Hardware version of the sample:	V1.0.0
Power Supply:	DC 3.7V by Battery DC 5V by USB port
Battery	Li-polymer 3.7V, 1300mAh
Sample Received Date:	Jun. 7, 2017
Sample tested Date:	Jun. 7, 2017 to Jul. 5, 2017

6.3 Product Specification subjective to this standard

Operation Frequency:	2402MHz~2480MHz						
Bluetooth Version:	Bluetooth V2.1+EDR						
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK						
Number of Channel:	79						
Sample Type:	Portable						
Test Power Grade:	N/A						
Test software of EUT	BBPOS_FCC_0713 (Version: 20160713) comes from the desk of associated laptop						
Antenna Type:	Monopole						
Antenna Gain:	1dBi						
Test voltage:	DC 3.7V by Battery DC 5V by USB port						
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		

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Certification	Supplied by
laptop	LENOVO	E46L	FCC DOC	CTI
Mouse	L.Selectron	OP-200	FCC DOC	CTI

6.5 Test Facility

Test location

The test site a is located on *Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China.*

Test site at Centre Testing International Group Co., Ltd has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 06, 2014.

The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

FCC-Registration No.: 886427

Centre Testing International Group 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 886427.

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

RF test system					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Communication test set test set	Agilent	N4010A	MY51400230	03-14-2017	03-13-2018
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-14-2017	03-13-2018
Signal Generator	Keysight	N5182B	MY53051549	03-14-2017	03-13-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2017	01-11-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2017	01-11-2018
DC Power	Keysight	E3642A	MY54436035	04-01-2017	03-31-2018
PC-1	Lenovo	R4960d	---	04-01-2017	03-31-2018
power meter & power sensor	R&S	OSP120	101374	03-14-2017	03-13-2018
RF control unit	JS Tonscend	JS0806-2	158060006	03-14-2017	03-13-2018
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	04-01-2017	03-31-2018

Conducted disturbance Test					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100009	06-16-2016	06-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	05-07-2018
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-13-2018
Communication test set	R&S	CMW500	152394	04-01-2016	03-13-2018
LISN	R&S	ENV216	100098	06-16-2016	06-12-2018
LISN	schwarzbeck	NNLK8121	8121-529	06-16-2016	06-12-2018
Voltage Probe	R&S	ESH2-Z3	--	06-13-2017	06-12-2018
Current Probe	R&S	EZ17	100106	06-16-2016	06-12-2018
ISN	TESEQ GmbH	ISN T800	30297	01-29-2015	02-22-2018

3M Semi/full-anechoic Chamber					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2016	05-22-2018
Microwave Preampfier	Agilent	8449B	3008A02425	02-04-2016	02-15-2018
Horn Antenna	ETS-LINDGREN	3117	00057410	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-12-2018
Receiver	R&S	ESCI	100435	06-16-2016	06-13-2018
Multi device Controller	maturio	NCD/070/10711 112	---	01-12-2016	01-11-2018
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-12-2018
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-12-2018
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	05-07-2018
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-13-2018
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2016	01-11-2018
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2016	01-11-2018
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2016	01-11-2018
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2016	01-11-2018
Communication test set	R&S	CMW500	152394	04-01-2016	03-13-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2016	01-11-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2016	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2016	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2016	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2016	01-11-2018

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C (2015)	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Test Results List:

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

Appendix A): 20dB Occupied Bandwidth

Test Result

Mode	Channel.	20dB Bandwidth [MHz]	99% OBW [MHz]	Verdict	Remark
GFSK	LCH	0.9662	0.87592	PASS	Peak detector
GFSK	MCH	0.9667	0.88238	PASS	
GFSK	HCH	0.9691	0.87829	PASS	
$\pi/4$ DQPSK	LCH	1.2760	1.15370	PASS	
$\pi/4$ DQPSK	MCH	1.2770	1.15510	PASS	
$\pi/4$ DQPSK	HCH	1.2770	1.15580	PASS	
8DPSK	LCH	1.2580	1.15400	PASS	
8DPSK	MCH	1.2570	1.15580	PASS	
8DPSK	HCH	1.2600	1.15470	PASS	

Test Graph



<p>$\pi/4$DQPSK/LCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.40200000 GHz</p> <p>Center Freq: 2.40200000 GHz</p> <p>Ref Offset 19.08 dB Ref 19.08 dBm</p> <p>Center 2.402 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1537 MHz</p> <p>Total Power: 12.4 dBm</p> <p>Transmit Freq Error: -7.535 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.276 MHz</p> <p>x dB: -20.00 dB</p>
<p>$\pi/4$DQPSK/MCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.44100000 GHz</p> <p>Center Freq: 2.44100000 GHz</p> <p>Ref Offset 19.02 dB Ref 19.02 dBm</p> <p>Center 2.441 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1551 MHz</p> <p>Total Power: 11.9 dBm</p> <p>Transmit Freq Error: -5.389 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.277 MHz</p> <p>x dB: -20.00 dB</p>
<p>$\pi/4$DQPSK/HCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.48000000 GHz</p> <p>Center Freq: 2.48000000 GHz</p> <p>Ref Offset 19.05 dB Ref 19.05 dBm</p> <p>Center 2.48 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1558 MHz</p> <p>Total Power: 12.2 dBm</p> <p>Transmit Freq Error: -3.137 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.277 MHz</p> <p>x dB: -20.00 dB</p>

<p>8DPSK/LCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.40200000 GHz</p> <p>Center Freq: 2.40200000 GHz</p> <p>Ref Offset 19.08 dB Ref 19.08 dBm</p> <p>Center 2.402 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1540 MHz</p> <p>Total Power: 12.6 dBm</p> <p>Transmit Freq Error: -2.432 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.258 MHz</p> <p>x dB: -20.00 dB</p>
<p>8DPSK/MCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.44100000 GHz</p> <p>Center Freq: 2.44100000 GHz</p> <p>Ref Offset 19.02 dB Ref 19.02 dBm</p> <p>Center 2.441 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1558 MHz</p> <p>Total Power: 12.2 dBm</p> <p>Transmit Freq Error: -1.065 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.257 MHz</p> <p>x dB: -20.00 dB</p>
<p>8DPSK/HCH</p>	<p>Keyight Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.48000000 GHz</p> <p>Center Freq: 2.48000000 GHz</p> <p>Ref Offset 19.05 dB Ref 19.05 dBm</p> <p>Center 2.48 GHz #Res BW 30 kHz</p> <p>Span 3 MHz Sweep 3.2 ms</p> <p>Occupied Bandwidth: 1.1547 MHz</p> <p>Total Power: 12.6 dBm</p> <p>Transmit Freq Error: 1.302 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 1.260 MHz</p> <p>x dB: -20.00 dB</p>

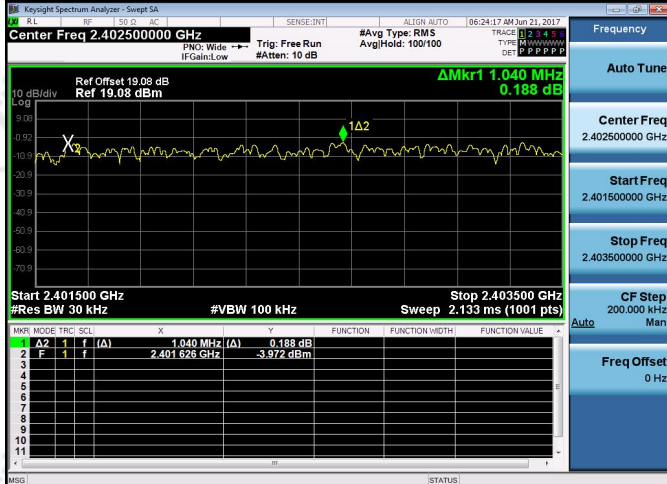
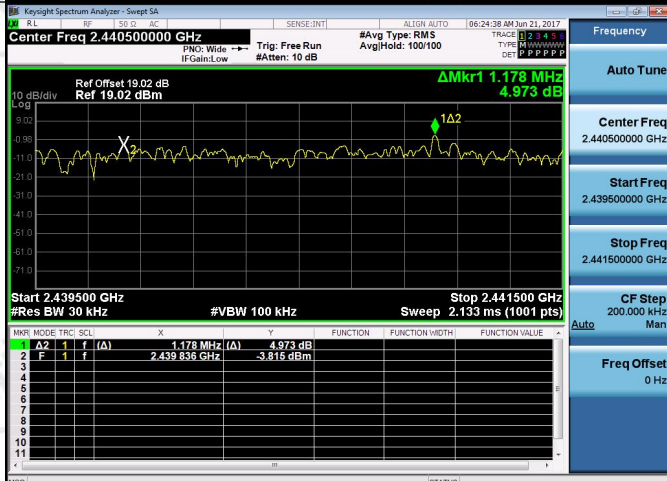
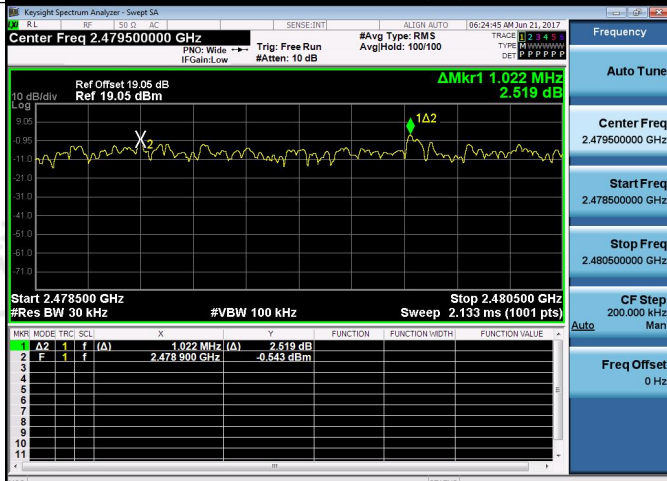
Appendix B): Carrier Frequency Separation

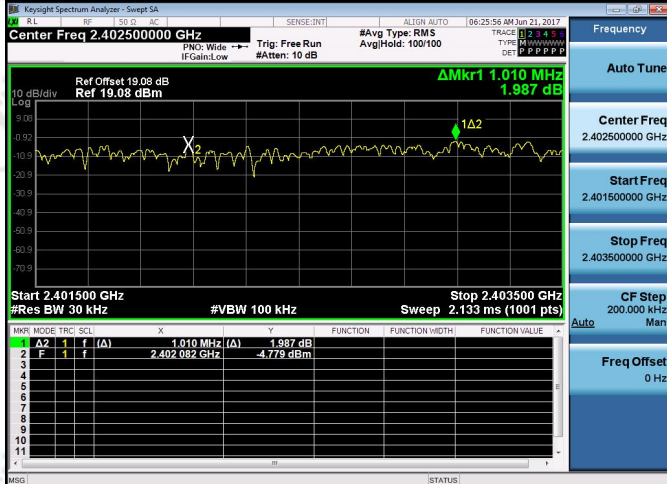
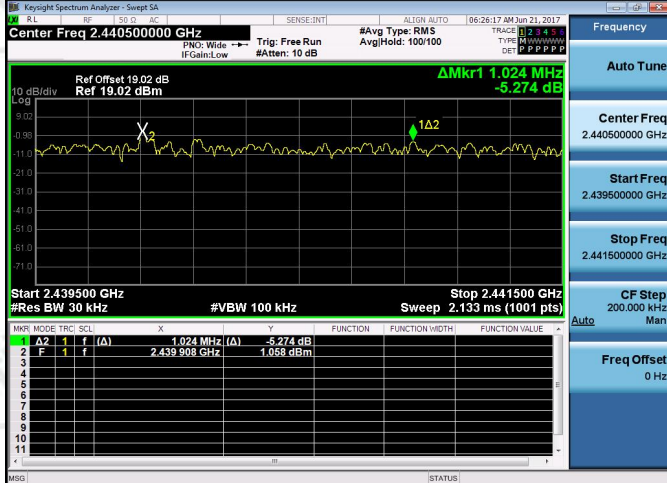
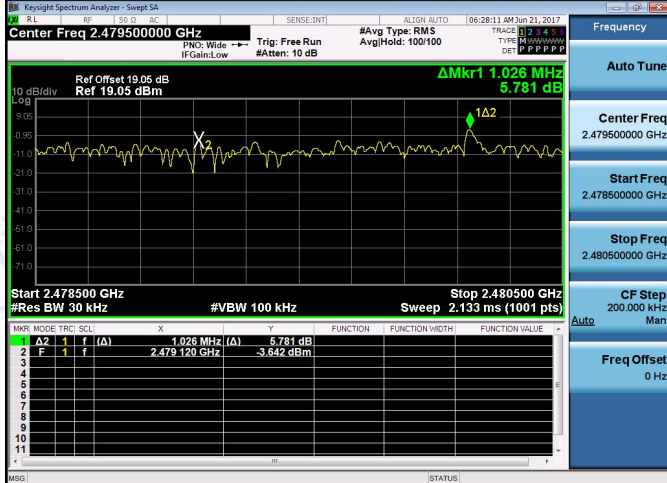
Result Table

Mode	Channel.	Carrier Frequency Separation [MHz]	Verdict
GFSK	LCH	1.060	PASS
GFSK	MCH	0.964	PASS
GFSK	HCH	1.100	PASS
$\pi/4$ DQPSK	LCH	1.040	PASS
$\pi/4$ DQPSK	MCH	1.178	PASS
$\pi/4$ DQPSK	HCH	1.022	PASS
8DPSK	LCH	1.010	PASS
8DPSK	MCH	1.024	PASS
8DPSK	HCH	1.026	PASS

Test Graph



<p>π/4DQPSK/LCH</p>	 <p>Center Freq 2.40250000 GHz</p> <p>Ref Offset 19.08 dB Ref 19.08 dBm</p> <p>ΔMkr1 1.040 MHz 0.188 dB</p> <p>Start 2.401500 GHz Stop 2.403500 GHz #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MNPR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A2</td> <td>f</td> <td>(A)</td> <td>1.040 MHz (A)</td> <td>0.188 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401 826 GHz</td> <td>-3.972 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MNPR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	A2	f	(A)	1.040 MHz (A)	0.188 dB				2	F	f		2.401 826 GHz	-3.972 dBm			
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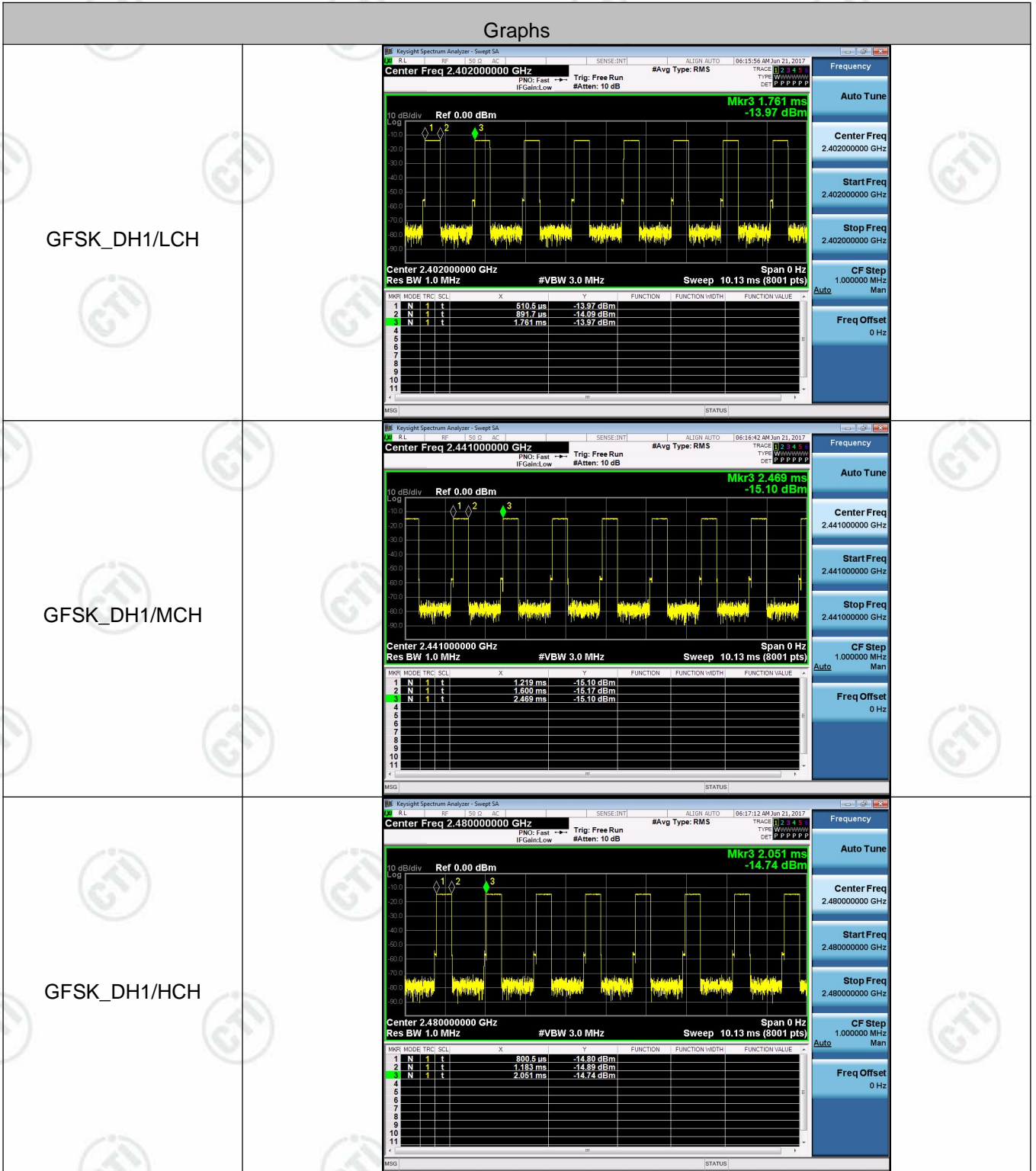
<p>8DPSK/LCH</p>	
<p>8DPSK/MCH</p>	
<p>8DPSK/HCH</p>	

Appendix C): Dwell Time

Result Table

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Duty Cycle [%]	Verdict
GFSK	DH1	LCH	0.381266	320	0.122	30	PASS
GFSK	DH1	MCH	0.38127	320	0.122	30	PASS
GFSK	DH1	HCH	0.382537	320	0.122	31	PASS
GFSK	DH3	LCH	1.63654	160	0.262	65	PASS
GFSK	DH3	MCH	1.63653	160	0.262	65	PASS
GFSK	DH3	HCH	1.636533	160	0.262	65	PASS
GFSK	DH5	LCH	2.88546	106.7	0.308	77	PASS
GFSK	DH5	MCH	2.88547	106.7	0.308	77	PASS
GFSK	DH5	HCH	2.88546	106.7	0.308	77	PASS

Test Graph





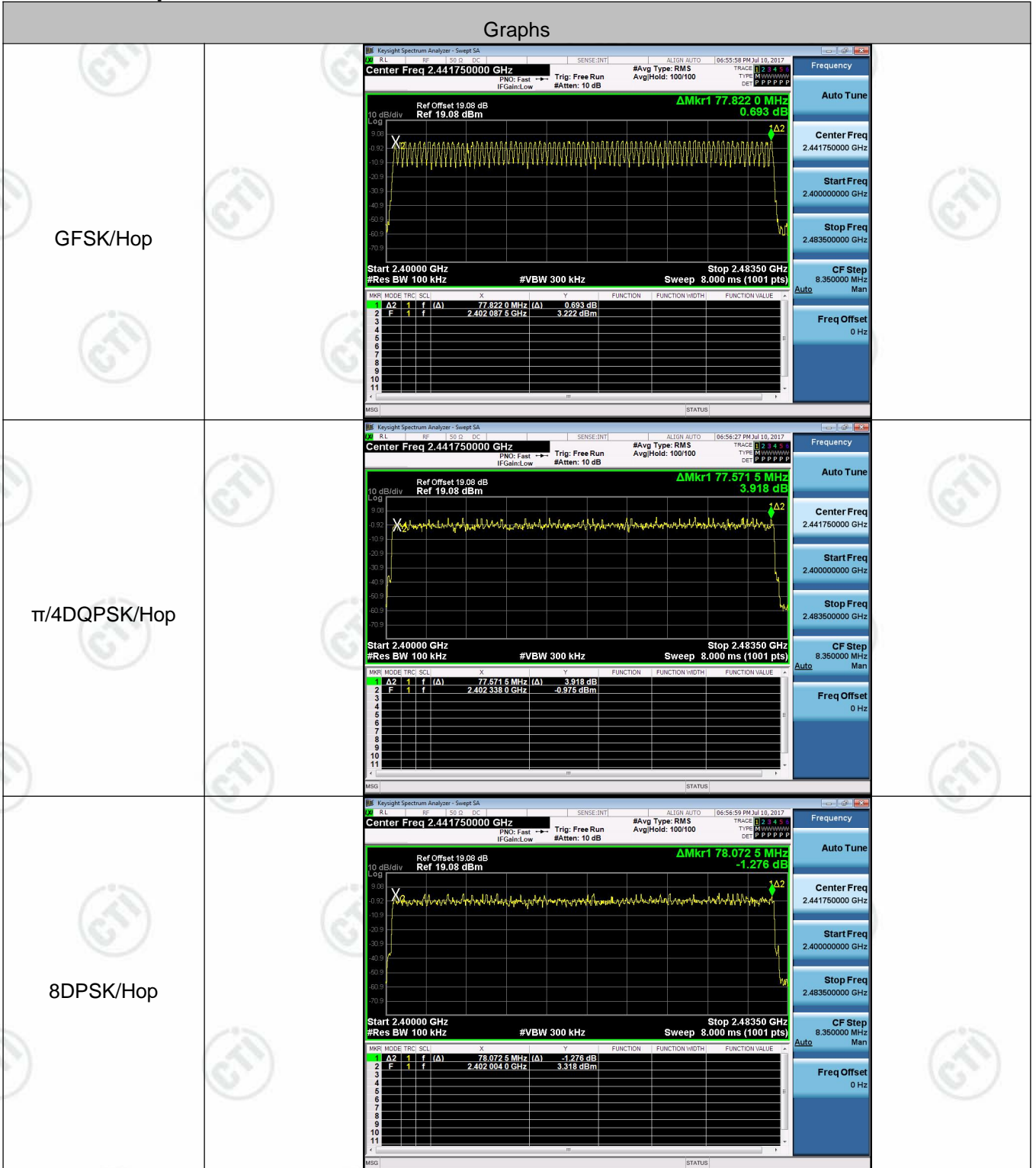


Appendix D): Hopping Channel Number

Result Table

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

Test Graph



Appendix E): Conducted Peak Output Power

Result Table

Mode	Channel.	Maximum Peak Output Power [dBm]	Verdict
GFSK	LCH	5.271	PASS
GFSK	MCH	4.857	PASS
GFSK	HCH	5.195	PASS
$\pi/4$ DQPSK	LCH	6.086	PASS
$\pi/4$ DQPSK	MCH	5.691	PASS
$\pi/4$ DQPSK	HCH	6.022	PASS
8DPSK	LCH	6.372	PASS
8DPSK	MCH	5.935	PASS
8DPSK	HCH	6.276	PASS

Test Graph

