Audix Technology Corp.
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FCC 15.247 & RSS-247
2.4 GHz Test Report

for

Acer Incorporated

8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist.,
New Taipei City 221 Taiwan

Product Name	**:**	**Tablet Computer**
Model Name	**:**	**A8001**
Marketing Name	**:**	**B1-870**
Brand		**acer**
FCC ID	**:**	**HLZA8001**
IC	**:**	**1754F-A8001**

Prepared by: **:** **AUDIX Technology Corporation,**
EMC Department

Testing Laboratory
1724

TESTING
NVLAP LAB CODE 200077-0

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TEST REPORT CERTIFICATION

Applicant	:	Acer Incorporated
Manufacturer	:	Acer Incorporated
EUT Description		
(1) Product	:	Tablet Computer
(2) Model	:	A8001
(3) Marketing Name	:	B1-870
(4) Brand	:	acer
(5) Power Supply	:	(1)DC 5.2V, 2.0A (Via AC/DC Adapter) (2)DC 3.8V (Via Battery)

Applicable Standards:

47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 4), November 2014
RSS-247 (Issue 2), February 2017
ANSI C63.10:2013

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.
Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2017. 12. 18

Reviewed by: Sabrina Wang (Sabrina Wang/Administrator)

Approved by: Ben Cheng (Ben Cheng/Manager)

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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2017. 12. 18	Original Report	EM-F170785

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2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	**PASS**
15.247(d)/15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	**PASS**
15.247(a)(1)	RSS-247 §5.1(2)	20dB Bandwidth	**PASS**
15.247(a)(1)	RSS-247 §5.1(2)	Carrier Frequency Separation	**PASS**
15.247(a)(1)(iii)	RSS-247 §5.1(4)	Time of Occupancy	**PASS**
15.247(a)(1)(iii)	RSS-247 §5.1(4)	Number of Hopping Channels	**PASS**
15.247(b)(1)	RSS-247 §5.1(2)	Maximum Peak Output Power	**PASS**
15.247(d)	RSS-247 §5.5	Conducted Band Edges and Conducted Spurious Emission	**PASS**
15.203	---	Antenna Requirement	**Compliance**

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3. GENERAL INFORMATION

3.1. Description of Application

Applicant	Acer Incorporated 8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221 Taiwan
Applicant	Acer Incorporated 8F., No.88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221 Taiwan
Product	Tablet Computer
Model	A8001
Marketing Name	B1-870
Brand	acer

3.2. Description of EUT

Test Model	A8001
Serial Number	N/A
Power Rating	(1)DC 5.2V, 2.0A (Via AC/DC Adapter) (2)DC 3.8V (Via Battery)
RF Features	WLAN:802.11 b/g/n Bluetooth: BT and BLE
Transmit Type	802.11b: 1T1R 802.11g: 1T1R 802.11n-HT20: 1T1R 802.11n-HT40: 1T1R BT/BLE: 1T1R
Sample Status	Production
Date of Receipt	2017. 12. 04
Date of Test	2017. 12. 06 ~ 15
Interface Ports of EUT	• MicroSD card slot x1 • Micro USB port x1 • Audio jack x1
Accessories Supplied	• AC/DC Adapter • USB Cable: Shielded, Detachable, 0.8m

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3.3. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (GHz)	Max Gain (dBi)
1	A8L3	Shenzhen Neostra Technology Co.,Ltd	FPC	2.4 ~ 2.5	2.93

3.4. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
Bluetooth	2402-2480	79	FHSS (GFSK, π/4 DQPSK, 8-DPSK)	1/2/3

Channel List							
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

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3.5. Description of Key Components

3.5.1. For the All Component Lists

Item	Supplier	Model / Type	Character
Main Board	Kingshine electronics	A8L3_MB_V2.1	---
MCU	MTK	MT8167A	1.3GHz (406ball) 802.11 b/g/n, BT 4.0 1728-BZASHBEP18027-B
GPS module	MTK	MT3337V	---
eMMC	SK hynix	H26M52208FPR	16GB
Memory	SK hynix	H5TC4G63EFR-PBA	1GB LPDDR3 1600MHz
8.0"LCD Panel	Shenzhen K&D Technology Co., Ltd	KD080D24-40NH-B7-L	800*1280 IPS panel
Battery	TCL	PR-2874E9G	DC3.8V, 17.1Wh, 4500mAh
Camera(Front)	MicroKore	SP2509	2.0 Mega Pixels
Camera(Rear)	MicroKore	SP5506	5.0 Mega Pixels
AC/DC Adapter	Lite-On	PA-1100-25	I/P: AC100-240V, 0.3A 50/60Hz O/P: DC5.2V, 2A
	Delta	ADP-10HW A	I/P: AC100-240V, 0.4A 50-60Hz O/P: DC5.35V, 2A
USB Cable	Perth Tai	N/A	Shielded, Detachable, 0.8m
	Shuttle	N/A	Shielded, Detachable, 0.8m

Remark: For more detailed features description, please refer to the manufacturer's specifications or the user manual.

3.5.2. According to Radiated and AC conducted emission pre-test results, the EUT collocates with following worst components, which are used to establish a basic configuration of system during test:

Item	Supplier	Model / Type	Character
Main Board	Kingshine electronics	A8L3_MB_V2.1	---
MCU	MTK	MT8167A	1.3GHz (406ball) 802.11 b/g/n, BT 4.0 1728-BZASHBEP18027-B
GPS module	MTK	MT3337V	---
eMMC	SK hynix	H26M52208FPR	16GB
Memory	SK hynix	H5TC4G63EFR-PBA	1GB LPDDR3 1600MHz
8.0"LCD Panel	Shenzhen K&D Technology Co., Ltd	KD080D24-40NH-B7-L	800*1280 IPS panel
Battery	TCL	PR-2874E9G	DC3.8V, 17.1Wh, 4500mAh
Camera(Front)	MicroKore	SP2509	2.0 Mega Pixels
Camera(Rear)	MicroKore	SP5506	5.0 Mega Pixels
AC/DC Adapter	Lite-On	PA-1100-25	I/P: AC100-240V, 0.3A 50/60Hz O/P: DC5.2V, 2A
USB Cable	Perth Tai	N/A	Shielded, Detachable, 0.8m

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3.6. Test Configuration

Mode	Duty Cycle (x)	T (ms)	Duty Cycle Factor (dB)
BT	N/A	2.880	N/A

AC Conduction	
Test Case	Normal operation

Item		Modulation	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge Note1	GFSK	1Mbps	00/78
		8-DPSK	3Mbps	00/78
Conducted Test Case Note2	20dB Bandwidth	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Carrier Frequency Separation	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Time of Occupancy	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Number of Hopping Channels	GFSK	1Mbps	39
		8-DPSK	3Mbps	39
	Maximum Peak Output Power	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Band Edges	GFSK	1Mbps	00/78
		8-DPSK	3Mbps	00/78
	Spurious Emission	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78

Note 1: □Mobile Device
■Portable Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow: ■ Lie □ Side□ Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.

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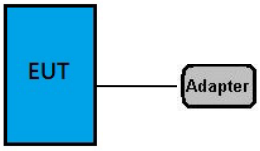
3.7. Tested Supporting System List

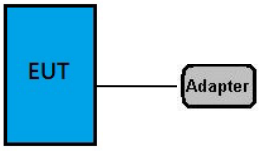
None

3.8. Setup Configuration

3.8.1. EUT Configuration for Power Line & Radiated Emission



3.8.2. EUT Configuration for RF Conducted Test Items



3.9. Operating Condition of EUT

Test program “Android of Engineer mode” is used for enabling EUT BT function under continues transmitting and choosing data rate/ channel.

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3.10.Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2005 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724 (3) FCC OET Designation No. TW1004 & TW1090 & TW1724
Test Facilities	(1) No. 8 Shielding Room (2) Semi-Anechoic Chamber (IC Test Site Registration No.: 5183B-1) (3) Fully Anechoic Chamber (IC Test Site Registration No.: 5183B-4)

3.11.Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	±3.50dB
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	±0.2kHz
Carrier Frequency Separation	±0.2kHz
Time of Occupancy	±0.03sec
Maximum peak Output power	± 0.52dB
Conducted Emission Limitations	± 0.13dB

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4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2017. 02. 07	1 Year
2.	A.M.N.	R&S	ENV4200	825358/003	2017. 04. 14	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2016. 12. 14	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2017. 01. 16	1 Year
5.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.8 S/R	2017. 04. 21	1 Year
6.	Test Software	Audix	e3	V.6.120424	N.C.R.	1 Year
7.	Signal Cable	Yeida	RG/58AU	CE-08	2017. 09. 22	1 Year

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2017. 09. 13	1 Year
2.	Spectrum Analyzer	Agilent	N9010A-526	MY52220368	2017. 11. 18	1 Year
3.	Test Receiver	R & S	ESCS30	100338	2017. 06. 19	1 Year
4.	Amplifier	HP	8447D	2944A06305	2017. 02. 16	1 Year
5.	Amplifier	Sonoma	310N	187161	2017. 06. 08	1 Year
6.	Bilog Antenna	CHASE	CBL6112D	33821	2017. 01. 21	1 Year
7.	Loop Antenna	R&S	HFH2-Z2	891847/27	2016. 12. 23	2 Years
8.	Horn Antenna	ETS-Lindgren	3117	00135902	2017. 03. 08	1 Year
9.	Horn Antenna	COM-POWER	AH-840	101092	2017. 05. 04	1 Year
10.	2.4GHz Notch Filter	K&L	7NSL10-2441.5E130.5-00	1	2017. 07. 26	1 Year
11.	3GHz Notch Filter	Microwave	H3G018G1	484798	2017. 08. 25	1 Year
12.	Digital Thermo-Hygro Meter	EVERY DAY	E-512	RF-02	2017. 04. 21	1 Year
13.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.
14.	Signal Cable	MIYAZAKI	5D2W	RE-11	2017. 02. 15	1 Year
14.	Signal Cable	HUBER+SUHNER	SUCOFLEX 106	54602/6	2017. 02. 15	1 Year

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9010B-544	MY55460198	2017. 04. 18	1 Year
2.	Digital Thermo-Hygro Meter	Datronn	KT-905	RF	2017. 04. 21	1 Year

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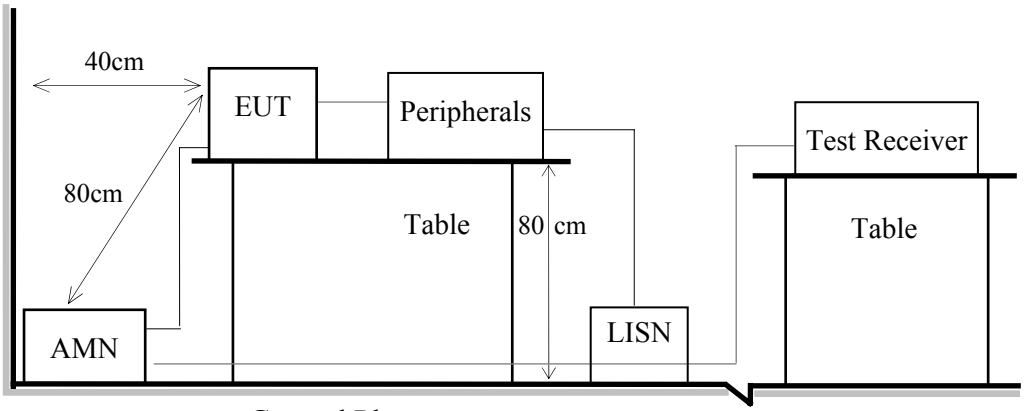
5. CONDUCTED EMISSION

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.8

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.
2.: The lower limit applies to the band edges.

5.3. Test Procedure

5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
5.3.4. Checking frequency range from 150 kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

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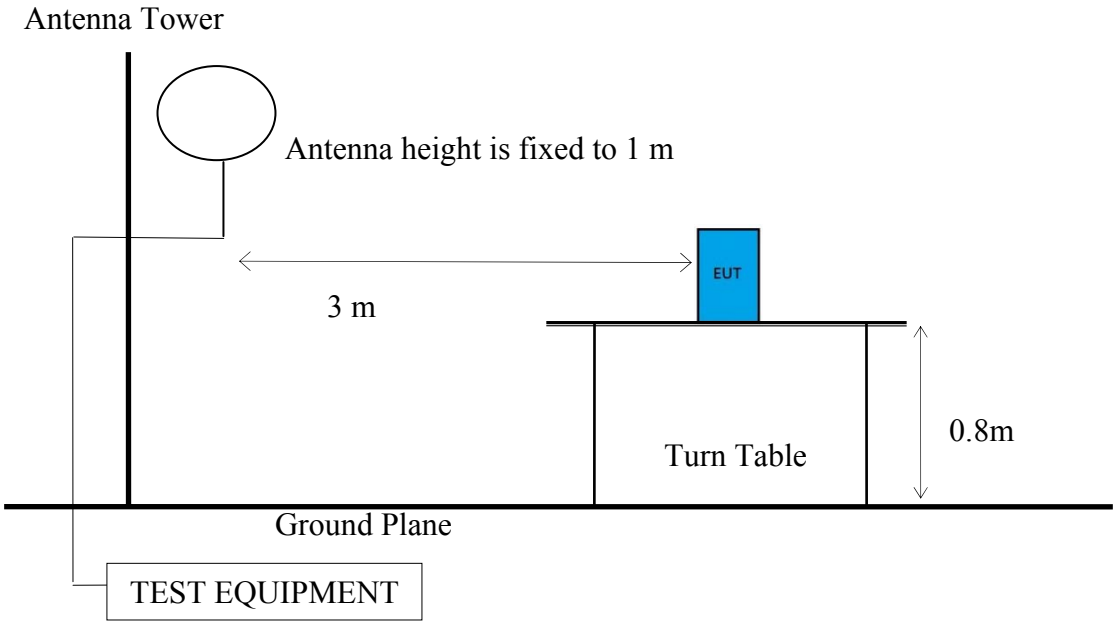
6. RADIATED EMISSION

6.1. Block Diagram of Test Setup

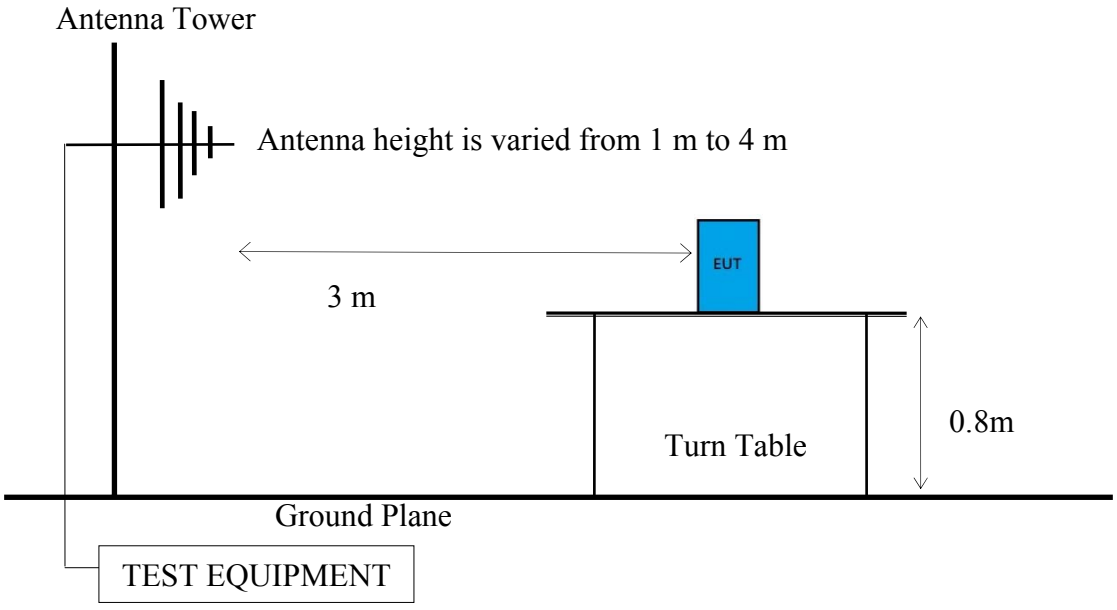
6.1.1. Block Diagram of EUT

Indicated as section 3.8

6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30-1000 MHz



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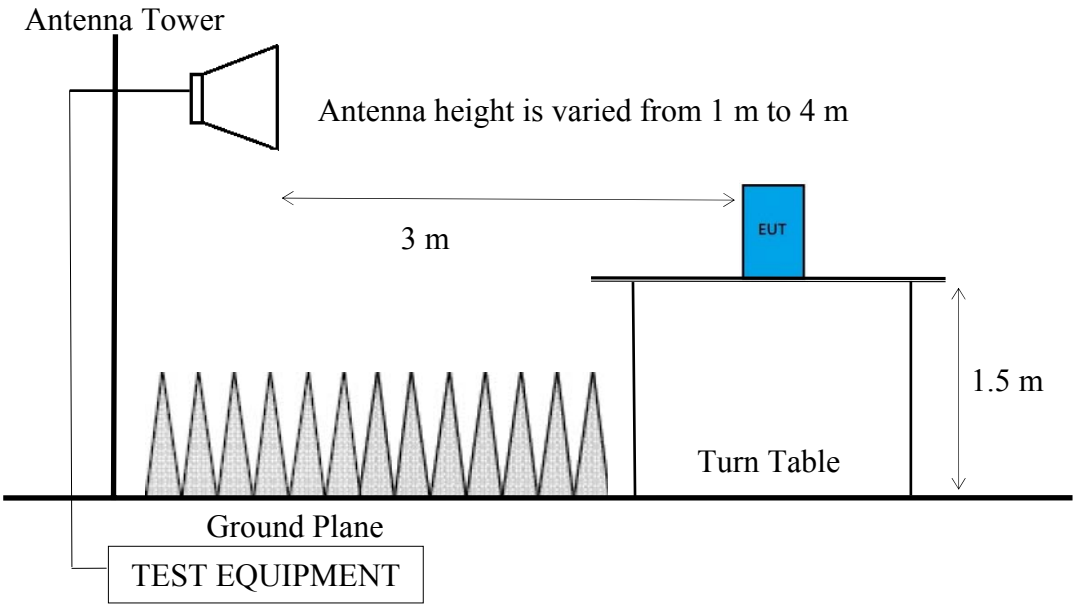
6.1.4. Setup Diagram for above 1GHz



6.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) dBμV/m = 20 log (μV/m)
(2) The tighter limit applies to the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) Fundamental and emission fall within operation band are exempted from this section.
(5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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6.3. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level.
In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 25GHz:
The EUT setup on the turn find table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1 GHz:
Spectrum Analyzer is used for pre-testing with following setting:
(1)RBW = 120KHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

Frequency above 1GHz to 10th harmonic (up to 25 GHz):
Peak Detector:
(1)RBW = 1MHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average detector for finally measurement.

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Average Detector:

■**Option 1:**

(1)RBW = 1MHz
(2)VBW ≥ 1/ T.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.

☐**Option 2:**

Average Emission Level= Peak Emission Level+ D.C.C.F.

6.4. Measurement Result Explanation

■Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading

■Average Emission Level l=Antenna Factor + Cable Loss + Meter Reading

☐Average Emission Level= Peak Emission Level+ DCCF

Duty Cycle Correction Factor (DCCF)= 20log (TX_{on}/TX_{on+off}) presented in section 3.6

☐ERP= Peak Emission Level-95.2dB-2.14dB

6.5. Test Results

Please refer to Appendix A.

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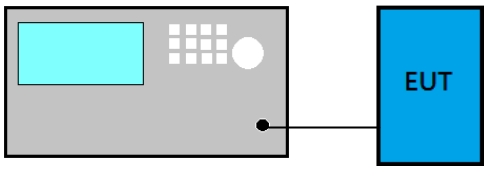
7. 20dB BANDWIDTH

7.1. Block Diagram of Test Setup



7.2. Specification Limits

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

7.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Set RBW close to1% to 5% of OBW.
(2) Set VBW≥3RBW.
(3) Detector = Peak.
(4) Trace mode = Max hold.
(5) Sweep = Auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x dB to -20 dB to record the final bandwidth.

7.4. Test Results

Please refer to Appendix A

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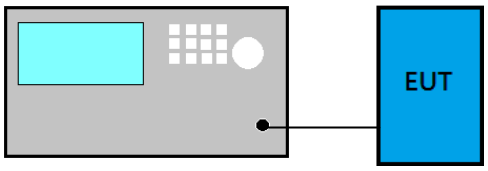
8. CARRIER FREQUENCY SEPARATION

8.1. Block Diagram of Test Setup



8.2. Specification Limits

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

8.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Span = Wide enough to capture the peaks of two adjacent channels
(2) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
(3) VBW = RBW
(4) Sweep = Auto
(5) Detector function = Peak
(6) Trace = Max hold
(7) Allow the trace to stabilize.

8.4. Test Results

Please refer to Appendix A

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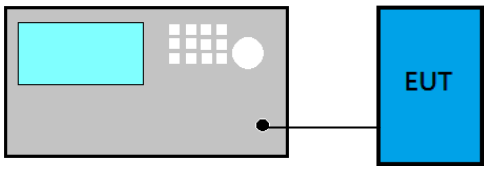
9. TIME OF OCCUPANCY

9.1. Block Diagram of Test Setup



9.2. Specification Limits

Frequency hopping systems in the 2400-2483.5MHz shall use at least 15 non-overlapping channels. 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 number of hopping channels employed.

9.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Span: Zero span, centered on a hopping channel.
(2) RBW shall be ≤ channel spacing and where possible RBW should be set > 1/T, where T is the expected dwell time per channel.
(3) Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
(4) Detector function = Peak
(5) Trace = Max hold

9.4. Test Results

Please refer to Appendix A

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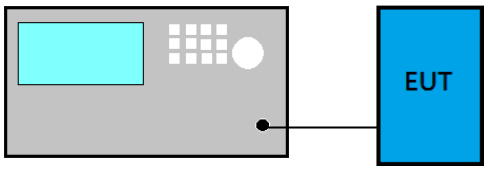
10. NUMBER OF HOPPING CHANNELS

10.1. Block Diagram of Test Setup



10.2. Specification Limits

Frequency hopping systems which use fewer than 20 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels.

10.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
(2) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
(3) VBW ≥ RBW
(4) Sweep = Auto
(5) Detector function = Peak
(6) Trace = m=Max hold
(7) Allow the trace to stabilize.

10.4. Test Results

Please refer to Appendix A

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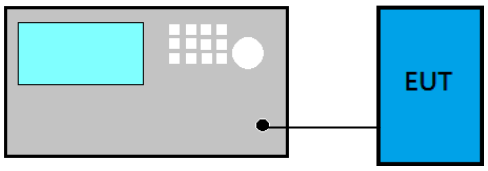
11. MAXIMUM PEAK OUTPUT POWER

11.1. Block Diagram of Test Setup



11.2. Specification Limits

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

11.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
(2) RBW ≥ 1% of the span
(3) VBW ≥ RBW
(4) Sweep = Auto
(5) Detector function = Peak
(6) Trace = Max hold

11.4. Test Results

Please refer to Appendix A

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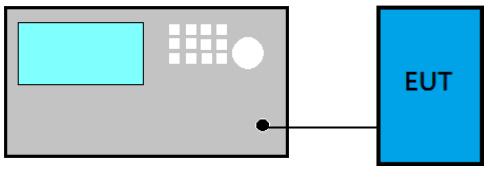
12. EMISSION LIMITATIONS

12.1. Block Diagram of Test Setup



12.2. Specification Limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, that the required attenuation shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)).

12.3. Test Procedure

Following measurement procedure is reference to ANSI C63.10:2013:

(1) Set span wide enough to capture the peak level of the in-band emission and all spurious emissions; up to 10^{th} harmonic.
(2) RBW = 100 kHz
(3) VBW ≥ RBW
(4) Sweep = Auto
(5) Detector function = Peak
(6) Trace = Max hold

12.4. Test Results

Please refer to Appendix A

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13. DEVIATION TO TEST SPECIFICATIONS

【NONE】

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APPDNDIX A

TEST DATA AND PLOTS

(Model: A8001)

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AUDIX Technology Corp.
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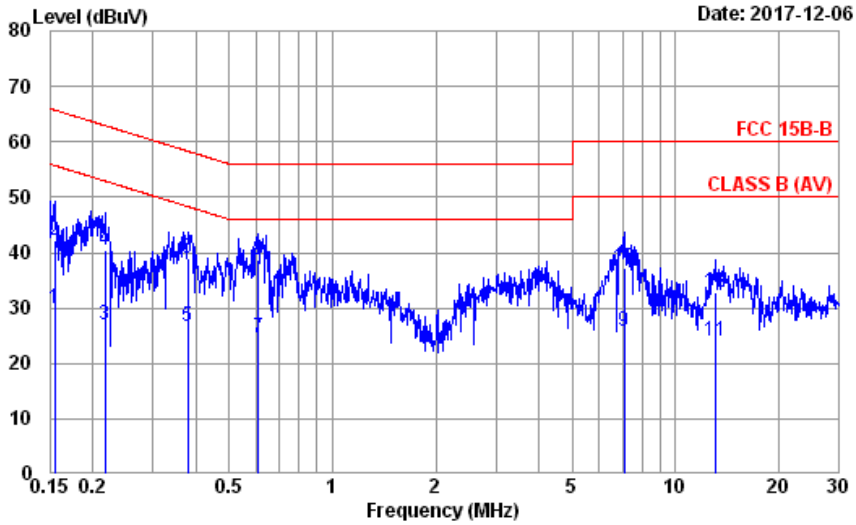
A.1 CONDUCTED EMISSION

Test Date	2017/12/06	Temp./Hum.	22℃/47%
Test Voltage	AC 120V, 60Hz (Via AC Adapter)		



Site no. : No.8 Shielded Room Data no. : 4
Condition : ENV4200 100169 LISN Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 22°C / 47% ESR3 (1774) Engineer : Nick Du
EUT : A8001
Power Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.155	10.56	0.03	9.86	9.32	29.77	55.74	25.97	Average
2	0.155	10.56	0.03	9.86	21.87	42.32	65.74	23.42	QP
3	0.217	10.51	0.03	9.86	6.42	26.82	52.92	26.10	Average
4	0.217	10.51	0.03	9.86	20.17	40.57	62.92	22.35	QP
5	0.379	10.44	0.04	9.86	6.19	26.53	48.30	21.77	Average
6	0.379	10.44	0.04	9.86	18.74	39.08	58.30	19.22	QP
7	0.608	10.43	0.05	9.86	4.23	24.57	46.00	21.43	Average
8	0.608	10.43	0.05	9.86	18.43	38.77	56.00	17.23	QP
9	7.100	11.03	0.16	9.88	4.82	25.89	50.00	24.11	Average
10	7.100	11.03	0.16	9.88	16.10	37.17	60.00	22.83	QP
11	13.127	12.16	0.22	9.91	1.85	24.14	50.00	25.86	Average
12	13.127	12.16	0.22	9.91	10.48	32.77	60.00	27.23	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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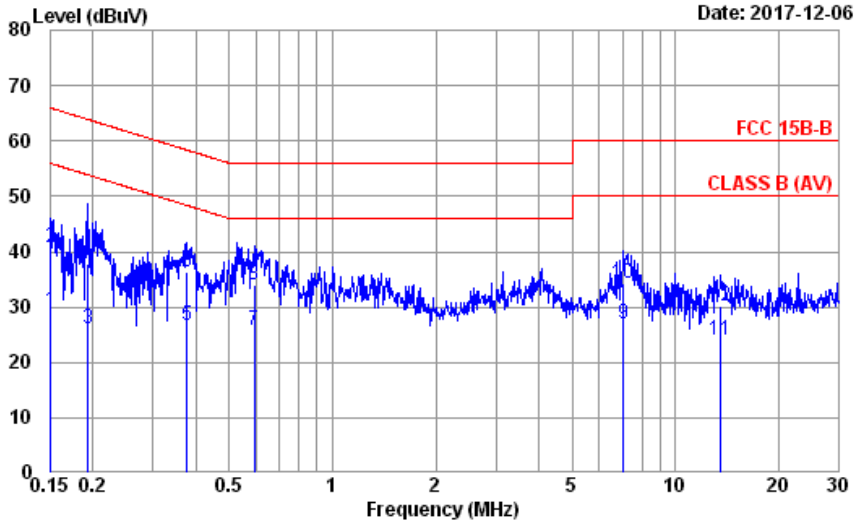
Test Date	2017/12/06	Temp./Hum.	22℃/47%
Test Voltage	AC 120V, 60Hz (Via AC Adapter)		



Site no. : No.8 Shielded Room Data no. : 3
Condition : ENV4200 100169 LISN Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 22°C / 47% ESR3 (1774) Engineer : Nick Du
EUT : A8001
Power Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.151	10.63	0.03	9.86	8.82	29.34	55.96	26.62	Average
2	0.151	10.63	0.03	9.86	20.35	40.87	65.96	25.09	QP
3	0.193	10.57	0.03	9.86	5.77	26.23	53.89	27.66	Average
4	0.193	10.57	0.03	9.86	17.31	37.77	63.89	26.12	QP
5	0.377	10.46	0.04	9.86	6.18	26.54	48.34	21.80	Average
6	0.377	10.46	0.04	9.86	16.09	36.45	58.34	21.89	QP
7	0.592	10.45	0.05	9.86	5.48	25.84	46.00	20.16	Average
8	0.592	10.45	0.05	9.86	13.62	33.98	56.00	22.02	QP
9	7.062	11.03	0.16	9.88	5.94	27.01	50.00	22.99	Average
10	7.062	11.03	0.16	9.88	13.11	34.18	60.00	25.82	QP
11	13.551	12.29	0.22	9.91	1.64	24.06	50.00	25.94	Average
12	13.551	12.29	0.22	9.91	7.64	30.06	60.00	29.94	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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A.2 RADIATED EMISSION

Test Date	2017/12/15	Temp./Hum.	26℃/48%
Test Voltage	DC3.8V(Via Battery)		

A.2.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

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A.2.1.2 Frequency Below 1 GHz

Mode	Charge	Frequency	---

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
34.85	22.37	1.31	0.33	24.01	40.00	15.99	Peak
90.14	15.59	2.14	13.73	31.46	43.50	12.04	Peak
151.25	16.97	2.84	6.84	26.65	43.50	16.85	Peak
219.15	17.14	3.53	15.35	36.02	46.00	9.98	Peak
333.61	20.43	4.77	5.49	30.69	46.00	15.31	Peak
660.50	24.79	6.96	2.87	34.62	46.00	11.38	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
34.85	22.37	1.31	8.43	32.11	40.00	7.89	Peak
90.14	15.59	2.14	18.55	36.28	43.50	7.22	Peak
116.33	18.59	2.46	10.02	31.07	43.50	12.43	Peak
216.24	16.92	3.50	9.20	29.62	46.00	16.38	Peak
322.94	20.15	4.63	6.61	31.39	46.00	14.61	Peak
807.94	25.99	7.65	0.84	34.48	46.00	11.52	Peak

Mode	GFSK	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.00	24.77	1.20	-0.28	25.69	40.00	14.31	Peak
101.78	17.60	2.29	4.90	24.79	43.50	18.71	Peak
461.65	22.77	6.12	2.56	31.45	46.00	14.55	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.00	24.77	1.20	-0.24	25.73	40.00	14.27	Peak
124.09	18.59	2.55	1.21	22.35	43.50	21.15	Peak
326.82	20.25	4.68	4.94	29.87	46.00	16.13	Peak

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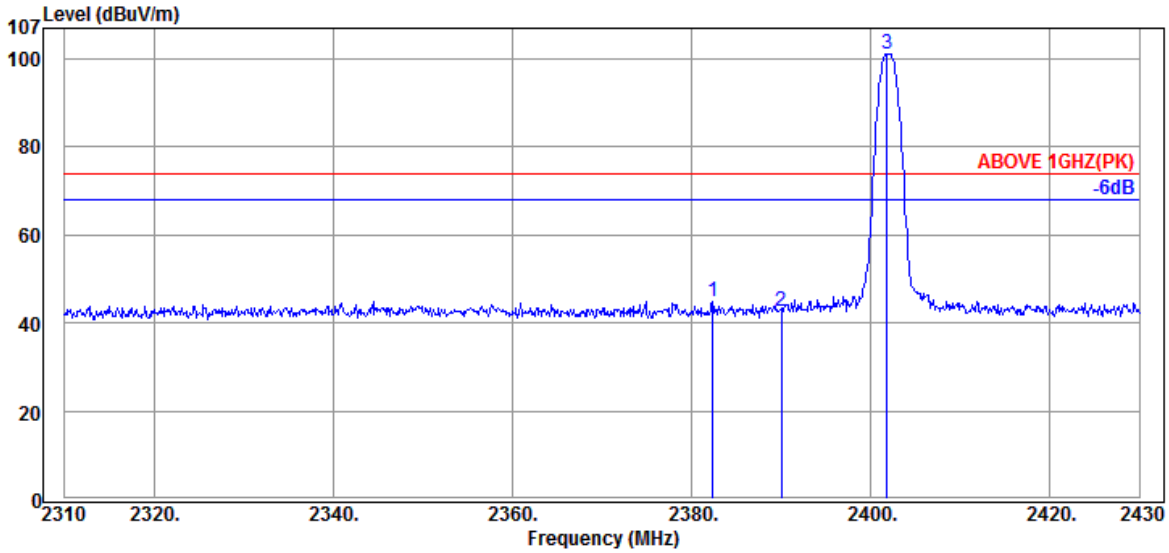
A.2.1.3 Frequency Above 1 GHz to 10th harmonics

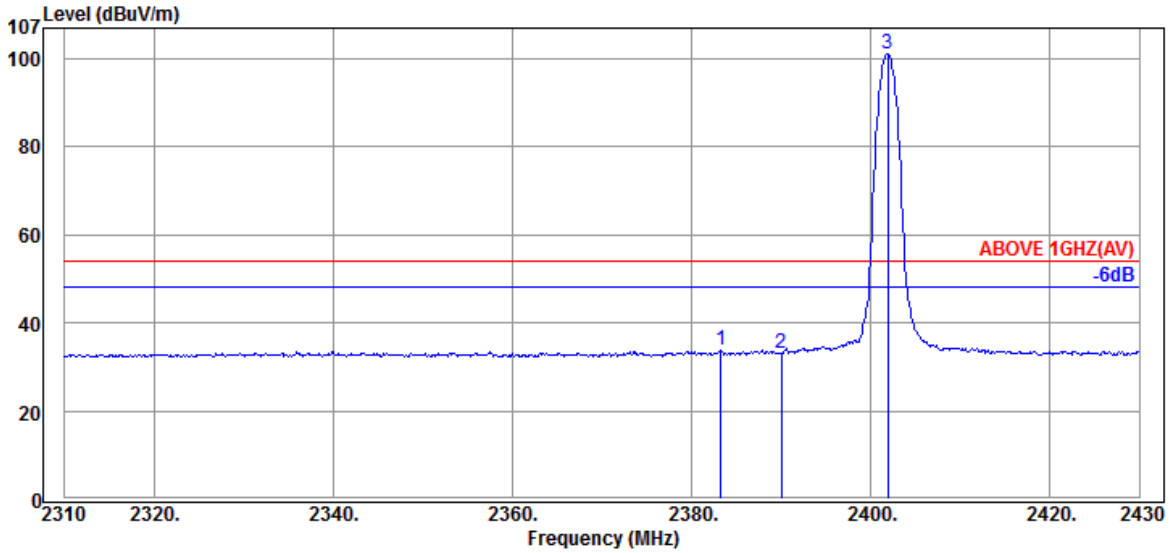
Band Edge:

Mode	GFSK	Frequency	TX 2402MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2382.36	32.13	6.55	6.18	44.86	74.00	29.14	Peak
2390.04	32.16	6.57	3.83	42.56	74.00	31.44	Peak
2401.80	32.16	6.57	62.56	101.29	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2383.32	32.13	6.55	-4.98	33.70	54.00	20.30	Average
2390.04	32.16	6.57	-5.48	33.25	54.00	20.75	Average
2401.92	32.16	6.57	62.39	101.12	---	---	Average

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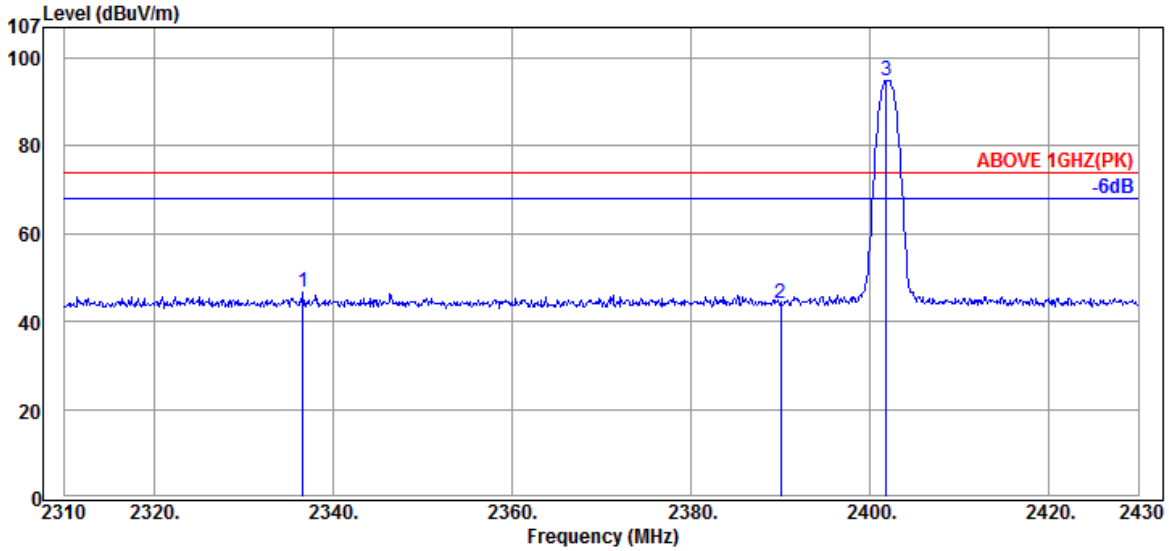
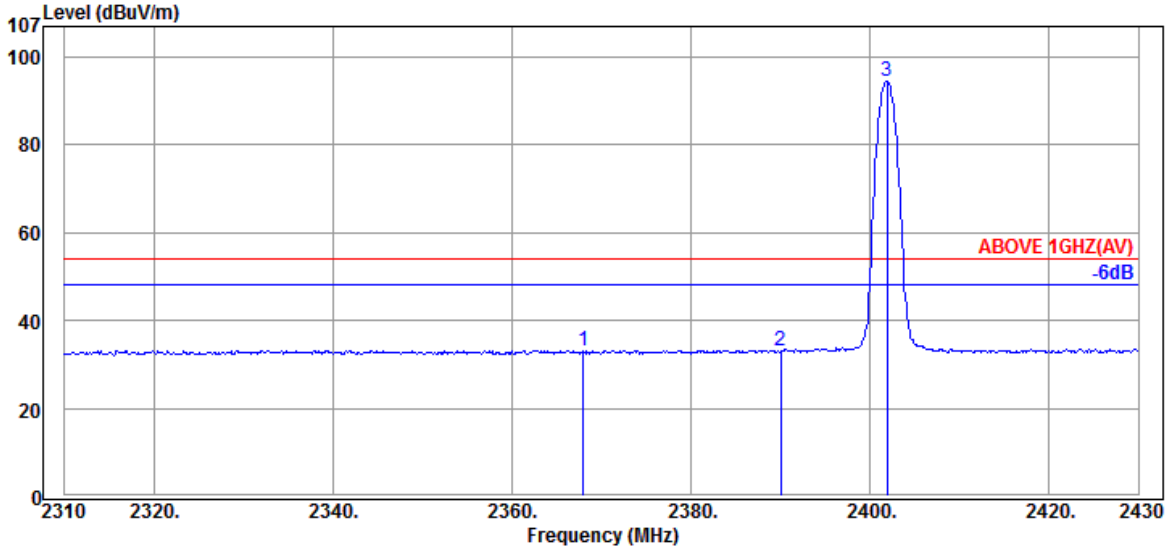
Mode	GFSK	Frequency	TX 2402MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2336.64	32.08	6.51	7.92	46.51	74.00	27.49	Peak
2390.04	32.16	6.57	5.30	44.03	74.00	29.97	Peak
2401.80	32.16	6.57	56.15	94.88	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2367.96	32.11	6.53	-5.37	33.27	54.00	20.73	Average
2390.04	32.16	6.57	-5.70	33.03	54.00	20.97	Average
2401.92	32.16	6.57	55.79	94.52	---	---	Average

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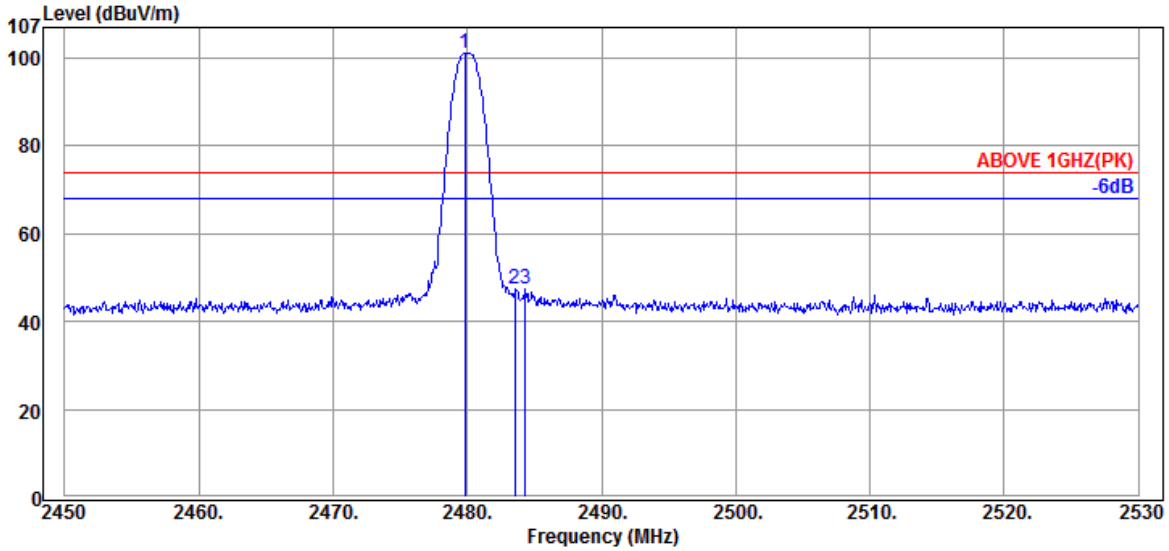
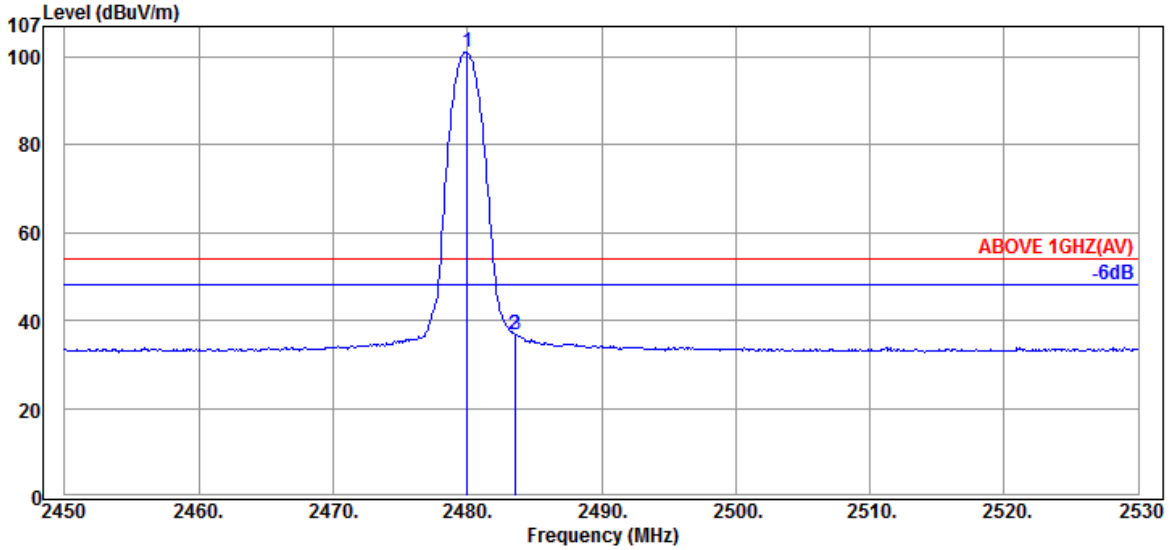
Mode	GFSK	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	62.21	101.16	---	---	Peak
2483.52	32.28	6.67	8.40	47.35	74.00	26.65	Peak
2484.32	32.28	6.67	8.33	47.28	74.00	26.72	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.00	32.28	6.67	62.10	101.05	---	---	Average
2483.52	32.28	6.67	-2.13	36.82	54.00	17.18	Average
2483.60	32.28	6.67	-2.10	36.85	54.00	17.15	Average

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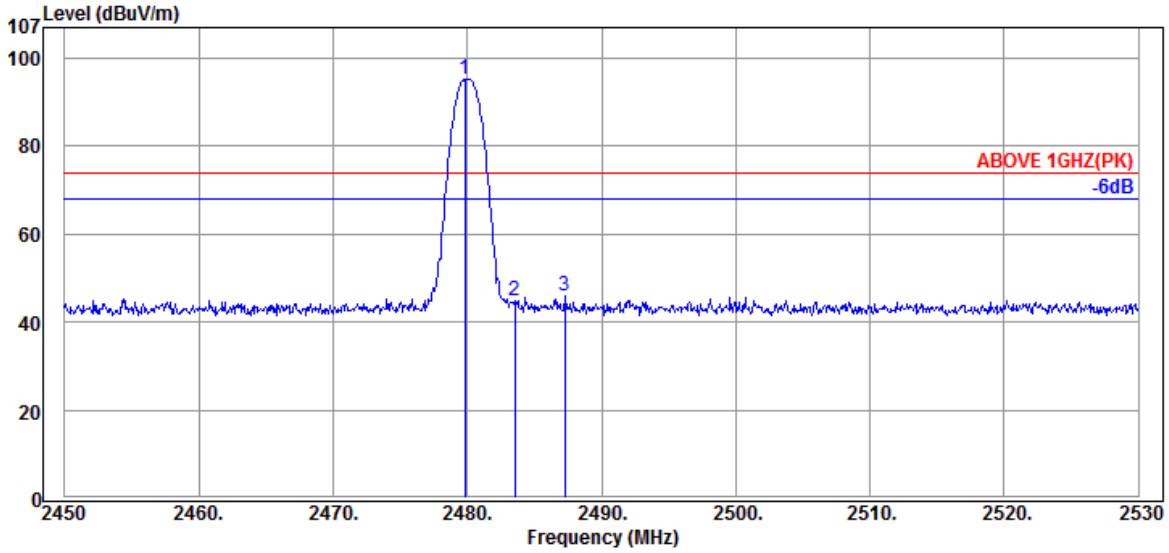
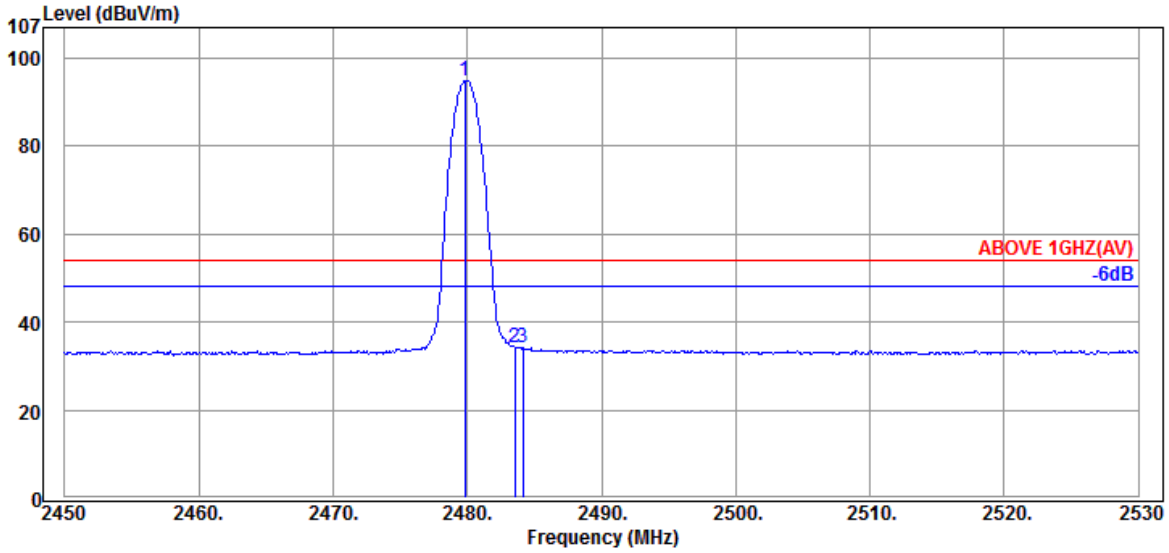
Mode	GFSK	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	56.24	95.19	---	---	Peak
2483.52	32.28	6.67	5.90	44.85	74.00	29.15	Peak
2487.28	32.28	6.67	6.97	45.92	74.00	28.08	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	56.07	95.02	---	---	Average
2483.52	32.28	6.67	-4.67	34.28	54.00	19.72	Average
2484.16	32.28	6.67	-4.64	34.31	54.00	19.69	Average

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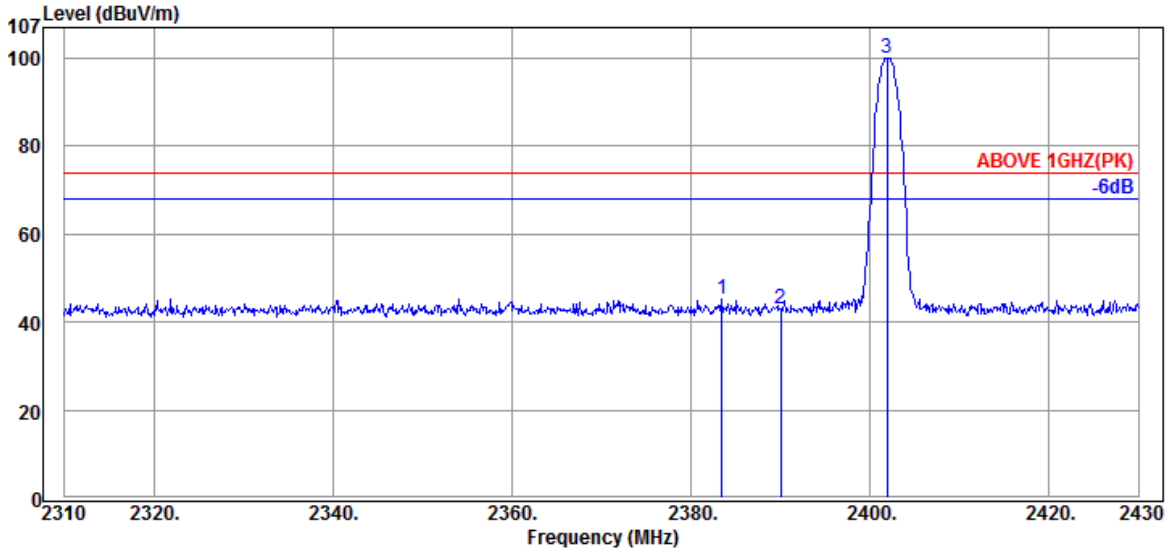
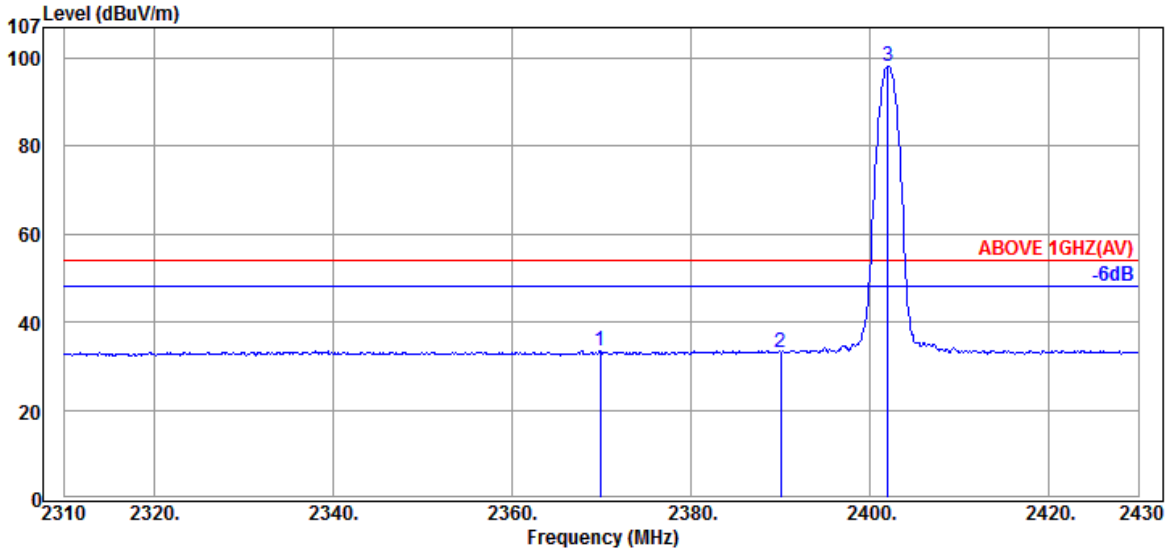
Mode	8-DPSK	Frequency	TX 2402MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2383.44	32.13	6.55	6.59	45.27	74.00	28.73	Peak
2390.04	32.16	6.57	4.27	43.00	74.00	31.00	Peak
2401.92	32.16	6.57	61.39	100.12	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2369.88	32.13	6.55	-5.24	33.44	54.00	20.56	Average
2390.04	32.16	6.57	-5.55	33.18	54.00	20.82	Average
2402.04	32.16	6.57	59.53	98.26	---	---	Average

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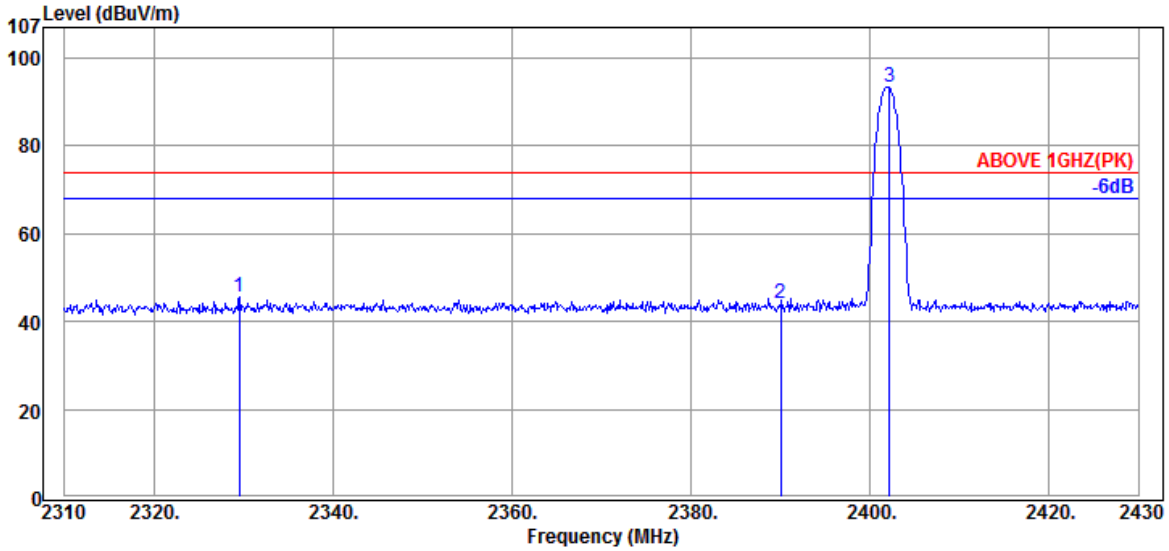
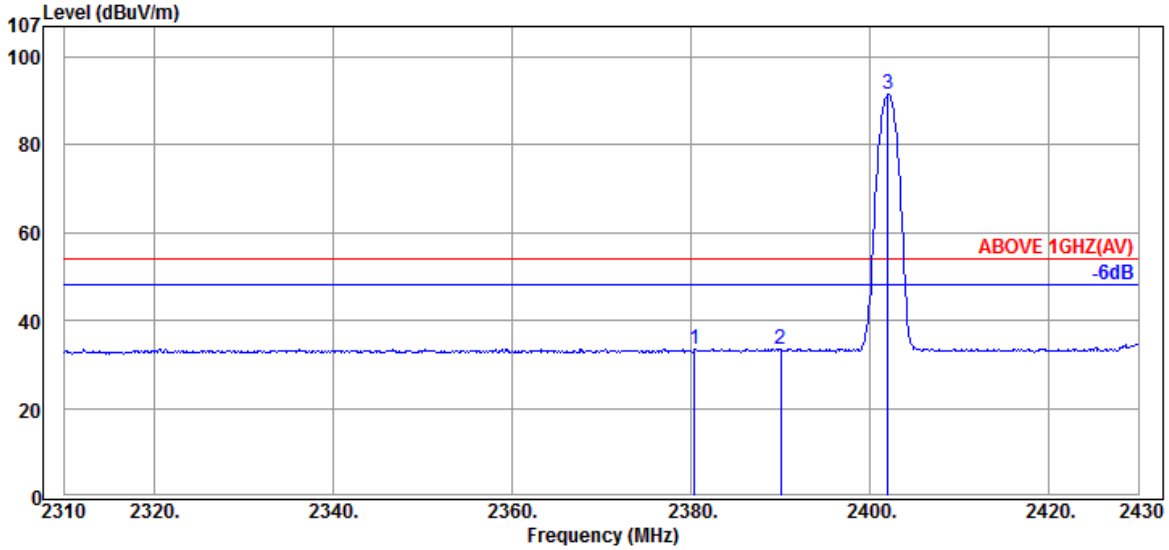
Mode	8-DPSK	Frequency	TX 2402MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2329.56	32.06	6.49	7.07	45.62	74.00	28.38	Peak
2390.04	32.16	6.57	5.45	44.18	74.00	29.82	Peak
2402.16	32.16	6.57	54.52	93.25	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2380.44	32.13	6.55	-5.07	33.61	54.00	20.39	Average
2390.04	32.16	6.57	-5.23	33.50	54.00	20.50	Average
2402.04	32.16	6.57	52.69	91.42	---	---	Average

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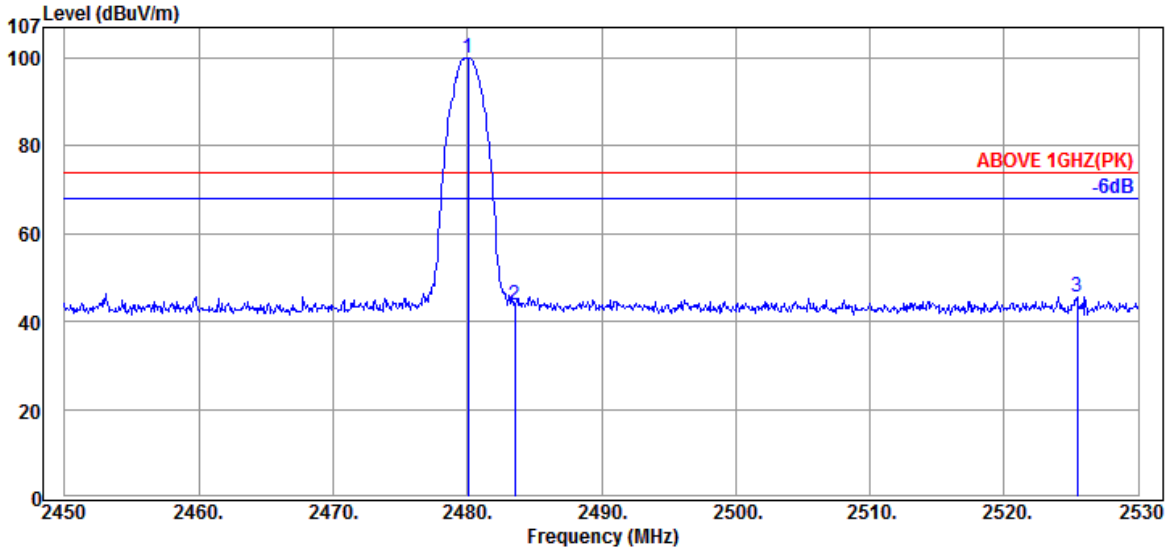
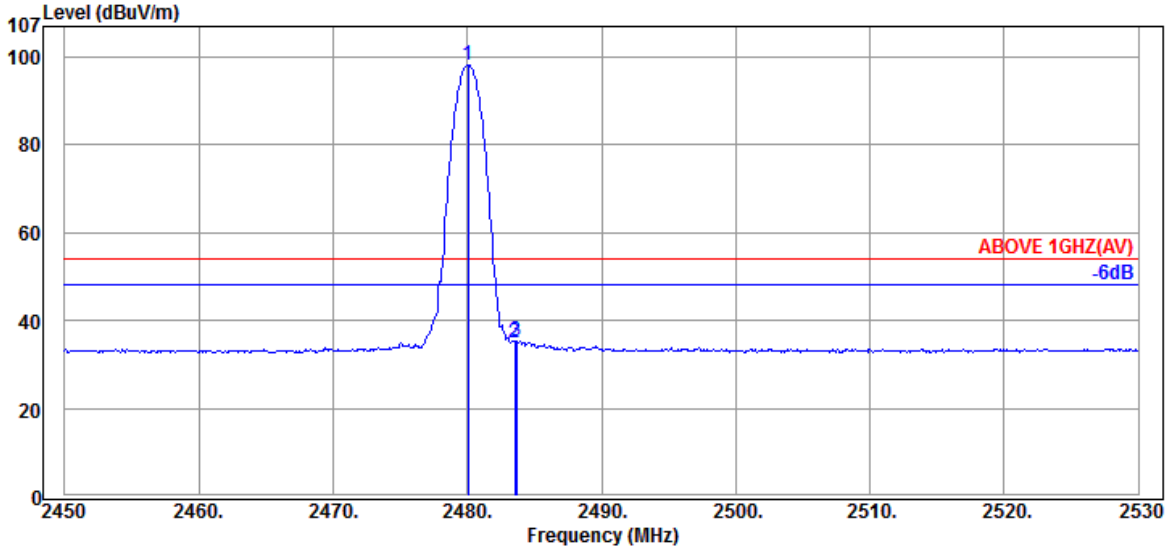
Mode	8-DPSK	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.08	32.28	6.67	61.06	100.01	---	---	Peak
2483.52	32.28	6.67	4.83	43.78	74.00	30.22	Peak
2525.44	32.34	6.74	6.63	45.71	74.00	28.29	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.08	32.28	6.67	59.27	98.22	---	---	Average
2483.52	32.28	6.67	-4.09	34.86	54.00	19.14	Average
2483.68	32.28	6.67	-3.73	35.22	54.00	18.78	Average

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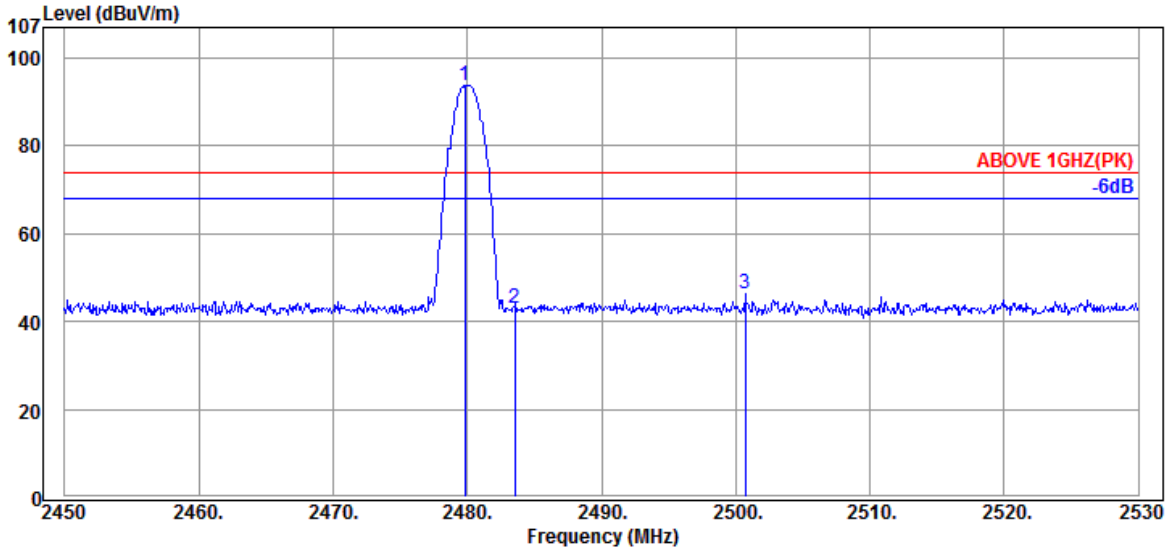
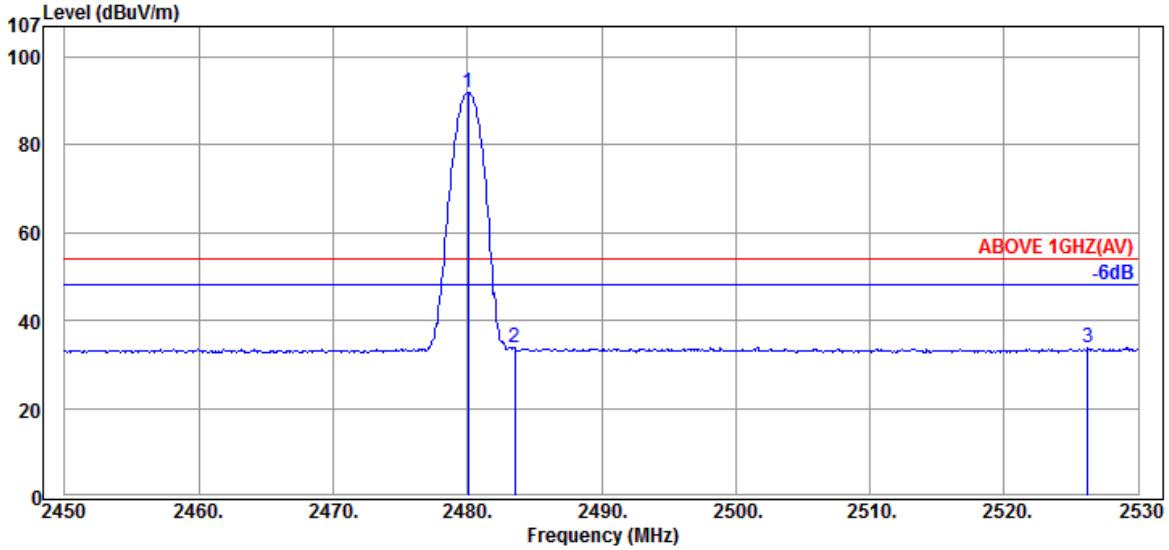
Mode	8-DPSK	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	54.82	93.77	---	---	Peak
2483.52	32.28	6.67	4.00	42.95	74.00	31.05	Peak
2500.72	32.30	6.69	7.26	46.25	74.00	27.75	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.08	32.28	6.67	52.92	91.87	---	---	Average
2483.52	32.28	6.67	-4.97	33.98	54.00	20.02	Average
2526.24	32.34	6.74	-5.12	33.96	54.00	20.04	Average

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A.2.2 Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Mode	GFSK	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2154.00	31.82	6.28	4.71	42.81	54.00	11.19	Peak
3605.00	32.90	8.30	4.69	45.89	54.00	8.11	Peak
7410.00	35.80	12.01	0.55	48.36	54.00	5.64	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1974.00	31.36	6.04	5.90	43.30	54.00	10.70	Peak
4805.00	34.22	9.54	-1.02	42.74	54.00	11.26	Peak
7205.00	35.80	11.80	-2.97	44.63	54.00	9.37	Peak

Mode	GFSK	Frequency	TX 2441MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
3660.00	32.96	8.35	38.40	45.25	54.00	8.75	Peak
4880.00	34.25	9.56	33.27	42.67	54.00	11.33	Peak
7335.00	35.80	11.94	34.31	47.34	54.00	6.66	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1952.00	31.24	6.01	40.37	43.11	54.00	10.89	Peak
4880.00	34.25	9.56	33.24	42.64	54.00	11.36	Peak
7140.00	35.80	11.74	37.29	50.18	54.00	3.82	Peak

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Mode	GFSK	Frequency	TX 2480MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
3560.00	32.87	8.26	2.45	43.58	54.00	10.42	Peak
4960.00	34.29	9.60	-3.04	40.85	54.00	13.15	Peak
7440.00	35.80	12.04	-2.88	44.96	54.00	9.04	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
3550.00	32.85	8.24	2.79	43.88	54.00	10.12	Peak
4960.00	34.29	9.60	-3.08	40.81	54.00	13.19	Peak
7440.00	35.80	12.04	-2.80	45.04	54.00	8.96	Peak

A.2.3 Emissions in Non-restricted Frequency Bands:

All emission levels below the 15.209 general radiated emissions limits is not required.

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A.3 20dB BANDWIDTH

Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

A.3.1 6dB Bandwidth Result

Mode	Centre Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz) (Reference only)	2/3 (20dB Bandwidth)
GFSK	2402	0.8791	0.81922	0.586
	2441	0.8757	0.82142	0.584
	2480	0.8779	0.81802	0.585
8-DPSK	2402	1.085	1.0422	0.723
	2441	1.083	1.0474	0.722
	2480	1.090	1.0414	0.727

Remark: The maximum two-thirds of the 20dB bandwidth is the limit for carrier frequency separation presented.

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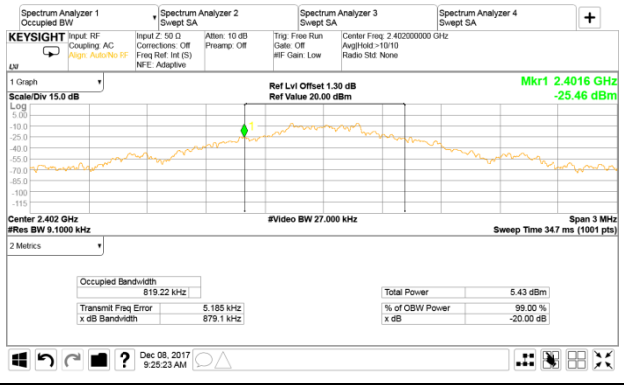
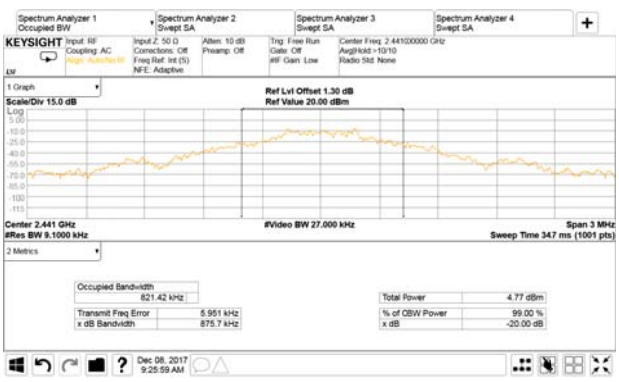
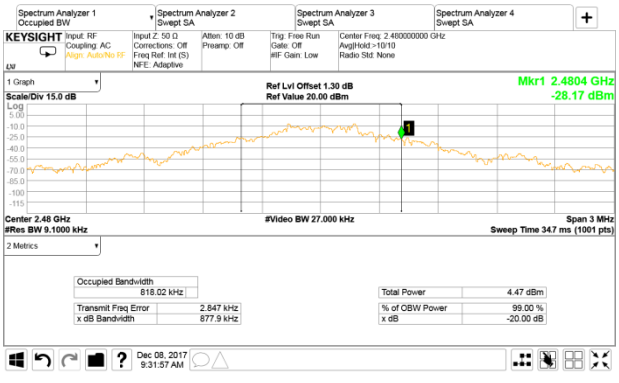
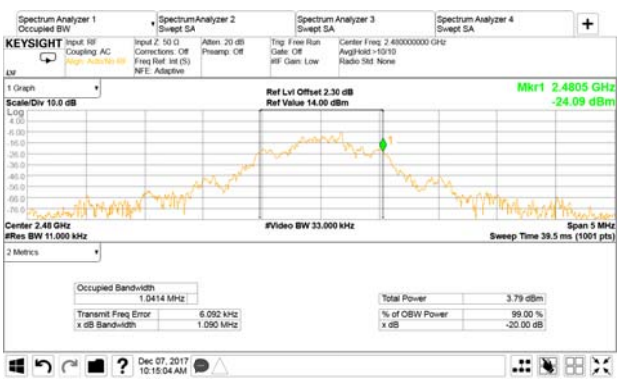
A.3.2 Measurement Plots

Mode: GFSK	Mode: 8-DPSK
	
	
	

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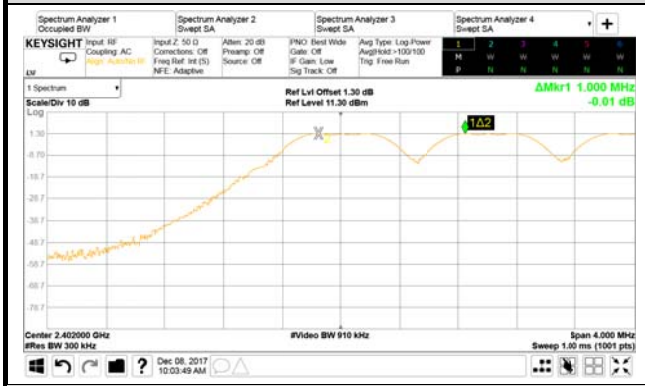
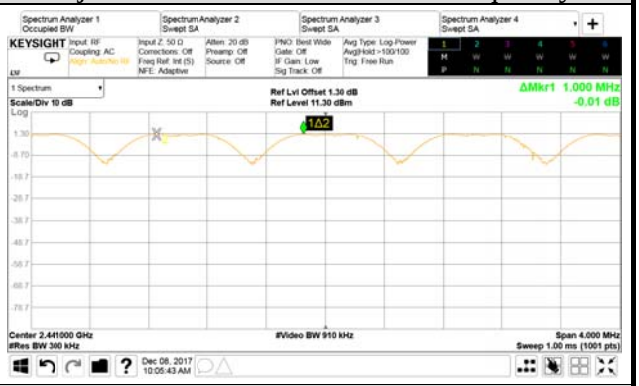
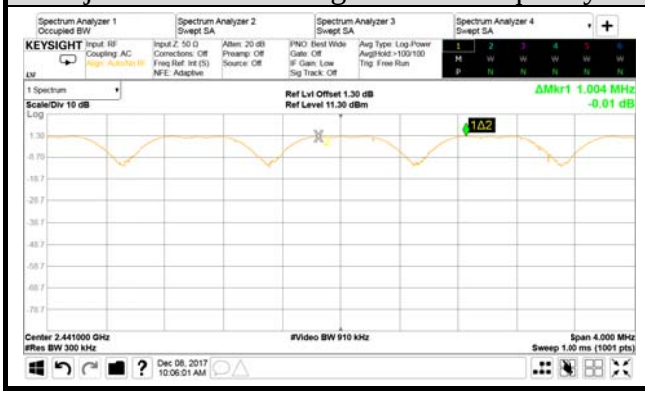
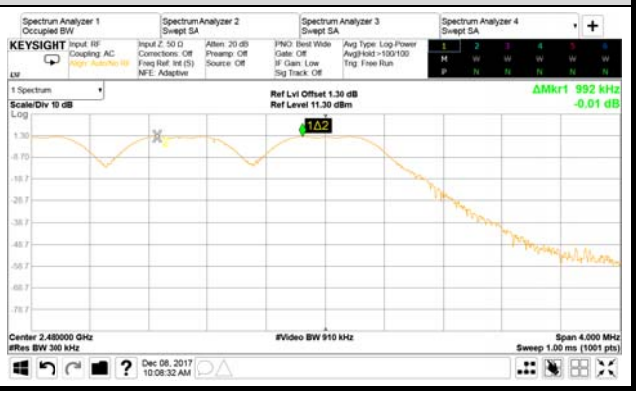
A.4 CARRIER FREQUENCY SEPARATION

Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

Mode: GFSK	
2402MHz	2441MHz adjacent channel of left carrier frequency
	
2441MHz adjacent channel of right carrier frequency	2480MHz
	

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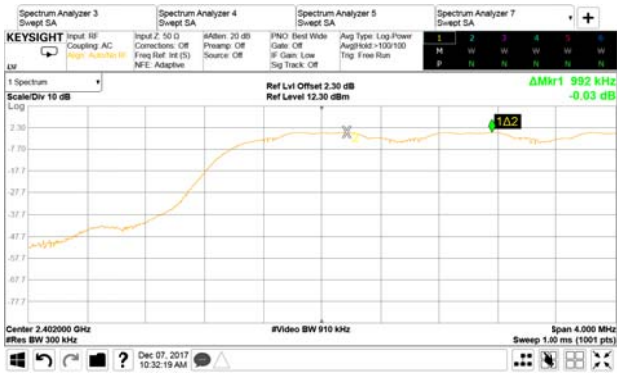
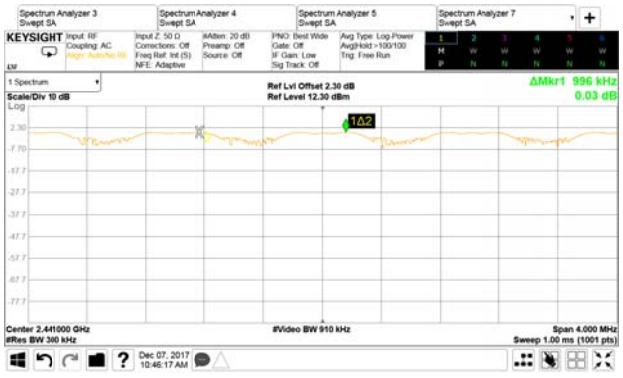
adjacent channel of left carrier frequency</td></tr>
<tr><td> 
</td><td> 
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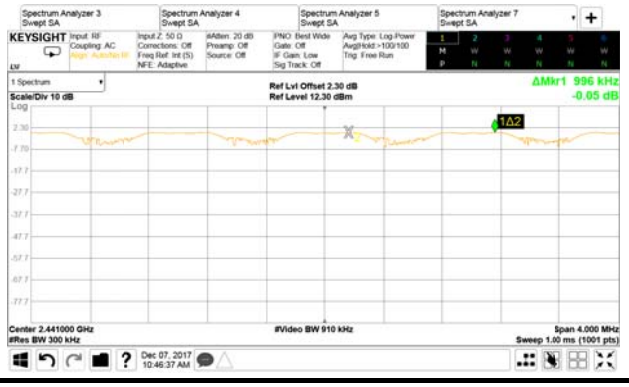
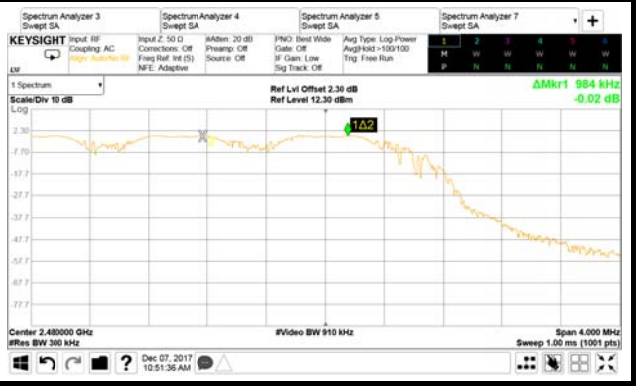
<tr><td>2441MHz
adjacent channel of right carrier frequency</td><td>2480MHz</td></tr>
<tr><td> 
</td><td> 
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A.5 TIME OF OCCUPANCY

Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

A.5.1 Time of Occupancy

Mode	Centre Frequency (MHz)	Mode	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
GFSK	2402	DH1	0.370	116.920	<400
		DH3	1.630	309.048	
		DH5	2.880	364.032	
	2441	DH1	0.365	115.340	
		DH3	1.630	309.048	
		DH5	2.880	364.032	
	2480	DH1	0.375	118.500	
		DH3	1.630	309.048	
		DH5	2.880	364.032	

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Observation Period: 79 channels*0.4 seconds = 31.6 seconds

Centre Frequency: 2402MHz

DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.370** ms= **116.920** ms

DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.630** ms= **309.048** ms

DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.880** ms= **364.032** ms

Centre Frequency: 2441MHz

DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.365** ms= **115.340** ms

DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.630** ms= **309.048** ms

DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.880** ms= **364.032** ms

Centre Frequency: 2480MHz

DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.375** ms= **118.500** ms

DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.630** ms= **309.048** ms

DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.880** ms= **364.032** ms

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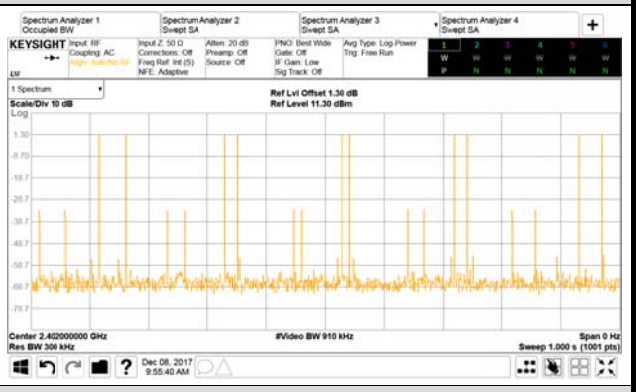
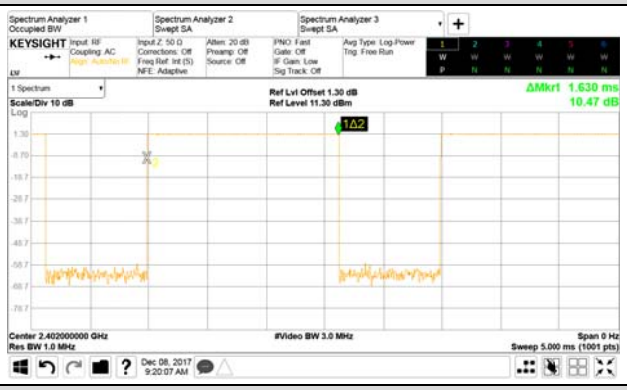
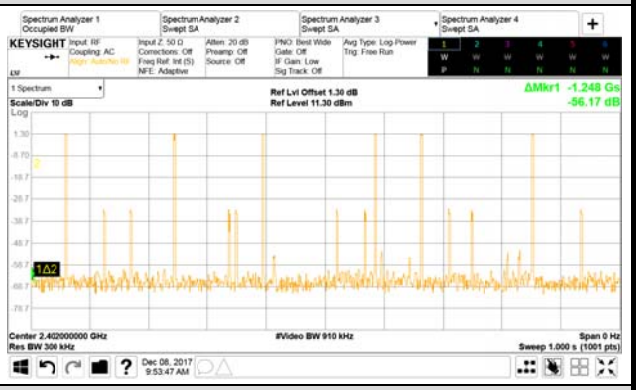
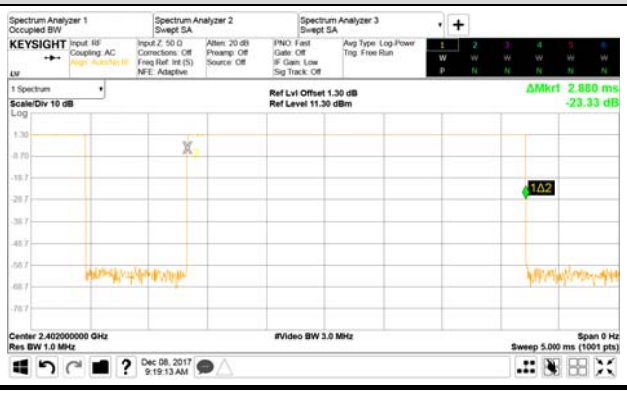
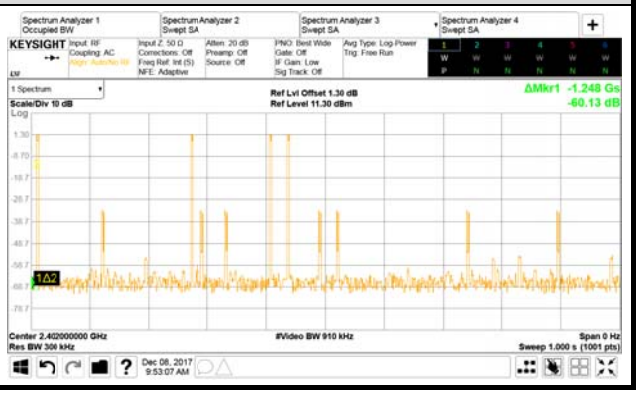
- Measurement Plots

Mode: GFSK	
Centre Frequency: 2402MHz	
DH1	
	
DH3	
	
DH5	
	

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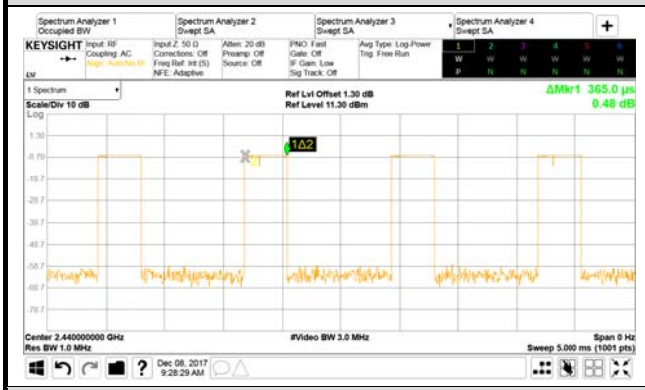
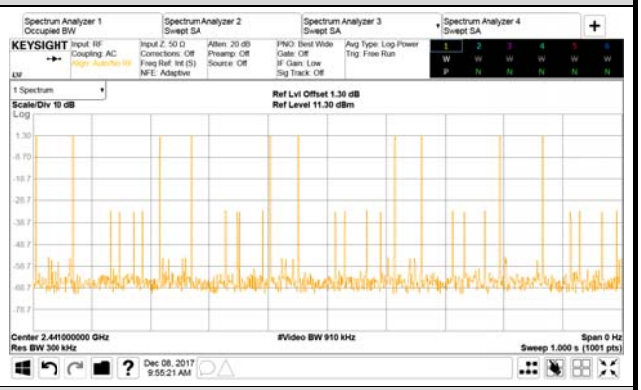
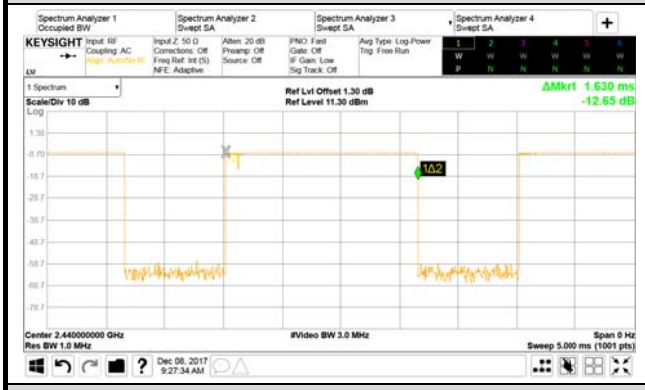
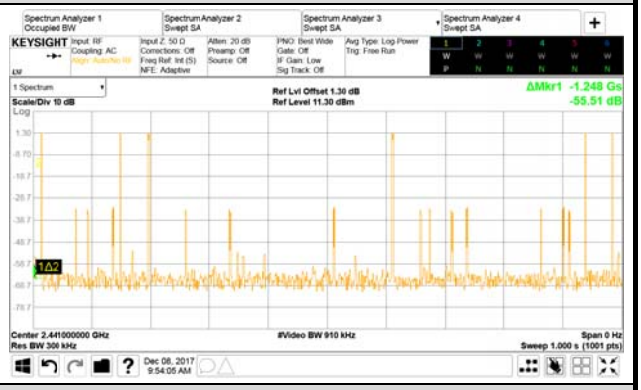
Mode: GFSK	
Centre Frequency: 2441MHz	
DH1	
	
DH3	
	
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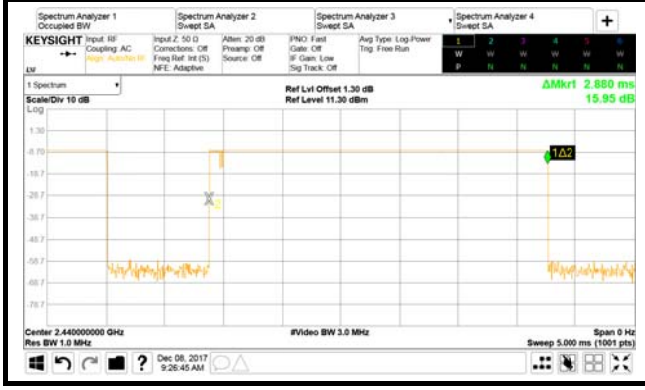	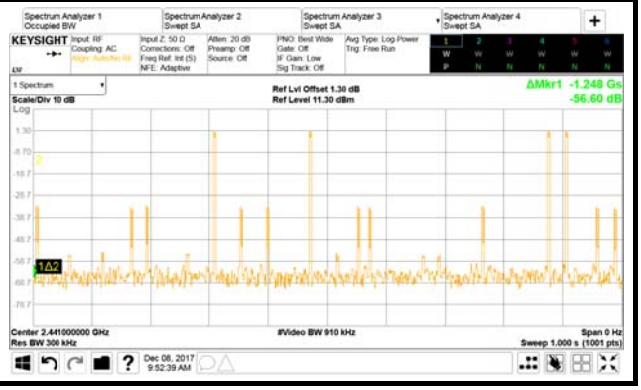

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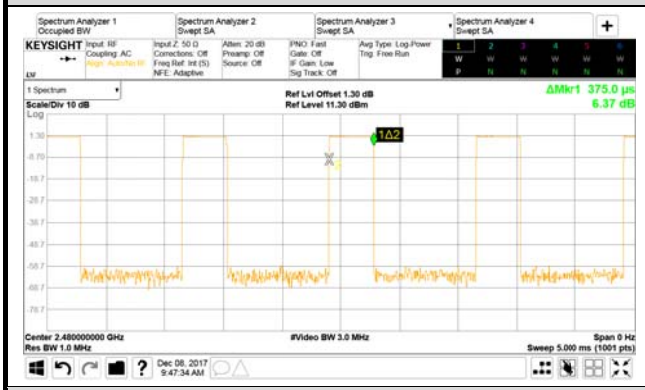
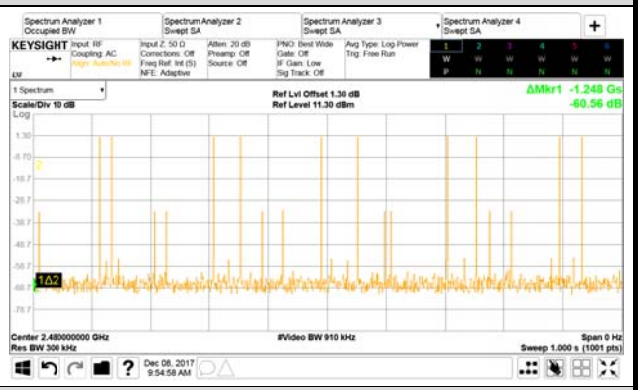
Mode: GFSK	
Centre Frequency: 2480MHz	
DH1	
	
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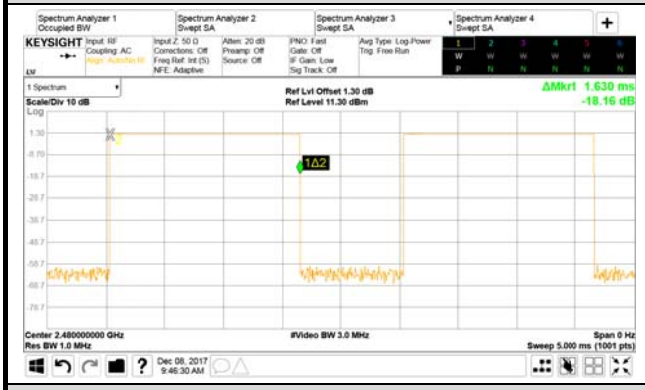	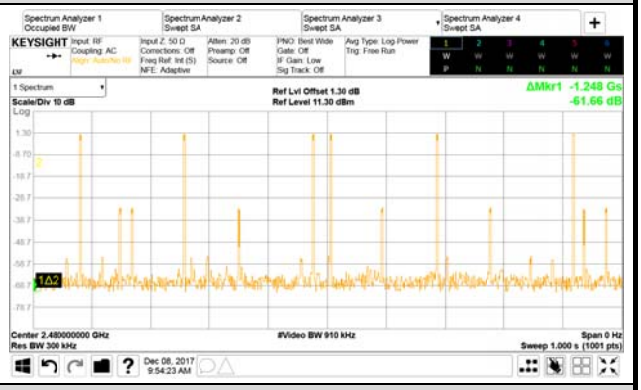
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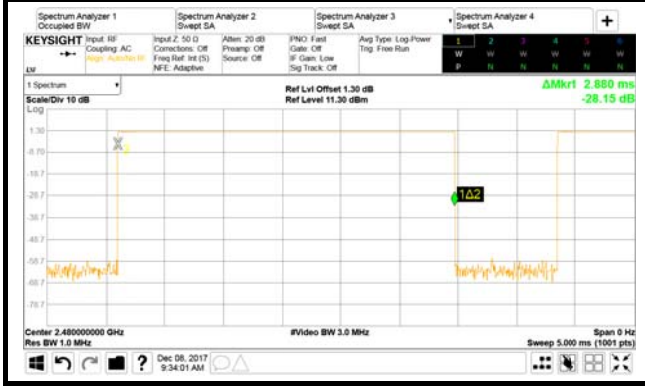	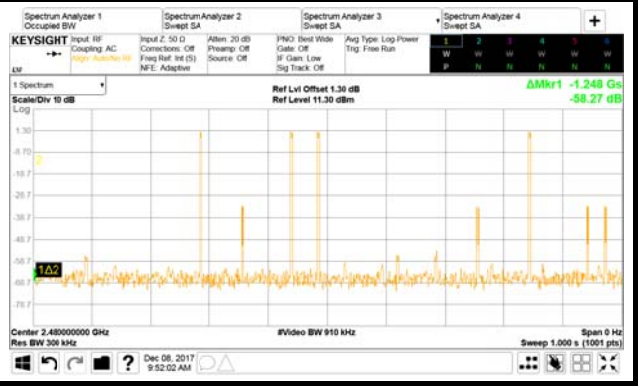

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Mode	Centre Frequency (MHz)	Mode	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
8-DPSK	2402	3DH1	0.380	120.080	<400
		3DH3	1.630	309.048	
		3DH5	2.885	364.664	
	2441	3DH1	0.385	121.660	
		3DH3	1.625	308.100	
		3DH5	2.880	364.032	
	2480	3DH1	0.380	120.080	
		3DH3	1.630	309.048	
		3DH5	2.885	364.664	

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Observation Period: 79 channels*0.4 seconds = 31.6 seconds

Centre Frequency: 2402MHz

3DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.380** ms=**120.080** ms

3DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.630** ms=**309.048** ms

3DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.885** ms=**364.664** ms

Centre Frequency: 2441MHz

3DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.385** ms=**121.660** ms

3DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.625** ms=**308.100** ms

3DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.880** ms=**364.032** ms

Centre Frequency: 2480MHz

3DH1: For each second of **10** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
10 channels*31.6 seconds* **0.380** ms=**120.080** ms

3DH3: For each second of **6** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
6 channels*31.6 seconds* **1.630** ms=**309.048** ms

3DH5: For each second of **4** channel appearance, the longest time of occupancy for each of 31.6 seconds is:
4 channels*31.6 seconds* **2.885** ms=**364.664** ms

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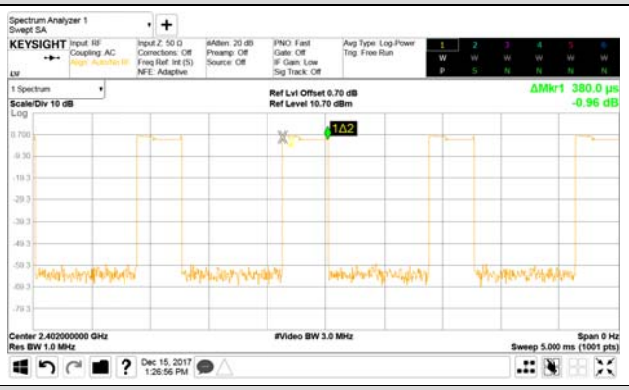
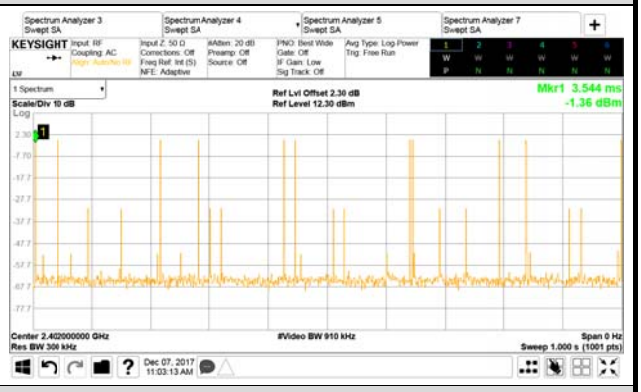
- Measurement Plots

Mode: 8-DPSK	
Centre Frequency: 2402MHz	
3DH1	
	
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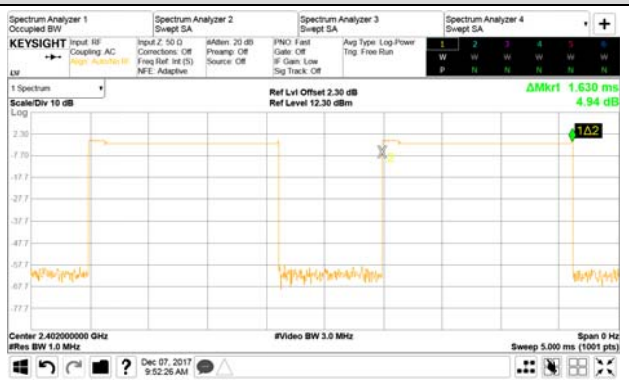	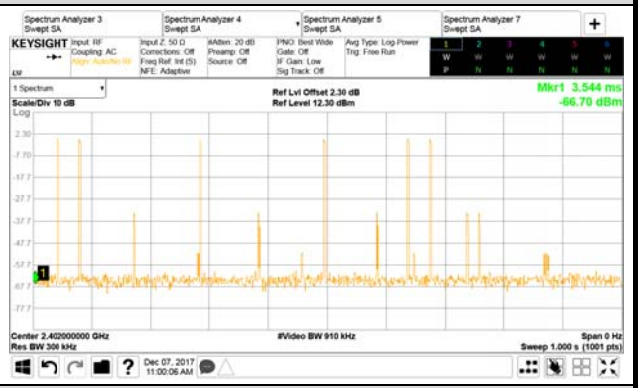
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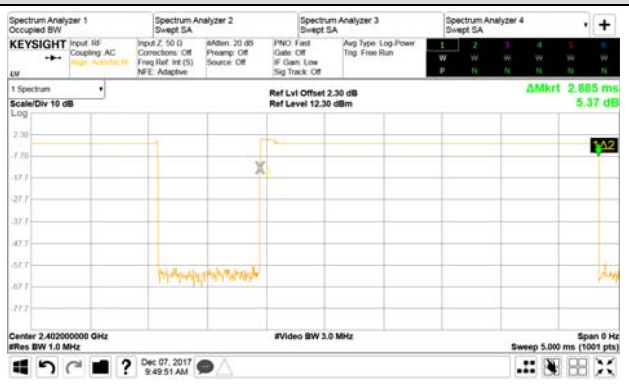	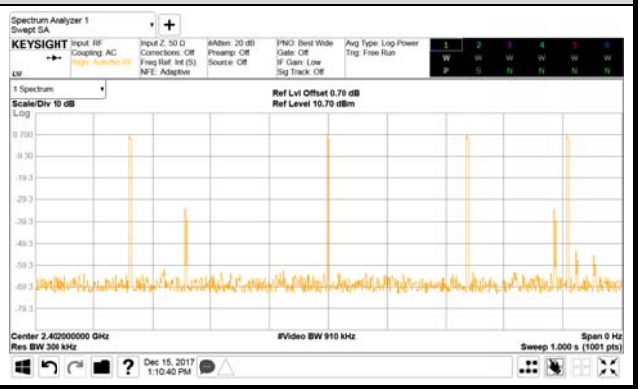

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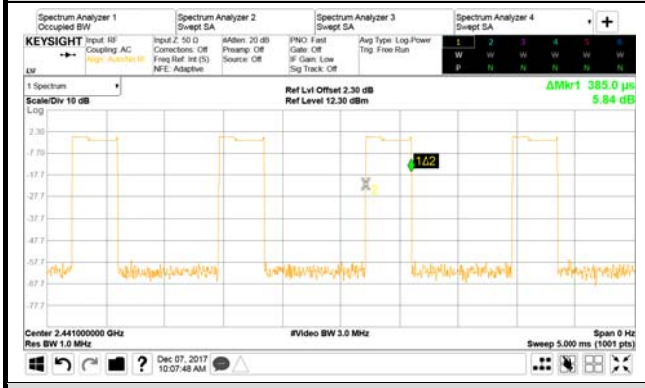
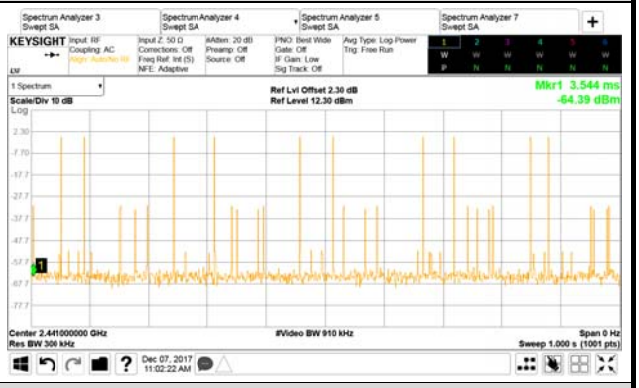
Mode: 8-DPSK	
Centre Frequency: 2441MHz	
3DH1	
	
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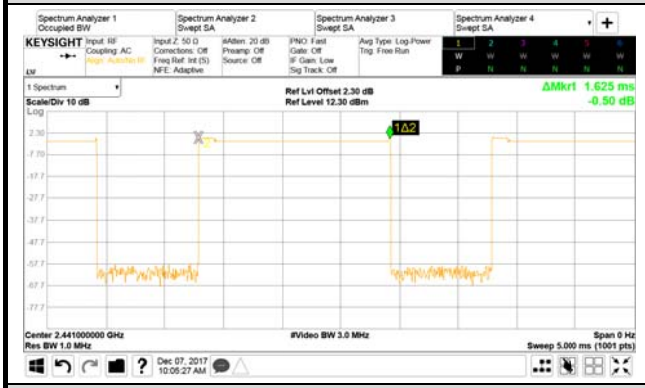	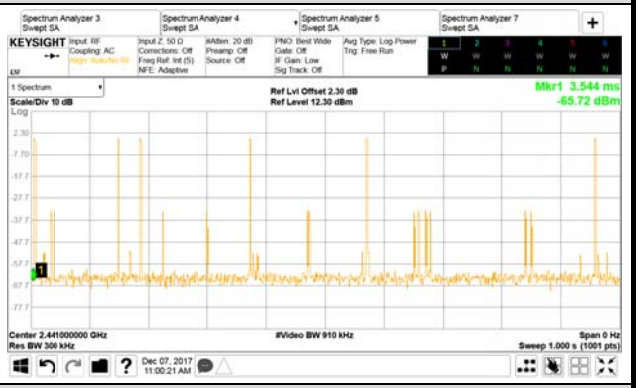
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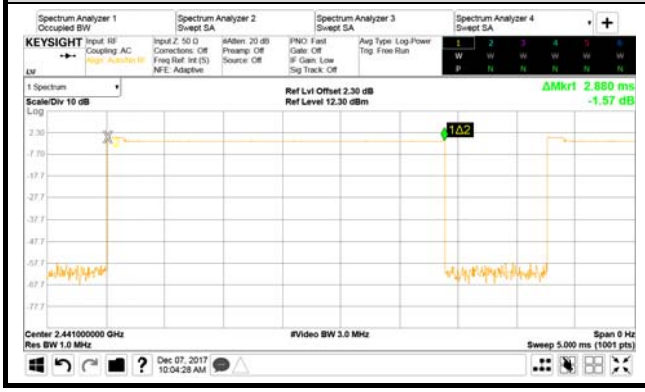	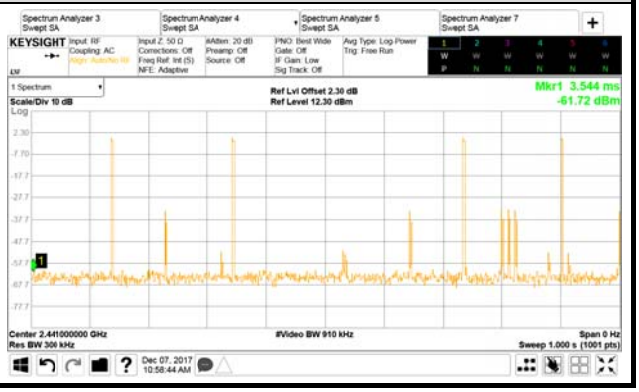

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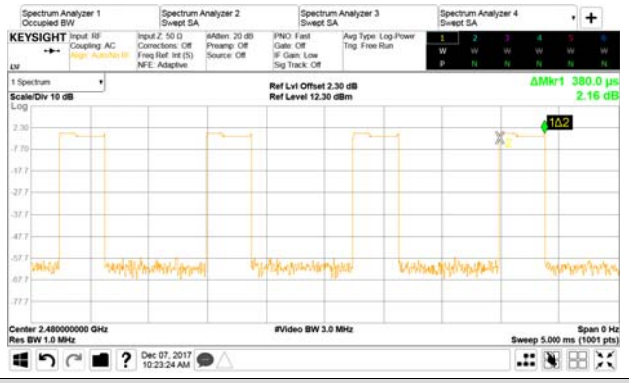
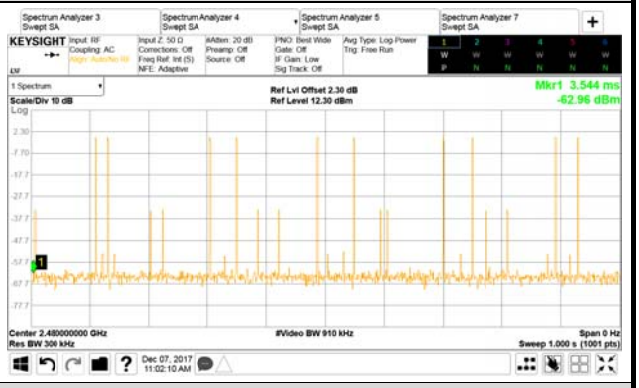
Mode: 8-DPSK	
Centre Frequency: 2480MHz	
3DH1	
	
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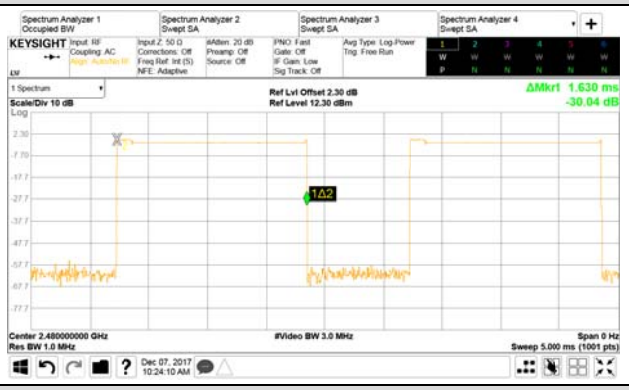	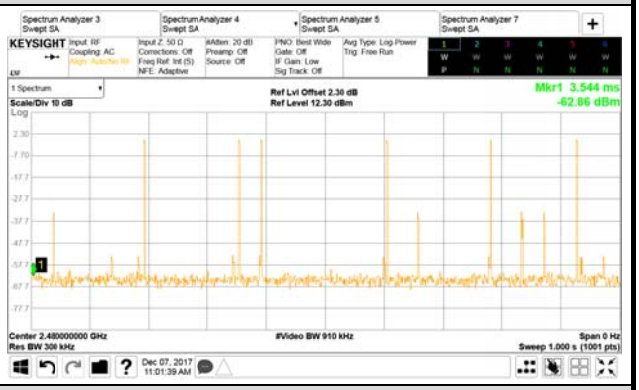
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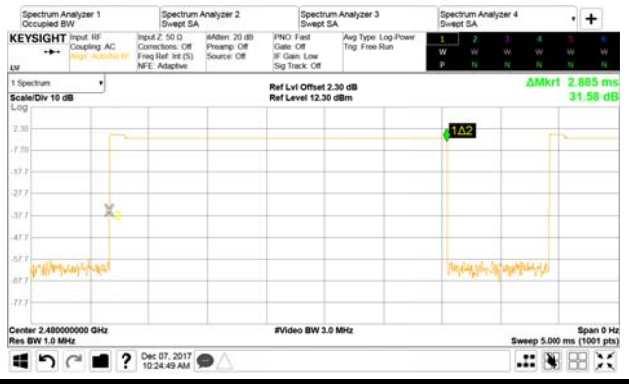	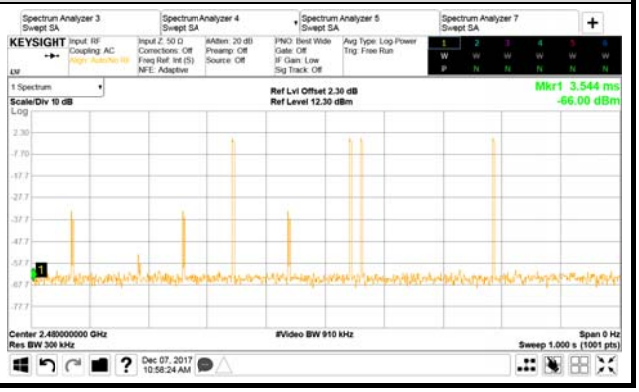

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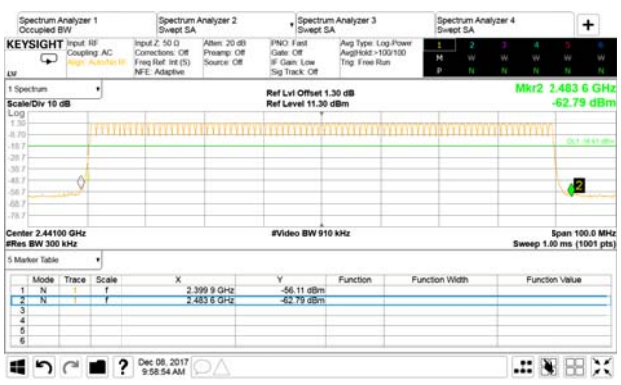
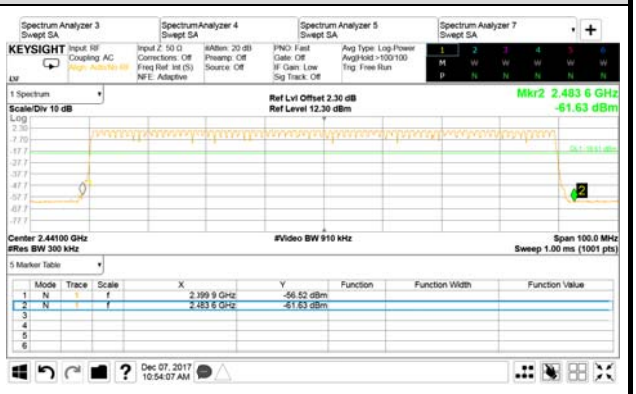
A.6 NUMBER OF HOPPING CHANNELS

Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

Mode: GFSK	Mode: 8-DPSK
	
The number hopping channel is 79.	The number hopping channel is 79.

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A.7 MAXIMUM PEAK OUTPUT POWER

Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

A.7.1 Maximum Peak Output Power

Modulation	Centre Frequency (MHz)	Maximum Peak Output Power		Limit
		dBm	W	
GFSK	2402	1.64	0.0015	21dBm (0.125W)
	2441	1.15	0.0013	
	2480	1.00	0.0013	
8-DPSK	2402	0.65	0.0012	
	2441	0.41	0.0011	
	2480	0.45	0.0011	

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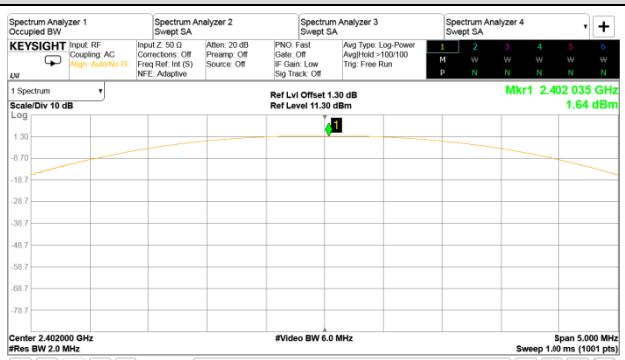
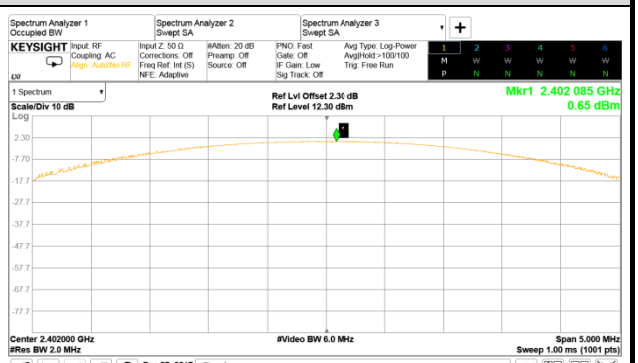
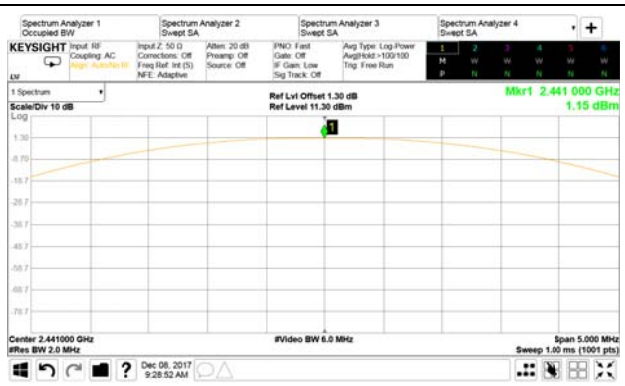
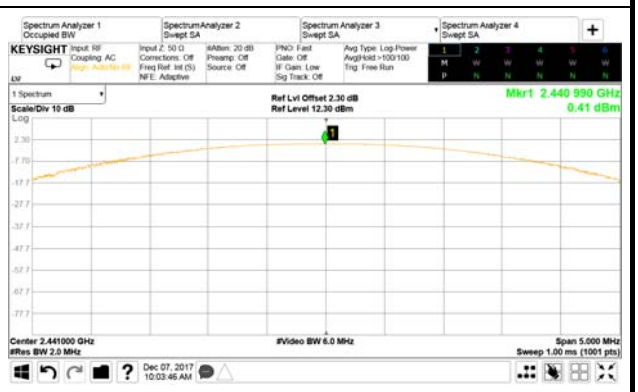
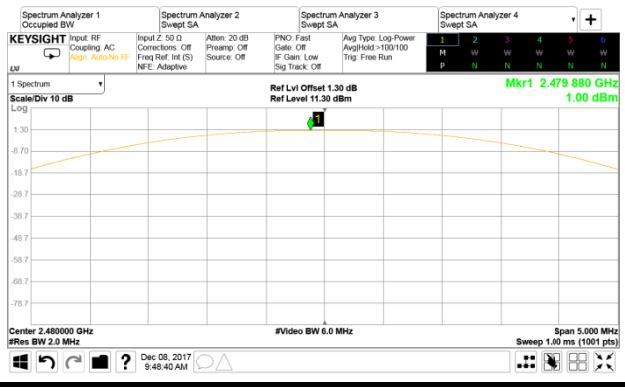
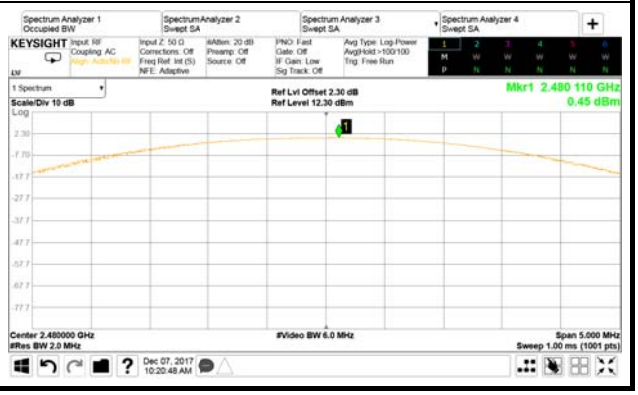
A.7.2 Measurement Plots

Mode: GFSK	Mode: 8-DPSK
	
	
	

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A.8 EMISSION LIMITATIONS MEASUREMENT

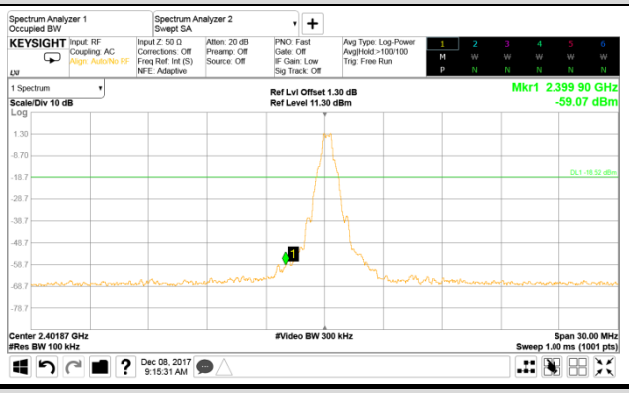
Test Date	2017/12/07 ~ 08	Temp./Hum.	23~24℃/55~58%
Cable Loss	GFSK:1.30dB; 8-DPSK:2.30dB	Test Voltage	DC3.8V (Via Battery)

A.8.1 Band Edge

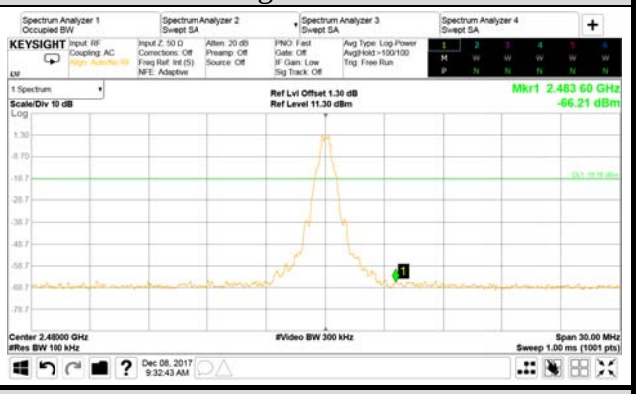
Mode: GFSK

Single Channel

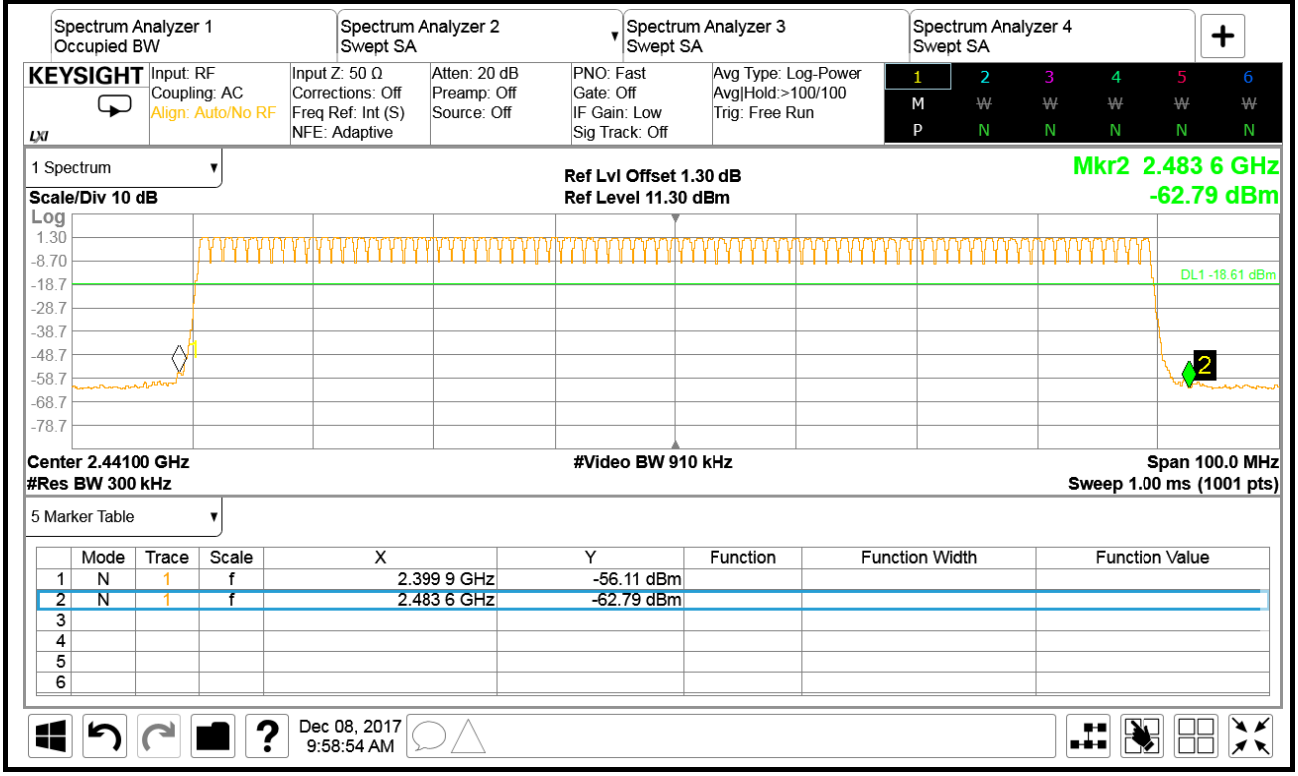
Low channel



High channel



Hopping Mode



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.399 9 GHz	-56.11 dBm			
2	N	1	f	2.483 6 GHz	-62.79 dBm			
3								
4								
5								
6								

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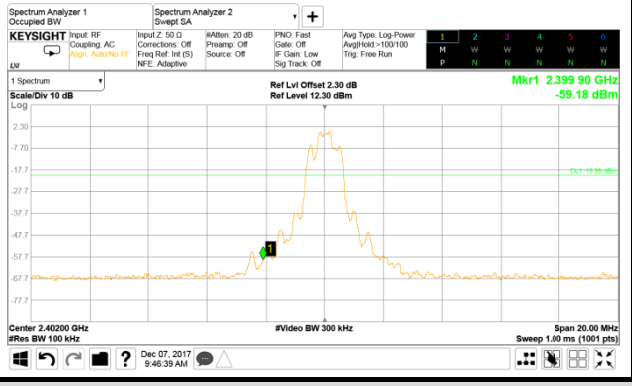
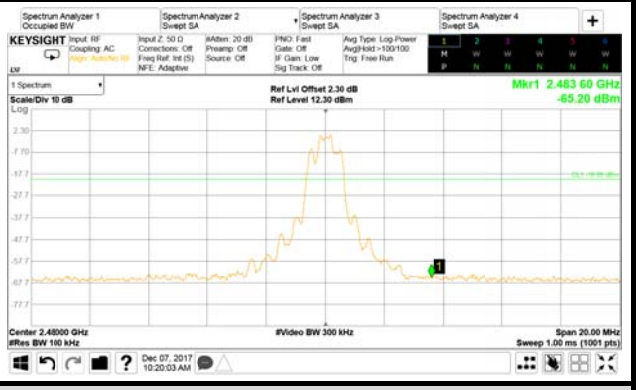
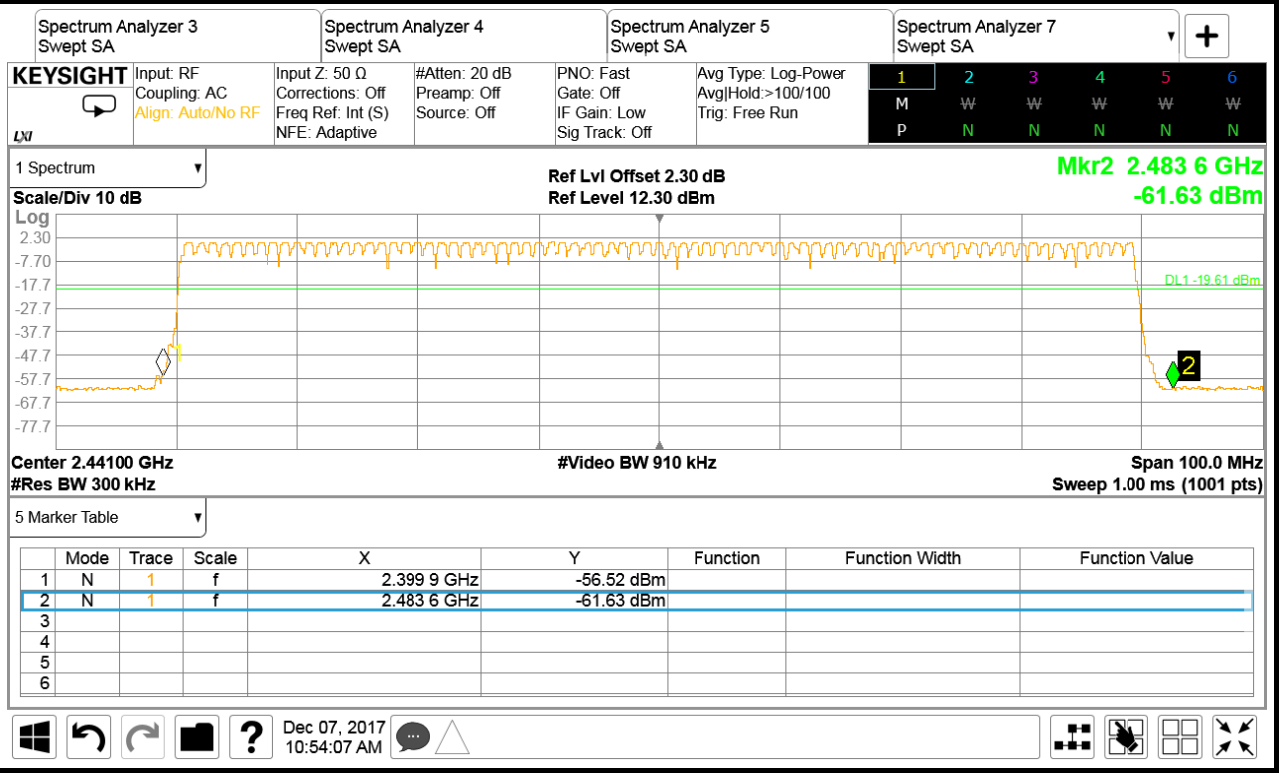
Mode: 8-DPSK

Single Channel

Low channel	High channel
	

Hopping Mode



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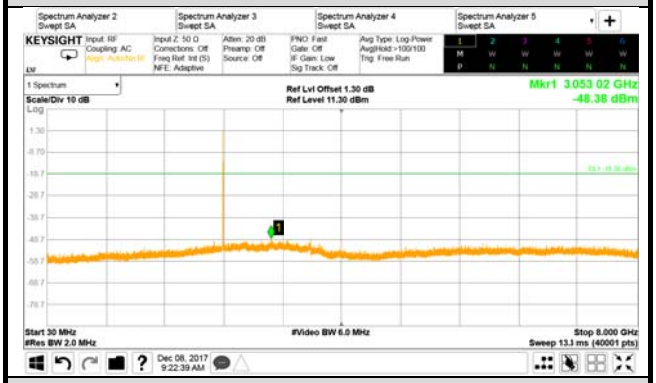
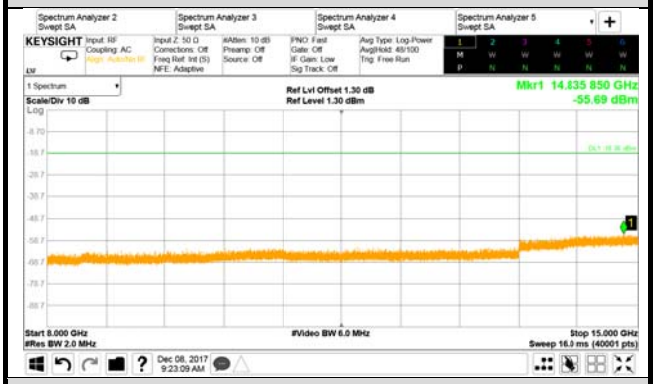
A.8.2 Spurious Emission

Test Date	2017/12/07	Temp./Hum.	23℃/55%
Cable Loss	1.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	GFSK	Frequency	2402MHz

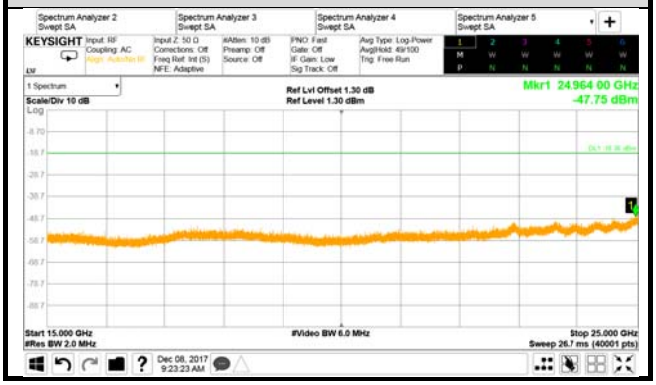
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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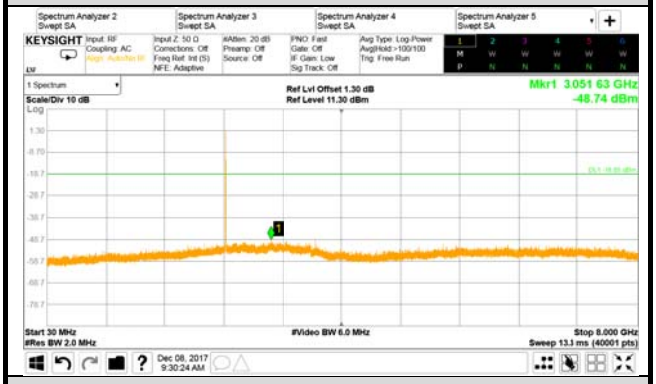
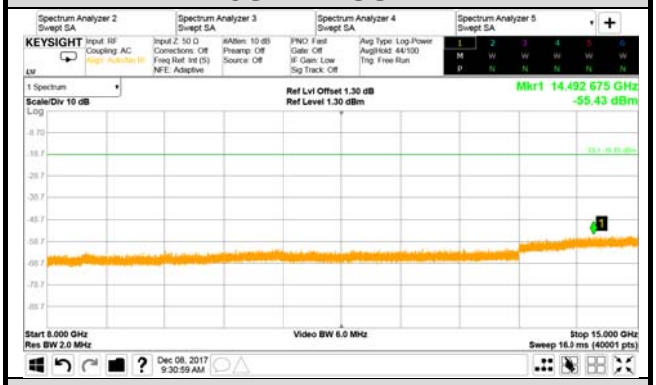
Test Date	2017/12/07	Temp./Hum.	23℃/55%
Cable Loss	1.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	GFSK	Frequency	2441MHz

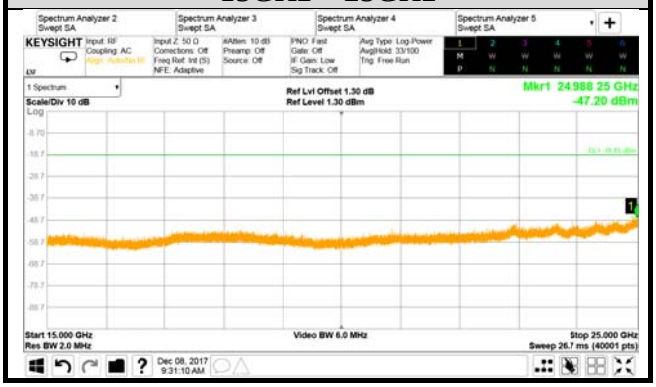
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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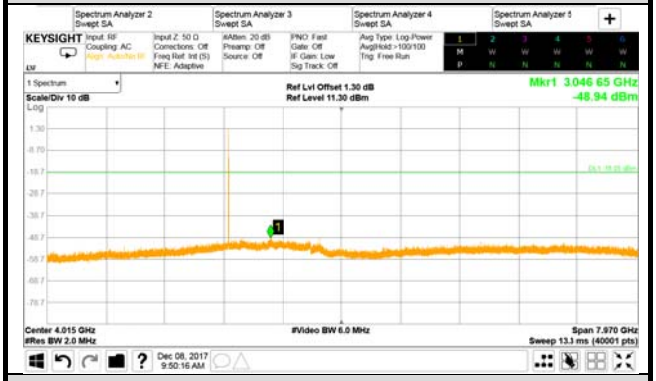
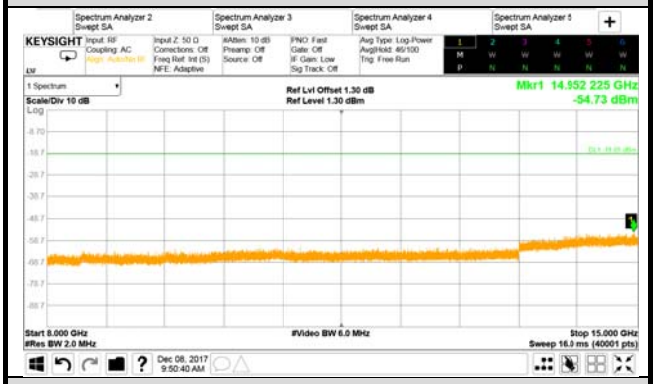
Test Date	2017/12/07	Temp./Hum.	23℃/55%
Cable Loss	1.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	GFSK	Frequency	2480MHz

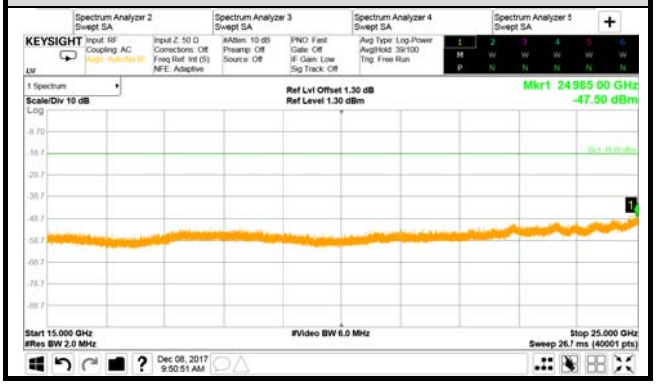
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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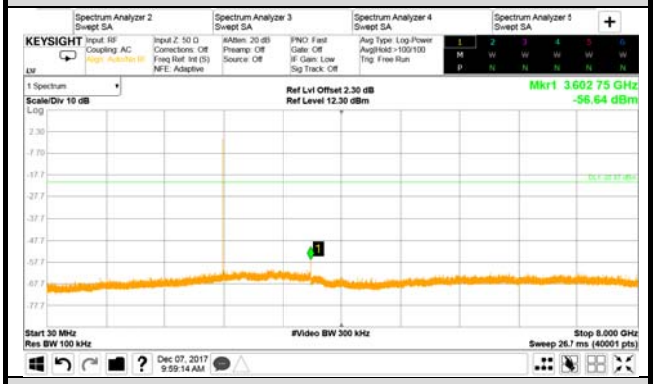
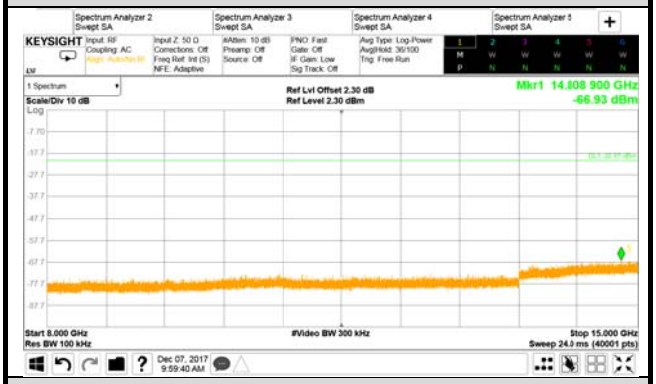
Test Date	2017/12/08	Temp./Hum.	24℃/58%
Cable Loss	2.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	8-DPSK	Frequency	2402MHz

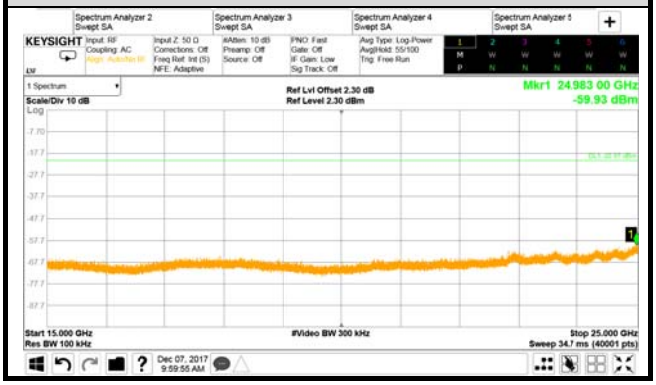
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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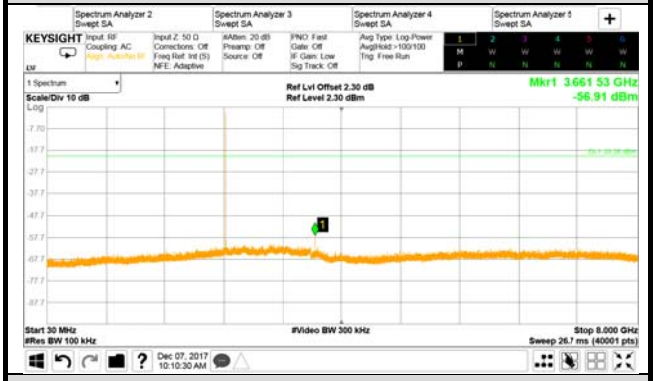
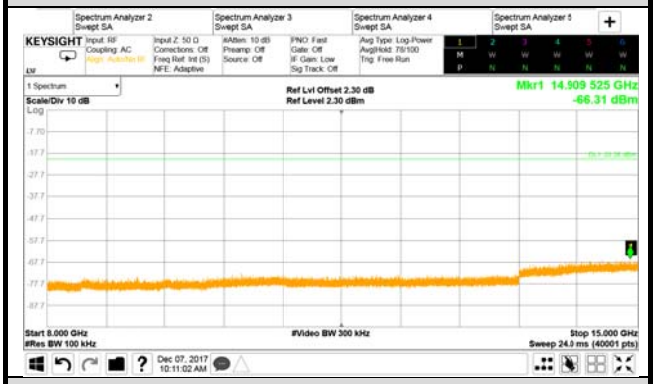
Test Date	2017/12/08	Temp./Hum.	24℃/58%
Cable Loss	2.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	8-DPSK	Frequency	2441MHz

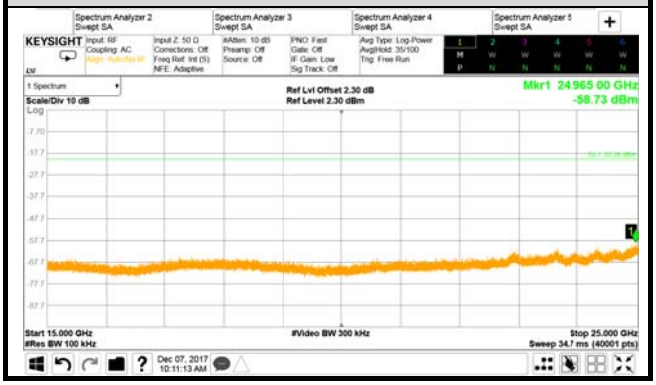
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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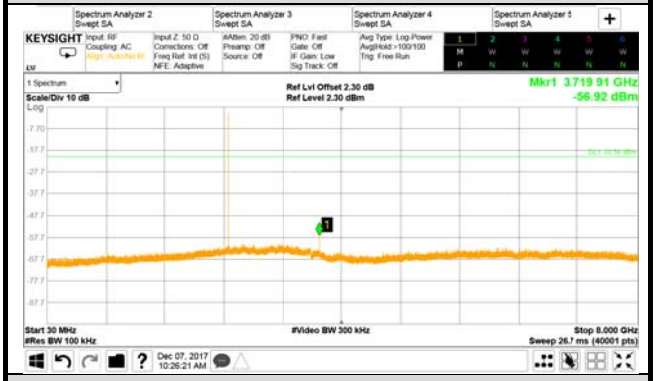
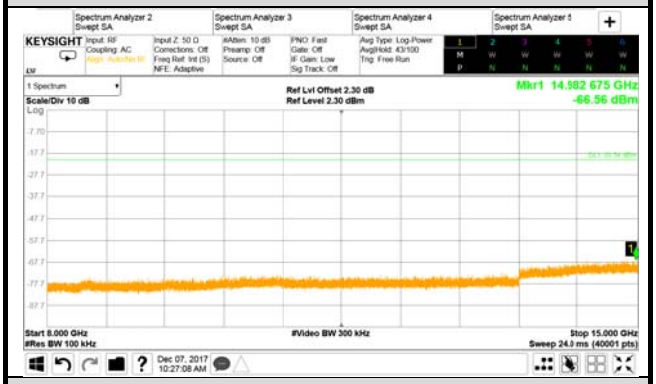
Test Date	2017/12/08	Temp./Hum.	24℃/58%
Cable Loss	2.30dB	Test Voltage	DC3.8V (Via Battery)
Mode	8-DPSK	Frequency	2480MHz

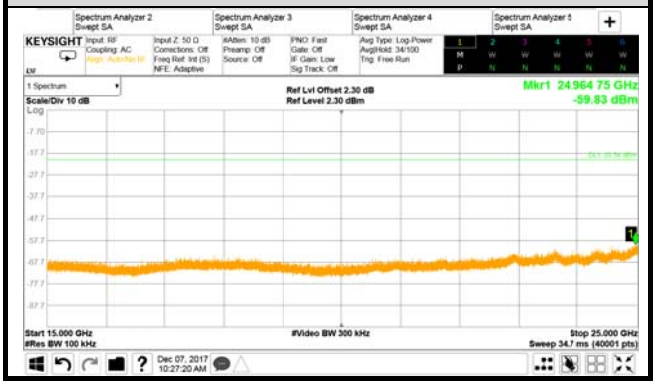
30MHz – 8GHz



8GHz – 15GHz



15GHz – 25GHz



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APPDNDIX B

TEST PHOTOGRAPHS

(Model: A8001)

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APPDNDIX C

EUT PHOTOGRAPHS

(Model: A8001)