FCC TEST REPORT

FOR

Shenzhen Concox Information Technology Co., Ltd

Smart Bike-sharing GPS Lock

Model No.: BL10

Additional Model No.: GB100

Prepared for	:	Shenzhen Concox Information Technology Co., Ltd
Address	:	Floor 4th, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, China
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Tel	:	(+86)755-82591330
Fax	:	(+86)755-82591332
Web	:	www.LCS-cert.com
Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	Jan 02, 2018
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	Jan 02, 2018~Mar 07, 2018
Date of Report	:	Mar 07, 2018

FCC TEST REPORT

FCC CFR 47 PART 15 C(15.247)

Report Reference No. ..... :		**LCS180102003AEA**
Date of Issue.....	:	Mar 07, 2018
Testing Laboratory Name..... :		**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address.....	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name..... :		**Shenzhen Concox Information Technology Co., Ltd**
Address.....	:	Floor 4th, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, China
Test Specification		
Standard	:	FCC CFR 47 PART 15 C(15.247)
Test Report Form No.	:	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03

Test Item Description. ..... :		**Smart Bike-sharing GPS Lock**
Trade Mark.....	:	N/A
Model/ Type reference	:	BL10
Ratings.....	:	DC 3.70V, 10000mAh Charging parameter: Input: DC5V, 1A(max) from solar power
Result ..... :		**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Calvin Weng	Dick Su	Gavin Liang
Calvin Weng/ Administrators	Dick Su/ Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : **LCS180102003AEA**	Mar 07, 2018 Date of issue

EUT.....	:	Smart Bike-sharing GPS Lock
Type / Model.....	:	BL10
Applicant.....	**:**	**Shenzhen Concox Information Technology Co., Ltd**
Address.....	:	Floor 4th, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, China
Telephone.....	:	
Fax.....	:	
Manufacturer.....	**:**	**Shenzhen Concox Information Technology Co., Ltd**
Address.....	:	Floor 4th, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, China
Telephone.....	:	
Fax.....	:	
Factory.....	:	**Shenzhen Concox Information Technology Co., Ltd**
Address.....	:	Floor 4th, Building B, Gaoxinqi Industrial Park, Liuxian 1st Road, District 67, Bao'an, Shenzhen, China
Telephone.....	:	
Fax.....	:	

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
000	Mar 07, 2018	Initial Issue	Gavin Liang

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

Name of EUT	Smart Bike-sharing GPS Lock
Model Number	BL10, GB100
Modulation Type	GMSK for GPRS
Antenna Gain	0dBi (max.) For GSM 850; 0dBi (max.) For GSM 900; 0dBi (max.) For DCS 1800; 0dBi (max.) For PCS 1900; -1.0dBi (max.) For BT
Hardware version	NF2311-V1.0
Software version	QB200_50_MK1_R0_V10
GSM/GPRS Operation Frequency Band	GPRS850/GPRS1900
UMTS Operation Frequency Band	Not Supported
LTE Operation Frequency Band	Not Supported
GSM/EDGE/GPRS	Supported GPRS
GSM Release Version	R99
GSM/EDGE/GPRS Power Class	GSM850:Power Class 4/ PCS1900:Power Class 1
GPRS/EDGE Multislot Class	GPRS: Multi-slot Class 12
GPRS operation mode	Class B
WCDMA Release Version	Not Supported
HSDPA Release Version	Not Supported
HSUPA Release Version	Not Supported
DC-HSUPA Release Version	Not Supported
LTE Release Version	Not Supported
LTE/UMTS Power Class	Not Supported
WLAN FCC Modulation Type	Not Supported
WLAN FCC Operation frequency	Not Supported
Antenna Type	PIFA Antenna
BT Modulation Type	GFSK,8-DPSK,π/4-DQPSK(BT V3.0) GFSK(BT V4.0)
Extreme temp. Tolerance	-30°C to +50°C
GPS function	Support and only RX
NFC Function	Not Supported
Extreme vol. Limits	3.40VDC to 4.20VDC (nominal: 3.70VDC)

1.2. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
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1.3. External I/O Cable

I/O Port Description	Quantity	Cable
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1.4. Description of Test Facility

FCC Registration Number is 254912.
Industry Canada Registration Number is 9642A-1.
ESMD Registration Number is ARCB0108.
UL Registration Number is 100571-492.
TUV SUD Registration Number is SCN1081.
TUV RH Registration Number is UA 50296516-001

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	±3.10dB	(1)
		30MHz~200MHz	±2.96dB	(1)
		200MHz~1000MHz	±3.10dB	(1)
		1GHz~26.5GHz	±3.70dB	(1)
		26.5GHz~40GHz	±3.90dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	±1.63dB	(1)
Power disturbance	:	30MHz~300MHz	±1.60dB	(1)

(1) The uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7 Description of Test Modes

Bluetooth operates in the unlicensed ISM Band at 2.4GHz. With basic data rate feature, the data rates can be up to 1 Mb/s by modulating the RF carrier using GFSK techniques. The EUT works in the X-axis, Y-axis, Z-axis. The following operating modes were applied for the related test items. All test modes were tested, only the result of the worst case was recorded in the report.

Mode of Operations	Frequency Range (MHz)	Data Rate (Mbps)
BT V 3.0	2402	1/2/3
	2441	1/2/3
	2480	1/2/3
For Conducted Emission		
Test Mode	TX Mode	
For Radiated Emission		
Test Mode	TX Mode	

Worst-case mode and channel used for 9kHz-1000 MHz radiated emissions was the mode and channel with the highest output power, that was determined to be TX(1Mbps-Middle Channel).

AC conducted emission is not applied due to this product is powered by battery, and recharge from solar power. It's not recharged from AC power directly or indirectly;

Bluetooth V3.0 (DSS) frequency & channel list:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
0	2402	40	2442
1	2403	41	2443
--	--	--	--
37	2439	77	2479
38	2440	78	2480
39	2441		

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR PART 15C 15.207, 15.209, 15.247 and DA 00-705.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209, 15.247 under the FCC Rules Part 15 Subpart C.

2.3 General Test Procedures

2.3.1 Conducted Emissions

The EUT is directly placed on the ground. According to the requirements in Section 6.2.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turntable, which is directly placed on the ground. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10-2013.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a continuous transmits condition.

3.2 EUT Exercise Software

The sample will be controlled by BlueTest3.exe to enter RF test mode to control sample change channel, modulation and so on;

3.3 Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
1	PC	Lenovo	Ideapad	A131101550	/	/	DOC
2	Power adapter	Lenovo	CPA-A090	36200414	1.00m	unshielded	DOC

3.4 Block Diagram/Schematics

Please refer to the related document.

3.5 Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6 Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

Applied Standard: FCC Part 15 Subpart C		
FCC Rules	Description of Test	Result
§15.247(b)(1)	Maximum Conducted Output Power	Compliant
§15.247(c)	Frequency Separation And 20 dB Bandwidth	Compliant
§15.247(a)(1)(ii)	Number Of Hopping Frequency	Compliant
§15.247(a)(1)(iii)	Time Of Occupancy (Dwell Time)	Compliant
§15.209, §15.205	Conducted Spurious Emissions and Band Edges Test	Compliant
§15.209, §15.247(d)	Radiated and Conducted Spurious Emissions	Compliant
§15.205	Emissions at Restricted Band	Compliant
§15.207(a)	Conducted Emissions	N/A
§15.203	Antenna Requirements	Compliant
§15.247(i)§2.1093	RF Exposure	Compliant

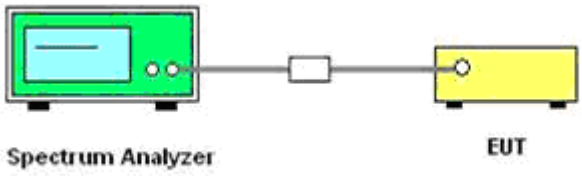
5. SUMMARY OF TEST EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Power Meter	R&S	NRVS	100444	2017-06-17	2018-06-16
2	Power Sensor	R&S	NRV-Z81	100458	2017-06-17	2018-06-16
3	Power Sensor	R&S	NRV-Z32	10057	2017-06-17	2018-06-16
4	EPM Series Power Meter	Agilent	E4419B	MY45104493	2017-06-17	2018-06-16
5	E-SERIES AVG POWER SENSOR	Agilent	E9301H	MY41495234	2017-06-17	2018-06-16
6	ESA-E SERIES SPECTRUM ANALYZER	Agilent	E4407B	MY41440754	2017-11-18	2018-11-17
7	MXA Signal Analyzer	Agilent	N9020A	MY49100040	2017-06-17	2018-06-16
8	SPECTRUM ANALYZER	R&S	FSP	100503	2017-06-17	2018-06-16
9	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2017-06-17	2018-06-16
10	Positioning Controller	MF	MF-7082	/	2017-06-17	2018-06-16
11	EMI Test Software	AUDIX	E3	N/A	2017-06-17	2018-06-16
12	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2017-06-17	2018-06-16
13	AMPLIFIER	QuieTek	QTK-A2525G	CHM10809065	2017-11-18	2018-11-17
14	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2017-06-23	2018-06-22
15	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2017-05-02	2018-05-01
16	Horn Antenna	EMCO	3115	6741	2017-06-23	2018-06-22
17	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	2017-06-10	2018-06-09
18	RF Cable-R03m	Jye Bao	RG142	CB021	2017-06-17	2018-06-16
19	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2017-06-17	2018-06-16
20	TEST RECEIVER	R&S	ESCI	101142	2017-06-17	2018-06-16
21	RF Cable-CON	UTIFLEX	3102-26886-4	CB049	2017-06-17	2018-06-16
22	10dB Attenuator	SCHWARZBECK	MTS-IMP136	261115-001-003 2	2017-06-17	2018-06-16
23	Artificial Mains	R&S	ENV216	101288	2017-06-17	2018-06-16

6. ANTENNA PORT MEASUREMENT

6.1 Peak Power

6.1.1 Block Diagram of Test Setup



6.1.2 Limit

According to §15.247(b)(1), For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping system in the 2400–2483.5 MHz band: 0.125 watts.

6.1.3 Test Procedure

Use the following spectrum analyzer settings:

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

RBW > the 20 dB bandwidth of the emission being measured

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power

6.1.4 Test Results

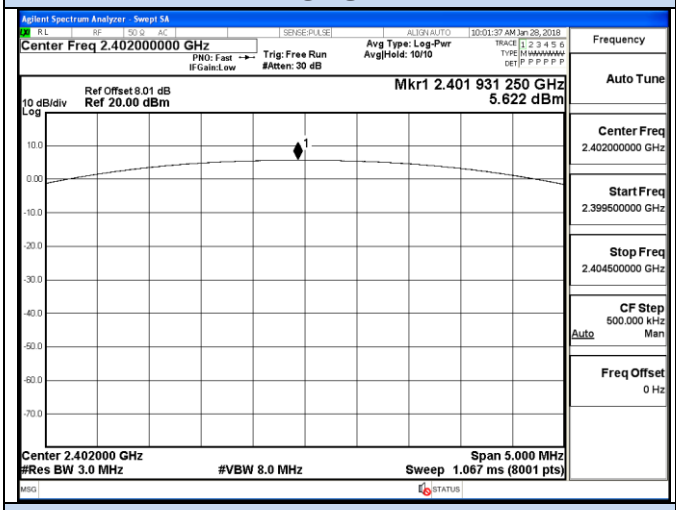
Test Mode	Channel	Frequency (MHz)	Measured Maximum Power (dBm)	Limits (dBm)	Verdict
GFSK	0	2402	5.622	21.00	PASS
	39	2441	**5.836**		
	78	2480	5.811		
π/4DQPSK	0	2402	5.406	21.00	PASS
	39	2441	5.594		
	78	2480	5.606		
8DPSK	0	2402	5.559	21.00	PASS
	39	2441	5.776		
	78	2480	5.724		

Remark:

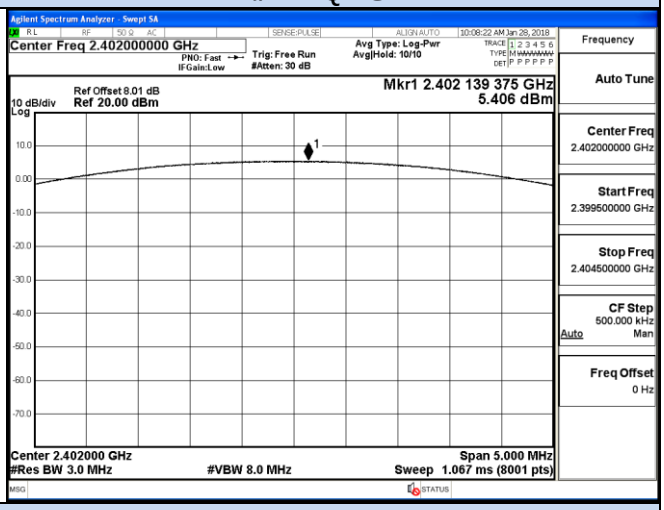
1. *Test results including cable loss;*
2. *Measured output power at difference Packet Type for each mode and recorded worst case for each mode.*
3. *Worst case data at DH5 for GFSK, 2DH5 for π/4DQPSK, 3DH5 for 8DPSK modulation type;*
4. *Please refer to following test plots.*

Peak Output Power

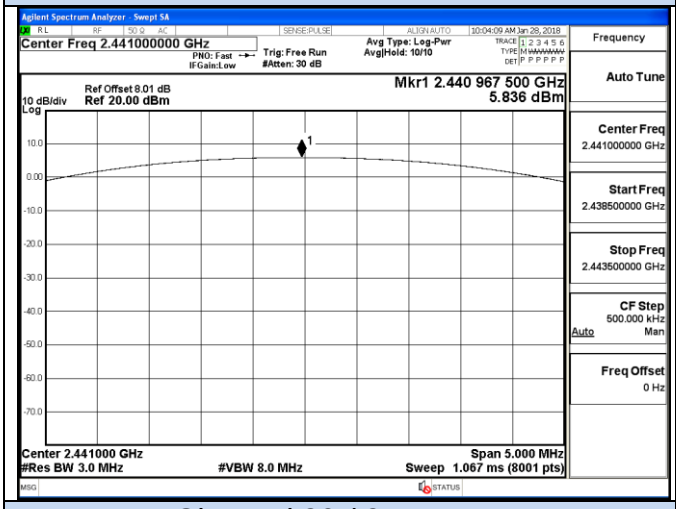
GFSK



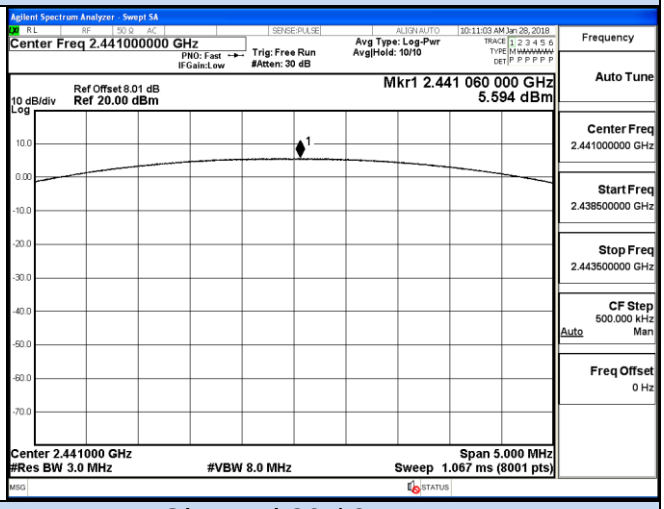
π/4-DQPSK



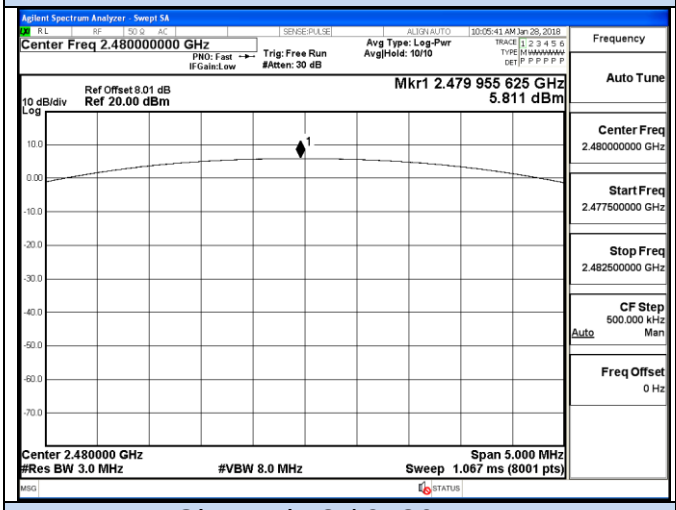
Channel 0 / 2402 MHz



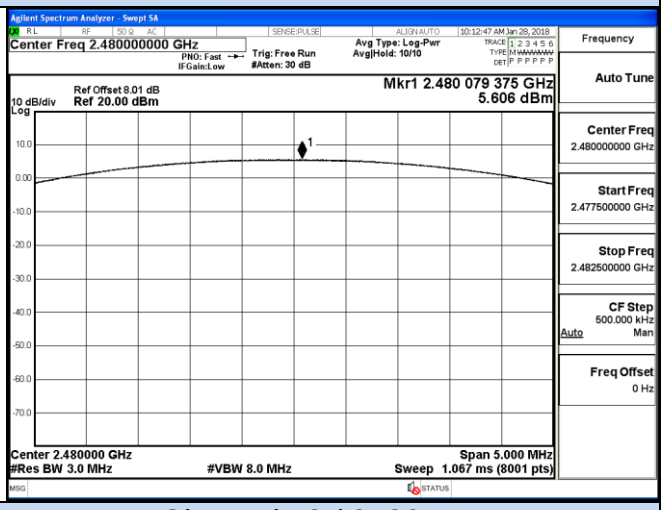
Channel 0 / 2402 MHz



Channel 39 / 2441 MHz

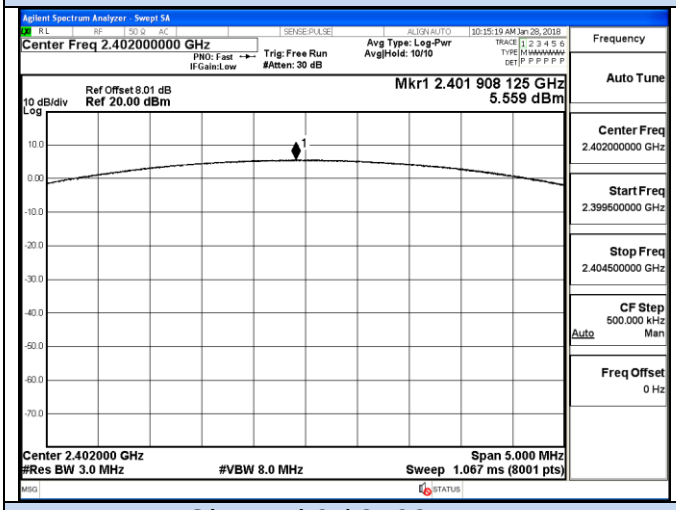


Channel 39 / 2441 MHz



Channel 78 / 2480 MHz

Channel 78 / 2480 MHz

Peak Output Power	
8DPSK	
	
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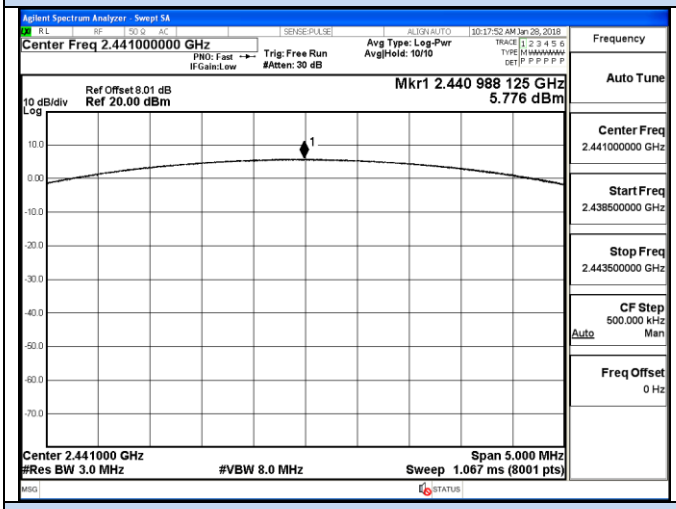
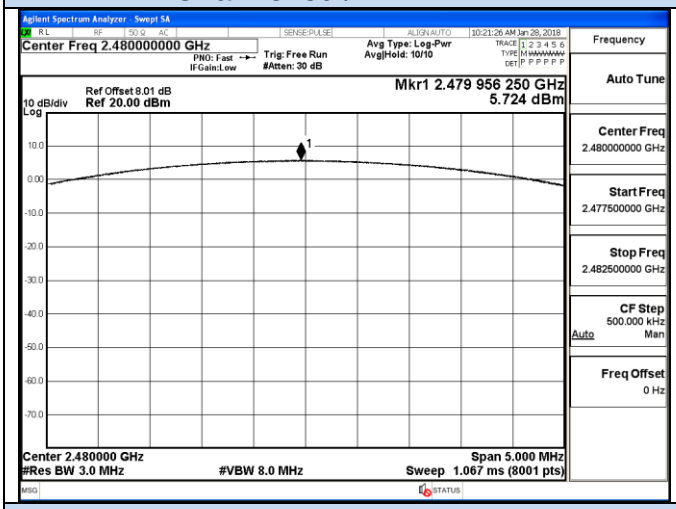
	
Channel 39 / 2441 MHz	
	
Channel 78 / 2480 MHz	

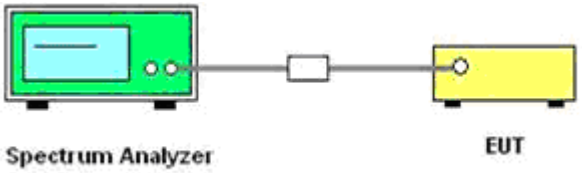
6.2 Frequency Separation and 20 dB Bandwidth

6.2.1 Limit

§ 15.247(a) (1) 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.

According to §15.247(c) or A8.1(a), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a).

6.2.2 Block Diagram of Test Setup



6.2.3 Test Procedure

Frequency separation test procedure：

1). Place the EUT on the table and set it in transmitting mode.

2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.

3). Set center frequency of Spectrum Analyzer = middle of hopping channel.

4). Set the Spectrum Analyzer as RBW = 100 KHz, VBW = 300 KHz, Span = wide enough to capture the peaks of two adjacent channels, Sweep = auto.

5). Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.

20dB bandwidth test procedure：

1). Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel.

2). RBW = 30 KHz, VBW = 100 KHz.

3). Detector function = peak.

4). Trace = max hold.

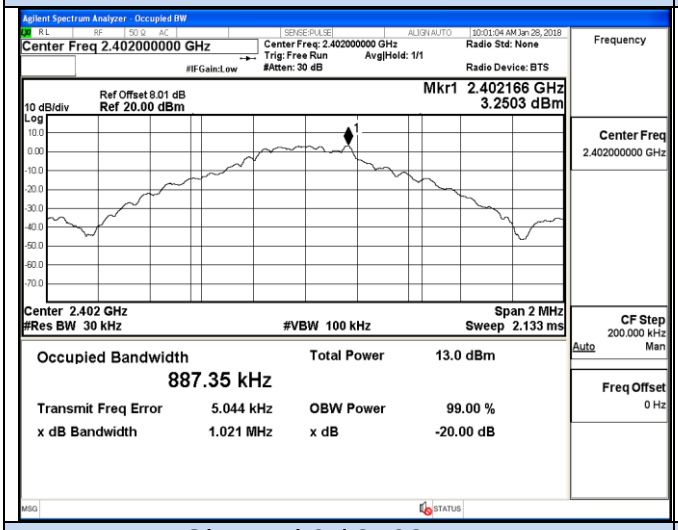
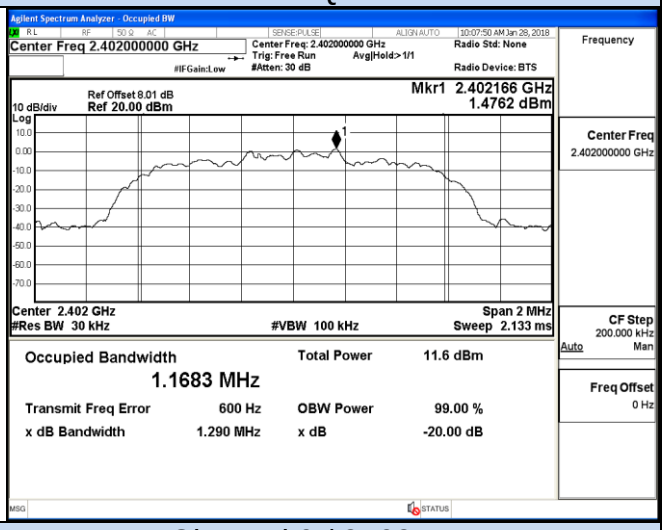
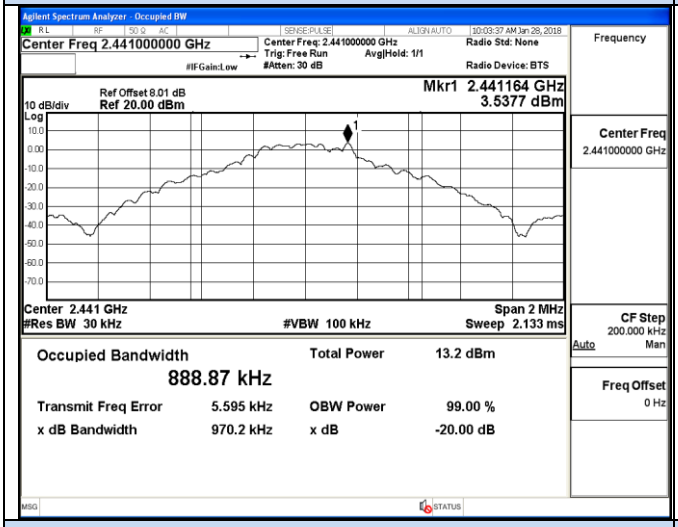
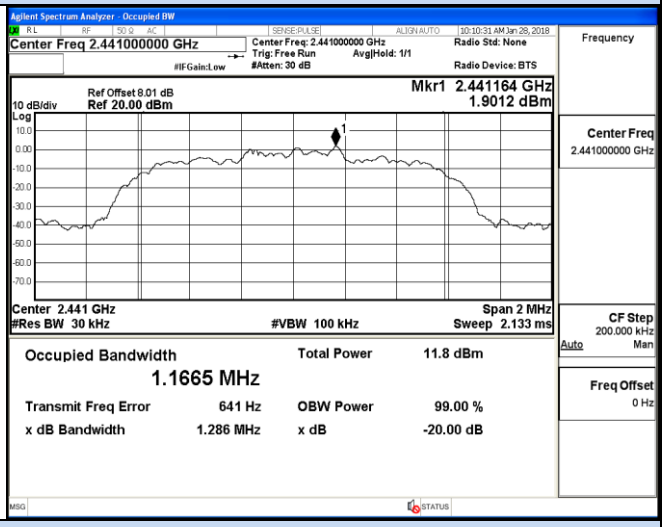
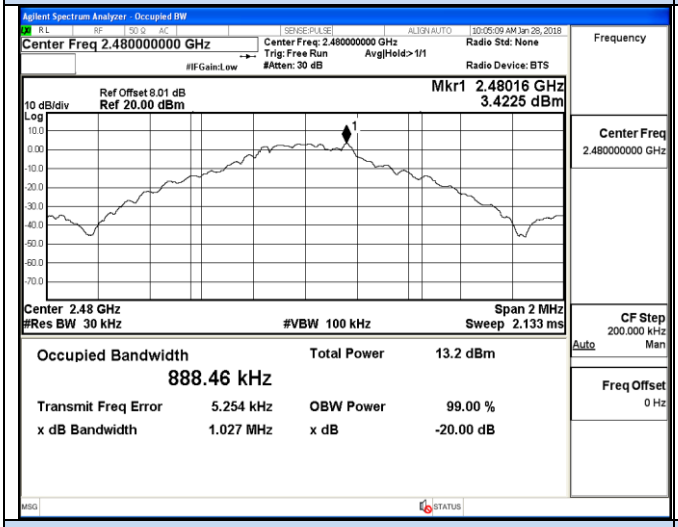
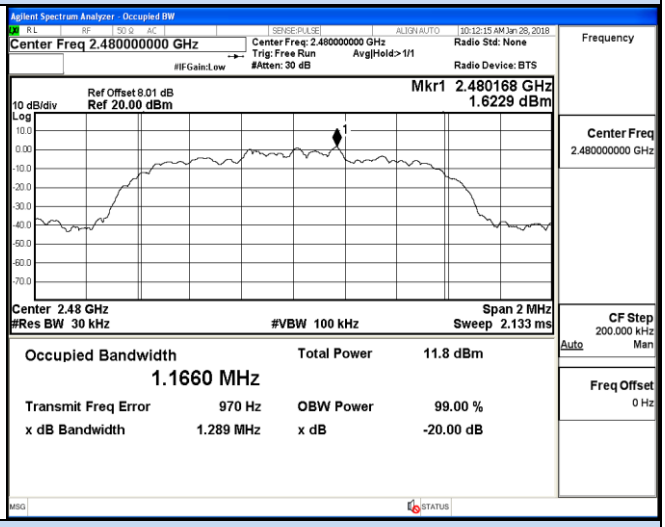
6.2.4 Test Results

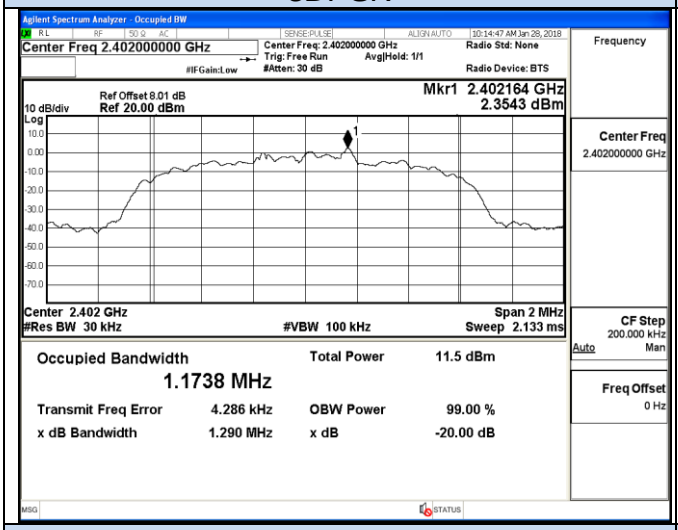
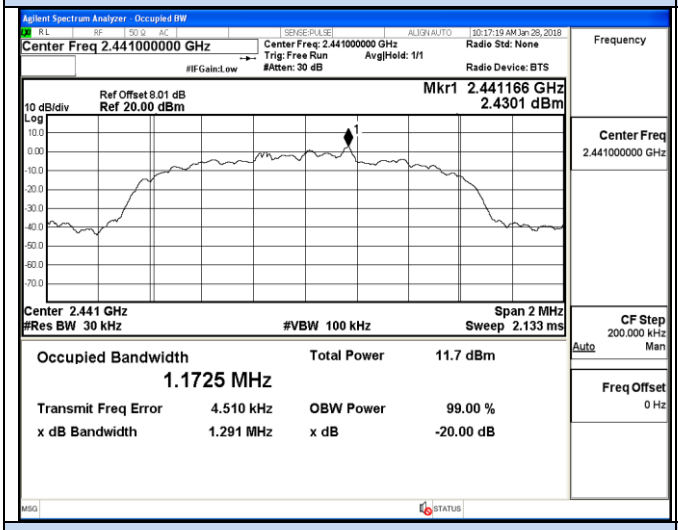
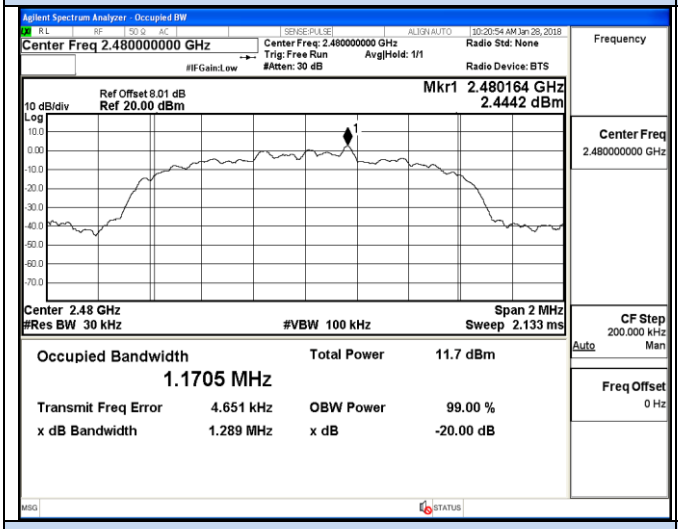
6.2.4.1 20dB Bandwidth

Test Mode	Channel	Frequency (MHz)	Measured Bandwidth (MHz)		Limits (MHz)	Verdict
			99%	20dB		
GFSK	0	2402	0.88735	1.021	No Limits	PASS
	39	2441	0.88887	0.9702		
	78	2480	0.88846	1.027		
π/4DQPSK	0	2402	1.1683	1.290	No Limits	PASS
	39	2441	1.1665	1.286		
	78	2480	1.1660	1.289		
8DPSK	0	2402	1.1738	1.290	No Limits	PASS
	39	2441	1.1725	1.291		
	78	2480	1.1705	1.289		

Remark:
1. *Test results including cable loss;*
2. *Measured 20dB and occupied bandwidth at difference Packet Type for each mode and recorded worst case for each mode.*
3. *Worst case data at DH5 for GFSK, 2DH5 for π/4DQPSK, 3DH5 for 8DPSK modulation type;*
4. *Please refer following test plots;*

20dB Bandwidth and 99% Bandwidth

GFSK	π/4DQPSK
	
Channel 0 / 2402 MHz	Channel 0 / 2402 MHz
	
Channel 39 / 2441 MHz	Channel 39 / 2441 MHz
	
Channel 78 / 2480 MHz	Channel 78 / 2480 MHz

20dB Bandwidth and 99% Bandwidth	
8DPSK	
	
Channel 0 / 2402 MHz	
	
Channel 39 / 2441 MHz	
	
Channel 78 / 2480 MHz	

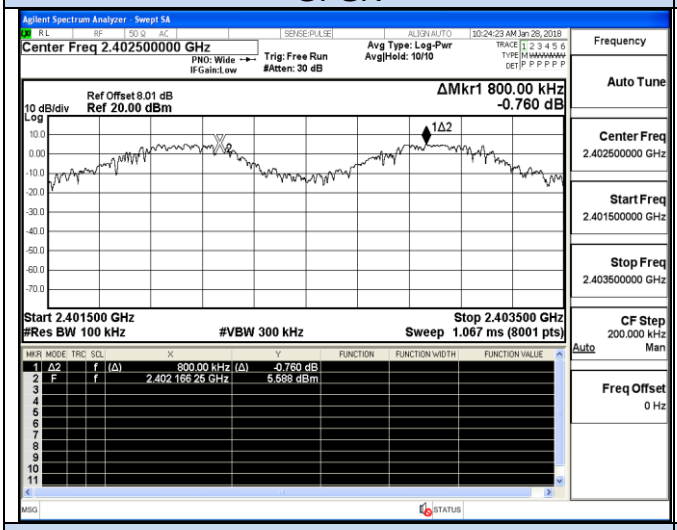
6.2.4.2 Frequency Separation

The Measurement Result With 1Mbps For GFSK Modulation				
Channel	20dB Bandwidth (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	1.021	0.800	≥0.681	PASS
Middle	0.9702	0.704	≥0.647	PASS
High	1.027	0.846	≥0.685	PASS
The Measurement Result With 2Mbps For π/4-DQPSK Modulation				
Channel	20dB Bandwidth (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	1.290	1.200	≥0.860	PASS
Middle	1.286	1.058	≥0.857	PASS
High	1.289	1.118	≥0.859	PASS
The Measurement Result With 3Mbps For 8-DPSK Modulation				
Channel	20dB Bandwidth (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	1.290	1.110	≥0.860	PASS
Middle	1.291	1.058	≥0.861	PASS
High	1.289	1.128	≥0.859	PASS

Remark:
1. *Test results including cable loss;*
2. *Please refer to following plots;*
3. *Measured at difference Packet Type for each mode and recorded worst case for each mode.*
4. *Worst case data at DH5 for GFSK, 2DH5 for π/4-DQPSK, 3DH5 for 8DPSK modulation type;*

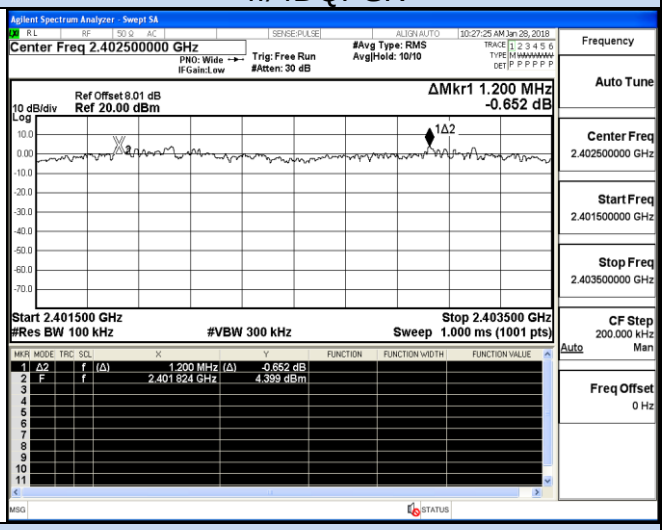
Frequency Separation

GFSK

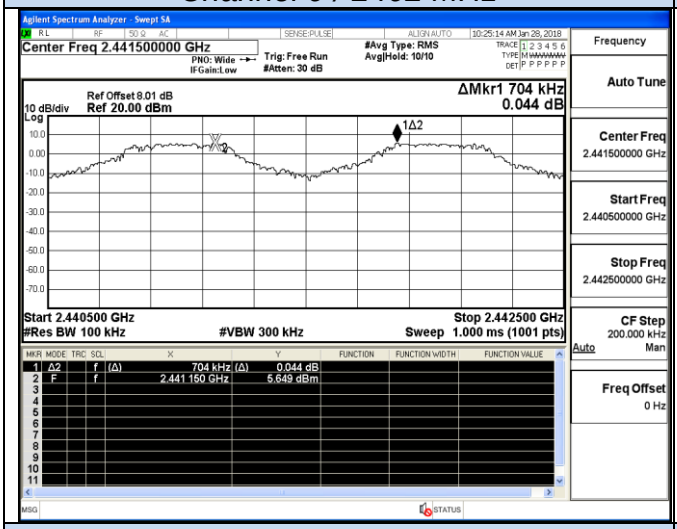


Channel 0 / 2402 MHz

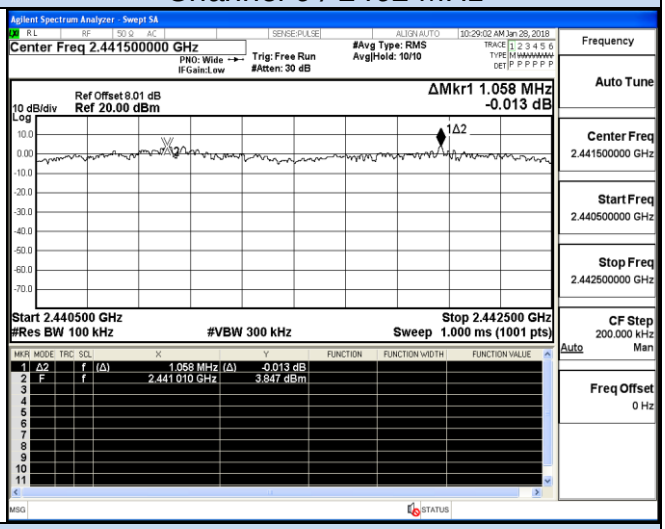
π/4DQPSK



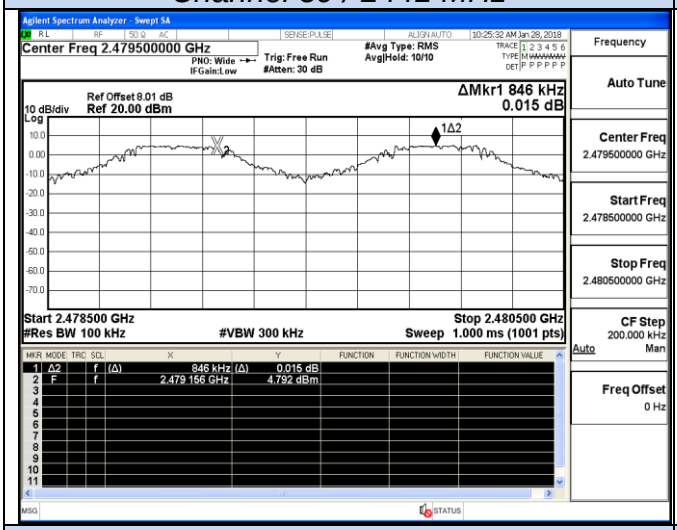
Channel 0 / 2402 MHz



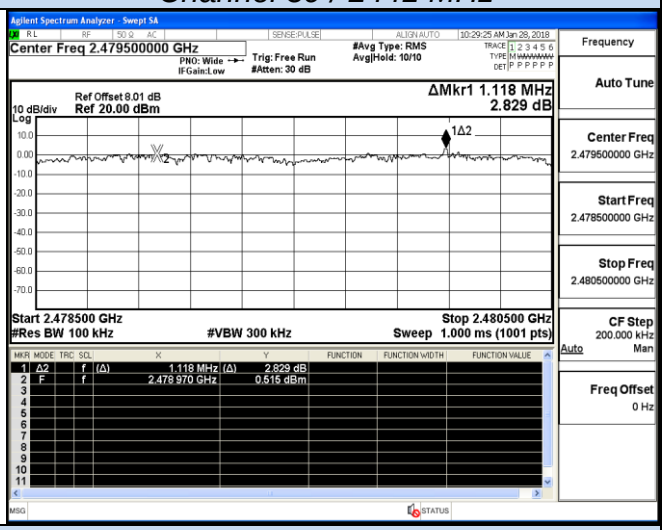
Channel 39 / 2441 MHz



Channel 39 / 2441 MHz



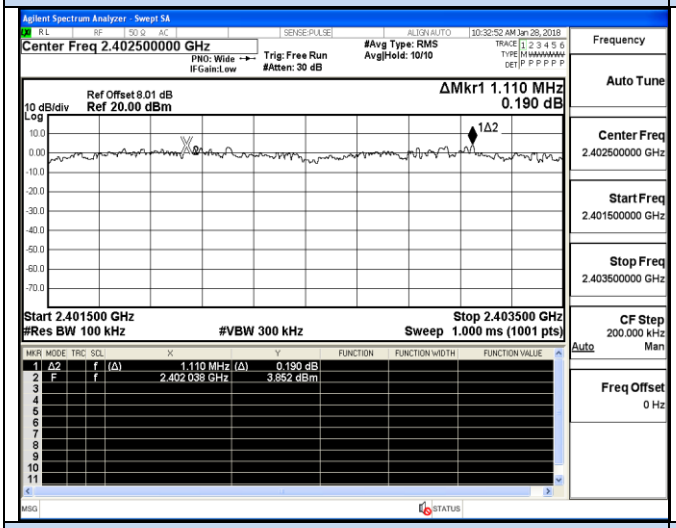
Channel 78 / 2480 MHz



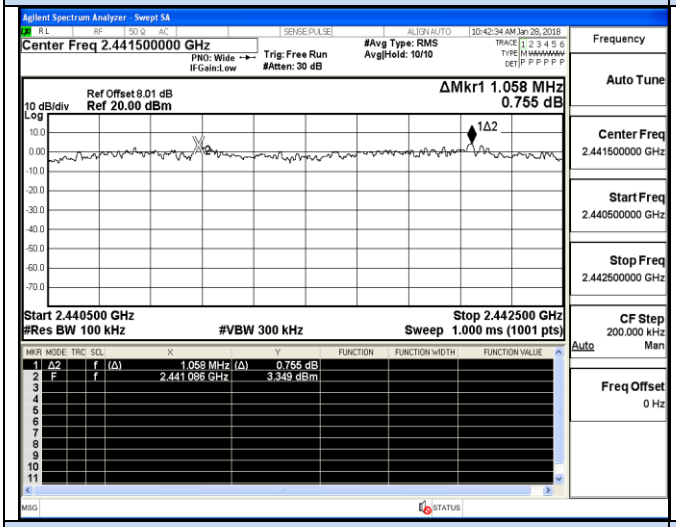
Channel 78 / 2480 MHz

Frequency Separation

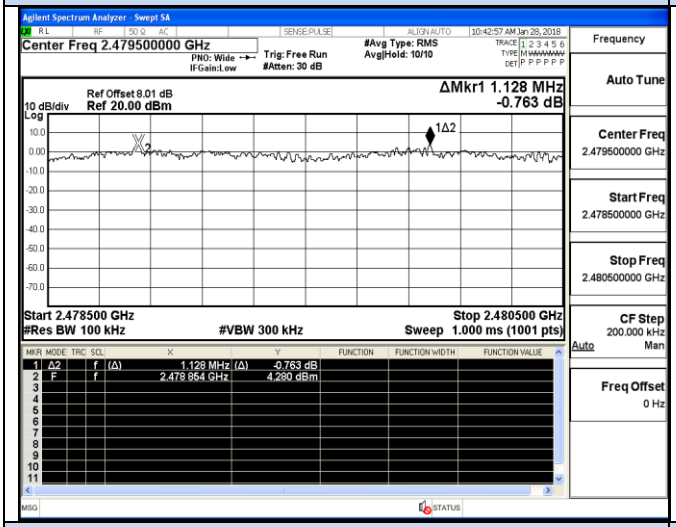
8DPSK



Channel 0 / 2402 MHz



Channel 39 / 2441 MHz



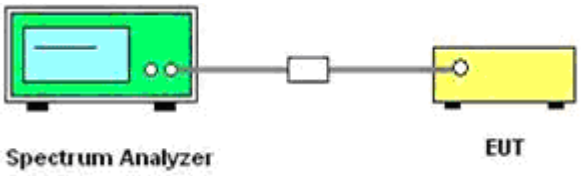
Channel 78 / 2480 MHz

6.3 Number of Hopping Frequency

6.3.1 Limit

According to §15.247(a)(1)(ii) or A8.1 (d), Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels.

6.3.2 Block Diagram of Test Setup



6.3.3 Test Procedure

1). Place the EUT on the table and set it in transmitting mode.

2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.

3). Set Spectrum Analyzer Start=2400MHz, Stop = 2483.5MHz, Sweep = auto.

4). Set the Spectrum Analyzer as RBW = 1 MHz, VBW=1MHz.

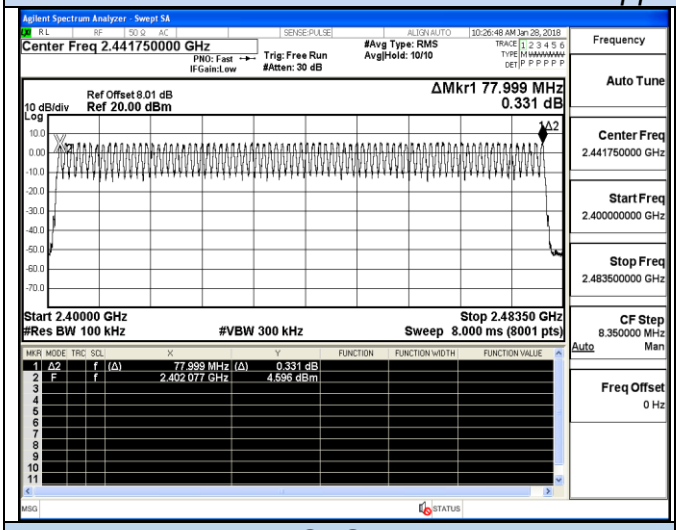
5). Max hold, view and count how many channel in the band.

6.3.4 Test Results

Test Mode	Measurement Result (No. of Channels)	Limit (No. of Channels)	Result
GFSK	79	≥15	PASS
π/4DQPSK	79	≥15	PASS
8DPSK	79	≥15	PASS

Remark:

1. *Test results including cable loss;*
2. *Measured output power at difference Packet Type for each mode and recorded worst case for each mode.*
3. *Worst case data at DH5 for GFSK, 2DH5 for π/4DQPSK, 3DH5 for 8DPSK modulation type;*
4. *Record test plots only for GFSK;*
5. *Please refer following test plots;*

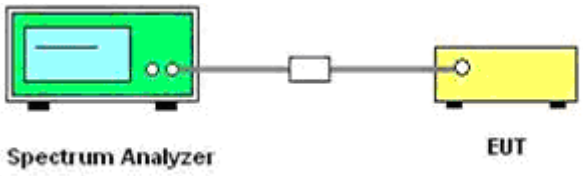
Number of Hopping Frequency	
	
GFSK	

6.4 Time of Occupancy (Dwell Time)

6.4.1 Limit

According to §15.247(a)(1)(iii) or A8.1 (d), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

6.4.2 Block Diagram of Test Setup



6.4.3 Test Procedure

1). Place the EUT on the table and set it in transmitting mode.
2). Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer.
3). Set center frequency of Spectrum Analyzer = operating frequency.
4). Set the Spectrum Analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.
5). Repeat above procedures until all frequency measured was complete.

6.4.4 Test Results

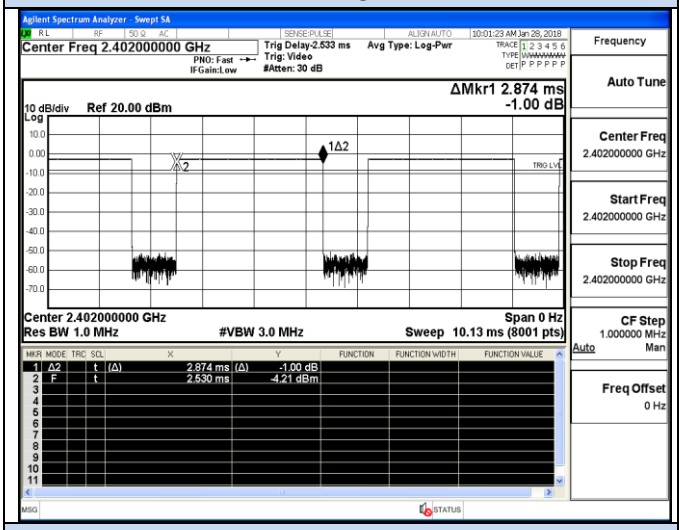
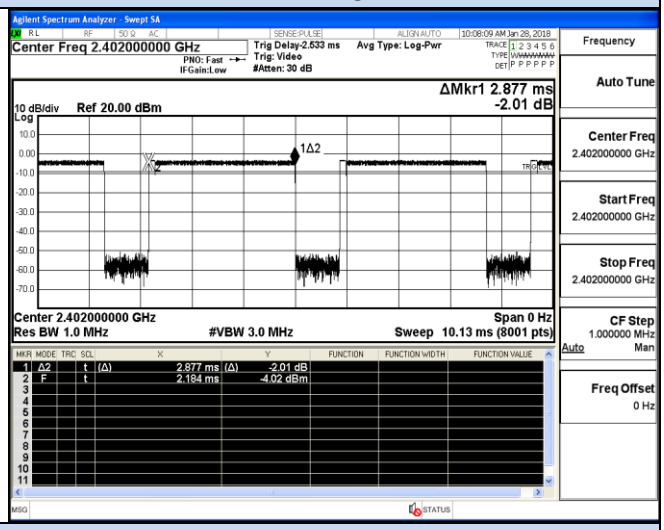
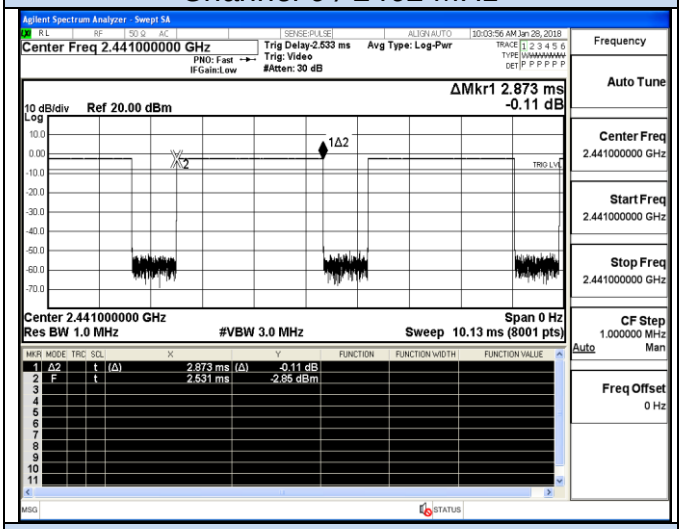
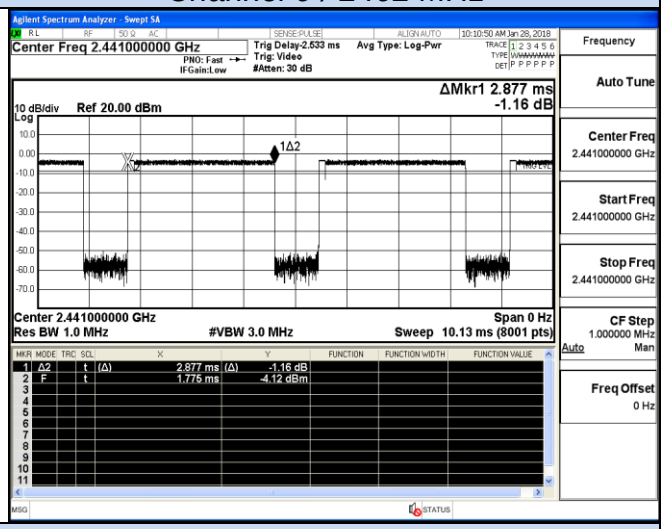
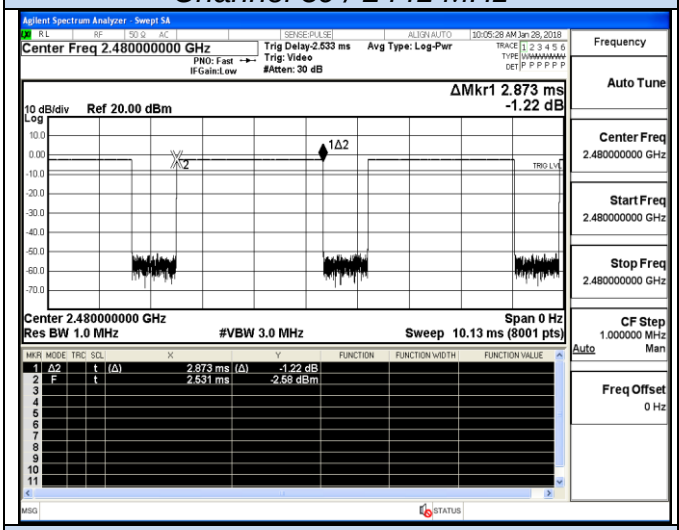
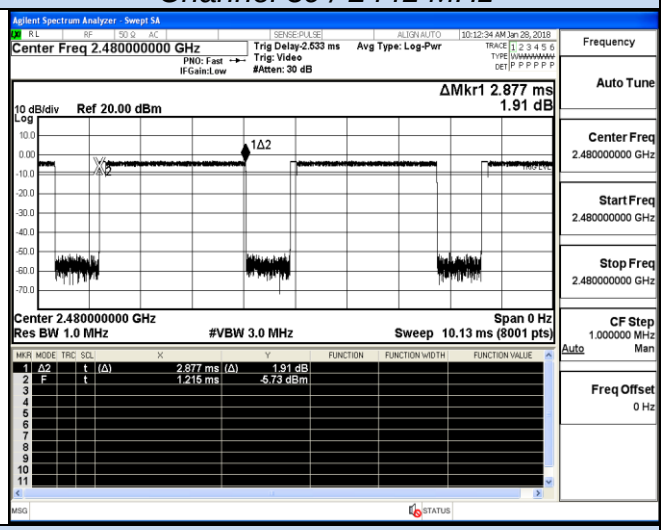
The Dwell Time=Burst Width*Total Hops. The detailed calculations are showed as follows:
The duration for dwell time calculation: 0.4[s]*hopping number=0.4[s]*79[ch] =31.6[s*ch];
The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and a hopping rate of 1600 [ch*hop/s] for all channels. So the final hopping rate for all channels is 1600/6=266.67 [ch*hop/s]
The hops per second on one channel: 266.67 [ch*hops/s]/79 [ch] =3.38 [hop/s];
The total hops for all channels within the dwell time calculation duration: 3.38 [hop/s]*31.6[s*ch]=106.67 [hop*ch];
The dwell time for all channels hopping: 106.67 [hop*ch]*Burst Width [ms/hop/ch].

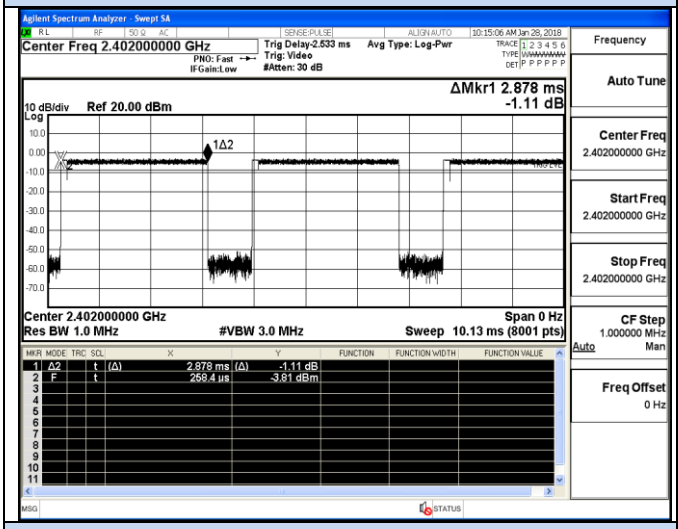
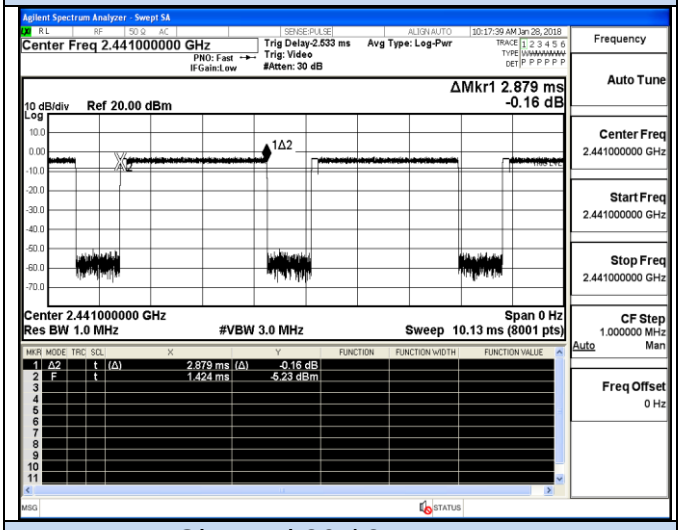
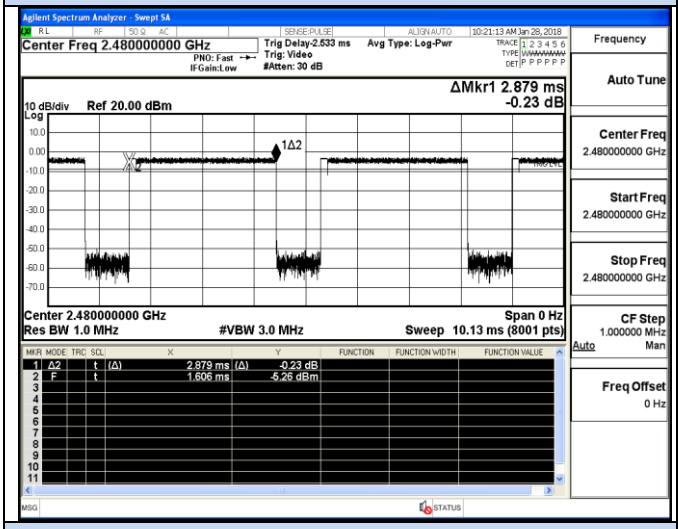
Mode	Burst Type	Frequency (MHz)	Pulse Width (ms)	Dwell Time (S)	Limit (S)	Verdict
GFSK	DH5	2402	2.87	0.306	0.4	PASS
		2441	2.87	0.306	0.4	PASS
		2480	2.87	0.306	0.4	PASS
π/4-DQPSK	2DH5	2402	2.87	0.306	0.4	PASS
		2441	2.87	0.306	0.4	PASS
		2480	2.87	0.306	0.4	PASS
8DPSK	3DH5	2402	2.87	0.306	0.4	PASS
		2441	2.87	0.306	0.4	PASS
		2480	2.87	0.306	0.4	PASS

Remark:
1. *Test results including cable loss;*
2. *Please refer to following plots;*
3. *Measured at difference Packet Type for each mode and recorded worst case for each mode.*
4. *Dwell Time Calculate formula:*
   DH1: Dwell time=Pulse time (ms) × (1600 ÷ 2 ÷ 79) ×31.6 Second
   DH3: Dwell time=Pulse time (ms) × (1600 ÷ 4 ÷ 79) ×31.6 Second

DH5: Dwell time=Pulse Time (ms) × (1600 ÷ 6 ÷ 79) ×31.6 Second

5. *Measured at low, middle and high channel, recorded worst at middle channel;*

Dwell time	
GFSK	π/4-DQPSK
DH5	2DH5
	
Channel 0 / 2402 MHz	Channel 0 / 2402 MHz
	
Channel 39 / 2441 MHz	Channel 39 / 2441 MHz
	
Channel 78 / 2480 MHz	Channel 78 / 2480 MHz

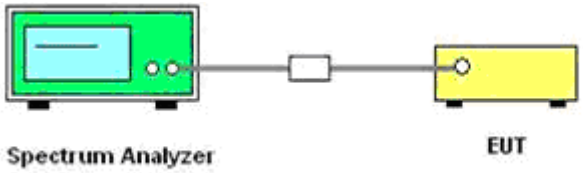
Dwell time	
8DPSK	
3DH5	
	
Channel 0 / 2402 MHz	
	
Channel 39 / 2441 MHz	
	
Channel 78 / 2480 MHz	

6.5 Conducted Spurious Emissions and Band Edges Test

6.5.1 Limit

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

6.5.2 Block Diagram of Test Setup



6.5.3 Test Procedure

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 300 KHz.
Measurements are made over the 9 KHz to 26.5GHz range with the transmitter set to the lowest, middle, and highest channels

6.5.4 Test Results of Conducted Spurious Emissions

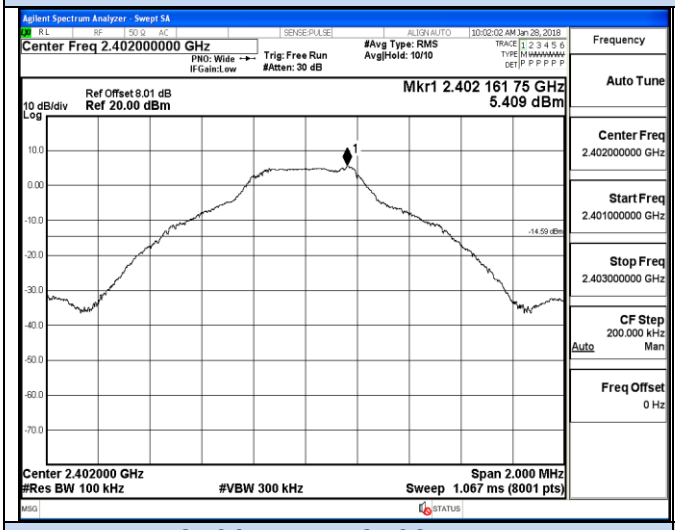
No non-compliance noted. Only record the worst test result (TX-GFSK) in this report. The test data refer to the following page.

Test Mode	Channel	Frequency (MHz)	Spurious RF Conducted Emission (dBc)	Limits (dBc)	Verdict
GFSK	0	2402	<-20	-20	PASS
	39	2441	<-20		
	78	2480	<-20		
π/4-DQPSK	0	2402	<-20	-20	PASS
	39	2441	<-20		
	78	2480	<-20		
8DPSK	0	2402	<-20	-20	PASS
	39	2441	<-20		
	78	2480	<-20		

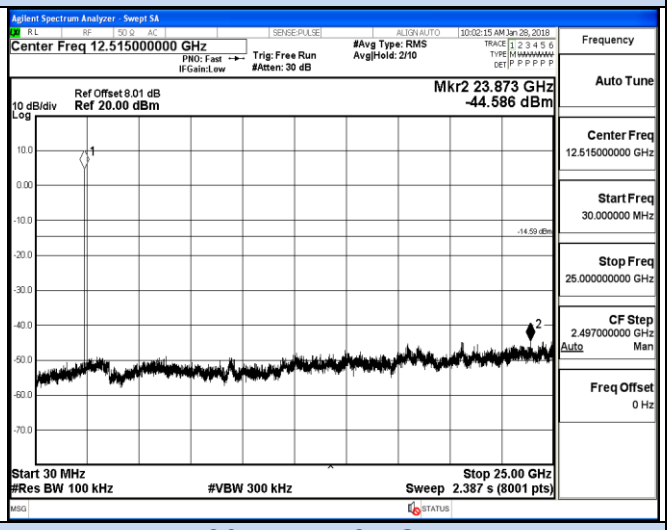
Remark:
1. *Test results including cable loss;*
2. *Please refer to following plots;*
3. *Measured at difference Packet Type for each mode and recorded worst case for each mode.*
4. *Worst case data at DH5 for GFSK, 2DH5 for π/4-DQPSK, 3DH5 for 8DPSK modulation type;*

RF Conducted Spurious Emissions

GFSK – Channel 0 / 2402 MHz

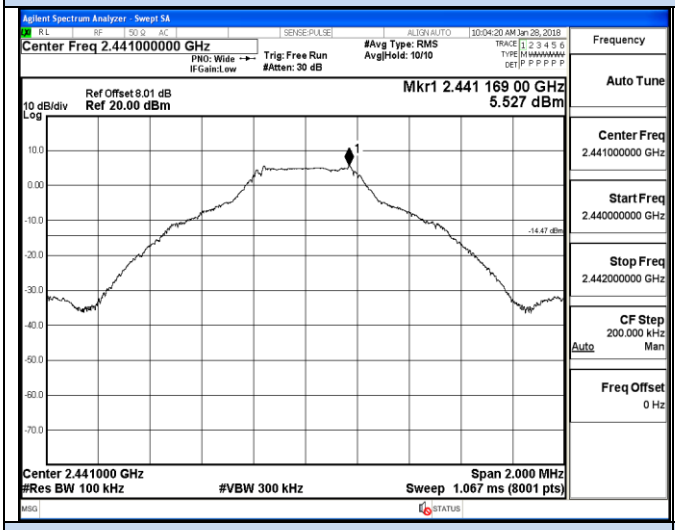


2400 MHz – 2402 MHz

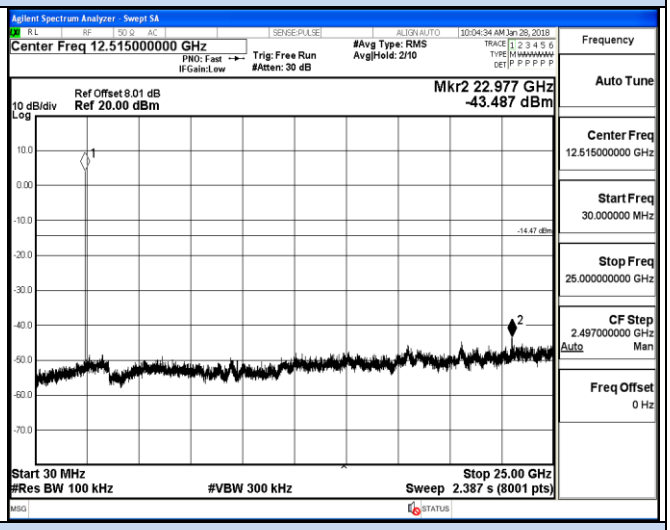


30 MHz – 25 GHz

GFSK – Channel 39 / 2441 MHz

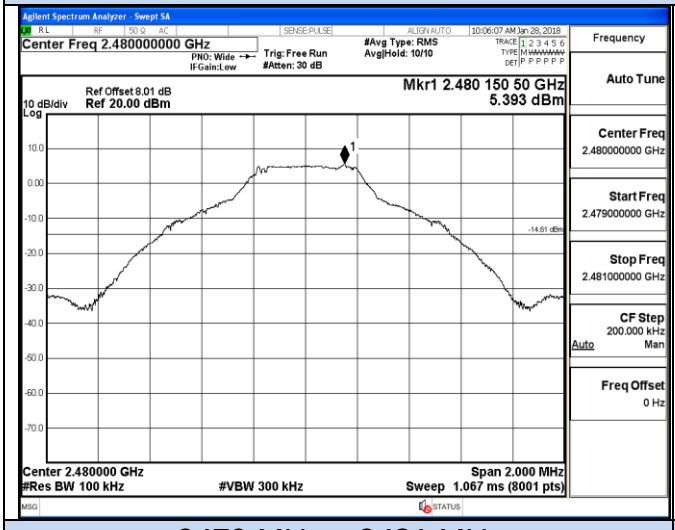


2440 MHz – 2442 MHz

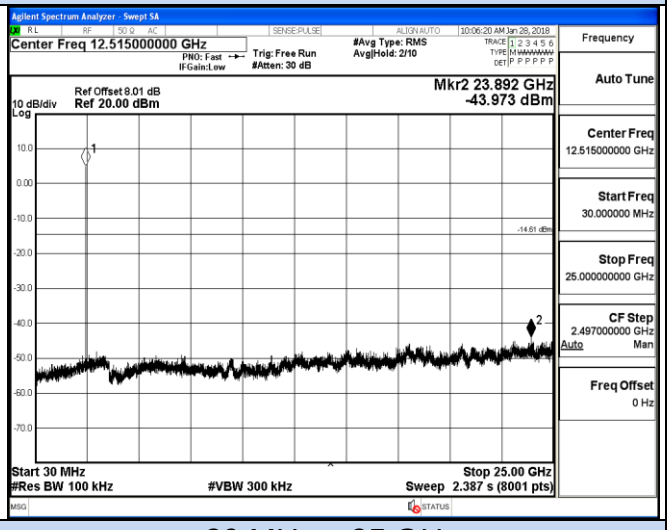


30 MHz – 25 GHz

GFSK – Channel 78 / 2480 MHz



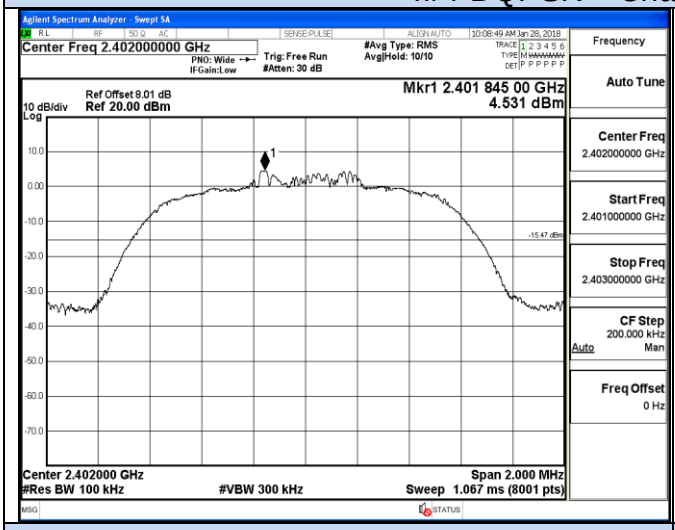
2479 MHz – 2481 MHz



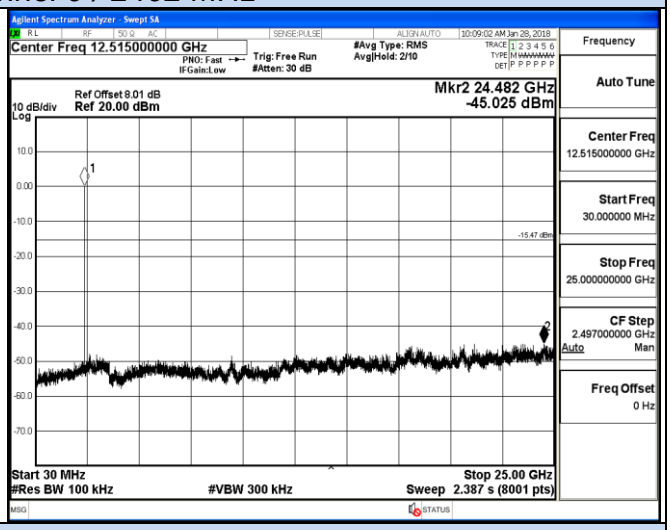
30 MHz – 25 GHz

RF Conducted Spurious Emissions

π/4-DQPSK – Channel 0 / 2402 MHz

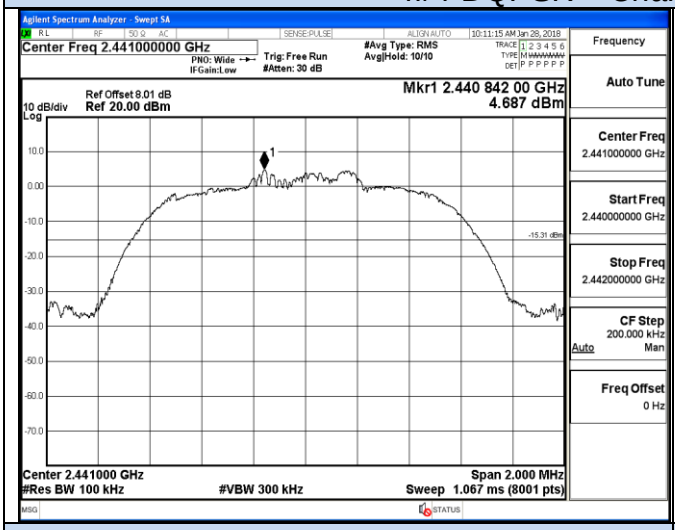


2400 MHz – 2402 MHz

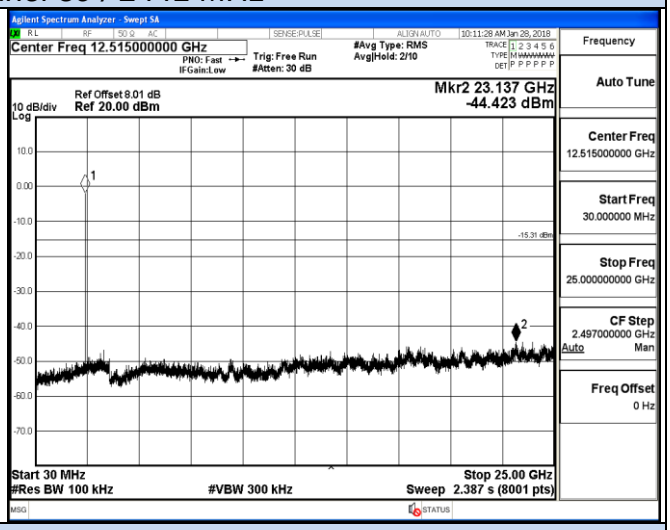


30 MHz – 25 GHz

π/4-DQPSK – Channel 39 / 2441 MHz

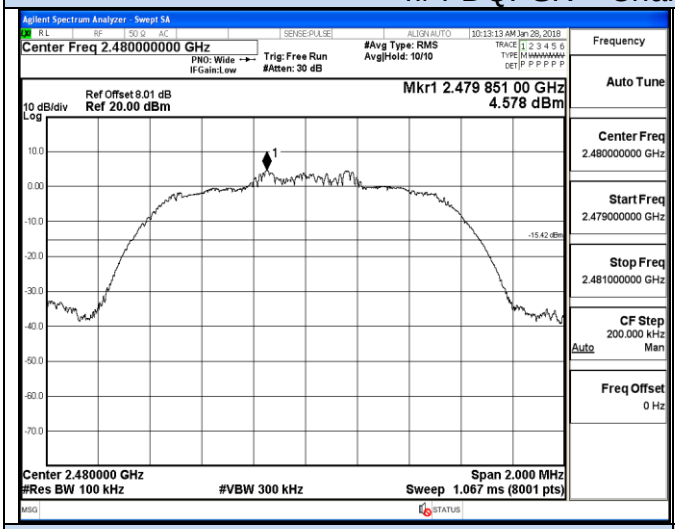


2440 MHz – 2442 MHz

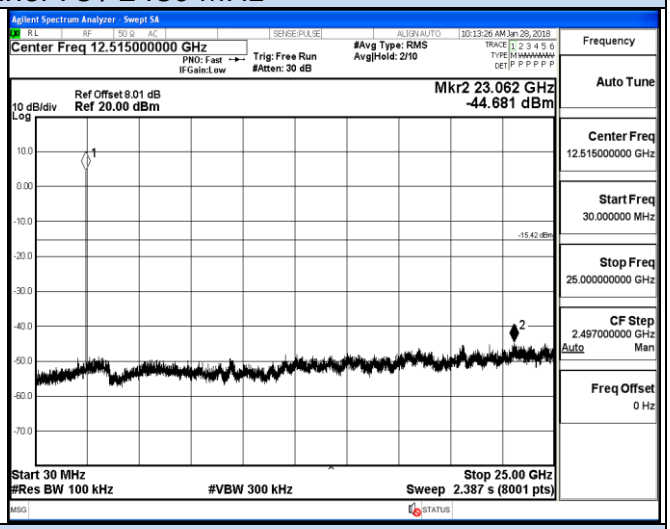


30 MHz – 25 GHz

π/4-DQPSK – Channel 78 / 2480 MHz



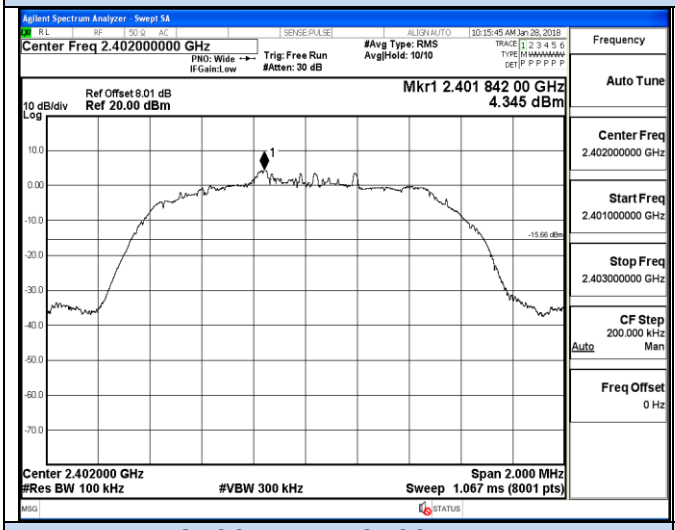
2479 MHz – 2481 MHz



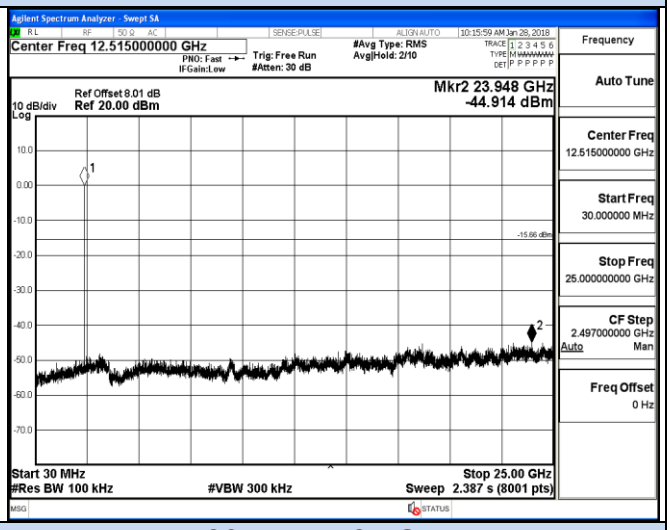
30 MHz – 25 GHz

RF Conducted Spurious Emissions

8DPSK – Channel 0 / 2402 MHz

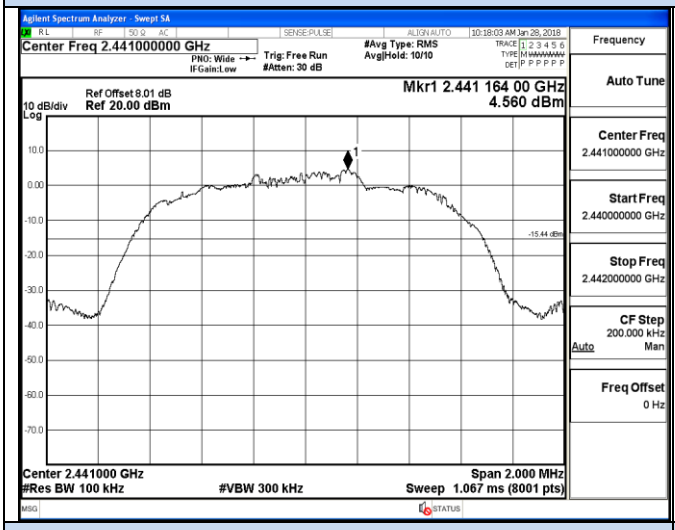


2400 MHz – 2402 MHz

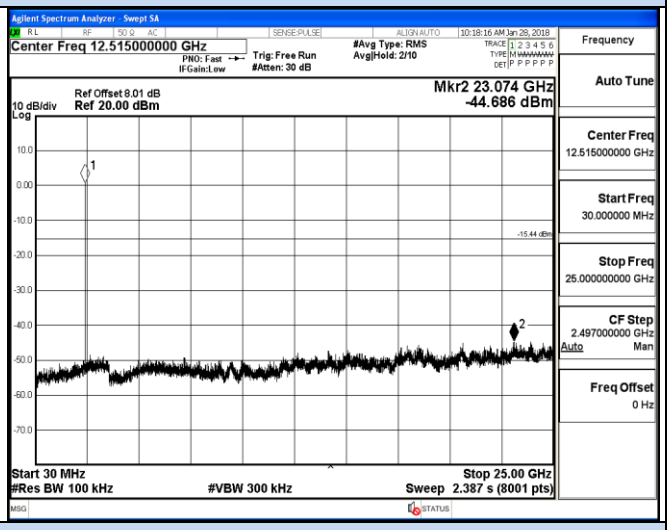


30 MHz – 25 GHz

8DPSK – Channel 39 / 2441 MHz

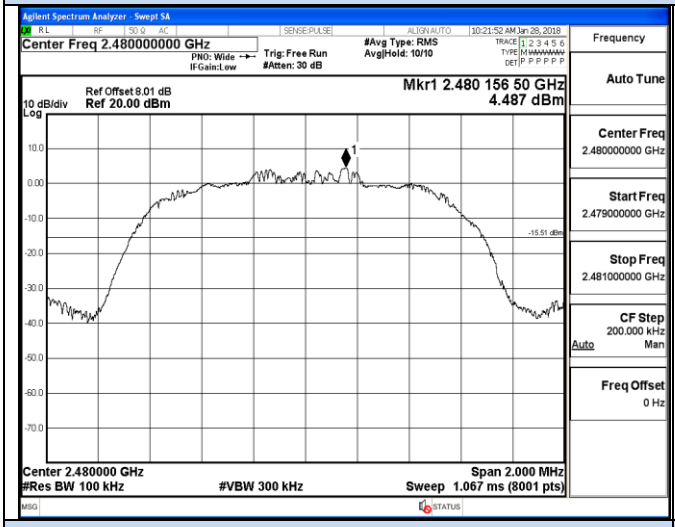


2440 MHz – 2442 MHz

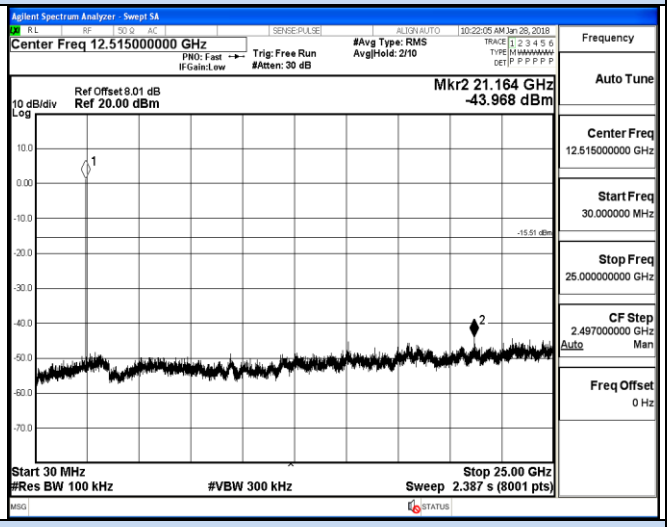


30 MHz – 25 GHz

8DPSK – Channel 78 / 2480 MHz



2479 MHz – 2481 MHz



30 MHz – 25 GHz