

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

Applicant:	Quanta Computer Inc. No. 188, Wenhua 2nd Road, Guishan District, Taoyuan City 33377, Taiwan
Product Name:	Dev Board Mini
Brand Name:	Google
Model No.:	KA1
Model Difference:	N/A
Report Number:	E2/2020/50132
FCC ID:	HFS-NX2KA1
FCC Rule Part:	§15.247, Cat: DSS
Issue Date:	Aug. 11, 2020
Date of Test:	May 27, 2020 ~ Jun. 20, 2020
Date of EUT Received	: May 27, 2020

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Jun Chang

Approved By:

Jim Chang / Manager



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Revision History						
Report Number	Revision	Description	Issue Date	Remark		
E2/2020/50132	Rev.00	Original.	Aug. 11, 2020	Revised By: Stefanie Yu		

Note:

1 · Disclaimer

Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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Table of Contents

1	GENERAL INFORMATION	4
2	SYSTEM TEST CONFIGURATION	6
3	SUMMARY OF TEST RESULTS	9
4	DESCRIPTION OF TEST MODES	. 10
5	MEASUREMENT UNCERTAINTY	. 12
6	CONDUCTED EMISSION TEST	. 13
7	PEAK OUTPUT POWER MEASUREMENT	. 17
8	20DB BANDWIDTH MEASUREMENT	. 19
9	CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT	. 23
10	RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT	. 29
11	FREQUENCY SEPARATION	. 58
12	NUMBER OF HOPPING FREQUENCY	. 60
13	TIME OF OCCUPANCY (DWELL TIME)	. 62
14	ANTENNA REQUIREMENT	. 72

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GENERAL INFORMATION

1.1 **Product description**

Product Name:	Dev Board Mini
Brand Name:	Google
Model No.:	KA1
Model Difference:	N/A
Hardware Version:	N/A
Software Version:	N/A
Power Supply:	5Vdc from Host

Radio Technology:	Bluetooth BR+EDR	
Channel number:	79 channels	
Modulation type:	GFSK + π/4DQPSK + 8DPSK	
Transmit Power: 1.19 dBm		
Frequency Range:	2.402GHz – 2.480GHz	
Dwell Time:	\leq 0.4s	

1.2 **Antenna Designation**

Antenna Type	Supplier	Antenna Part No.	Freq.	Peak Antenna Gain (dBi)	Worst An- tenna Gain
Chip	TDK	N/A	2.4GHz	0.9	-

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Report No.: E2/2020/50132 Page 5 of 72



1.3 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247 FCC KDB 558074 D01 15.247 Meas. Guidance v05r02 ANSI C63.10:2013

1.4 Test Facility

SGS Taiwan Ltd. Central RF Lab (TAF code 3702) No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333

FCC Designation number: TW0028

1.5 Special Accessories

There is no special accessory used while test was conducted.

1.6 Equipment Modifications

There was no modification incorporated into the EUT.

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2 SYSTEM TEST CONFIGURATION

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 which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.3 Radiated Emissions

The EUT is a placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table 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 max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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2.4 **Measurement Results Explanation Example**

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*9m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site. There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

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2.5 **Configuration of Tested System** Fig. 2-1 Conducted (Antenna Port) & Radiated Emission Configuration

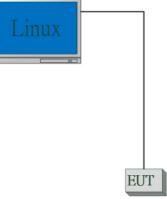


Fig 2-2 Conduction (AC Power Line) Emission

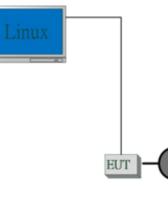


Table 2-1 Equipment Used in Tested System

ltem	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1	Bluetooth Test Software	N/A	N/A	N/A	N/A	N/A
2	Notebook	Dell	P66F	28241894594	N/A	N/A

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SUMMARY OF TEST RESULTS 3

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b)(1)	Peak Output Power	Compliant
§15.247(a)(1)	20dB Bandwidth	Compliant
§15.205 §15.209 §15.247(d)	Conducted & Radiated Band Edge and Spurious Emission	Compliant
§15.247(a)(1)	Frequency Separation	Compliant
§15.247(a)(1)(iii)	Number of hopping frequency Time of Occupancy	Compliant
§15.203	Antenna Requirement	Compliant

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DESCRIPTION OF TEST MODES

4.1 Operated in 2400 ~ 2483.5MHz Band

79 channels are provided for Bluetooth

ITEM	FREQUENCY	ITEM	FREQUENCY	ITEM	FREQUENCY	ITEM	FREQUENCY
1	2402 MHz	21	2422 MHz	41	2442 MHz	71	2462 MHz
2	2403 MHz	22	2423 MHz	42	2443 MHz	72	2463 MHz
3	2404 MHz	23	2424 MHz	43	2444 MHz	73	2464 MHz
4	2405 MHz	24	2425 MHz	44	2445 MHz	74	2465 MHz
5	2406 MHz	25	2426 MHz	45	2446 MHz	75	2466 MHz
6	2407 MHz	26	2427 MHz	46	2447 MHz	76	2467 MHz
7	2408 MHz	27	2428 MHz	47	2448 MHz	77	2468 MHz
8	2409 MHz	28	2429 MHz	48	2449 MHz	78	2469 MHz
9	2410 MHz	29	2430 MHz	49	2450 MHz	79	2470 MHz
10	2411 MHz	30	2431 MHz	50	2451 MHz	70	2471 MHz
11	2412 MHz	31	2432 MHz	51	2452 MHz	71	2472 MHz
12	2413 MHz	32	2433 MHz	52	2453 MHz	72	2473 MHz
13	2414 MHz	33	2434 MHz	53	2454 MHz	73	2474 MHz
14	2415 MHz	34	2435 MHz	54	2455 MHz	74	2475 MHz
15	2416 MHz	35	2436 MHz	55	2456 MHz	75	2476 MHz
16	2417 MHz	36	2437 MHz	56	2457 MHz	76	2477 MHz
17	2418 MHz	37	2438 MHz	57	2458 MHz	77	2478 MHz
18	2419 MHz	38	2439 MHz	58	2459 MHz	78	2479 MHz
19	2420 MHz	39	2440 MHz	59	2460 MHz	79	2480 MHz
20	2421 MHz	40	2441 MHz	60	2461 MHz		

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4.2 The Worst Test Modes and Channel Details

- 1 The EUT has been tested under operating condition.
- 2 Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
- Investigation has been done on all the possible configurations for searching the worst case. 3

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	PACKET TYPE		
RADIATED EMISSION TEST (BELOW 1 GHz)						
Bluetooth	0 to 78	39	8DPSK	3DH5		
RADIATED EMISSION TEST (ABOVE 1 GHz)						
Bluetooth	0 to 78	0,39,78	8DPSK	3DH5		
Note: The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for Bluetooth BR+EDR Transmitter for channel Low, Mid and High, the worst case E2 position was reported.						

	ANTENNA PORT CONDUCTED TEST					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	PACKET TYPE		
Peak Output Power, 20dB Band Width						
Bluetooth	0 to 78	0,39,78	GFSK, π/4-DQPSK, 8-DPSK	DH5/2DH5/3DH5		
Band Edge						
Bluetooth	0 to 78	0,78	GFSK, 8-DPSK	DH5/3DH5		
		Frequency	Separation			
Bluetooth	0 to 78	0,1,2	8-DPSK	3DH5		
		Number of hop	ping frequency			
Bluetooth	0 to 78	0 to 78	8-DPSK	3DH5		
	Time of Occupancy (Dwell time)					
Bluetooth	0 to 78	0,39,78	GFSK, π/4-DQPSK, 8-DPSK	DH1/DH3/DH5 2DH1/2DH3/3DH5 3DH1/2DH3/3DH5		

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MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
Peak Output Power	+/- 0.84 dB
20dB Bandwidth	+/- 51.33 Hz
100 KHz Bandwidth Of Frequency Band Edges	+/- 0.84 dB
Frequency Separation	+/- 51.33 Hz
Number of hopping frequency	+/- 51.33 Hz
Time of Occupancy	+/- 51.33 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

Radiated Spurious Emission Measurement Uncertainty				
	9kHz~30MHz: +-2.3dB			
Polarization: Vertical	30MHz - 180MHz: +/- 3.37dB			
	180MHz -417MHz: +/- 3.19dB			
	0.417GHz-1GHz: +/- 3.19dB			
	1GHz - 18GHz: +/- 4.04dB			
	18GHz - 40GHz: +/- 4.04dB			
	9kHz~30MHz: +-2.3dB			
	30MHz - 167MHz: +/- 4.22dB			
Polarization: Horizontal	167MHz -500MHz: +/- 3.44dB			
Polarization: Horizontal	0.5GHz-1GHz: +/- 3.39dB			
	1GHz - 18GHz: +/- 4.08dB			
	18GHz - 40GHz: +/- 4.08dB			

Note:

- 1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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6 CONDUCTED EMISSION TEST

6.1 Standard Applicable

Frequency within 150 kHz to 30MHz shall not exceed the limit table as below.

Frequency range	Limits dB(uV)			
MHz	Quasi-peak Average			
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Note

1. The lower limit shall apply at the transition frequencies

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

6.2 Measurement Equipment Used

Conducted Emission Test Site						
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.	
LISN	SCHWARZBECK Mess-Elektronik	NSLK8127	974	03/25/2020	03/24/2021	
EMI Test Re- ceiver	R&S	ESCI	101342	04/28/2020	04/27/2021	
Test Software	audix	e3	Ver. 6.11- 20180419c	N.C.R	N.C.R	

6.3 EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI 63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

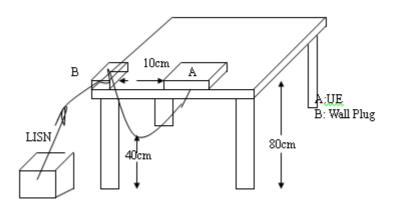
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6.4 Test SET-UP (Block Diagram of Configuration)



6.5 Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plan.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

6.6 Measurement Result

Note: Refer to next page for measurement data and plots. Note2: The * reveals the worst-case results that closet to the limit.

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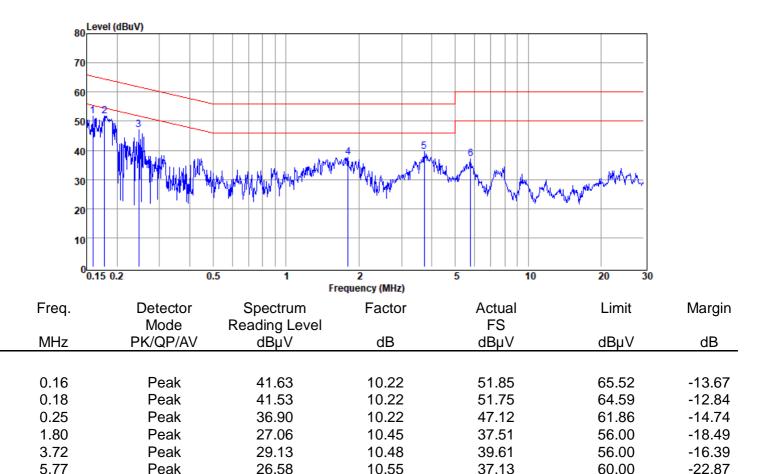
AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number Test Mode Power Probe

:E2/2020/50132 :BT :120V/60Hz :L1

Test Date Temp./Humi. Engineer

:2020-06-19 :25.2/59 :Kailin



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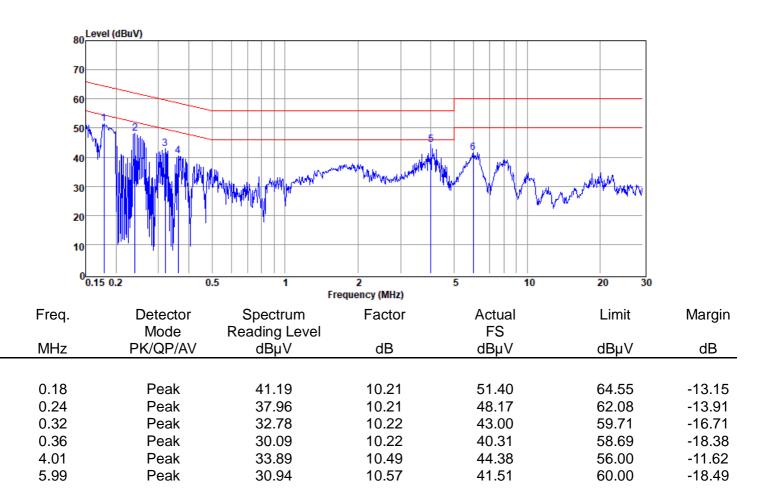
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Report Number	:E2/2020/50132	Test Date
Test Mode	:BT	Temp./Humi.
Power	:120V/60Hz	Engineer
Probe	:N	

Test Date	:2020-06-19
Temp./Humi.	:25.2/59
Engineer	:Kailin



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7 PEAK OUTPUT POWER MEASUREMENT

7.1 Standard Applicable

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, The Limit: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: The Limit: 0.125 Watts. The power limit for 1Mbps is 1watt, and 2Mbps, 3Mbps and AFH mode are 0.125 watts.

7.2 Measurement Equipment Used

	Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.	
Power Meter	Anritsu	ML2496A	1326001	08/05/2019	08/04/2020	
Power Sensor	Anritsu	MA2411B	1315048	08/05/2019	08/04/2020	
Power Sensor	Anritsu	MA2411B	1315049	08/05/2019	08/04/2020	
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020	

7.3 Test Set-up:

EUT	Attenuator	Power Sensor		Power Meter
-----	------------	--------------	--	-------------

7.4 Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10 Measurement Guidelines.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Max Hold, Detector = Peak, RBW >=20dB bandwidth)
- 4. Record the max. reading.
- 5. Repeat above procedures until all default test channel is completed.

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7.5 Peak & Average Power Measurement Result

1M BR mode (Peak):

СН	Freq. (MHz)	Peak Output Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	1.15	1.303	125
Mid	2441	0.51	1.125	125
High	2480	-0.14	0.968	125

2M EDR mode (Peak):

СН	Freq. (MHz)	Peak Output Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	1.16	1.306	125
Mid	2441	0.52	1.127	125
High	2480	-0.10	0.977	125

3M EDR mode (Peak):

СН	Freq. (MHz)	Peak Output Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	1.19	1.315	125
Mid	2441	0.58	1.143	125
High	2480	-0.09	0.979	125

NOTE: cable loss as 0.5dB that offsets in the spectrum

1M BR mode (Average):

СН	Freq. (MHz)	Max. Output include tune up tolerance Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	0.88	1.223	125
Mid	2441	0.27	1.063	125
High	2480	-0.36	0.920	125

2M EDR mode (Average):

СН	Freq. (MHz)	Max. Avg.Output include tune up tolerance Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	-1.93	0.641	125
Mid	2441	-2.35	0.582	125
High	2480	-3.14	0.485	125

3M EDR mode (Average):

СН	Freq. (MHz)	Max. Avg.Output include tune up tolerance Power (dBm)	Output Power (mW)	Limit (mW)
Low	2402	-1.99	0.632	125
Mid	2441	-2.55	0.555	125
High	2480	-3.15	0.484	125

*Note: Max. Output include tune up tolerance Power measured by using average detector.

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8 20dB BANDWIDTH MEASUREMENT

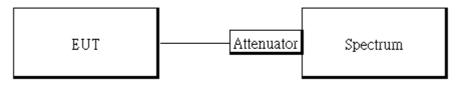
8.1 Standard Applicable

For frequency hopping systems operating in the 2400 MHz-2483.5 MHz no limit for 20dB bandwidth.

8.2 Measurement Equipment Used

	Con	ducted Emission	Test Site		
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020

8.3 Test Set-up



8.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set the spectrum analyzer as RBW=10 kHz (1 % of 20 dB Bandwidth.), VBW = 30 kHz, Span= large enough to capture all products of the modulation process, Sweep=auto, Detector = Peak, and Max hold for 20dB Bandwidth test.
- 5. Mark the peak frequency and -20dB (upper and lower) frequency
- 6. Repeat above procedures until all test default channel is completed

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8.5 20dB Bandwidth

GFSK

СН	20 dB BW (MHz)	2/3 BW (MHz)
Low	0.9234	0.62
Mid	0.9241	0.62
High	0.9237	0.62

π/4-DQPSK

СН	20 dB BW (MHz)	2/3 BW (MHz)
Low	1.202	0.80
Mid	1.201	0.80
High	1.202	0.80

8-DPSK

СН	20 dB BW (MHz)	2/3 BW (MHz)
Low	1.245	0.83
Mid	1.243	0.83
High	1.244	0.83

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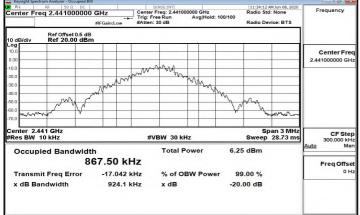
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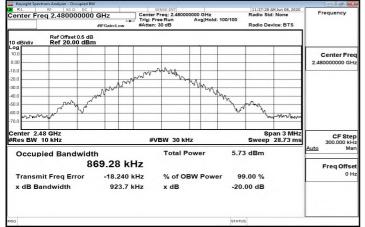
FCC_15_247_BT\OBW 20dB_GFSK_1M_DH5_2402MHz

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Occup	ied Bandwidt	h		Total	Powe	r	6.5	7 dBm		Auto	Mai	
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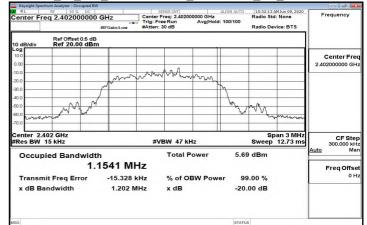
FCC_15_247_BT\OBW 20dB_GFSK_1M_DH5_2441MHz



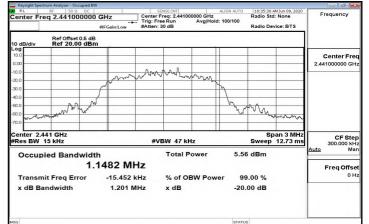
FCC_15_247_BT\OBW 20dB_GFSK_1M_DH5_2480MHz



FCC_15_247_BT\OBW 20dB_π/4DQPSK_2M_2402MHz



FCC_15_247_BT\OBW 20dB_π/4DQPSK_2M_2441MHz



FCC_15_247_BT\OBW 20dB_π/4DQPSK_2M_2480MHz



FCC_15_247_BT\OBW 20dB_8DPSK_3M_DH5_2402MHz

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RL	RF 50 Ω DC		SENSE:IN		ALIGN AUTO		Jun 09, 2020	English
Center Fre	aq 2.402000000	GHz #IFGain:Low		402000000 GHz Avg Hold	d: 100/100	Radio Std: Radio Devi		Frequency
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	1.	1541 M	Hz					Freq Offse
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x dB Ba	ndwidth	1.245 N	ИHz xd	в	-20.	00 dB		
56					STATU			

FCC_15_247_BT\OBW 20dB_8DPSK_3M_DH5_2441MHz

Keysight Spectrum Analyzer - Occupied BW				
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Ref Offset 0.5 dB 10 dB/div Ref 20.00 dBm				
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Center 2.441 GHz Res BW 15 kHz		#VBW 47 kHz	Span 3 Sweep 12.7	3 ms 300.000 kH
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150			STATUS	

FCC_15_247_BT\OBW 20dB_8DPSK_3M_DH5_2480MHz

RL	RF 50 Ω DC			SENSE:INT		ALIGN AUTO		AM Jun 09, 2020	
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	nit Freq Error andwidth	-14.156 1.244	6 kHz	% of C x dB	BW Powe		9.00 % 00 dB		Freq Offset 0 Hz
56						STATU	s		

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9 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

9.1 Standard Applicable

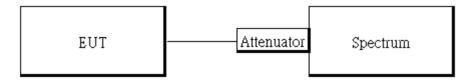
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. 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 in §15.209(a).

9.2 Measurement Equipment Used

	Condu	ucted Emission	Test Site			
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020	
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020	
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020	

9.3 Test SET-UP

fullest extent of the law



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9.4 **Measurement Procedure**

9.4.1 **Conducted Band Edge:**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set center frequency of spectrum analyzer = operating frequency.
- 5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Sweep = auto
- 6. Mark Peak, 2.3999GHz and 2.4836GHz and record the max. level.
- 7. Repeat above procedures until all frequency measured were complete.

9.4.2 Conducted Spurious Emission:

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. The testing follows ANSI C63.10:2013.
- Set RBW = 100 kHz & VBW = 300 kHz, Detector = Peak, Sweep = Auto
- 4. Allow trace to fully stabilize.
- 5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
- 6. Repeat above procedures until all default test channel measured were complete.

9.5 **Measurement Result**

See next page for test plots.

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Report No.: E2/2020/50132 Page 25 of 72

FCC_15_247_BT\Band Edge_GFSK_1M_DH5_2402MHz

	11:25:45 AM Jun 08, 2020		SE:INT	CC3		0 Q DC	RE 5	-		R
Frequency	TRACE 1 2 3 4 5 6 TYPE M	Type: Log-Pwr			GHz	000000 G		Fre		
Auto Tun	DET P NNNNN			#Atten: 3	PNO: Fast - IFGain:Low					
Auto Tun	3 2.390 00 GHz -61.63 dBm	Mkr3					Ref Offset Ref 20.0		B/di	
Center Fre	1									.og
2.365000000 GH	X					-	-		-	0.00
and the second	DL1 -19.76 dBm									10.0 20.0
Start Fre 2.310000000 GH										30.0
2.0100000000					-	-	-		-	40.0
Stop Fre		▲3			1	-			-	50.0
2.420000000 GH	of hereare approximation	monoral stationary	appenen anteresticat	no ophorida and a	THAN GUT DIST MANY	ways a share the set	edution of	-reactioned	F .	60.0 70.0
								_		
	Span 110.0 MHz					z	500 GH			
11.000000 MH	0.53 ms (1001 pts)		FUNC	W 300 kHz	#VB	2	0 kHz	W 1	s B	Re
11.000000 MH	0.53 ms (1001 pts)	Sweep 10		Y 0.24 dE	2 18 GHz	× 2.402	00 kHz		SB MODE	Re MKR
11.000000 MH <u>Auto</u> Ma	0.53 ms (1001 pts)		m	Y		× 2.402 2.399	0 kHz	W 1	s B	#Re
11.000000 MH Auto Ma Freq Offse	0.53 ms (1001 pts)		m	0.24 dE -58.18 dE	2 18 GHz 9 90 GHz	× 2.402 2.399	00 kHz	W 1	N N	Re 1 2 3 4 5
11.000000 MH <u>Auto</u> Ma Freq Offs 0 H	0.53 ms (1001 pts)		m	0.24 dE -58.18 dE	2 18 GHz 9 90 GHz	× 2.402 2.399	00 kHz	W 1	N N	Re 1 2 3 4 5 6 7
Freq Offse 0 ⊢ Scale Typ	0.53 ms (1001 pts)		m	0.24 dE -58.18 dE	2 18 GHz 9 90 GHz	× 2.402 2.399	00 kHz	W 1	N N	#Re 1 2 3 4 5 6
11.000000 MH <u>Auto</u> Ma Freq Offs 0 H	0.53 ms (1001 pts)		m	0.24 dE -58.18 dE	2 18 GHz 9 90 GHz	× 2.402 2.399	00 kHz	W 1	N N	Re 1 2 3 4 5 6 7 8 9

FCC_15_247_BT\Band Edge_GFSK_1M_DH5_2480MHz

5 6 Frequency	M Jun 08, 2020 CE 1 2 3 4 5 6 PE M WWWWW ET P N N N N N	TRAC	: Log-Pwr	Avg Ty	SE:INT			000 GHz	50 Ω		R		RL
N N	PE NWWWW	TY											
						#Atten: 30	Fast ++-	PNO: IFGair					
12	600 GHz 48 dBm		Mkr3						et 0.5			Vdiv	0 dB
Center Fre													og 10.0
2.487500000 GH									1		_	-	0.00
Brind Start Fre	DL1 -20.59 dBm								1				20.0
2.475000000 GH								6	1				10.0
Stop Fre	and the second	ann	national productions			*****	A. Streen	human	/	m	way	maria	50.0 50.0
2.500000 MI	25.00 MHz (1001 pts)		Sweep 2.			300 kHz	#VBW			50 G) kHz			
Auto Ma	ION VALUE	FUNCTI	ICTION WIDTH	CTION F		Y		X			RC SC	IODE T	
Freq Offs	E				m	-0.59 dB -58.67 dB -60.48 dB	+z	2.480 150 G 2.483 500 G 2.483 600 G			1 1		2 3 4 5
Scale Typ					-		-				-	-	6 7 8
								-				-	9
-						117							

FCC_15_247_BT\Band Edge_8DPSK_3M_DH5_2402MHz

Keysight Spectrum Analyzer - Sw	ept SA				- 🗟 💌
RL RF 50Ω		SENSE:INT	ALIGN AUTO	10:40:58 AM Jun 09, 2020	Frequency
Center Freq 2.36500	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
Ref Offset 0. 0 dB/div Ref 20.00			Mkr	3 2.390 00 GHz -60.71 dBm	Auto Tun
0.00 10.0					Center Fre 2.365000000 GH
20.0				DL1 -20.11 dBm	Start Fre 2.310000000 GH
50.0 50.0	พที่หาระสุดาร์การเหตุการ	aahaanaladkorooniindaa			Stop Fre 2.42000000 GH
enter 2.36500 GHz Res BW 100 kHz	#VBW	300 kHz		Span 110.0 MHz 0.53 ms (1001 pts)	CF Ste 11.000000 MH Auto Ma
KR MODE TRC SCL	X		UNCTION FUNCTION WIDTH	FUNCTION VALUE	
1 N 1 f (Δ) 2 N 1 f 3 N 1 f (Δ) 4 5 6	2.401 96 GHz (Δ) 2.399 90 GHz 2.390 00 GHz (Δ)	-0.11 dBm -58.59 dBm -60.71 dBm			Freq Offs 0 H
7 8 9 10					Scale Typ
11				*	
sg			STATUS		

FCC_15_247_BT\Band Edge_8DPSK_3M_DH5_2480MHz

Keysight Spectrum Analyzer - Swept SA					- 9 ×
RL RF 50Ω DC		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	10:49:16 AM Jun 09, 2020 TRACE 1 2 3 4 5 6	Frequency
Center Freq 2.48750000	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TYPE MWWWW DET P NNNNN	
Ref Offset 0.5 dB I0 dB/div Ref 20.00 dBm			Mkr3	2.483 600 GHz -61.06 dBm	Auto Tune
					Center Fre 2.487500000 GH
20.0				DL1 -20.64 dBm	Start Fre 2.475000000 GH
50.0 60.0	Weren Marrie	month and the second second	and all and a second	๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛	Stop Fre 2.500000000 GH
enter 2.48750 GHz Res BW 100 kHz		300 kHz	Sweep 2.	Span 25.00 MHz 400 ms (1001 pts)	CF Ste 2.500000 MH Auto Ma
	80 150 GHz (Δ)	-0.64 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	
2 N 1 f 2.4	83 500 GHz 83 600 GHz (Δ)	-60.22 dBm -61.06 dBm			Freq Offse 0 H
7 8 9					Scale Type
10				· · ·	Log <u>Li</u>
				•	
sg			STATUS		

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Report No.: E2/2020/50132 Page 26 of 72

FCC 15 247 BT\Hopping Band Edge GFSK 1M DH5 2402MHz

RL		um Analyzer - Sv										6
			a DC			SENSE	:INT				AM Jun 08, 2020	Frequency
ente	r Fre	q 2.3650	00000 GH			Trig: Free R		Avg Type	: Log-Pwr	TR	ACE 1 2 3 4 5 6	
			P	NO: Fast Gain:Low	+	#Atten: 30 d					DET P NNNN	
0 dB/d		Ref Offset 0 Ref 20.00							Mkı		00 GHz	
og						1						
10.0			-								1	Center F
0.00				-	-					11004/	delibertheaset	2.365000000
10.0										I MAYO	$\mathcal{W}(\mathcal{U},\mathcal{W})$	
										1 Man	1991,1949,194	
20.0											1	Start F
30.0				-							-	2.310000000
40.0		-		-							-	
50.0										2		
				1.2.2.2		Courses D			▲3	0		Stop F
60.0 - 44	traduleur.	and make way as		vine state	Marroys	description of the second of the	- manual manife	mbhanhant		- traff		2.420000000
70.0		-	-	-	-					-	-	
	- 0.00	500 GHz			_					-	440.0 8411	
					-	300 kHz			Swoon 1		110.0 MHz	
	-	00 kHz		#VI	DAA	300 KHZ					(1001 pts)	
MKR MOD	DE TRC	SCL	×			Y			ICTION WIDTH		(1001 pts)	Auto
MKR MOD	DE TRC		2.414 0	06 GHz (Y 0.34 dBn	n				,	Auto
1 N 2 N 3 N	DE TIRC	sel f (Δ)	2.414 0	06 GHz (Δ)	Y	n				,	
MKR MOD 1 N 2 N 3 N 4	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Auto
1 N 2 N 3 N 4 5	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Auto Freq Off
1 N 2 N 3 N 4 5 6 7	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Freq Off
1 N 2 N 3 N 4 5 6 7 8	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Auto Freq Off
1 N 2 N 3 N 4 5 6 7 8 9	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Freq Off
1 N 2 N 3 N 4 5 6 7 8 9	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Freq Off
1 N 2 N 3 N 4 5 6 7 8	DE TIRC	sel f (Δ) f	2.414 0	06 GHz (Δ)	0.34 dBm -58.98 dBm	n				,	Freq Off

FCC_15_247_BT\Hopping Band Edge_GFSK_1M_DH5_2480MHz

									manyaer - Swe		in opeca		
Frequency	M Jun 08, 2020 CE 1 2 3 4 5 6	TRA	pe: Log-Pwr	Avg T	NSE:INT			DC 0000 GH	50 Ω 2.48750	RF	r Fre		XI R Cen
	PE MWWWWW ET P NNNNN	TY D				#Atten: 3	Fast ++-	PM					
Auto Tur	600 GHz 77 dBm		Mkr3						Offset 0.5 20.00 d			B/div	
Center Fre 2.487500000 GH								1	2 ¹ \ A (ς {	Λ		10.00 0.00
Start Fre 2.475000000 GH	DL1 -20.90 dBm								VV	V	V		20.0 30.0 40.0
Stop Fre 2.50000000 GH	-aret-reparts	manylationeri	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and a second second		**	∮ ³	-h-s				-	50.0 50.0 70.0
CF Ste 2.500000 MH Auto Ma	,	400 ms (Sweep 2			300 kHz	#VBW			00	3W 1	es B	Re
Freq Offs 0 H	ON VALUE	FUNCT	FUNCTION WIDTH	UNCTION	Bm	-0.90 dl -60.51 dl -59.77 dl	Hz	2.477 926 2.483 500 2.483 600	(Δ) (Δ)	f)E TRC 1 1	N N N	1 2 3 4 5 6
Scale Typ													7 8 9 10
	,		STATUS	-		m					1	_	4 MSG

FCC_15_247_BT\Hopping Band Edge_8DPSK_3M_DH5_2402MHz

	t Spectro		zer - Sweg									1	- 1 1 2
enter	Fre	RF q 2.3	50 Ω 6500	DC 0000 GH	IZ NO: Fast -	Trig: Free		Avg Typ	e: Log-Pwr	TR	AM Jun 09, 2020 ACE 1 2 3 4 5 6 YPE MWWWWW DET P N N N N N		quency
0 dB/di			set 0.5 0.00 d	dB	Gain:Low	#Atten: 30	dB		Mkı	3 2.390	00 GHz		Auto Tur
og 10.0										atarre	1 Aralistational		enter Fre
0.0											Di 1 - 21 - 60 - dBm		Start Fre
0.0 0.0 0.0 toyy 0.0	yaan ya	circontrat	~~4wi7~7	bran den trada		igue, wytrodow	na an a	ingsfelt in standing an		Q ²			Stop Fr
enter Res B	W 10	500 G 00 kH			#VBI	W 300 kHz				0.53 ms	110.0 MHz (1001 pts)	11.0 Auto	CF St 000000 M
AR MODE 1 N 2 N	1 1	f		2.410 9 2.399 9		-1.59 dB -61.36 dB	m	NCTION FL	INCTION WIDTH	FUNC	TION VALUE		
3 N 4 5	1	f		2.399 0	0 GHz	-60.98 dBi	n				E.	Fr	req Offs 0
6 7 8 9												S	cale Ty
0												Log	L
G									STATU	s			

FCC_15_247_BT\Hopping Band Edge_8DPSK_3M_DH5_2480MHz

								Analyzer - :			
Frequency	58 AM Jun 09, 2020		Avg Type: Log-Pv	NSE:INT	SEN	47	Ω DC		RF		RI
Auto Tun	DET P NNNN				Trig: Free #Atten: 30	NO: Fast - Gain:Low	F	2.407	eq i		- CII
Auto Tun	8 600 GHz 0.86 dBm	Mkr3 2.483 -6	Mk					Offset		8/div	
Center Fre 2.487500000 GH							sA	Morr	~	a Ma	og 10.0
Start Fre 2.475000000 GH	DL1 -20.89 dBm							·		n-(* ×11)	10.0 20.0 30.0 40.0
Stop Fre 2.50000000 GH	tong terlisolograpsials	mantheatrangelage	la maria	a pagastan sector		3	h				50.0 50.0
CF Ste 2.500000 MH Auto Ma	n 25.00 MHz s (1001 pts) cononvalue	ep 2.400 m	Sweep		W 300 kHz	#VB	×		100	er 2.4 s BW	Re
	CHON VALUE	N WOTH FOR	- HON FONCTION WIL		-0.88 dE	0 GHz	2.478 0		f	N 1	1
Freq Offse 0 ⊢				Bm	-61.44 dE -60.86 dE		2.483 50		f	N 1 N 1	2 3 4 5 6
Scale Typ										-	6 7 8 9
Log <u>Li</u>	+										11
	•				m			<u></u>			1
		STATUS	STA								ŝG

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Report No.: E2/2020/50132 Page 27 of 72



FCC_15_247_BT\Spurious Emission_GFSK_1M_DH5_2402MHz

- Ø -							Analyzer - Swe			
Frequency	11:27:39 AM Jun 08, 2020			SENSE:IN				RF	-	RL
Trequency	TRACE 1 2 3 4 5 6	Type: Log-Pwr	Avg T	Trig: Free Run	Fast -+-	00000 GH	13.0150	eq '	er Fi	ent
	DET P NNNNN			#Atten: 30 dB	Low	IFGai				
Auto Tur	25.820 8 GHz -50.88 dBm	Mkr4 2					Offset 0.5 f 20.00 c		Vdiv) dE
Center Fre										og 0.0
13.015000000 GH							1	01		0.00
13.013000000 GP								Ň	1.2	0.0
/ / / / / / /	DL1 -21.70 dBm			1.1.1.1		1				0.0
Start Fre				1		1			0	0.0
30.000000 MH										0.0
										0.0
	4					(~ ~ 1
Stop Fre	4	ورية أفاستخفارا فعقيها أني ورو	فرم و فعلوه و الرقي	فبطور ومرود ومرود والم	and and and					0.0
Stop Fre 26.000000000 GF				interior and a state	yn (el je			-		0.0 0.0 0.0
26.00000000 GH	Span 25.97 GHz				i de la constante de				er 13	0.0 0.0 ent
26.00000000 GH CF Ste 2.597000000 GH	4 Span 25.97 GHz 82 s (30001 pts)			300 kHz	#VBW				er 13 BW	0.0 0.0 ent
26.00000000 GH			FUNCTION	Y		×	kHz	00	BW	ent Res
26.00000000 GF CF Ste 2.597000000 GF <u>Auto</u> Ma	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm	Hz (Δ)	2.401 9 0	kHz	00	BW N 1	ent Res
26.00000000 GH CF Ste 2.597000000 GH	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz	00 f	BW N 1 N 1 N 1	0.0 0.0 ent Res
26.00000000 GF CF Ste 2.597000000 GF <u>Auto</u> Ma	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm	Hz (Δ) Hz Hz (Δ)	2,401 9 C 4,804 0 C	kHz (Δ)	00 f	BW	0.0 0.0 ent Res 1 2 3
26.00000000 GF CF Ste 2.597000000 GF <u>Auto</u> Ma	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz (Δ)	00 f f	BW N 1 N 1 N 1	0.0 0.0 ent Res 1 2 3 4 5
25.00000000 GF 2.597000000 GF <u>Auto</u> Me Freq Offs	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz (Δ)	00 f f	BW N 1 N 1 N 1	0.0 ent Res 1 2 3 4 5 6 7
26.00000000 GF CF Ste 2.597000000 GF <u>Auto</u> Ma	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz (Δ)	00 f f	BW N 1 N 1 N 1	0.0 0.0 ent Res 1 2 3 4 5 6 7 8
25.00000000 GF 2.597000000 GF <u>Auto</u> Me Freq Offs	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz (Δ)	00 f f	BW N 1 N 1 N 1	0.0 0.0 ent Res 1 2 3 4 5 6 7 8 9 0
25.00000000 GF 2.597000000 GF <u>Auto</u> Me Freq Offse 0 F Scale Typ	82 s (30001 pts)	Sweep 2.48	FUNCTION	-1.70 dBm -58.61 dBm -63.02 dBm	Hz (Δ) Hz Hz (Δ)	2.401 9 C 4.804 0 C 7.206 0 C	kHz (Δ)	00 f f	BW N 1 N 1 N 1	0.0 0.0 ent Res 1 2 3 4 5 6 7 8 9

FCC_15_247_BT\Spurious Emission_GFSK_1M_DH5_2441MHz

- @ e									Analyzer - Swep			
Frequency	AMJun 08, 2020 ACE 1 2 3 4 5 6 YPE MWWWWW	TRA	: Log-Pwr	Avg Type	e Run	1	Z Fast -+	0000 GH	50 Ω 13.0150	RF Pq	Fre	ter
Auto Tun	B1 3 GHz .39 dBm	4 23.58	Mkr			#Atten: 3	n:Low	IFGa 1B	Offset 0.5 20.00 d			B/div
Center Fre 13.015000000 GF										Q		
Start Fre	01121.42.dBm											_
	♦4											
	and the state of the state	a drive statement	and save dalifying	and a second		alad annual free		and the second	the second		-	
Stop Fre 26.00000000 GF 2.597000000 GF Auto Ma	25.97 GHz 30001 pts)	2.482 s (3	Sweep 2	FUNCTION FUN		300 kHz			kHz	00 501	W 1	MODE
26.00000000 GF CF Ste 2.597000000 GF	30001 pts)	2.482 s (3		FUNCTION FUR	Bm Bm Bm	300 kHz -1.42 dl -58.25 dl -60.87 dl -52.39 dl	GHz (Δ) GHz GHz (Δ)	× 2.440 9 4.882 0 7.323 0 23.581 3	kHz	00	W 1	s Bl

FCC_15_247_BT\Spurious Emission_GFSK_1M_DH5_2480MHz

199 0C 8.015000000 GHz PROF 48 PROF	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr Mkr	11:19:06 445 Jun 06, 2020 TRACEL (2: 3 4 3 5 0 TRACEL (2: 3 4 3	Frequency Auto Turn Center Free 13.015000000 GH Start Free 30.000000 MH
IFGain:Lov		Mkr	4 25.536 9 GHz -51.89 dBm	Center Fre 13.015000000 GH Start Fre
20.00 dBm				13.015000000 GH Start Fre
2. ^3.			DL1 22.08 dBm	
2			4	
				Stop Fre 26.00000000 G
				CF Ste 2.597000000 GI Auto M
Δ) 2.479 8 GHz 4.960 0 GHz	(Δ) -2.08 dBm -59.07 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offs 01
				Scale Typ
H:	z #V 2.479 8 GHz 4.960 0 GHz 7.440 0 GHz	z #VBW 300 kHz 2.479 8 GHz (Δ) -2.08 dBm 4.960 0 GHz (Δ) -59.07 dBm 7.440 0 GHz (Δ) -63.29 dBm	z #VEW 300 kHz Sweep 2.479 8 GHz (a) - 2.03 GBm 4.990 GHz (a) - 2.03 GBm 7.440 GHz (a) - 63.29 dBm 2.5538 9 GHz (a) - 63.29 dBm 2.5538 9 GHz (b) - 61.89 dBm	z #VBW 300 kHz Sweep 2.482 s (30001 pts) x y FUNCTION FUNCTION FUNCTION VALUE 2.479 8 GHz 6.320 8 GHz

FCC_15_247_BT\Spurious Emission_π/4DQPSK_2M_2402MHz

								ot SA	nalyzer - Swe	um A	Spectr	sight
CE 1 2 3 4 5 6	TRAC		Avg Typ				Hz	DC 00000 G	50 Ω 3.0150	q 1	Fre	ter
7 2 GHz	25.567	Mkr4				 W	NO: Fast Gain:Lov	dB				Bidiu
									20.00 0			3/div
DL1 -27.29 dBm												
			and the state				h ytoly	3				
		Sweep 2			300 kHz	/BW	#V					
ON VALUE	FUNCTION	CTION WIDTH	TION FU		Y			×			TRC	
e				m m	-58.49 dE	1.1	0 GHz 0 GHz	4.804		f	1 1 1	ZZZZ
				-		-				_		-
				-		_						
	EII:2:4:5:6 FIP NNNNN 7 2 GHz 81 dBm 0:1:-27:20 db 6 5.97 GHz 0001 pts	-51.81 dBm	Mkr4 25.567 2 GHz -51.81 dBm -1.1.7729.06 -51.81 dBm -1.1.7729.06 -51.81 dBm -1.1.7729.06 -51.81 dBm -1.1.7729.06 -51.81 dBm -1.1.7729.06 -51.81 dBm	Avg Type: Log-Pwr THACE [12 3 4 3 6 THACE [12 3 4 5 THACE [12 3 4 5	Avg Type: Log-Pwr Trace [1,2] a s d Run Trace [1,2] a s d Jab Trace [1,2] a s d Mkr4 25.567 2 GHz -51.81 dBm -51.81 dBm -51.81 dBm -51.81 dBm -51.81 dBm -51.81 dBm -51.87 dBm -51.81 dBm -51.87 dBm -51.81 dBm -51.87 dBm -51.81 dBm -51.97 dBm -51.82 dBm -51.97 dBm -51.82 dBm -51.97 dBm -51.81 dBm -51.97 dBm -51.81 dBm -51.97 dBm -51.82 dBm -51.97 dBm -51.81 dBm -51.97 dBm -51.91 dBm -51.97 dBm -51.91 dBm -51.97 dBm	Avg Type: Log-Pwr Trace [2:2:4:5:0] Trig: Free Run Øxten: 30 dB Mkr4 25.567 2 GHz -51.81 dBm Mkr4 25.567 2 GHz -51.81 dBm Juli - 27.29 de Juli - 27.29 de Span 25.97 GHz 300 kHz	Avg Type: Log-Bwr Trace [1,2,3,4,5,0] Trig: Free Run #Atten: 30 dB Trice [1,2,3,4,5,0] Mkr2 25,567 72 GHz -51.81 dBm -51.81 dBm -51.87 dBm -51.81 dBm -51.87 dBm -51.81 dBm -51.97 dBr -51.81 dBm -51.97 GHz Span 25.97 GHz Sweep 2.482 s (30001 pts) -52.83 dBm -51.97 GHz -52.83 dBm -51.97 GHz -52.84 dBm -51.97 GHz	Ing: Fraction Ing: Fra	DC Stretcht Autor Arro 1602/321 Akt Mo 9, 2020 D0000 GHZ Trigs Free Run Batten: 30 dB Arg Type: Log-Pwr The Case Pwr The	39 0 C State <	RF 39 0 0 0C Street ENT Augunto 102221 Augunto 102	Freq 13.015000000 GHz Trig: Free Run IFGaint.cow Avg Type: Log-Pwr Trig: Free Run ItGaint.cow Trig: Free Run ItGaint.cow Mkr 25,567 2 GHz Ref Offset 0.5 dB Mkr 4 25,567 2 GHz Span 25.97 GHz Span 25.97 GHz 13.02 GHz Sweep 2.482 s (30001 pts) Sweep 2.482 s (30001 pts) TREE REI Coll 24.03 2 GHz Sweep 2.482 s (30001 pts)

FCC_15_247_BT\Spurious Emission_m/4DQPSK_2M_2441MHz

Print Fare Trig: Free Run BRG faar. Low Avg Type: Log-Pwr Trig: Free Run BRG faar. Low Trig: Free Run BRG faar. Low Avg Type: Log-Pwr Trig: Free Run BRG faar. Low Trig: Free Run BRG faar. Low Frequency Frequency Ref Offset0 5 dB 00 00 00 00 00 00 00 00 00 00 00 00 00		020	M lup 09.3	10:36:13 A	UTO	ALIG		INT	SENS			DC	50 Ω	-	RF	1	L	G R
Ref Offset 0.6 dB Mkr4 25.992 2 GHz Auto Tur dBJdr. Ref 20.00 dBm -50.93 dBm -50.93 dBm Center Fr 00 1 1 13.01500000 G 13.015000000 G 00 2 3 1 13.01500000 G 13.015000000 G 00 2 3 4 5 13.015000000 G 00 2 3 4 5 13.015000000 G 00 2 3 4 5 13.015000000 G 00 2 3 4 4 5 5 00 2 3 4 4 5 5 5 00 2 3 4 4 5 <td< th=""><th>Frequency</th><th>156</th><th>CE 1 2 3</th><th>TRAC</th><th></th><th></th><th>Avg</th><th>un</th><th>rig: Free</th><th></th><th>O: Fast</th><th>00000 G</th><th></th><th></th><th></th><th>Fre</th><th></th><th></th></td<>	Frequency	156	CE 1 2 3	TRAC			Avg	un	rig: Free		O: Fast	00000 G				Fre		
Image: Section of the sectio	Auto Tune				/kr4				Rtten: 30		ain:Low	dB					B/div	
D0 D1 - 22 or 3m D1 - 22 or 3m State F r i 00 2 3 0 0 4 4 00 2 3 0 0 4 4 00 2 3 0 0 4 4 00 2 3 0 0 4 4 00 2 3 0 0 0 5 0 0 5 0 0 5 0 0 0 5 0	Center Free 13.015000000 GH:	_												-	Q			0.0
N T Ch (Δ) Z Alege (Δ) <	Start Free 30.000000 MH	dBm	DL1 -27.61			_				-						_		0.0
Important Span 25.97 GHz Span 25.97 GHz CF Str. 12000 Trice Sci. #VBW 300 kHz Sweep 2.482 s (30001 pts) 2.597000000 Git at a stress of a stress o	Stop Fre 26.00000000 GH				,		t bar saits aits An anna Ang a							*			-	1.0
N I	CF Step 2.597000000 GH Auto Ma				ep 2.	Sw			0 kHz	BW 3	#V						ter	
2 N 1 f 4.882 0 GHz 57.83 dBm 1 67.83 dBm 0 N 1 f (1.0) 7.32 30 GHz (1.0) 413 dBm 0 0 0 0 N 1 f 25.992 2 GHz -50.93 dBm 0 0 0 1 1 f 25.992 2 GHz -50.93 dBm 0 0 0 1 1 1 7 25.992 2 GHz -50.93 dBm 0 0 0 0 1 1 1 1 1 1 1 1 0	<u>Nato</u> Mai	•	ON VALUE	FUNCT	иртн	FUNCTIO	NCTION		7 7 61 dB	۵)	CH ₇					TRC		
	Freq Offse 0 H								7.83 dB	Δ)) GHz	4.882			f	1	NN	2
	Scale Typ										_							0
5 STATUS			_					1	m									

FCC_15_247_BT\Spurious Emission_π/4DQPSK_2M_2480MHz

	39 AM Jun 09, 2020	40.00.00	ALIGN AUTO	-	SENSE:IN		Ω DC	Analyzer - :	RF	RL.
Frequency	TRACE 1 2 3 4 5 6	TRA	ype: Log-Pwr	Avg	Trig: Free Run	Hz	6000000 GI			
Auto Tun	564 6 GHz	4 25.56	Mkr		#Atten: 30 dB	Gain:Low	IFG).5 dB	Offset		
	2.30 dBm	-02.				-	dBm	f 20.00	v Rei	B/div
Center Fre 13.015000000 GH				-				1	ġ	
Start Fre 30.000000 MH	UL1 -23395 88m								_	
Stop Fre 26.00000000 GH						3				
								GHz	13.02	
CF Ste 2.59700000 GH	n 25.97 GHz s (30001 pts)		Sweep 2		300 kHz	#VBW			W 100	
		2.482 s (3	Sweep 2	FUNCTION	Y		×	kHz	W 100	es Bi
2.597000000 GH	s (30001 pts)	2.482 s (3		FUNCTION		8 GHz (Δ) 0 GHz 0 GHz (Δ)	2.479 8	kHz	W 100	es Bl
2.59700000 GH Auto Ma Freq Offse 0 H Scale Typ	s (30001 pts)	2.482 s (3		FUNCTION	-3.95 dBm -59.95 dBm -61.84 dBm	8 GHz (Δ) 0 GHz 0 GHz (Δ)	2.479 8 4.960 0 7.440 0	kHz (Δ)	W 100	N N N N
2.597000000 GH <u>Auto</u> Ma Freq Offse 0 H	s (30001 pts)	2.482 s (3		FUNCTION	-3.95 dBm -59.95 dBm -61.84 dBm	8 GHz (Δ) 0 GHz 0 GHz (Δ)	2.479 8 4.960 0 7.440 0	kHz (Δ)	W 100	N N N N

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FCC_15_247_BT\Spurious Emission_8DPSK_3M_DH5_2402MHz

Frequency	:51 AM Jun 09, 2020	10:42:51 A	ALIGN AUTO		SENSE:IN				RF		RL
Frequency	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN	TRAC TVI D	Type: Log-Pwr	Avg	Trig: Free Run	nst 🔸	PNO	13.01500	eq '	er Fre	ente
Auto Tur	732 5 GHz 51.97 dBm		watten: oo ub	IFGain:Low Ref Offset 0.5 dB Ref 20.00 dBm				dB/			
Center Fre 13.015000000 GH											
Start Fre 30.000000 MH	DL1 -26,39 dBm								+		.0
-											
					endergeter og fø		³				.0
Stop Fre 26.00000000 GF CF Ste 2.59700000 GF Auto Ma	an 25.97 GHz s (30001 pts)	2.482 s (3			300 kHz		3	kHz	00	er 13.0 BW 1	ente
26.00000000 GH		2.482 s (3	Sweep 2	FUNCTION	300 KHz	≠vbw	×	kHz	00	er 13.0 BW 1	ente tes
26.00000000 GF CF Ste 2.597000000 GF <u>Auto</u> Ma	s (30001 pts)	2.482 s (3		FUNCTION	300 kHz	ž (Δ)	X 2.401 9 0	kHz	00	er 13. BW 1	ente tes
26.00000000 GH CF Ste 2.597000000 GH	s (30001 pts)	2.482 s (3		FUNCTION	300 KHz	≠VBW z (Δ) z (Δ)	×	kHz (Δ)	00 f	er 13.0 BW 1 000 000 000	
26.00000000 GF 2.597000000 GF <u>Auto</u> Ma	s (30001 pts)	2.482 s (3		FUNCTION	300 kHz -6.39 dBm -58.77 dBm -60.33 dBm	≠VBW z (Δ) z (Δ)	X 2.401 9 (4.804 0 (7.206 0 (kHz (Δ)	00 f f	er 13.0 BW 1 000 000 000	
26.00000000 GF CF Ste 2.59700000 GF <u>Auto</u> Me Freq Offs	s (30001 pts)	2.482 s (3		FUNCTION	300 kHz -6.39 dBm -58.77 dBm -60.33 dBm	≠VBW z (Δ) z (Δ)	X 2.401 9 (4.804 0 (7.206 0 (kHz (Δ)	00 f f	er 13.0 BW 1 000 000 000	

FCC_15_247_BT\Spurious Emission_8DPSK_3M_DH5_2441MHz

- @ ex									nalyzer - Swe		ght Spec	
Frequency	CE 1 2 3 4 5 6	TRAC	LIGN AUTO		ee Run		Iz): Fast -+	00000 GH	50 Ω 3.0150	eq '	er Fr	ent
Auto Tun	1 1 GHz 80 dBm	4 25.85	Mkr		30 dB	#Atten: 3	in:Low	dB	Offset 0.5 20.00 c		div	de
Center Free 13.015000000 GH										g		99 0.0
Start Free 30.000000 MH	DL1 -26.40 dBm											0.0
Stop Fre 26.00000000 GH				ator bigi and		uklan oʻshtorlari Mariyan yanga	n de an estila a			-		0.0
CF Ste 2.597000000 GH Auto Ma	25.97 GHz 30001 pts)	2.482 s (3			Iz	300 kHz	#VBW		kHz	100	er 13. BW 1	Res
	ION VALUE	FUNCTO	CTION WDTH	FUNCTION	d Days	-6.40 d	GHz (A)	X	(Δ)			
Freq Offse 0 H					dBm dBm	-60.47 d -60.49 d -51.80 d	GHz (A)	4.882 0	(Δ) (Δ)	f		2 3 4 5
Scale Typ												6 7 8 9 0
		1	STATUS			u.	1			-	1	G

FCC_15_247_BT\Spurious Emission_8DPSK_3M_DH5_2480MHz

							Analyzer		t Spec		
TRACE 1 2 3 4 5 6			SENSE:IN		GHz	5000000		eq '	Fre		er
Mkr4 25.858 9 GHz -51.86 dBm			#Atten: 30 dB	IFGain:Low #					v	B/div	10 d
							1	0			.og 10.0 0.00
DL1 -29.10 dBm											20.0 30.0 40.0
				a na se a		-	un de	-			50.0 50.0 70.0
2 s (30001 pts)	Sweep 2.48		300 kHz	вw	#V		kHz	100	W 1	s B	Re
	NCTION WIDTH	FUNCTION	-9.10 dBm	(Δ)	79 8 GHz				E TRO	N	MKR 1
			-59.68 dBm -61.63 dBm			4 96		f	1		2
			-51.86 dBm	<u>(Δ)</u>	40 0 GHz 58 9 GHz	7.44	(Δ)	f	1	NN	3 4 5
5				(Δ)		7.44	(Δ)		1		4
	DEL 2010 dBe	Mkr4 25.858 9 GHz -51.86 dBm 	Mkr4 25.858 9 GHz -51.86 dBm -51.86 dBm 	Trig: Free Run Acten: 30 dB Mkr4 25.858 9 GHz -51.86 dBm -51.86 dBm -51.8	Trigi. Free Run SAtten: 30 dB Trigi. Run Calif. Print Run Satten: 30 dB Mkr4 25.858 9 GHz -51.86 dBm Atten: 30 dB Span 25.97 GHz Sweep 2.482 s (30001 pts) Span 25.97 GHz Sweep 2.482 s (30001 pts) Syn 25.97 GHz Sweep 2.482 s (30001 pts)	PROF Fast Trig: Free Run Trig: Minimum Staten: 30 dB Mkr4 25.858 9 GHz -51.86 dBm	Outcome Trig: Free Run Brain tow Trig: Free Run Brain tow	Child I Double PAG Frain - with an analysis Trig Even and the second	Construction Property and the second se	Intel Distribution Processing Processing Processing Ref Offset 0.5 dB Mkr4 25.858 9 GHz -51.86 dBm / Ref 20.00 dBm -51.86 dBm -51.86 dBm 1 - - - 1 - - - - 1 - - - - 1 - - - - - 13.02 GHz Span 25.97 GHz Sweep 2.482 s (30001 pts) - - - 1 - - - - - - - 13.02 GHz #VEW 300 kHz Sweep 2.482 s (30001 pts) - - - - 13.4 4.900 cHz - - - - - -	Ref Offset 0.5 dB Mkr4 25.858 9 GHz B/div Ref Offset 0.5 dB Mkr4 25.868 0 GHz B/div Ref 20,00 dBm -51.86 dBm 1 - - 1 - - 2 - - 2 - - 2 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 2 - - 2 - - 1 - - 1 - -

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10 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

10.1 Standard Applicable

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, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 and limit as below.

And according to §15.33(a) (1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

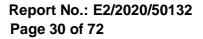
Note:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level ($dB\mu V/m$) = 20 log Emission level ($\mu V/m$)

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10.2 **Measurement Equipment Used**

966 Chamber									
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.				
Broadband An- tenna	SCHWAZBECK	VULB 9168	9168-617	11/04/2019	11/03/2020				
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2019	12/24/2020				
Horn Antenna	Schwarzbeck	BBHA9120D	1187	01/10/2020	01/09/2021				
Loop Antenna	ETS.LINDGREN	6502	143303	04/28/2020	04/27/2021				
3m Site NSA	SGS	966 chamber D	N/A	07/12/2019	07/11/2020				
Spectrum Ana- lyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020				
Pre-Amplifier	EMC Instru- ments	EMC184045B	980135	11/20/2019	11/19/2020				
Pre-Amplifier	EMC Instru- ments	EMC9135	980234	11/20/2019	11/19/2020				
Pre-Amplifier	EMC Instru- ments	EMC12630SE	980271	11/20/2019	11/19/2020				
Attenuator	Woken	WATT-218FS-10	RF25	11/20/2019	11/19/2020				
High Pass Filter	R&S	F13 HPF 3GHz	RF64	11/20/2019	11/19/2020				
Low Pass Filter	EWT	EWT-56-0019	RF46	11/20/2019	11/19/2020				
Notch Filter	EWT	EWT-54-0038	RF55	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17413/4	11/20/2019	11/19/2020				

NOTE: N.C.R refers to Not Calibrated Required.

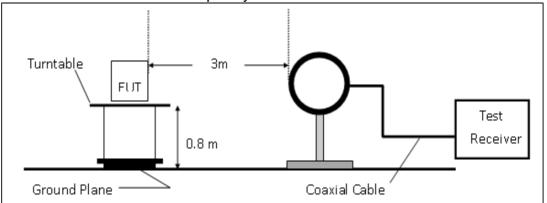
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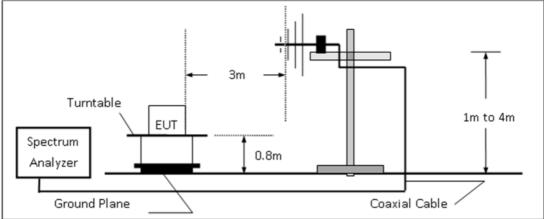


10.3 **Test SET-UP**

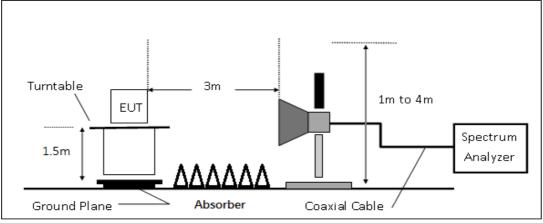
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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10.4 Measurement Procedure

10.4.1 Radiated Emission

- 1. The testing follows the Measurement Procedure of ANSI C63.10:2013.
- The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 2. 1GHz above ground plan.
- The turn table shall rotate 360 degrees to determine the position of maximum emission level. 3.
- 4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 5. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
- 6. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
- 7. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- When measurement procedures for electric field radiated emissions above 1 GHz the EUT 8. measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
- 9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
- 11. Repeat above procedures until all default test channel measured were complete.

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10.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength RA = Reading Amplitude AF = Antenna Factor CL = Cable Attenuation Factor (Cable Loss) AG = Amplifier Gain

The limit of the emission level is expressed in dBuV/m, which converts 20*log(uV/m)

Actual FS($dB\mu V/m$) = SPA. Reading level($dB\mu V$) + Factor(dB) Factor(dB) = Antenna Factor($dB\mu V/m$) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

10.6 Test Results of Radiated Spurious Emissions form 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

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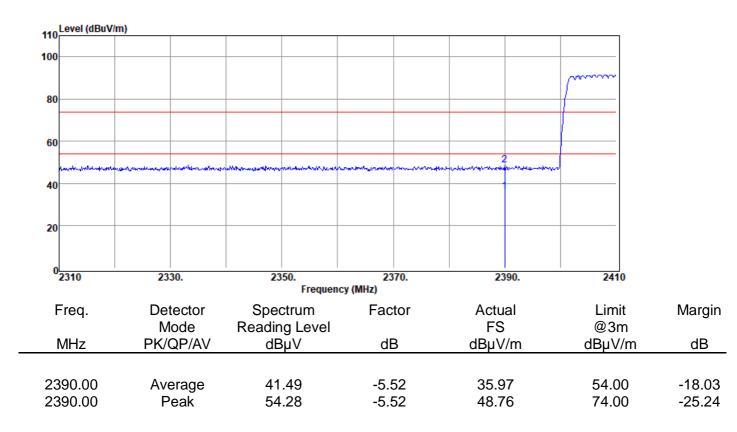


10.7 Measurement Result:

10.7.1 Radiated Bandedge Result (Hopping Mode)

Report Number	:E2/2020/50132
Operation Mode	:BT BR Hopping
Test Frequency	:2402 MHz
Test Mode	:BE CH LOW
EUT Pol	:E2 Plan

•	
Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.2/62
Antenna Pol.	:VERTICAL
Engineer	:Kailin



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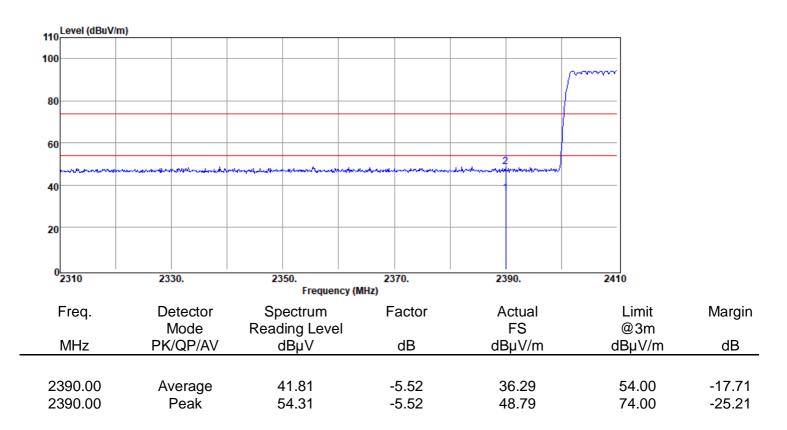
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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT BR Hopping	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.2/62
Test Mode	:BE CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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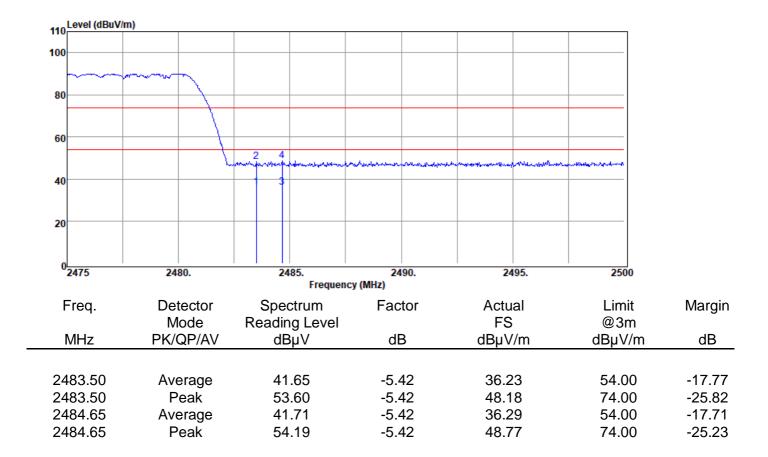
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Report Number:E2/2020/50132Operation Mode:BT BR HoppingTest Frequency:2480 MHzTest Mode:BE CH HIGHEUT Pol:E2 Plan

Test Site:966 Chamber DTest Date:2020-06-20Temp./Humi.:21.3/63Antenna Pol.:VERTICALEngineer:Kailin



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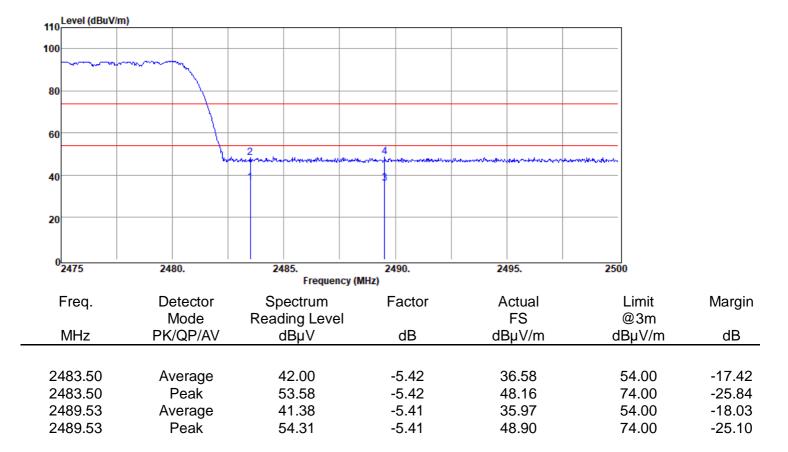
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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT BR Hopping	Test Date	:2020-06-20
Test Frequency	:2480 MHz	Temp./Humi.	:21.3/63
Test Mode	:BE CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



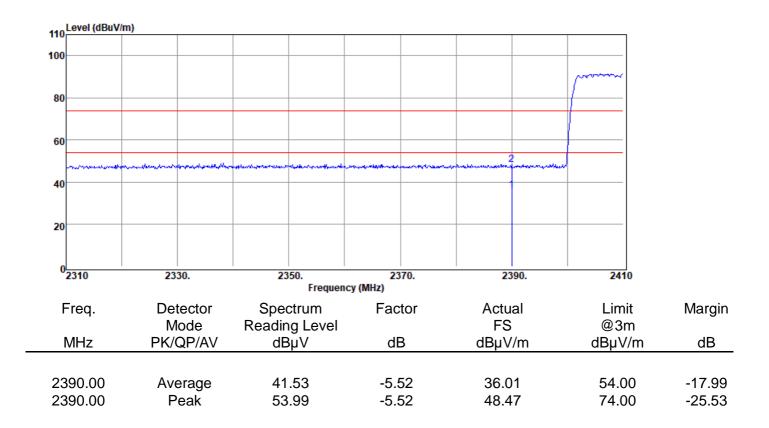
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Report Number	:E2/2020/50132
Operation Mode	:BT EDR Hopping
Test Frequency	:2402 MHz
Test Mode	:BE CH LOW
EUT Pol	:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.2/63
Antenna Pol.	:VERTICAL
Engineer	:Kailin

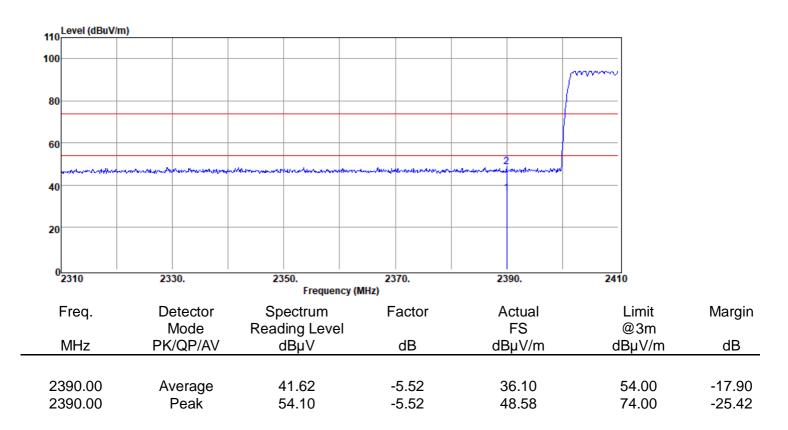


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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR Hopping	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.2/63
Test Mode	:BE CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



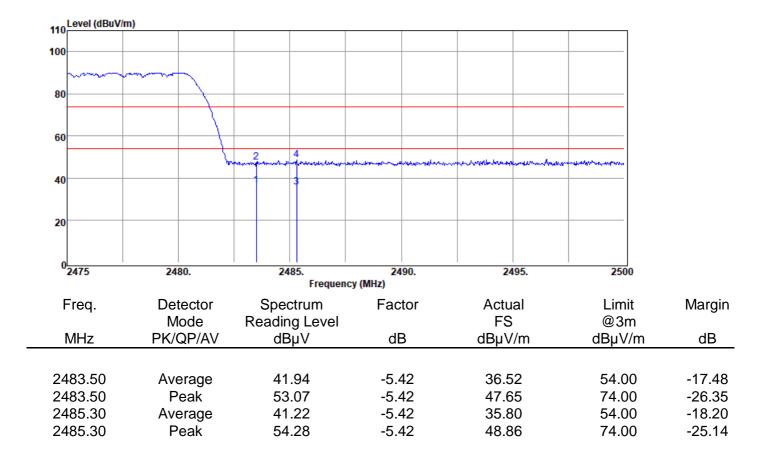
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Report Number	:E2/2020/50132
Operation Mode	:BT EDR Hopping
Test Frequency	:2480 MHz
Test Mode	:BE CH HIGH
EUT Pol	:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.3/63
Antenna Pol.	:VERTICAL
Engineer	:Kailin

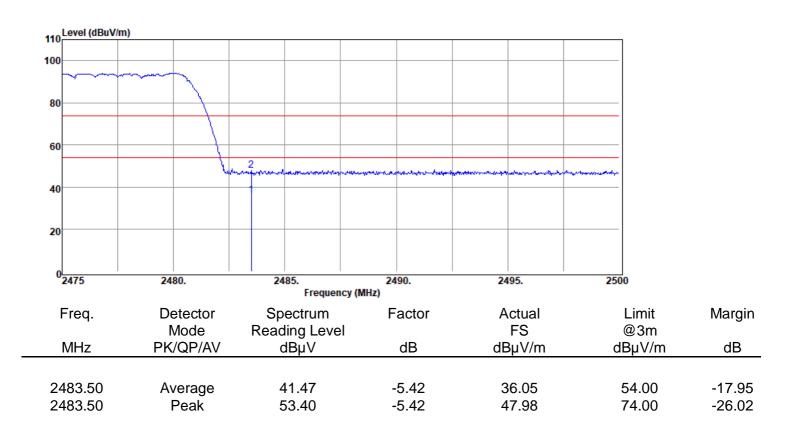


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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR Hopping	Test Date	:2020-06-20
Test Frequency	:2480 MHz	Temp./Humi.	:21.3/63
Test Mode	:BE CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin

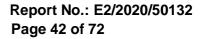


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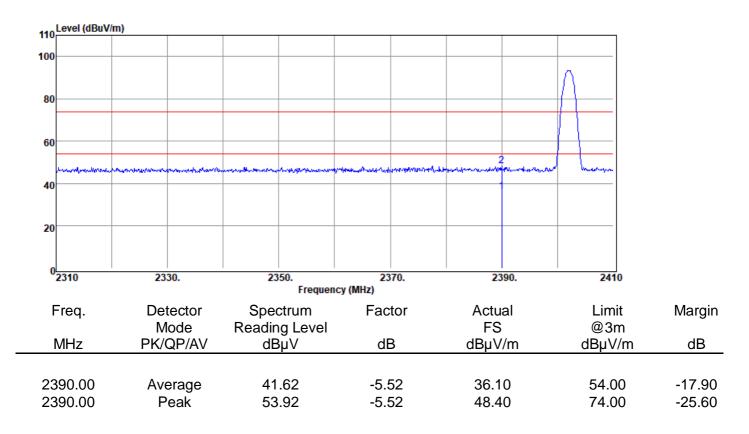
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10.7.2 Radiated Bandedge Result (Non-Hopping Mode)

Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT BR	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.3/63
Test Mode	:BE CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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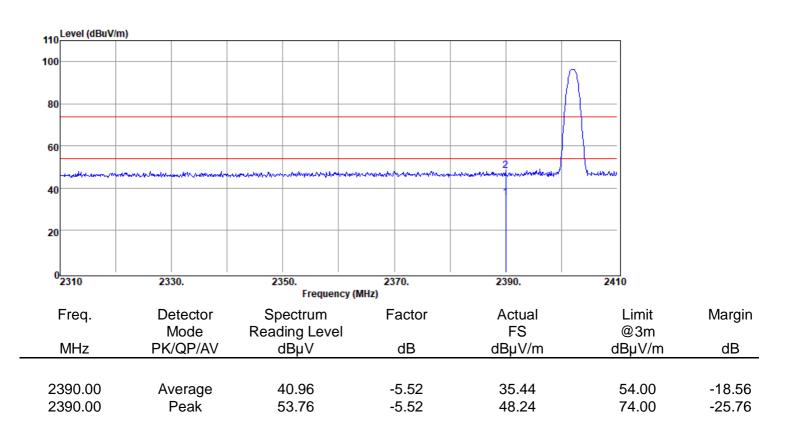
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Report Number	:E2/2020/50132	Test Site	:966 Chamber I
Operation Mode	:BT BR	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.3/63
Test Mode	:BE CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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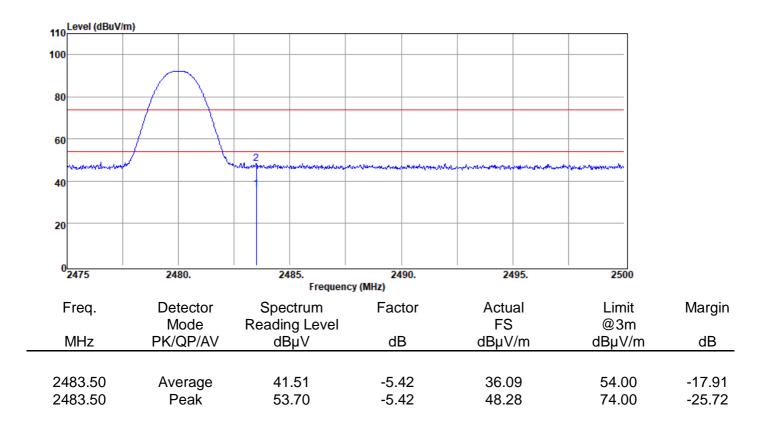
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Report Number:E2/2020/50132Operation Mode:BT BRTest Frequency:2480 MHzTest Mode:BE CH HIGHEUT Pol:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.4/64
Antenna Pol.	:VERTICAL
Engineer	:Kailin



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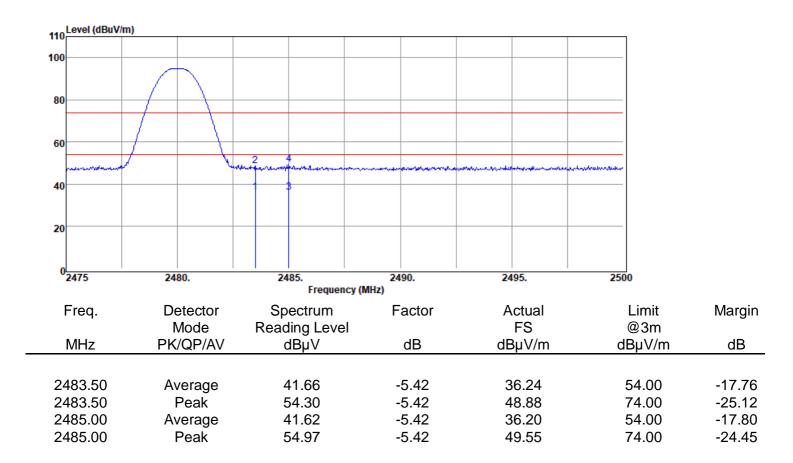
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Report Number	:E2/2020/50132	Test Site	:966 Chamber I
Operation Mode	:BT BR	Test Date	:2020-06-20
Test Frequency	:2480 MHz	Temp./Humi.	:21.4/64
Test Mode	:BE CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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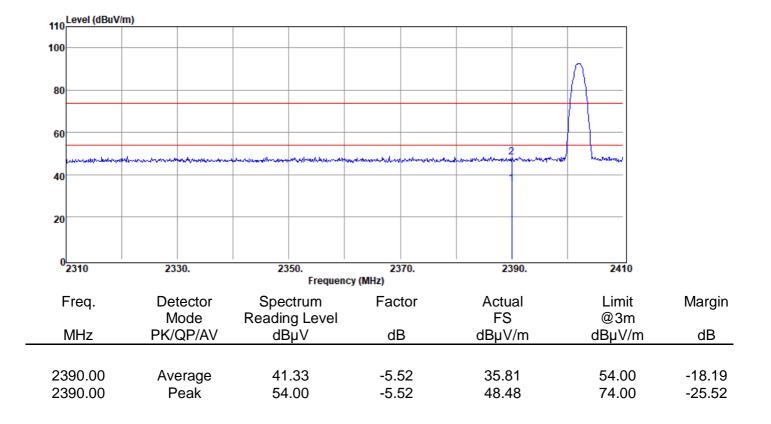
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Report Number	:E2/2020/50132
Operation Mode	:BT EDR
Test Frequency	:2402 MHz
Test Mode	:BE CH LOW
EUT Pol	:E2 Plan

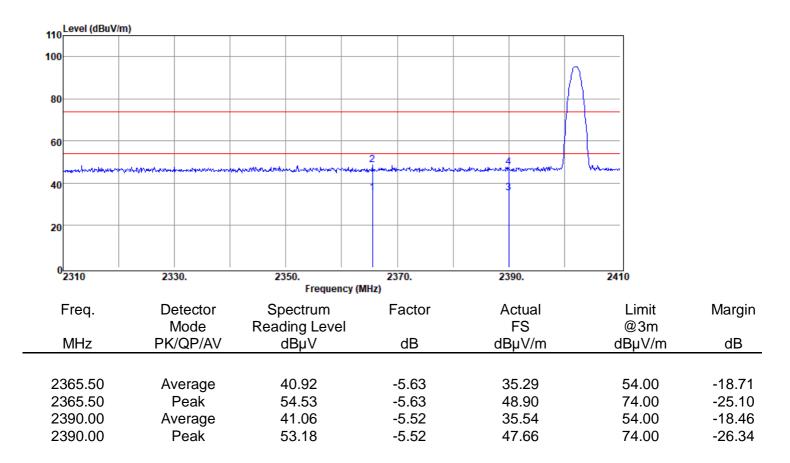
Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.2/62
Antenna Pol.	:VERTICAL
Engineer	:Kailin



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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.2/62
Test Mode	:BE CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



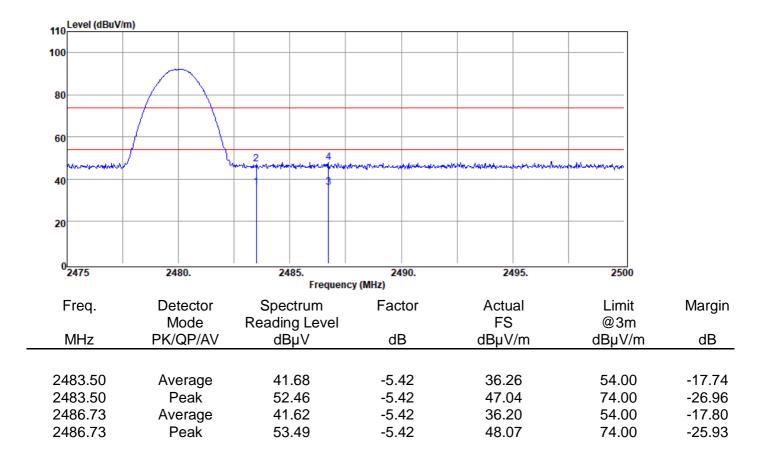
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Report Number:E2/2020/50132Operation Mode:BT EDRTest Frequency:2480 MHzTest Mode:BE CH HIGHEUT Pol:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.3/62
Antenna Pol.	:VERTICAL
Engineer	:Kailin



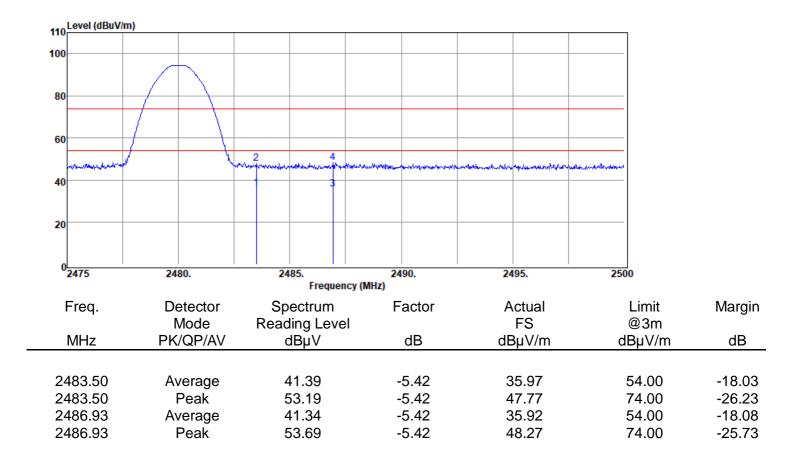
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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2480 MHz	Temp./Humi.	:21.3/62
Test Mode	:BE CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



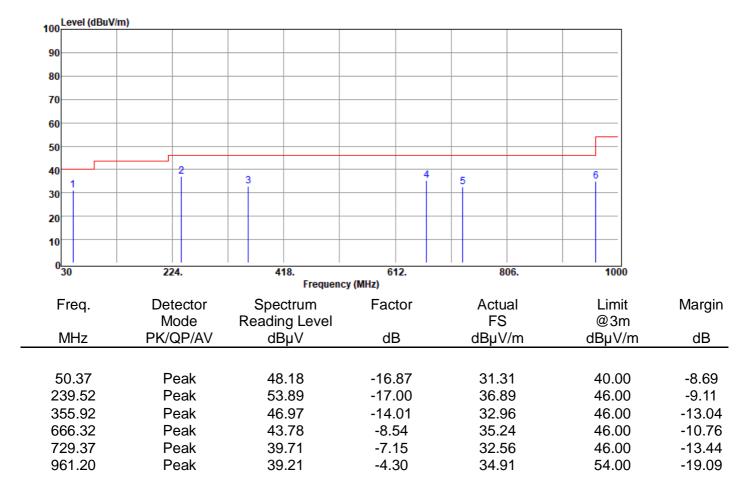
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10.7.3 Radiated Spurious Emission form 30MHz to 1000MHz:

Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2441 MHz	Temp./Humi.	:21.6/64
Test Mode	:TX CH MID	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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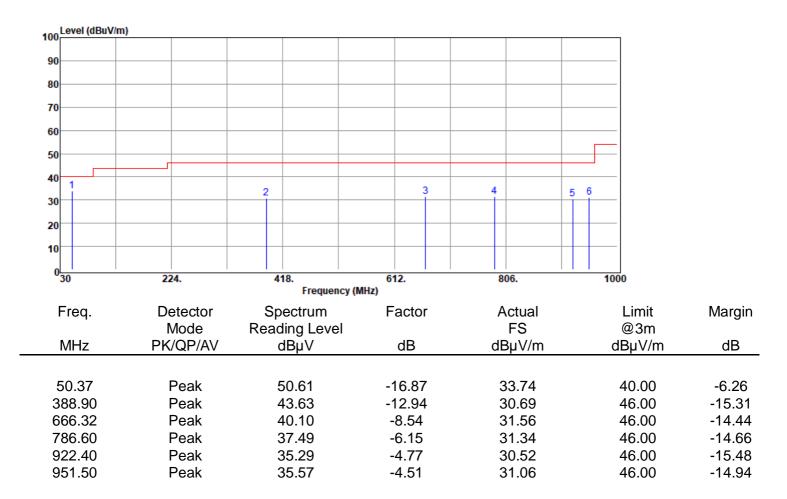


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 公司
 t (886-2) 2299-3279
 f (886-2) 2298-0488
 www.sgs.com.tw



Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2441 MHz	Temp./Humi.	:21.6/64
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



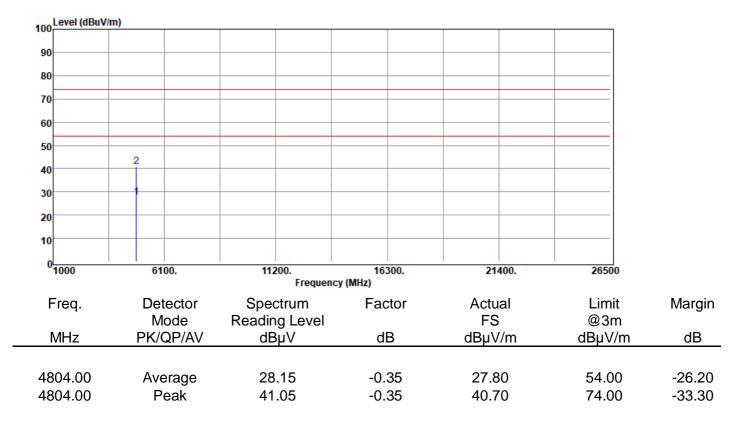
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10.7.4 Radiated Spurious Emission above 1 GHz:

Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.3/62
Test Mode	:TX CH LOW	Antenna Pol.	:VERTICAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2402 MHz	Temp./Humi.	:21.3/62
Test Mode	:TX CH LOW	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin

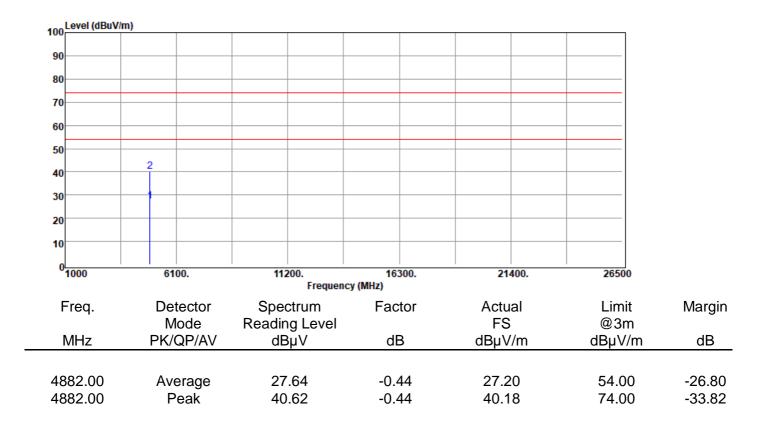
100 Level (dBuV/m)					
90						
80						
70						
60						
50						
40	2					
30						
20						
10						
0 <mark></mark>	6100.	11200. Frequency (N	16300. MHz)	21400.	26500	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Marg
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4804.00	Average	27.91	-0.35	27.56	54.00	-26.4
4804.00	Peak	40.36	-0.35	40.01	74.00	-33.9

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Report Number:E2/2020/50132Operation Mode:BT EDRTest Frequency:2441 MHzTest Mode:TX CH MIDEUT Pol:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.2/62
Antenna Pol.	:VERTICAL
Engineer	:Kailin



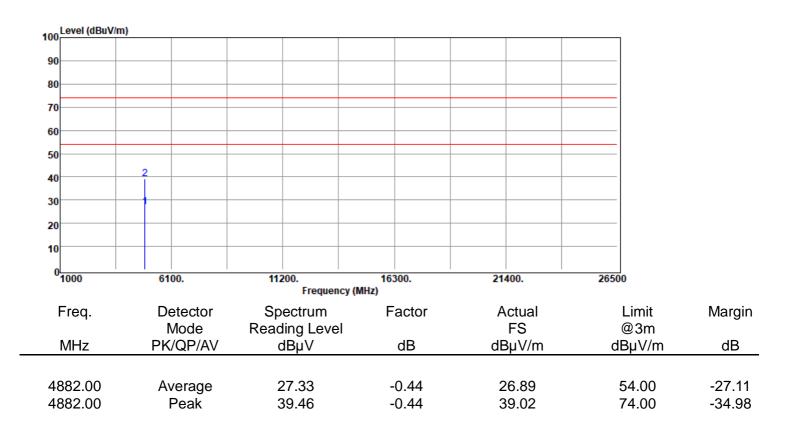
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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2441 MHz	Temp./Humi.	:21.2/62
Test Mode	:TX CH MID	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin

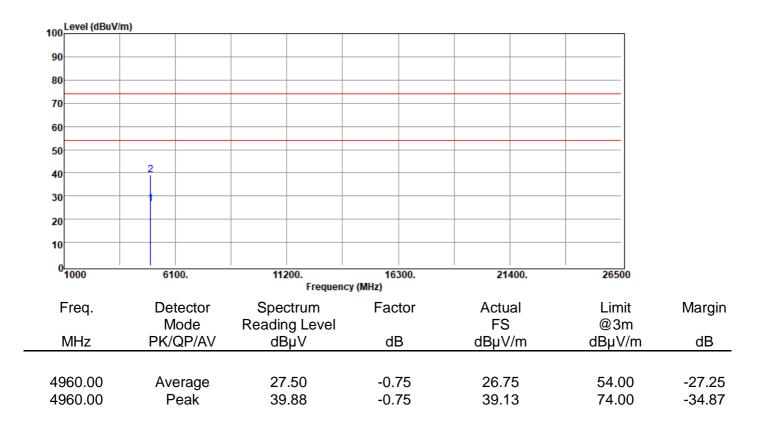


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Report Number:E2/2020/50132Operation Mode:BT EDRTest Frequency:2480 MHzTest Mode:TX CH HIGHEUT Pol:E2 Plan

Test Site	:966 Chamber D
Test Date	:2020-06-20
Temp./Humi.	:21.3/63
Antenna Pol.	:VERTICAL
Engineer	:Kailin



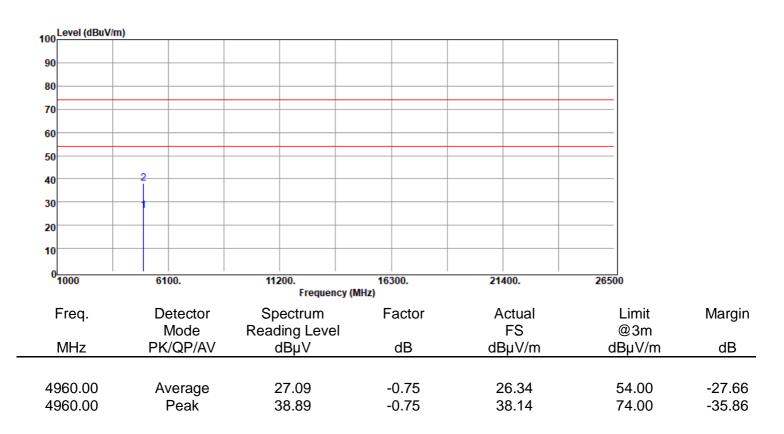
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Report Number	:E2/2020/50132	Test Site	:966 Chamber D
Operation Mode	:BT EDR	Test Date	:2020-06-20
Test Frequency	:2480 MHz	Temp./Humi.	:21.3/63
Test Mode	:TX CH HIGH	Antenna Pol.	:HORIZONTAL
EUT Pol	:E2 Plan	Engineer	:Kailin



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11 FREQUENCY SEPARATION

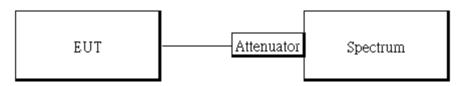
11.1 Standard Applicable

Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25 kHz or the 2/3*20dB bandwidth of the hopping channel, whichever is greater.

11.2 Measurement Equipment Used

Conducted Emission Test Site									
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.				
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020				
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020				
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020				

11.3 Test Set-up



11.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set center frequency of spectrum analyzer = middle of hopping channel.
- 5. Set the spectrum analyzer as RBW, VBW=100 kHz, Adjust Span to 5MHz, Sweep = auto.
- 6. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

11.5 Measurement Result

Channel separation (MHz)	Limit	Result
1	\geq 25 kHz or 2/3 times 20dB bandwidth	PASS

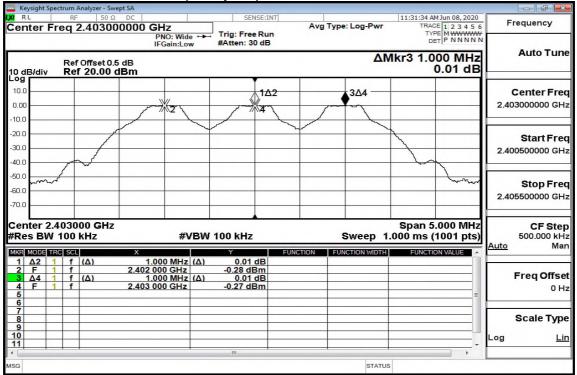
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11.6 Frequency Separation Test Plots



FCC_15_247_BT\Frequency Separation_8DPSK_3M_DH5_CH0CH1CH2

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12 NUMBER OF HOPPING FREQUENCY

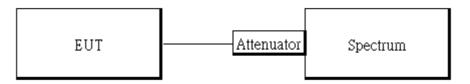
12.1 **Standard Applicable**

Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

12.2 **Measurement Equipment Used**

Conducted Emission Test Site										
EQUIPMENT	LAST	CAL DUE.								
TYPE		NUMBER	NUMBER	CAL.						
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020					
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/15/2019	07/14/2020					
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020					

Test Set-up 12.3



12.4 **Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set spectrum analyzer Start=2400MHz, Stop = 2483.5MHz, Sweep = auto.
- 5. Set the spectrum analyzer as RBW=430kHz, VBW=1.5MHz., Detector = Peak
- 6. Max hold, view and count how many channel in the band.

12.5 Measurement Result

Tabular Data of Total Channel Number

	Channel Number	Limit
2.4 GHz – 2.441 GHz	40	
2.441 GHz – 2.4835 GHz	39	>15
2.4 GHz ~2.4835 GHz	(40+39) = 79	

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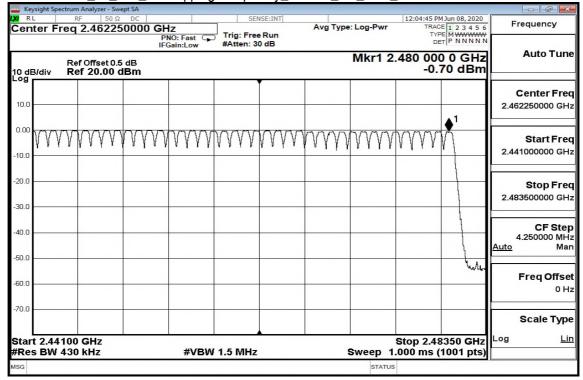


12.6 Channel Number Test Plots

Keysight S m Analyzer - Swept SA 12:04:14 PM Jun 08, 2020 TRACE 1 2 3 4 5 6 TYPE M DET P N N N N N Frequency Center Freq 2.420500000 GHz Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB PNO: Fast +++ Auto Tune Mkr1 2.402 000 GHz Ref Offset 0.5 dB Ref 20.00 dBm 0.11 dBm 10 dB/div **Center Freq** 10.0 2.420500000 GHz 0.00 V V V V V V Start Freq 2.40000000 GHz -10.0 -20.0 Stop Freq 2.441000000 GHz -30.0 CF Step -40.0 4.100000 MHz Auto Man -50.0 Freq Offset -60.0 0 Hz -70.0 Scale Type Lin Log Center 2.42050 GHz Span 41.00 MHz #Res BW 430 kHz #VBW 1.5 MHz Sweep 1.000 ms (1001 pts) STATUS

FCC_15_247_BT\Hopping Frequency_ 8DPSK_3M_DH5_2400-2441

FCC_15_247_BT\Hopping Frequency_8DPSK_3M_DH5_2441-2480



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13 TIME OF OCCUPANCY (DWELL TIME)

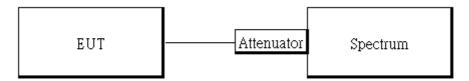
13.1 Standard Applicable

Frequency hopping systems operating in the 2400MHz-2483.5MHz. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channel employed.

13.2 Measurement Equipment Used

Conducted Emission Test Site									
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.				
DC Block	PASTER- NACK	PE8210	RF32	11/20/2019	11/19/2020				
Spectrum Analyzer	KEYSIGHT	N9010A	MY5144011 3	07/15/2019	07/14/2020				
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020				

13.3 Test Set-up



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13.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C6310:2015.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set center frequency of spectrum analyzer = operating frequency.

5. Set the spectrum analyzer as RBW, VBW=1MHz, 3MHz, Span = 0Hz, Detector = Peak, Adjust Sweep = 2~8ms.

6. Repeat above procedures until all frequency of the interest measured were complete.

Formula Deduced: time occupancy of one time slot X Hopping rate / total slot in one channel / total channel that hops X period of working channels.

Where, standard hopping rate is 1600 hops/s, slot in one channel for DH1, DH3, and DH5 is 2, 4, and 6, respectively.

DH1 consists of single time slot of the uplink, and one slot of the downlink Total Slot: 2 DH3 consists of three time slot of the uplink, and one slot of the downlink. Total Slot: 4 DH5 consists of five time slot of the uplink, and one slot of the downlink. Total Slot: 6

In AFH mode, hopping rate is 800 hop/s with 6 slots in 20 hopping channels with channel hopping rate (800 / 6 / 20) in Occupancy Time Limit (0.4 * 20) (S), Hop Over Occupancy Time comes to $(800 / 6 / 20)^{*}(0.4 * 20) = 53.33$

Note: the result of the complete test default channel at 1Mbps is recorded on the test report, 2Mbps, and 3Mbps only records the measurement result at middle channel that reveals no much deviation.

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Report No.: E2/2020/50132 Page 64 of 72



13.5 **Tabular Result of the Measurement**

GFSK (1Mbps)

Channel	PACKET TYPE	Measurement Result (ms)	Dwell Time (ms)	Offset	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	DH1	120.00	0.375	0.5	400ms	2.667	3.00
Low	DH3	260.80	1.63	0.5	400ms	0.613	1.00
	DH5	307.20	2.88	0.5	400ms	0.347	1.00
	DH1	118.40	0.37	0.5	400ms	2.703	3.00
Mid	DH3	260.80	1.63	0.5	400ms	0.613	1.00
	DH5	307.20	2.88	0.5	400ms	0.347	1.00
	DH1	120.00	0.375	0.5	400ms	2.667	3.00
High	DH3	262.40	1.64	0.5	400ms	0.610	1.00
	DH5	307.20	2.88	0.5	400ms	0.003	1.00

π/4 DQPSK (2Mbps)

Channel	PACKET TYPE	Measurement Result (ms)	Dwell Time (ms)	Offset	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	2DH1	121.60	0.38	0.5	400ms	2.632	3.00
Mid	2DH3	260.80	1.63	0.5	400ms	0.613	1.00
	2DH5	307.20	2.88	0.5	400ms	0.347	1.00

8-DPSK (3Mbps)

Channel	PACKET TYPE	Measurement Result (ms)	Dwell Time (ms)	Offset	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	3DH1	123.20	0.385	0.5	400ms	2.597	3.00
Mid	3DH3	262.40	1.64	0.5	400ms	0.610	1.00
	3DH5	308.80	2.895	0.5	400ms	0.345	1.00

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GFSK

CH Low	DH1 time slot DH3 time slot DH5 time slot	=	1.630 *	(1600/2/79) (1600/4/79) (1600/6/79)		31.6 = 31.6 = 31.6 =	()
CH Mid	DH1 time slot DH3 time slot DH5 time slot	=	1.630 *	(1600/2/79) (1600/4/79) (1600/6/79)	*	31.6 = 31.6 = 31.6 =	()
CH High	DH1 time slot DH3 time slot DH5 time slot	=	1.640 *	(1600/2/79) (1600/4/79) (1600/6/79)	*	31.6 = 31.6 = 31.6 =	()

$\pi/4$ -DQPSK (2Mbps):

CH Mid	2DH1 time slot $=$	0.380 *	(1600/2/79)	*	31.6 =	121.60 (ms)
	2DH3 time slot $=$	1.630 *	(1600/4/79)	*	31.6 =	260.80 (ms)
	2DH5 time slot $=$	2.880 *	(1600/6/79)	*	31.6 =	307.20 (ms)

8-DPSK (3Mbps):

CH Mid	3DH1 time slot =	0.385 *	(1600/2/79) *	31.6 =	123.20 (ms)
	3DH3 time slot $=$	1.640 *	(1600/4/79) *	31.6 =	262.40 (ms)
	3DH5 time slot $=$	2.895 *	(1600/6/79) *	31.6 =	308.80 (ms)

A period time = 0.4 (s) * 79 = 31.6 (s)

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	GFSK (1Mbps) for AFH Mode									
Hopping Channel	PACKET TYPE	Measurement Result	Limit							
Number	FACKETTIFE	(ms)	(ms)							
20	DH5	153.60	400ms							
π/4 DQPSK (2Mbps) for AFH Mode										
Hopping Channel	PACKET TYPE	Measurement Result	Limit							
Number	PACKETTIFE	(ms)	(ms)							
20	2DH5	153.60	400ms							
	8-DPSK (3Mbps	s) for AFH Mode								
Hopping Channel	PACKET TYPE	Measurement Result	Limit							
Number	FAUREITTE	(ms)	(ms)							
20	3DH5	154.40	400ms							

13.6 **Measurement Result**

Note: Refer to next page for plots.

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FCC 15 247 BT\Dwell Time GFSK 1M DH1 2402MHz

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FCC_15_247_BT\Dwell Time_GFSK_1M_DH1_2441MHz

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FCC 15 247 BT\Dwell Time GFSK 1M DH1 2480MHz

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FCC_15_247_BT\Dwell Time_GFSK_1M_DH3_2402MHz

Keysight Spectrum Analyzer - Swept RL RF 50.0	DC	SENSE:INT		11:06:49 AM Jun 09, 2020	- 0 Ø 🗾
enter Freq 2.402000		Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Frequency
Ref Offset 0.5 o	IFGain:Low	#Atten: 30 dB	ΔΝ	Ikr3 2.500 ms 0.02 dB	Auto Tur
	1∆2 ♦ ^{3∆4}				Center Fre 2.402000000 GH
.0					Start Fre 2.402000000 G
10 Lawhulni 10	Hot jour rate in the	Margarity.	N haroon	way	Stop Fr 2.402000000 Gi
enter 2.402000000 GH s BW 1.0 MHz		3.0 MHz	Sweep 10.	Span 0 Hz 00 ms (1001 pts)	CF Ste 1.000000 Mi Auto M
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.630 ms (Δ) 1.050 ms 2.500 ms (Δ) 1.050 ms	-4.44 dB 0.37 dBm 0.02 dB 0.37 dBm			Freq Offs
5 7 8 9 9 1					Scale Tyj
G			STATUS		

FCC_15_247_BT\Dwell Time_GFSK_1M_DH3_2441MHz

RL			50 Ω DC			SENSE:1N				11:07:35 AM J	un 09, 2020	Frequency
enter l	Frec	2.44	1000000	PNO: Fas IFGain:Lo		Trig: Free Run #Atten: 30 dB		Type: Lo	g-Pwr	TYPE	1 2 3 4 5 6 WWWWWW P NNNN	
0 dB/div			et 0.5 dB 00 dBm						ΔN	1kr3 2.5 0.	00 ms 00 dB	Auto Tu
			↓142	3 ∆4 —				1				Center Fr 2.441000000 G
0.0												Start Fr 2.441000000 G
0.0			Heymonyuw			pyperengen af		4474474-491			"mallion-w	Stop Fr 2.441000000 G
es BW	1.0	MHz	00 GHz	#\	/BW 3	.0 MHz				00 ms (10	• •	CF Sto 1.000000 M Auto M
		CL t (Δ)	X	1.630 ms	(A)	-0.05 dB	FUNCTION	FUNCTIO	NWDTH	FUNCTION	VALUE	
2 F 3 Δ4 4 F 5 6	1	t t (Δ) t		90.00 μs 2.500 ms 90.00 μs	(Δ)	-0.08 dBm 0.00 dB -0.08 dBm						Freq Offs 0
6 7 8 9		-							-			Scale Ty
1											-	L09 [
									STATUS			

FCC 15 247 BT\Dwell Time GFSK 1M DH3 2480MHz

	5A	SENSE:IN	-		11:08:13 AM		- @ *
RL RF 50 Ω D enter Freq 2.4800000	DOO GHz	Trig: Free Run	Avg Ty	pe: Log-Pwr	TRACE	1 2 3 4 5 6 WWWWWWW	Frequency
Ref Offset 0.5 dl dB/div Ref 20.00 dB		#Atten: 30 dB		Δ	Mkr3 2.5	and the second s	Auto Tun
	λ 1Δ2	3Δ4	-		1 1		Center Fre 2.480000000 GH
2.0 2							Start Fre 2.48000000 GH
2.0 474444444	Wherefortunget		when the states		4Jert-rankamet		Stop Fre 2.48000000 GH
enter 2.480000000 GHz es BW 1.0 MHz	#VBW	/ 3.0 MHz		Sweep 1	0.00 ms (1		1.000000 MH
es BW 1.0 MHz C MODE FRG Sct 1 Δ2 1 t (Δ) 2 F 1 t 3 Δ4 1 t (Δ) 4 F 1 t 5		7 3.0 MHz 2.64 dB -14.53 dBm -14.53 dBm	Function F	Sweep 1		001 pts)	1.000000 Mł <u>Auto</u> Ma Freq Offs
Ess BW 1.0 MHz	#VBW <u>1.640 ms</u> (Δ) <u>1.420 ms</u> 2.510 ms (Δ)	Y 2.64 dB -14.53 dBm 13.93 dB	FUNCTION F		0.00 ms (1	001 pts)	CF Ste 1.000000 MH Auto Freq Offsi 0 H Scale Typ Log L



FCC 15 247 BT\Dwell Time GFSK 1M DH5 2402MHz

50 Ω DC 2.402000000 GHz PNO: Fa IFGain:L Offset 0.5 dB	st +++ Trig: Free	Run	E: Log-Pwr TRAC	M Jun 08, 2020 DE 1 2 3 4 5 6 PE WWWWWWW ET P N N N N N	Frequency
Offset 0.5 dB	ow #Atten: 30) dB	De		
20.00 dBm			ΔMkr3 4.	- Constanting	Auto Tun
1Δ2	3Δ4				Center Fre 2.402000000 GH
					Start Fre 2.402000000 GF
Kind here and the second s		Vicconstantiation	- Anton	humbersha	Stop Fre 2.402000000 GF
Hz #	VBW 3.0 MHz		Sweep 15.00 ms (1001 pts)	CF Sto 1.000000 M Auto M
(Δ) 2.880 m 60.00 μ (Δ) 4.995 m	s 0.42 dE s (Δ) -0.02 d	dB 3m dB	FUNCTR		Freq Offs 0
					Scale Ty
	() 000000 GHz Hz # (a) 2,880 m 50.00 u (b) 4,995 m	() () () () () () () () () ()	() () () () () () () () () ()		

FCC_15_247_BT\Dwell Time_GFSK_1M_DH5_2441MHz

Keysight Spectrum Analyzer - S				- @ 💌
Center Freq 2.4410	DO0000 GHz	Avg Type: Log-Pwr	11:33:23 AM Jun 08, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWW	Frequency
Ref Offset 0	IFGsin:Low #Atten: 30 dB		Mkr3 4.995 ms 0.02 dB	Auto Tune
10.0 0.00	\$1∆2 ∳3∆4			Center Free 2.441000000 GH
-20.0				Start Free 2.441000000 GH
-60.0	เหล่าระระการเองสมสตร์	เขาะกงไม่ไม่สำคัญใช้สุกกับ!	Li silabiyay	Stop Fre 2.441000000 GH
L Center 2.441000000 Res BW 1.0 MHz	#VBW 3.0 MHz		Span 0 Hz 5.00 ms (1001 pts)	CF Step 1.000000 MH Auto Ma
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	X Y 2.880 ms (Δ) -0.29 dB 1.260 ms -0.03 dBm 4.995 ms (Δ) 0.02 dB 1.260 ms -0.03 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offse 0 H
6 7 8 9 10 11				Scale Type Log <u>Li</u> i
MSG	m	STATUS	•	

FCC 15 247 BT\Dwell Time GFSK 1M DH5 2480MHz

nalyzer - Swept SA				- @ 🕰
50 Ω DC 2.480000000 GHz		vg Type: Log-Pwr	11:36:38 AM Jun 08, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWWWW	Frequency
IFGain:Low	#Atten: 30 dB		DET P NNNNN	Auto Tun
***		304		Center Fre 2.480000000 GH
				Start Fre 2.480000000 GH
havening	Willionsharkenik		wareturshipping	Stop Fre 2.48000000 GH
			,	CF Ste 1.000000 MH Auto Ma
(Δ) 2.880 ms (Δ) 4.230 ms (Δ) 4.995 ms (Δ) 4.230 ms	-0.53 dB -0.51 dBm 0.00 dB -0.51 dBm			Freq Offs
		-		
	2.48000000 GHz PRO: Fast IFGainLow Offset 0.5 dB 20.00 dBm www.www.www.www. www.www.www. www.www.	2.48000000 GHz PRO: Fast	2.48000000 GHz Avg Type: Log-Pwr PRO: Fast Trig: Free Run 0ffset0.5 dB 2 20.00 dBm 2 0 ffset0.5 dB 2	2.48000000 GHz PRO Fast Urgs Free Run #Atten: 30 dB Trig: Free Run #Atten: 40 dB #Atten:

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.sgs.com.tw

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2402MHz

Keysight Spectrum Analyzer - Swept SA				
RL RF 50 Ω DC enter Freq 2.40200000	0 GHz	Avg Type: Log-Pwr	11:09:06 AM Jun 09, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWWW	Frequency
Ref Offset 0.5 dB	PNO: Fast Trig: Free IFGain:Low #Atten: 30	lВ	Mkr3 2.500 ms	Auto Tun
0 dB/div Ref 20.00 dBm		<u>∧1∆2</u>	-1.62 dB	Center Fre
0.00 pmmy 10.0	×		34	2.40200000 GH
20.0				Start Fre 2.402000000 GH
0.0 0.0 0.0	land and the state of the state	Utry have been a stranger and some	uponilla University 19	Stop Fre 2.40200000 GH
enter 2.402000000 GHz es BW 1.0 MHz	#VBW 3.0 MHz		Span 0 Hz 5.000 ms (1001 pts)	CF Ste 1.000000 MH Auto Ma
$\frac{1}{\Delta 2} \frac{1}{1} t (\Delta)$	385.0 μs (Δ) 8.20 d	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	368.0 μs 121 8.20 d 2.425 ms -11.70 dBr 2.500 ms (Δ) -1.62 d 2.425 ms -11.70 dBr	n 3		Freq Offs 0 H
6				Scale Typ
8				
8 9 10 11			*	Log <u>Li</u>

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2441MHz

Reysight Spectrum Analyzer - Swept SA						
RL RF 50 Ω DC enter Freq 2.441000000	GHz	SENSE:17	Avg Ty	pe: Log-Pwr	11:09:54 AM Jun 09, 2020 TRACE 1 2 3 4 5 TYPE WWWWWW	Frequency
Ref Offset 0.5 dB	PNO: Fast +++ IFGain:Low	Trig: Free Rui #Atten: 30 dB		Δ	Mkr3 2.500 ms	Auto Tur
dB/div Ref 20.00 dBm			_	-	-0.02 dE	
0.00 Xa ureen 1	Δ2		•	3 <u>0</u> 4		Center Fre 2.441000000 GF
						Start Fr 2.441000000 G
and an and a second sec	duiped ships as a fig	www.maddwaa.adaiya	sudianatively and	unipply	ishlalosongalosaanadiradisoo	Stop Fr 2.441000000 G
enter 2.441000000 GHz es BW 1.0 MHz	#VBW	3.0 MHz		Sweep 5	Span 0 Hz .000 ms (1001 pts)	
$\frac{1}{\Delta 2} \frac{1}{1} \frac{1}{t} \frac{1}{\Delta 2} \frac{1}{t} $	380.0 us (A)	-3.03 dB	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	830.0 μs (Δ) 830.0 μs 2.500 ms (Δ) 830.0 μs	-0.09 dBm -0.02 dB -0.09 dBm			F	Freq Offs 0
7 8 9 0						Scale Ty
						Log L
a				STATUS		

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2480MHz

n Analyzer - Sw						_			
	00000 GH	NO: Fast 🔸	Trig: Free	Run	Avg 1	Type: Log-Pwr	TRAC	CE 1 2 3 4 5 6	
	5 dB	Gain:Low	#Atten: 3	0 08		-	Mkr3 2	.500 ms	Auto Tun
2	Δ2				3 <u>0</u> 4 —	1			Center Fre 2.480000000 GH
									Start Fre 2.480000000 GH
nia.	ronteghyloud	skolen, vennerel forl	adi.htpshiptanoa	ny merik udjesti		unterpreterenter	North Antonia	Warnshapphais	Stop Fre 2.48000000 GH
MHz		#VBV	V 3.0 MHz	EIW			5.000 ms (1001 pts)	CF Ste 1.000000 MH Auto Ma
t (Δ) t (Δ)	38 45 2.5	55.0 μs 500 ms (Δ)	-0.63 de	dB 3m dB	- 1.01			e	Freq Offs 0 F
				-					Scale Typ
	ef Offset 0, ef Offset 0, ef 20.00 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	er 1993 oc 2.48000000 GH er Offset 0.5 dB ef Offset 0.5 dB ef 20.00 dBm 142 142 142 142 142 142 142 142	99 0 000 GH2 12.48000000 GH2 IFGSILLOW ef Offset 0.5 dB IFGSILLOW ef Offset 0.5 dB 102 102 102 102 102 102 102 102 102 102 102 102 102 104/7010/000000 GH2 10000000 GH2 WH2 #VEV 10000000 GH2 103 00 us (60 100 100 100 100 100 100 100 100 100 1	67 390 0C 1 58 2.450000000 GHz PRO: Fast → IFGainLow Trig: Free #Atten: 3 ef Offset 0.5 dB ef 000 dBm 10/2 10/2 11/2 10/2	66 39.0 pc \$	90 90 00 SR652MT SR652MT Avg T 12.45000000 GHz PROF Fast → Trig: Free Run Free Run SR652MT Avg T ef Offset 0.5 dB Free Run SR652MT SR652MT SR652MT SR652MT ef Offset 0.5 dB Free Run SR652MT SR652MT SR652MT SR652MT ef Offset 0.5 dB Free Run SR652MT SR652MT SR652MT SR652MT ef Offset 0.5 dB Free Run SR652MT SR652MT SR652MT SR652MT ef Offset 0.5 dB Free Run SR652MT SR652MT SR652MT SR652MT gamma free Run SR652MT SR652MT SR652MT SR652MT gamma gamma gamma Gamma SR652MT SR652MT Gamma gamma gamma gamma gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma Gamma	φr 39.0 oc sense.twr) Avg Type: Log-Pwr [P:Goin.Low Frig: Free Run (F:Goin.Low) Avg Type: Log-Pwr Avg Type: Log-Pwr ef Offset 0.5 dB # Avg Type: Log-Pwr Avg Type: Log-Pwr ef Offset 0.5 dB # # Avg Type: Log-Pwr of Offset 0.5 dB # # Avg Type: Log-Pwr 1/0.2 • 30.4 # 1/0.2 • 30.4 # 1/0.2 • 30.4 # 1/0.2 • # # 1/0.2 • 30.4 # 1/0.2 • # # 1/0.2 • • # 1/0.2 • • • 0000000 GHz # # # # 1/0.1 * • • # 1/12 • • # # 0000000 GHz # • # # 1/14 • •	ef 39 0 00 H11031 2.48000000 GHz PROF. Fact ==+ Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Trig: Trig: Free Run #Atten: 30 dB ef Offset 0.5 dB AMkr3 2 ef 00fset 0.5 dB 304 f 102 304 /142 304 // 142 304 // 142 304 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 142 500 // 144 500 // 144 500 // 144 700 // 144 700 // 144 700 // 144 700 // 144 700	000000000000000000000000000000000000



FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2402MHz

	rum Analyzer - Swept S							- Ø 💌
Center Fre	RF 50 Ω D eq 2.4020000				rg Type: Log-Pwr	TYPE V	23456	Frequency
10 dB/div	Ref Offset 0.5 dE Ref 20.00 dBi	IFGain:Low	#Atten: 3) dB	۵	Mkr3 2.50	00 ms 42 dB	Auto Tun
10.0	2	142	304					Center Fre 2.402000000 GH
-10.0								Start Fre 2.402000000 GH
-50.0	nbaylyn	Ψrsann/I	n ¹	ninnifwitryd		nyhvari		Stop Fre 2.402000000 GH
Center 2.40 Res BW 1.0	02000000 GHz 0 MHz		BW 3.0 MHz		Sweep 1	Spa 0.00 ms (10		CF Ste 1.000000 MH
MKR MODE TRC		x	Y	FUNCTION	FUNCTION WIDTH	FUNCTION V	ALUE	in the second se
1 Δ2 1 2 F 1	t (Δ) t	1.640 ms 1.260 ms	(Δ) 3.11 -5.77 dE	dB	-		_	1. 1. A. 1.
3 Δ4 1 4 F 1 5	t (Δ) t	2.500 ms 1.260 ms		dB				Freq Offs 0 I
6 7 8 9				_				Scale Ty
								.og L
10							-	
10 11			m	-				

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2441MHz

		Analyzer - Swept								- @ ×
Center	Freq	F 50 Ω 2.441000	DC 000 GHz PNO: Fast		SENSE:INT	Avg Type	: Log-Pwr	TRAC	1 Jun 09, 2020 E 1 2 3 4 5 6 E WWWWWW T P N N N N N	Frequency
10 dB/di		f Offset 0.5 d of 20.00 de	IFGain:Lon		#Atten: 30 dB		۵	Mkr3 2.	500 ms 0.02 dB	Auto Tun
10.0	*-,~~*		×	12	2 € ^{3∆4}		Junear		- T	Center Fre 2.441000000 GH
-20.0										Start Fre 2.441000000 GH
-50.0		HWILMAN	d	htu	ANIM.	Hereiter	414	h	herstelherse b ^a	Stop Fre 2.441000000 GH
Center Res BW	/ 1.0 P			/BW 3	.0 MHz		Sweep 10		. ,	CF Ste 1.000000 MH Auto Ma
1 Δ2 2 F 3 Δ4 4 F 5 6	1 t	(Δ) (Δ)	1.630 ms 2.240 ms 2.500 ms 2.240 ms		-1.91 dB -0.09 dBm -0.02 dB -0.09 dBm				Ę	Freq Offso 0 ⊢
7 8 9 10 11										Scale Typ Log <u>Li</u>
4 MSG					m		STATUS			<u></u>

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2480MHz

							n Analyzer - Sv		
Frequency	13:06 AM Jun 09, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWW	11: Log-Pwr	Avg Type	SENSE:1	z	00000 GH	50 S		_{RL} nter
Auto Tun	r3 2.500 ms	AML		Trig: Free Ru #Atten: 30 dB	O: Fast ↔→ ain:Low	IFG		_	
	2.22 dB						ef Offset 0. ef 20.00		dB/di
Center Fre 2.48000000 GF				4	Δ2 <u>3</u> Δ4				0
2.48000000 GF	Present in a contr		Personal		The		×2	7	0
Start Fre									
2.48000000 GF								-	0
Stop Fre	YW .	Whent	aproximation .		yayayaya	Wh	M	mpanna	0
								-	0
2.48000000 Gi	Span 0 Hz			2.0.884	#1/D141	GHz	000000		nter
2.48000000 GH CF Ste 1.000000 MH	ms (1001 pts)			3.0 MHz	#VBW	GHz	MHz	r 2.480 W 1.0	nter s BV
2.480000000 Gi CF Ste 1.000000 Mi Auto Mi Freq Offs	ms (1001 pts)			3.0 MHz 3.98 dB -7.54 dBm 2.22 dB -7.54 dBm	#VBW : 0 ms (Δ) 0 ms (Δ) 0 ms (Δ)	× 1.64 1.19 2.50	4Hz (Δ)		nter s BV
2.48000000 GF CF Ste 1.000000 MF Auto Ma Freq Offs 0 F	ms (1001 pts)			Y 3.98 dB -7.54 dBm 2.22 dB	0 ms (Δ) 0 ms 0 ms (Δ)	× 1.64 1.19 2.50	4Hz (Δ)		nter s BV
2.48000000 GH CF Ste 1.000000 MH	ms (1001 pts)			Y 3.98 dB -7.54 dBm 2.22 dB	0 ms (Δ) 0 ms 0 ms (Δ)	× 1.64 1.19 2.50	4Hz (Δ)		nter s BV

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134號 t (886-2) 2299-3279 f (886-2) 2298-0488 www.sgs.com.tw

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2402MHz

- @ 赵										r - Swep			Spect		K
Frequency	3 AM Jun 09, 2020 RACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	TRA	ALIGN AUTO e: Log-Pwr	Avg Ty		Trig: Free		NO: Fast	000 GH			RF eq 2	Fre		
Auto Tune	5.010 ms 0.26 dB		Δ		dB	#Atten: 30	v	Gain:Low	в	et 0.5 00 di				B/div	0 0
Center Free 2.402000000 GH	7						€ ^{3∆4}		¹ ∆2 ¹ ¹ ² ³ ⁴				2		0.0
Start Fre 2.402000000 GH															0.0
Stop Free 2.402000000 GH	North-Network		•	nn,wahh/kusu	h			444-MAN	Anyotapinal					ehde	50.0 50.0
CF Ste 1.000000 MH Auto Ma	Span 0 Hz s (1001 pts)	15.00 ms	Sweep 1	CTION FI		3.0 MHz	BW :	#V	z	00 GI	Hz	D M	1.0	ter: BW	er
Freq Offse 0 H	5				iB im iB	-1.05 (0.13 dE 0.26 (0.13 dE		180 ms 30.0 µs 110 ms 30.0 µs	2.8 48 5.0		(Δ) (Δ)	t	1 1 1	Δ2 F Δ4 F	1 2 3 4 5
Scale Type															6 7 8 9 10
		IS	STATUS			m		-						-	G

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2441MHz

Frequency	M Jun 09, 2020		ALIGN AUTO		SENSE:IN		S0 Ω DC	RF		RI
	E 1 2 3 4 5 6 WWWWW T P N N N N	T)	: Log-Pwr	Avg Typ	Trig: Free Run #Atten: 30 dB	GHZ PNO: Fast ↔ IFGain:Low	41000000	q 2.	er Fre	en
Auto Tur	.995 ms 0.01 dB		Δ				fset 0.5 dB 0.00 dBm			
Center Fre 2.441000000 GH		b			€ ^{3∆4}	1Δ2	***			0.0 0.0 0.00
Start Fre 2.441000000 GH).0).0).0
Stop Fre 2.441000000 GH	N		apollopont		4.014-14	nthe tother phy.		war	mbapatik	0.0
CF Ste 1.000000 Mi Auto Mi	pan 0 Hz 1001 pts)		Sweep 1		3.0 MHz	#VBW	000 GHz		er 2.44 BW 1.0	
Auto IVIs	ON VALUE	FUNCT	CTION WIDTH	FUNCTION FL	Y		х		ODE TRC	
Freq Offs 0 F	UL UL				-1.79 dB -0.06 dBm -0.01 dB -0.06 dBm	2.880 ms (Δ) 1.950 ms 4.995 ms (Δ) 1.950 ms		t (t (t (12 1 F 1 14 1 F 1	2 3 4 5
Scale Typ										6 7 8 9
								_		1
			STATUS							g

FCC 15 247 BT\Dwell Time π/4DQPSK 2M 2480MHz

- # •										alyzer - Sw		Spect	
Frequency	un 09, 2020 1 2 3 4 5 6 WWWWWW P N N N N N	10:37:12 AM TRACE TYPE	ALIGN AUTO pe: Log-Pwr	Avg Typ	in	SENSE		PNO: Fast		50 Ω 48000	RF q 2.	Fre	nter
Auto Tun		Mkr3 4.9	Δ		3	Atten: 30 d	v	IFGain:Low		offset 0. 20.00			B/di
Center Fre 2.48000000 GH		b			♦ 3∆4	1Δ2		~~~~~	×2~		1		
Start Fre 2.48000000 GH													
Stop Fre 2.48000000 GH		arringha	winester.		HLYP	Norman			nuy/	Hartan style	Hun		
CF Ste 1.000000 MH Auto Ma			Sweep 1:	TON	FUNCT	0 MHz	BW :	#V	SHz	0000 (Iz	MH	2.48 / 1.0	BW
Freq Offs 0 F						-1.31 dB -0.56 dBm -0.10 dB -0.56 dBm		2.880 ms 3.315 ms 4.995 ms 3.315 ms			t t t	1 1 1	Δ2 F Δ4 F
Scale Typ													
			STATUS			m					1		



FCC 15 247 BT\Dwell Time 8DPSK 3M DH1 2402MHz

	ght 9	opectn		nalyzer - Si		_						_		_						00
ente	er	Fre	RF q 2	2.4020		PN	O: Fast		Trig: I	SENSE Free Rin: 30 d	un	Avg	Type:	Log-P		T	ACE 1 2	9,2020 3456	_	requency
10 dB/	div			Offset 0 20.00		IFG	ain:Lov	N	#Atter	n. 30 u	5				ΔΜ	kr3 2) ms) dB		Auto Tu
10.0	2								***	n-new	<u>}</u> 1∆2							3∆4 µw		Center Fr 2000000 G
10.0 - 20.0 - 30.0 - 40.0 -																			2.40	Start Fr 2000000 G
50.0 - 60.0 - 70.0 -	4	ny h y	de la	Kew Arrive	hy ut raf	40 4 460	npmhilp	httpatheter	mai		Al HIN	n myrauf	Ared in	犅	AQ.499 young	rpandd	Warnand	4	2.40	Stop Fi 2000000 0
ente tes E				00000 Hz	GHz		#V	/BW	3.0 M	Hz			s	weep	5.00		Span (1001			CF S1
ikr MC					x				Y			TION	FUN	TION WI	DTH	FUNC	TION VAL	UE ^	Auto	N
1 Δ 2 F 3 Δ 4 F 5	4		t	(Δ) (Δ)		2.25	5 ms 0 ms 5 ms		0.36	90 dB 5 dBm .00 dB 5 dBm		_								Freq Off C
6 7 8 9	-	-	_							_										Scale Ty
10			_				_		m	_				1	-				Log	
SG														STA	ATUS					

FCC_15_247_BT\Dwell Time_8DPSK_3M_DH1_2441MHz

- @ ×									Analyzer - Sv		t Spect		
Frequency	11:14:22 AM Jun 09, 2020 TRACE 1 2 3 4 5 6 TYPE WWWWWWWWW	e: Log-Pwr	Avg Ty	SE:INT			GHz PNO: Fast		50 s 2.4410	RF eq 2	Fre		Cei
Auto Tune	Mkr3 2.500 ms -0.24 dB	Δ			#Atten: 30	w	PNO: Fas IFGain:Lo		Offset 0.			IB/di	10 0
Center Fre 2.441000000 GH				● ^{3∆4}					© ^{1∆2}	How	Xa		10.0 -10.1
Start Fre 2.441000000 GH													-20.1 -30.1 -40.1
Stop Fre 2.441000000 GH	hady legal and reserves a filler	Yahan Mundupph	hhum	นหตุป	Annaly records	ydyd	njnakumin	numtu	ymJph 1	_	H	hu	-50.1 -60.1 -70.1
CF Ste 1.000000 MH Auto Ma	Span 0 Hz 100 ms (1001 pts)	Sweep 5.	CTION F	FUN	3.0 MHz	VBW	#\	GHz		0 M	2.4 N 1.1	s BV	Re
Freq Offse 0 H	u			3m dB	-9.67 (-0.33 dE -0.24 (-0.33 dE	(Δ)	385.0 μs 210.0 μs 2.500 ms 210.0 μs		(Δ) (Δ)	t	1	Δ2 F Δ4 F	1 2 3 4 5 6
Scale Typ Log <u>Li</u>													7 8 9 10 11
	•	STATUS			m	-				-	-	-	4 MSG

FCC 15 247 BT\Dwell Time 8DPSK 3M DH1 2480MHz

enter Freq 2.480000		SENSE:INT	Avg Type: L		4:59 AM Jun 09, 2020 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast ++- IFGain:Low	#Atten: 30 dB			DET P NNNN	Auto Tu
Ref Offset 0.5 d 0 dB/div Ref 20.00 dB				ΔMkr	3 2.500 ms 0.00 dB	Auto Tu
00 10.0 2.00 χαριτογγία		•	<u>04</u>			Center Fr 2.480000000 G
						Start Fr 2.480000000 G
0.0 VI http://www.hyth	ennin and and	www.hudanght.h	. Marata Marahalata	kryter Horriver open	raliun annaithean	Stop Fr 2.480000000 G
enter 2.480000000 GH es BW 1.0 MHz	#VBW	3.0 MHz			Span 0 Hz ms (1001 pts)	1.000000 N
enter 2.480000000 GH es BW 1.0 MHz Semone Fire Set 1 Δ2 1 t (Δ) 2 F 1 t		3.0 MHz -2.92 dB -0.60 dBm				1.000000 N <u>Auto</u> N
enter 2.480000000 GH es BW 1.0 MHz G MODE HTG SSI 1 A2 1 t (A) 2 F 1 t 3 A4 1 t (A) 4 F 1 t (A) 5 4	#VBW 380.0 μs (Δ)	-2.92 dB			ms (1001 pts)	1.000000 M Auto Freq Off
enter 2.480000000 GH es BW 1.0 MHz Remote Res Set 1 Δ2 1 t (Δ) 2 F 1 t 3 Δ4 1 t (Δ)	#VBW 380.0 μs (Δ) 115.0 μs 2.500 ms (Δ)	Y -2.92 dB -0.60 dBm 0.00 dB			ms (1001 pts) UKCTION VALUE	CF St 1.000000 M Auto M Freq Offs 0 Scale Ty

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134號 t (886-2) 2299-3279 www.sgs.com.tw

FCC_15_247_BT\Dwell Time_8DPSK_3M_DH3_2402MHz

11:15:58 AM TRACE TYP DE Mkr3 2.4	pe: Log-Pwr		Trig: Free Rur #Atten: 30 dB	PNO: Fast ↔ IFGain:Low	50 Ω DC 102000000	r Freq 2.4
Mkr3 2.	Δ					
					fset 0.5 dB 0.00 dBm	
1	w.cysp.cop.go	1	3 <u>0</u> 4	1Δ2		
where whether we		Young Trades		14 American		Hollowshipe
		FUNCTION	/ 3.0 MHz	#VBW		2.402000 N 1.0 MH:
			-1.32 dB 0.37 dBm -0.01 dB 0.37 dBm	1.420 ms 2.500 ms (Δ)		1 t (/ 1 t 1 t (/ 1 t (/ 1 t
S s (1	0.00 m	Sweep 10.00 m	Sweep 10.00 m	/ 3.0 MHz Sweep 10.00 m / 3.0 MHz Sweep 10.00 m / 3.0 MHz Sweep 10.00 m	#VBW 3.0 MHz Sweep 10.00 m #200 ms 0.37 dBm 1.420 ms 0.37 dBm	w invalue inv

FCC 15 247 BT\Dwell Time 8DPSK 3M DH3 2441MHz

RL RE	50 Q DC	SENSE:10	m	11:16:54 AM Jun 09, 2020	
	2.441000000 GHz	ast +++ Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6	Frequency
0 dB/div Ref	Offset 0.5 dB			Mkr3 2.500 ms -6.18 dB	Auto Tun
	1Δ2		man and a second second		Center Fre 2.441000000 GH
0.0					Start Fre 2.441000000 GF
0.0 0.0	MURANN	unna	ya,11,1494a.	hundre	Stop Fre 2.441000000 Gi
enter 2.4410 es BW 1.0 M	Hz	#VBW 3.0 MHz		Span 0 Hz 0.00 ms (1001 pts)	CF Ste 1.000000 MI Auto M
KR MODE TRC SCL 1 Δ2 1 t	(Δ) 1.640 r	ns (Δ) 2.98 dB	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
2 F 1 t	1.640 Γ 240.0 (Δ) 2.500 r 240.0	μs -6.04 dBm ns (Δ) -6.18 dB		s	Freq Offs 01
7 8					Scale Typ
9					
				*	Log <u>L</u>

FCC 15 247 BT\Dwell Time 8DPSK 3M DH3 2480MHz

- @ 赵								- Swept SA			t Spect		
Frequency	23456	TYPE V	Type: Log-Pwr	Avg T	SENSE:INT		GHz PNO: Fast	50 Ω DC		RF eq 2	Fre		en
Auto Tune	00 ms	Mkr3 2.50	Δ		Atten: 30 dB	v	IFGain:Lov	t0.5 dB 00 dBm				B/div	0 dE
Center Fre 2.480000000 GH	- Street	mus		-querre-	3∆4 ••••••	1Δ2		×		45-	ur-sigue	-	0.00 10.0 0.00
Start Fre 2.48000000 GH													20.0 30.0 40.0
Stop Fre 2.48000000 GH	v	jatura).uu	M	hantu.)		direfter figs		ind.	perviley of	P			50.0 60.0 70.0
CF Ste 1.000000 MH Auto Ma	1 /).00 ms (10) MHz	BW :	#V	0 GHz	Hz	D MI	V 1.0	BW	les
Freq Offse 0 H	ALUE ×	FUNCTION	FUNCTION WIDTH	FUNCTION	-10.38 dB -0.77 dBm -0.47 dB -0.77 dBm		1.640 ms 1.860 ms 2.500 ms 1.860 ms	X	(Δ) (Δ)	t	1 1 1	Δ2 F Δ4 F	1 2
Scale Typ													7 8 9 10 11
						_							



FCC_15_247_BT\Dwell Time_8DPSK_3M_DH5_2402MHz

DC DOOO GHz PNO: Fast ++ IFGain:Low dB Bm	SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUT Avg Type: Log-Pv		Frequency Auto Tun
dB	#Atten: 30 dB			Auto Tun
			0.00 dB	
	14	n Decord	2000-200-200-200	Center Fre 2.402000000 GH
				Start Fre 2.402000000 GR
n/~vinate/al/Magicray		wightenartypipal		Stop Fr 2.402000000 G
			,	CF Sto 1.000000 M Auto M
X 2.880 ms (Δ) 645.0 μs 4.995 ms (Δ) 645.0 μs	2.57 dB 0.40 dBm 0.00 dB 0.40 dBm	FUNCTION FUNCTION WE	TH FUNCTION VALUE	Freq Offs 0
				Scale Ty
	μ μ μ μ	Hz 2 80 ms (Δ) 2.57 dB 4950 ms (Δ) 0.00 dB	μα μα η η	Image: Span of Hz Span of Hz #VBW 3.0 MHz Sweep 15.00 ms (1001 pts) X 280 ms (Δ) 2.7 (8) 96450 μs 0.40 dBm 400 dBm

FCC_15_247_BT\Dwell Time_8DPSK_3M_DH5_2441MHz

- # 🛋							Analyzer -			
1 2 3 4 5 6 Frequency	10:44:02 AM Jun 09, 20 TRACE 1 2 3 4 TYPE WWWW	ALIGN AUTO ype: Log-Pwr	Avg T	SENSE:17	Z IO: Fast ↔	000000 GH		req :		XI R Cer
P NNNNN	DET P NNN Mkr3 5.010 n	Δ		#Atten: 30 dB	iain:Low	IFC	f Offset f 20.00		B/div	
Center Fre 2.441000000 GH		. Alemana and a		14 	¢ ³	142		a	*	Log 10.0 0.00
Start Fre 2.441000000 GH										-20.0 -30.0
ອາມັນທີ່ທີ່ Stop Fre 2.441000000 GH	สมารรมทุกต	Work	Wadaperson		1-1846/ Trajin V	Alimaha			unhiki	-50.0 -60.0
Auto M	Span 0 5.00 ms (1001 p FURCTION VALUE	Sweep 1	FUNCTION	3.0 MHz	#VBW) GHz		.4410 1.0 M	BW	Res
Freq Offs				-3.92 dB -0.16 dBm 0.09 dB -0.16 dBm	95 ms (Δ) 0.0 μs 10 ms (Δ) 0.0 μs	63 5.0	(Δ) (Δ)	1 t 1 t	Δ2 F Δ4 F	1 2 3 4 5
Scale Typ										6 7 8 9 10
	,	STATUS		m				-	-	4 ISG

FCC 15 247 BT\Dwell Time 8DPSK 3M DH5 2480MHz

										analyzer		t speci		
Frequency	E 1 2 3 4 5 6	TRAC	ALIGN AUTO	Avg Ty	NSE:INT]			0000 GHz	0Ω 000		RF	Fre		R
Auto Tu	995 ms 2.01 dB	DE Mkr3 4.	Δ		e Run 10 dB	Trig: Fre #Atten: 3): Fast ++-	PNO: Fa IFGain:L	0.5 0	Offset	Ref	-		
Center Fr 2.480000000 G			-		3∆4	2	1/			f 20.00	Rei	۱ ۱) 	0 d .og 10.0 0.00
Start Fr 2.480000000 G														20.0 30.0 40.0
Stop Fr 2.48000000 G		-mp ^e	herlylislesser werden		•	Unarroundra	nn			waliyayahah	164.1477	MUN	-	50.0 60.0 70.0
CF St 1.000000 M	pan 0 Hz 1001 pts)		Sweep 1		/	3.0 MHz	#VBW		0 GH	00000 Hz		2.4: V 1.		
Auto N	N VALUE	FUNCTIO	UNCTION WIDTH	CTION F		Y		x				ETRC		
						-2.04) ms (Δ)			(Δ)		1	A2 F	
Freq Off 0	£				dB	-0.56 dl -2.01 -0.56 dl	5 ms (Δ)	2.655 m 4.995 m 2.655 m		(Δ)	t t	1	A4 F	2 3 4 5
Scale Ty					-									6 7 8 9
Log														10 11

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14 ANTENNA REQUIREMENT

14.1 **Standard Applicable**

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

Antenna Connected Construction 14.2

The antenna is designed with unique RF connector and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

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