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Report Template Version: V05 Report Template Revision Date: 2021-11-03

Test Report

Report No. : Applicant: Address of Applicant: Equipment Under Test (E	CQASZ20220801407E-01 KINGTA TECHNOLOGY CO., LTD Floor 2,Building 10/ Floor 4, Building 9, Futing industrial zone, Zhucun, Guanlan, Longhua, Shenzhen, China
Product:	Bluetooth Speaker
Model No.:	M5, Reflex Chill, TY-WSP56, HEYSONG REVERB MINI, Nakamichi NBE-F50, CHILL-BK, CHILL-BL, REF-CHILL-BK, REF-CHILL-BL
Test Model No.:	M5
Brand Name:	N/A
FCC ID:	N7KM5
Standards:	47 CFR Part 15, Subpart C
Date of Receipt:	2022-08-15
Date of Test:	2022-08-15 to 2022-08-23
Date of Issue: Test Result :	2022-09-15 PASS*

*In the configuration tested, the EUT complied with the standards specified above.

lewis zhou Tested By: (Lewis Zhou) Timo Loi Reviewed By: (Timo Lei) PPROVE Approved By: (Jack Ai)

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220801407E-01	Rev.01	Initial report	2022-09-15



2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10 (2013)	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 (2013)	PASS
Conducted Peak Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(1)	ANSI C63.10 (2013)	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2013)	PASS
Carrier Frequencies Separation	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2013)	PASS
Hopping Channel Number	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2013)	PASS
Dwell Time	47 CFR Part 15, Subpart C Section 15.247 (a)(1)	ANSI C63.10 (2013)	PASS
Pseudorandom Frequency Hopping Sequence	47 CFR Part 15, Subpart C Section 15.247(b)(4)	ANSI C63.10 (2013)	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 (2013)	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 (2013)	PASS
Radiated Spurious emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 (2013)	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 (2013)	PASS



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4 General Information

4.1 Client Information

Applicant:	KINGTA TECHNOLOGY CO., LTD
	Floor 2, Building 10/ Floor 4, Building 9, Futing industrial zone, Zhucun, Guanlar
Address of Applicant:	Longhua, Shenzhen, China
Manufacturer:	KINGTA TECHNOLOGY CO., LTD
Address of Manufacturer:	Floor 2,Building 10/ Floor 4, Building 9, Futing industrial zone, Zhucun, Guanlar Longhua, Shenzhen, China
Factory:	KINGTA TECHNOLOGY CO., LTD
Address of Factory:	Floor 2,Building 10/ Floor 4, Building 9, Futing industrial zone, Zhucun, Guanlar Longhua, Shenzhen, China

4.2 General Description of EUT

Product Name:	Bluetooth Speaker			
Model No.:	M5, Reflex Chill, TY-WSP56, HEYSONG REVERB MINI,			
	Nakamichi NBE-F50, CHILL-BK, CHILL-BL, REF-CHILL-BK, REF-CHILL-BL			
Test Model No.:	M5			
Trade Mark:	N/A			
Software Version:	M5-V1.0			
Hardware Version:	M5-AB5323B-8691R-MAIN V5			
Operation Frequency:	2402MHz~2480MHz			
Bluetooth Version:	V5.0			
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)			
Modulation Type:	GFSK, π/4DQPSK, 8DPSK			
Transfer Rate:	1Mbps/2Mbps/3Mbps			
Number of Channel:	79			
Hopping Channel Type:	Adaptive Frequency Hopping systems			
Product Type:	□ Mobile			
Test Software of EUT:	bt_tool_v1.1.0			
Antenna Type:	PCB antenna			
Antenna Gain:	1.7dBi			
Power Supply:	Li-ion battery: DC 3.7V 1200mAh, Charge by DC 5V for adapter			



Operation F	Operation Frequency each of channel						
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
6	2408MHz	26	2428MHz	46	2448MHz	66	2468MHz
7	2409MHz	27	2429MHz	47	2449MHz	67	2469MHz
8	2410MHz	28	2430MHz	48	2450MHz	68	2470MHz
9	2411MHz	29	2431MHz	49	2451MHz	69	2471MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
12	2414MHz	32	2434MHz	52	2454MHz	72	2474MHz
13	2415MHz	33	2435MHz	53	2455MHz	73	2475MHz
14	2416MHz	34	2436MHz	54	2456MHz	74	2476MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel	2402MHz
The Middle channel	2441MHz
The Highest channel	2480MHz



4.3 Additional Instructions

EUT Test Software Settings:				
Mode:	 Special software is used. Through engineering command into the engineering mode. engineering command: *#*#3646633#*#* 			
EUT Power level:	Class2 (Power level is built-in set para selected)	meters and cannot be changed and		
Use test software to set the lo	west frequency, the middle frequency and	the highest frequency keep		
transmitting of the EUT.				
Mode	Channel	Frequency(MHz)		
	СНО	2402		
DH1/DH3/DH5	СН39	2441		
	CH78	2480		
	СНО	2402		
2DH1/2DH3/2DH5	СН39	2441		
	CH78	2480		
	СН0	2402		
3DH1/3DH3/3DH5	СН39	2441		
	CH78	2480		

Run Software:

OMx Baudrate				
Classic BLE				
Test Mode				
FCC Test 🔘	Remote	BT address	200	
CBT Test 🔘	555555	555555	Run	
RF Control				
RF Mode	X TEST 🔻	Packet Type	DH5	•
Hopping 0	FF 🚽	TX Frequency	2402	•
TX Power 7	•	RX Frequency	2402	Ŧ
Scenario Pl	RBS Patter	m		•
LOG: FCC test n	lode			-



4.4 Test Environment

Operating Environment	Operating Environment:			
Temperature:	25 °C			
Humidity:	54% RH			
Atmospheric Pressure:	1009mbar			
Test Mode:	Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.			

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Remark	FCC certification
Adapter	MI	1	1	CQA



4.6 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

No.	Item	Uncertainty
1	Radiated Emission (Below 1GHz)	5.12dB
2	Radiated Emission (Above 1GHz)	4.60dB
3	Conducted Disturbance (0.15~30MHz)	3.34dB
4	Radio Frequency	3×10 ⁻⁸
5	Duty cycle	0.6 %
6	Occupied Bandwidth	1.1%
7	RF conducted power	0.86dB
8	RF power density	0.74
9	Conducted Spurious emissions	0.86dB
10	Temperature test	0.8°C
11	Humidity test	2.0%
12	Supply voltages	0.5 %
13	Frequency Error	5.5 Hz

Hereafter the best measurement capability for CQA laboratory is reported:



4.7 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.8 Test Facility

The test facility is recognized, certified, or accredited by the following organizations: **IC Registration No.: 22984-1**

The 3m Semi-anechoic chamber of Shenzhen Huaxia Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

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

CNAS (No. CNAS L5785)

CNAS has accredited Shenzhen Huaxia Testing Technology Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.9 Abnormalities from Standard Conditions

None.

4.10 Other Information Requested by the Customer

None.



4.11 Equipment List

			Instrument	Calibration	Calibration
Test Equipment	Manufacturer	Model No.	No.	Date	Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2021/9/10	2022/9/9
Spectrum analyzer	R&S	FSU26	CQA-038	2021/9/10	2022/9/9
		AFS4-00010300-18-10P-			
Preamplifier	MITEQ	4	CQA-035	2021/9/10	2022/9/9
		AMF-6D-02001800-29-			
Preamplifier	MITEQ	20P	CQA-036	2021/9/10	2022/9/9
Loop antenna	Schwarzbeck	FMZB1516	CQA-087	2021/9/16	2024/9/15
Bilog Antenna	R&S	HL562	CQA-011	2021/9/16	2024/9/15
Horn Antenna	R&S	HF906	CQA-012	2021/9/16	2024/9/15
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2021/9/16	2024/9/15
Coaxial Cable					
(Above 1GHz)	CQA	N/A	C019	2021/9/10	2022/9/9
Coaxial Cable					
(Below 1GHz)	CQA	N/A	C020	2021/9/10	2022/9/9
Antenna Connector	CQA	RFC-01	CQA-080	2021/9/10	2022/9/9
RF					
cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2021/9/10	2022/9/9
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2021/9/10	2022/9/9
EMI Test Receiver	R&S	ESPI3	CQA-013	2021/9/10	2022/9/9
LISN	R&S	ENV216	CQA-003	2021/9/10	2022/9/9
Coaxial cable	CQA	N/A	CQA-C009	2021/9/10	2022/9/9

Note:

The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.



5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)					
15.203 requirement:						
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the						
responsible party shall be use	responsible party shall be used with the device. The use of a permanently attached antenna or of an					
antenna that uses a unique co	antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit					
so that a broken antenna can	be replaced by the user, but the use of a standard antenna jack or					
electrical connector is prohibit	ted.					
15.247(b) (4) requirement:						
The conducted output power	limit specified in paragraph (b) of this section is based on the use of					
antennas with directional gain	is that do not exceed 6 dBi. Except as shown in paragraph (c) of this					
section, if transmitting antenn	section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output					
power from the intentional rac	liator shall be reduced below the stated values in paragraphs (b)(1),					
(b)(2), and (b)(3) of this section	(b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the					
antenna exceeds 6 dBi.						
EUT Antenna:						
The antenna is PCB antenna	a. The best case gain of the antenna is 1.7 dBi.					





5.2 Conducted Emissions

 Conducted Emissio					
Test Requirement:	47 CFR Part 15C Section 15.207				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	150kHz to 30MHz				
Limit:		Limit (c	lBuV)		
	Frequency range (MHz)	Quasi-peak	Average		
	0.15-0.5	66 to 56*	56 to 46*		
	0.5-5	56	46		
	5-30	60	50		
	* Decreases with the logarithm of the frequency.				
Test Procedure:					
Test Setup:	Shielding Room	AE <u>B</u> <u>B</u> <u>B</u> <u>B</u> <u>B</u> <u>B</u> <u>B</u> <u>B</u>	Test Receiver		

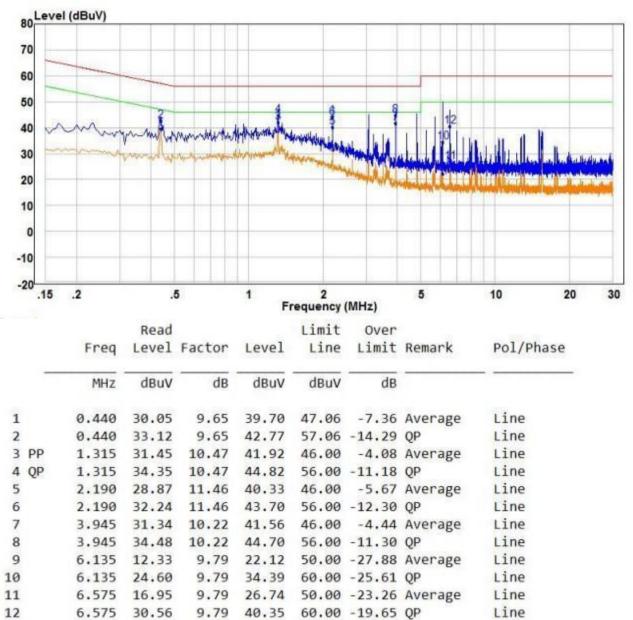


Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of
	data type at the lowest, middle, high channel.
Final Test Mode:	Through Pre-scan, find the DH5 of data type and GFSK modulation at the lowest channel is the worst case.
	Only the worst case is recorded in the report.
Test Voltage:	AC 120V/60Hz
Test Results:	Pass



Measurement Data

Live line:

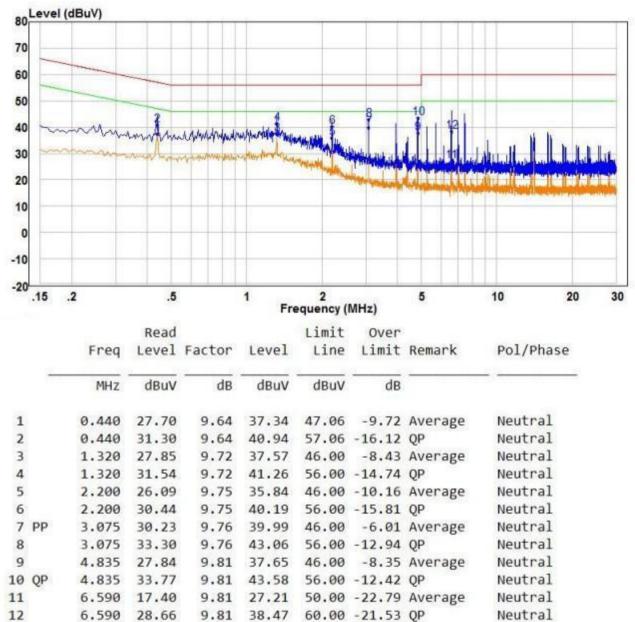


Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



Neutral line:



Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

3. If the Peak value under Average limit, the Average value is not recorded in the report.



5.3 Conducted Peak Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(1)			
Test Method:	ANSI C63.10:2013			
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane Remark: Offset=Cable loss+ attenuation factor.			
Limit:	21dBm			
Exploratory Test Mode:	Non-hopping transmitting with all kind of modulation and all kind of data type			
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of π /4DQPSK modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type. Only the worst case is recorded in the report.			
Test Results:	Pass			

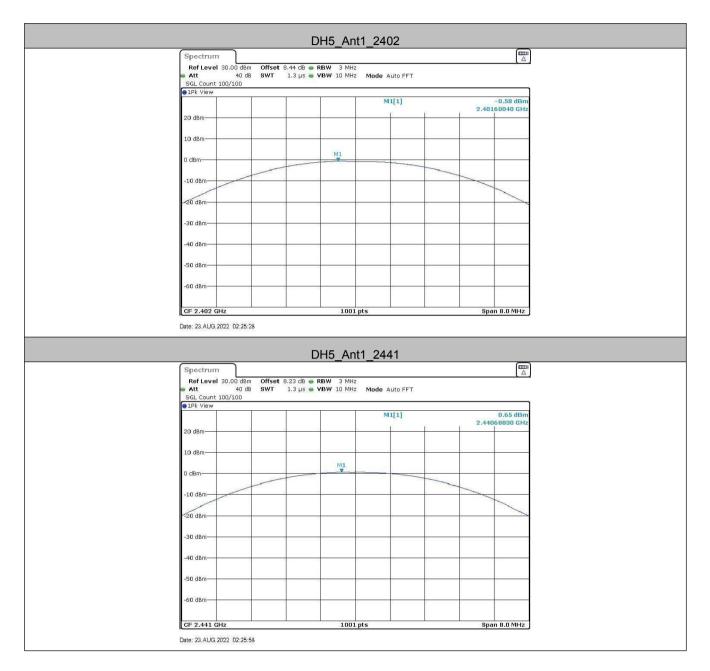


Measurement Data

GFSK mode						
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
Lowest	-0.58	21.00	Pass			
Middle	0.65	21.00	Pass			
Highest	0.14	21.00	Pass			
	π/4DQPSK m	ode				
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
Lowest	-1.93	21.00	Pass			
Middle	-0.65	21.00	Pass			
Highest	-1.35	21.00	Pass			
	8DPSK mod	le				
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
Lowest	-1.62	21.00	Pass			
Middle	-0.22	21.00	Pass			
Highest	-0.59	21.00	Pass			



Test plot as follows:









	20	0H5_Ant1_244	11		
Spectrum Ref Level 30.00 dB	m Offset 8.23 dB 🕳 R	BW 3 MHz			
 Att 40 c SGL Count 100/100 1Pk View 	ib SWT 1.3 µs 🖷 V	BW 10 MHz Mode Au		-0.65 dBm	
20 dBm				2.44061640 GHz	
10 dBm		M1			
0 dBm -10 dBm					
-20 dBm-					
-30 dBm					
-40 dBm					
-60 dBm					
CF 2.441 GHz Date: 23.AUG.2022 02:27	:53	1001 pts		Span 8.0 MHz	
	20	0H5_Ant1_248	30		
Spectrum Ref Level 30.00 dB		BW 3 MHz			
Ref Level 30.00 dB	m Offset 8.23 dB 🖷 R	BW 3 MHz	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c SGL Count 100/100 IPk View 20 dBm	m Offset 8.23 dB 🖷 R	BW 3 MHz BW 10 MHz Mode Au	ito FFT		
Ref Level 30,00 dB Att 40 o SGL Count 100/100 1Pk View	m Offset 8.23 dB 🖷 R	BW 3 MHz BW 10 MHz Mode Au	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c SGL Count 100/100 100/100 #1Pk View 20 dBm 10 dBm 10 dBm	m Offset 8.23 dB 🖷 R	BW 3 MH2 BW 10 MH2 Mode Au M1	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c SGL Count 100/100 IPk View 20 dBm 10 dBm 0 dBm -10 dBm -26 dBm	m Offset 8.23 dB 🖷 R	BW 3 MH2 BW 10 MH2 Mode Au M1	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c SGL Count 100/100 ● IPk View 20 dBm 10 dBm 0 dBm	m Offset 8.23 dB 🖷 R	BW 3 MH2 BW 10 MH2 Mode Au M1	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c ScL Count 100/100 IPk View 20 dBm 10 dBm 0 dBm -10 dBm -30 dBm -30 dBm -50 dBm	m Offset 8.23 dB 🖷 R	BW 3 MH2 BW 10 MH2 Mode Au M1	ito FFT	-1.35 dBm	
Ref Level 30.00 dB Att 40 c SGL Count 100/100 IPk View 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	m Offset 8.23 dB 🖷 R	BW 3 MH2 BW 10 MH2 Mode Au M1	ito FFT	-1.35 dBm	



		3DH5_Ant	1 2402			
Spectrum Ref Level 30.00	dBm Offset 8.44 di	B • RBW 3 MHz				
● Att 40 dB SWT 1.3 µs ● VBW 10 MHz Mode AutoFFT SGL Count 100/100 ● IPk View						
20 dBm-			M1[1]	2.4	- 1.62 dBm 0164840 GHz	
10 dBm						
0 dBm		M1				
-10 dBm						
-20-08m-						
-30 dBm						
-50 dBm						
-60 dBm						
CF 2.402 GHz Date: 23.AUG.2022 02	-29-16	1001 pt	s	S	pan 8.0 MHz	
		3DH5_Ant	1 2441			
Spectrum			1_2441			
Ref Level 30.00 Att 4 SGL Count 100/10 PIPk View	0dB SWT 1.3 µ	B • RBW 3 MHz s • VBW 10 MHz	Mode Auto FFT			
20 dBm-			M1[1]	2.4	-0.22 dBm 406 4840 GHz	
10 dBm	_				_	
0 dBm		M1		_		
-10 dBm						
-20 dBm		8 (1)	1			
-30 dBm						
-30 dBm						
-40 dBm						



 Spectrum				
	 RBW 3 MHz VBW 10 MHz Mode Auto FFT 			
SGL Count 100/100 IPk View				
	M1[1]	-0.59 dBm 2.48039160 GHz		
20 dBm				
10 dBm-				
0 dBm	MI			
-10 dBm				
-20 dBm-				
-30 dBm				
-40 dBm				
-50 dBm				
-60 dBm				
CF 2.48 GHz	1001 pts	Span 8.0 MHz		



5.4 20dB Occupy Bandwidth

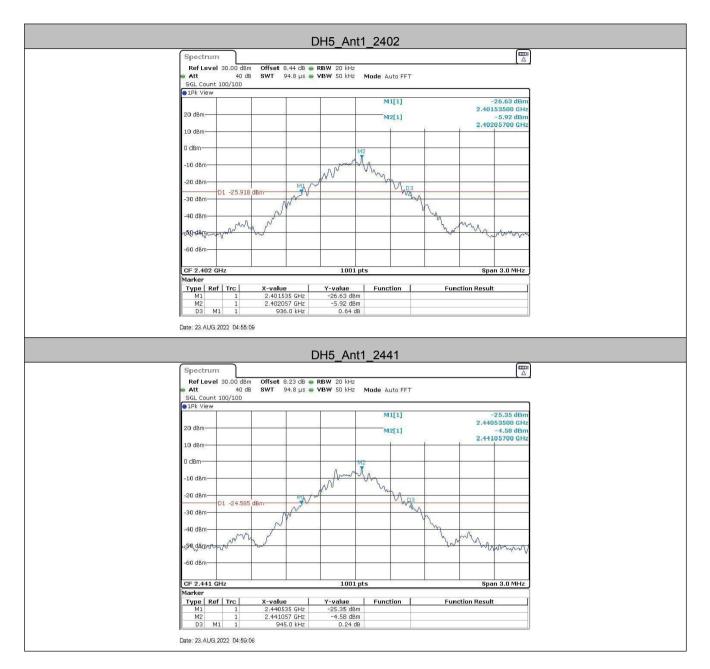
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)				
Test Method:	ANSI C63.10:2013				
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
	Remark: Offset=Cable loss+ attenuation factor.				
Limit:	NA				
Exploratory Test Mode:	Non-hopping transmitting with all kind of modulation and all kind of data type				
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of π /4DQPSK modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type. Only the worst case is recorded in the report.				
Test Results:	Pass				

Measurement Data

Test shannel	20dB Occupy Bandwidth (MHz)				
Test channel	GFSK	π/4DQPSK	8DPSK		
Lowest	0.936	1.263	1.254		
Middle	0.945	1.251	1.269		
Highest	0.942	1.320	1.266		

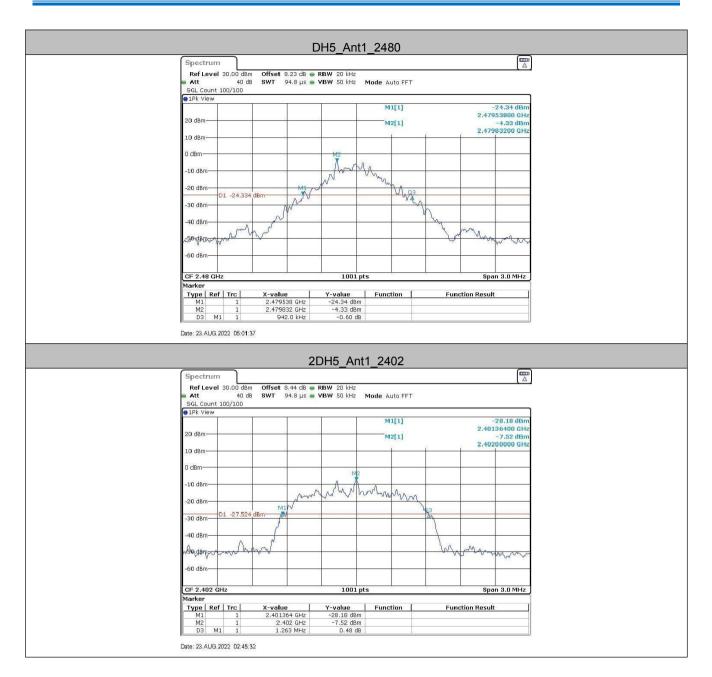


Test plot as follows:





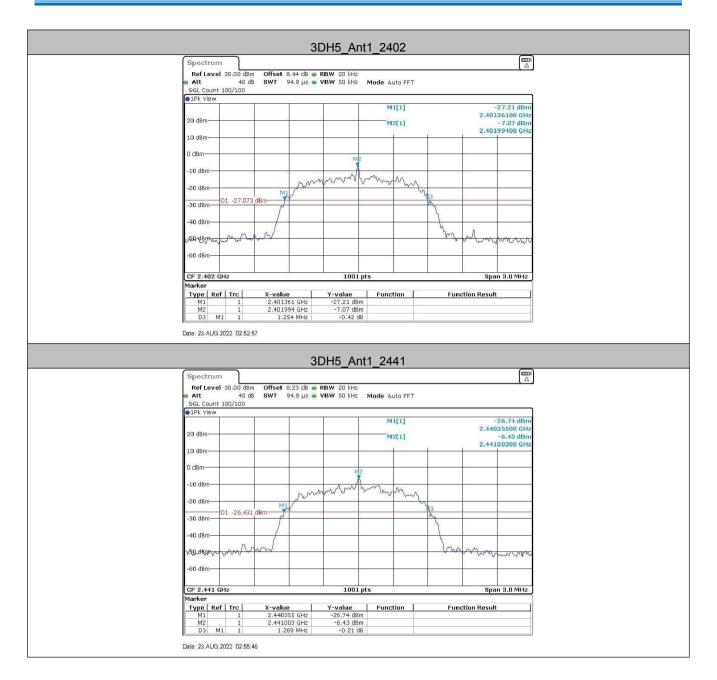


















5.5 Carrier Frequencies Separation

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
	Remark: Offset=Cable loss+ attenuation factor.
Limit:	2/3 of the 20dB bandwidth
	Remark: the transmission power is less than 0.125W.
Exploratory Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of π /4DQPSK modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type. Only the worst case is recorded in the report.
Test Results:	Pass



Measurement Data

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Нор	1.003	≥0.63	PASS
2DH5	Ant1	Нор	1.006	≥0.880	PASS
3DH5	Ant1	Нор	1.006	≥0.846	PASS

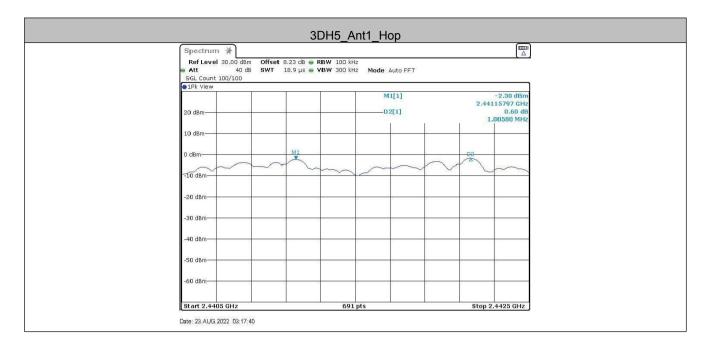
Mode	20dB bandwidth (MHz) (worse case)	Limit (MHz) (Carrier Frequencies Separation)
GFSK	0.945	0.63
π/4DQPSK	1.320	0.88
8DPSK	1.269	0.846



Test plot as follows:









5.6 Hopping Channel Number

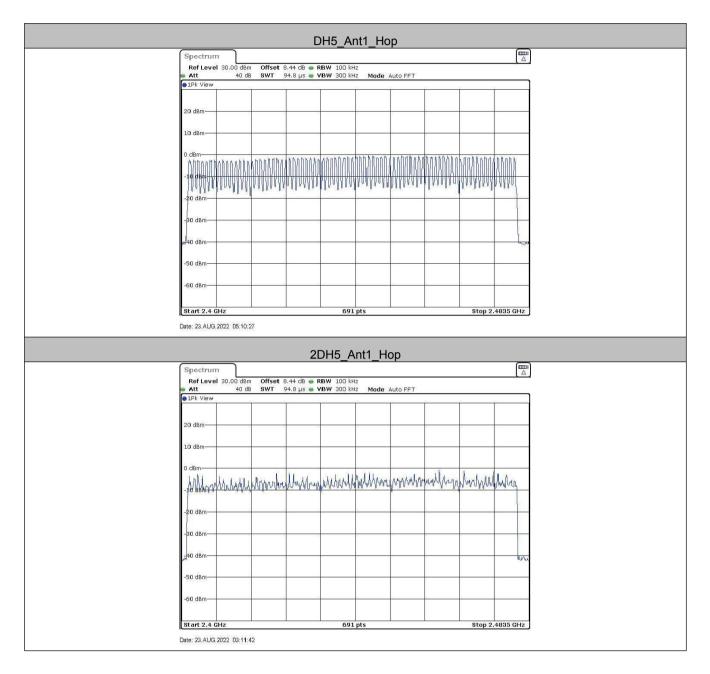
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane Remark: Offset=Cable loss+ attenuation factor.
Limit:	At least 15 channels
Exploratory Test Mode:	hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of $\pi/4DQPSK$ modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type. Only the worst case is recorded in the report.
Test Results:	Pass

Measurement Data

Mode	Hopping channel numbers	Limit
GFSK	79	≥15
π/4DQPSK	79	≥15
8DPSK	79	≥15



Test plot as follows:





Spectrum					
Ref Level 30.00 dBm					
Att 40 dB	SWT 94.8 µs 🖷	VBW 300 kHz Mode	Auto FFT		
●1Pk View	1		T T	1	
20 dBm					
10 dBm					
0 dBm					
- Janakara hara barak	pullingualunta	physical and a strategy of the	Junan manuf	Apprenticultur	MA
-20 dBm	~				
-30 dBm				1	
40 dBm					burt
-50 dBm					
-60 dBm	~				
Start 2.4 GHz		691 pts		Stop 2.483	5 GHz



5.7 Dwell Time

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table
	Ground Reference Plane
	Remark: Offset=Cable loss+ attenuation factor.
Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type.
Limit:	0.4 Second
Test Results:	Pass



Measurement Data

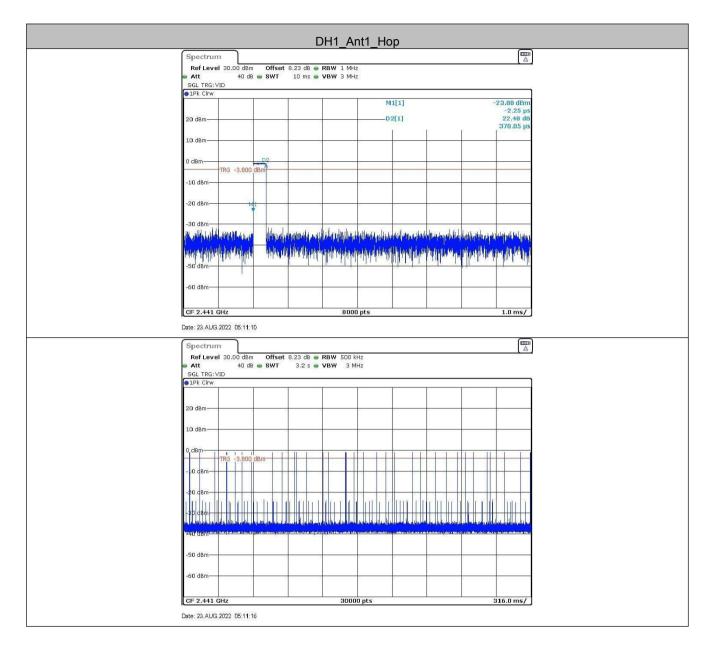
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Нор	0.37	330	0.122	≤0.4	PASS
DH3	Ant1	Нор	1.61	170	0.274	≤0.4	PASS
DH5	Ant1	Нор	2.85	110	0.313	≤0.4	PASS
2DH1	Ant1	Нор	0.38	330	0.125	≤0.4	PASS
2DH3	Ant1	Нор	1.62	170	0.276	≤0.4	PASS
2DH5	Ant1	Нор	2.86	110	0.315	≤0.4	PASS
3DH1	Ant1	Нор	0.38	320	0.121	≤0.4	PASS
3DH3	Ant1	Нор	1.62	170	0.275	0.4	PASS
3DH5	Ant1	Нор	2.86	110	0.315	<u>≤</u> 0.4	PASS

Remark:

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s



Test plot as follows:





DH3_Ant1_Hop	
Spectrum [min] Ref Level 30.00 dbm Offset 8.23 db ● RBW 1 MHz	
Att 40 dB SWT 10 ms VBW 3 MHz	
SGL TRG: VID ●1Pk Cirw	
M1[1] -8.54 dBm -1.00 µs	
20 dBm D2[1] 7.25 dB 1.60895 ms	
10 dBm	
0 d8m-	
TRG -3.800 4Bm	
-20 dBm-	
-30 dBm	
provided the discontenent the statement in	
20 gau Red y ar alloyed a seal of a sea	
-60 dBm	
CF 2.441 GHz 8000 pts 1.0 ms/	
Date: 23. AUG 2022 05:11:38	
Spectrum 💭	
Ref Level 30.00 dBm Offset 8.23 dB RBW 500 kHz Att 40 dB SWT 3.2 s VBW 3 MHz	
SGL TRG: VID IPk Cirw	
●TEK FILM	
20 dBm	
10 dBm	
TRG -3.600 dBm	
-10 dBm	
-20 dBm	
Fill CBU and provide the second and the second s	
-50 dBm	
-60 dBm	
-60 dBm CF 2.441 GHz 30000 pts 316.0 ms/	



			[DH5_A	.nt1_Ho	р			
Spectru	m								
Ref Lev	el 30.00 dBm								(-
Att SGL TRG		s 🕳 SWT	10 ms 👄	VBW 3 MF	łz				
IPk Clrw									
					M	1[1]			-5.79 dBm -1.00 μs
20 dBm-					Da	2[1]			4.42 dB
							r i	2	2.84911 ms
10 dBm-	-						-		
0 dBm-				D	2				
0 dBm	TRG -3.800	dBm	*****	2					
-10 dBm-	1.0.0								
-20 dBm-	-			-		-	e		
-30 dBm-									
-30 dBm-	La cata babahasa d				My mouthly	ي البنايرينية ال	Jahada Jaharah	des adaption.	al his he such
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-60 dBm-									
-oo abii-							-		
CF 2.441	GH7			800	10 pts				1.0 ms/
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Date: 23.AU	5.2022 05.10.4								
Spectru	m								
	el 30.00 dBm								1990
SGL TRG		s 👄 SWT	3.2 S 📟	VBW 31	MH2				
●1Pk Clrw			1			-			
20 dBm-	-			-	18		9	-	
10 dBm-				2					
0 dBm	-								
	TRG -3.800	dBm							
-10 dBm—	-		8		14		· · · ·		3 <u>8</u> 5 9
00.00									
-20 dBm-	C. CRU	11 1	1			111		- n n	T
-30 dBm-									
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-50 dBm-									
-30 dBm-			2	8					
-60 dBm-	-						*		
		1	1	1	1			1	
CF 2.441	GHz			300	00 pts			3	316.0 ms/





	2DH1	Ant1 Hon		
Spectrum	2011			
Att 40 dB				<u>i</u>
SGL TRG: VID 1Pk Clrw	1	1		
		Strategie das	-2.25 µs	
	6	02[1]	20.79 us 377.55 μs	
10 dBm	2			
0 dBm	Sma			
10 dBm				
-20 dBm				
-30 dBm				
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Wernstein Locker Chelenter	a the good of the section of the sec		and hill for Anti-Anti-Alakan	
-50 dBm				
-60 dBm	0 0			
CF 2.441 GHz		8000 pts	1.0 ms/	
Date: 23.AUG.2022 03:12:26		272		
Spectrum				
👄 Att 40 dB 🖷	Offset 8.23 dB • RBW • SWT 3.2 s • VBW	500 kHz 3 MHz		
RefLevel 30.00 dBm Att 40 dB SGL TRG:VID 1Pk Clrw	Offset 8.23 dB RBW SWT 3.2 s VBW	500 kHz 3 MHz		
Att 40 dB SGL TRG: VID 1Pk Clrw	Offset 8.23 dB RBW SWT 3.2 s VBW	500 kHz 3 MHz		
Att 40 dB SGL TRG: VID	Offset 8.23 dB	500 kHz 3 MHz		
Att 40 dB SGL TRG: VID 1Pk Clrw	Offset 8.23 dB RBW SWT 3.2 5 VBW	500 kHz 3 MHz		
Att 40 dB SGL TRG: VID PIPk CIrw 20 dBm 10 dBm 0 dBm	SWT 3.2 s VBW	SOD KH2 3 MH2		
Att 40 dB SGL TRG: VID 1Pk CIrw 20 dBm- 10 dBm-	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID ● 1Pk CIrw 20 dBm 10 dBm 0 dBm -10 dBm -1	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID IPk CIrw 20 dBm 10 dBm 0 dBm	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID O dBm	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID ● 1Pk CIrw 20 dBm 10 dBm 0 dBm -10 dBm -1	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID O dBm	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID 9 1Pk CIrw 20 dBm 10 dBm 0 dBm -10 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm -40 dBm	SWT 3.2 s VBW			
Att 40 dB SGL TRG: VID 9 IPk CIrw 9 IPk CIrw 20 dBm 10 dBm 10 dBm 0 dBm 10 dBm 10 dBm 10 dBm 10 dBm 10 dBm -10 dBm 10 dBm -10 dBm 10 dBm -50 dBm 10 dBm	3.2 s VBW	SOO KH2 3 MH2	316.0 ms/	
_	Ref Level 30.00 dBm Att 40 dB SGL TRG: VID ● IPk CIrw 20 dBm 10 dBm 0 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm -60 dBm CF 2.441 GHz Date: 23 AUG 2022 03:12:26	Spectrum Ref Level 30,00 dBm Offset 8,23 dB = RBW Att 40 dB = SWT 10 ms = VBW SGL TRG:VID ID ms = VBW ID dBm ID ms = VBW 10 dBm ID dBm -10 dBm ID ms = VBW -20 dBm ID ms = VBW -30 dBm ID ms = VBW -50 dBm ID ms = VBW -60 dBm ID ms = VBW	Ref Level 30.00 dBm Offset 8.23 dB RBW 1 MHz Att 40 dB SWT 10 ms VBW 3 MHz SGL TRG: VID ●1Pk Clrw ●121 ●121 ●121 ●1Pk Clrw ●121 ●221 ●221 ●221 10 dBm ●221 ●221 ●221 ●221 10 dBm ●20 dBm ●20 dBm ●221 ●221 -10 dBm ●20 dBm ●20 dBm ●20 dBm ●20 dBm -20 dBm ●14 ●14 ●14 ●14 ●14 -30 dBm ●14	Spectrum Image: Construction of the set of the s



		2DH3_Ant1_H	מר	
Spectrur	1		ν P	
Ref Leve	al 30.00 dBm Offset (
Att SGL TRG:		10 ms 👄 VBW 3 MHz		
● 1Pk Cirw	10			
		M	1[1]	-7.82 dBm -1.00 μs
20 dBm		D	2[1]	5.00 dB
			e en p	1.62145 ms
10 dBm		2 ×		
0 dBm		in some UP2		
	TRG -3.8001dBm	and the second		
-10 dBm				
-20 dBm				
-30 dBm				
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Spectrur	n			
Ref Leve Att	al 30.00 dBm Offset (8.23 dB RBW 500 kHz 3.2 s VBW 3 MHz		
SGL TRG: Y		3.2 S S VOW 3 MH2		
● 1Pk Cirw				
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10 dBm				
0 dBm				
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-10 dBm				
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	DH5_Ant1_Hop		
Spectrum Ref Level 30.00 dBm Offset 8.23 dB @	DBW 1 MHz		
Att 40 dB SWT 10 ms			
SGL TRG: VID IPk Clrw			
	M1[1]	-22.50 dBm -2.25 μs	
20 dBm	D2[1]	19.68 dB 2.86286 ms	
10 dBm			
0 dBm			
-10 dBm			
-20 dBm			
-30 dBm			
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	and the article of th	al y for a for the second of the date of the second of t	
-60 dBm			
CF 2.441 GHz	8000 pts	1.0 ms/	
Date: 23.AUG.2022 03:11:54			
Spectrum Ref Level 30.00 dBm Offset 8.23 dB 🖷	PRW FOO MIN		
Att 40 dB SWT 3.2 s	VBW 3 MHz		
SGL TRG: VID PIPK Cirw			
20 dBm			
10 dBm			
0 dBm			
TRG -3.900 dBm			
-10 dBm			
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-50 dBm	30000 pts	316.0 ms/	





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Spectrun	1									
Ref Level 30.00 dBm Offset 8.23 dB RBW 1 MHz										
Att SGL TRG: V		SWT	10 ms 👄	VBW 3 MH;	Z					
91Pk Clrw	10									
					M	1[1]		-	16.47 dBm -2.25 μs	
20 dBm			-		D	2[1]			13.73 dB	
							1	r i	377.55 µs	
10 dBm			-		-		-			
0 dBm	TRG -3.200	-11-162	-			-	-			
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-20 dBm	-		-			-				
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-50 dBm	18 - 2	3			6	1	1			
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	_	5-V							Ē	
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Att				VBW 3M						
SGL TRG: V	'ID									
●1Pk Clrw	-					-	-			
20 dBm		2			2		3			
10 dBm										
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-50 dBm										
-60 dBm										
CF 2.441 0	GHz			3000	0 pts			3	16.0 ms/	
Date: 23.AUG.	2022 03:18:4	6								



	3DH3_Ant1_Hop	
Spectrum		
RefLevel 30.00 dBm Offset Att 40 dB SWT	8.23 dB RBW 1 MHz 10 ms VBW 3 MHz	
SGL TRG; VID		
	M1[1]	-12.32 dBm
20 dBm-	D2[1]	-1.00 µs 10.22 dB
10 dBm		1.61895 ms
0 dBm		
-10 dBmM1		
00.40		
-20 dBm		
-30 dBm		
his and a second product provide		
and the second secon	a na a na a tanàna any amin'ny desira desira da dia da	La Mari Alita da La
-50 dBm		
-60 dBm		
CF 2.441 GHz	8000 pts	1.0 ms/
Date: 23,AUG,2022 03:19:52		
Spectrum	o oo da la anaa ay	
	3.2 s SUBW 3 MHz	
SGL TRG: VID		
20 dBm		
10 dBm		
0 dBm TRG -3,100 dBm		
-10 d&m		
-20/d8th-++++++++++++++++++++++++++++++++++++	rr hi hili kiri harre	
-20 001		
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ing Co.4.23 March and a strain and a	n an un un ang taon ang ang ang ang ang ang ang ang ang an	lanna han marana an
-50 dBm		
-60 dBm		
CF 2.441 GHz	30000 pts	316.0 ms/
Date: 23.AUG.2022_03:19:58	*	





0 P I		
	15_Ant1_Hop	m
Spectrum Ref Level 30.00 dBm Offset 8.23 dB RB	₩ 1 MHz	
Att 40 dB SWT 10 ms VB SGL TRG: VID		
SGL TRG: VID IPk Cirw		
	M1[1]	-7.14 dBm -1.00 µs
20 dBm	D2[1]	4.59 dB 2.86286 ms
10 dBm		2.00200 ms
Lo don.		
0 dBm		
-10 dBm		
-20 dBm		
-30 dBm		
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-60 dBm	10 C C	
CF 2.441 GHz	8000 pts	1.0 ms/
Date: 23.AUG.2022 03:18:12		
Spectrum		
Ref Level 30.00 dBm Offset 8.23 dB ■ RB' ■ Att 40 dB ■ SWT 3.2 s ■ VB		
SGL TRG: VID		
1Pk Cirw		
20 dBm		
10 000		
10 dBm	× *	· · · · ·
0 dBm		
TRG -3.100 dBm		
-10 dBm		
-10 dBm		
-dio diam		
-do dem		
-dio diam		
-do dim		
-20 dBm		
-do dim	and the second s	316.0 ms/



5.8 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
	Remark: Offset=cable loss+ attenuation factor.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Exploratory Test Mode:	Hopping and Non-hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of $\pi/4DQPSK$ modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type. Only the worst case is recorded in the report.
Test Results:	Pass



Shenzhen Huaxia Testing Technology Co., Ltd.

Report No.: CQASZ20220801407E-01

Measurement Data

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
		Low	2402	-2.31	-49.91	≤-22.31	PASS
		High	2480	-1.48	-49.53	≤-21.48	PASS
DH5	Ant1	Low	Hop_2402	-2.96	-50.1	≤-22.96	PASS
		High	Hop_2480	-1.68	-49.47	≤-21.68	PASS
		Low	2402	-3.45	-50.44	≤-23.45	PASS
		High	2480	-3.04	-49.05	≤-23.04	PASS
2DH5	Ant1	Low	Hop_2402	-3.52	-49.49	≤-23.52	PASS
		High	Hop_2480	-3.43	-49.66	≤-23.43	PASS
		Low	2402	-2.65	-49.36	≤-22.65	PASS
		High	2480	-2.03	-49.34	≤-22.03	PASS
3DH5	Ant1	Low	Hop_2402	-6.22	-50.35	≤-26.22	PASS
		High	Hop_2480	-1.44	-49.13	≤-21.44	PASS



Test plot as follows:

			DH5	_Ant1_L	ow_2402			
Sp	ectrum							
	f Level 20.00			BW 100 kHz				
- A	t 3 . Count 300/30	0 dB SWT 7 0	5.8 µs 👄 V	/BW 300 kHz	Mode Auto FFT			
	: View	0						
					M1[1]		-2.31 dBr 2.4018560 GH	
10	Bm				M2[1]		-53.32 dBr	m
0 d	m		2	6			2.4000000 GH	1z
10	dBm						1	
-20	JBm D1 -22	.310 dBm				-		-
-30	dBm					-		-
-10	dBm				0			
1993 1993	1999 - P					M3	M4	
-50	Bm Munn	wanter	munipirvu	multimache uma	utwinnter	advirter my	werkmanner th	10-
-60	1Bm							-
-70	dBm							
	t 2.35 GHz	-		691 pts	0		Stop 2.405 GHz	z
Mar	er e Ref Trc	X-value	1	Y-value	Function	Eupo	tion Result	
	41 1	2,40185	56 GHz	-2.31 dBm	Tanccon	- Tunc	AIOH NGSUIC	
	42 1 43 1		.4 GHz 39 GHz	-53.32 dBm -52.06 dBm				-
	14 1			-49.91 dBm				
Date:	23.AUG.2022 04	:55:30						
			DH5	_Ant1_H	igh_2480			_
	ctrum				igh_2480		[]	
R	f Level 20.00		.23 dB 👄 R	BW 100 kHz			E d	
R	f Level 20.00	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT			<u>a</u>
R A SG	fLevel 20.00 t 3	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT			-
R A SCG IF	f Level 20.00 t 3 . Count 300/30 : View	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT	_	- 1.48 dBr 2.479780 GH	m Iz
R SG 11	f Level 20.00 t 3 .Count 300/30 t View Bm	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R A SCG IF	f Level 20.00 t 3 .Count 300/30 t View Bm	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH	m tz m
R SG 01F 100 0 d	f Level 20.00 t 3 .Count 300/30 t View Bm	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R SG 9 IP 10 0 d -10	f Level 20.00 t 300/30 View Bm M1 IBm M1	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R A SG 10 10 -10 -20	f Level 20.00 t 3 Count 300/30 : view Bm M1 m M1 M1 M1 m M1 m	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R A SG 10 10 -10 -20	f Level 20.00 t 300/30 View Bm M1 IBm M1	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R SG 91F 10 -10 -20 -30	f Level 20.00 t 3 Count 300/30 : view Bm M1 m M1 M1 M1 m M1 m	0 dB SWT 9	.23 dB 👄 R	BW 100 kHz BW 300 kHz	Mode Auto FFT		- 1.48 dBr 2.479780 GH -52.28 dBr	m tz m
R SG 917 10 -10 -20 -30 -40	f Level 20.00 t 3 Count 300/30 View Bm IBm IBm D1 -21 IBm JBm	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BBW 100 kHz BW 300 kHz	Mode Auto FFT M1[1] M2[1] 		-1.48 dBi 2.479780 GH -52.28 dBi 2.483500 GH	m 1z m 1z
R SG 917 10 -10 -20 -30 -40 -30 -40	f Level 20.00 t 3 Count 300/30 : View Bm M1 m M1 m M1 m M1 m M1 m M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BBW 100 kHz BW 300 kHz	Mode Auto FFT M1[1] M2[1] 		- 1.48 dBr 2.479780 GH -52.28 dBr	m 1z m 1z
R SG 917 10 -10 -20 -30 -40 -30 -40	f Level 20.00 t 3 Count 300/30 View Bm IBm IBm D1 -21 IBm JBm	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BBW 100 kHz BW 300 kHz	Mode Auto FFT M1[1] M2[1] 		-1.48 dBi 2.479780 GH -52.28 dBi 2.483500 GH	m 1z m 1z
R SG ● IF 10 0 d -10 -20 -30 -40 -55 -60	f Level 20.00 t 3 Count 300/30 : View Bm M1 m M1 m M1 m M1 m M1 m M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1 M1	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BBW 100 kHz BW 300 kHz	Mode Auto FFT M1[1] M2[1] 	-	-1.48 dBi 2.479780 GH -52.28 dBi 2.483500 GH	m 1z m 1z
R SG 91F 10 -10 -20 -30 -40 -59 -60 -70	f Level 20.00 t 3 Count 300/30 View Bm M1 m M1 Bm 01 -21 JBm 01 -21 JBm 1 JBm	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BW 100 kHz BW 300 kHz BW 300 kHz M4	Mode Auto FFT M1[1] M2[1] 		-1.48 dBr 2.479780 GH -52.28 dBr 2.483500 GH	
R SG ● IF 10 0 d -10 -20 -30 -40 -5% -50 -70 -81d	f Level 20.00 t 3 Count 300/30 : view Bm M1 m M1 JBm D1 -21 JBm D1 -21 JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM	0 dB SWT 9 0	.23 dB Φ R 14.8 μs Φ V	BBW 100 kHz BW 300 kHz	Mode Auto FFT M1[1] M2[1] 		-1.48 dBi 2.479780 GH -52.28 dBi 2.483500 GH	
R SG 916 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	f Level 20.00 t 3 Count 300/30 : view Bm M1 m M1 JBm D1 -21 JBm D1 -21 JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM JBm JM	0 dB SWT 9 0 	.23 dB ● R +4.8 µs ● V 	BW 100 kHz /BW 300	Mode Auto FFT M1[1] M2[1] 		-1.48 dBr 2.479780 GH -52.28 dBr 2.483500 GH	
R SG 91F 10 - 0 d -10 -20 -30 -40 -59 -50 -70 -70 -71 -71 -71 -71 -71 -71 -71 -71 -71 -71	f Level 20.00 t 3 Count 300/30 : view Bm M1 m M1 Bm JBm JBm JBm JBm JBm JBm JBm JBm JBm	0 dB SWT 9 0 	.23 dB R R 14.8 µs V	BW 100 kHz BW 300 kHz BW 300 kHz M4 691 pts Y-volue -1.48 dbm	Mode Auto FFT		-1.48 dBr 2.479780 GH -52.28 dBr 2.483500 GH	
R SG 91F 10 0 d -10 -20 -30 -40 -55 -60 -70 -70 -70 -70 -70 -70 -70 -70 -70 -7	f Level 20.00 f Level 20.00 t 30/30 count 30/30 count 30/30 count 30/30 count 30/30 count 30/30 bm 1 dBm 01 -21	0 dB SWT 9 0 	.23 dB R R 14.8 µs V M3 North M4. 178 GH2 15 GH2 15 GH2	BW 100 kHz BW 300 kHz BW 300 kHz 691 pts 7-volue -1.48 dbm -52.97 dbm	Mode Auto FFT		-1.48 dBr 2.479780 GH -52.28 dBr 2.483500 GH	
R SG 91F 10 0 d -10 -20 -30 -40 -55 -60 -70 -70 -70 -70 -70 -70 -70 -70 -70 -7	f Level 20.00 f Level 20.00 t 32 count 300/30 : View Bm JBm	0 dB SWT 9 0 	.23 dB R R 14.8 µs V M3 North M4. 178 GH2 15 GH2 15 GH2	BW 100 kHz /BW 300	Mode Auto FFT		-1.48 dBr 2.479780 GH -52.28 dBr 2.483500 GH	







	2DH5 Ant1 Low 2402		
Spectrum			
Ref Level 20.00 dBm Offset 8.44	4 dB 👄 RBW 100 kHz	(-)	
Att 30 dB SWT 75.4 SGL Count 300/300	B µs 🖶 VBW 300 kHz 🛛 Mode Auto FFT		
●1Pk View			
- 19	M1[1]	-3.45 dBm 2.4018560 GHz	
10 dBm	M2[1]	-52.46 dBm	
0 dBm		2.4000000 GHz	
-10 dBm		<u>A</u>	
-20 dBm			
D1 -23.450 dBm			
-30 dBm			
-40 dBm			
-50 dBm	Md M3	12	
-60 dBm	an and the second and a second and a second s	or fund must and such as	
-70 dBm			
Start 2.35 GHz	691 pts	Stop 2.405 GHz	
Marker Type Ref Trc X-value	Y-value Function	Function Result	
M1 1 2.401856 M2 1 2.4	GHz -3.45 dBm GHz -52.46 dBm		
M3 1 2.39 M4 1 2.3825217			
M4 1 2.3825217 Date: 23.AUG 2022 02:45:53	GHz -50.44 dBm		
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2 Spectrum 2 Ref Level 20.00 dbm Offset 8.22			_
M4 1 2.3825217 Date: 23.AUG.2022 02.45:53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.1	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 µs • VBW 300 kHz Mode Auto FFT		
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2 2 Spectrum Offset 8.23 30 dB SWT 94.1 SGL Count 300/300 91Pk View 94.1 30 dB 3	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz	
M4 1 2.3825217 Date: 23.AUG.2022 02.45:53 Spectrum Offset 8.27 Ref Level 20.00 dBm Offset 8.27 SGL count 300/300 SWT 94.0 91.0 Other View 10 dBm 0 10 10	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 µs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm	_
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2 2 Spectrum Offset 8.23 30 dB SWT 94.1 SGL Count 300/300 91Pk View 94.1 30 dB 3	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz	
M4 1 2.3825217 Date: 23.AUG.2022 02.45:53 Spectrum Offset 8.27 Ref Level 20.00 dBm Offset 8.27 SGL count 300/300 SWT 94.0 91.0 Other View 10 dBm 0 10 10	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm	
M4 1 2.3825217 Date: 23.AUG 2022 02.45:53 2 2 Spectrum Offset 8.22 3 Ref Level 20.00 dbm Offset 8.22 3 SGL Count 300/300 91/1 3 I dbm 0 dbm 4 10 dbm 1 4 4 -10 dbm -10 dbm -10 dbm -10 dbm	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm	
 M4 1 2.3825217 Date: 23 AUG 2022 02:45:53 2 Spectrum Ref Level 20.00 dbm Offset 8:22 Att 30 db SWT 94.1 ScL Count 300/300 IPk View 10 dbm 10 dbm 10 dbm -10 dbm 0 1 - 23.040 dbm 0 dbm 0 0	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm	
M4 1 2.3825217 Date: 23.AUG 2022 02.45:53 2 Spectrum Offset 8.23 Att 30 dB SWT 94.0 SGL Count 300/300 91/4 3 <td>GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT</td> <td>-3.04 dBm 2.480010 GHz -52.26 dBm</td> <td></td>	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm	
M4 1 2.3825217 Date: 23.AUG 2022 02:45:53 2 Spectrum Ref Level 20.00 dbm Offset 8:22 Att 30 db SWT 94.1 SGL Count 300/300 91k View 10 dbm 10 dbm -10 dbm -10 dbm -10 dbm -10 dbm -30 dbm -40 dbm -40 dbm -40 dbm	CH2 -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kH2 B μ5 • VBW 300 kH2 Mode Auto FFT M1[1] M2[1] M2[1]	-3.04 dBm 2.480010 GHz -52.26 dBm	
M4 1 2.3825217 Date: 23.AUG.2022 02.45.53 2.45.53 Spectrum Offset 8.22 Att 30.46 SGL count 300/300 91Pk View 10 dBm -10 dBm -30 dBm -40 dBm	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG.2022 02.45.53 2.45.53 Spectrum Offset 8.22 Att 30.46 SGL count 300/300 91Pk View 10 dBm -10 dBm -30 dBm -40 dBm	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45:53 2.45:53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.1 SGL Count 300/300 91/H View 10 dBm 1 -10 dBm 1 -20 dBm 1 -30 dB 4 -30 dBm 1 -40 dBm 1 -60 dBm M2	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2.45.53 Spectrum Ref Level 20.00 dBm Offset 8.23 State 20.00 dBm Offset 8.23 30 dB SWT 94.0 SGL count 300/300 91Pk View 10 dBm M1 0 -10 dBm 01 -23.040 dBm -30 dB -30 dBm 01 -23.040 dBm -30 dBm -40 dBm 01 -23.040 dBm -30 dBm	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45:53 2.45:53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.1 SGL Count 300/300 91/H View 10 dBm 1 -10 dBm 1 -20 dBm 1 -30 dB 4 -30 dBm 1 -40 dBm 1 -60 dBm M2	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μs • VBW 300 kHz Mode Auto FFT	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2.45.53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.0 SGL Count 300/300 91/4 O dBm M1 0 0 dBm M1 0 -10 dBm M1 0 -30 dB 01 - 23.040 dBm -30 dBm 7 -30 dBm -30 dBm 7 -40 dBm -50 dBm 7 -40 dBm -70 dBm 7 -40 dBm -70 dBm 7 -40 dBm	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 µS • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1] M4 Unit for a standard and	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2.45.53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.0 SGL Count 300/300 91/Fk View 10 dBm 1 -10 dBm 1 -20 dBm 1 -30 dB 1 -30 dBm 1 -10 dBm 1 -10 dBm 1 -30 dBm 1 -40 dBm 1 -70 dBm 2 Start 2.47 GHz X-value M1 1 2.48001	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB • RBW 100 kHz 8 μ5 • VBW 300 kHz Magnetic state M1[1] M2[1] M1[1] M2[1] M4 M3 M4 M3 M4 M3 M4 G91 pts	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23 AUG 2022 02:45:53 2 Spectrum Ref Level 20.00 dbm Offset 8:22 Att 30 db SWT 94.1 SGL Count 300/300 91Pk View 10 dbm 0 dbm M1 0 -10 dbm 0 -10 dbm -30 dbm -12 3040 dBm -30 dbm -30 dbm -20 dbm -23 040 dBm -30 dbm -40 dbm -20 dbm -70 dbm -70 dbm -24 4000 -70 dbm -24 4000 -24 4000 -70 dbm -24 2000 -24 4000 -70 dbm -24 4000 -24 4000 -11 1 -24 4000 -24 4000	GH2 -50.44 dBm 2DH5_Ant1_High_2480 3 dB ● RBW 100 kH2 3 dB ● RBW 100 kH2 3 μS ● VBW 300 kH2 Mode Auto FFT M1[1] M2[1] M2[1] M2[1] M2[1] M3 M4	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	
M4 1 2.3825217 Date: 23.AUG 2022 02.45.53 2.45.53 Spectrum Ref Level 20.00 dBm Offset 8.23 Att 30 dB SWT 94.0 SGL Count 300/300 91/Fk View 10 dBm 1 -10 dBm 1 -20 dBm 1 -30 dB 1 -30 dBm 1 -10 dBm 1 -10 dBm 1 -30 dBm 1 -40 dBm 1 -70 dBm 2 Start 2.47 GHz X-value M1 1 2.48001	GHz -50.44 dBm 2DH5_Ant1_High_2480 3 dB RBW 100 kHz 8 µS VBW 300 kHz 9 µS VBW 300 kHz M1[1] M2[1] M1[1] M2[1] M3 M4 M4 M4 M4 M4 M3 M4 M4 M4 M3 M4 M4 M4 <td>-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz</td> <td></td>	-3.04 dBm 2.480010 GHz -52.26 dBm 2.483500 GHz	



2DH5_Ant1_Low_Hop_2402	
Spectrum	_
Ref Level 20.00 dBm Offset 8,44 dB RBW 100 kHz	
Att 30 dB SWT 75.8 µs VBW 300 kHz Mode Auto FFT Count 300/300	
Count sub/sub	
MI[1] -3.52 dBm	
10 dBm 2.4031300 GHz M2[1] -51.87 dBm	
0 dBm 2.4000000 GHz	
LA DA	
-10 dBm	
-20 dBm- D1 -23.520 dBm-	
-30 dBm	
-40 dBm	
All all and the second second provide a second	
-60 dBm	
-70 dBm	
Start 2.35 GHz 691 pts Stop 2.405 GHz	
Marker	
Type Ref Trc X-value Y-value Function Function Result M1 1 2.40313 GHz -3.52 dBm	
M2 1 2.4 GHz -51.87 dBm	
M3 1 2.39 GHz -52.37 dBm M4 1 2.3512754 GHz -49.49 dBm	
Date: 23.AUG 2022 03.07:31	
2DH5_Ant1_High_Hop_2480	
RefLevel 20.00 dBm Offset 8.23 dB 🖷 RBW 100 kHz	
RefLevel 20.00 dBm Offset 8.23 dB ■ RBW 100 kHz ■ Att 30 dB SWT 94.8 µs ■ VBW 300 kHz Mode Auto FFT SGL Count 300/300	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 Image: Superstand Supersta	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 ●1Pk view M1[1] -3.43 dBm	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 • • • • • ● 1Pk View • • • • • 10 dBm •<	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 ●1Pk View	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 91Pk View 10 dBm -3.43 dBm 10 dBm M1[1] -54.23 dBm 0'dBm 2.493000 GHz	
Ref Level 20.00 dBm Offset 9:23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 IPk View M1[1] -3.43 dBm 10 dBm M1[1] -54.23 dBm 0'dBm 2.483000 GHz 10 dBm 2.483000 GHz	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 91Pk View 10 dBm -3.43 dBm 10 dBm M1[1] -54.23 dBm 0'dBm 2.493000 GHz	
Ref Level 20.00 dbm Offset 9.23 db RBW 100 kHz Att 30 db SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 0 SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 0 10 dbm -3.43 dbm 2.472030 GHz 10 dbm 10 dbm 2.483500 GHz -34.33 dbm 0/8m 2.483500 GHz -34.33 dbm 0/8m 2.483500 GHz -34.33 dbm	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 ●1Pk View M1[1] -3.43 dBm 10 dBm M2[1] -54.23 dBm 0'dBm M2[1] -54.23 dBm 0'dBm 0 0 -20 dBm 01 -23.430 dBm 0 -30 dBm 01 -23.430 dBm 0	
Ref Level 20.00 dBm Offset 9:23 dB RBW 100 kHz Att 30 db SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 ●1Pk View M1[1] -3.43 dBm 10 dBm M2[1] -54.23 dBm 0/Bm M2[1] -54.23 dBm 0/Bm 01 -23.430 dBm 01 -23.430 dBm -30 dBm 01 -23.430 dBm 01 -23.430 dBm	
Ref Level 20.00 dBm Offset 9:23 dB RBW 100 kHz Att 30 db SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300 ●1Pk View M1[1] -3.43 dBm 10 dBm M2[1] -54.23 dBm 0/Bm M2[1] -54.23 dBm 0/Bm 01 -23.430 dBm 01 -23.430 dBm -30 dBm 01 -23.430 dBm 01 -23.430 dBm	
Ref Level 20.00 dEm Offset 9:23 dB RBW 100 kHz Att 30 db SWT 94.8 µs VBW 300 kHz Mode Auto FFT SGL Count 300/300	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT ScL Count 300/300 Interview M1[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 0 dBm M1[1] 2.472030 GHz 0 dBm M1[1] 2.432030 GHz -20 dBm 0 -54.23 dBm -30 dBm	
Ref Level 20.00 dBm Offset 9:23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT SGL Count 300/300 Image: second	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT ScL Count 300/300 Interview M1[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 0 dBm M1[1] 2.472030 GHz 0 dBm M1[1] 2.432030 GHz -20 dBm 0 -54.23 dBm -30 dBm	
Ref Level 20.00 dEm Offset 9:23 dE	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT SGL Count 300/300 Int view M1[1] -3.43 dBm 10 dBm M2[1] -3.42 dBm 0 dBm M2[1] 2.472030 GHz 0 dBm M2[1] 2.472030 GHz 0 dBm M2[1] 2.483500 GHz -20 dBm 01 -23.430 dBm 01 -23.430 dBm -30 dBm 01 -23.430 dBm 01 -23.430 dBm -50 dBm M3 M4 -50 dBm M3 M4 -70 dBm M3 M4 -70 dBm 01 -2.55 GHz Marker 50 dBm 01 -2.55 GHz	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT SGL Count 300/300 IPk View M1[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm -20 dBm M1[1] -3.43 dBm -30 dBm M1[1] -3.43 dBm -30 dBm M3 M4 -50 dBm M3 M4 -60 dBm M3 M4 -70 dBm M3 M4 -70 dBm G91 pts Stop 2.55 GHz M1 1 2.47203 GHz -3.43 dBm	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT SGL Count 300/300 In dBm M1[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 0 dBm M1[1] -3.43 dBm 0 dBm M1[1] -3.43 dBm -20 dBm 2.483500 GHz -30 dBm M4 -30 dBm M4 -50 dBm M4 -70 dBm M1 -70 dBm M1 -70 dBm G1 2.47203 GHz -70 dBm Stop 2.55 GHz -70 dBm -70.30 GHz -70 dBm -70.30 GHz -70.5 GHz -70.43 dBm <td></td>	
Ref Level 20.00 dBm Offset 8.23 dB RBW 100 kHz Att 30 dB SWT 94.8 µs WBW 300 kHz Mode Auto FFT SGL Count 300/300 IPk View M1[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm 10 dBm M1[1] -3.43 dBm 10 dBm M2[1] -3.43 dBm -20 dBm M1[1] -3.43 dBm -30 dBm M1[1] -3.43 dBm -30 dBm M3 M4 -50 dBm M3 M4 -60 dBm M3 M4 -70 dBm M3 M4 -70 dBm G91 pts Stop 2.55 GHz M1 1 2.47203 GHz -3.43 dBm	



			3DH	5 Ant1	Low 2	202			
Spectrum			001	<u></u>		02			
Ref Leve Att SGL Count	20.00 dBm 30 dB			RBW 100 kHz /BW 300 kHz		to FFT			(A
●1Pk View					M1[11			-2.65 dBm
10 dBm									18560 GHz 51.04 dBm
0 dBm					M2[1]			00000 GHz
		â							h
-10 dBm									
-20 dBm	D1 -22.650	dBm							
-30 dBm								-	
-40 dBm					i.				
M4							MB		M2
-50 den	lowthinknesses	computind	MALLEMAN	an Much	newhole	umutan	willywork	munanin	and hule
-60 dBm								-	
-70 dBm									
Start 2.35	CUIT				•			01-	105 011
Start 2.35 Marker	GHZ			691 p	15			stop	2.405 GHz
M1	1	2.40185	56 GHz .4 GHz 39 GHz	-2.65 dBm -51.04 dBm -52.30 dBm	r l				
M2 M3 M4 Date: 23.AUG	1 1 2022 02:53:19	2.352311		-49.36 dBm					
M3 M4 Date: 23.AUG	2022 02:53:11	2.352311	l6 GHz			2480			(The second seco
M3 M4 Date: 23 AUG Spectrum Ref Leve Att SGL Count	1 2022 02:53:11 1 20.00 dBm 30 dB	2.352311 9 Offset 8	3DH 23 dB • F	-49.36 dBm	High_2				E
M3 M4 Date: 23.AUG Spectrum Ref Leve Att	1 2022 02:53:11 1 20.00 dBm 30 dB	2.352311 9 Offset 8	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2	ito FFT			-2.03 dBm
M3 M4 Date: 23 AUG Spectrum Ref Leve Att SGL Count @1Pk View 10 dBm	1 2022 02:53:11 20.00 dBm 30 dB 300/300	2.352311 9 Offset 8	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz 52.84 dBm
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SG. Count ● 1Pk View	1 2022 02:53:11 1 20.00 dBm 30 dB	2.352311 9 Offset 8	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz
M3 M4 Date: 23 AUG Spectrum Ref Leve Att SGL Count @1Pk View 10 dBm	1 2022 02:53:11 20.00 dBm 30 dB 300/300	2.352311 9 Offset 8	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz 52.84 dBm
M3 M4 Date: 23.AUG Spectrun Ref Leve Att SGL Count I dBm	1 2022 02:53:11 20.00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz 52.84 dBm
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SG. Count @1Pk View 10 dBm 0 dBm -10 dBm	1 2022 02:53:11 20.00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz 52.84 dBm
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ● 1Pk View 10 dBm 0 dBm	1 2022 02:53:11 20.00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9	3DH 23 dB • F	-49.36 dBm 5_Ant1_ RBW 100 kHz	High_2 Mode Au	ito FFT			-2.03 dBm 80130 GHz 52.84 dBm
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ● 1Pk View 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -40 dBm	1 2022 02:53:11 2022 02:53:11 1 20:00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2 Mode Au MI[1] 1]		2.4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ● 1Pk View 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -40 dBm	1 2022 02:53:11 2022 02:53:11 1 20:00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2 Mode Au MI[1] 1]		2.4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ● 1Pk View 10 dBm 0 dBm	1 2022 02:53:11 2022 02:53:11 1 20:00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2 Mode Au MI[1] 1]		2.4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count • 1Pk View 10 dBm- -10 dBm- -20 dBm- -30 dBm- -40 dBm- -60 dBm-	1 2022 02:53:11 2022 02:53:11 1 20:00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2 Mode Au MI[1] 1]	- aphil- way a	2.4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref.Leve Att SGL Count ● 1Pk View 10 dBm -0 dBm -20 dBm -30 dBm -40 dBm -40 dBm	1 2022 02:53:11 2022 02:53:11 1 20:00 dBm 30 dB 300/300	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2 Mode Au MI[1] 1]	- mp-M-mm/m	2.4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count 91Pk View 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm	1 2022 02:53:11 20:00 dBm 30 dB 300/300 M1 01 -22:030 01 -22:030 01 -22:030	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB • Г 44.8 µs • \	-49.36 dBm	High_2	1] 1]		2,4	-2.03 dBm 80130 GHz 52.84 dBm 83500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ■ IPk View 10 dBm - -10 dBm - -20 dBm - -30 dBm - -50 dBm - -50 dBm - -70 dBm - -70 dBm - -20 dBm -	1 2022 02:53:11 2000 dBm 30 dB 300/300 M1 01 -22:030 M2 www.m2 www.m2 M2 www.m4	2.352311 9 Offset 8 SWT 9 dBm	3DH5 3DH5 .23 dB ● F 4.8 µs ● \	-49.36 dBm	High_2 Mode Au M1[M2[to FFT 1] 1]		2,4 Aarton Murrow Stop	-2.03 dBm 80130 GHz 52.84 dBm 8500 GHz
M3 M4 Date: 23.AUG Spectrum Ref.Love Att SGL Count ■ IPk View 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -70 dBm 50 dBm -70 dBm 50 dBm -70 dBm Stort 2.47 Marker Type [Ref M1	1 2022 02:53:11 2 00:00 dBm 30 dB 300/300 M1 M1 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	2.352311 9 Offset 8 SWT 9 dBm dBm vulpur,J,/r.y.M	3DH3 3DH3 23 dB • F 4.8 µs • \	-49.36 dBm	High_2 Mode Au MI[MI[MI[MI[MI]	to FFT 1] 1]		2,4	-2.03 dBm 80130 GHz 52.84 dBm 8500 GHz
M3 M4 Date: 23.AUG Spectrum Ref Leve Att SGL Count ● 1Pk View 10 dBm	1 2022 02:53:11 2 0:00 dBm 30 dB 300/300 M1 01 -22:030 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	2.352311 9 Offset 8 SWT 9 dBm dBm ydqur,Uryw X-volue 2.4801 2.4801	3DH8	-49.36 dBm	High_2 Mode Au MI[MI[MI[to FFT 1] 1]		2,4 Aarton Murrow Stop	-2.03 dBm 80130 GHz 52.84 dBm 8500 GHz



3DH	5_Ant1_Low_Hop_2402	
Spectrum		
Ref Level 20.00 dBm Offset 8.44 d	B 🖷 RBW 100 kHz	(23)
 Att 30 dB SWT 75.8 μ SGL Count 300/300 	is 🖷 VBW 300 kHz Mode Auto FFT	
IPk View]
	M1[1]	-6.22 dBm
10 dBm	M2[1]	2.4028110 GHz -53.03 dBm
0 dBm	COLUMN STREET	2.4000000 GHz
		M1
-10 dBm		/1/Ma
-20 dBm		-1
D1 -26.220 dBm		
-30 dBm		
-40 dBm		
-50 dBm	M3	M2
	line many mound when more	muniment from a series of the
-60 dBm		
-70 dBm		
Start 2.35 GHz Marker	691 pts	Stop 2.405 GHz
M1 1 2.402811 GH M2 1 2.44 GH M3 1 2.39 GH M4 1 2.3658623 GH Date: 23.AUG.2022 03:16.41	z -53.03 dBm z -54.15 dBm	
3DH	5 Ant1 High Hop 2480	
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ	5_Ant1_High_Hop_2480	
Spectrum Ref Level 20.00 dBm Offset 8.23 d	B ● RBW 100 kHz s ● VBW 300 kHz Mode Auto FFT	
Spectrum Ref Level 20.00 d8m Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 IPk View	B 🖷 RBW 100 kHz	-1.44 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 SGL Count 300/300	B ● RBW 100 kHz s ● VBW 300 kHz Mode Auto FFT	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 Image: Count 300/300 Imag	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 Image: Count 300/300 Imag	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 db SWT 94.8 µ SGL Count 300/300 IPK View 10 dBm 10 dBm 0 dBm M1	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 Image: Count 300/300 Imag	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 Image: Count 300/300 <thimage< td=""><td>B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]</td><td>-1.44 dBm 2.477810 GHz -52.20 dBm</td></thimage<>	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 Image: Count 300/300 <thit an<="" td=""><td>B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]</td><td>-1.44 dBm 2.477810 GHz -52.20 dBm</td></thit>	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1]	-1.44 dBm 2.477810 GHz -52.20 dBm
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 91Pk View 910 dBm 910 dBm 10 dBm M1 910 dBm 910 dBm -20 dBm 91 - 21.440 dBm 910 dBm 910 dBm -30 dBm 91 - 21.440 dBm 910 dBm 910 dBm	B • RBW 100 kHz s • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 91Pk View 910 dBm 910 dBm 10 dBm M1 910 dBm 910 dBm -20 dBm 91 - 21.440 dBm 910 dBm 910 dBm -30 dBm 91 - 21.440 dBm 910 dBm 910 dBm	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 91Pk View 910 dBm 910 dBm 10 dBm M1 910 dBm 910 dBm -20 dBm 91 - 21.440 dBm 910 dBm 910 dBm -30 dBm 91 - 21.440 dBm 910 dBm 910 dBm	B • RBW 100 kHz s • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 db SGL Count 300/300 IPR View 10 dBm 0 dBm 0 dBm -20 dBm -30 dBm -50 dBm -50 dBm	B • RBW 100 kHz s • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Count 300/300 91Pk View 90 dBm 91 dBm 91 dBm 10 dBm M1 0 dBm 91 dBm	B • RBW 100 kHz s • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Court 30/300 IPK View 10 dBm 10 dBm 10 dBm 0 dBm M1 0 0 dBm -20 dBm 01 -21.440 dBm -30 dBm -30 dBm -50 dBm M2 -70 dBm -70 dBm	B RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1] M3 M4 M3 M4 M4 M3 M4 M4 M4 M4 M4 M4 M4 M4 M4 M4 M4 M4 M4	-1.44 dBm 2.477810 CHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 db SGL Count 300/300 IPR View 10 dBm 0 dBm 0 dBm 0 dBm -20 dBm -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm Start 2.47 GHz	B • RBW 100 kHz s • VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1]	-1.44 dBm 2.477810 GHz -52.20 dBm 2.483500 GHz
Spectrum Ref Level 20.00 dBm Offset 8.23 d Att 30 dB SWT 94.8 µ SGL Court 30/300 IPK View 10 dBm 10 dBm 10 dBm 0 dBm M1 0 0 dBm -20 dBm 01 -21.440 dBm -30 dBm -30 dBm -50 dBm M2 -70 dBm -70 dBm	8 RBW 100 kHz s VBW 300 kHz Mode Auto FFT M1[1] M2[1] M2[1] M4 M4 M4 M4 M4 M4 M4 M4 M3 Function 2 -1.44 dBm 2 -52.20 dBm 2 -52.40 dBm	-1.44 dBm 2.477810 CHz -52.20 dBm 2.483500 GHz 2.483500 GHz



5.9 Spurious RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
	Remark: Offset=cable loss+ attenuation factor.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Exploratory Test Mode:	Non-hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH5 of data type is the worst case of GFSK modulation type, 2-DH5 of data type is the worst case of π /4DQPSK modulation type, 3-DH5 of data type is the worst case of 8DPSK modulation type.
Test Results:	Pass



