



TEST REPORT

Applicant Name : Address : Report Number : FCC ID: Aduro Products LLC 250 Liberty Street, Metuchen, N.J. 08840. USA SZ3220420-15120E-RF 2AJUM-AC-WS20

Test Standard (s) FCC PART 15.247

Sample Description

Product Type:Wireless Shower SpeakerModel No.:AC-WS20-SD14Multiple Model:AC-WS20-PD14, AC-WS20-PD15, AC-WS20-SD15Trade Mark:N/ADate Received:2022-04-20Date of Test:2022-04-26Report Date:2022-05-05

Test Result:

Pass*

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

Prepared and Checked By:

Ting Lü EMC Engineer

Approved By:

Candy . Li

Candy Li EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*.

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Shenzhen Accurate Technology Co., Ltd.

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FCC-BT

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Shenzhen Accurate Technology Co., Ltd.	Report No.: SZ3220420-15120E-RF
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GENERAL INFORMATION

Product	Wireless Shower Speaker			
Tested Model	AC-WS20-SD14			
Multiple Model	AC-WS20-PD14, AC-WS20-PD15, AC-WS20-SD15			
UPC Number	849813049918849813050631849813049925849813050648849813049932849813050655849813049949849813050662849813049970849813050686849813049987849813050693849813049994849813050709849813050006849813050716			
SKU Number	AC-WS20-PD14, AC-WS20-SD14 AC-WS20-PD15, AC-WS20-SD15			
Model difference	Please refer to DOS letter.			
Frequency Range	2402~2480MHz			
Maximum conducted Peak output power	5.76dBm			
Modulation Technique	BDR(GFSK)/EDR(π/4-DQPSK)/EDR(8DPSK)			
Antenna Specification*	Internal PCB Antenna:-0.58dBi(provided by the applicant)			
Voltage Range	DC 3.7 V from battery or DC 5V from adapter			
Sample number	SZ3220420-15120E-RF-S1			
Sample/EUT Status	Good condition			

Product Description for Equipment under Test (EUT)

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Char	nnel Bandwidth	5%
RF output pov	wer, conducted	0.73dB
Unwanted Emis	ssion, conducted	1.6dB
AC Power Lines Conducted Emissions		2.72dB
.	30MHz - 1GHz	4.28dB
Emissions, Radiated	1GHz - 18GHz	4.98dB
18GHz - 26.5GHz		5.06dB
Temperature		1°C
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

EUT Exercise Software

Software "FCC_assist_1.0.2.2"* was used during testing and the power level was Default Power level 10*.

Special Accessories

N/A.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

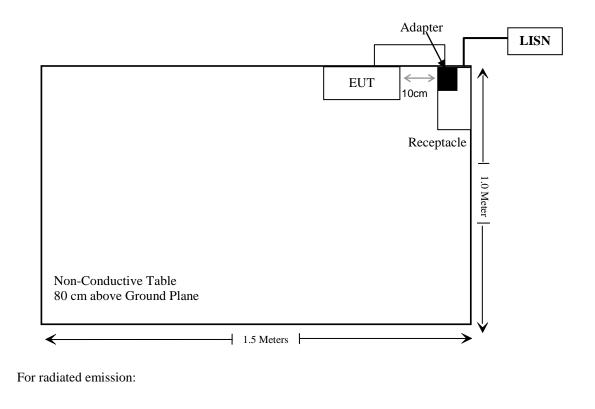
Manufacturer	Description	Model	Serial Number
HUAWEI	Adapter	KA06E-0501000US	/

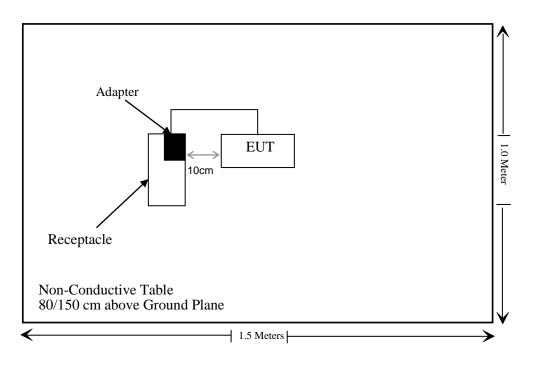
External I/O Cable

Cable Description	Length (m)	From/Port	То
Un-shielding Detachable USB Cable	0.47	EUT	Adapter

Block Diagram of Test Setup

For conducted emission:





SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1091	Maximum Permissible Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209 & §15.247(d)	Radiated Emissions	Compliant
§15.247(a)(1)	20 dB Emission Bandwidth & 99% Occupied Bandwidth	Compliant
§15.247(a)(1)	Channel Separation Test	Compliant
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliant
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
§15.247(b)(1)	Peak Output Power Measurement	Compliant
§15.247(d)	Band edges	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date		
	Conducted Emissions Test						
Rohde & Schwarz	EMI Test Receiver	ESCI	100784	2021/12/13	2022/12/12		
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2021/12/13	2022/12/12		
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2021/12/13	2022/12/12		
Unknown	RF Coaxial Cable	No.17	N0350	2021/12/14	2022/12/13		
	Conducted E		tware: e3 19821b (V9)			
		Radiated Emissi	ons Test				
Rohde & Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12		
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12		
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08		
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08		
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10		
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05		
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04		
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04		
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13		
	Radiated En	nission Test Softw	ware: e3 19821b (V	/9)			
RF Conducted Test							
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12		
Rohde & Schwarz	Open Switch and Control Unit	OSP120 + OSP-B157	101244 + 100866	2021/12/13	2022/12/12		
WEINSCHEL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13		
Unknown	RF Coaxial Cable	No.31	RF-01	Each	time		

* **Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1310 & §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

(B) Limits for General Population/Uncontrolled Exposure					
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)	
0.3-1.34	614	1.63	*(100)	30	
1.34-30	824/f	2.19/f	*(180/f ²)	30	
30-300	27.5	0.073	0.2	30	
300-1500	/	/	f/1500	30	
1500-100,000	/	/	1.0	30	

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

 $S = PG/4\pi R^2 =$ power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Test Result:

Calculated Formulary:

For worst case:

Frequency		ım Antenna Gain	-	conducted wer	Evaluation Distance	Power Density	MPE Limit
(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	$(\mathrm{mW/cm}^2)$	(mW/cm ²)
2402-2480	-0.58	0.87	6	3.98	20	0.0007	1

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. 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 prohibited.

Antenna Connector Construction

The EUT has one internal PCB Antenna arrangement, which was permanently attached and the antenna gain is -0.58dBi, fulfill the requirement of this section. Please refer to the EUT photos.

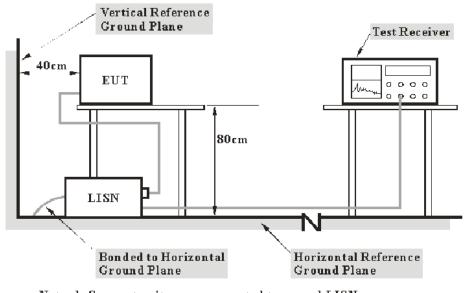
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Factor & Margin Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

The "**Over limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit Level = Read Level + Factor

Test Data

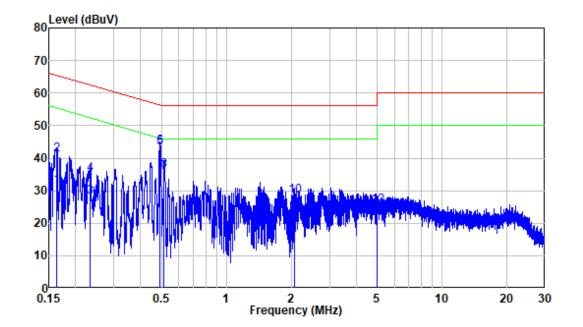
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Caro Hu on 2022-04-26.

EUT operation mode: BT transmitting

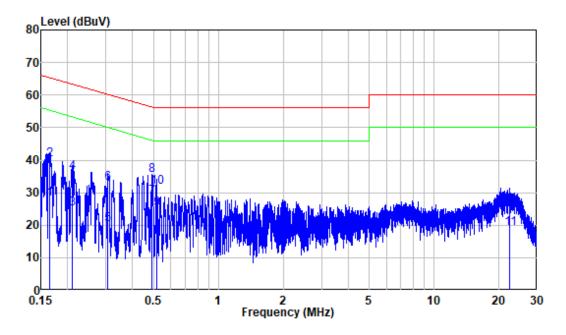
AC 120V/60 Hz, Line



Site	:	Shielding Room
Condition	:	Line
Job No.	:	SZ3220420-15120E-RF
Mode	:	BT Transmitting
Model	:	AC-W520-SD14
Power	:	AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.163	9.80	21.53	31.33	55.30	-23.97	Average
2	0.163	9.80	31.12	40.92	65.30	-24.38	QP
3	0.234	9.80	18.33	28.13	52.32	-24.19	Average
4	0.234	9.80	25.20	35.00	62.32	-27.32	QP
5	0.492	9.80	33.27	43.07	46.14	-3.07	Average
6	0.492	9.80	33.80	43.60	56.14	-12.54	QP
7	0.514	9.81	25.93	35.74	46.00	-10.26	Average
8	0.514	9.81	26.53	36.34	56.00	-19.66	QP
9	2.060	9.82	14.91	24.73	46.00	-21.27	Average
10	2.060	9.82	18.59	28.41	56.00	-27.59	QP
11	5.011	9.85	9.80	19.65	50.00	-30.35	Average
12	5.011	9.85	15.40	25.25	60.00	-34.75	QP

AC 120V/60 Hz, Neutral



Site	:	Shielding Room
Condition	:	Neutral
Job No.	:	SZ3220420-15120E-RF
Mode	:	BT Transmitting
Model	:	AC-W520- SD14
Power	:	AC 120V 60Hz

			Read		Limit	0ver	
	Freq	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.165	9.80	18.34	28.14	55.20	-27.06	Average
2	0.165	9.80	30.39	40.19	65.20	-25.01	QP
3	0.211	9.80	15.24	25.04	53.18	-28.14	Average
4	0.211	9.80	26.34	36.14	63.18	-27.04	QP
5	0.306	9.80	10.49	20.29	50.08	-29.79	Average
6	0.306	9.80	23.15	32.95	60.08	-27.13	QP
7	0.492	9.80	19.01	28.81	46.13	-17.32	Average
8	0.492	9.80	25.52	35.32	56.13	-20.81	QP
9	0.516	9.81	15.21	25.02	46.00	-20.98	Average
10	0.516	9.81	21.95	31.76	56.00	-24.24	QP
11	22.431	10.12	8.83	18.95	50.00	-31.05	Average
12	22.431	10.12	15.18	25.30	60.00	-34.70	QP

Shenzhen Accurate Technology Co., Ltd.

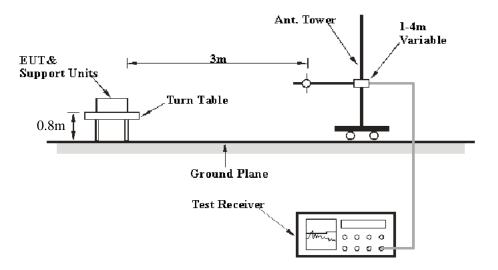
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

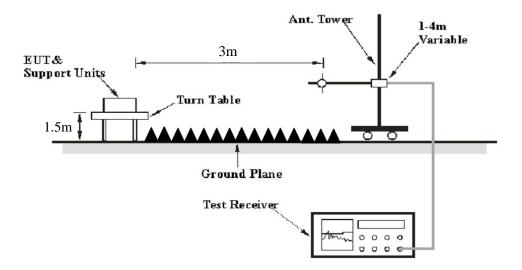
FCC §15.205; §15.209; §15.247(d)

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	РК
Above I GHZ	1 MHz	10 Hz	/	Average

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode for frequency range of 30 MHz -1 GHz and peak and Average detection modes for frequencies above 1 GHz.

If the maximized peak measured value complies with the limit, then it is unnecessary to perform QP/Average measurement.

Factor & Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

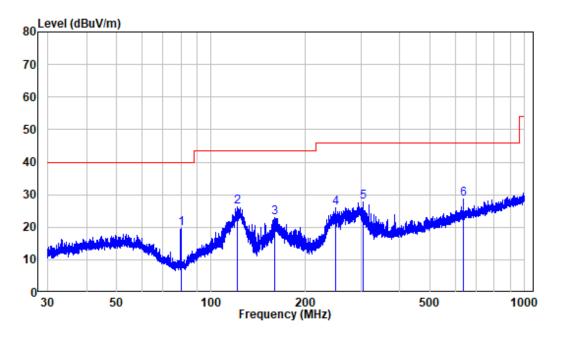
Temperature:	25 °C	
Relative Humidity:	64 %	
ATM Pressure:	101.2 kPa	

The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: BT Transmitting

(Scan with GFSK, $\pi/4$ -DQPSK, 8DPSK mode at X axis, Y axis, Z axis, the worst case is 8DPSK Mode at X axis)

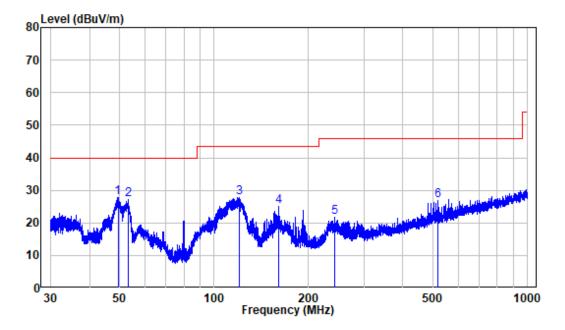
Below 1GHz: 8DPSK, High channel



Horizontal

Site : chamber Condition: 3m Horizontal Job No. : SZ3220420-15120E-RF Test Mode: BT Transmitting

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	80.010	-16.79	36.46	19.67	40.00	-20.33	Peak
2	121.442	-13.82	40.05	26.23	43.50	-17.27	Peak
3	159.574	-14.25	37.13	22.88	43.50	-20.62	Peak
4	250.301	-10.74	36.84	26.10	46.00	-19.90	Peak
5	306.082	-9.03	36.88	27.85	46.00	-18.15	Peak
6	638.089	-1.95	30.54	28.59	46.00	-17.41	Peak



Vertical

Site : chamber Condition: 3m VERTICAL Job No. : SZ3220420-15120E-RF Test Mode: BT Transmitting

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	49.316	-9.94	37.67	27.73	40.00	-12.27	Peak
2	53.061	-10.17	37.27	27.10	40.00	-12.90	Peak
3	120.435	-13.62	41.35	27.73	43.50	-15.77	Peak
4	160.205	-14.20	39.19	24.99	43.50	-18.51	Peak
5	241.994	-10.77	32.55	21.78	46.00	-24.22	Peak
6	519.065	-4.29	31.09	26.80	46.00	-19.20	Peak

Above 1GHz (worst case for 8DPSK):

Frequency	Recei	ver	Turntable Angle	Rx An	tenna	Factor	Absolute Level	Limit	Margin
(MHz)	Reading	PK/AV	Degree	Height	Polar	(dB / m)	(dBuV/m)	(dBuV/m)	(dB)
	(dBuV)	ΡΚ/Αν	Degree	(m)	(H/V)		(
				Low Ch	annel				
2310	44.59	PK	143	2.1	Н	-7.23	37.36	74	-36.64
2310	45.28	PK	159	1.6	V	-7.23	38.05	74	-35.95
2390	52.96	PK	120	1.5	Н	-7.21	45.75	74	-28.25
2390	53.81	PK	242	1.6	V	-7.21	46.6	74	-27.4
4804	56.34	PK	308	1.7	Н	-3.52	52.82	74	-21.18
4804	52.49	PK	254	1.2	V	-3.52	48.97	74	-25.03
				Middle C	hannel				
4882	52.11	PK	54	1.1	Н	-3.37	48.74	74	-25.26
4882	52.06	PK	274	1.8	V	-3.37	48.69	74	-25.31
				High Ch	annel				
2483.5	74.6	PK	30	1.5	Н	-7.2	67.4	74	-6.6
2483.5	51.47	AV	30	1.5	Н	-7.2	44.27	54	-9.73
2483.5	63.7	PK	242	1.8	V	-7.2	56.5	74	-17.5
2483.5	52.05	AV	242	1.8	V	-7.2	44.85	54	-9.15
2500	58.18	PK	242	1.8	Н	-7.18	51	74	-23
2500	48.85	PK	197	1.2	V	-7.18	41.67	74	-32.33
4960	56.59	PK	293	2.1	Н	-3	53.59	74	-20.41
4960	54.54	PK	255	1.1	V	-3	51.54	74	-22.46

Note:

Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Absolute Level (Corrected Amplitude) = Factor + Reading

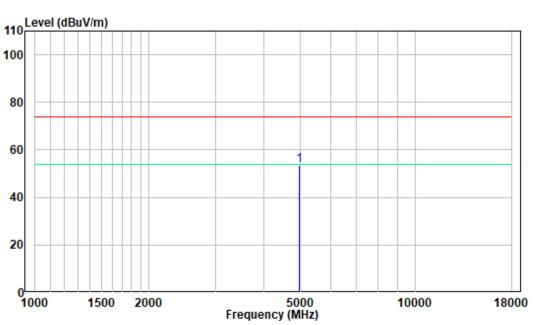
Margin = Absolute Level (Corrected Amplitude) – Limit

The other spurious emission which is in the noise floor level was not recorded.

For above 1GHz, the test result of peak was 20dB below to the limit of peak, which can be compliant to the average limit, so just peak value was recorded.

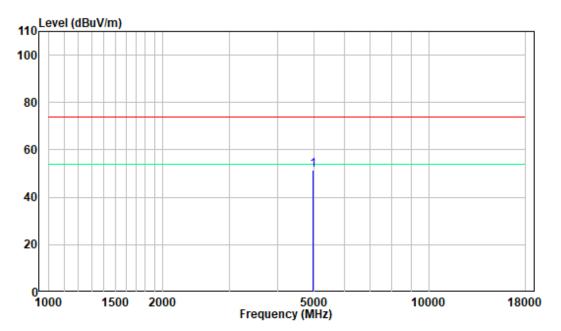
1 GHz - 18 GHz: (Pre-Scan plots)

Worst case for 8DPSK High Channel:



Horizontal

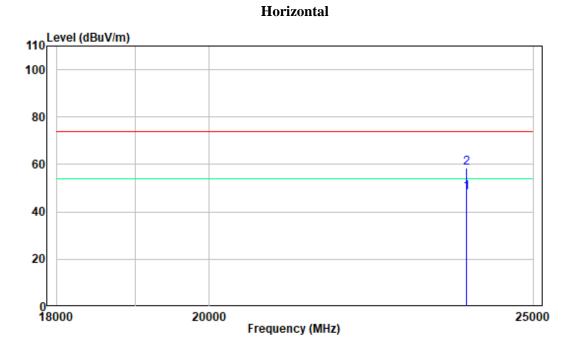




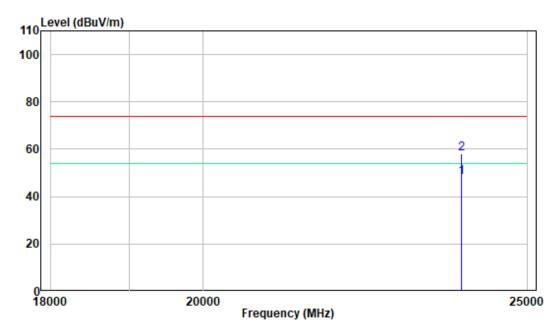
Shenzhen Accurate Technology Co., Ltd.

18-25GHz: (Pre-Scan plots)

Worst case for 8DPSK High Channel:



Vertical



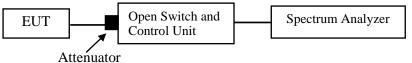
FCC §15.247(a) (1)-CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test Procedure

- 1. Set the EUT in transmitting mode, maxhold the channel.
- 2. Set the adjacent channel of the EUT and maxhold another trace.
- 3. Measure the channel separation.



Test Data

Environmental Conditions

Temperature:	24 °C	
Relative Humidity:	64%	
ATM Pressure:	101.2 kPa	

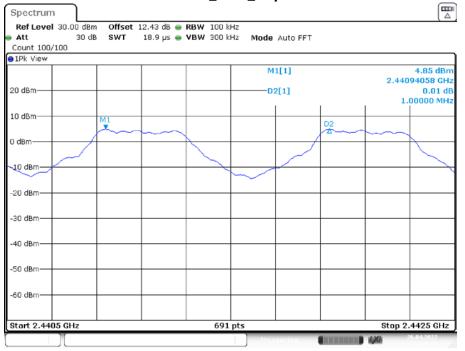
The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: Transmitting

Test Result: Compliant.

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Нор	1	>=0.588	PASS
2DH1	Ant1	Нор	1	>=0.850	PASS
3DH1	Ant1	Нор	1	>=0.828	PASS

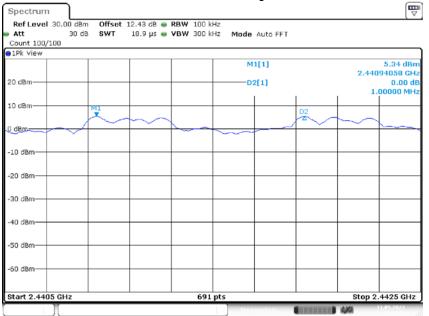
Please refer to the below plots:



DH1_Ant1_Hop

Date: 26.APR.2022 11:29:54

2DH1_Ant1_Hop



Date: 11.MAY.2022 16:34:02

Shenzhen Accurate Technology Co., Ltd.

	opini_n	Intr_110p	_
Spectrum			
Ref Level 30.00 dBm Att 30 dB Count 100/100 30 dB		kHz kHz Mode Auto FFT	
1Pk View			
20 dBm		M1[1]	4.85 dBn 2.44094058 GH: 0.04 dE 1.00000 MH:
10 dBm	M1	02	
Q dBm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		<u> </u>
-10 dBm-			
-20 dBm-			
-30 dBm			
-40 dBm			
-50 dBm			
-60 dBm			
Start 2.4405 GHz	691	L pts	Stop 2.4425 GHz
		Measuring	26.04.2022

3DH1_Ant1_Hop

Date: 26.APR.2022 11:37:41

FCC §15.247(a) (1) – 20 dB EMISSION BANDWIDTH & 99% OCCUPIED BANDWIDTH

Applicable Standard

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

Test Procedure

The following conditions shall be observed for measuring the occupied bandwidth and 20 dB bandwidth:

• The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

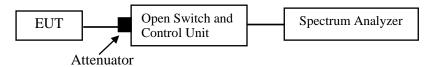
• The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.

• The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / 20 dB bandwidth if the device is not transmitting continuously.

• The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / 20 dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).



Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	64 %
ATM Pressure:	101.2 kPa

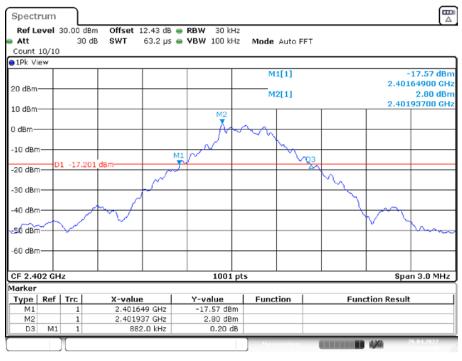
The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: Transmitting

Test Result: Compliant.

TestMode	Antenna	Channel	20db EBW[MHz]	99% OCCUPIED BANDWIDTH[MHz]	Verdict
DH1	Ant1	2402	0.882	0.827	PASS
		2441	0.885	0.827	PASS
		2480	0.882	0.827	PASS
2DH1	Ant1	2402	1.245	1.181	PASS
		2441	1.275	1.193	PASS
		2480	1.275	1.19	PASS
3DH1	Ant1	2402	1.218	1.169	PASS
		2441	1.242	1.181	PASS
		2480	1.221	1.181	PASS

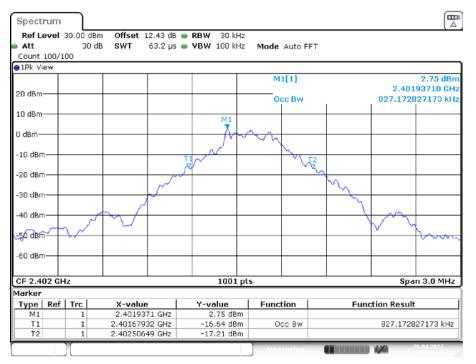
Please refer to the below plots:



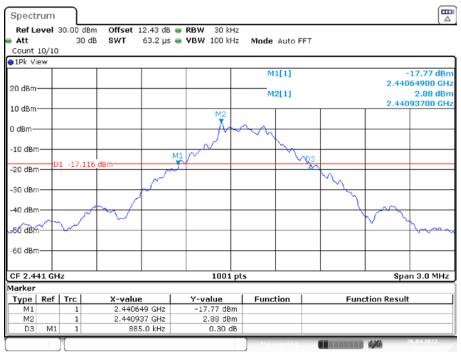
20 dB EMISSION BANDWIDTH_DH1_Ant1_2402

Date: 26.APR.2022 11:06:42





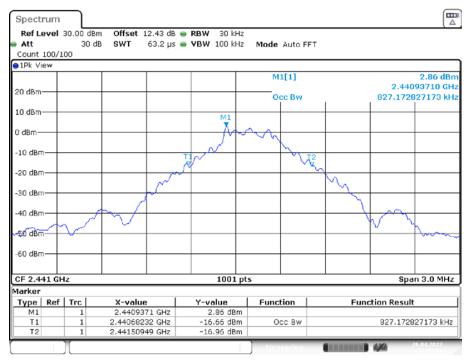
Date: 26.APR.2022 11:06:59



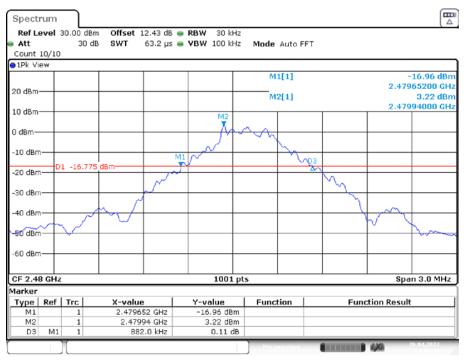
20 dB EMISSION BANDWIDTH_DH1 _Ant1_2441

Date: 26.APR.2022 11:07:51





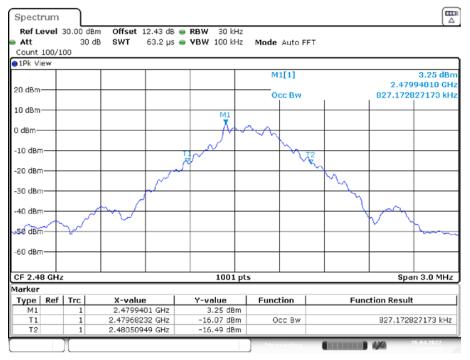
Date: 26.APR.2022 11:08:08



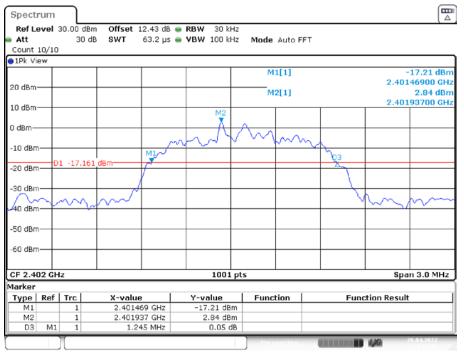
20 dB EMISSION BANDWIDTH_DH1 _Ant1_2480

Date: 26.APR.2022 11:08:41





Date: 26.APR.2022 11:08:57



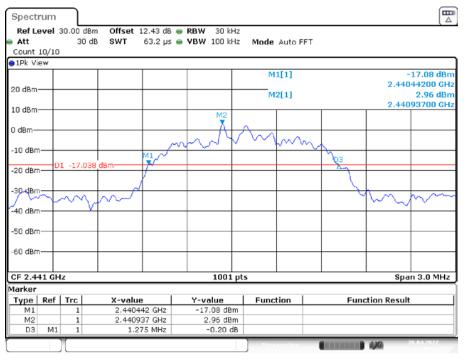
20 dB EMISSION BANDWIDTH_2DH1 _Ant1_2402

Date: 26.APR.2022 11:10:02

99% OCCUPIED BANDWIDTH_2DH1 _Ant1_2402



Date: 26.APR.2022 11:10:19



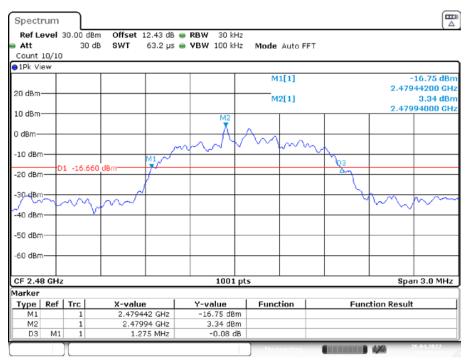
20 dB EMISSION BANDWIDTH_2DH1 _Ant1_2441

Date: 26.APR.2022 11:14:23

99% OCCUPIED BANDWIDTH_2DH1 _Ant1_2441



Date: 26.APR.2022 11:14:40



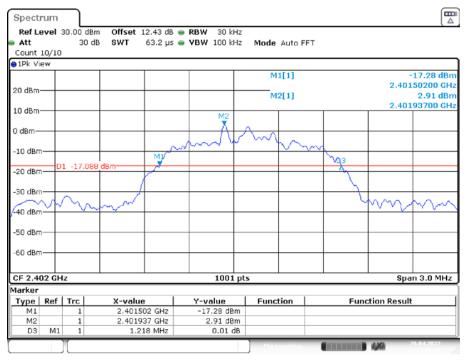
20 dB EMISSION BANDWIDTH _2DH1_Ant1_2480

Date: 26.APR.2022 11:15:13

99% OCCUPIED BANDWIDTH _2DH1_Ant1_2480



Date: 26.APR.2022 11:15:30



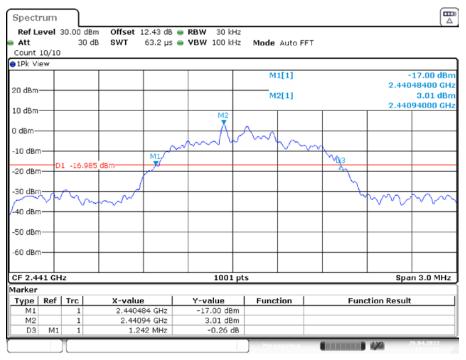
20 dB EMISSION BANDWIDTH_3DH1_Ant1_2402

Date: 26.APR.2022 11:16:20

99% OCCUPIED BANDWIDTH_3DH1_Ant1_2402



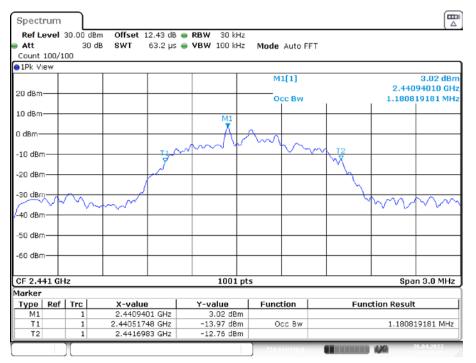
Date: 26.APR.2022 11:16:37



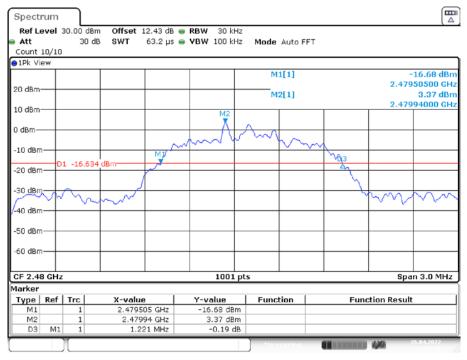
20 dB EMISSION BANDWIDTH_3DH1_Ant1_2441

Date: 26.APR.2022 11:17:28





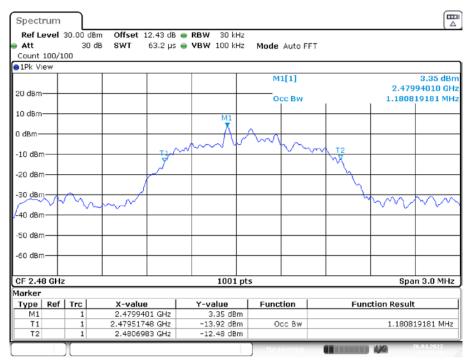
Date: 26.APR.2022 11:17:45



20 dB EMISSION BANDWIDTH_3DH1_Ant1_2480

Date: 26.APR.2022 11:18:19





Date: 26.APR.2022 11:18:36

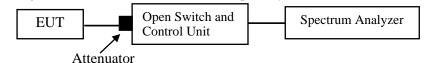
FCC §15.247(a) (1) (iii)-QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

- 1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- 2. Set the EUT in hopping mode from first channel to last.
- 3. By using the max-hold function record the quantity of the channel.



Test Data

Environmental Conditions

Temperature:	24°C		
Relative Humidity:	64%		
ATM Pressure:	101.2 kPa		

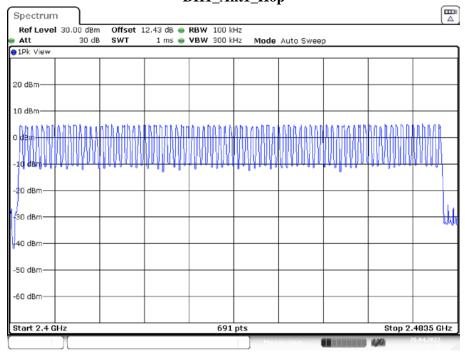
The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: Transmitting

Test Result: Compliant.

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Нор	79	>=15	PASS
2DH1	Ant1	Нор	79	>=15	PASS
3DH1	Ant1	Нор	79	>=15	PASS

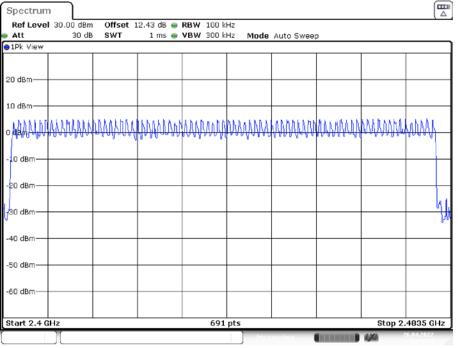
Please refer to the below plots:



DH1_Ant1_Hop

Date: 26.APR.2022 11:30:18

2DH1_Ant1_Hop



Date: 26.APR.2022 11:34:21

			•		intr_in	°P			_
Spectrum									
Ref Level 3	30.00 dBm	Offset	12.43 dB 🥃	RBW 100	kHz				
Att	30 dB	SWT	1 ms 👄	VBW 300	kHz Mode	Auto Swee	р		
1Pk View									
20 dBm									
LO dBm									
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) MARCHAR	HANNA	HUMIN		WAAN	HANNA		MANAMA	₩₩₩₩	MMM -
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0 dBm									
20 dBm									
30 dBm									
									v v
40 dBm									
-50 dBm									
-60 dBm									
								010	4005 011-
Start 2.4 GH	z			65	1 pts			· ·	.4835 GHz
					Me	suring		420	1010412022

3DH1_Ant1_Hop

Date: 26.APR.2022 11:37:58

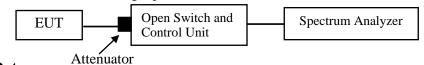
FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

- 1. The EUT was worked in channel hopping.
- 2. Set the RBW to: 1MHz.
- 3. Set the VBW \geq 3×RBW.
- 4. Set the span to 0Hz.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Recorded the time of single pulses



Test Data

Environmental Conditions

Temperature:	24 °C		
Relative Humidity:	64 %		
ATM Pressure:	101.2 kPa		

The testing was performed by Nick Fang on 2022-04-26.

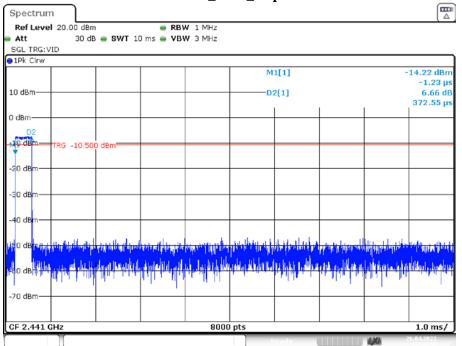
EUT operation mode: Transmitting Test Result: Compliant.

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Нор	0.37	320	0.119	<=0.4	PASS
DH3	Ant1	Нор	1.62	180	0.292	<=0.4	PASS
DH5	Ant1	Нор	2.86	90	0.257	<=0.4	PASS
2DH1	Ant1	Нор	0.38	320	0.122	<=0.4	PASS
2DH3	Ant1	Нор	1.63	180	0.293	<=0.4	PASS
2DH5	Ant1	Нор	2.87	80	0.229	<=0.4	PASS
3DH1	Ant1	Нор	0.38	320	0.122	<=0.4	PASS
3DH3	Ant1	Нор	1.63	170	0.276	<=0.4	PASS
3DH5	Ant1	Нор	2.87	110	0.316	<=0.4	PASS

Note 1: A period time=0.4*79=31.6(s), Result=Burst Width*Total Hops

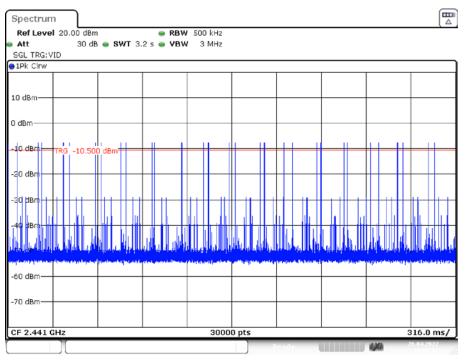
Note 2: Total Hops =Hopping Number in 3.16s*10

Note 3: Hoping Number in 3.16s=Total of highest signals in 3.16s (Second high signals were other channel)



DH1_Ant1_Hop

Date: 26.APR.2022 11:30:50

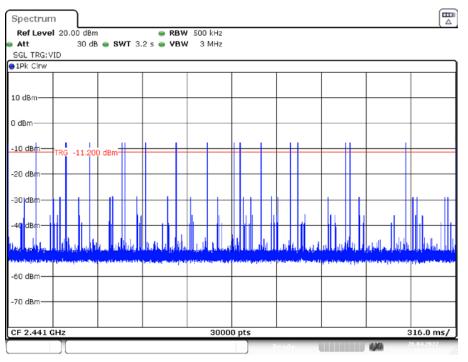


Date: 26.APR.2022 11:30:55

					M	1[1]		-	29.78 dBr
LO dBm									-2.48 µ
U UBM					U:	2[1]		1	22.19 d .62145 m
I dBm									
	D2								
10 dBm	-8.200 dBm								
20 dBm									
11 30 dBm									
40 dBm									
							التناسيان		h
60 dBm	1 Mar Ha M	IL Di httm://	hele with	Lines Lines	र्त चले हरू र भाषि	Althe Linkship Links	Ma. Martin Harden	ALL STREET	and the second second
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70 dBm									
F 2.441 GHz				8000	nte				1.0 ms/

DH3_Ant1_Hop

Date: 26.APR.2022 11:31:42



Date: 26.APR.2022 11:31:47

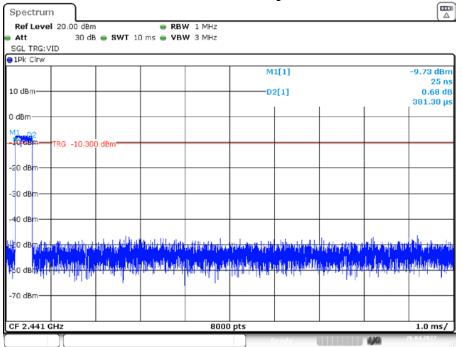
Spectrum		_	111_110	•			Ē
Ref Level 20.00 dBm	e PB	N 1 MHz					
	SWT 10 ms						
SGL TRG: VID							
1Pk Cirw							
			м	1[1]			-9.91 dBr 25 n
10 dBm			D	2[1]			2.27 d
						. 3	2.86036 m
D dBm							
M1	02						
10 dBm TRG -10.500	dBm						
-20 dBm							
-30 dBm							
-40 dBm							
50 dBm	1	المراجع الم	a location of	a bacina la	Nind In The	andmond	a satulit
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0 dBm	astration field	di di kata ha ha ha da i	n da man dada at i fi	timb dis datas t	فالقرير فللألا	haddiana dda d	ներիրվերը
po ubin	1.0.0.0.0.0	al tactica	ստերի ա	ull de la	10 10 10 10 10 10 10 10 10 10 10 10 10 1	n i li cui	
-70 dBm							
CF 2.441 GHz		8000	nte				1.0 ms/
5F 2.991 GHZ		8000	pus				1.0 ms/

DH5_Ant1_Hop

Date: 26.APR.2022 11:41:27

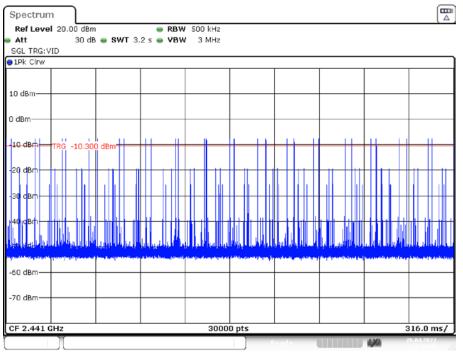
Spectrum							
Ref Level 20.00	dBm D dB e SWT 3.2 :	RBW 500 kHz					
SGL TRG: VID	J dB 🛑 SW1 3.2 :	s 👄 VBW 3 MHz					
1Pk Cirw							
10 dBm							
0 dBm							
-10 dBm TRG -10	1.500 dBm						
-20 dBm	_						
-30 dBm	_						
-40 cBm							
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-70 dBm							
-/o ubin							
CF 2.441 GHz		300)00 pts			3	16.0 ms/
			R	eady [4/0	.04.2022

Date: 26.APR.2022 11:41:32

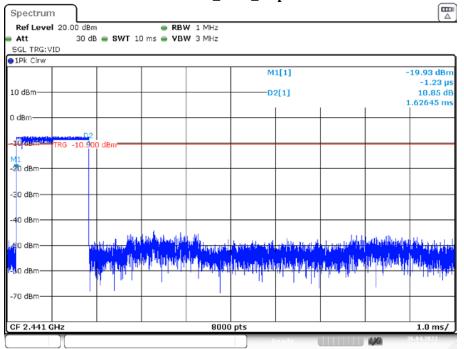


2DH1_Ant1_Hop

Date: 26.APR.2022 11:34:39

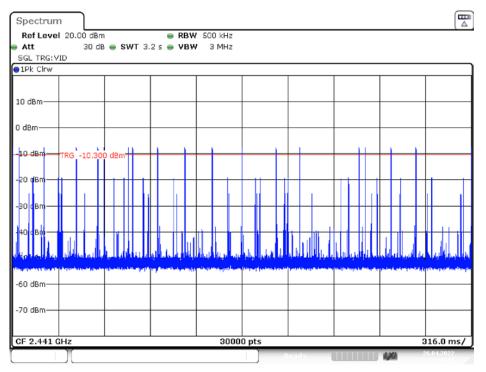


Date: 26.APR.2022 11:34:44

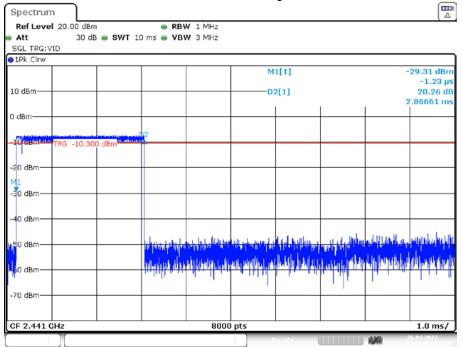


2DH3_Ant1_Hop

Date: 26.APR.2022 11:35:10

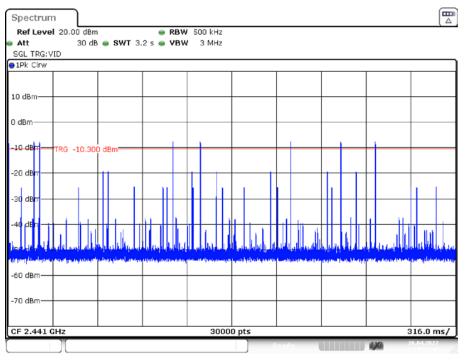


Date: 26.APR.2022 11:35:16



2DH5_Ant1_Hop

Date: 26.APR.2022 11:35:42

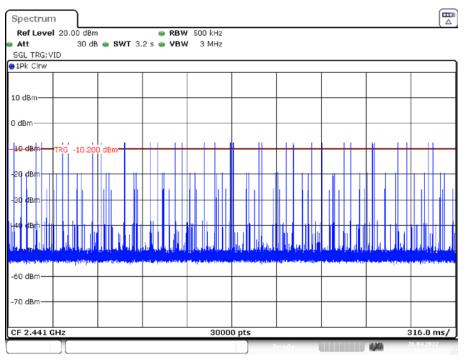


Date: 26.APR.2022 11:35:47

1Pk Clrw									
					м	1[1]		-	11.81 dBr -1.23 μ
D dBm					D	2[1]			3.37 d
									382.55 µ
dBm									
D2									
9-abm TRO	5 -10.200 d	Bm							
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3DH1_Ant1_Hop

Date: 26.APR.2022 11:43:50

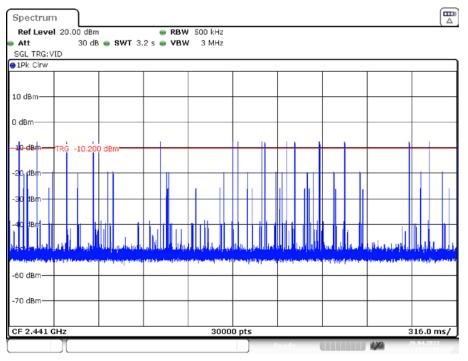


Date: 26.APR.2022 11:43:56

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I dBm									
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			h Har Ar Har I	1.6					LI A RA
0 dBm	int	a bhaile librai	ALCHINE A	A 10 million of 1	100000000000	it i anti i i i i	dan a se	A M. MIL	مرا مرابع <u>ا</u> مرابع
0 dBm	<u>id</u>	ووالما المتلب	فارباليك خلسهم	<u>h ti pilitin fi</u>	ALLAND ARE	րոնիրուրը	l e f bije j date gedikter	ahi ahilahig	<u>hu ddiwy y</u>
			l	de la compañía de la	r r		In the	to be	
70 dBm									
									1

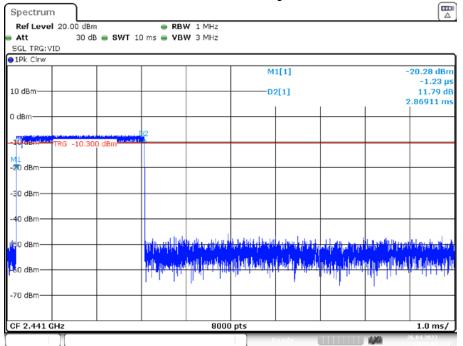
3DH3_Ant1_Hop

Date: 26.APR.2022 11:38:53



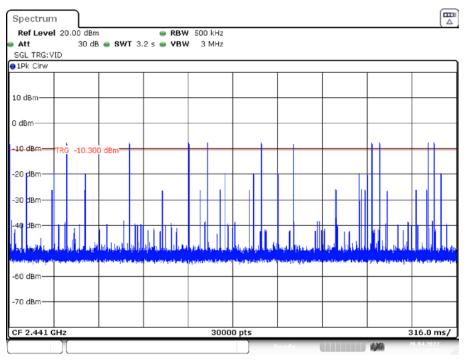
Date: 26.APR.2022 11:38:59

Version 11: 2021-11-09



3DH5_Ant1_Hop

Date: 26.APR.2022 11:40:06



Date: 26.APR.2022 11:40:12

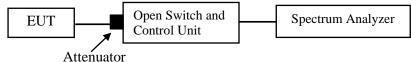
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

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

Test Procedure

- 1. Place the EUT on a bench and set in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
- 3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	24°C	
Relative Humidity:	64 %	
ATM Pressure:	101.2 kPa	

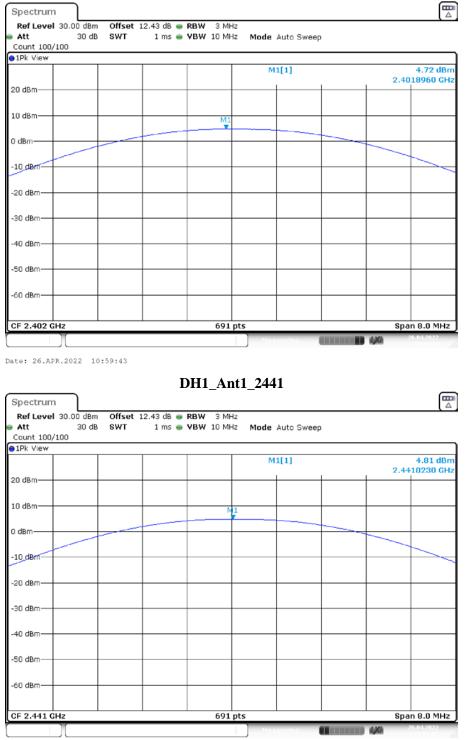
The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: Transmitting

Test Result: Compliant.

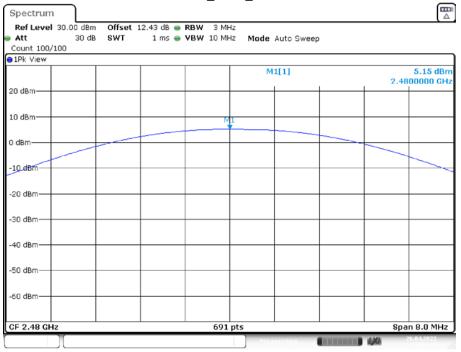
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
		2402	4.72	<=30	PASS
DH1	Ant1	2441	4.81	<=30	PASS
		2480	5.15	<=30	PASS
		2402	5.19	<=30	PASS
2DH1	Ant1	2441	5.19	<=30	PASS
		2480	5.51	<=30	PASS
		2402	5.47	<=30	PASS
3DH1	Ant1	2441	5.38	<=30	PASS
		2480	5.76	<=30	PASS

Please refer to the below plots:



DH1_Ant1_2402

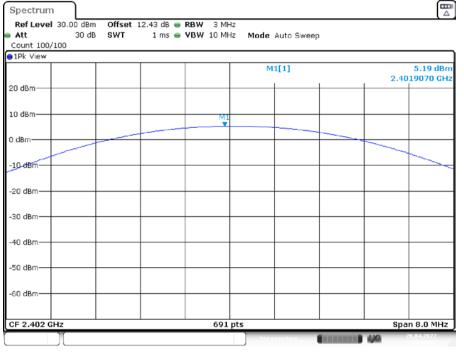
Date: 26.APR.2022 11:02:02



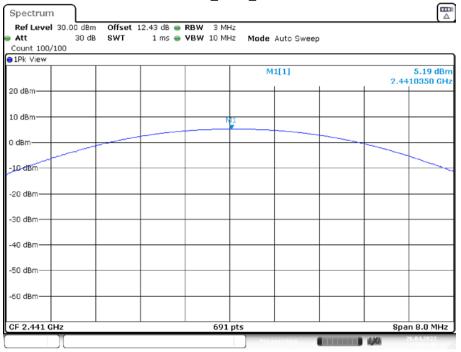
DH1_Ant1_2480

Date: 26.APR.2022 11:02:31

2DH1_Ant1_2402



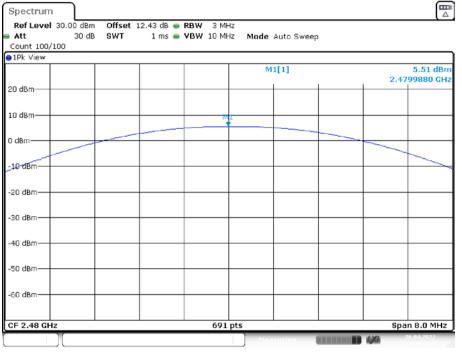
Date: 26.APR.2022 11:03:04



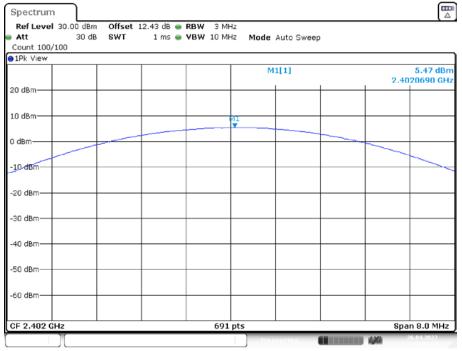
2DH1_Ant1_2441

Date: 26.APR.2022 11:03:49

2DH1_Ant1_2480



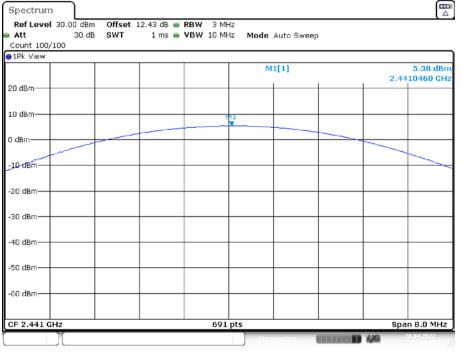
Date: 26.APR.2022 11:04:17



3DH1_Ant1_2402

Date: 26.APR.2022 11:04:40

3DH1_Ant1_2441



Date: 26.APR.2022 11:05:09

	UD III.		_
Spectrum			
Ref Level 30.00 dBm	Offset 12.43 dB 👄 RBW	3 MHz	· · · · · · · · · · · · · · · · · · ·
Att 30 dB	SWT 1 ms 👄 VBW 1	0 MHz Mode Auto Sweep	
Count 100/100		-	
1Pk View			
		M1[1]	5.76 dBm
20 dBm			2.4800690 GHz
20 dBm			
10 dBm			
0 dBm			
-10 dBm			`
-20 dBm			
-30 dBm			
-40 dBm			
-50 dBm			
-60 dBm			
CF 2.48 GHz		691 pts	Span 8.0 MHz
		Measuring	25.04.2022
CF 2.48 GHz		691 pts	

3DH1_Ant1_2480

Date: 26.APR.2022 11:05:31

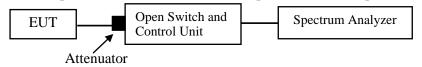
FCC §15.247(d) - BAND EDGES TESTING

Applicable Standard

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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) (see §15.205(c)).

Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
- 3. Set RBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- 5. Repeat above procedures until all measured frequencies were complete.



Test Data

Environmental Conditions

Temperature:	24°C
Relative Humidity:	64 %
ATM Pressure:	101.2kPa

The testing was performed by Nick Fang on 2022-04-26.

EUT operation mode: Transmitting

Test Result: Compliant

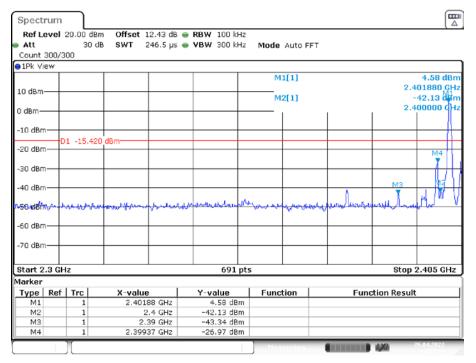
Please refer to the below plots:

DH1: Band Edge - Left Side Hopping

Spectrum						
Ref Level Att Count 300/3	30 d		B 🖶 RBW 100 kHz s 🖶 VBW 300 kHz	Mode Auto F	FT	
1Pk View						
				M1[1]		4.74 dBr
10 dBm						2.404010 GH
				M2[1]		-28.30 dB
) dBm						2.400000 Q
I						
-10 dBm						
	1 -15.26	0 dBm				
-20 dBm						M2
30 dBm						<u>()</u>
					M4	мз
-40 dBm					1.15.41	
in and	and the second second	www.markymark	monument	march man	mornapulityun	VANNAMAN and
-50 dBm						
-60 dBm						
-oo abiii						
-70 dBm						
I						
Start 2.3 GH	2		691 pt	5		Stop 2.405 GHz
larker	-			-		
Type Ref	Tre	X-value	Y-value	Function	Euno	ction Result
M1	1	2.40401 GHz	4.74 dBm			
M2	1	2.4 GHz	-28.30 dBm			
M3	1	2.39 GHz	-42.10 dBm			
M4	1	2.381261 GHz	-38.84 dBm			

Date: 26.APR.2022 11:26:10

Single

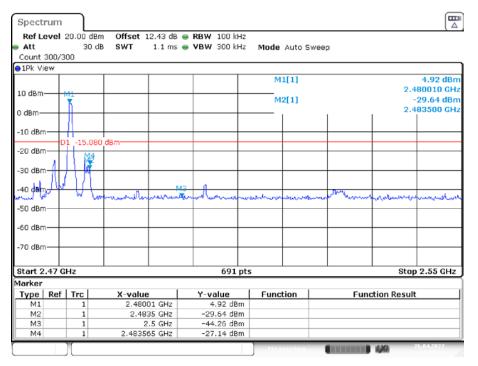


Date: 26.APR.2022 11:07:14

			110pp	0		
Spectrum						
Ref Level	20.00 dB	m Offset 12.43 de	3 👄 RBW 100 kHz			
Att	30 d	B SWT 1.1 ms	5 👄 VBW 300 kHz	Mode Auto S	Sweep	
Count 300/3	00					
1Pk View						
				M1[1]		5.07 dBr
						2.470980 GH
·				M2[1]		-35.19 dBn
A Bell (AA A A A	<u> </u>					2.483500 GH
UATRAJINUU	18					
빈아상태에 가서서	Ŋ					
	1 -14.93	0 dBm				
20 dBm	-					
	1					
-30 dBm	WW 2				M	
-40 dBm	~		M3			
io abiii	hul	war with water	Mannahar	montroliven	Millel Mansus	mmonwhender
-50 dBm						
I						
-60 dBm —						
-70 dBm						
Start 2.47 G	Hz		691 pt:	5		Stop 2.55 GHz
1arker						
Type Ref	Trc	X-value	Y-value	Function	Func	tion Result
M1	1	2.47098 GHz	5.07 dBm			
M2	1	2.4835 GHz	-35.19 dBm			
M3	1	2.5 GHz 2.525536 GHz	-40.47 dBm			
M4		2.525536 GHZ	-39.27 dBm			

DH1: Band Edge - Right Side Hopping

Date: 26.APR.2022 11:32:48



Single

Date: 26.APR.2022 11:09:13

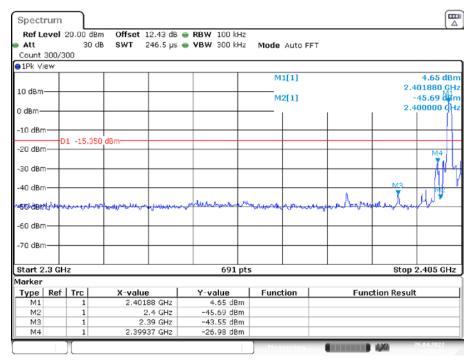
Version 11: 2021-11-09

2DH1: Band Edge - Left Side Hopping

Spectrum							
Ref Level Att Count 300/3	30			 RBW 100 kHz VBW 300 kHz 	Mode Auto P	FT	,
∋1Pk View							
10 dBm					M1[1]		2.87 dBn 2.403100 GH -30.56 dB
							2.400000 GH
-10 dBm							
-20 dBm 0	01 -17.1	.30 dBm					
-30 dBm		_				M4	
-40 dBm •50 ซอกิ		-poortany testing and a	m	Anguineman	And the second	T	men man man
-60 dBm							
-70 dBm							
Start 2.3 GH	łz			691 pt	s		Stop 2.405 GHz
larker							
Type Ref	Trc	X-value	e	Y-value	Function	Eun Fun	ction Result
M1	1	2.40	31 GHz	2.87 dBm			
M2	1		2.4 GHz	-30.56 dBm			
M3 M4	1		39 GHz 65 GHz	-48.60 dBm -43.51 dBm			
					Measuring		26.04.2022

Date: 26.APR.2022 11:33:22

Single

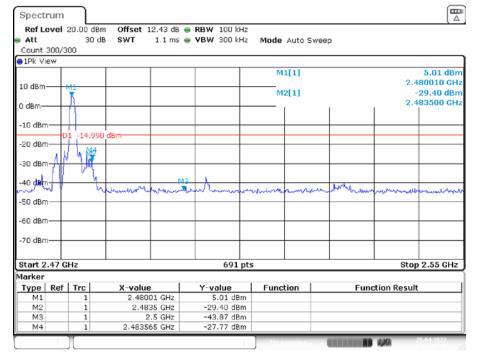


Date: 26.APR.2022 11:10:34

2DH1: Band Edge - Right Side Hopping

Spectrum								Ē
			10 10 -					4
Ref Level				RBW 100 kHz				
Att	30 d	IB SWT 1	l.1 ms 👄	VBW 300 kHz	Mode	Auto Sv	veep	
Count 300/3	300							
1Pk View								
I					M	1[1]		5.00 dBr
10 d8m		++						2.473300 GH
1 T		1 1			M	2[1]		-34.78 dBr
oldebox 4444	<u>аң — </u>	++					1	2.483500 GH
		1 1						
-10 dBm								
-20 dBm	01 -15.00	0 dBm						
-20 UBIII								
-30 dBm	1 M2							
	PG	1 1	мз	1	/14			
-40 dBm		mundo		AL ALLA	1	1.1		
	~	A. CORACCEONTINA	A working a	mar and a	work	nr habbelier	when we we	mound
-50 dBm		+ +						
-60 dBm								
-oo usiii								
-70 dBm								
/0 0.01		1 1						
Start 2.47 0	Hz			691 pt	<u>د</u>			Stop 2.55 GHz
1arker				002.00	2			0100 2100 0112
	Trc	X-value	1	Y-value	Func	tion	Eun	ction Result
M1	1	2.4733	GHz	5.00 dBm	, i une		1 411	oron nogult
M2	1	2.4835		-34.78 dBm				
M3	1		GHz	-41.67 dBm				
M4	1	2.512203	GHz	-39.50 dBm				
	1				Mas		Concession of	26.04.2022

Date: 26.APR.2022 11:36:22



Single

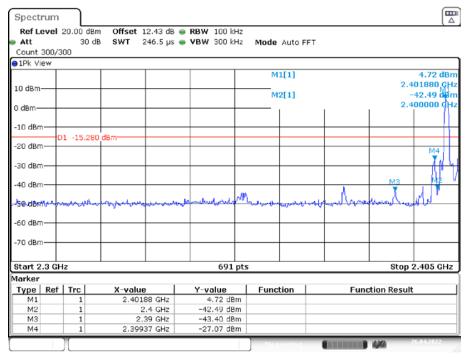
Date: 26.APR.2022 11:15:45

3DH1: Band Edge - Left Side Hopping

Spectrum						
Ref Level			3 🖷 RBW 100 kHz			
Att	30 c	İB SWT 246.5 μ	5 👄 VBW 300 kHz	Mode Auto F	FT	
Count 300/3	300					
1Pk View						
				M1[1]		3.47 dBr
10 dBm —						2.402040 GH
				M2[1]		-29.69 dBt
) dBm —						2.400000 GH
						M
10 dBm						
	01 -16.53	0_dBm				
20 dBm 🕂						
30 dBm						M2
30 aBm						
40 dBm						M4 N
						M3. J
solapui^v/	hogody	-	west all the shall all and	Maurupana	Maynuluellings	want the wall the
I						
60 dBm —						
70 dBm —						
						Stop 2.405 GHz
Start 2.3 Gi	Hz		691 pts	5		
Start 2.3 GH Iarker	Hz		691 pts	5		0000 21100 0112
larker		X-value			Fu	
larker	Hz Trc	X-value 2.40204 GHz	691 pts Y-value 3.47 dBm	Function	Fu	nction Result
larker Type Ref	Trc		Y-value		Fu	
larker Type Ref M1	Trc 1	2.40204 GHz	Y-value 3.47 dBm		Fu	
larker Type Ref M1 M2	1 1	2.40204 GHz 2.4 GHz	Y-value 3.47 dBm -29.69 dBm		Fu	

Date: 26.APR.2022 11:36:56

Single



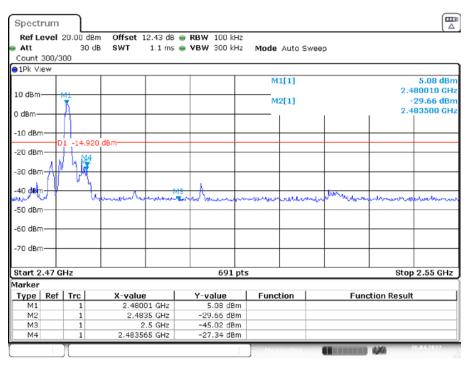
Date: 26.APR.2022 11:16:53

3DH1: Band Edge - Right Side Hopping

Spectrum									
Ref Level : Att	20.00 dBi 30 d		iB 👄 RBW ns 👄 VBW						
Count 300/3		5 SWI 1.11		300 KH2	Mode	Auto S	weep		
1Pk View	00								
					M	1[1]		5.14	dBm
10 dBm								2.47897	
					M	2[1]		-35.18	
A declarate	4							2.48350	D GH2
041-01-00	<u> </u>								
-10 dBm	1 -14.86	o do m							
-20 dBm	1 -14.80	J abm							
	1.1								
-30 dBm	%	+							
-40 dBm			MO		4				
-40 abm	u	4 Manually	markelle	margue	Menters	hadredda	the alimous	andreamenter	المتحاص
-50 dBm									
-60 dBm									
-70 dBm									
Start 2.47 G	Hz			691 pts				Stop 2.55	GHz
1arker									
Type Ref	Trc	X-value	Y-1	/alue	Func	tion	F	unction Result	
M1	1	2.47897 GH	-	5.14 dBm					
M2	1	2.4835 GH		5.18 dBm					
M3 M4	1	2.5 GH: 2.512435 GH		4.17 dBm 9.64 dBm					
1.1.4	1	2.012400 GH	J	3.04 ubm					

Date: 26.APR.2022 11:40:33

Single



Date: 26.APR.2022 11:18:51

***** END OF REPORT *****

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