



TEST REPORT

Applicant Name :	Xiamen iprt Technology Co., Ltd				
Address :	Fifth Floor, No.101, Huli Industrial Park, Meixi Road, Tong'an District, Xiamen				
	City, China				
Report Number :	XMTN3211231-68547E-00A				
FCC ID:	2A2HA-JD-468BT				
Test Standard (s) FCC PART 15.247					
Sample Description					
Product Type:	Thermal Label Printer				
Model No.:	BY-244				
Date Received:	2021-12-31				
Date of Test:	2022-01-20 to 2022-04-07				
Report Date:	2022-04-13				
Test Result:	Pass*				
* In the configuration tested, the E	UT complied with the standards above.				
Prepared and Checked By:	Approved By:				
Ting Lu					

Ting Lü **EMC Engineer**

R6bort li

Robert Li **EMC Engineer**

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

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Shenzhen Accurate Technology Co., Ltd.

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GENERAL INFORMATION

Product	Thermal Label Printer		
Tested Model No.	BY-244		
Frequency Range	2402~2480MHz		
Maximum conducted Peak output power	-1.31dBm		
Modulation Technique	GFSK, π/4-DQPSK, 8DPSK		
Antenna Specification*	Internal Antenna: 2dBi(provided by the applicant)		
Voltage Range	DC 24V from adapter		
Sample number	XMTN3211231-68547E-RF -S1 (Assigned by ATC)		
Sample/EUT Status	Good condition		
Adapter Information	Model: GM53-240200-F Input: 100-240V~, 50/60Hz, 2A Output: DC 24V, 2A		

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 Emi	ssion, conducted	1.6dB	
AC Power Lines Conducted Emissions		2.72dB	
	30MHz - 1GHz	4.28dB	
Emissions, Radiated	1GHz - 18GHz	4.98dB	
Rudiated	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 "BT98X FCC Tool V1.2.exe"* was used during testing and the power level was 0*.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

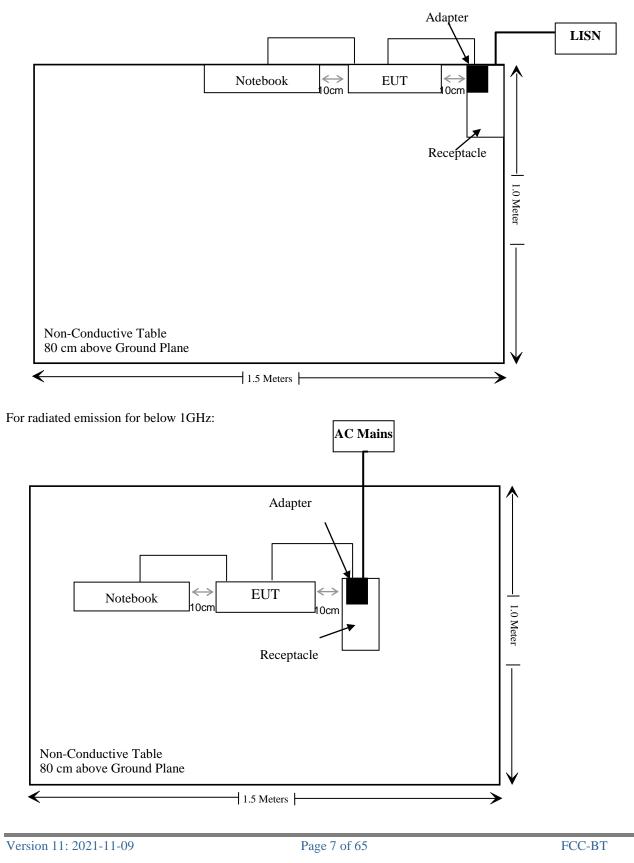
Manufacturer	Description	Model	Serial Number	
Lenovo	Notebook	T430	Unknown	

External I/O Cable

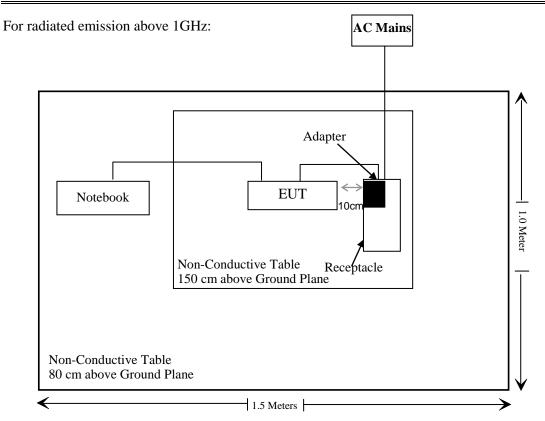
Cable Description	Length (m)	From Port	То
Unshielded Detachable USB Cable	1.45	Notebook	EUT
Unshielded Un-Detachable DC Input Cable	1.13	Adapter	EUT

Block Diagram of Test Setup

For conducted emission:



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SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (I), §1.1310 & §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	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 Comp	

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 Er		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	Each	time		
Unknown	RF Coaxial Cable	No.32	RF-02	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 §15.247 (i) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

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

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$\mathbf{S} = \frac{PG}{4\pi R^2}$$

S = 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)

Frequency	Antenna Gain		-	Tune up conducted power		Power Density	MPE Limit
(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	$(\mathrm{mW/cm}^2)$	(mW/cm ²)
2402-2480	2	1.58	-1	0.79	20	0.000250	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 Antenna arrangement, which was permanently attached and the antenna gain is 2dBi, fulfill the requirement of this section. Please refer to the EUT photos.

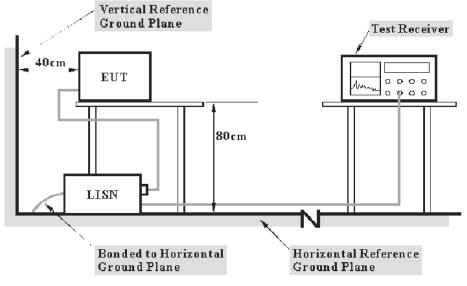
Result: Compliant.

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

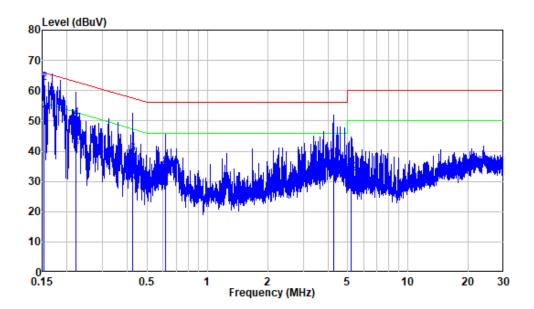
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Caro Hu on 2022-04-07.

EUT operation mode: BT Transmitting(working and monitoring with CMW500)

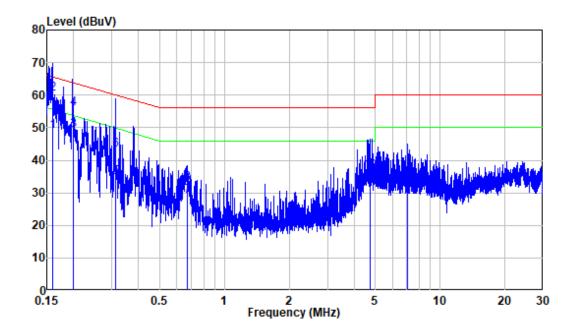
AC 120V/60Hz, Line



Site :	Shielding Room
Condition:	Line
Test Mode:	Transmitting
Model :	BY-244
Power :	AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.153	9.89	41.88	51.77	55.85	-4.08	Average
2	0.153	9.89	52.64	62.53	65.85	-3.32	QP
3	0.221	9.80	31.21	41.01	52.78	-11.77	Average
4	0.221	9.80	40.96	50.76	62.78	-12.02	QP
5	0.423	9.80	20.25	30.05	47.40	-17.35	Average
6	0.423	9.80	29.12	38.92	57.40	-18.48	QP
7	0.620	9.81	18.64	28.45	46.00	-17.55	Average
8	0.620	9.81	24.96	34.77	56.00	-21.23	QP
9	4.252	9.95	22.51	32.46	46.00	-13.54	Average
10	4.252	9.95	27.16	37.11	56.00	-18.89	QP
11	5.180	10.00	16.94	26.94	50.00	-23.06	Average
12	5.180	10.00	22.50	32.50	60.00	-27.50	QP

AC 120V/60Hz, Neutral



Site :	Shielding Room
Condition:	Neutral
Test Mode:	Transmitting
Model :	BY-244
Power :	AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.159	9.80	39.23	49.03	55.51	-6.48	Average
2	0.159	9.80	50.52	60.32	65.51	-5.19	QP
3	0.200	9.80	39.39	49.19	53.61	-4.42	Average
4	0.200	9.80	46.05	55.85	63.61	-7.76	QP
5	0.312	9.80	24.83	34.63	49.92	-15.29	Average
6	0.312	9.80	33.51	43.31	59.92	-16.61	QP
7	0.671	9.81	19.10	28.91	46.00	-17.09	Average
8	0.671	9.81	23.19	33.00	56.00	-23.00	QP
9	4.709	9.88	22.63	32.51	46.00	-13.49	Average
10	4.709	9.88	26.73	36.61	56.00	-19.39	QP
11	7.086	9.97	19.20	29.17	50.00	-20.83	Average
12	7.086	9.97	23.16	33.13	60.00	-26.87	QP

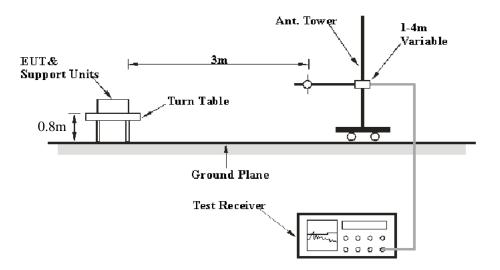
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

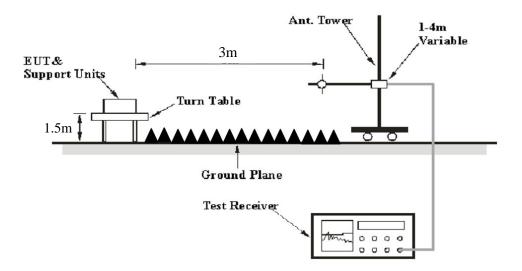
FCC §15.205; §15.209; §15.247(d)

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	/	PK
ADOVE 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.

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, an 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

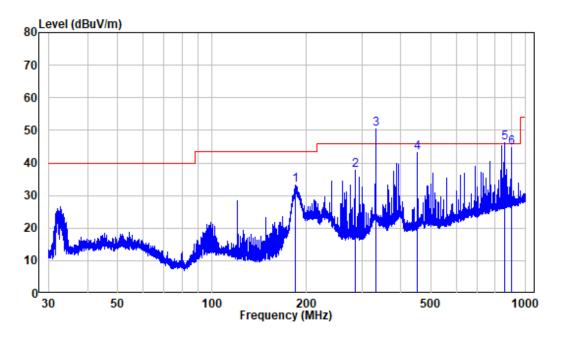
Temperature:	23 °C
Relative Humidity:	58%
ATM Pressure:	101.0 kPa

The testing was performed by Nick Fang on 2022-04-03.

EUT operation mode: BT Transmitting(working and monitoring with CMW500)

(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 Mode, High Channel

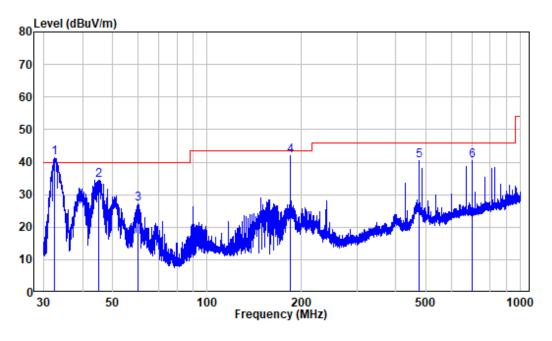


Horizontal

Site :	chamber
Condition:	3m HORIZONTAL
Job No. :	XMTN3211231-68547E-RF
Test Mode:	BT Transmitting

	Freq	Factor			Limit Line		Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	184.652	-12.22	45.48	33.26	43.50	-10.24	Peak
2	286.229	-9.42	47.16	37.74	46.00	-8.26	Peak
3	332.373	-7.81	58.22	50.41	46.00	4.41	QP *
4	452.323	-5.57	48.70	43.13	46.00	-2.87	
5	858.529	0.28	45.76	46.04	46.00	0.04	QP *
6	900.147	1.36	43.45	44.81	46.00	-1.19	QP





Site : chamber Condition: 3m VERTICAL Job No. : XMTN3211231-68547E-RF Test Mode: BT Transmitting

	Freq	Factor			Limit Line		Remar	k
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB		
1	32.534	-12.09	53.43	41.34	40.00	1.34	QP	*
2	45.039	-9.94	44.31	34.37	40.00	-5.63	QP	
3	60.254	-10.72	37.88	27.16	40.00	-12.84	Peak	
4	184.571	-12.23	54.28	42.05	43.50	-1.45	QP	
5	475.499	-5.39	45.71	40.32	46.00	-5.68	QP	
6	701.761	-1.57	41.90	40.33	46.00	-5.67	QP	

Note *: The data record above represents the worst case for all supported operating modes, there were no spurious emission in the range 30MHz -1GHz over the limit in §15.209 caused by radio, the emission list at above table was investigated and was not caused by the radio, the emission was present when the radio was not transmitting. Those emissions comply with the FCC Part 15, Subpart B-Unintentional radiators §15.109(b) limit set for Class A digital device as the EUT is a Class A equipment according the user manual.

Above 1GHz (worst case):

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)		0	(m)	(H/V)				
				3DH1, Lo					
2310	45.75	PK	275	1.1	Н	-7.23	38.52	74	-35.48
2310	45.54	РК	109	1.9	V	-7.23	38.31	74	-35.69
2390	46.5	РК	140	1.5	Н	-7.21	39.29	74	-34.71
2390	45.33	РК	7	2.1	V	-7.21	38.12	74	-35.88
4804	46.27	PK	140	1.5	Н	-3.52	42.75	74	-31.25
4804	45.19	РК	173	1.4	V	-3.52	41.67	74	-32.33
7206	46.6	РК	173	1.4	Н	2.71	49.31	74	-24.69
7206	42.55	РК	24	1.0	V	2.71	45.26	74	-28.74
	BT 3DH1, Middle Channel								
4882	46.29	РК	322	1.5	Н	-3.37	42.92	74	-31.08
4882	45.23	РК	66	1.3	V	-3.37	41.86	74	-32.14
7323	48.02	РК	66	1.3	Н	3.31	51.33	74	-22.67
7323	44.57	РК	266	1.7	V	3.31	47.88	74	-26.12
			BT	3DH1, Hi	gh Chanı	nel			
2483.5	61.05	РК	272	1.7	Н	-7.2	53.85	74	-20.15
2483.5	58.68	РК	342	1.2	V	-7.2	51.48	74	-22.52
2500	47.7	РК	170	1.2	Н	-7.18	40.52	74	-33.48
2500	48.36	РК	217	1.5	V	-7.18	41.18	74	-32.82
4960	46.69	РК	118	1.4	Н	-3.01	43.68	74	-30.32
4960	46.38	РК	356	2.1	V	-3.01	43.37	74	-30.63
7440	49.84	РК	356	2.1	Н	3.52	53.36	74	-20.64
7440	44.22	РК	314	1.7	V	3.52	47.74	74	-26.26

Note:

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

Absolute Level (Corrected Amplitude) = Factor + Reading

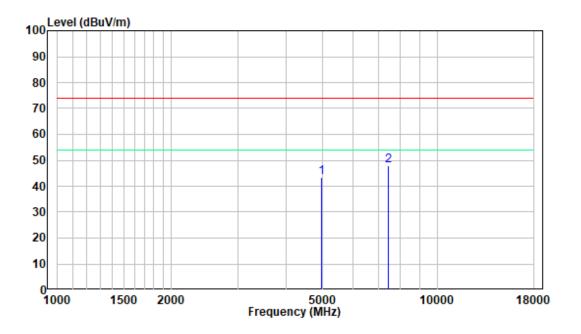
Margin = Absolute Level - Limit The other spurious emission which is in the noise floor level was not recorded.

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.

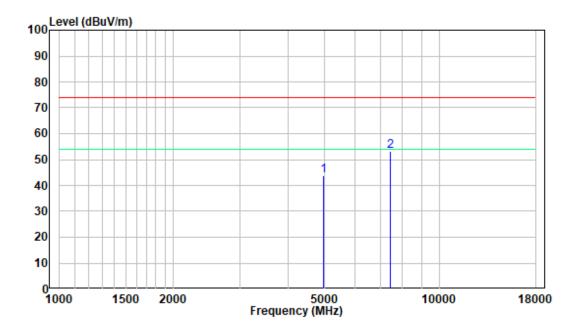
1 GHz - 18 GHz: (Pre-Scan plots)

High Channel

Horizontal



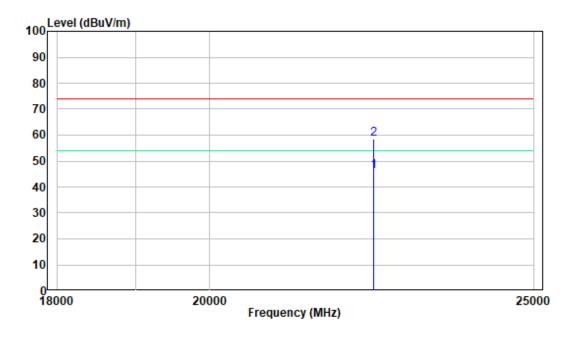




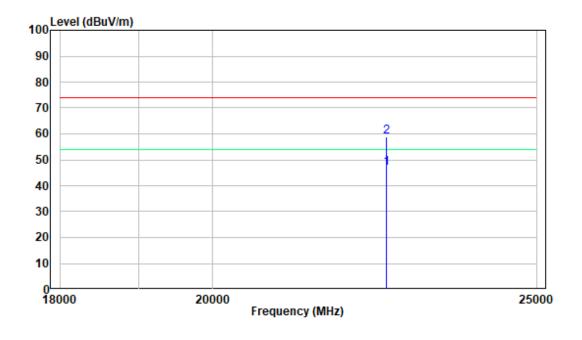
18-25GHz: (Pre-Scan plots)

High Channel

Horizontal



Vertical



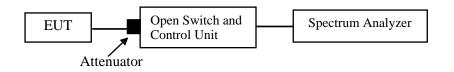
FCC §15.247(a) (1)-CHANNEL SEPARATION TEST

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:	20 °C
Relative Humidity:	58 %
ATM Pressure:	101.0 kPa

The testing was performed by Key.Pei on 2022-01-20.

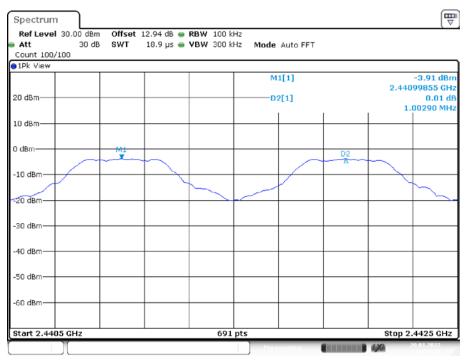
EUT operation mode: Transmitting

Test Result: Compliant.

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Нор	1.003	>=0.654	PASS
2DH1	Ant1	Нор	1.064	>=0.862	PASS
3DH1	Ant1	Нор	1.006	>=0.872	PASS

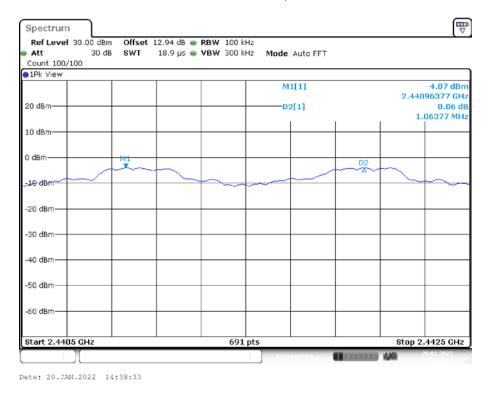
Please refer to the below plots:

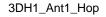
DH1_Ant1_Hop

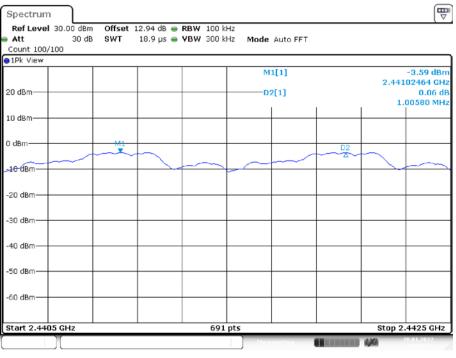


Date: 20.JAN.2022 14:30:21

2DH1_Ant1_Hop







Date: 20.JAN.2022 18:01:55

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.

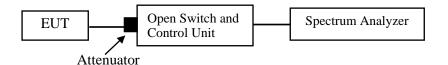
• The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.

• 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:	20 °C		
Relative Humidity:	58 %		
ATM Pressure:	101.0 kPa		

The testing was performed by Key.Pei on 2022-01-20.

EUT operation mode: Transmitting

Test Result: Compliant.

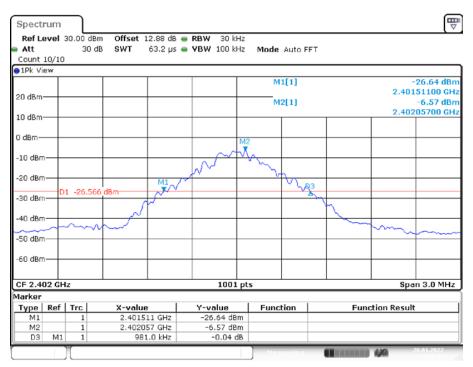
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.981	2401.511	2402.492		PASS
		2441	0.978	2440.514	2441.492		PASS
		2480	0.957	2479.535	2480.492		PASS
2DH1	Ant1	2402	1.293	2401.367	2402.660		PASS
		2441	1.293	2440.364	2441.657		PASS
		2480	1.290	2479.364	2480.654		PASS
3DH1	Ant1	2402	1.308	2401.352	2402.660		PASS
		2441	1.305	2440.352	2441.657		PASS
		2480	1.302	2479.352	2480.654		PASS

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.914	2401.547	2402.462		PASS
		2441	0.914	2440.547	2441.462		PASS
		2480	0.917	2479.544	2480.462		PASS
2DH1	Ant1	2402	1.223	2401.401	2402.623		PASS
		2441	1.208	2440.401	2441.608		PASS
		2480	1.196	2479.401	2480.596		PASS
3DH1	Ant1	2402	1.235	2401.389	2402.623		PASS
		2441	1.226	2440.386	2441.611		PASS
		2480	1.22	2479.386	2480.605		PASS

Please refer to the below plots:

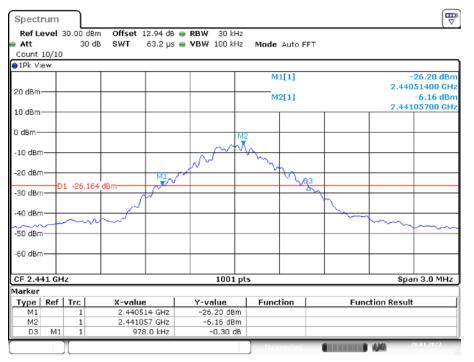
20 dB EMISSION BANDWIDTH

DH1_Ant1_2402



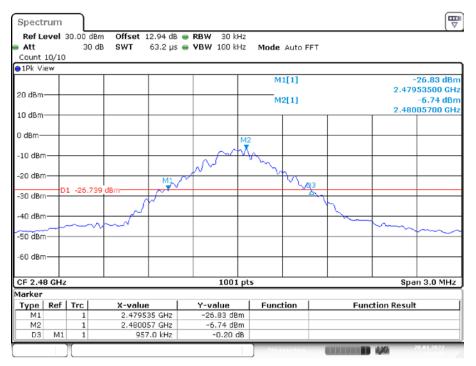
Date: 20.JAN.2022 13:59:34

DH1_Ant1_2441



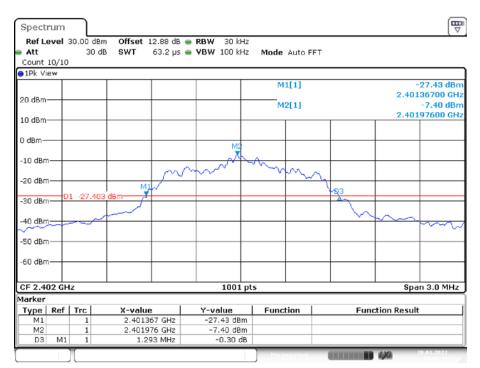
Date: 20.JAN.2022 14:00:56

DH1_Ant1_2480



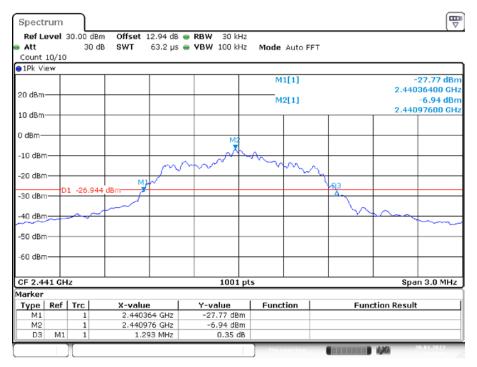
Date: 20.JAN.2022 14:01:50

2DH1_Ant1_2402



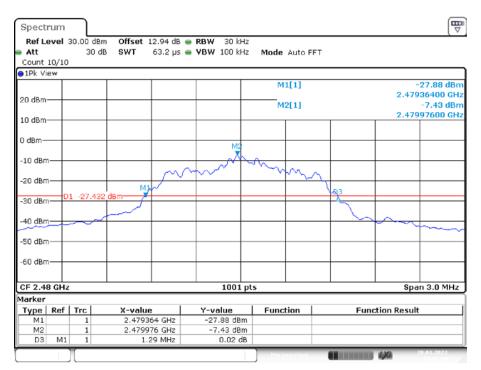
Date: 20.JAN.2022 14:03:37

2DH1_Ant1_2441



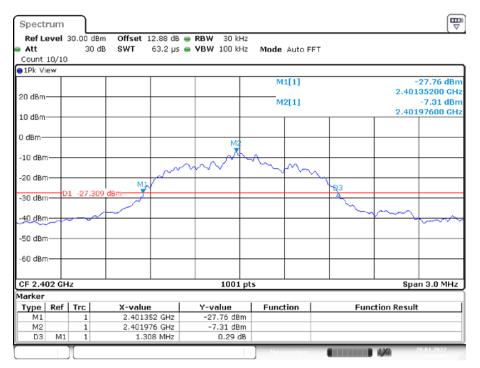
Date: 20.JAN.2022 14:04:59

2DH1_Ant1_2480



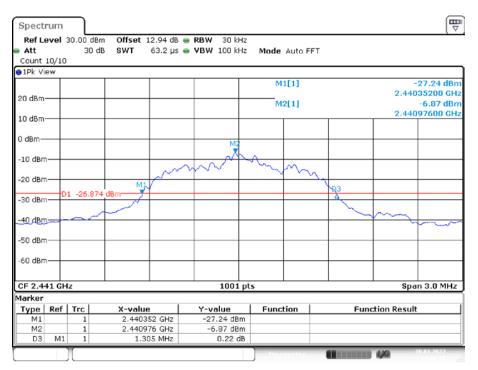
Date: 20.JAN.2022 14:05:54

3DH1_Ant1_2402



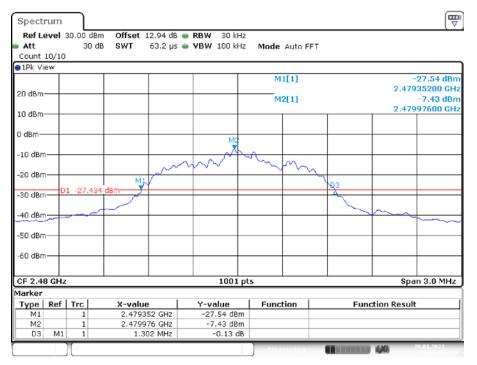
Date: 20.JAN.2022 14:08:01

3DH1_Ant1_2441



Date: 20.JAN.2022 14:09:19

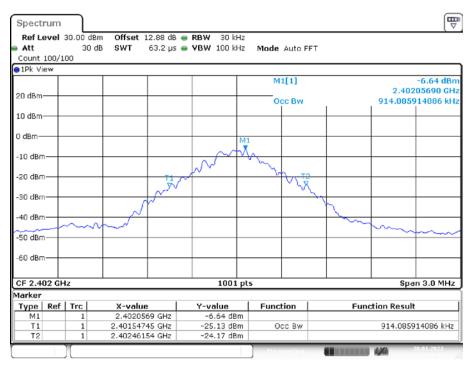
3DH1_Ant1_2480



Date: 20.JAN.2022 14:10:14

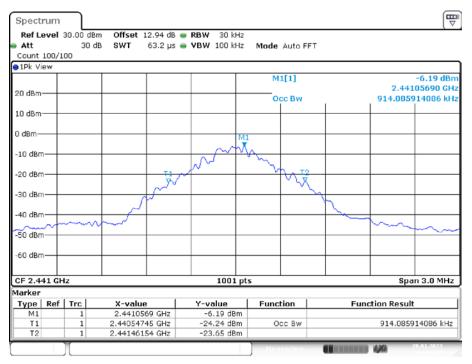
99% OCCUPIED BANDWIDTH

DH1_Ant1_2402

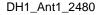


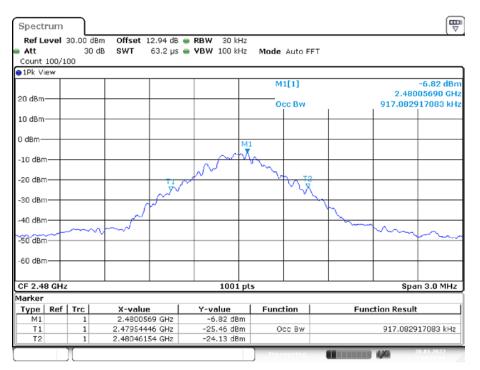
Date: 20.JAN.2022 13:59:52

DH1_Ant1_2441



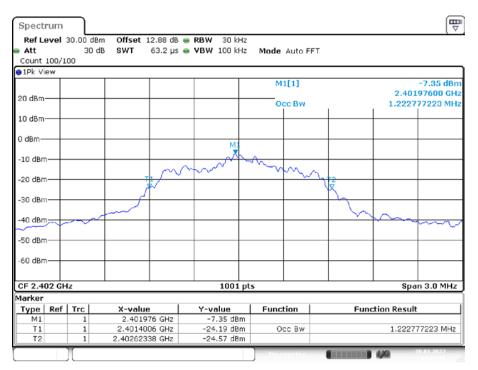
Date: 20.JAN.2022 14:01:14



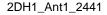


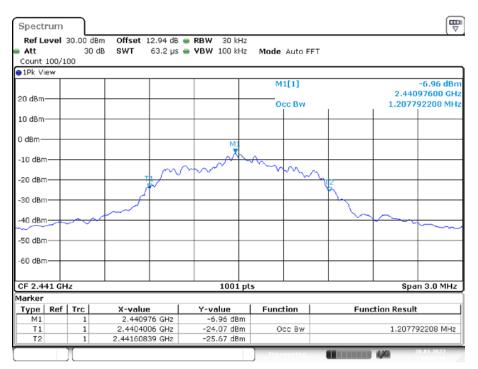
Date: 20.JAN.2022 14:02:07

2DH1_Ant1_2402



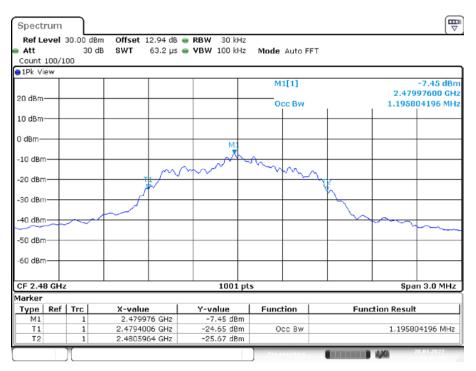
Date: 20.JAN.2022 14:03:56





Date: 20.JAN.2022 14:05:16

2DH1_Ant1_2480



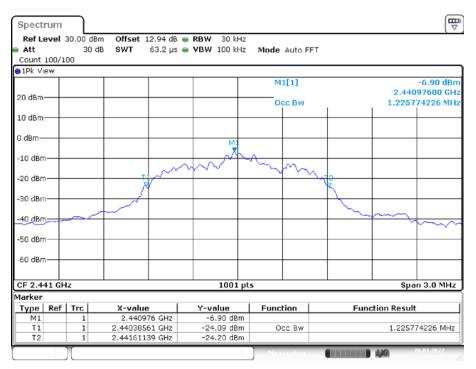
Date: 20.JAN.2022 14:06:11

3DH1_Ant1_2402



Date: 20.JAN.2022 14:08:18

3DH1_Ant1_2441



Date: 20.JAN.2022 14:09:37

₽ Spectrum Ref Level 30.00 dBm Offset 12.94 dB 👄 RBW 30 kHz 63.2 µs 👄 VBW 100 kHz 🛛 Mode Auto FFT Att 🕯 30 dB SWT Count 100/100 ●1Pk View -7.45 dBm 2.47997600 GHz M1[1] 20 dBm-Occ Bw 1.219780220 MHz 10 dBm-0 dBm M) -10 dBm n -20 dBm -30 dBm 40 dBm -50 dBm--60 dBm-CF 2.48 GHz Span 3.0 MHz 1001 pts Marker Type Ref Trc M1 1 X-value 2.479976 GHz Y-value -7.45 dBm Function Function Result -24.38 dBm -24.23 dBm 2.47938561 GHz 2.48060539 GHz Τ1 Occ Bw 1.21978022 MHz 1 T2 1

3DH1_Ant1_2480

Date: 20.JAN.2022 14:10:31

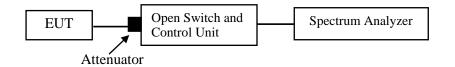
FCC §15.247(a) (1) (iii)-QUANTITY OF HOPPING CHANNEL TEST

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

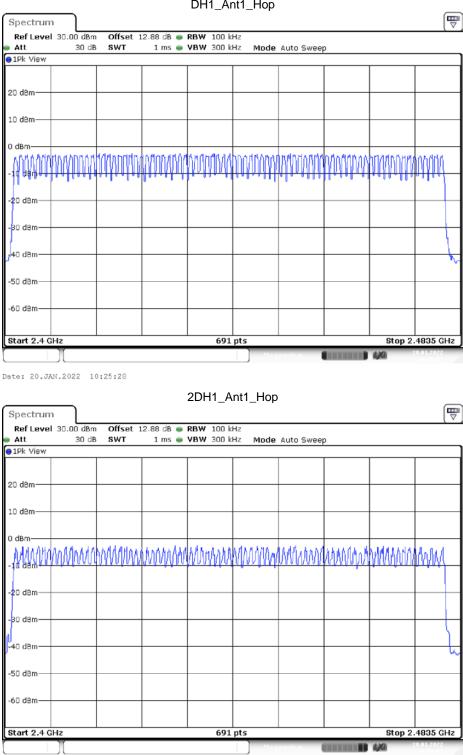
Temperature:	20 °C		
Relative Humidity:	58 %		
ATM Pressure:	101.0 kPa		

The testing was performed by Key.Pei on 2022-01-20.

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



DH1_Ant1_Hop

Date: 20.JAN.2022 10:59:03

Report No.: XMTN3211231-68547E-00A

				3DH1_A	.nt1_Hop)			_
Spectrum	<u> </u>								₩
Ref Level				RBW 100 k					
Att	30 d	B SWT	1 ms 🖷	VBW 300 k	Hz Mode	Auto Swee	р		
1Pk View									
20 dBm									
10 dBm									
0 dBm									
	MAMAN	MMMM	ummul	HAMAN	MMM	MMM	WWWW	MMMM	MM
-20 dBm									
-30 d8m									
									{
-40 d8m									ե
-50 dBm									
-60 dBm									
Start 2.4 G	Hz	1		691	pts			Stop 2	.4835 GHz
					No.		C	4.365	20.01.2022

3DH1_Ant1_Hop

Date: 20.JAN.2022 11:14:09

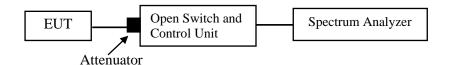
FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

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:	20 °C
Relative Humidity:	58 %
ATM Pressure:	101.0 kPa

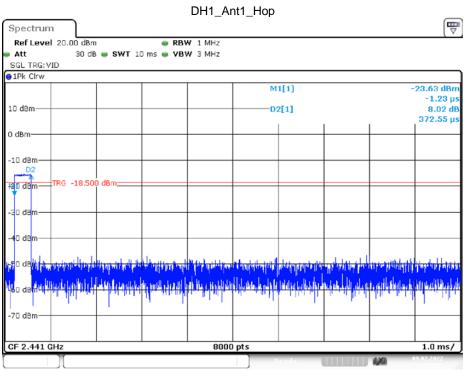
The testing was performed by Key.Pei on 2022-02-09.

EUT operation mode: Transmitting

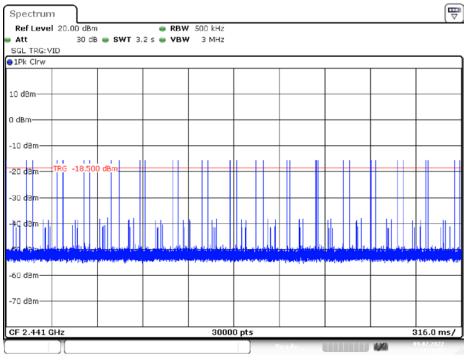
Test Result: Compliant.

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Нор	0.37	330	0.123	<=0.4	PASS
DH3	Ant1	Нор	1.62	170	0.276	<=0.4	PASS
DH5	Ant1	Нор	2.86	100	0.286	<=0.4	PASS
2DH1	Ant1	Нор	0.38	330	0.126	<=0.4	PASS
2DH3	Ant1	Нор	1.63	170	0.276	<=0.4	PASS
2DH5	Ant1	Нор	2.87	120	0.344	<=0.4	PASS
3DH1	Ant1	Нор	0.38	330	0.126	<=0.4	PASS
3DH3	Ant1	Нор	1.63	170	0.276	<=0.4	PASS
3DH5	Ant1	Нор	2.87	100	0.287	<=0.4	PASS

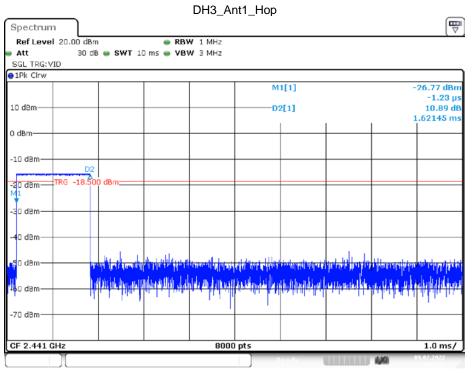
Note 1: A period time=0.4*79=31.6(s), Result=Burst Width*Total Hops Note 2: Total Hops =Hopping Number in 3.16s*10 Note 3: Hoping Number in 3.16s=Total of highest signals in 3.16s (Second high signals were other channel)



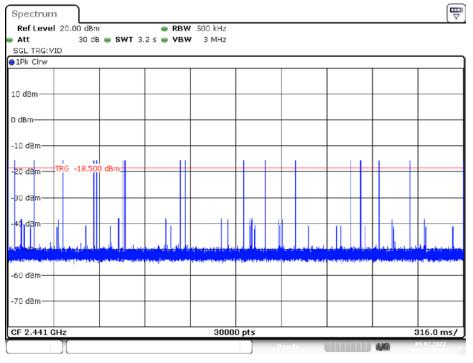
Date: 9.FEB.2022 14:58:03



Date: 9.FEB.2022 14:58:09

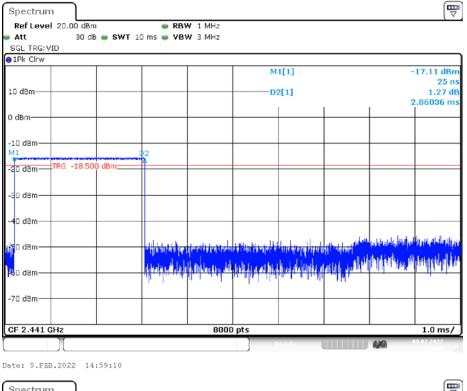


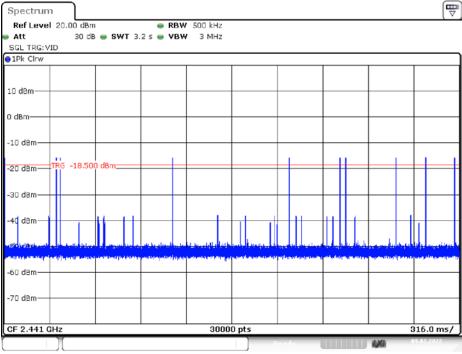
Date: 9.FEB.2022 14:58:37



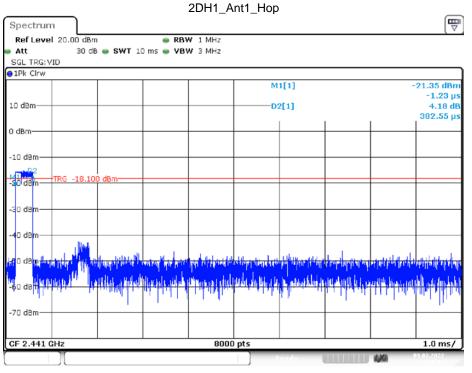
Date: 9.FEB.2022 14:58:43



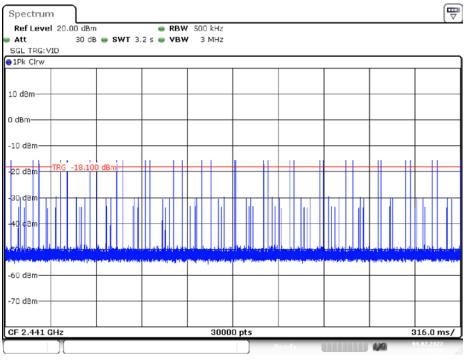




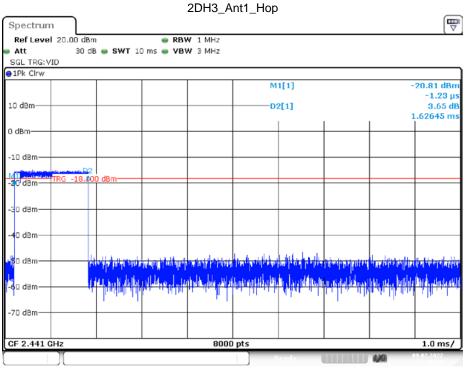
Date: 9.FEB.2022 14:59:15



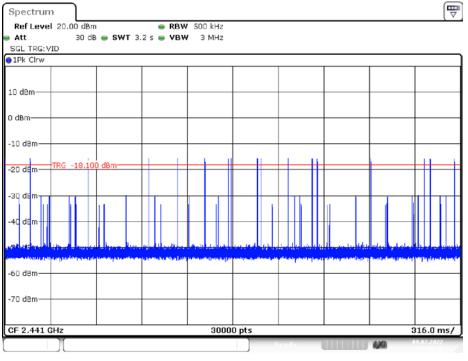
Date: 9.FEB.2022 15:00:03



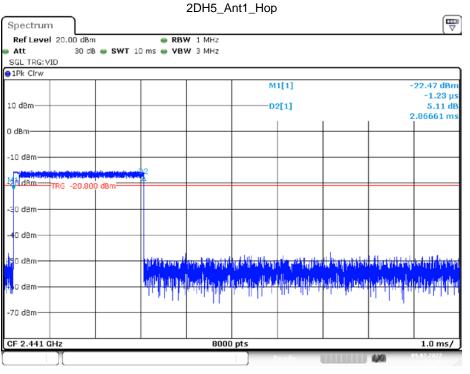
Date: 9.FEB.2022 15:00:08



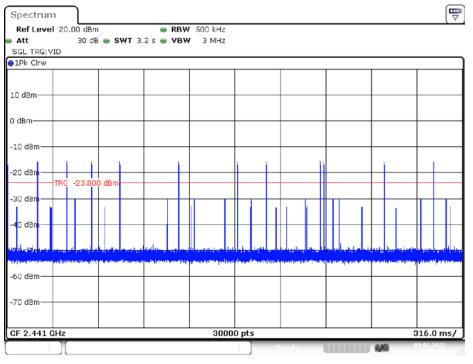
Date: 9.FEB.2022 15:00:35



Date: 9.FEB.2022 15:00:41

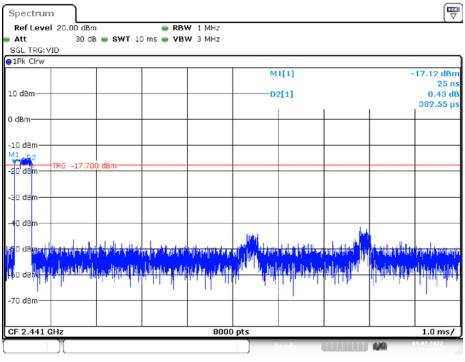


Date: 9.FEB.2022 15:01:05

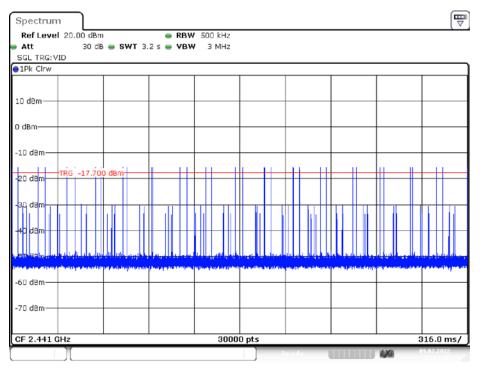


Date: 9.FEB.2022 15:01:10

3DH1_Ant1_Hop

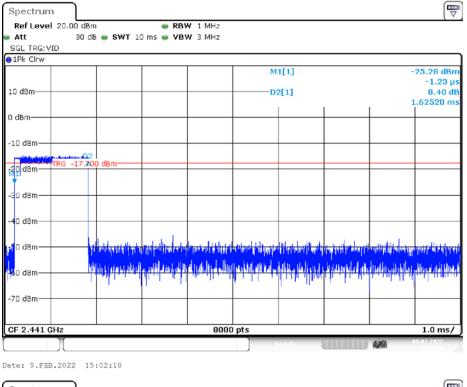


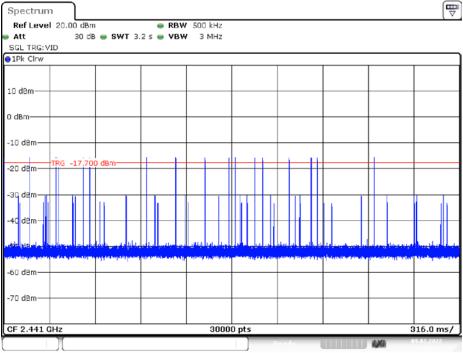
Date: 9.FEB.2022 15:01:40



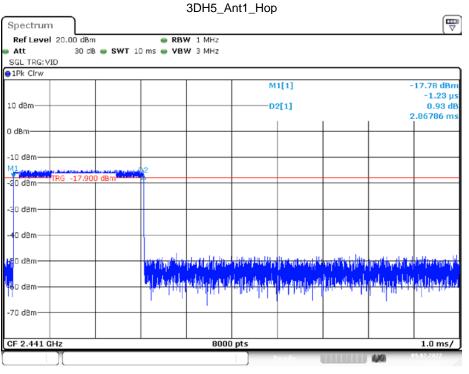
Date: 9.FEB.2022 15:01:45



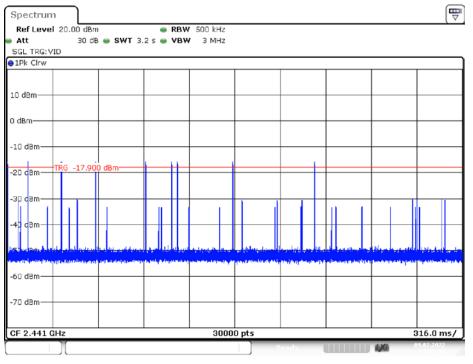




Date: 9.FEB.2022 15:02:15



Date: 9.FEB.2022 15:02:42



Date: 9.FEB.2022 15:02:48

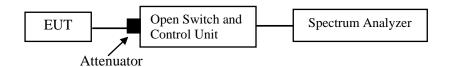
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

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

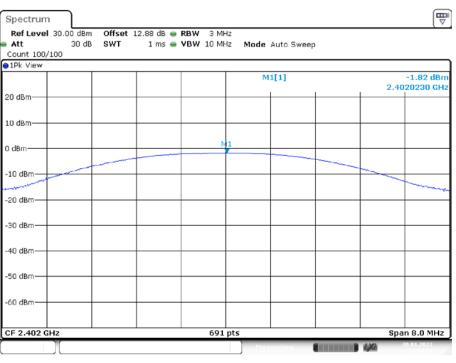
Temperature:	20 °C
Relative Humidity:	58 %
ATM Pressure:	101.0 kPa

The testing was performed by Key.Pei on 2022-01-20.

EUT operation mode: Transmitting

Test Result: Compliant.

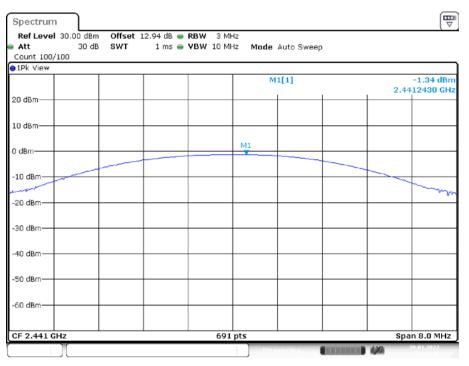
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
		2402	-1.82	<=20.97	PASS
DH1	Ant1	2441	-1.34	<=20.97	PASS
		2480	-1.67	<=20.97	PASS
	Ant1	2402	-1.83	<=20.97	PASS
2DH1		2441	-1.34	<=20.97	PASS
		2480	-1.62	<=20.97	PASS
	Ant1	2402	-1.72	<=20.97	PASS
3DH1		2441	-1.31	<=20.97	PASS
		2480	-1.65	<=20.97	PASS



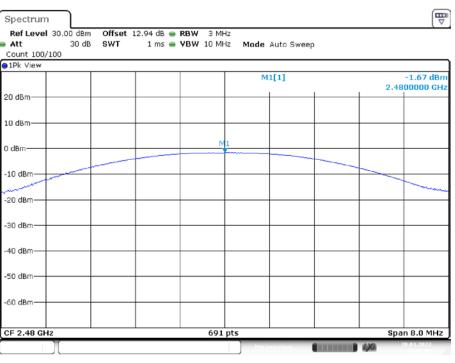
DH1_Ant1_2402

Date: 20.JAN.2022 11:24:23

DH1_Ant1_2441



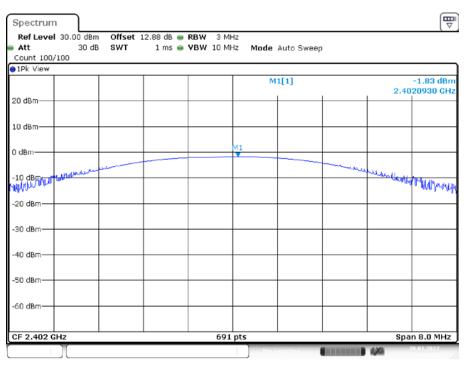
Date: 20.JAN.2022 11:24:47



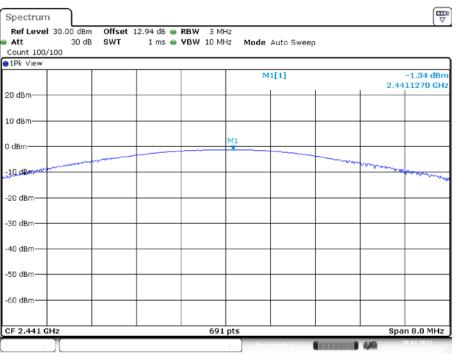
DH1_Ant1_2480

Date: 20.JAN.2022 11:25:02

2DH1_Ant1_2402



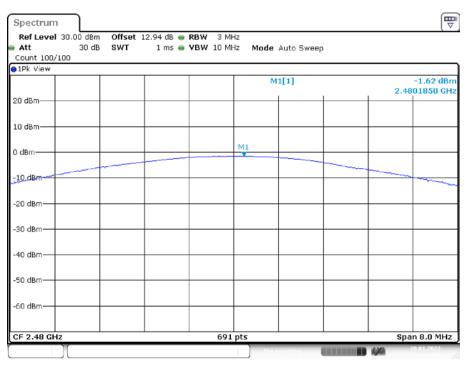
Date: 20.JAN.2022 11:25:20



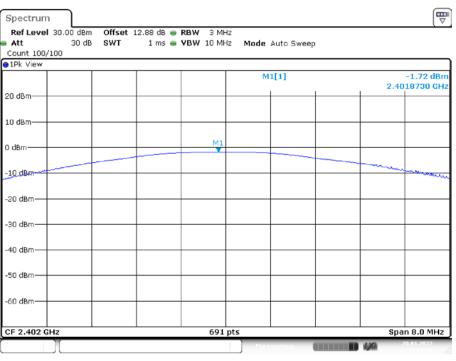
2DH1_Ant1_2441

Date: 20.JAN.2022 11:26:04

2DH1_Ant1_2480



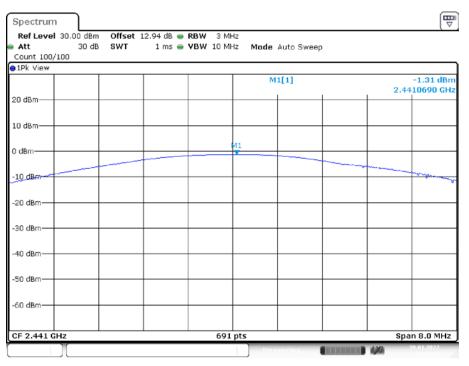
Date: 20.JAN.2022 11:28:04



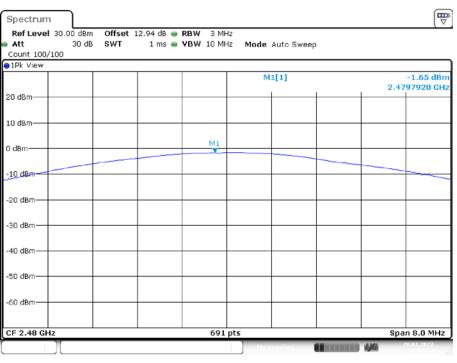
3DH1_Ant1_2402

Date: 20.JAN.2022 11:31:52

3DH1_Ant1_2441



Date: 20.JAN.2022 11:33:10



3DH1_Ant1_2480

Date: 20.JAN.2022 11:35:52

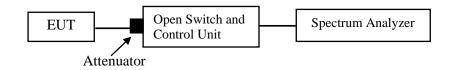
FCC §15.247(d) - BAND EDGES TESTING

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:	20 °C
Relative Humidity:	58 %
ATM Pressure:	101.0 kPa

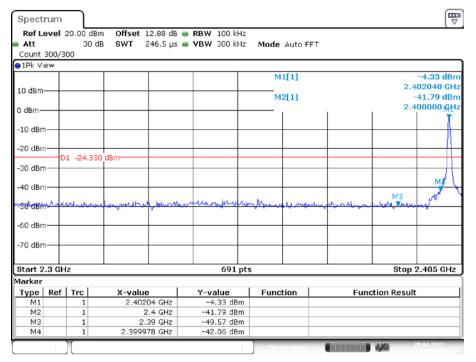
The testing was performed by Key.Pei on 2022-01-20.

EUT operation mode: Transmitting

Test Result: Compliant.

Conducted Band Edge Result:

DH1_Ant1_Low_2402



Date: 20.JAN.2022 14:00:07

DH1_Ant1_High_2480

Ref Lo	evel	20.00 de	Bm Offset 12.94 dB	🖷 RBW 100 kHz			
Att		30	dB SWT 1.1 ms	👄 VBW 300 kHz	Mode Auto S	Sweep	
Count	300/3	00					
▶1Pk Vi	в₩						
					M1[1]		-4.36 dBn
10 dBm·							2.480010 GH
to abiii					M2[1]		-42.81 dBn
0 dBm—	_	41					2.483500 GH
, april		X					
-10 dBm	-+						
		Λ					
-20 dBm		ft –					
	1-	1 -24.36	50 dBm				
-30 dBm		1					
-40 dBm	/	M2		43	M4		
And	and .	<u> </u>	a mouto employed	manopunder	amountar	ware alleston derend	hadreather and the second
50 dBm	-						
-60 dBrr	-+-						
-70 dBm	+						
Start 2	.47 G	Hz		691 pt	5		Stop 2.55 GHz
1arker							
Type	Ref	Trc	X-value	Y-value	Function	Functi	on Result
M1		1	2.48001 GHz	-4.36 dBm			
M2		1	2.4835 GHz	-42.81 dBm			
MЗ		1	2.5 GHz	-43.34 dBm			
M4		1	2.520435 GHz	-41.99 dBm			

Date: 20.JAN.2022 14:02:22

Version 11: 2021-11-09

Spectrum							Ę
Ref Level				RBW 100 kHz			
Att	-	DdB SWT	246.5 µs	• VBW 300 kHz	Mode Auto F	FT	
Count 300/3 1Pk View	00						
TEK VIEW					M1[1]		-4.70 dB
10 dBm							2.404920 GF
					M2[1]		-47.06 dB
) dBm —		_					2.400000 GH
10.40-							1 1
-10 dBm							
20 dBm							
	1 -24.	700 dBm					
-30 dBm							
-40 dBm				1014			M3 M2
50 dBm	-	realing Remark	- marene M	monteren	-managenere	man and a start	whom the way
50 dBm		ľ	1		× · ×		
-60 dBm							
-70 dBm							
							010.405.014
Start 2.3 GH Iarker	12			691 pt	5		Stop 2.405 GH;
	Trc	X-valu	e	Y-value	Function	Eu	nction Result
M1	1		192 GHz	-4.70 dBm	. unctoff	14	notion Regult
M2	1		2.4 GHz	-47.06 dBm			
M3	1		.39 GHz	-46.90 dBm			
M4	1	2.349	913 GHz	-45.20 dBm			

DH1_Ant1_Low_Hop_2402

Date: 20.JAN.2022 14:14:24

DH1_Ant1_High_Hop_2480

Spectrum						
Ref Level			B 👄 RBW 100 kHz			
Att	30 d	iB SWT 1.1 m	s 👄 VBW 300 kHz	Mode Auto S	Sweep	
Count 300/3 1Pk View	00					
ITEK VIEW				M1[1]		-4.35 dBr
				milil		2.477000 GH
.0 dBm				M2[1]		-42.78 dBr
dBm <u>M1</u>						2.483500 GH
ALIANT	0					
10,48,11,111						
19999991	11					
20 dem - P						
30 dBm	1 -24.35	U dBm				
30 ubm						
40 dBm	M2		M3		M4	
	hite	wouth marked and the	wet man and and and and and and and and and a	when the when	man	Menterson and the second shares and the
50 dBm —						
50 dBm						
BU UBIN						
70 dBm						
tart 2.47 G	Hz		691 pt	s		Stop 2.55 GHz
arker				-		0.00
	Trc	X-value	Y-value	Function	Eun	ction Result
M1	1	2.477 GHz	-4.35 dBm			
M2	1	2.4835 GHz	-42.78 dBm			
M3 M4	1	2.5 GHz	-43.32 dBm			
	1	2.531101 GHz	-41.12 dBm			

Date: 20.JAN.2022 14:33:46

Version 11: 2021-11-09

Spectrum							
Ref Level				RBW 100 kHz	-		
Att		dB SWT	246.5 µs (VBW 300 kHz	Mode Auto F	FT	
Count 300/3	300						
1Pk View							
I					M1[1]		-4.56 dBr 2.402040 GH
10 dBm —		_	+		M2[1]		-39.39 dBr
					matri		2.400000 GH
0 dBm							
-10 dBm							
-20 dBm —			+				
	01 -24.	560 dBm					
-30 dBm							Mg
40 dBm							
TO GOIN							M3 M
Soudemand	كيعطمهم	bas shashna	ما الأكامة المحصوم	mannen	مريا بم مريا بر هم مريا يرم	- Marine and a second strategy and	Marsh Beder my
.							
-60 dBm							
-70 dBm							
o ubiii							
Start 2.3 GF	łz			691 pt:	5		Stop 2.405 GHz
larker							
Type Ref	Trc	X-valu	e	Y-value	Function	Fun	oction Result
M1	1		204 GHz	-4.56 dBm			
M2	1		2.4 GHz	-39.39 dBm			
M3 M4	1		.39 GHz	-49.20 dBm -39.14 dBm			
1114	1	2.3998	520 GHZ	-39.14 0BM			

2DH1_Ant1_Low_2402

Date: 20.JAN.2022 14:04:11

2DH1_Ant1_High_2480

Spectru	m								
Ref Leve Att Count 300	_	dBm Offset : 0 dB SWT		 RBW 100 kHz VBW 300 kHz 		Auto S	Sweep		
●1Pk View									
10 dBm						1[1] 2[1]		2	-4.48 dBm .480010 GHz -42.60 dBm
0 dBm	M11							2	.483500 GHz
-10 dBm—	Ă								
-20 dBm—	D1 -24	.480 dBm							
-40 dBm		12 M4		43 annie den mar			بالسيدية والمسالي	und more thank	multeren
-50 dBm—									
-60 dBm—									
-70 dBm—	-								
Start 2.4	7 GHz			691 p	ts			St	op 2.55 GHz
larker									
Type R	Ref Trc X-ve		.	Y-value	Func	tion	Function Result		ılt
M1	1	2.480	01 GHz	-4.48 dBm					
M2	1		35 GHz	-42.60 dBm					
MЗ	1		2.5 GHz	-44.48 dBm					
M4	1	2.4911	01 GHz	-42.09 dBm					
					Mea	surin a		1 420	20.01.2022

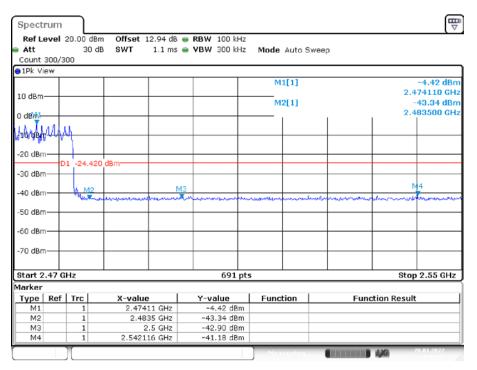
Date: 20.JAN.2022 14:06:26

₽ Spectrum Ref Level 20.00 dBm Offset 13.10 dB 👄 RBW 100 kHz Att 30 dB SWT 246.5 µs 👄 VBW 300 kHz Mode Auto FFT Count 300/300 ⊖1Pk View M1[1] -8.61 dBn 2.404920 GHz 10 dBm-M2[1] 47.29 dBm 2.400000 GHz 0 dBm -10 dBm n. -20 dBm D1 -28.610 -30 dBm--40 dBr M2 Хл M3 J. ÷ -50 dBm -60 dBm -70 dBm Start 2.3 GHz 691 pts Stop 2.405 GHz Marker Y-value -8.61 dBm -47.29 dBm Function Type Ref Trc Function Result X-value 2.40492 GHz M1 1 M2 2.4 GHz 1 ΜЗ 2.39 GHz -48.72 dBm 1 2.350522 GHz -46.27 dBm M4 1 **.....** 490

2DH1_Ant1_Low_Hop_2402

Date: 20.JAN.2022 14:34:24

2DH1_Ant1_High_Hop_2480



Date: 20.JAN.2022 14:42:26

3DH1_Ant1_Low_2402

Spectrum						
Ref Level	20.00 dBr	n Offset 12.88 dB	RBW 100 kHz			, , , , , , , , , , , , , , , , , , , ,
Att	30 di	3 SWT 246.5 µs	👄 VBW 300 kHz	Mode Auto i	FFT	
Count 300/3	00					
∋1Pk View						
				M1[1]		-4.51 dBn
10 dBm						2.402190 GH
				M2[1]		-42.04 dBn
						2.400000 GH
o ubiii					1	1 T
-10 dBm						
-20 dBm						
D	1 -24.510) dBm				
-30 dBm						
-40 dBm						NITLE
						мз 🏒
SOUGHING	بهم الألفيل	a sugaranta da la para sa	water may share	Same and	Jay and and	my and starting my
-60 dBm						
-70 dBm						
Start 2.3 GH	z		691 pts			Stop 2.405 GHz
larker						
	Trc	X-value	Y-value	Function	Eur	ction Result
M1	1 2.40219 GHz		-4.51 dBm	Function	Fui	iction Result
M2	1	2.4 GHz	-42.04 dBm			
M3	1	2.39 GHz	-48.76 dBm			
M4	1	2.399674 GHz	-42.76 dBm			
	1)		B J MR 20.01.2022
	Л			Measuring		1944

Date: 20.JAN.2022 14:08:33

3DH1_Ant1_High_2480

Spectrur	n								E
Ref Leve Att Count 300	30	dBm Offset 1 DdB SWT		 RBW 100 kHz VBW 300 kHz 		Auto S	Sweep		
⊖1Pk View									
					M	[1]			-4.47 dBm
10 dBm									480010 GH
					M	2[1]			-42.91 dBn
0 dBm	M1				I		1	z .	483500 GH:
-10 dBm—	L A								
-10 dBm—									
-20 dBm—	<u> </u>								
	D1 -24.	470 dBm							
-30 dBm	$H \leftarrow$								
	F Im	2					M4		
-40 dBm	1 4	2 Mary Mad Markey	enound	-	ummen		mound	adultout	mar marine
-50 dBm-			· · ·						
-60 dBm—									
-70 dBm—	-	_							
Start 2.47	' GHz			691 p	ts			Sto	p 2.55 GHz
Marker									
	ef Trc	X-value		Y-value	Funct	ion	Function Result		
M1	1	2.48001 GHz		-4.47 dBm					
M2 M3	1	2.4835 GHz 2.5 GHz		-42.91 dBm -44.49 dBm					
M3 M4	1	2.5295		-44.49 dBm -41.48 dBm					
	1				Mea	urina.		B 439	20.01.2022

Date: 20.JAN.2022 14:10:46

3DH1_Ant1_Low_Hop_2402

Spectrum										
Ref Level				🖷 RBW 100 kH						
Att		dB SWT	246.5 µs	👄 VBW 300 kH	z Mode	Auto F	FT			
Count 300/3	300									
∋1Pk View										
					M	1[1]			-4.38 dBr	
10 dBm								2	.402950 GH	
10 00.00					M2[1]			-48.27 dBn		
0 dBm								. 2	.400000 ፍ ዙ	
									- I T	
-10 dBm									- (
I										
-20 dBm									+ +	
1	01 -24.3	380 dBm								
-30 dBm										
-40 dBm										
					1			M3	M2	
-50 dBm	marin	menon	all phillips	manumant	an man	montent	mighting	you where the	autymeth	
-60 dBm										
-70 dBm-		_								
Start 2.3 G	-lz			691 p	ts			Sto	p 2.405 GHz	
Marker										
	Trc	X-valı	ie I	Y-value	Func	tion	Function Result			
M1	1			-4.38 dBn						
M2	1	2110	2.4 GHz	-48.27 dBn						
MЗ	1			-47.63 dBn						
M4	1	2.353	109 GHz	-45.52 dBn	1					
	10				-	-		-	20.01.2022	

Date: 20.JAN.2022 14:44:12

3DH1_Ant1_High_Hop_2480

Spect												
Ref Le	evel 2	0.00 dBr 30 d			 RBW 100 kH VBW 300 kH 							
Count	200/20		5 5 81	1.1 ms	- YBW 300 KH	12 1900	e Auto S	sweep				
1Pk Vi		<u> </u>										
							M1[1]			-4.36 0	dBr	
10 dBm-										2.480010	2.480010 GH	
LO UBIII							M2[1]			-43.67 0		
dBm—	- 14	1			_					2.483500	GH	
a a sa a	мы											
Jelati	የዋም	1					+					
20 dBm												
20 ubii		-24.360) dBm									
30 dBm		-					_					
		1 M2			-M4							
40 dBm	+	Hunger.		mound	a have been a second grow and	manula	mun	meanin	mun	manhan		
50 dBm												
SU UBII												
60 dBm	+				_		_					
70 dBm	+											
Start 2	.47 GH	z			691	pts				Stop 2.55 G	знz	
larker												
Туре	Ref		X-value		Y-value		nction	Function Result				
M1		1		D1 GHz	-4.36 dBi							
M2 M3		1	2.4835 GHz 2.5 GHz		-43.67 dBi -43.26 dBi							
M3 M4		1			-43.20 dBm							
		~	1.0010		. area de		_	1			_	

Date: 20.JAN.2022 14:53:18

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