

CTC Laboratories, Inc.

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Т	EST REPORT		
Report No:	CTC20231642E01		
FCC ID:	2APN5-T54C		
IC:	29127-T54C		
Applicant:	Shenzhen Sonoff Technologies	Co.,Ltd.	
Address:	3F & 6F, Bldg A, No. 663, Bulong F China	d, Shenzhen, Guangdong,	
Manufacturer	Shenzhen Sonoff Technologies Co	.,Ltd.	
Address	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China		
Product Name:	Smart Touch Wall Switch		
Trade Mark:	Sonoff		
Model/Type reference:	T5-4C-120		
Listed Model(s):	/		
Standard:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 RSS-247 Issue 2		
Date of receipt of test sample:	Jul. 27, 2023		
Date of testing	Jul. 27, 2023 to Aug. 20, 2023		
Date of issue	Aug. 21, 2023		
Result:	PASS		
Compiled by:		Jim Jiang	
(Printed name+signature)	Jim Jiang	Jim - f	
Supervised by:		This shang	
(Printed name+signature)	Eric Zhang	Zinc zhang	
Approved by:		Jemas	
(Printed name+signature)	Totti Zhao	100000	
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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Operation within the bands 902–928MHz, 2400–2483.5MHz, and 5725-5850MHz.

RSS-247 Issue 2: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus.

ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Date of issue	Description
01	Aug. 21, 2023	Original

1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS-247 Issue 2				
Test Item	Standard Section		Result	Test
rest nem	FCC	IC	Result	Engineer
Antenna Requirement	15.203	RSS-Gen 6.8	Pass	Jim Jiang
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Jim Jiang
Conducted Band Edge and Spurious Emissions	15.247(d)	RSS-247 5.5	Pass	Jim Jiang
Radiated Band Edge and Spurious Emissions	15.205&15.209& 15.247(d)	RSS-247 5.5	Pass	Jim Jiang
6dB Bandwidth	15.247(a)(2)	RSS-247 5.2 (a)	Pass	Jim Jiang
Conducted Max Output Power	15.247(b)(3)	RSS-247 5.4 (d)	Pass	Jim Jiang
Power Spectral Density	15.247(e)	RSS-247 5.2 (b)	Pass	Jim Jiang
Transmitter Radiated Spurious	15.209&15.247(d)	RSS-247 5.5& RSS-Gen 8.9	Pass	Jim Jiang

Note:

The measurement uncertainty is not included in the test result. 1.

2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.

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1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

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

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.



1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties radio equipment characteristics; Part 2" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Below is the best measurement capability for CTC Laboratories, Inc.

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

1.6. Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15 °C to 35 °C
Relative Humidity:	20 % to 75 %
Air Pressure:	101 kPa

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2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Shenzhen Sonoff Technologies Co.,Ltd.	
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China	
Manufacturer:	Shenzhen Sonoff Technologies Co.,Ltd.	
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China	

2.2. General Description of EUT

Product Name:	Smart Touch Wall Switch
Trade Mark:	Sonoff
Model/Type reference:	T5-4C-120
Listed Model(s):	/
Model Difference:	/
Power Supply:	Input: 100-240V~ 50/60Hz Max 16A Output: 100-240V~ 50/60Hz Max 4A/Gang 16A/Total
Hardware Version:	V1.0.2
Software Version:	V1.2.0
Bluetooth 5.0 / BLE	
Modulation:	GFSK
Operation Frequency:	2402MHz~2480MHz
Channel Number:	40
Channel Separation:	2MHz
Data Rate:	1Mbps
Antenna Type:	FPC Antenna
Antenna Gain:	2.82dBi

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2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkPad T460s	/	Lenovo
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	Unshielded	NO	150cm
Test Software Information			
Name	Version	/	/
EspRFTestTool	v2.8	/	/

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2.4. Operation State

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing. BT BLE, 40 channels are provided to the EUT. Channels 00/19/39 were selected for testing.

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
:	÷
18	2438
19	2440
20	2442
:	÷
38	2478
39	2480

Note: The display in grey were the channel selected for testing.

Test Mode:

|--|

The engineering test program was provided and enabled to make EUT continuous transmit.

For AC power line conducted emissions:

The EUT was set to connect with the Bluetooth instrument under large package sizes transmission.

For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

The worse case configurations:

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software	EspRFTestTool_v2.8			
Modulation Mode	Test Channel	Power Level		
	00	5		
GFSK	19	5		
	39	5		

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2.5. Measurement Instruments List

Tonsce	end RF Test System				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	MXA Signal Analyzer	Keysight	N9020A	MY46471737	Dec. 16, 2023
2	2 Spectrum Analyzer		FSU26	100105	Dec. 16, 2023
3	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 14, 2024
4	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 16, 2023
5	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 16, 2023
6	Power Sensor	Keysight	U2021XA	MY55130004	Mar. 14, 2024
7	Power Sensor	Keysight	U2021XA	MY55130006	Mar. 14, 2024
8	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 16, 2023
9	High and low temperature box	ESPEC	MT3035	/	Mar. 24, 2024
10	JS1120 RF Test System	TONSCEND	v2.6	/	/

Radiate	d Emission (3m chamber 2	2)			
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Dec. 07, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-648	Dec. 07, 2024
3	Loop Antenna	ETS	6507	1446	Dec. 13, 2023
4	Spectrum Analyzer	R&S	FSU26	100105	Dec. 16, 2023
5	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 14, 2024
6	Pre-Amplifier	SONOMA	310	186194	Dec. 16, 2023
7	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 16, 2023
8	Test Receiver	R&S	ESCI7	100967	Dec. 16, 2023
9	3m chamber 2	Frankonia	EE025	/	Oct. 23, 2024

Conduc	cted Emission					
Item	Test Equipment	Manufacturer Model No.		Serial No.	Calibrated Until	
1	LISN	R&S	ENV216	101112	Dec. 16, 2023	
2	LISN	R&S	ENV216	101113	Dec. 16, 2023	
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 16, 2023	
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 16, 2023	
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 16, 2023	

Note: 1. The Cal. Interval was one year.

2. The Cal. Interval was three years of the antenna.

3. The cable loss has been calculated in test result which connection between each test instruments.

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3. TEST ITEM AND RESULTS

3.1. Conducted Emission

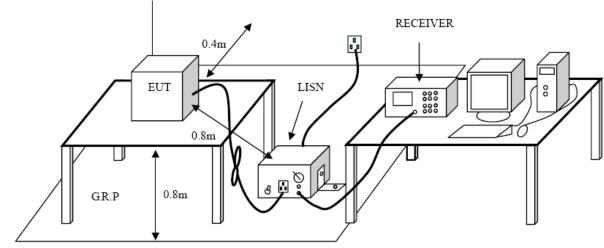
<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.207 / RSS-Gen 8.8

	Conducted Limit (dBµV)				
Frequency (MHz)	Quasi-peak	Average			
0.15 - 0.5	66 to 56 *	56 to 46 *			
0.5 - 5	56	46			
5 - 30	60	50			

* Decreases with the logarithm of the frequency.

Test Configuration



Test Procedure

1. The EUT was setup according to ANSI C63.10:2013 requirements.

2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.

3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 μ H coupling impedance for the measuring equipment. 4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)

5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

8. During the above scans, the emissions were maximized by cable manipulation.

Test Mode

Please refer to the clause 2.4.

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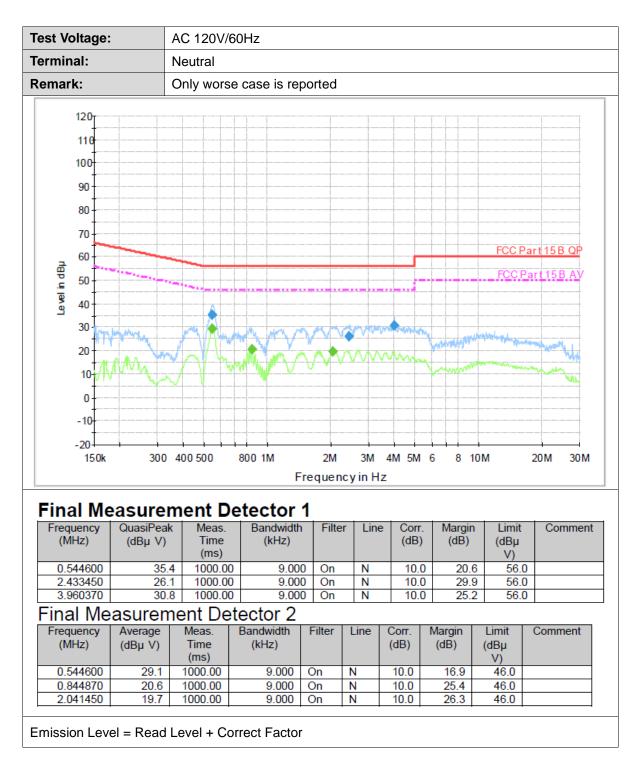
est Vo	Itage:		AC 120V/	60Hz						
ermina	al:		Line Only worse case is reported							
lemar	(:									
	120T						1 1			
	110								_	
	100									
	90									
	80									
	70									
	60								FCC	Part 15 B QP
1Bµ										Part 15 B AV
Level in dBµ	50		·							
Leve	40									
	30									
	20	1 miles		And man when	www.	Manhalan				- alkal
	10-	AAAA	AAY.		in h			LANAL HARLIN	ship you to the	Mandara Lines
	-						nm	<u></u>		-les - and -
	0									
	-10							+		
	-20	→ → 							4	
	150k	300	400 500	800 1M	2M	3M	4M 5N	168	10M	20M 30M
				F	requer	ncyin H	Z			
Fina	l Me	asure	ment D	etector	1					
Frequ		QuasiPea	k Meas. Time	Bandwidth	Filte	er Lin				Comment
(MF	12)	(dBµ V)	(ms)	(kHz)			(dB) (dB)	(dBµ V)	
	55580	25.				L1	9.		.9 56.	
	18310 60370	17. 26.				L1	9.			
				tector 2				20		-
Frequ		Average	Meas.	Bandwidth	Filter	Line	Corr.	Margin	Limit	Comment
(MH	Hz)	(dBµ V)	Time (ms)	(kHz)			(dB)	(dB)	(dBµ V)	
0.54	16780	19.5	1000.00	9.000	On	L1	9.7	26.5	46.0	
0.81	18310	14.2	1000.00	9.000	On	L1	9.7	31.8	46.0	
3.96	60370	15.9	1000.00	9.000	On	L1	9.7	30.1	46.0	

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3.2. Radiated Emission

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.209 / RSS-Gen 8.9

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009~0.490	2400/F (kHz)	300
0.490~1.705	24000/F (kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

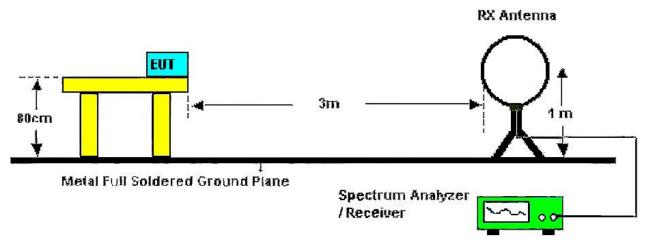
	dBµV/m (at 3 meters)			
Frequency Range (MHz)	Peak	Average		
Above 1000	74	54		

Note:

(1) The tighter limit applies at the band edges.

(2) Emission Level (dB μ V/m)=20log Emission Level (μ V/m).

Test Configuration



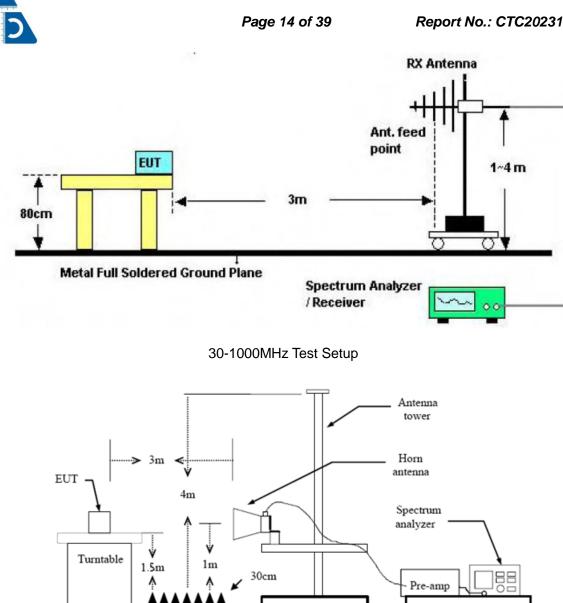
Below 30MHz Test Setup

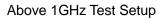
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Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013.

The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for 2 above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.

3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.

For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna 4. tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.

- Set to the maximum power setting and enable the EUT transmit continuously. 5.
- Use the following spectrum analyzer settings 6.

(1) Span shall wide enough to fully capture the emission being measured;

(2) 9k – 150kHz:

RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold (3) 0.15M – 30MHz:

RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold (4) 30M - 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the

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peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(5) From 1 GHz to 10th harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

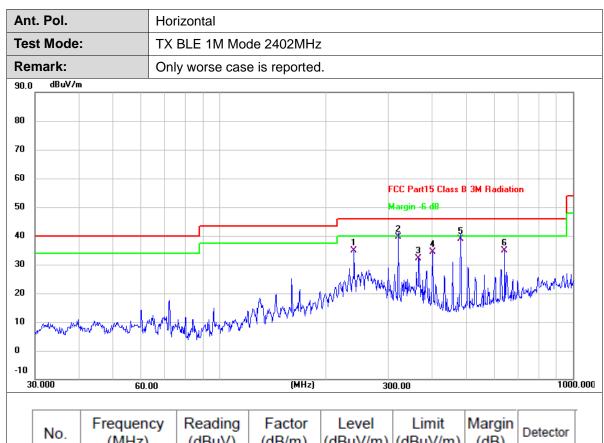
Test Result

9 kHz~30 MHz

From 9 kHz to 30 MHz: The conclusion is PASS.

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.





	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	239.9873	53.94	-18.95	34.99	46.00	-11.01	QP	ĺ
	2 *	319.9369	56.23	-16.71	39.52	46.00	-6.48	QP	
	3	365.5390	47.69	-15.62	32.07	46.00	-13.93	QP	
	4	400.4318	49.12	-14.83	34.29	46.00	-11.71	QP	
	5	480.5276	51.92	-12.95	38.97	46.00	-7.03	QP	
	6	640.6110	44.97	-9.98	34.99	46.00	-11.01	QP	
Po	marke								

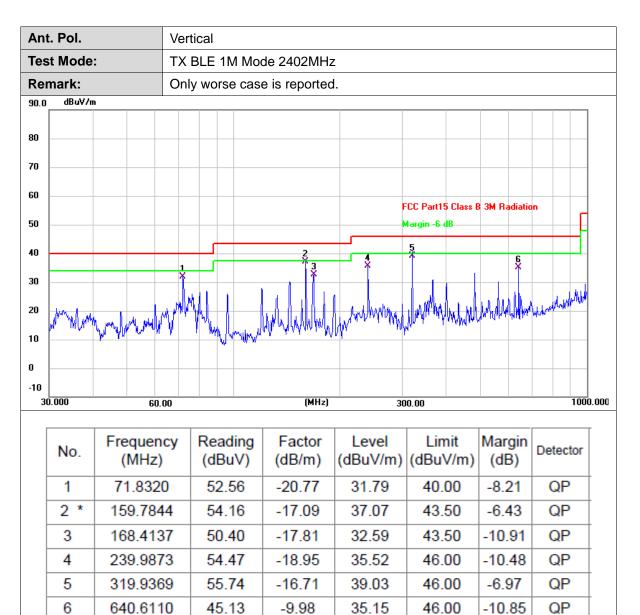
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Ant	. Pol.		Horizontal						
Test Mode:			TX BLE 1M M	ode 2402MH	Ηz				
Remark:			No report for t limit.	he emission	which more	than 20 dB I	below the	e prescribe)d
	No.	Frequency (MHz)	/ Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	1494.955	61.19	-11.57	49.62	74.00	-24.38	peak	
	2	3202.257	53.41	-6.86	46.55	74.00	-27.45	peak	
	3	5179.738	51.64	-1.10	50.54	74.00	-23.46	peak	
	4	7070.451	48.25	2.94	51.19	74.00	-22.81	peak	
	5	9420.112	45.58	7.08	52.66	74.00	-21.34	peak	
	6 *	11693.690	43.14	9.99	53.13	74.00	-20.87	peak	

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

Ant	t. Pol.		Vertical					
Test Mode: Remark:			TX BLE 1M M	TX BLE 1M Mode 2402MHz No report for the emission which more than 20 dB below the prescribed limit.				
			•					
	No.	Frequency (MHz)	(dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	1390.071	57.18	-11.73	45.45	74.00	-28.55	peak
	2	3202.257	53.61	-6.86	46.75	74.00	-27.25	peak
	3	4806.614	50.67	-2.43	48.24	74.00	-25.76	peak
	4	6403.954	48.44	1.38	49.82	74.00	-24.18	peak
	5	8618.761	46.93	5.71	52.64	74.00	-21.36	peak
	6 *	11932.374	43.30	9.68	52.98	74.00	-21.02	peak

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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Ant	t. Pol.		Horizontal	Horizontal						
Test Mode: Remark:			TX BLE 1M M	TX BLE 1M Mode 2440MHz						
			No report for t limit.	No report for the emission which more than 20 dB below the prescribed limit.						
	No.	Frequency (MHz)	y Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
	1	1194.600	59.01	-12.86	46.15	74.00	-27.85	peak		
	2	1494.955	56.64	-11.57	45.07	74.00	-28.93	peak		
	3	3254.441	54.55	-6.82	47.73	74.00	-26.27	peak		
	4	7113.440	47.81	3.02	50.83	74.00	-23.17	peak		
	5	9848.310	46.53	6.56	53.09	74.00	-20.91	peak		
	6 *	12102.340	3 43.51	9,70	53.21	74.00	-20.79	peak		

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

An	Ant. Pol.		Vertical						
Test Mode: Remark:			TX BLE 1M M	TX BLE 1M Mode 2440MHz					
			No report for the emission which more than 20 dB below the prescribed limit.						
	No.	Frequency (MHz)	(dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	1497.978	63.04	-11.55	51.49	74.00	-22.51	peak	
	2	3254.441	53.16	-6.82	46.34	74.00	-27.66	peak	
	3	4884.943	52.10	-2.10	50.00	74.00	-24.00	peak	
	4	7949.572	46.88	4.70	51.58	74.00	-22.42	peak	
	5	10337.663	3 46.51	6.65	53.16	74.00	-20.84	peak	
	6 *	12374.349	43.45	9.97	53.42	74.00	-20.58	peak	

Remarks:

EN

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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An	t. Pol.		Horizontal							
Tes	st Mode:		TX BLE 1M Mode 2480MHz No report for the emission which more than 20 dB below the prescribed limit.							
Re	mark:									
	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector		
	1	1494.955	56.78	-11.57	45.21	74.00	-28.79	peak		
	2	3307.475	56.54	-6.79	49.75	74.00	-24.25	peak		
	3	4964.548	49.07	-1.75	47.32	74.00	-26.68	peak		
	4	6915.034	47.79	2.57	50.36	74.00	-23.64	peak		
	5	8830.295	45.95	6.14	52.09	74.00	-21.91	peak		
	6 *	11117.660	42.78	10.32	53.10	74.00	-20.90	peak		

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

An	t. Pol.		Vertical								
Tes	st Mode:		TX BLE 1M M	TX BLE 1M Mode 2480MHz							
Re	mark:		No report for the emission which more than 20 dB below the prescribed limit.								
	No.	Frequency (MHz)	(dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector			
	1 *	1497.978	65.43	-11.55	53.88	74.00	-20.12	peak			
	2	3307.475	52.01	-6.79	45.22	74.00	-28.78	peak			
	3	4964.548	48.94	-1.75	47.19	74.00	-26.81	peak			
	4	5753.595	48.92	0.46	49.38	74.00	-24.62	peak			
	5	8480.562	47.28	5.42	52.70	74.00	-21.30	peak			
	6	10895.273	3 43.53	9.61	53.14	74.00	-20.86	peak			

Remarks:

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor

2.Margin value = Level -Limit value

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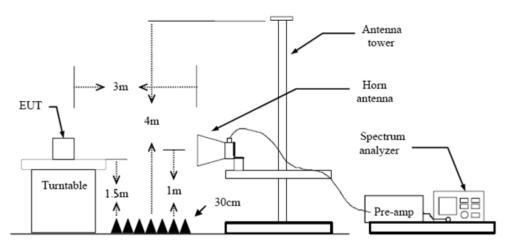
3.3. Band Edge Emissions (Radiated)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d) / RSS-247 5.5

Restricted Frequency Band	(dBµV/m) (at 3m)					
(MHz)	Peak	Average				
2310 ~ 2390	74	54				
2483.5 ~ 2500	74	54				

Test Configuration



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 2. degrees to determine the position of the maximum emission level.

3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is 4. repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement. The receiver set as follow: 5.

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

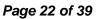
Test Mode

Please refer to the clause 2.4.

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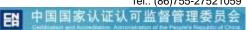




	Pol.		Ho	rizontal					
est	Mode:		ТХ	BLE 1M N	/lode 2402M	Hz			
20.0	dBuV/m								
10									
00 -									
0 -									٨
						FCC P	art15 Class B 3M	Above-1G Pe	ak /
0									$\left \right $
0 -						ECC P	art15 Class B 3M	About 16 AV	
0								HDOTE-TO AT	\uparrow
0								1 X	\downarrow
0								Ş	
0									
0.0									
228	9.200 23	01.20 2313	.20 2	2325.20 23	337.20 (MHz)	2361.20	2373.20 23	85.20 23	97.20 240
		Frequer	icy	Reading	Factor	Level	Limit	Margin	Detector
	No.	(MHz))	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
	No. 1			(dBuV) 48.44	(dB/m) -7.72	(dBuV/m) 40.72	(dBuV/m) 74.00	(dB) -33.28	peak

1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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nt. Pol.		Vertic	al					
st Mode:		TX BL	_E 1M M	ode 2402M	Hz			
.0 dBu∀/m				1	1		1	1
					FCC	Part15 Class B 3M	Above-1G Pe	ak A
					FCC	Part15 Class B 3M	Above-1G AV	
							1 X	\uparrow
								$\uparrow \uparrow$
							2 X	
) 2288.000 23	300.00 2312.0	10 2324	1 00 233	6.00 (MHz)	2360.00	2372.00 23	84.00 23	96.00 24
	Frequenc		eading IBuV)	Factor (dB/m)	Level (dBuV/m	Limit (dBuV/m)	Margin (dB)	Detector
No.	(MHz)	(0	Duv)	(ub/iii)	(aba m	//		
No.			8.77	-7.72	41.05	74.00	-32.95	peak

2.Margin value = Level -Limit value

EN



								izontal	Ho		Pol.
					Ηz	e 2480M	1 Mo	BLE 1M	T)		Mode:
											dBuV/m
											Λ
											$-\Lambda$
ak	Above-1G Pea	Class B 3M A	Part15	FCC I							-+
											×
	Above-1G AV	Class B 3M /	Part15	FCCF							1
										· · · · · · · · · · · · · · · · · · ·)
	-										
80.80 259	68.80 2580	6.80 256	255	14.80	254	(MHz)	2520	508.80	6.80	.80 249	2.800 248
Detector	Margin (dB)	Limit 3uV/m)			Lev (dBu)	Factor dB/m)		Readiną (dBuV)		Freque (MHz	No.
peak	-16.57	74.00		43	57.	-7.32		64.75	00	2483.5	1
AVG	-3.99	54.00		.01	50.	7.32		57.33	00	2483.5	2 *
	(dB) -16.57	3uV/m) 74.00) (d	V/m) .43	(dBu) 57.	dB/m) -7.32)	(dBuV) 64.75	:) 00	(MHz 2483.5	1

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1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value

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Ant	. Pol.		Vertio	cal							
Tes	t Mode:		ТХ В	LE 1M M	ode 2480	ИНz					
120.0	dBuV/m										1
110											
100											
90											
80	_Λ_										
70	-						FCC P	art15 Class B 3M	Above-1G Pe	ak	•
60											
50	-						FCC P	art15 Class B 3M	Above-1G AV	r	
	1 N										1
40	11										
30	`		<u></u>								1
20											
10											
0.0 24	74.000 24	86.00 2498.00) 251	0.00 252	22.00 (MH	z) 25	i46.00	2558.00 25	70.00 25	82.00 259] 94.00
	No.	Frequency (MHz)		eading dBuV)	Factor (dB/m)		evel iV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	2483.500) (53.98	-7.32	46	.66	74.00	-27.34	peak	
	2 *	2483.500) 4	48.17	-7.32	40	.85	54.00	-13.15	AVG	
											i.
	narks: actor (dE	B/m) = Antenr	a Fac	tor (dB/m)+Cable F	actor (d	B)-Pre	-amplifier Fa	actor		

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1.Factor (dB/m) = Antenna Factor (2.Margin value = Level -Limit value

EN

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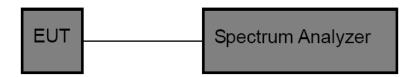
3.4. Band Edge and Spurious Emissions (Conducted)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d) / RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, 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.

Test Configuration



Test Procedure

- The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss 1. was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- Use the following spectrum analyzer settings: 3 RBW = 100 kHz, VBW \geq RBW, scan up through 10th harmonic. Sweep = auto, Detector function = peak, Trace = max hold.
- Measure and record the results in the test report. 4.

Test Mode

Please refer to the clause 2.4.

Test Result

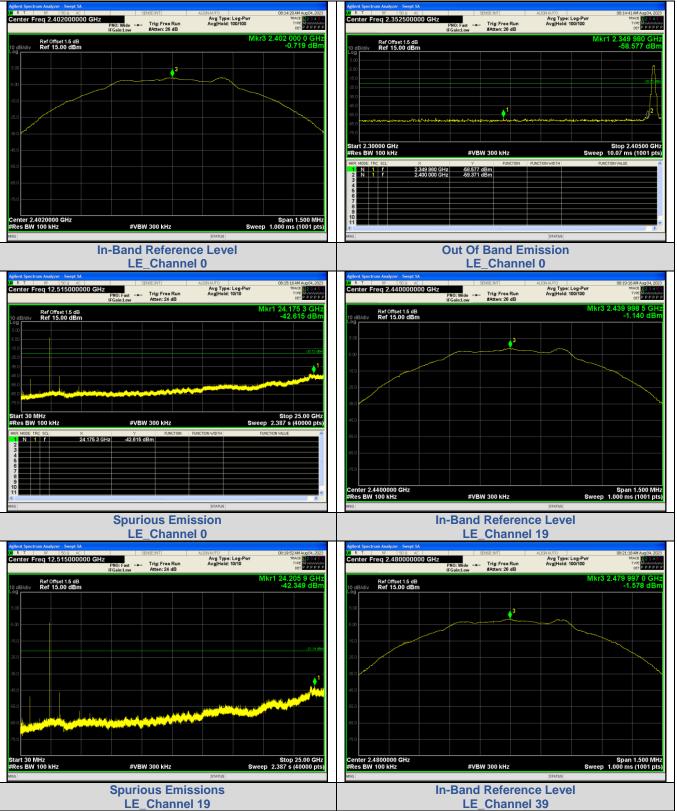
Mode	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
		2400.00	-59.371	-20.72	-38.651	PASS
	0	2349.98	-58.577	-20.72	-37.857	PASS
LE		24175.3	-42.615	-20.72	-21.895	PASS
LE	19	24205.9	-42.349	-21.14	-21.209	PASS
	39	2483.50	-59.515	-21.58	-38.000	PASS
		23950.0	-42.410	-21.58	-20.830	PASS

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W R T P2 SSD #C SSD #C SSD #C DSD #C <thdsd #c<="" th=""></thdsd>	Agtent Spectran Andyzer, Swyd 3A 1 E T B Sto 6 C 990EEN/T AU37/M/TO 082213/M Au904.0022 Center Freq 12.515000000 GHz PNO: Fast →→ Trig: Free Run AvgiHold: 10/10 700 IFGaint.ev Attent: 24 dB cet
Ref Offset 1 5 dB 10 dBdW Ref 15.00 dBm 50 dBdW 60 dB	Ref Onfset 1 5 dB Mkr1 23.950 0 GHz 0 dB/dl/w Ref 13.00 dBm -42.410 dBm 500 -42.410 dBm -42.410 dBm 500 -500 -500 500 -500 -500 500 -500 -500 500 -500 -500 500 -500 -500 500 -500 -500 500 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500 510 -500 -500
MRR HODE, TRC SQL X Y PARCTON RARCTON WOUTH PARCTON WALLE 1 1 1 2.483 50 GHz 59.515 dBm 0 0 0 3 6 1 1 1 2.483 50 GHz 59.515 dBm 0 3 6 1 1 1 2.483 50 GHz 59.515 dBm 0 3 6 1 1 1 1 0 0 3 6 1 1 1 1 0 3 6 1 1 1 1 1 3 6 1 1 1 1 1 4 1 1 1 1 1 1 4 1 1 1 1 1 1 4 1 1 1 1 1 1 10 1 1 1 1 1 1 10 1 1 1 1 1 1 10 1 1 1 1 1 1 10 1 1 1 1 1 1 10 1 1 1 1 <t< th=""><th></th></t<>	

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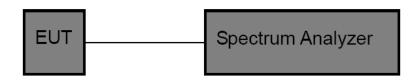
3.5. DTS Bandwidth

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2) / RSS-247 5.2 a

Test Item	Limit	Frequency Range (MHz)
DTS Bandwidth	≥500 kHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

- 1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. DTS Spectrum Setting:
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) \geq 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.
 - OCB Spectrum Setting:
 - (1) Set RBW = $1\% \sim 5\%$ occupied bandwidth.
 - (2) Set the video bandwidth (VBW) \geq 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

Please refer to the clause 2.4.

Test Result

Mode	Channel	Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limit (MHz)	Result
	0	1.0244	0.6451		PASS
LE	19	1.0211	0.6395	0.5	PASS
	39	1.0247	0.6387		PASS

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Occupied Bandwidth:

Agilent Spectrum Analyzer - Occupied BW	annaure aur		02-12-20 M L = 04, 2022	Agilent Spectrum Analyzer - Occupied BW		eraere a et		00-10-07 MI 104
Center Freq 2.402000000 GHz	Center Freq: 2.40200000	0 GHz Avg Hold: 100/100	08:13:30 AM Aug 04, 2023 Radio Std: None	Center Freq 2.440000000	GHz	Center Freq: 2.440000 Trig: Free Run	000 GHz Avg Hold: 100/100	08:18:27 AM Aug 04, 2023 Radio Std: None
#IFGain:Lo	w #Atten: 26 dB		Radio Device: BTS kr2 2.4025222 GHz		#IFGain:Low	#Atten: 26 dB		Radio Device: BTS Mkr2 2.4405232 GHz
Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm			-21.456 dBm	Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm	_			-22.927 dBm
Log 11.5				Log 11.5				
1.50				1.50				
18.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	22	2	-18.5	1 mm	m	man	2
-28.5			m n n n n n n n n n n n n n n n n n n n	-28.5				
-48.5			human	-38.5 -48.5				- The man
-58.5				-58.5				
-68.5				-68.6				
Center 2.402 GHz #Res BW 20 kHz	#VBW 62 kHz		Span 2 MHz Sweep 5.333 ms	Center 2.44 GHz #Res BW 20 kHz		#VBW 62 ki	łz	Span 2 MHz Sweep 5.333 ms
Occupied Bandwidth 1.0244 MH	Total Power	5.49 dBm		Occupied Bandwidth	211 MHz	Total Power	4.84 dBm	
		99.00 %			12.785 kHz	OBW Power	99.00 %	
Transmit Freq Error 10.058 kH x dB Bandwidth 1.263 MH		-26.00 dB		Transmit Freq Error x dB Bandwidth	1.259 MHz	x dB	-26.00 dB	
		Longo al					20100 42	
MSG		STATUS		MSG			STATUS	
	LE Channel	0			LE	Channel	19	
Agilent Spectrum Analyzer - Occupied BW OB R T RF 50.9 AC	_							
Center Freq 2.480000000 GHz	Center Freq: 2.48000000	0 GHz Avg Hold: 100/100	08:20:29 AM Aug 04, 2023 Radio Std: None					
#IFGain:Lo	w #Atten: 26 dB		Radio Device: BTS					
Ref Offset 1.5 dB 10 dB/div Ref 21.50 dBm		IVI	-22.226 dBm					
Log 11.5								
1.50								
18.5	Marine Marine	Amm 2	2					
28.5			m -					
-43.5			- mon					
-58.5								
68.5								
Center 2.48 GHz #Res BW 20 kHz	#VBW 62 kHz		Span 2 MHz Sweep 5.333 ms					
Occupied Bandwidth	Total Power	4.55 dBm						
1.0247 MH	7							
Transmit Freq Error 9.621 kH		99.00 %						
x dB Bandwidth 1.268 MH	z xdB	-26.00 dB						
MSG		STATUS						
NSO	E Channel 3	STATUS		-				

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DTS Bandwidth:

Agilent Spectrum Analyzer - Occupied BW			Agilent Spectrum Analyzer - Occupied BW	/			
01 R T RF 50 Q AC Center Freq 2.402000000 GHz	Center Freq: 2.40200000 GHz	/TO 08:13:41 AM Aug04, 2 Radio Std: None	Center Freq 2.440000000	GHz	Center Freq: 2.440000	ALIGN AUTO	08:18:38 AM Aug 04, 2023 Radio Std: None
//IFGain:Low	Trig: Free Run Av #Atten: 26 dB	g Hold>100/100 Radio Device: BTS		#IFGain:Low	. Trig: Free Run #Atten: 26 dB	Avg Hold>100/100	Radio Device: BTS
Ref Offset 1.5 dB 10 dB/div Ref 16.50 dBm			Ref Offset 1.5 dB 10 dB/div Ref 16.50 dBm				
10 dB/div Ref 16.50 dBm			10 dB/div Ref 16.50 dBm				
6.50			6.50				
3.50			13.50				
23.5			-23.6				
-33.5							A second second
-43.5			-43.5				
-53.5			-53.5				
-73.5			-03.5				
Center 2.402 GHz		Span 2 M	Hz Center 2.44 GHz				Span 2 MHz
#Res BW 100 kHz	#VBW 300 kHz	Sweep 1.333	ms #Res BW 100 kHz		#VBW 300 k	Hz	Sweep 1.333 ms
Occupied Bandwidth	Total Power 5	5.68 dBm	Occupied Bandwidth		Total Power	5.13 dBm	
1.0236 MHz			1.0	0197 MHz			
Transmit Freq Error 435 Hz	OBW Power	99.00 %	Transmit Freq Error	-171 Hz	OBW Power	99.00 %	
x dB Bandwidth 645.1 kHz	x dB	-6.00 dB	x dB Bandwidth	639.5 kHz	x dB	-6.00 dB	
MSG	s	TATUS	MSG			STATUS	
LE	E Channel 0			LE	Channel	19	
Agilent Spectrum Analyzer - Occupied BW	_						
Center Freq 2.480000000 GHz	SENSE:INT ALIGN AU Center Freq: 2.480000000 GHz	/TO 08:20:39 AM Aug04, 2 Radio Std: None	023				
//IFGain:Low		g Hold:>100/100 Radio Device: BTS					
Ref Offset 1.5 dB 10 dB/div Ref 16.50 dBm							
6.50							
3.50							
-23.5							
-33.5			-				
-43.5							
-53.5							
103.0							
Center 2.48 GHz #Res BW 100 kHz	#VBW 300 kHz	Span 2 M Sweep 1.333	ns				
Occupied Bandwidth	Total Power 4	l.81 dBm					
1.0234 MHz							
Transmit Freq Error 1.076 kHz	OBW Power	99.00 %					
x dB Bandwidth 638.7 kHz	x dB	-6.00 dB					
Sol And Bandmarth Sol A Kh2	x 40	0100.00					
MSG	st	TATUS					
LE	Channel 39						

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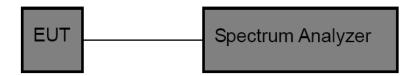
3.6. Peak Output Power

<u>Limit</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3) / RSS-247 5.4 d

Section	Test Item	Limit	Frequency Range (MHz)
FCC CFR 47 Part15.247 (b)(3)	Maximum Conducted Output Power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

- 2. Spectrum Setting:
 - (1) Set RBW \geq DTS Bandwidth.
 - (2) Set VBW \geq 3*RBW.
 - (3) Set Span \geq 3*RBW.
 - (4) Sweep time = Auto couple.
 - (5) Detector = Peak.
 - (6) Trace mode = Max hold.

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

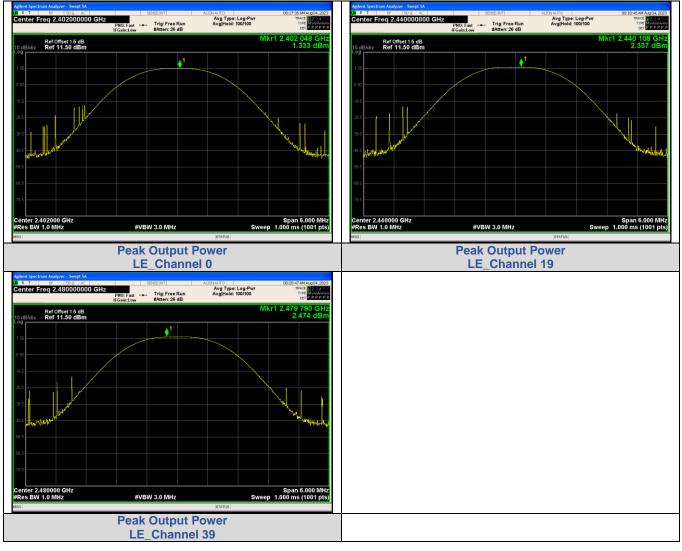
Please refer to the clause 2.4.

Test Result

Mode	Channel	Peak Output Power(dBm)	Limit (dBm)	Result
	0	1.333	30	PASS
LE	19	2.337	30	PASS
	39	2.474	30	PASS

Mode	Channel	Peak Output Power(dBm)	EIRP(dBm)	Limit (dBm)	Result
	0	1.333	4.153	36	PASS
LE	19	2.337	5.157	36	PASS
	39	2.474	5.294	36	PASS





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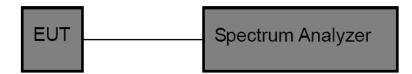
Power Spectral Density 3.7.

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e) / RSS-247 5.2 b

Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	8 dBm (in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

- 1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz.

Set the VBW to: 10 kHz.

Detector: peak.

Sweep time: auto.

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.4.

Test Result

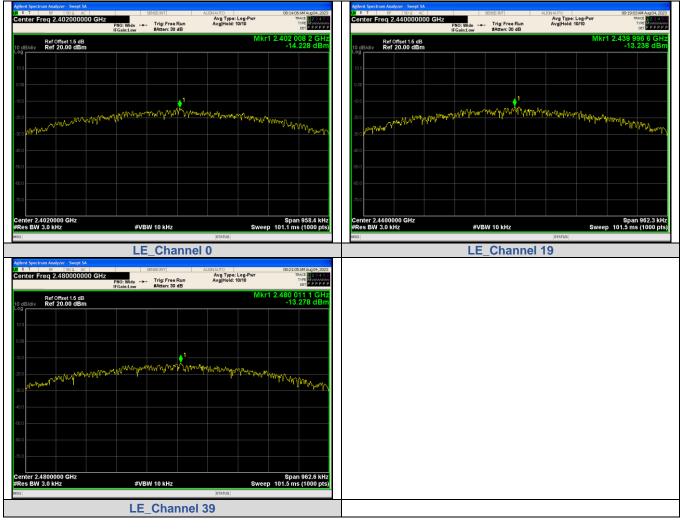
Mode	Channel	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
	0	-14.228	8	PASS
LE	19	-13.238	8	PASS
	39	-13.278	8	PASS

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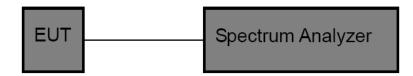


Duty Cycle 3.8.

Limit

None, for report purposes only.

Test Configuration



Test Procedure

- 1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- 2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

3. Spectrum Setting: Set analyzer center frequency to test channel center frequency. Set the span to 0Hz. Set the RBW to 10MHz. Set the VBW to 10MHz. Detector: Peak. Sweep time: Auto.

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.4.

Test Result

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	1/T Minimum VBW (kHz)	Final Setting for VBW (kHz)
	0	2.091	2.500	83.65	0.48	1
LE	19	2.091	2.500	83.65	0.48	1
	39	2.091	2.500	83.65	0.48	1

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Hz PN0:East ↔ Trig:	Avg Type Free Run	08:13:22	2 AM Aug 04, 2023 RACE 1 2 3 4 5 6 TYPE WWWWWW DET A A A A A A
		ΔMkr3	2.500 ms -5.71 dB
. 1	<u>∧201</u>		
	3Δ1		
	and brief law	ta constitue d'antica de la constitue de la cons	
h, hallah, a		a the state of the second s	
#VBW 8.01	MHz*	Sweep 11.25 ms	Span 0 Hz (40000 pts)
Υ 846 ms -7.89 dBm 091 ms (Λ) 1.08 dB	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u> </u>
500 ms (Δ) -5.71 dB			
	STATUS		
LE			
SENSE:INT		08:18:19	AM Aug 04, 2023
PNO: East +++ Trig:	Free Run		RACE 23456 TYPE WWWWWW DET A A A A A A
		∆Mkr3	2.500 ms -8.67 dB
	2∕43∆		
	in the second se	TATE ALL STREET	الدينة. الدينة
laun an	(E.N.)	and the second sec	Alley
			On on All
			Span 0 Hz (40000 pts)
489 ms -4.53 dBm 091 ms (Δ) -5.16 dB	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	^
500 ms (Δ) -8.67 dB			
	Hz PNO: Fast → Trig: IFGain:Low 1 1 IFGain:Low IFGain:Low IFGain:Low IFGain:Low IFGain:Low IFGain:Low<	Hz Avg Type PNO: Fast +++ Trig: Free Run #Atten: 26 dB Avg Type PNO: Fast +++ Trig: Free Run #Atten: 26 dB 2201 3A1 PNO: Fast +++ Function Function PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Fast +++ PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Fast +++ PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Fast +++ PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Fast +++ PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Function width PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Function width PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Function width PNO: Fast +++ Trig: Free Run #Atten: 26 dB PNO: Function width	HZ Avg Type: RMS T PRO: Feat Trig: Free Run Feain: Low Trig: Free Run Atten: 28 dB AWg Type: RMS T AWg Type: RMS AWg Type: RMS AWg Type: RMS T AWg Type: RMS AWg Type: RMS AWg Type: RMS T AWg Type: RMS AWg Type: RMS AWg Type: RMS T AWg Type: RMS AWg Type: RMS AWg Type: RMS T AWg Type: RMS T AWg Type: RMS T AWg Type: RMS T <td< td=""></td<>

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PNO: Fast →→ Trig: Free Run IFGain:Low #Atten: 26 dB DET	123456 W ww.waw AAAAAA
10 dB/div Ref 17.50 dBm -6	500 me
	.37 dB
7.50 -2.50	
-12.5 ¥ 3 ∆1	
-22.5	
-42.5	
-62.5 <mark>(kit / //////////////////////////////////</mark>	(Rindon)
Center 2.48000000 GHz Sp	oan 0 Hz
	iuuu pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION VIDTH FUNCTION VALUE 1 N 1 t 5.985 ms -9.31 dBm - - 2 Δ1 t (Δ) 2.091 ms (Δ) 2.56 dB -	
3 Δ1 1 t LO 2.500 ms LΔ -6.37 dB -6.37 d	
6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
9 9 10 10 11 11 11 11 11 11 11 11 11 11 11	
MSG STATUS	



3.9. Antenna Requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i)

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Test Result

The directional gain of the antenna is less than 6dBi, please refer to the EUT internal photographs antenna photo.

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