FCC PART 15.247

TEST REPORT

For

Jiangsu Yuyue Medical Equipment & Supply Co., Ltd.

No.1 Baisheng Road Development Zone, Danyang, Jiangsu province, 212300 China

FCC ID: 2A2JJ-YHT107

Report Type:	**Product Name:**
Original Report	Infrared ear thermometer

Report Number:	RKSA240816001-00B
Report Date:	2024-09-19
Reviewed By:	Jenny Yang
Approved By:	Kyle Xu
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu Province, China Tel: +86-512-86175000 Fax: +86-512-88934268 www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RKSA240816001-00B	R1V1	2024-09-19	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Jiangsu Yuyue Medical Equipment & Supply Co., Ltd.
Tested Model:	YHT107
Product Name:	Infrared ear thermometer
Power Supply:	DC 3V
RF Function:	BLE (1Mbps) & BLE (2Mbps)
Operating Band/Frequency:	2402-2480 MHz
Maximum Output Power:	3.12 dBm
Channel Number:	40
Channel Separation:	2 MHz
Modulation Type	GFSK
Antenna Type:	PCB Antenna
★Maximum Antenna Gain:	1.23 dBi

Note: The maximum antenna gain was declared by the manufacturer.

All measurement and test data in this report was gathered from production sample serial number: RKSA240816001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-08-16.)

Objective

This report is prepared for *Jiangsu Yuyue Medical Equipment & Supply Co., Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communications Commission rules.

The tests were performed in order to determine Compliant with FCC Part 15, Subpart C, and section 15.203, 15.205, 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 and FCC KDB 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emissions	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No.: CN5055.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Channel List for BLE mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
18	2438	38	2478
19	2440	39	2480

EUT was tested with channel 0, 19 and 39.

EUT Exercise Software

RF Test Tool: sscom5

★Power level: 15

Note: The power level was declared by the applicant.

Special Accessories

No special accessory.

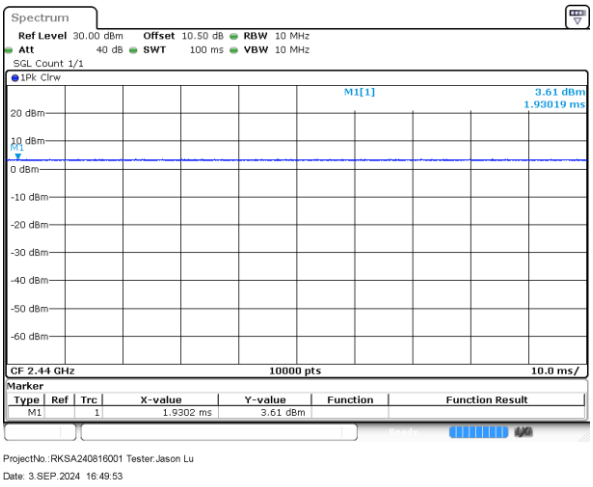
Equipment Modifications

No modification was made to the EUT tested.

Duty Cycle:

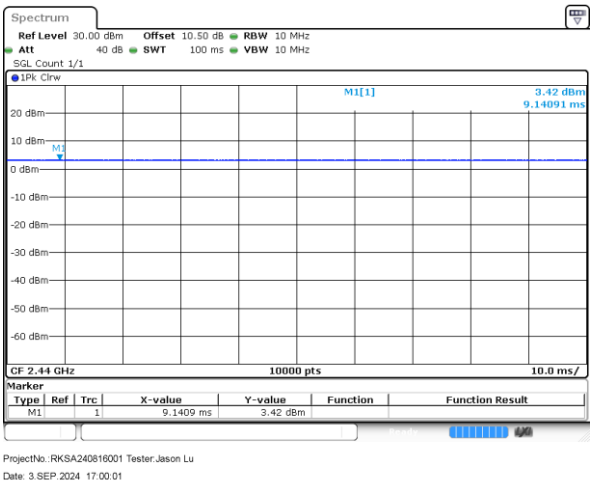
BLE 1M

Middle



BLE 2M

Middle



Mode	Duty Cycle (%)	T_{on}(ms)	T_{on+off}(ms)	10log(1/x)
BLE (1Mbps)	100	100	100	0
BLE (2Mbps)	100	100	100	0

Note: "x" means the Duty Cycle.

Support Equipment List and Details

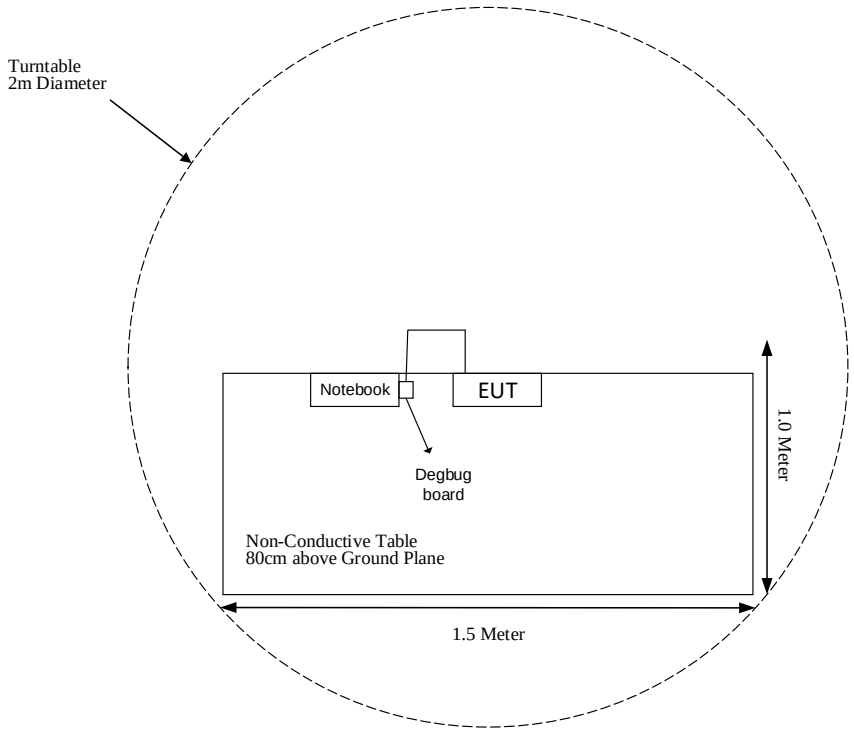
Manufacturer	Description	Model	Serial Number
/	Debug board	/	/
Dell	Notebook	E6410	3094742521

External I/O Cable

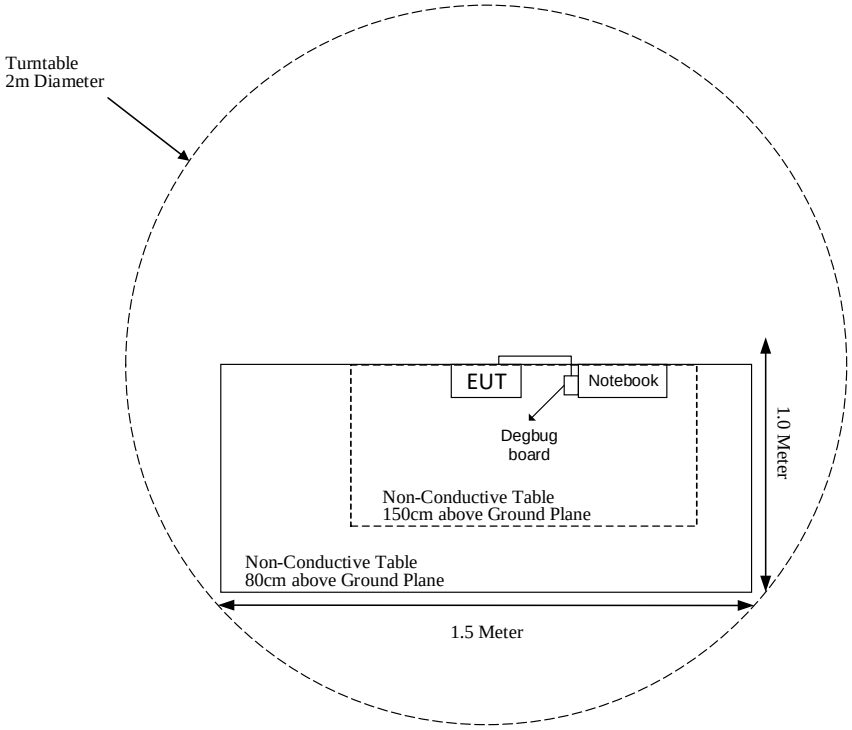
Cable Description	Length (m)	From Port	To
Data Cable	0.1	EUT	Debug board

Block Diagram of Test Setup

For Radiated Emissions(Below 1GHz):



For Radiated Emissions(Above 1GHz):



TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2024-04-23	2025-04-22
Sunol Sciences	Broadband Antenna	JB3	A090314-1	2023-11-11	2024-11-10
Narda	6dB Attenuator	773-6	10690812-2-1	2023-11-11	2024-11-10
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
Sonoma Instrument	Pre-amplifier	310N	171205	2024-04-23	2025-04-22
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2024-04-23	2025-04-22
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2023-12-02	2024-12-01
ETS-LINDGREN	Horn Antenna	3116	2516	2023-12-08	2024-12-07
A.H.Systems, inc	Amplifier	PAM-0118P	512	2024-04-25	2025-04-25
SELECTOR	Amplifier	EM18G40G	060726	2024-04-25	2025-04-25
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2024-08-05	2025-08-04
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-13	013	2024-04-25	2025-04-24
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSV40-N	103298	2024-04-24	2025-04-23
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1093	RF EXPOSURE	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Not Applicable (See Note)
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

Note: The EUT is powered by battery.

FCC §1.1310 & §2.1093 - RF EXPOSURE

Applicable Standard

According to§2.1093and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 General RF Exposure Guidance

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

Measurement Result

For worst case:

Mode	Frequency Range (MHz)	Max Tune-up Conducted Power★		Calculated Distance (mm)	Calculated Value	Threshold (1-g SAR)	SAR Test Exclusion
		(dBm)	(mW)				
BLE	2402-2480	3.5	2.24	5.0	0.7	3.0	Yes

Note: The Tune-up power provide by applicant.

Result: No SAR test is required.

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 a PCB antenna for BLE, and the antenna gain is 1.23 dBi, which is permanently attached to the unit, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

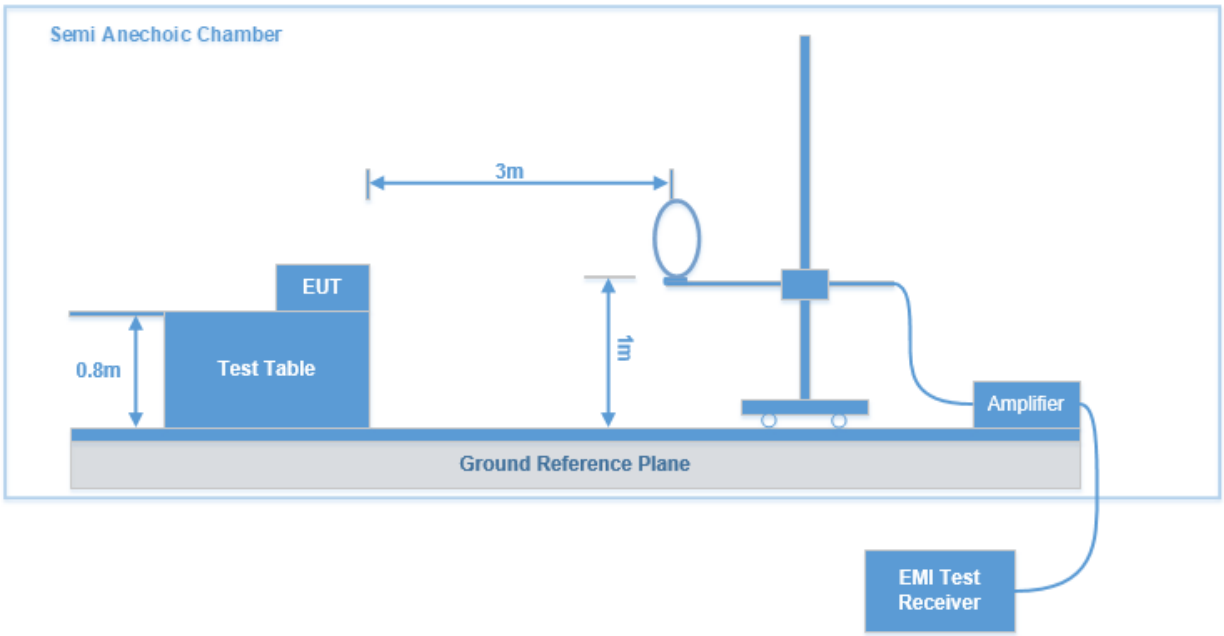
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

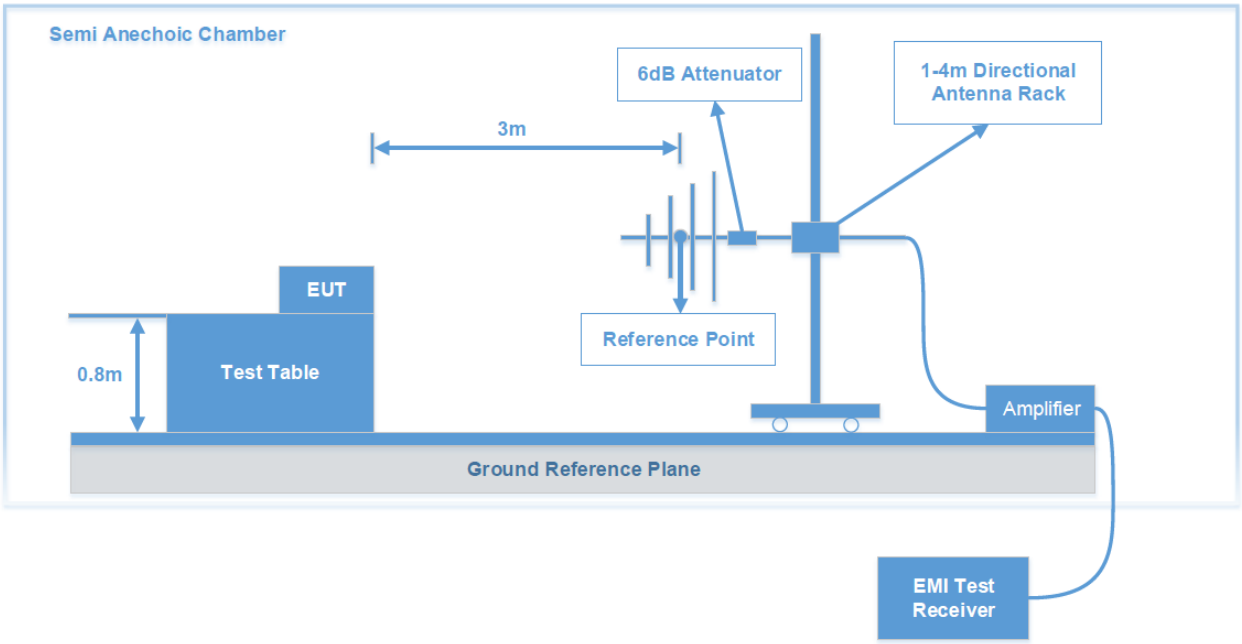
FCC §15.247 (d); §15.209; §15.205;

Test System Setup

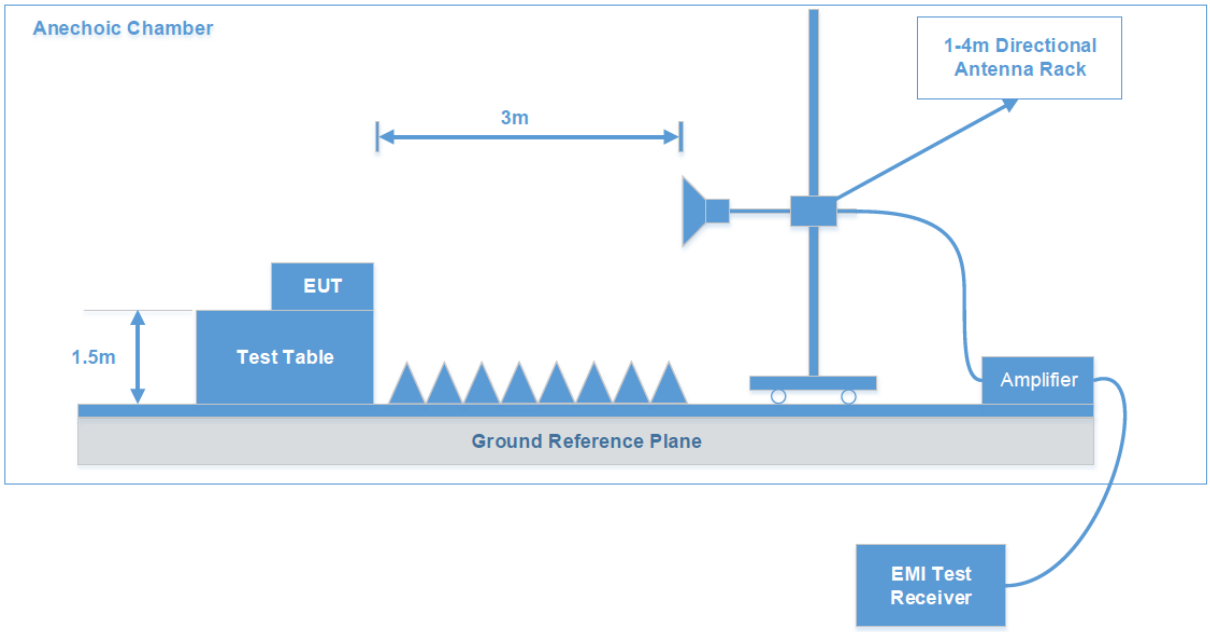
9 kHz – 30 MHz:



30 MHz - 1 GHz:



Above 1GHz:



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

EMI Test Receiver Setup

The system was investigated from 9 kHz to 25 GHz.

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

Frequency Range	RBW	VBW	IF B/W	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	200 Hz	QP/Average
150 kHz – 30 MHz	9 kHz	30 kHz	9 kHz	QP/ Average
30 MHz – 1000 MHz	100 kHz	300 kHz	/	Peak
Above 1GHz	/	/	120 kHz	QP
	1MHz	3 MHz	/	Peak

Test Procedure

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

If the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

For 9 kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude (dBμV/m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

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

Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Note: The QuasiPeak (dBμV/m), MaxPeak (dBμV/m), Average (dBμV/m) which shown in the data table are all Corrected Amplitude.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data: See Appendix

FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

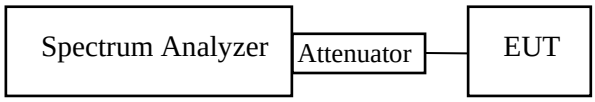
Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.8.1

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 * RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data: See Appendix

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

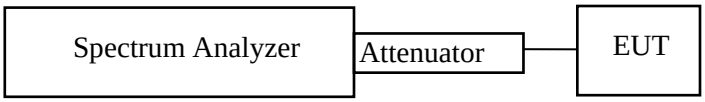
Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.9.1.1

1. Set the RBW ≥ DTS bandwidth.
2. Set VBW ≥ 3 * RBW.
3. Set span ≥ 3 * RBW
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.



Test Data: See Appendix

FCC §15.247(d) – BAND EDGE

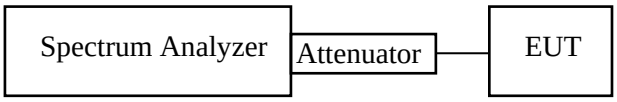
Applicable Standard

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

According to ANSI C63.10-2013 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 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: See Appendix

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

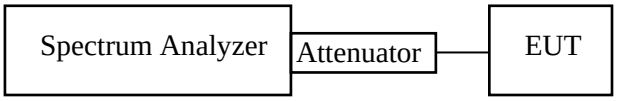
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

1. Set the RBW to: 3kHz≤ RBW≤100 kHz.
2. Set the VBW ≥ 3*RBW.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data: See Appendix

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A - EUT EXTERNAL PHOTOGRAPHS and EXHIBIT B - EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C - TEST SETUP PHOTOGRAPHS.

Appendix - TEST DATA

Environmental Conditions & Test Information

Test Item:	DUTY CYCLE	SPURIOUS EMISSIONS		
		9kHz - 1GHz	1 GHz - 18 GHz	18 GHz - 25 GHz
Test Date:	2024-09-03	2024-08-31	2024-09-03	2024-08-30
Temperature:	26.7 ℃	25.4 ℃	26.7 ℃	26.4 ℃
Relative Humidity:	55 %	59 %	55 %	55 %
ATM Pressure:	101.7kPa	101.0 kPa	101.7kPa	102.5 kPa
Test Result:	/	Pass	Pass	Pass
Test Engineer:	Jason Lu	Grace Luo	Destine Hu	Hugh Wu

Test Item:	6 DB EMISSION BANDWIDTH	OCCUPIED BANDWIDTH	MAXIMUM CONDUCTED OUTPUT POWER	BAND EDGE	POWER SPECTRAL DENSITY
Test Date:	2024-09-03	2024-09-03	2024-09-03	2024-09-03	2024-09-03
Temperature:	26.7 ℃	26.7 ℃	26.7 ℃	26.7 ℃	26.7 ℃
Relative Humidity:	55 %	55 %	55 %	55 %	55 %
ATM Pressure:	101.7kPa	101.7kPa	101.7kPa	101.7kPa	101.7kPa
Test Result:	Pass	/	Pass	Pass	Pass
Test Engineer:	Jason Lu	Jason Lu	Jason Lu	Jason Lu	Jason Lu

SPURIOUS EMISSIONS

Test Result: Compliant.

EUT operation mode: Transmitting

After pre-scan in the X, Y and Z axes of orientation, the worst case in the X axes of orientation is below:

BLE 1M:

9 kHz-30 MHz: (*Transmitting in maximum output power low channel)*

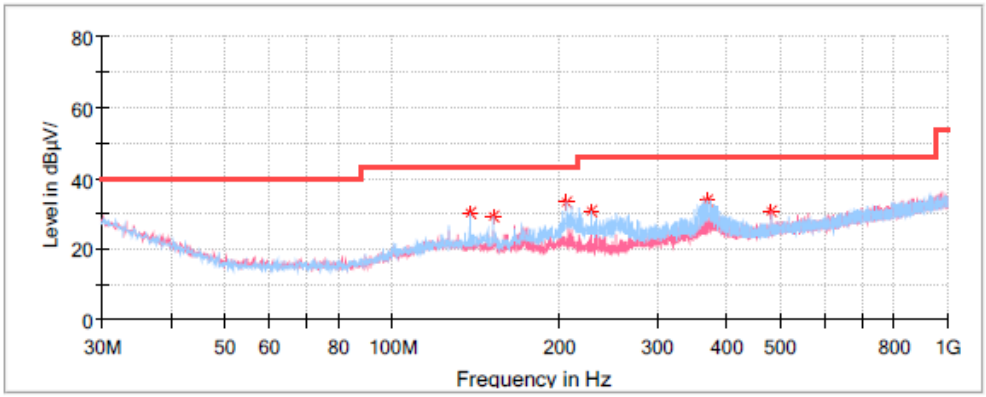
The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

30 MHz - 1 GHz:

Low Channel: 2402 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-1M mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



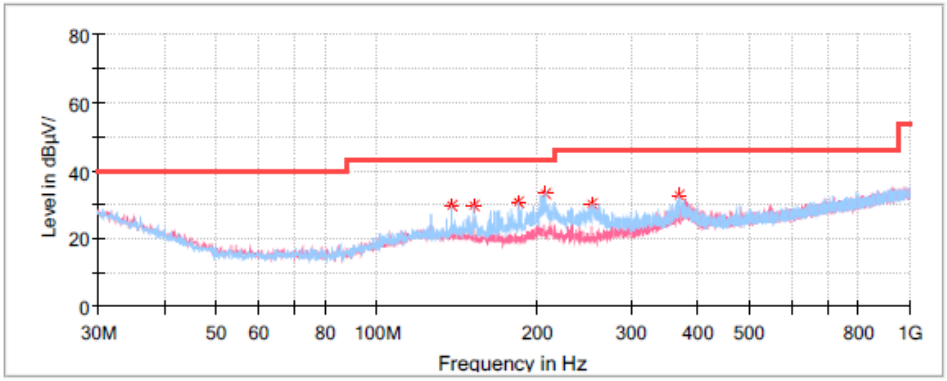
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
138.033750	30.05	43.50	13.45	H	-11.4
151.977500	28.97	43.50	14.53	H	-11.9
206.418750	33.18	43.50	10.32	H	-12.6
228.001250	30.63	46.00	15.37	H	-13.1
370.470000	33.76	46.00	12.24	H	-8.7
480.080000	30.70	46.00	15.30	V	-5.9

Middle Channel: 2440 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-1M mode middle channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



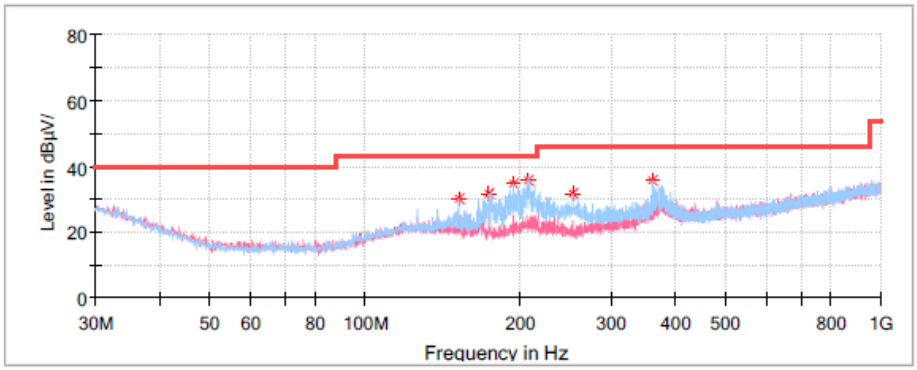
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
138.155000	29.62	43.50	13.88	H	-11.4
151.977500	29.66	43.50	13.84	H	-11.9
184.957500	30.65	43.50	12.85	H	-12.8
207.752500	33.22	43.50	10.28	H	-12.7
253.342500	30.09	46.00	15.91	H	-12.2
368.651250	32.48	46.00	13.52	H	-8.8

High Channel:2480 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-1M mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



Critical_Freqs

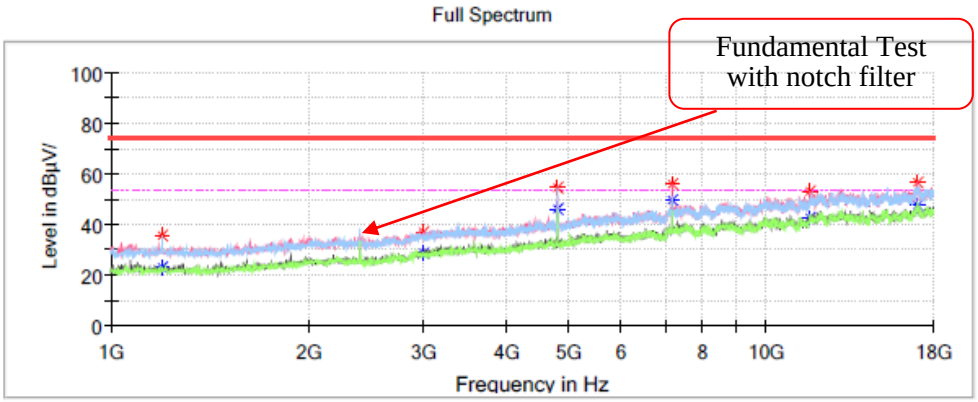
Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
151.977500	30.09	43.50	13.41	H	-11.9
173.802500	31.78	43.50	11.72	H	-12.7
193.808750	34.88	43.50	8.62	H	-12.5
206.782500	35.69	43.50	7.81	H	-12.6
253.463750	31.59	46.00	14.41	H	-12.2
362.103750	35.57	46.00	10.43	H	-8.9

1GHz-18GHz:

Low Channel: 2402 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



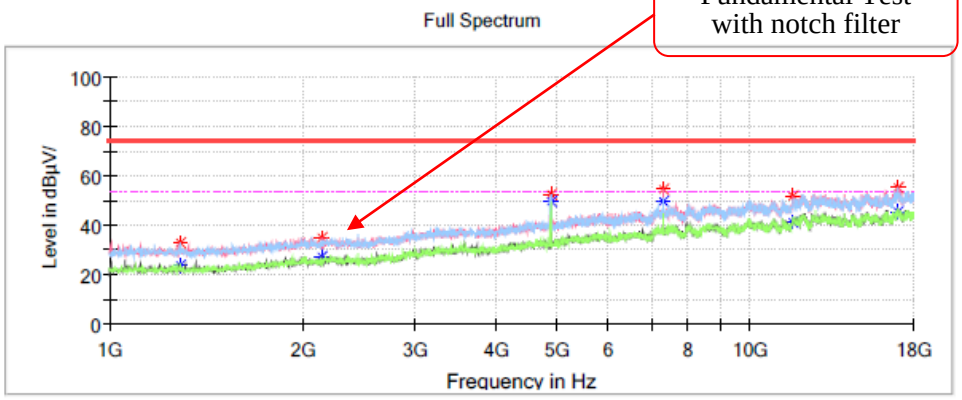
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1197.200000	35.41	---	74.00	38.59	H	-15.2
1197.200000	---	22.91	54.00	31.09	H	-15.2
3000.900000	---	28.36	54.00	25.64	V	-8.4
3000.900000	37.19	---	74.00	36.81	V	-8.4
4802.900000	---	46.44	54.00	7.56	H	-3.2
4802.900000	54.42	---	74.00	19.58	H	-3.2
7205.000000	56.02	---	74.00	17.98	V	3.1
7205.000000	---	49.44	54.00	4.56	V	3.1
11670.900000	---	42.47	54.00	11.53	V	8.9
11670.900000	52.80	---	74.00	21.20	V	8.9
17049.700000	---	47.68	54.00	6.32	V	12.2
17049.700000	56.77	---	74.00	17.23	V	12.2

Middle Channel: 2440 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



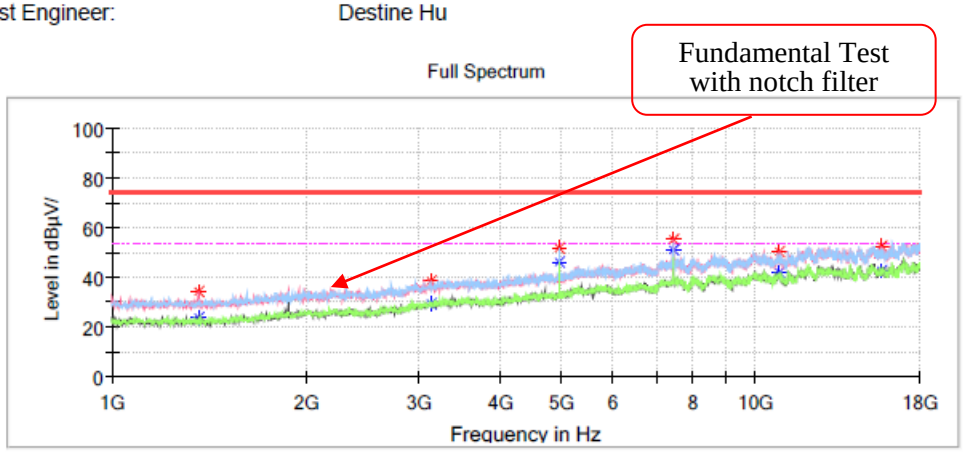
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1285.600000	32.70	---	74.00	41.30	H	-15.0
1285.600000	---	23.83	54.00	30.17	H	-15.0
2145.800000	35.03	---	74.00	38.97	V	-11.3
2145.800000	---	27.19	54.00	26.81	V	-11.3
4879.400000	52.60	---	74.00	21.40	H	-2.9
4879.400000	---	49.47	54.00	4.53	H	-2.9
7318.900000	---	49.49	54.00	4.51	V	3.4
7318.900000	54.82	---	74.00	19.18	V	3.4
11636.900000	51.54	---	74.00	22.46	V	8.9
11636.900000	---	41.55	54.00	12.45	V	8.9
17041.200000	---	45.29	54.00	8.71	H	12.2
17041.200000	55.03	---	74.00	18.97	H	12.2

High Channel: 2480 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



Critical_Freqs

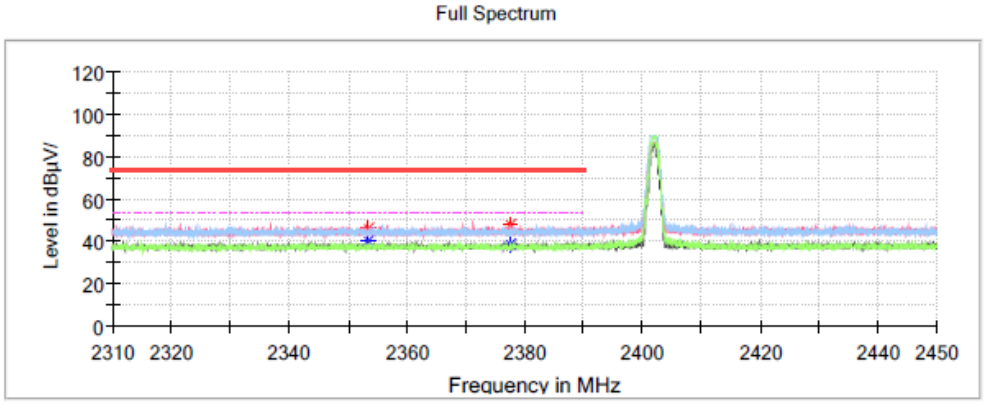
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1360.400000	---	23.57	54.00	30.43	V	-14.9
1360.400000	34.50	---	74.00	39.50	V	-14.9
3138.600000	---	29.49	54.00	24.51	H	-7.9
3138.600000	38.77	---	74.00	35.23	H	-7.9
4959.300000	---	46.14	54.00	7.86	H	-2.6
4959.300000	51.51	---	74.00	22.49	H	-2.6
7439.600000	---	51.15	54.00	2.85	V	3.7
7439.600000	55.08	---	74.00	18.92	V	3.7
10861.700000	---	41.70	54.00	12.30	V	7.3
10861.700000	50.18	---	74.00	23.82	V	7.3
15735.600000	---	42.61	54.00	11.39	H	9.6
15735.600000	52.69	---	74.00	21.31	H	9.6

Band Edge:

Left Side

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



Critical_Freqs

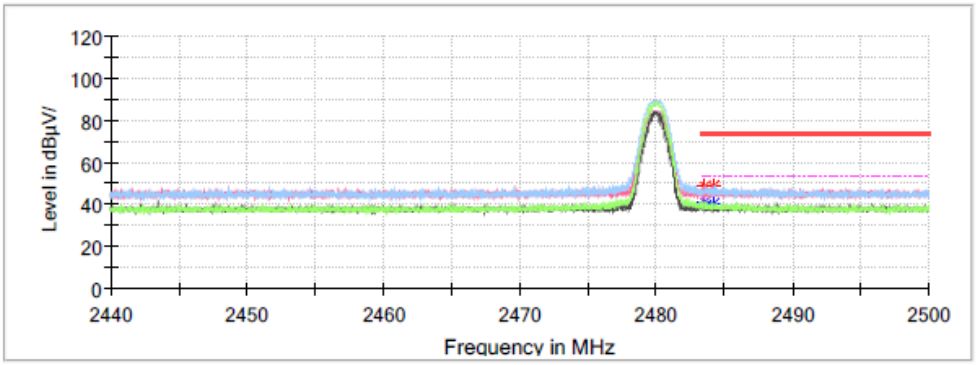
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2353.358000	45.83	---	74.00	28.17	V	-0.7
2353.358000	---	40.34	54.00	13.66	V	-0.7
2377.550000	48.15	---	74.00	25.85	V	-0.6
2377.550000	---	38.52	54.00	15.48	V	-0.6

Right Side

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu

Full Spectrum

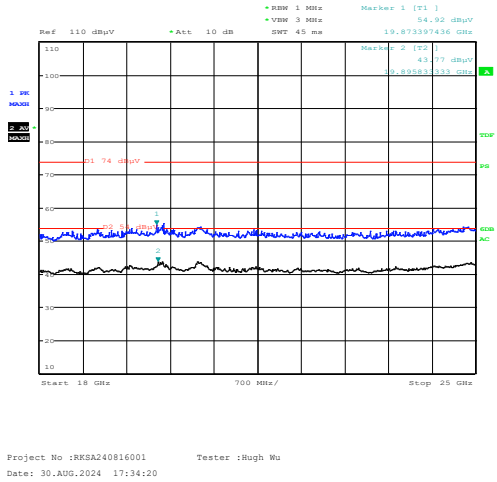


Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.602000	48.40	---	74.00	25.60	H	-0.3
2483.602000	---	41.39	54.00	12.61	H	-0.3
2484.190000	48.89	---	74.00	25.11	H	-0.3
2484.190000	---	40.37	54.00	13.63	H	-0.3

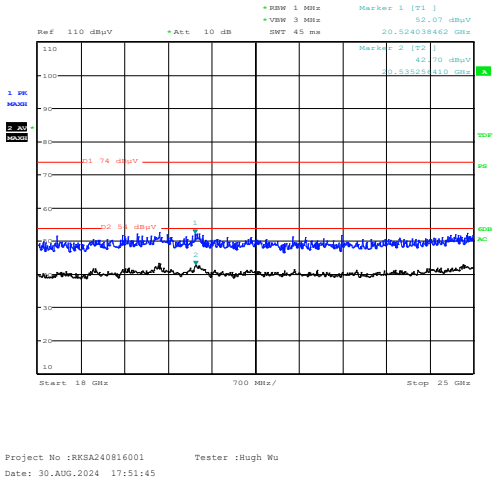
18 GHz - 25 GHz (low channel was worst):

Horizontal



Project No :RKSA240816001 Tester :Hugh Wu
Date: 30.AUG.2024 17:34:20

Vertical



Project No :RKSA240816001 Tester :Hugh Wu
Date: 30.AUG.2024 17:51:45

Note: The test distance is 3m. The limit is 74dBµV/m (Peak) and 54dBµV/m (Average)

BLE 2M:

9 kHz-30 MHz: (*Transmitting in maximum output power low channel)*

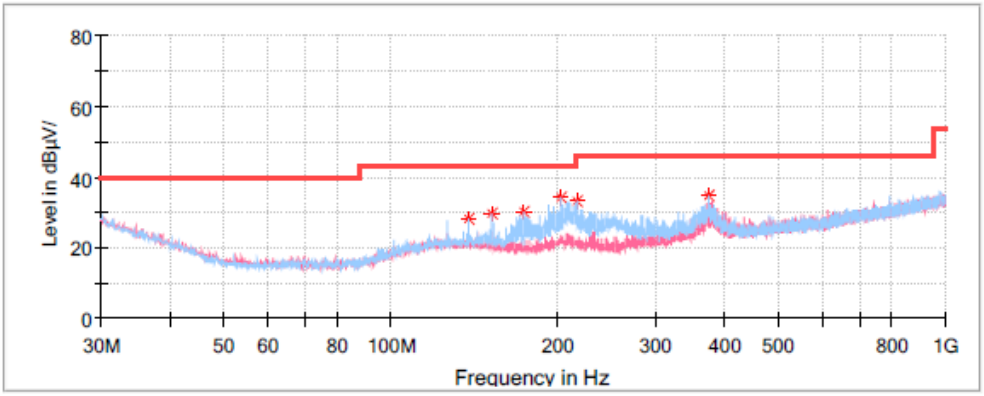
The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

30 MHz - 1 GHz:

Low Channel: 2402 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-2M mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



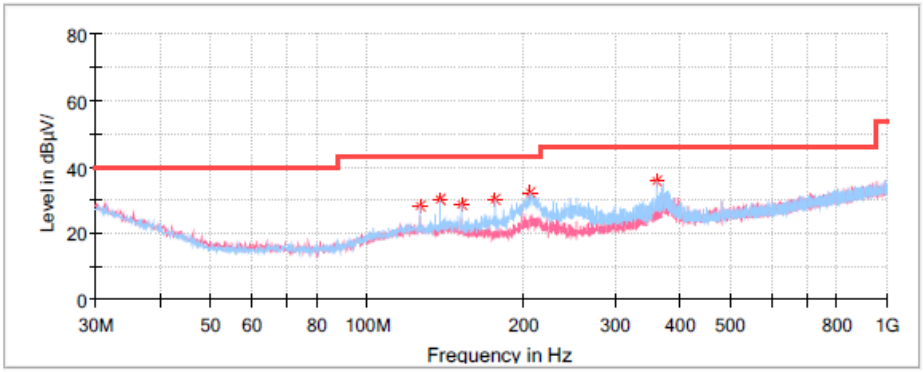
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
138.033750	28.28	43.50	15.22	H	-11.4
151.977500	29.92	43.50	13.58	H	-11.9
173.802500	30.20	43.50	13.30	H	-12.7
203.145000	34.16	43.50	9.34	H	-12.4
216.361250	33.21	46.00	12.79	H	-13.2
375.320000	34.66	46.00	11.34	H	-8.6

Middle Channel: 2440 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-2M mode middle channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



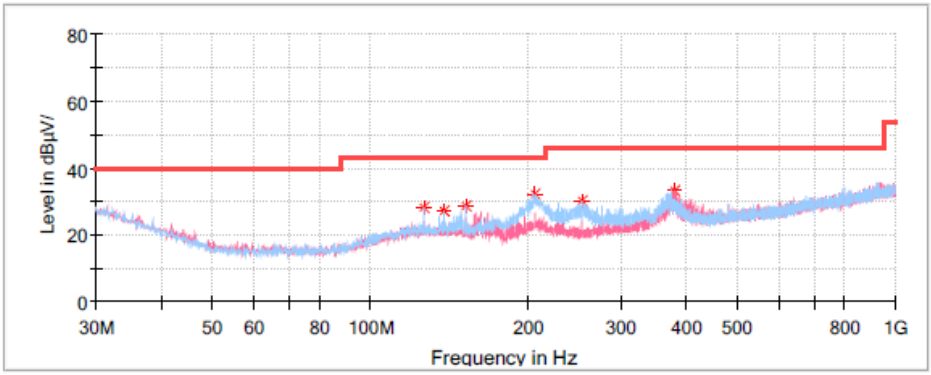
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
126.636250	27.96	43.50	15.54	H	-11.1
137.912500	30.22	43.50	13.28	H	-11.4
151.977500	28.51	43.50	14.99	H	-11.9
176.712500	30.29	43.50	13.21	H	-12.9
206.176250	32.29	43.50	11.21	H	-12.6
360.648750	35.51	46.00	10.49	H	-9.0

High Channel:2480 MHz

Common Information

Project No:	RKSA240816001
EUT Model:	YHT107
Test Mode:	Transmitting in BLE-2M mode high channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	25.4℃
Humidity:	59%
Barometric Pressure:	101.0kPa
Test Engineer:	Grace Luo
Test Date:	2024/8/31



Critical_Freqs

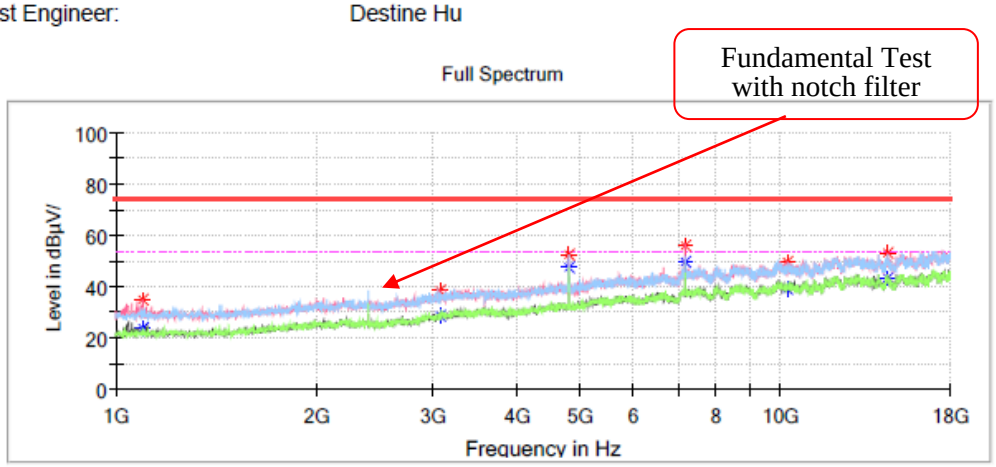
Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
126.636250	28.21	43.50	15.29	H	-11.1
137.912500	27.13	43.50	16.37	H	-11.4
151.977500	28.77	43.50	14.73	H	-11.9
206.297500	32.08	43.50	11.42	H	-12.6
253.342500	30.29	46.00	15.71	H	-12.2
379.563750	33.03	46.00	12.97	V	-8.5

1GHz-18GHz:

Low Channel: 2402 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



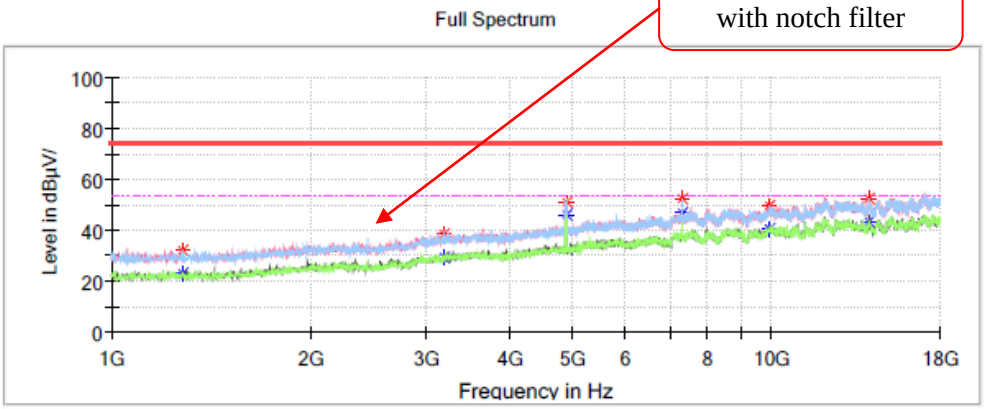
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1098.600000	---	23.96	54.00	30.04	V	-15.3
1098.600000	34.66	---	74.00	39.34	V	-15.3
3074.000000	---	28.61	54.00	25.39	H	-8.1
3074.000000	38.68	---	74.00	35.32	H	-8.1
4802.900000	52.12	---	74.00	21.88	H	-3.2
4802.900000	---	47.43	54.00	6.57	H	-3.2
7205.000000	56.29	---	74.00	17.71	V	3.1
7205.000000	---	49.39	54.00	4.61	V	3.1
10205.500000	---	39.23	54.00	14.77	H	7.1
10205.500000	49.58	---	74.00	24.42	H	7.1
14462.300000	---	43.12	54.00	10.88	V	9.4
14462.300000	53.30	---	74.00	20.70	V	9.4

Middle Channel: 2440 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



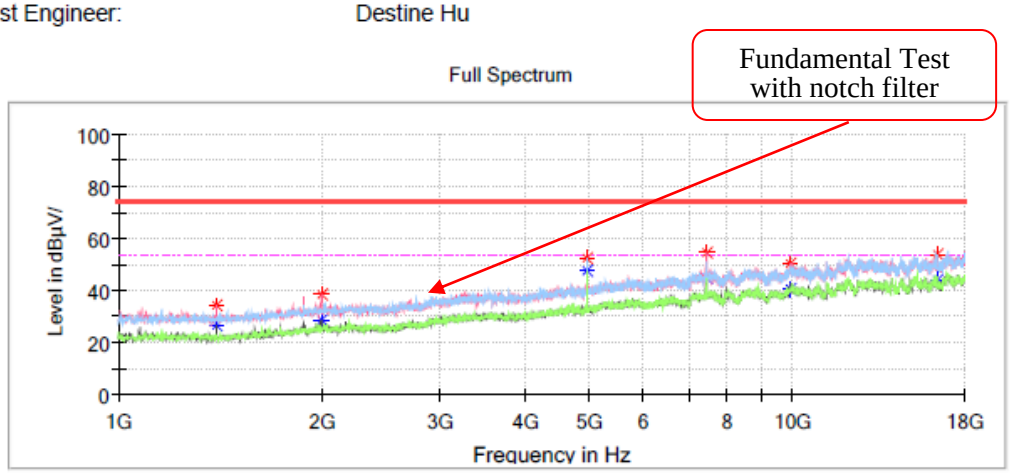
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1283.900000	---	22.76	54.00	31.24	H	-15.0
1283.900000	32.08	---	74.00	41.92	H	-15.0
3198.100000	---	29.68	54.00	24.32	H	-7.6
3198.100000	38.20	---	74.00	35.80	H	-7.6
4879.400000	51.25	---	74.00	22.75	H	-2.9
4879.400000	---	46.05	54.00	7.95	H	-2.9
7318.900000	52.51	---	74.00	21.49	V	3.4
7318.900000	---	46.79	54.00	7.21	V	3.4
9933.500000	---	40.37	54.00	13.63	H	6.9
9933.500000	49.93	---	74.00	24.07	H	6.9
14006.700000	---	43.64	54.00	10.36	V	9.8
14006.700000	52.70	---	74.00	21.30	V	9.8

High Channel: 2480 MHz

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



Critical_Freqs

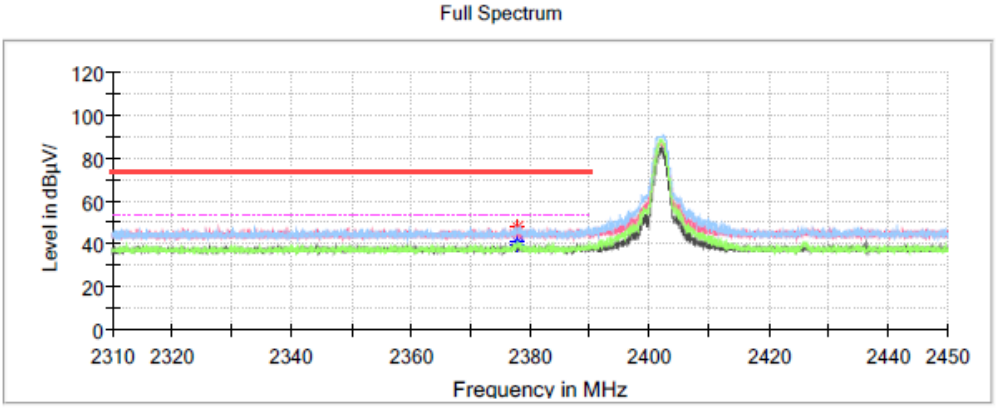
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1396.100000	---	26.24	54.00	27.76	V	-14.9
1396.100000	34.32	---	74.00	39.68	V	-14.9
1997.900000	---	28.86	54.00	25.14	V	-11.8
1997.900000	38.52	---	74.00	35.48	V	-11.8
4959.300000	52.31	---	74.00	21.69	H	-2.6
4959.300000	---	47.43	54.00	6.57	H	-2.6
7441.300000	54.47	---	74.00	19.53	V	3.7
7441.300000	---	44.85	54.00	9.15	V	3.7
9950.500000	---	40.33	54.00	13.67	V	7.0
9950.500000	50.37	---	74.00	23.63	V	7.0
16362.900000	---	44.11	54.00	9.89	H	10.4
16362.900000	54.18	---	74.00	19.82	H	10.4

Band Edge:

Left Side

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu



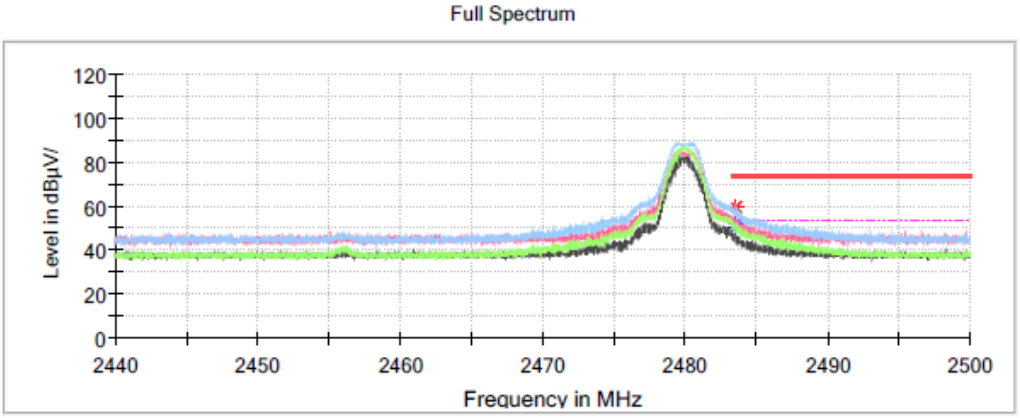
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2377.886000	45.13	---	74.00	28.87	H	-0.6
2377.886000	---	41.01	54.00	12.99	H	-0.6
2377.914000	48.01	---	74.00	25.99	H	-0.6
2377.914000	---	39.47	54.00	14.53	H	-0.6

Right Side

Common Information

Project No.:	RKSA240816001
Test Mode:	BLE
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Destine Hu

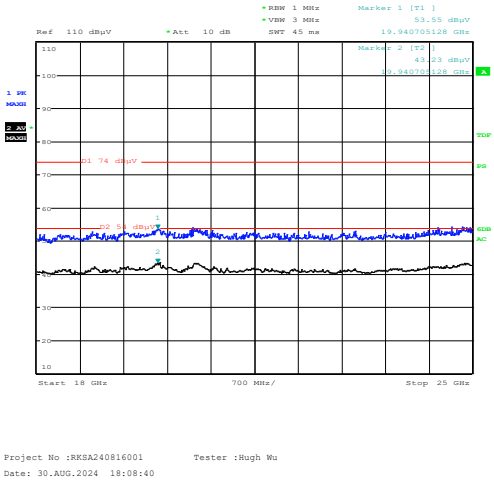


Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.626000	59.42	---	74.00	14.58	H	-0.3
2483.626000	---	50.47	54.00	3.53	H	-0.3
2483.638000	59.25	---	74.00	14.75	H	-0.3
2483.638000	---	51.68	54.00	2.32	H	-0.3

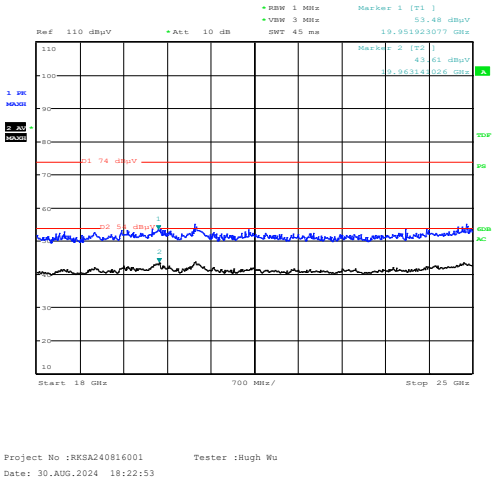
18 GHz - 25 GHz (low channel was worst):

Horizontal



Project No :RKSA240816001 Tester :Hugh Wu
Date: 30.AUG.2024 18:08:40

Vertical



Project No :RKSA240816001 Tester :Hugh Wu
Date: 30.AUG.2024 18:22:53

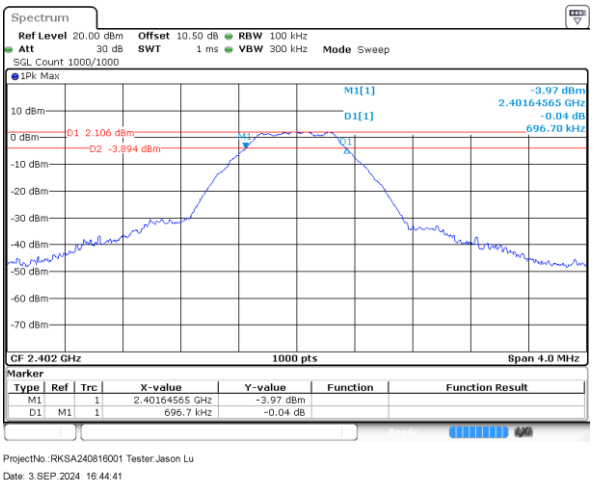
Note: The test distance is 3m. The limit is 74dBµV/m (Peak) and 54dBµV/m (Average)

6 dB EMISSION BANDWIDTH

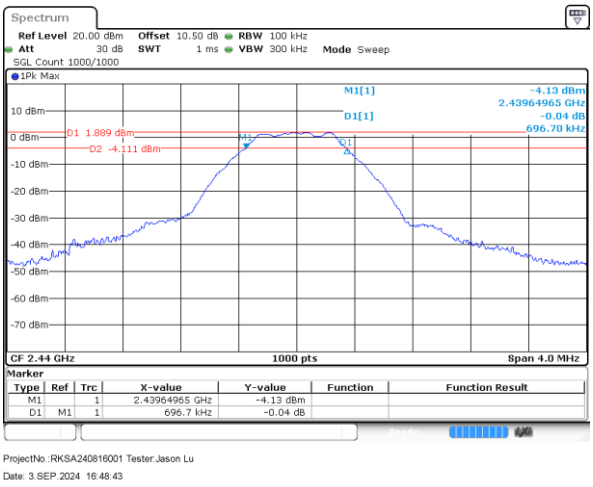
Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
BLE (1Mbps)	Low	2402	0.697	≥0.5
	Middle	2440	0.697	≥0.5
	High	2480	0.693	≥0.5
BLE (2Mbps)	Low	2402	1.277	≥0.5
	Middle	2440	1.285	≥0.5
	High	2480	1.321	≥0.5

BLE 1M:

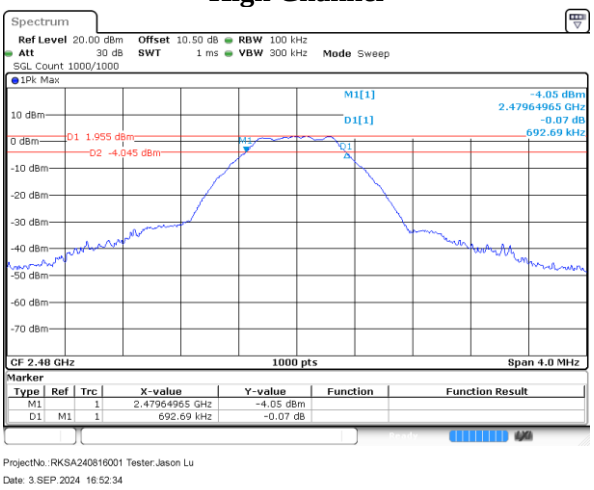
Low Channel



Middle Channel

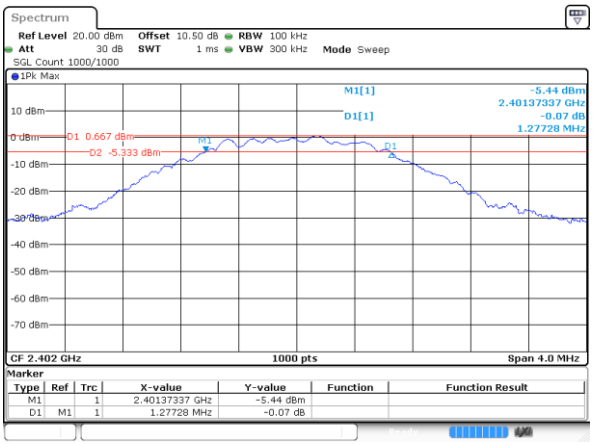


High Channel



BLE 2M:

Low Channel



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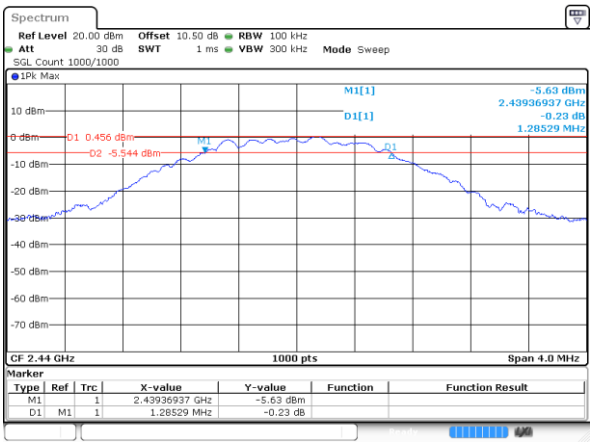
Middle Channel



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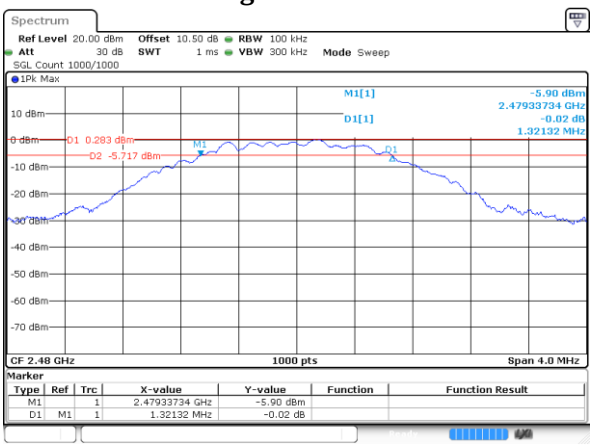
High Channel



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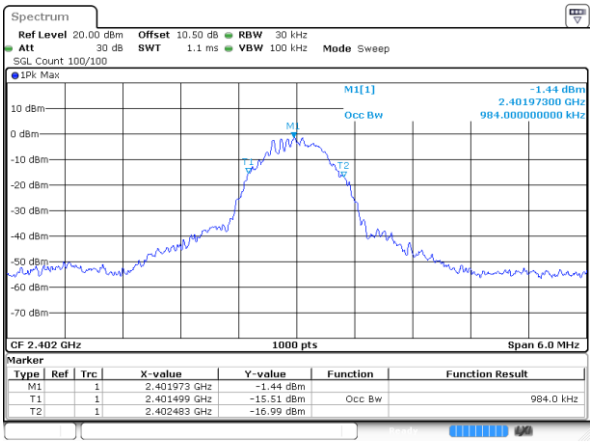
OCCUPIED BANDWIDTH

EUT operation mode: Transmitting

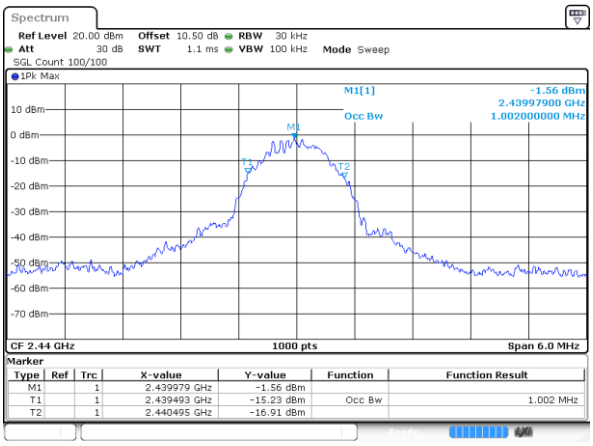
Channel	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
BLE (1Mbps)	Low	2402	0.984
	Middle	2440	1.002
	High	2480	0.996
BLE (2Mbps)	Low	2402	2.130
	Middle	2440	2.166
	High	2480	2.190

BLE 1M:

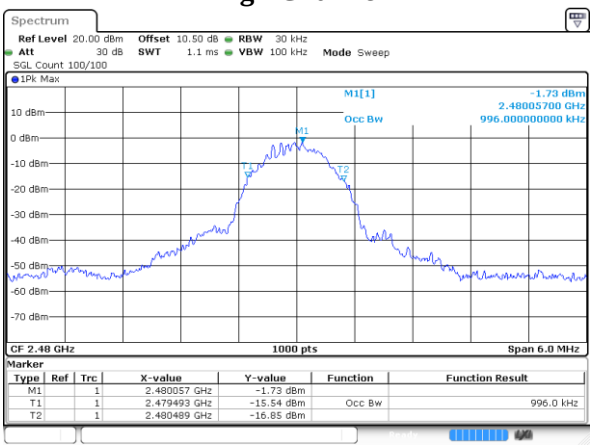
Low Channel



Middle Channel

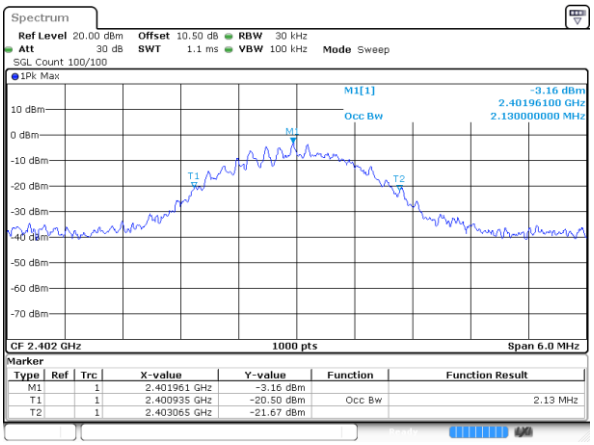


High Channel

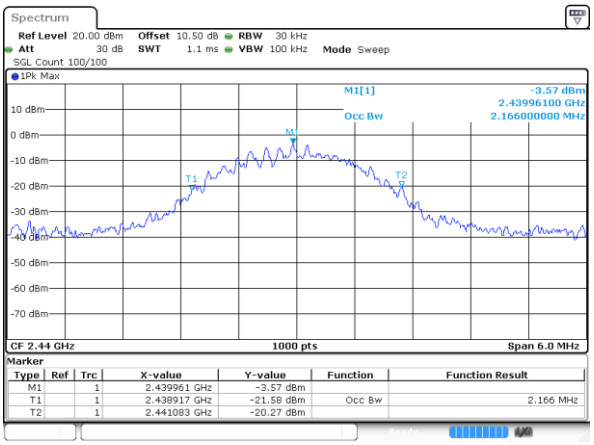


BLE 2M:

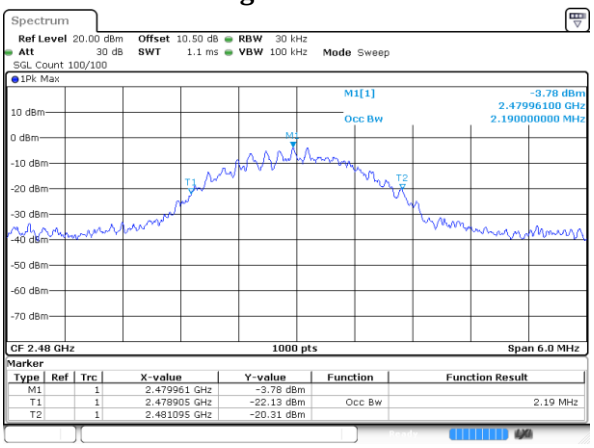
Low Channel



Middle Channel



High Channel



MAXIMUM CONDUCTED OUTPUT POWER

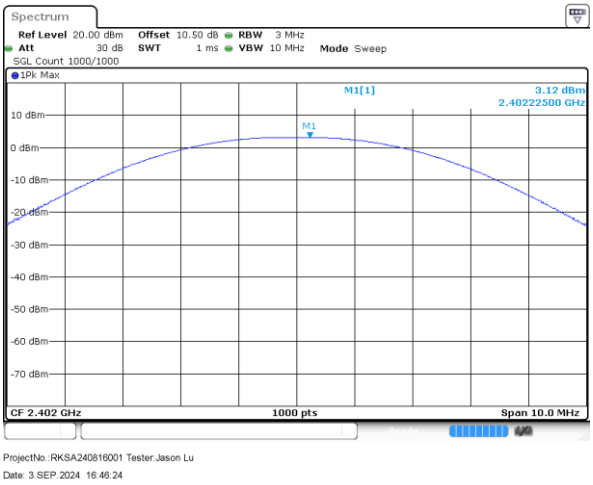
Test Result: Compliant.

EUT operation mode: Transmitting

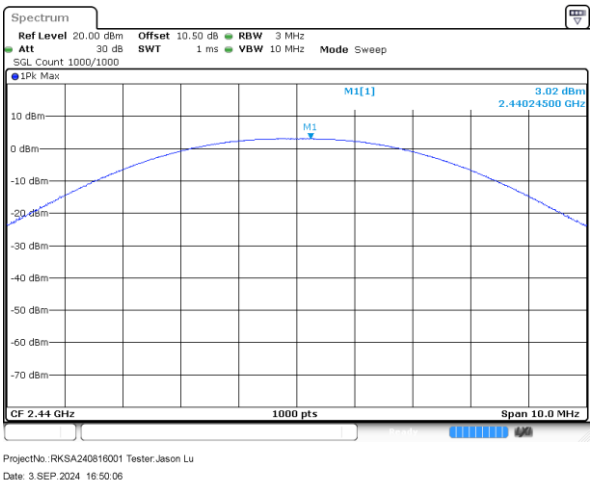
Mode	Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
BLE (1Mbps)	Low	2402	3.12	30	Pass
	Middle	2440	3.02	30	Pass
	High	2480	3.01	30	Pass
BLE (2Mbps)	Low	2402	2.99	30	Pass
	Middle	2440	2.87	30	Pass
	High	2480	2.86	30	Pass

BLE 1M:

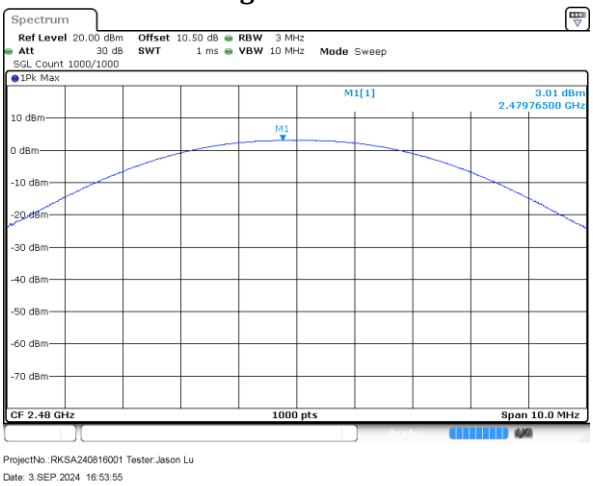
Low Channel



Middle Channel

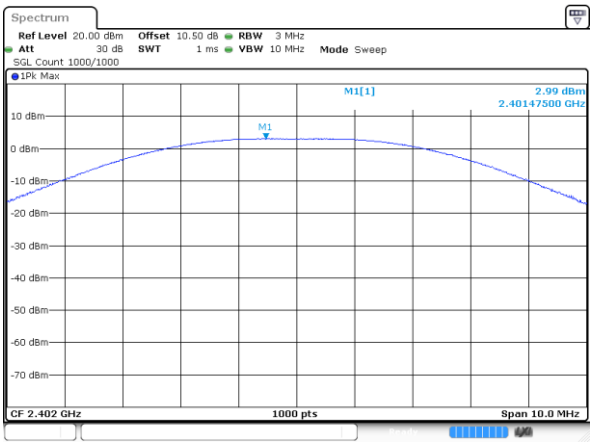


High Channel



BLE 2M:

Low Channel



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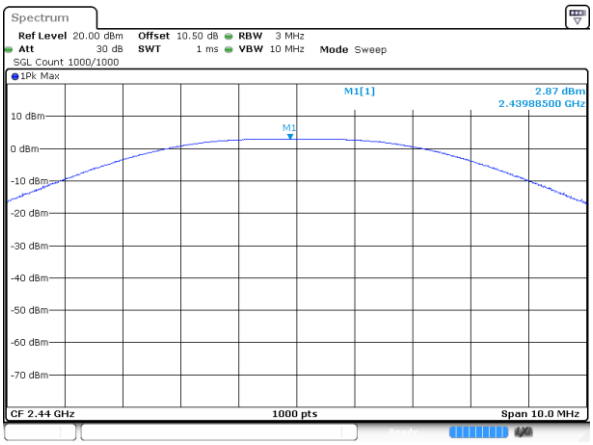
Middle Channel



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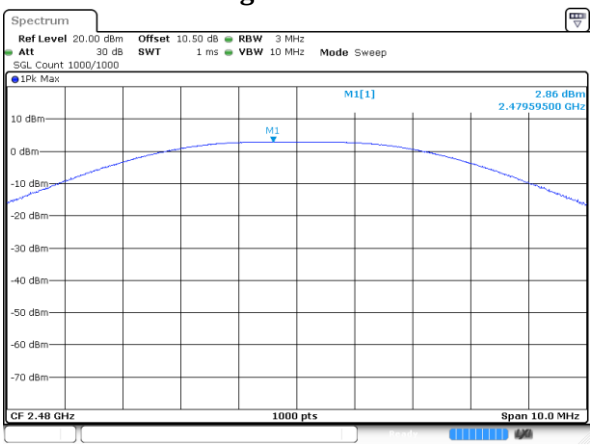
Date: 3.SEP.2024 17:00:17

High Channel



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BAND EDGE

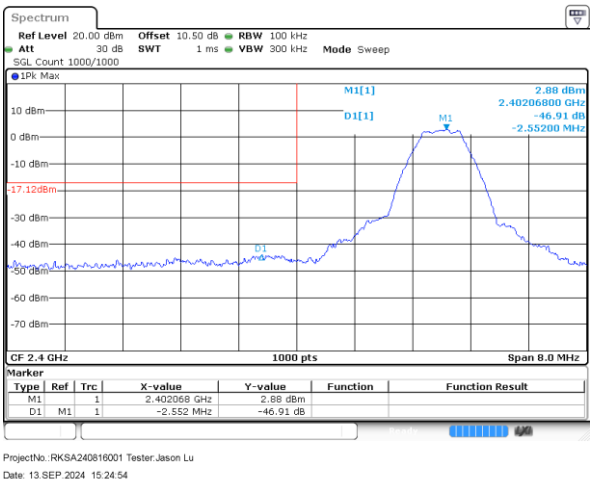
Test Result: Compliant.

EUT operation mode: Transmitting

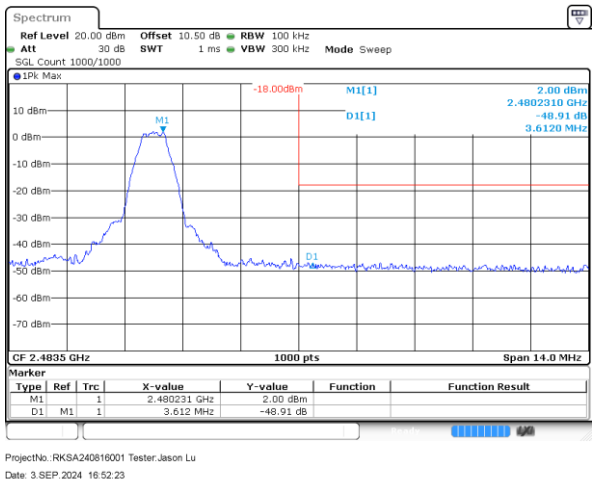
Mode	Channel	Frequency (MHz)	Result (dBc)	Limit (dBc)
BLE (1Mbps)	Low	2402	46.91	20
	High	2480	48.91	
BLE (2Mbps)	Low	2402	30.60	20
	High	2480	33.71	

BLE 1M:

Left Side

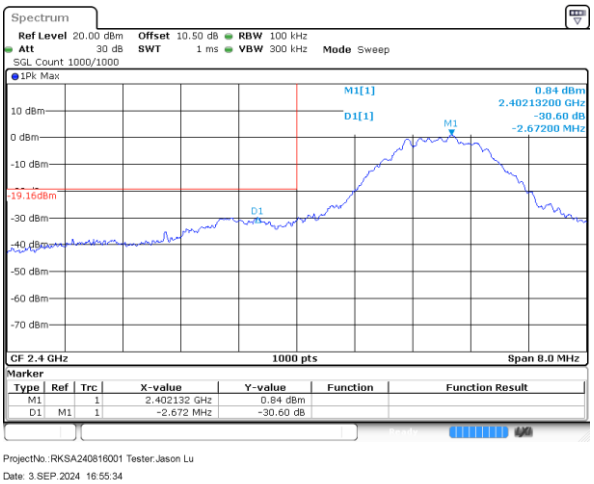


Right Side

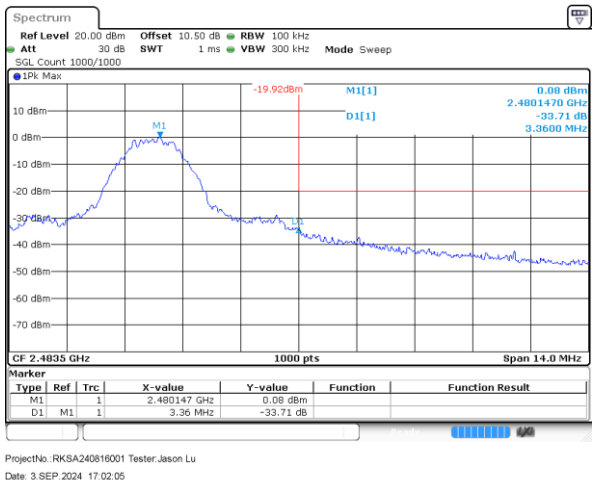


BLE 2M:

Left Side



Right Side



POWER SPECTRAL DENSITY

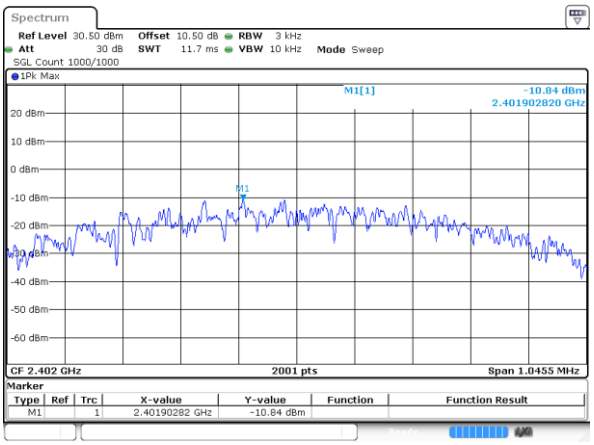
Test Result: Compliant.

EUT operation mode: Transmitting

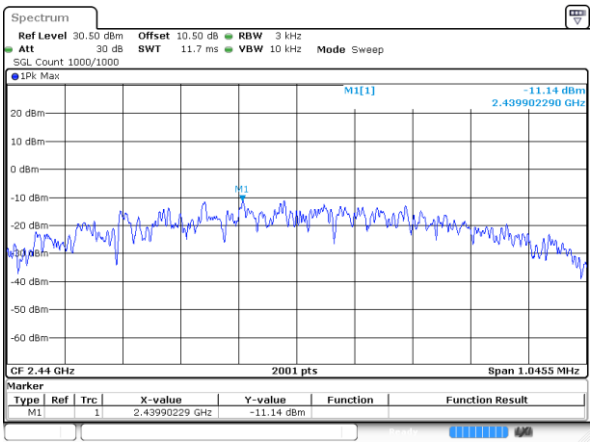
Mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
BLE (1Mbps)	Low	2402	-10.84	≤8
	Middle	2440	-11.14	≤8
	High	2480	-11.09	≤8
BLE (2Mbps)	Low	2402	-14.05	≤8
	Middle	2440	-14.18	≤8
	High	2480	-14.27	≤8

BLE 1M:

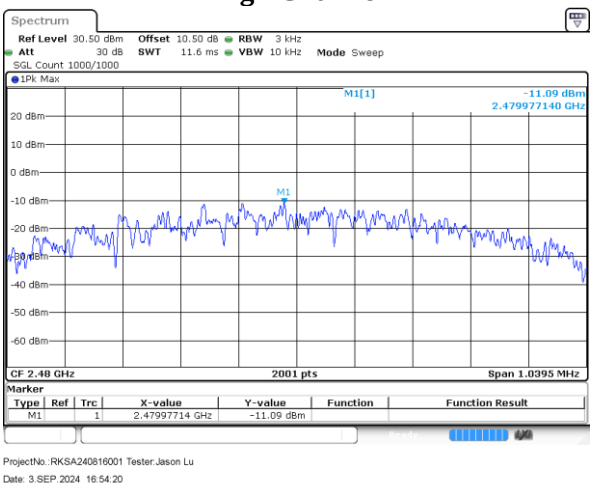
Low Channel



Middle Channel

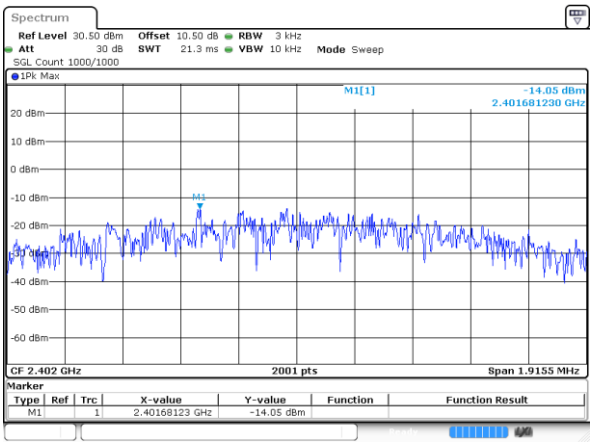


High Channel



BLE 2M:

Low Channel



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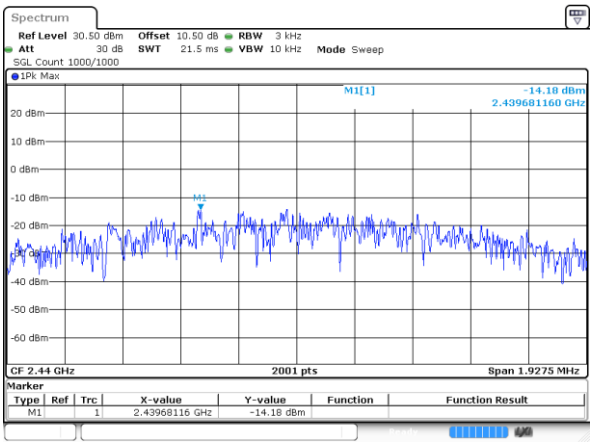
Middle Channel



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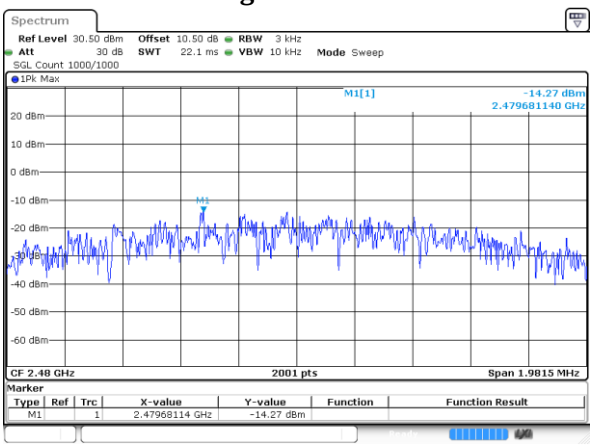
High Channel



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Date: 3.SEP.2024 17:04:12

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with "★".

2. The test data was only valid for the test sample(s).

3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

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