

TEST REPORT

Applicant Name: Shenzhen Xin Yuan Electronic Technology Co., Ltd.
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518129, Shenzhen City, Guangdong Province, China
Report Number: 2501Z13203E-RF-07A

Test Standard (s)

Item 19 of Article 2 Paragraph 1

Sample Description

Product Type: T-BEAM-S3
Model No.: T-BEAM-S3
Multiple Model(s) No.: N/A
Trade Mark: LILYGO
Date Received: 2025/11/05
Issue Date: 2025/12/18

Test Result:	Pass▲
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▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ekko Wu

Ekko Wu
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked * is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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Bay Area Compliance Laboratories Corp. (Shenzhen)

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501Z13203E-RF-07A	Original Report	2025/12/18

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Technical Parameters	Radio Type	BLE
	Modulation Type	GFSK
	Frequency Range	2402-2480MHz
	Rated Output Power	4.5 mW for BLE 1M/2M
	Antenna Gain[#]	4 dBi (It is provided by the applicant)
Nominal Power Supply		DC 5V from USB port
Sample serial number		3CBS-1(Assigned by BACL, Shenzhen)
Sample/EUT Status		Good condition
Adapter Information		N/A

Objective

The objective of the manufacturer is to demonstrate compliance with Certification Ordinance Article 2-1-19, rules and limits for this device including:

- Frequency Error
- Occupied Bandwidth
- Transmitter Spurious Emission and Unwanted Emission Intensity
- Antenna Output Power and Output Power Tolerance
- Receiver Spurious Emission Strength
- Interference Prevention Function
- Construction Protection Confirmation

Test Method

MIC Notice No.88 of Jan. 26, 2004, Appendix No.43 (Latest version: MIC Notice No.373 of Nov. 8, 2023)

Measurement Uncertainty

Item	Expanded Measurement uncertainty
Frequency error	56.6Hz(k=2, 95% level of confidence)
Occupied Channel Bandwidth	109.2kHz(k=2, 95% level of confidence)
RF output power, conducted	0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted	1.60dB(k=2, 95% level of confidence)
Duty Cycle	±1%
Temperature	±1°C
Supply voltages	±0.4%
Humidity	±1%

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 Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

Each test item follows test standards and with no deviation.

EUT TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a testing mode by some software.

For BLE mode, 40 channels are provided for testing:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
0	2402	20	2442
1	2404	21	2444
...	...	...	...
...	...	...	...
...	...	...	...
18	2438	38	2478
19	2440	39	2480

EUT was tested with channel 0, 19 and 39.

Normal/Extreme Voltage Condition[#]

NV	Normal Voltage	5V _{DC}
LV	Low Voltage	4.5V _{DC}
HV	High Voltage	5.5V _{DC}

Note: extreme voltage test conditions were declared by manufacturer.

The EUT works with USB port, power deviation of the USB port output is less than 1% when extreme voltage supplied, therefore the test only performed at normal condition. Details as following:

Voltage Condition	Input (V _{DC})	Output (V _{DC})
NV	5	5
LV	4.5	4.98
HV	5.5	5.02

EUT Exercise Software

Exercise Software [#]	EspRFTesTool_v3.6_manual.exe		
Power Level [#]			
Mode	Low Channel	Middle Channel	High Channel
BLE 1M	10	10	10
BLE 2M	10	10	10

Equipment Modifications

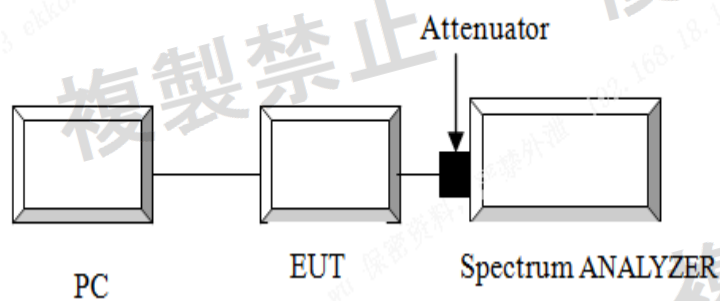
No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	PC	DESKTOP-1630AQ3	Unknown

External I/O Cable

Cable Description	Length(m)	From/Port	To
Un-shielding Detachable USB Cable	1	EUT	PC

Configuration of Test Setup

SUMMARY OF TEST RESULTS

MIC Notice No.88 Appendix No.43 Article 2, Paragraph 1, Item 19	Description of Test	Result
1	Frequency Error	Compliant
2	Occupied Bandwidth	Compliant
3	Transmitter Spurious Emission and Unwanted Emission Intensity	Compliant
4	Antenna Output Power and Output Power Tolerance	Compliant
5	Receiver Spurious Emission and Unwanted Emission Intensity	Compliant
6	Transmission Antenna Gain	Not Applicable
7	Carrier sense capability	Not Applicable**
8	Transmission Radiation Angle Width	Not Applicable
9	Frequency Hopping Dwell Time	Not Applicable*
10	Interference Prevention Function	Compliant
11	Construction Protection Confirmation	Compliant

Not Applicable* -Testing is only required for FHSS system devices.

Not Applicable**-The OBW of EUT is less than 26 MHz.

Not Applicable - This test item was not required for the output power less than 12.14 dBm (E.I.R.P)

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	Calibration Authority	Calibration Method
Rohde& Schwarz	Spectrum Analyzer	FSV40-N	102259	2025/09/01	2026/08/31	CCIC	c)
ANRITSU	Microwave peak power sensor	MA24418A	12622	2025/09/01	2026/08/31	CCIC	c)
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25	BACL SZ	d)
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	146520	2025/09/18	2026/09/17	CCIC	c)
R&S	Spectrum Analyzer	FSU26	200120	2024/12/04	2025/12/03	BACL Cal	c)
JD	JD Auto Test software	NA	1.0.0.3769	NCR	NCR	/	/

Note: Calibration Method

a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18 paragraph (1)

b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) ~Japan Calibration Service System~

c) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)

d) Calibration conducted by using other equipment that listed above from a) to c)

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

REQUIREMENTS AND TEST PROCEDURES

Frequency Error

Limit

50 ppm or below

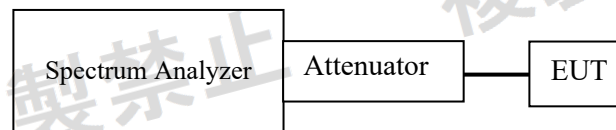
Test Procedure

Set the EUT to the measurement frequency without modulation.
Setting of SA is following as:

- Center Frequency: Frequency to measure
- RBW: 1 kHz, VBW: 3 kHz
- Span: 300kHz
- Sweep time: Auto
- Log scale: 10dB/Div, Data points: 400 points or more
- Reference level: Enough level for maximum dynamic range
- Detection: Positive Peak
- Sweep mode: Single Sweep
- Marker: Spot

Record the peak spot frequency.

If the EUT can't set at un-modulation mode, measure the 10dBc center frequency.



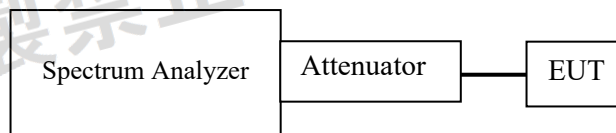
Occupied Bandwidth

Limit

- Occupied bandwidth: FH $\leq$ 83.5 MHz; OFDM, DS $\leq$ 26 MHz; Others $\leq$ 26 MHz

Test Procedure

1. Setting of SA is following as:
 - Center Frequency: Frequency to measure
 - RBW: 30 kHz, VBW: 30 kHz
 - Sweep time: Auto
 - Log scale: 10dB/Div, Data points: 400 points or more
 - Reference level: Enough level for maximum dynamic range
 - Detection: Positive Peak
 - Sweep mode: Continuous Sweep
 - Marker: Spot
2. EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 99% of occupied bandwidth to measure occupied bandwidth.



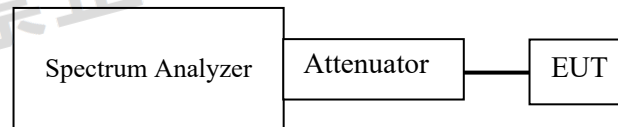
Transmitter Spurious Emission Strength and Unwanted Emission Intensity

Limit

- $f < 2387 \text{ MHz}$, $f > 2496.5 \text{ MHz}$: $\leq 2.5 \mu\text{W/MHz}$
- $2387 \text{ MHz} \leq f \leq 2400 \text{ MHz}$; $2483.5 \text{ MHz} < f \leq 2496.5 \text{ MHz}$: $\leq 25 \mu\text{W/MHz}$

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- The modulation state shall be in continuously transmitting mode.

Spectrum Analyzer Conditions

- Span: Measuring Frequency Range
- RBW: 1MHz (frequency range; 1GHz over), 100kHz (frequency range; 30MHz to 1GHz)
- VBW: Same as RBW (1MHz or 100kHz)
- Sweep time: Auto (Minimum time to ensure measurement accuracy.)
- Data points : 400 points or more
- Reference level: Enough level for maximum dynamic range
- Detection: Positive Peak

If the measured value is under the technical standard value, do not need to measure more detail.

Note: $2.5 \mu\text{W/MHz} = 0.25 \mu\text{W}/100\text{kHz}$

Antenna Output Power and Antenna Power Tolerance

Limit

Antenna power:

- $\leq 10 \text{ mW/MHz}$ (OFDM, DSSS from 2400-2483.5 MHz)
- $\leq 10 \text{ mW}$ (other from 2400-2483.5 MHz)

The Output Power Tolerance must be within +20%, -80%.

E.i.r.p:

- $\leq 12.14 \text{ dBm/MHz}$ (OFDM (20MHz system), DSSS form 2400-2483.5MHz)
- $\leq 9.13 \text{ dBm/MHz}$ (OFDM(40MHz system) from 2400-2483.5MHz)
- $\leq 12.14 \text{ dBm}$ (other from 2400-2483.5MHz)

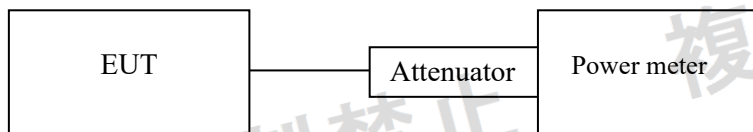
Test Procedure

Step 1: Measure the total power by Power Meter

Step 2: If it's the burst wave, set the power meter to measure averaging across the burst transmit on period.

Step 3: Record the reading on power meter as antenna output power.

Test Setup Block diagram



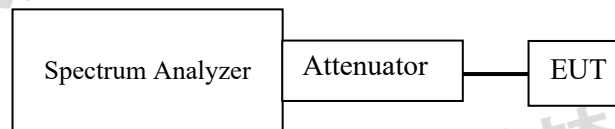
Receiver Spurious Emission and Unwanted Emission Intensity

Limit

- $\leq 4\text{nW}$ ($30\text{ MHz} \leq f \leq 1000\text{ MHz}$)
- $\leq 20\text{ nW}$ ($f \geq 1\text{ GHz}$)

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- The modulation state shall be “continuous receiving mode”.

Spectrum Analyzer Conditions

- Start Frequency: Start Frequency of frequency range to measure (30MHz or 1GHz)
- Stop Frequency: Stop Frequency of frequency range to measure (1GHz or 12.5GHz)
- Span: AUTO (Measurement Range)
- RBW: 100 kHz, VBW: 100 kHz for Frequency < 1 GHz
- RBW: 1MHz, VBW: 1MHz for Frequency > 1 GHz
- Sweep time: AUTO or more
- Sweep mode: Auto Sweep
- Detection: Positive Peak
- Reference Level: Enough level for maximum dynamic range

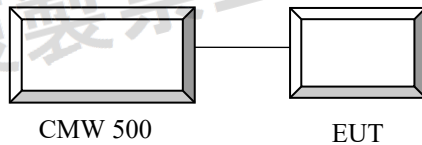
Interference Prevention Function

Requirement

The EUT shall have the interference prevention capability to transmit or to receive the identification automatically, so that sender and receiver shall exclude other equipment.

Test Procedure

Measurement System Diagram



In the case that the EUT has the function of automatically transmitting the identification code:

1. Transmit the predetermined identification codes from EUT
2. Check the transmitted identification codes with the demodulator.

In the case of receiving the identification codes:

1. Transmit the predetermined identification codes from the counterpart.
2. Check if communication is normal
3. Transmit the signal other than predetermined ID codes from the counterpart.
4. Check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

TEST DATA AND RESULTS**Frequency Error****Test Information:**

Sample No.:	3CBS-1	Test Date:	2025/11/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rainbow Zhu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.2	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.6
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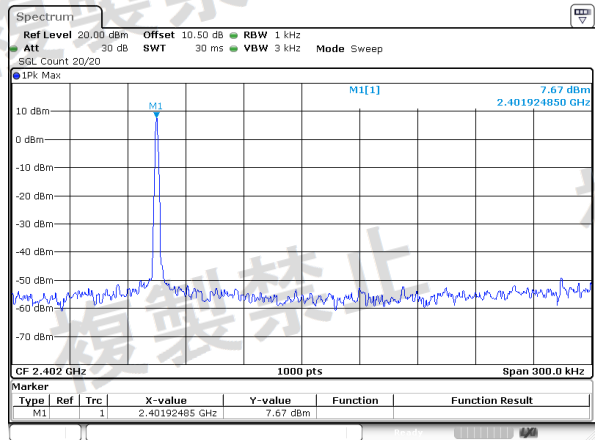
Test Condition: NV

Mode	Frequency (MHz)	Measure Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)	Verdict
Single Carrier	2402	2401.92485	-31.29	± 50	Pass
	2440	2439.92365	-31.29		Pass
	2480	2479.92185	-31.51		Pass

Frequency Tolerance = (Measure Frequency - Frequency)/Frequency*10⁶

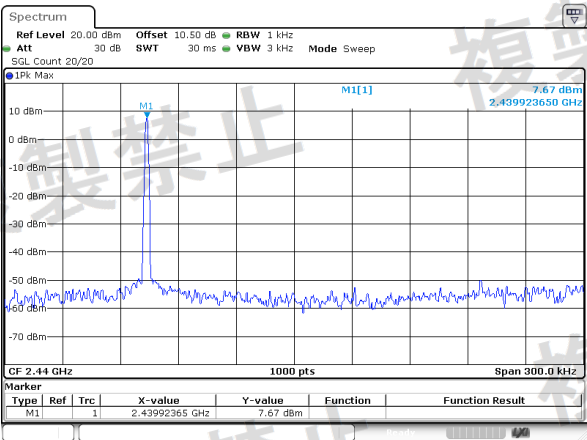
Test Condition: NV

2402MHz



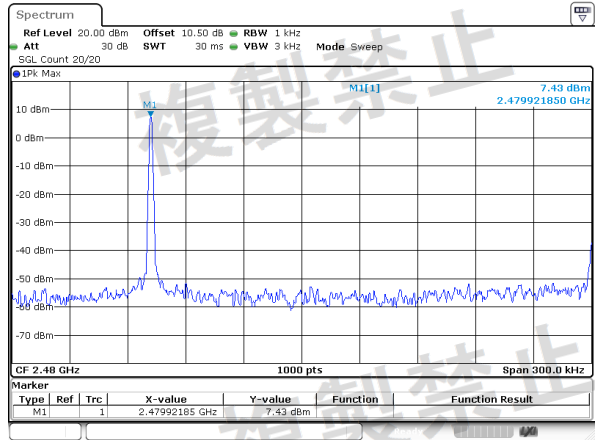
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 19.NOV.2025 14:53:09

2440MHz



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 19.NOV.2025 14:53:39

2480MHz



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 19.NOV.2025 14:53:57

Occupied Bandwidth**Test Information:**

Sample No.:	3CBS-1	Test Date:	2025/11/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rainbow Zhu	Test Result:	Pass

Environmental Conditions:

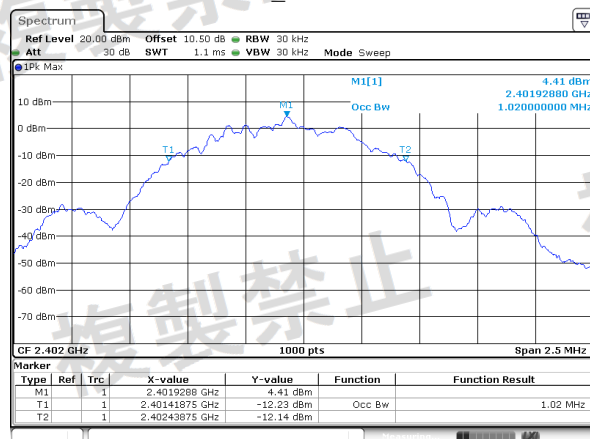
Temperature: (°C)	24.2	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.6
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Test Condition: NV

Mode	Occupied bandwidth (MHz)			Limit(MHz)	Verdict
	Low Channel	Middle Channel	High Channel		
BLE 1M	1.02	1.025	1.028	≤ 26	Pass
BLE 2M	2.015	2.02	2.02		Pass

Test Condition: NV

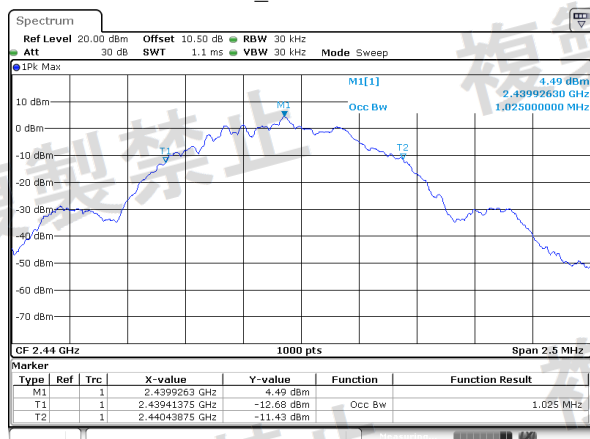
BLE 1M_Low Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:10:36

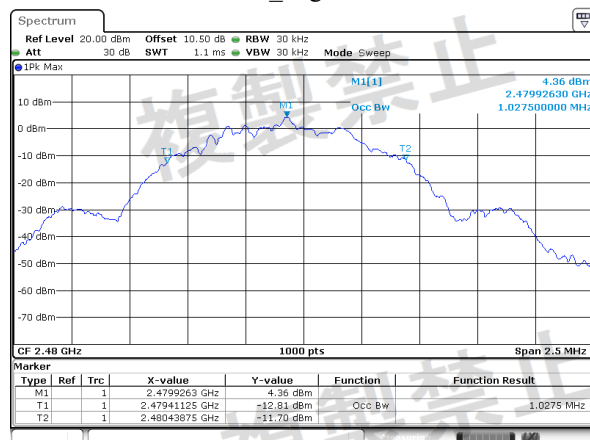
BLE 1M_Middle Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:11:04

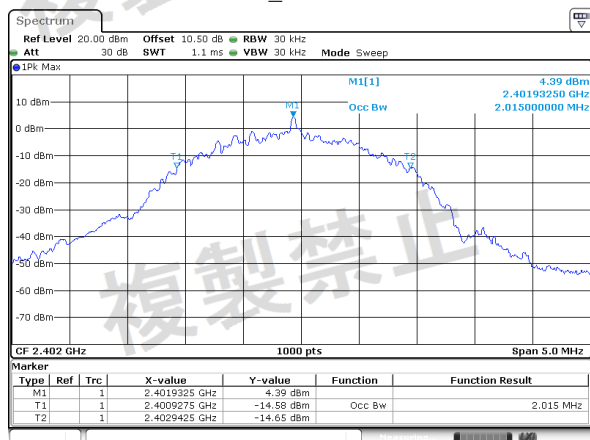
BLE 1M_High Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:11:39

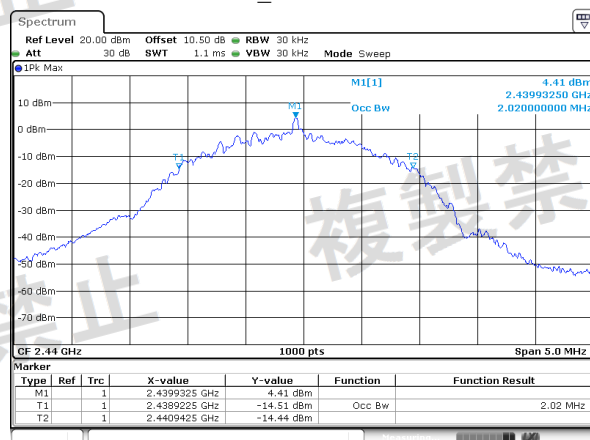
BLE 2M_Low Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:13:16

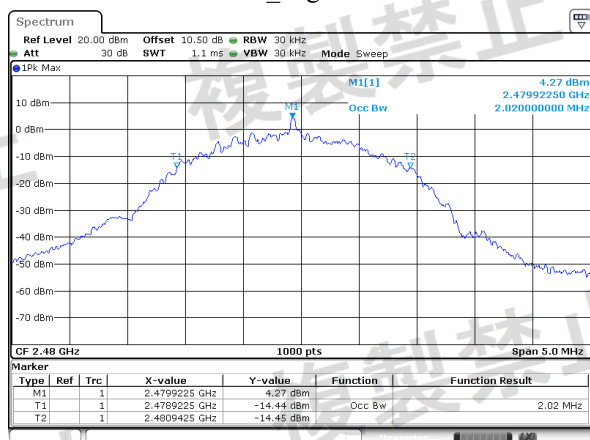
BLE 2M_Middle Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:13:52

BLE 2M_High Channel



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu

Date: 19.NOV.2025 15:14:19

Transmitter Spurious Emission and Unwanted Emission Intensity**Test Information:**

Sample No.:	3CBS-1	Test Date:	2025/11/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rainbow Zhu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2	Relative Humidity: (%)	45	ATM Pressure: (kPa)	102.0
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Test Condition: Normal, BLE 1M

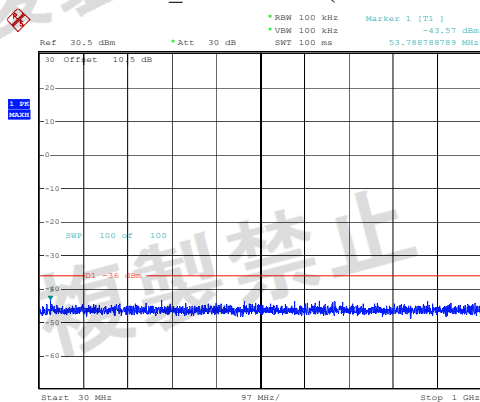
Channel	Test Band (RBW)	Frequency Range		Max.Emission Located(MHz)	Result (dBm/RBW)	Result (μW/RBW)	Limit (μW/RBW)	Verdict
		Start (MHz)	Stop (MHz)					
Low	Band I (100kHz)	30	1000	53.7887888	-43.57	0.044	0.25	Pass
	Band II (1MHz)	1000	2387	2366.1742000	-38.33	0.147	2.50	Pass
	Band III (1MHz)	2387	2400	2399.4665000	-38.28	0.149	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2487.1957000	-37.73	0.169	25	Pass
	Band V (1MHz)	2496.5	12500	11123.1419000	-37.01	0.199	2.50	Pass
Middle	Band I (100kHz)	30	1000	608.2132132	-43.10	0.049	0.25	Pass
	Band II (1MHz)	1000	2387	2316.1922000	-38.39	0.145	2.50	Pass
	Band III (1MHz)	2387	2400	2387.8003000	-38.37	0.146	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2485.4194000	-36.71	0.213	25	Pass
	Band V (1MHz)	2496.5	12500	11909.2027000	-36.83	0.207	2.50	Pass
High	Band I (100kHz)	30	1000	731.0410410	-43.42	0.045	0.25	Pass
	Band II (1MHz)	1000	2387	2347.4309000	-38.60	0.138	2.50	Pass
	Band III (1MHz)	2387	2400	2392.9795000	-38.14	0.153	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2483.5065000	-34.18	0.382	25	Pass
	Band V (1MHz)	2496.5	12500	10251.9662000	-36.34	0.232	2.50	Pass

Test Condition: Normal, BLE 2M

Channel	Test Band (RBW)	Frequency Range		Max.Emission Located(MHz)	Result (dBm/RBW)	Result (μW/RBW)	Limit (μW/RBW)	Verdict
		Start (MHz)	Stop (MHz)					
Low	Band I (100kHz)	30	1000	173.2182182	-43.59	0.044	0.25	Pass
	Band II (1MHz)	1000	2387	2357.1496000	-38.83	0.131	2.50	Pass
	Band III (1MHz)	2387	2400	2389.1471000	-38.13	0.154	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2483.5065000	-34.18	0.382	25	Pass
	Band V (1MHz)	2496.5	12500	3592.9797000	-36.80	0.209	2.50	Pass
Middle	Band I (100kHz)	30	1000	472.7627628	-43.11	0.049	0.25	Pass
	Band II (1MHz)	1000	2387	2348.1251000	-38.97	0.127	2.50	Pass
	Band III (1MHz)	2387	2400	2387.5791000	-38.00	0.158	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2493.7152000	-37.38	0.183	25	Pass
	Band V (1MHz)	2496.5	12500	10927.8784000	-36.95	0.202	2.50	Pass
High	Band I (100kHz)	30	1000	190.2102102	-43.43	0.045	0.25	Pass
	Band II (1MHz)	1000	2387	2319.6632000	-38.91	0.129	2.50	Pass
	Band III (1MHz)	2387	2400	2399.7983000	-37.89	0.163	25	Pass
	Band IV (1MHz)	2483.5	2496.5	2483.5065000	-31.20	0.759	25	Pass
	Band V (1MHz)	2496.5	12500	10617.4595000	-37.23	0.189	2.50	Pass

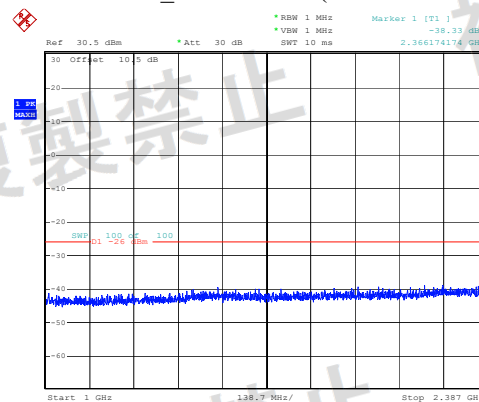
Test Condition: NV

BLE 1M_Low Channel(30MHz~1GHz)



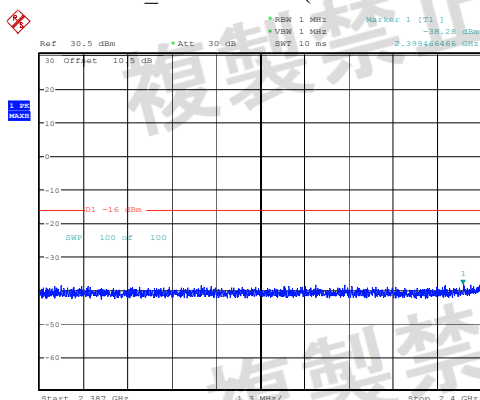
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:41:06

BLE 1M_Low Channel(1GHz~2.387GHz)



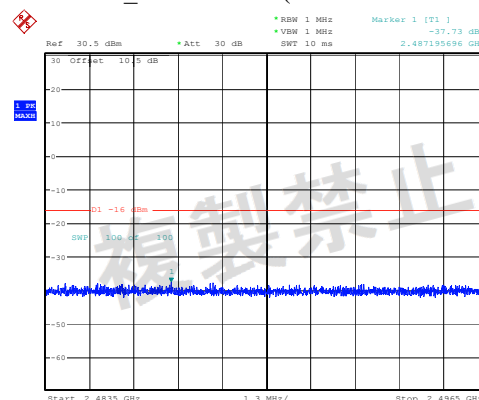
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:41:16

BLE 1M_Low Channel(2.387GHz~2.4GHz)



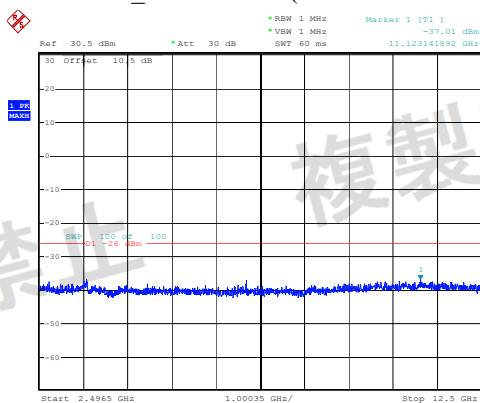
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:41:23

BLE 1M_Low Channel(2.4835GHz~2.4965GHz)



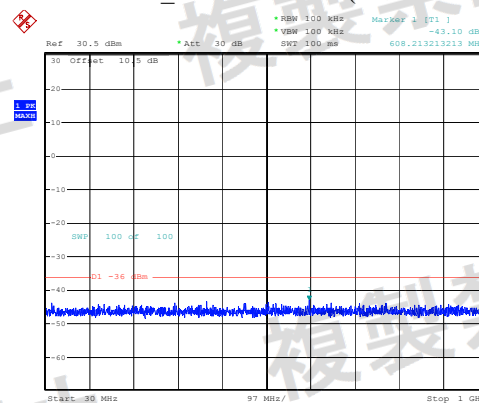
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:41:31

BLE 1M_Low Channel(2.4965GHz~12.5GHz)



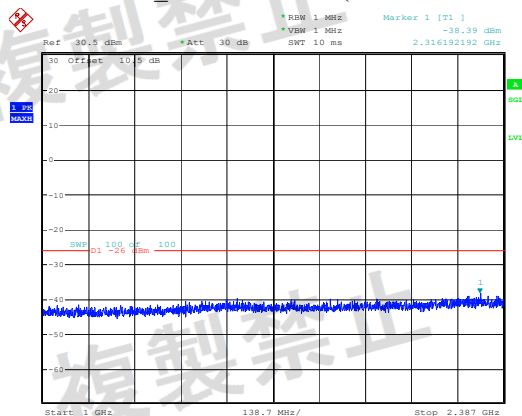
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:41:56

BLE 1M_Middle Channel(30MHz~1GHz)



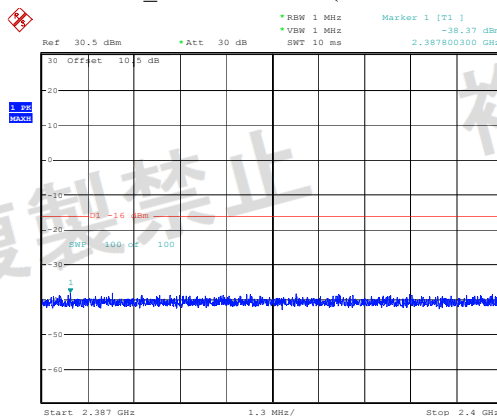
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:42:27

BLE 1M_Middle Channel(1GHz~2.387GHz)



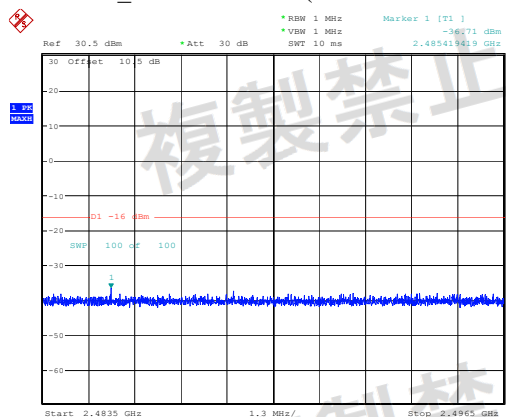
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:42:37

BLE 1M_Middle Channel(2.387GHz~2.4GHz)



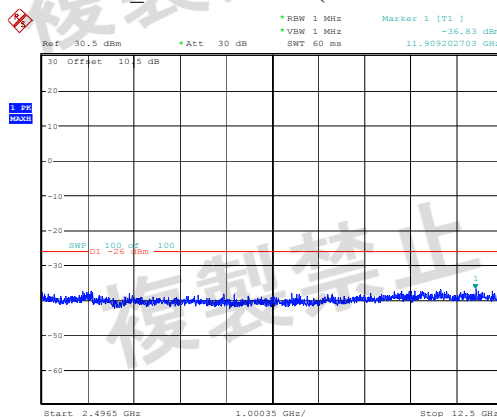
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:42:44

BLE 1M_Middle Channel(2.4835GHz~2.4965GHz)



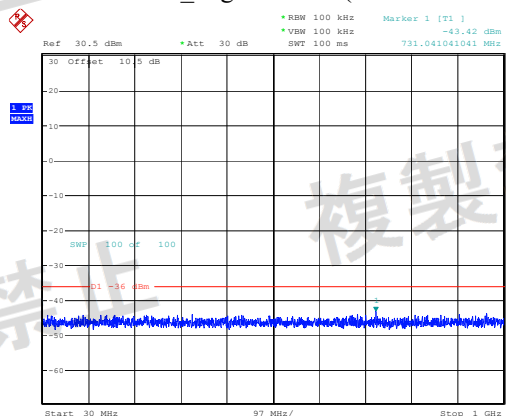
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:42:52

BLE 1M_Middle Channel(2.4965GHz~12.5GHz)



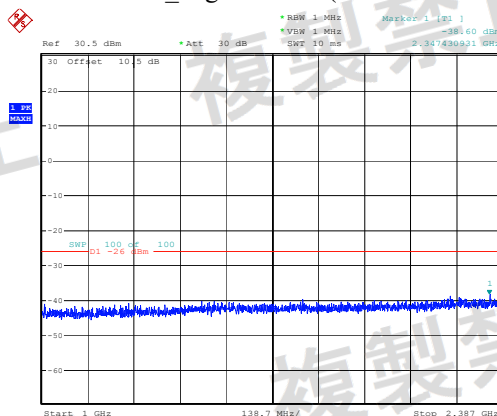
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:43:17

BLE 1M_High Channel(30MHz~1GHz)



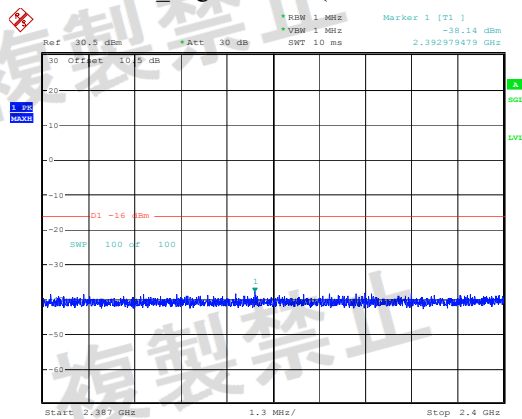
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:46:29

BLE 1M_High Channel(1GHz~2.387GHz)



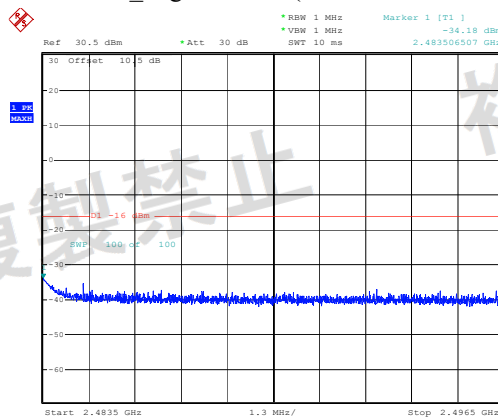
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:46:42

BLE 1M_High Channel(2.387GHz~2.4GHz)



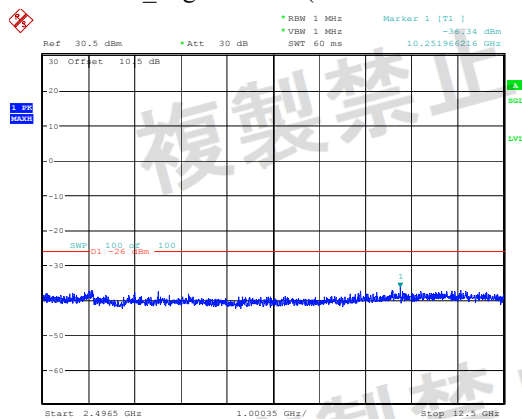
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:46:55

BLE 1M_High Channel(2.4835GHz~2.4965GHz)



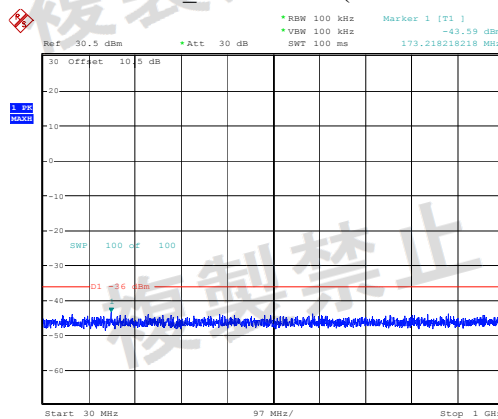
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:47:03

BLE 1M_High Channel(2.4965GHz~12.5GHz)



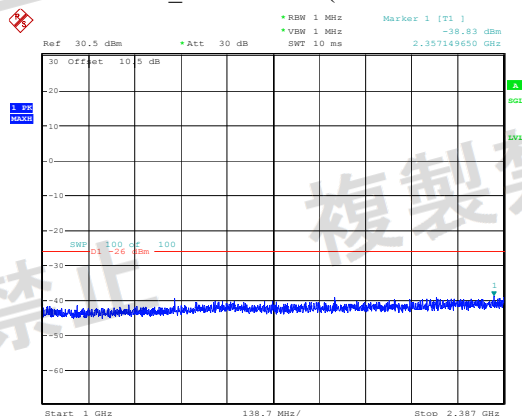
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:47:28

BLE 2M_Low Channel(30MHz~1GHz)



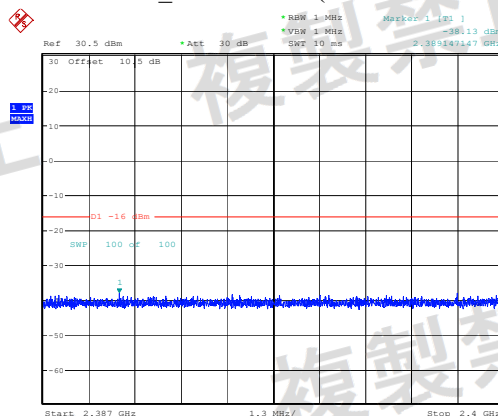
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:48:29

BLE 2M_Low Channel(1GHz~2.387GHz)



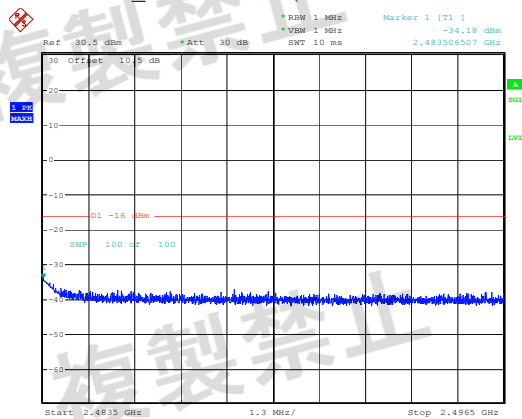
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:48:43

BLE 2M_Low Channel(2.387GHz~2.4GHz)



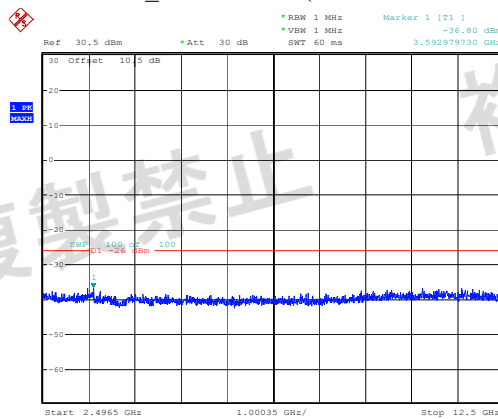
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:48:51

BLE 2M_Low Channel(2.4835GHz~2.4965GHz)



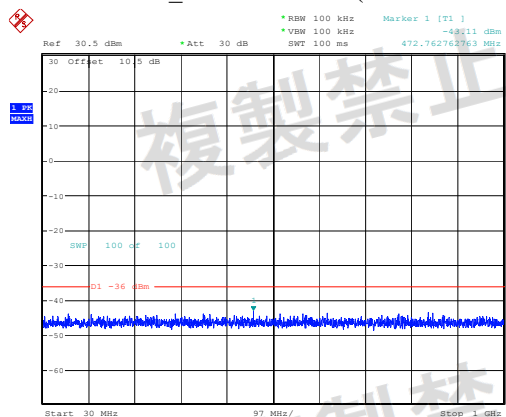
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:48:59

BLE 2M_Low Channel(2.4965GHz~12.5GHz)



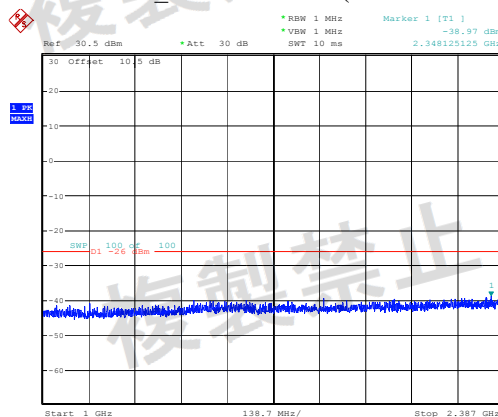
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:49:29

BLE 2M_Middle Channel(30MHz~1GHz)



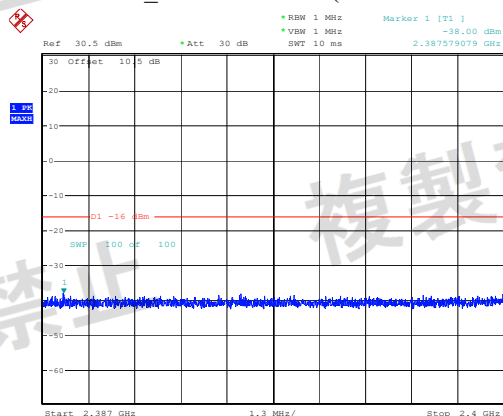
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:49:59

BLE 2M_Middle Channel(1GHz~2.387GHz)



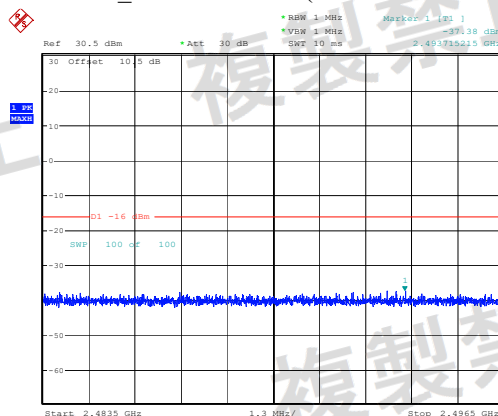
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:50:09

BLE 2M_Middle Channel(2.387GHz~2.4GHz)



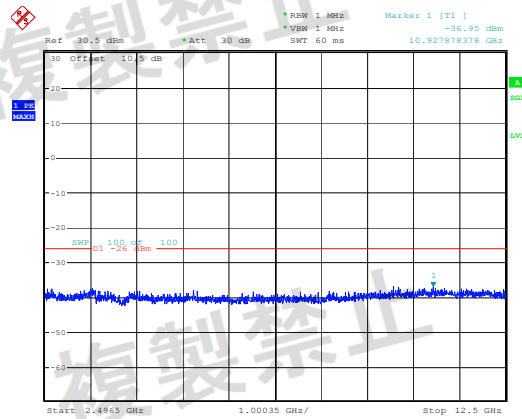
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:50:18

BLE 2M_Middle Channel(2.4835GHz~2.4965GHz)



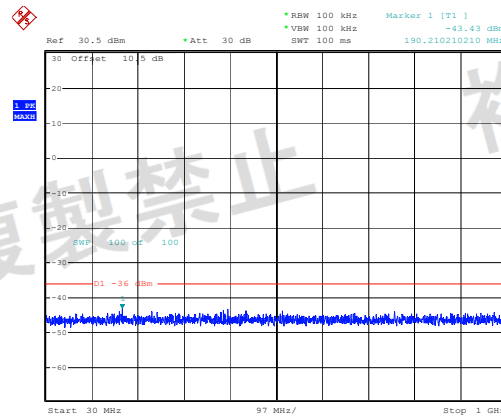
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:50:29

BLE 2M_Middle Channel(2.4965GHz~12.5GHz)



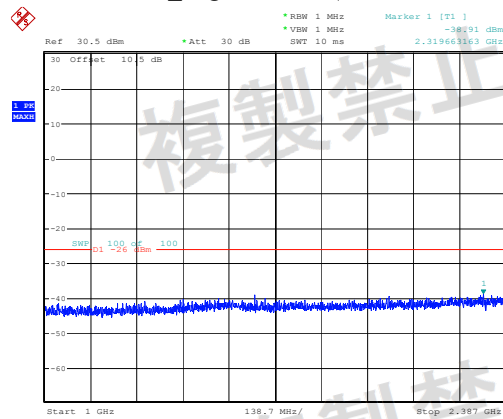
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:50:57

BLE 2M_High Channel(30MHz~1GHz)



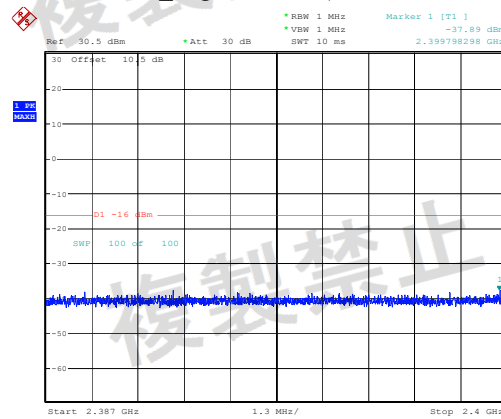
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:51:47

BLE 2M_High Channel(1GHz~2.387GHz)



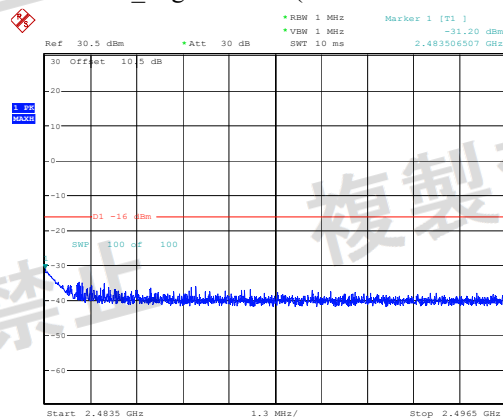
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:51:57

BLE 2M_High Channel(2.387GHz~2.4GHz)



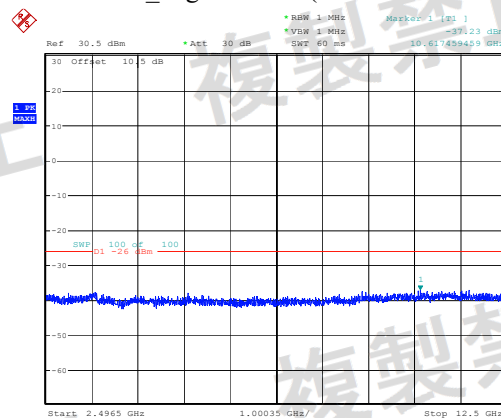
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:52:06

BLE 2M_High Channel(2.4835GHz~2.4965GHz)



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:52:18

BLE 2M_High Channel(2.4965GHz~12.5GHz)



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:52:58

Antenna Output Power and Output Power Tolerance**Test Information:**

Sample No.:	3CBS-1	Test Date:	2025/11/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rainbow Zhu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.2	Relative Humidity: (%)	46	ATM Pressure: (kPa)	101.6
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Test Condition: NV

Mode	Antenna gain (dBi)	Declared power (mW)
BLE 1M	4	4.50
BLE 2M		4.50

Mode	Channel	Conducted power(dBm)	Antenna output power(mW)		Antenna output tolerance(%)		EIRP (dBm)		Verdict
			Result	Limit	Result	Limit	Result	Limit	Verdict
BLE 1M	Low	6.20	4.169	≤ 10	-7.36	-80~+20	10.20	≤ 12.14	Pass
	Middle	6.25	4.217	≤ 10	-6.29	-80~+20	10.25	≤ 12.14	Pass
	High	6.12	4.093	≤ 10	-9.04	-80~+20	10.12	≤ 12.14	Pass
BLE 2M	Low	6.07	4.046	≤ 10	-10.09	-80~+20	10.07	≤ 12.14	Pass
	Middle	6.15	4.121	≤ 10	-8.42	-80~+20	10.15	≤ 12.14	Pass
	High	6.05	4.027	≤ 10	-10.51	-80~+20	10.05	≤ 12.14	Pass

Note:

 $\text{Antenna output power(mW)} = 10^{\{\text{Conducted power(dBm)} / 10\}}$ $\text{Antenna output power tolerance(\%)} = (\text{Antenna output power} - \text{Declared power}) / \text{Declared power} * 100\%$ $\text{EIRP(dBm)} = \text{Conducted power (dBm)} + \text{Antenna gain.}$

Receiver Spurious Emission and Unwanted Emission Intensity

Test Information:

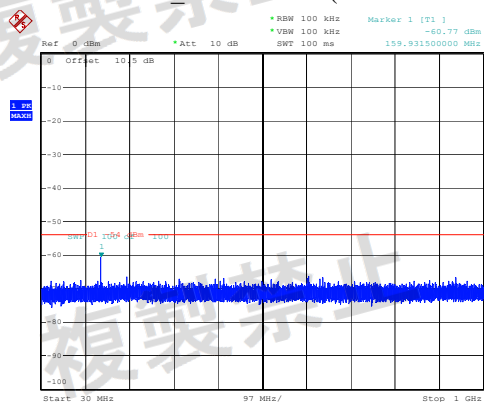
Sample No.:	3CBS-1	Test Date:	2025/11/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rainbow Zhu	Test Result:	Pass

Environmental Conditions:

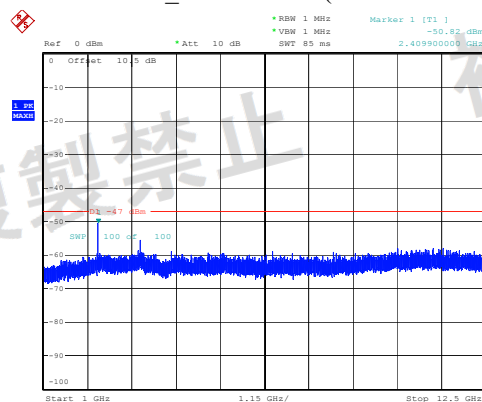
Temperature: (°C)	26.2	Relative Humidity: (%)	45	ATM Pressure: (kPa)	102.0
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Test Condition: NV

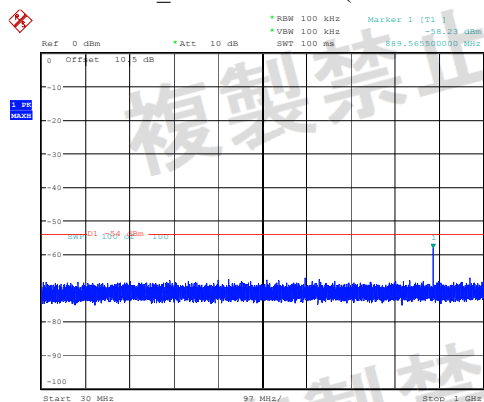
Mode	Channel	Test Band (RBW)	Frequency Range		Max.Emission Located(MHz)	Result (dBm)	Result (nW)	Limit (nW)	Verdict
			Start (MHz)	Stop (MHz)					
BLE 1M	Low	Band I (100kHz)	30	1000	159.9315	-60.77	0.838	4	Pass
		Band II (1MHz)	1000	12500	2409.9	-50.82	8.279	20	Pass
	Middle	Band I (100kHz)	30	1000	889.5655	-58.23	1.503	4	Pass
		Band II (1MHz)	1000	12500	10331.675	-58.12	1.542	20	Pass
	High	Band I (100kHz)	30	1000	598.226	-66.92	0.203	4	Pass
		Band II (1MHz)	1000	12500	5185.425	-53.79	4.178	20	Pass
BLE 2M	Low	Band I (100kHz)	30	1000	856.3915	-67.51	0.177	4	Pass
		Band II (1MHz)	1000	12500	2414.5	-58.03	1.574	20	Pass
	Middle	Band I (100kHz)	30	1000	641.3425	-67.23	0.189	4	Pass
		Band II (1MHz)	1000	12500	2415.075	-56.89	2.046	20	Pass
	High	Band I (100kHz)	30	1000	391.9555	-67.58	0.175	4	Pass
		Band II (1MHz)	1000	12500	9453.65	-57.76	1.675	20	Pass

Test Condition: NV**BLE 1M_Low Channel(30MHz~1GHz)**

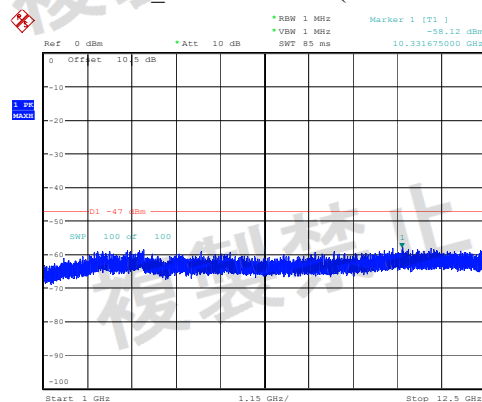
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:55:16

BLE 1M_Low Channel(1GHz~12.5GHz)

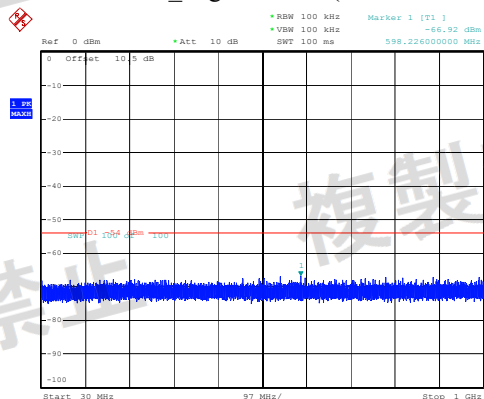
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:58:00

BLE 1M_Middle Channel(30MHz~1GHz)

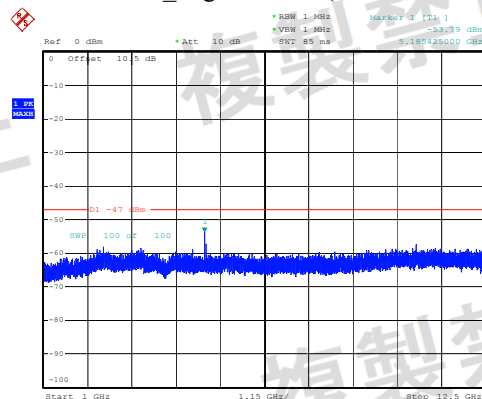
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 14:59:04

BLE 1M_Middle Channel(1GHz~12.5GHz)

ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:01:47

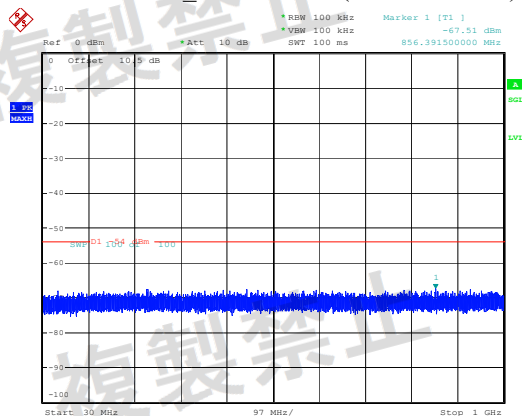
BLE 1M_High Channel(30MHz~1GHz)

ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:02:11

BLE 1M_High Channel(1GHz~12.5GHz)

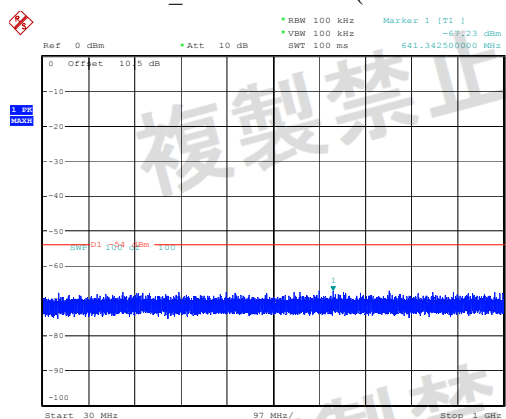
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:02:43

BLE 2M_Low Channel(30MHz~1GHz)



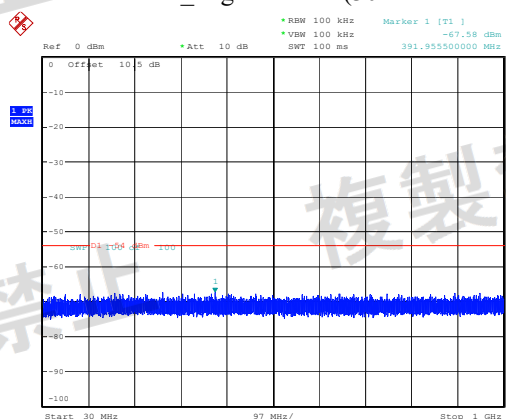
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:03:13

BLE 2M_Middle Channel(30MHz~1GHz)



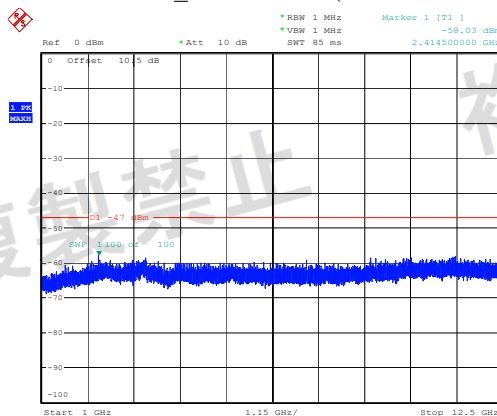
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:04:10

BLE 2M_High Channel(30MHz~1GHz)



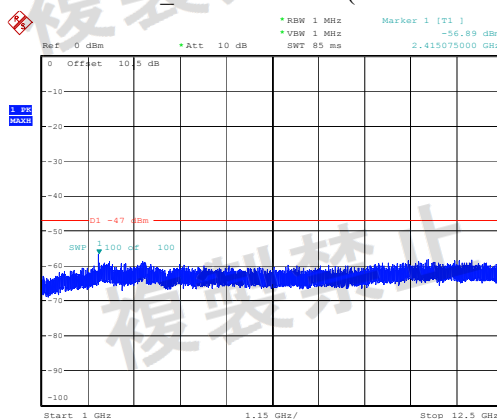
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:10:35

BLE 2M_Low Channel(1GHz~12.5GHz)



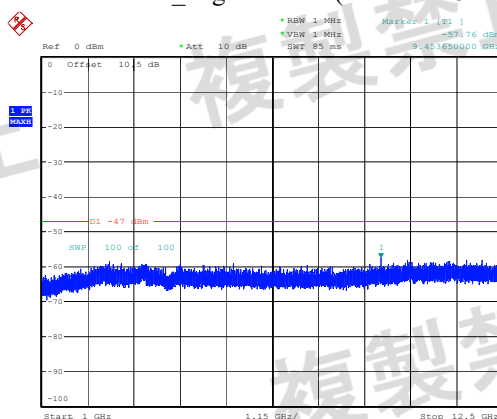
ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:03:45

BLE 2M_Middle Channel(1GHz~12.5GHz)



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:06:01

BLE 2M_High Channel(1GHz~12.5GHz)



ProjectNo.:2501Z13203E-RF Tester:Rainbow Zhu
Date: 21.NOV.2025 15:17:22

Interference Prevention Function**Test Information:**

Sample No.:	3CBS-1	Test Date:	2025/11/21
Test Site:	RF	Test Mode:	Communicating
Tester:	Rainbow Zhu	Test Result:	Good

Environmental Conditions:

Temperature: (°C)	26.2	Relative Humidity: (%)	45	ATM Pressure: (kPa)	102.0
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CONSTRUCTION PROTECTION CONFIRMATION

Limit

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

Confirmation Result

The EUT will ultimately be installed on the host and not easily opened, meeting the requirements of Construction protection.

EUT PHOTOGRAPHS

Please refer to the attachment 2501Z13203E-RF-EXP External photo and 2501Z13203E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501Z13203E-RF-TSPA Test Setup photo.

****END OF REPORT****