

MIC REPORT

Test Report No..... :	TCT251205E018	
Date of issue..... :	Dec. 16, 2025	
Testing laboratory	Shenzhen TCT Testing Technology Co., Ltd.	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China	
Applicant's name..... :	YELL CO., LTD	
Address..... :	6F, Suite Shin-Okachimachi Bldg., 4-24-8, Taito, Taito-ku, Tokyo, Japan 110-0016	
Manufacturer's name ... :	Cool Ear (Dongguan) Tech Co., Ltd	
Address..... :	No. 3, Zhenlong East Road, Tangxia Town, Dongguan City, Guangdong Province, P.R.China	
Standard(s)	Article 2, Paragraph1, item 19 MIC Notice No.88 Appendix No.43	
Product Name..... :	TWS earphone	
Trade Mark	N/A	
Model/Type reference..... :	GACHAMUKKU	
Rating(s)..... :	Rechargeable Li-ion Battery DC 3.7V	
Date of receipt of test item	Dec. 05, 2025	
Date (s) of performance of test..... :	Dec. 05, 2025 ~ Dec. 16, 2025	
Tested by (+signature) ... :	Ronaldo LUO	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

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1. General Product Information

1.1. EUT description

Product Name.....:	TWS earphone
Model/Type reference.....:	GACHAMUKKU
Hardware Version	V4.3
Software Version	S414
BT Version	V5.4
Operation Frequency	2402MHz~2480MHz
Transfer Rate	1/2/3 Mbits/s
Number of Channel	79
Modulation Type.....:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Modulation Technology	FHSS
Antenna Type.....:	PCB Antenna
Antenna Gain.....:	-1.2dBi
Rating(s).....:	Rechargeable Li-ion Battery DC 3.7V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

1.3. Operation Frequency

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
...	...	...	...	...	...	...	...
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
...	...	...	...	...	...	...	...
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz	-	

Remark: Channel 0, 39 & 78 have been tested for GFSK, $\pi/4$ -DQPSK, 8DPSK modulation mode.

2. Test Result Summary

Requirement	Appendix No.43	Result
Frequency Deviation	Section 3	PASS
Occupied frequency bandwidth and Spread bandwidth	Section 4	PASS
Secondary emission of radio wave	Section 7	PASS
Antenna power and deviation	Section 6	PASS
Spurious radiation or extraneous emission strength	Section 5	PASS
Transmitting antenna absolute gain	Section 8	N/A
Main lobe width of transmitting antenna	Section 9	N/A
Interference suppression function	Section 10	PASS
Hopping frequency residence time	Section 11	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

3. General Information

3.1. Test environment and mode

Operating Environment:			
Temperature:	25.0 °C		
Humidity:	54 % RH		
Atmospheric Pressure:	1010 mbar		
Voltage			
	Input voltage (V)	voltage (V)	Percent (%)
Normal	3.7	3.3	
+10%	4.07	3.3	0
-10%	3.33	3.3	0
Note: When the input voltage is reduced or increased by 10%, the regulator voltage changes is less than 1%. So the following test items are conducted in the normal voltage.			
Test Mode:			
Operation mode:	1) Keep the EUT in continuous transmitting by select channel and modulations; 2) Keep the EUT in continuous receiver mode by each modulation.		

3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3.3. Test Instruments List

Conducted Emission						
Name	Model No.	Serial Number	Manufacturer	Date of Cal.	Due Date	Calibrated by
Spectrum Analyzer	N9020A	MY49100619	Agilent	Jun. 26, 2025	Jun. 25, 2026	LiSai
Filter box	MW100-PSB	MW210530TCT-19	MWRFTest	/	/	/
Power detector box	MW100-RFCB	MW210531TCT	MWRFTest	Jan. 21, 2025	Jan. 20, 2026	LiSai
Programable tempratuce and humidity chamber	JQ-2000	510101234	JQ	Jun. 26, 2025	Jun. 25, 2026	LiSai
DC Power Supply	KR3005K	2203D0300864	Kingrang	Jun. 26, 2025	Jun. 25, 2026	LiSai
Attenuator	VAT-10W2	2051	MCL	Jun. 26, 2025	Jun. 25, 2026	LiSai

Remark:

Measuring Equipment Calibration Information		
Used	Calibration Company Abbreviation	Full Name of calibration company
☒	LiSai	Guangzhou LiSai Metrology & Test Co., Ltd.
Calibration Information (Article 24-2, Paragraph 4 of the Radio Act)		
☐	(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio Act	
☐	(b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act	
☒	(c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 of the Radio Act	
☐	(d) Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a) through (c) above	

4. Test Facilities

Shenzhen TCT Testing Technology Co., Ltd.

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict,
Bao'an District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

5. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	RF power, conducted	$\pm 0.12\text{dB}$
2	Spurious emissions, conducted	$\pm 0.11\text{dB}$
3	Temperature	$\pm 0.1^{\circ}\text{C}$
4	Humidity	$\pm 1.0\%$

6. Test Results and Measurement Data

6.1. Frequency Deviation

6.1.1. Test Specification

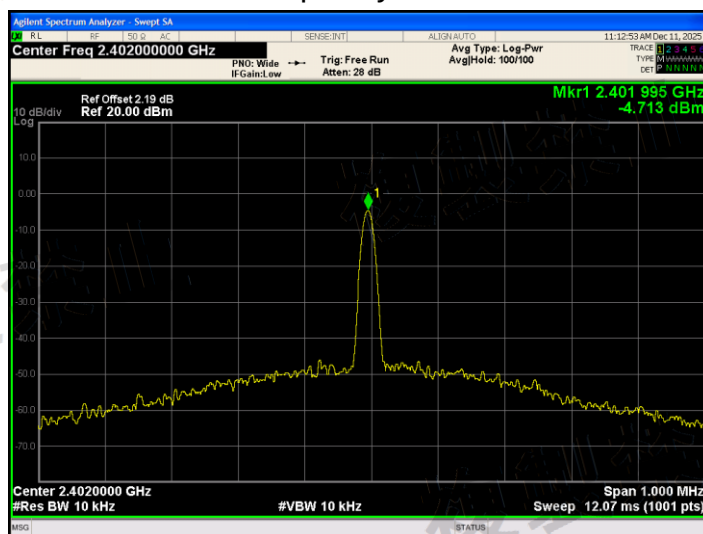
Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 3
Limits:	±50 ppm
Test Setup:	 The diagram illustrates the test setup. On the left is a green rectangular box labeled 'Spectrum Analyzer'. A black line representing a cable connects it to a yellow rectangular box on the right labeled 'EUT' (Equipment Under Test).
Test Procedure:	1. Frequency accuracy of SA shall be less than 10% of limits tolerance (5ppm) 2. Setting of SA is following as: RBW:10 kHz / VBW:10 kHz 3. Center Frequency: The center frequency of testing for EUT 4. Sweep time: Auto 5. Sweep mode: Continuous sweep 6. Detect mode: Positive peak 7. EUT have transmitted absence of modulation signal and fixed channelize. f is using the mark cursor to mark the peak frequency value, fc is declaring of channel frequency. Then the frequency error formula is $(f-f_c)/f_c \times 10^6$ ppm and the limit is less than ± 50 ppm.
Test Result:	PASS

6.1.2. Test Data

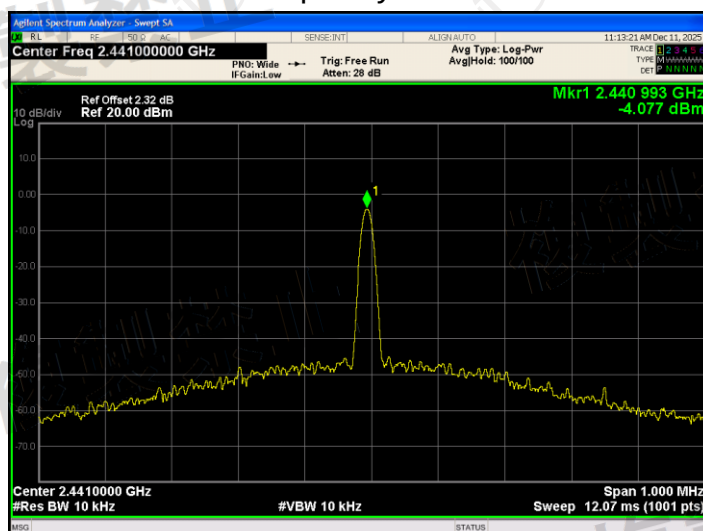
Test conditions		Low	Middle	High	Limit	Result
Volt.(dc)	Temp.					
3.7V	25°C	2401.995 MHz	2440.993 MHz	2479.993 MHz	±50 ppm	PASS
		-2.08ppm	-2.87ppm	-2.82ppm		

Test plots as follows:

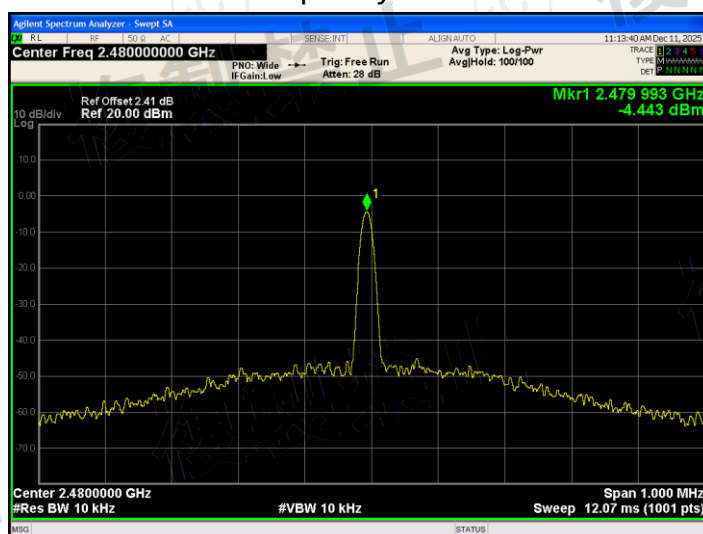
Test Frequency: 2402MHz



Test Frequency: 2441MHz



Test Frequency: 2480MHz



6.2. Occupied frequency bandwidth and Spread bandwidth

6.2.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 4
Limit:	83.5 MHz for Occupied frequency bandwidth
Test Setup:	 Spectrum Analyzer EUT
Test Procedure:	1. Setting of SA is following as: RBW:1000 kHz / VBW: 1000 kHz / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold 2. EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device). 3. SA set to 99% of occupied bandwidth to measure occupied bandwidth. SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth.
Test Result:	PASS

6.2.2. Test Data

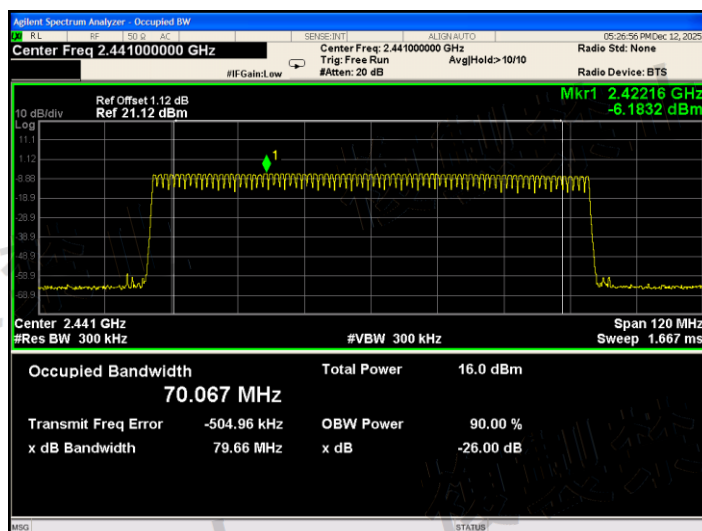
Occupied Frequency Bandwidth					
Test Condition		Modulation Type	Result (MHz)	Limit (MHz)	Result
Volt.(dc)	Temp.				
3.7V	25°C	GFSK	78.64	≤ 83.5	PASS
3.7V	25°C	Pi/4DQPSK	78.75		PASS
3.7V	25°C	8DPSK	78.68		PASS

Spread Bandwidth			
Test Condition		Modulation Type	Result (MHz)
Volt.(dc)	Temp.		
3.7V	25°C	GFSK	70.07
3.7V	25°C	Pi/4DQPSK	70.45
3.7V	25°C	8DPSK	70.33

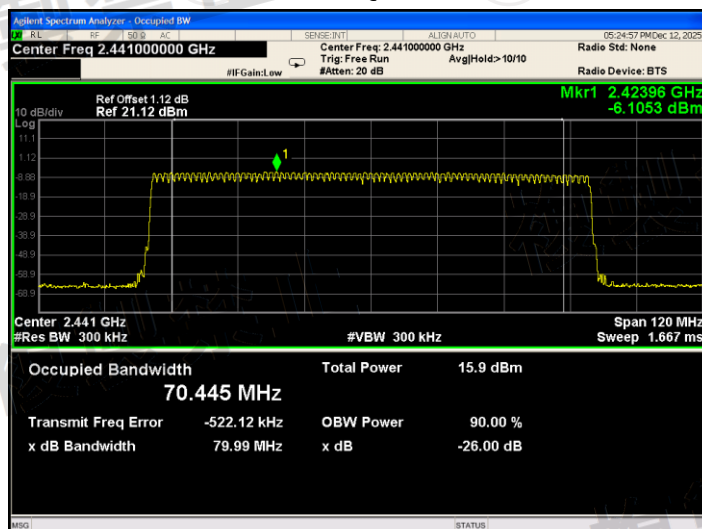
Test plots as follows:

Spread Bandwidth:

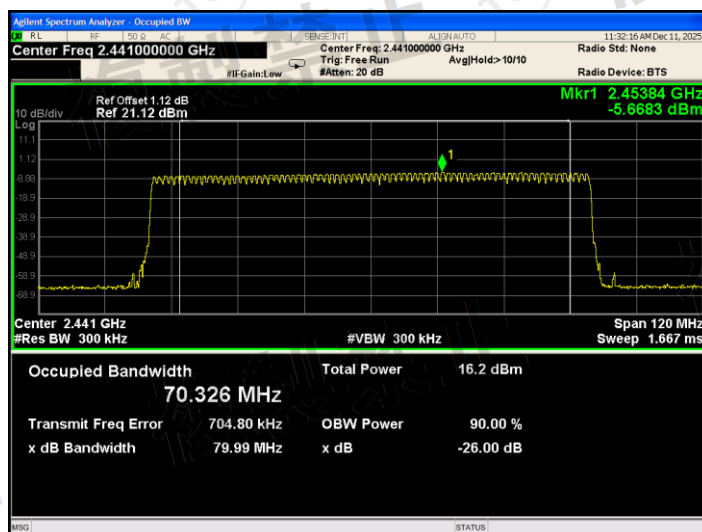
GFSK



Pi/4DQPSK

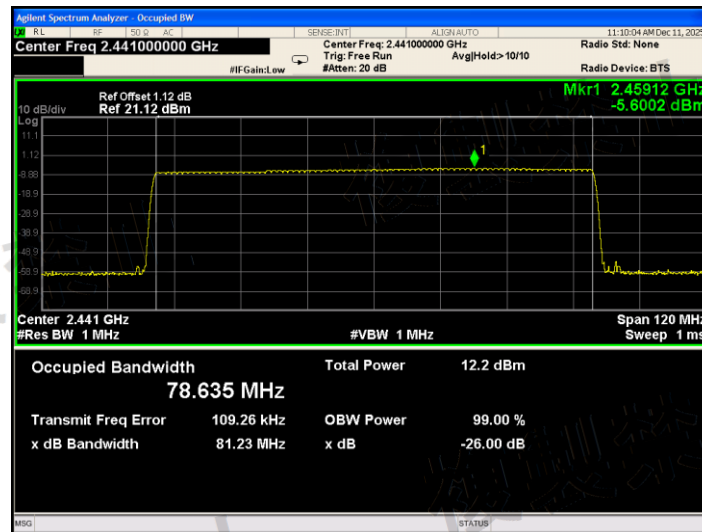


8DPSK

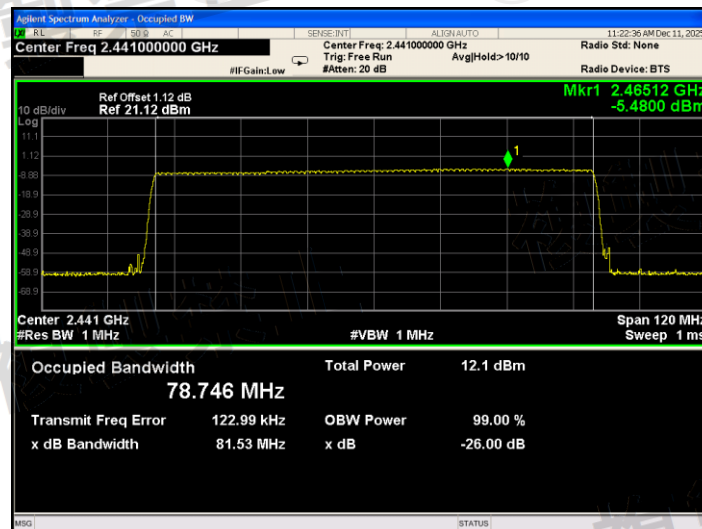


Occupied Bandwidth:

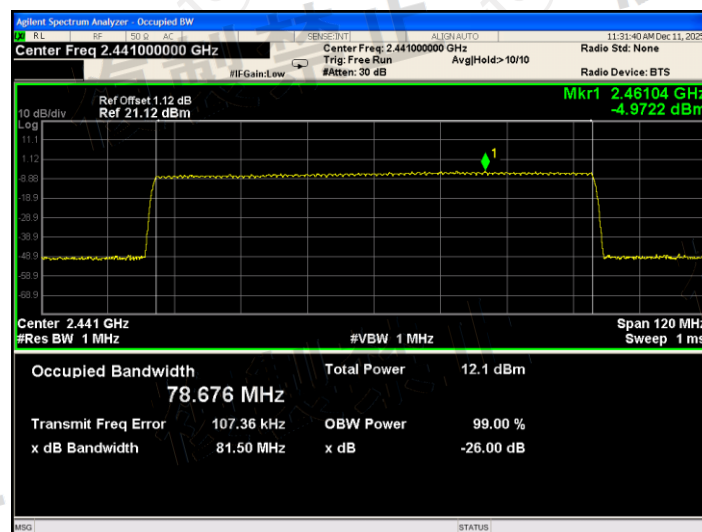
GFSK



Pi/4DQPSK



8DPSK



6.3. Secondary emission of radio wave

6.3.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 7
Limit:	4 nW for below 1 GHz, 20 nW for above 1 GHz
Test Setup:	 Spectrum Analyzer EUT
Test Procedure:	1. EUT have the continuous reception mode and fixed only one channelize. 2. Setting of SA is following as RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
Test Result:	PASS

6.3.2. Test data

GFSK

Test conditions		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Read Level (nW)	Limit (nW)	Result
Volt.(dc)	Temp.						
3.7V	25°C	30-1000	787.57	-89.76	0.001	4	PASS
		1000-13000	2464.00	-70.03	0.099	20	

Pi/4DQPSK

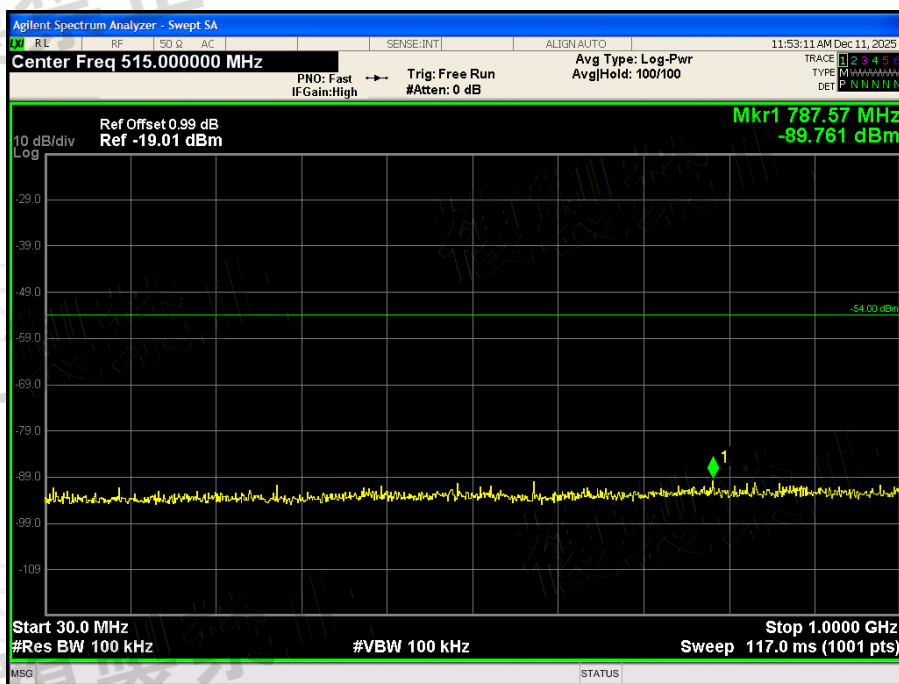
Test conditions		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Read Level (nW)	Limit (nW)	Result
Volt.(dc)	Temp.						
3.7V	25°C	30-1000	940.83	-90.32	0.001	4	PASS
		1000-13000	2608.00	-71.17	0.076	20	

8DPSK

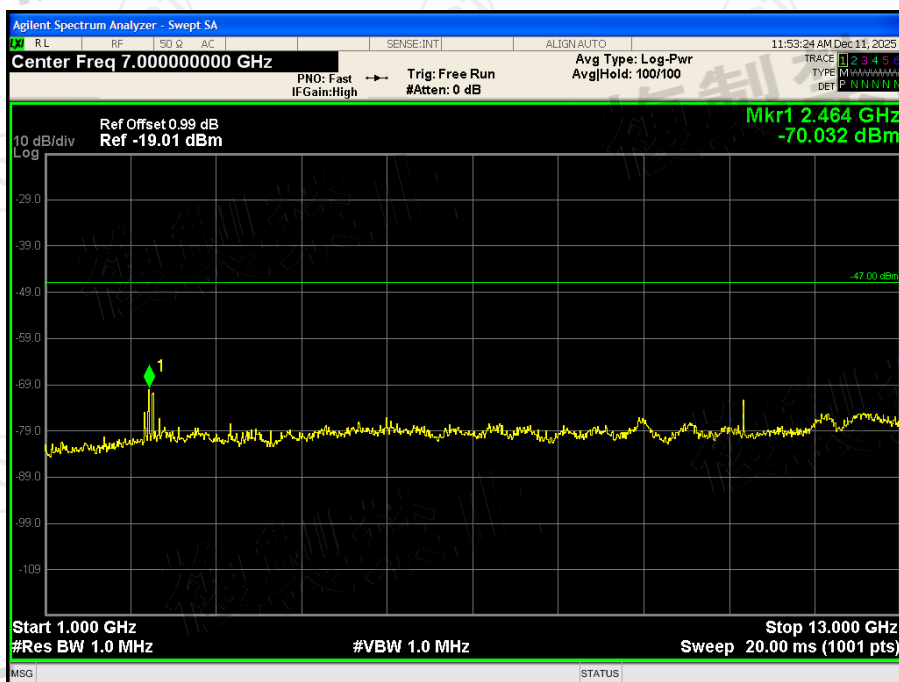
Test conditions		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Read Level (nW)	Limit (nW)	Result
Volt.(dc)	Temp.						
3.7V	25°C	30-1000	648.86	-90.65	0.001	4	PASS
		1000-13000	2464.00	-70.17	0.096	20	

Test plots as follows:

GFSK

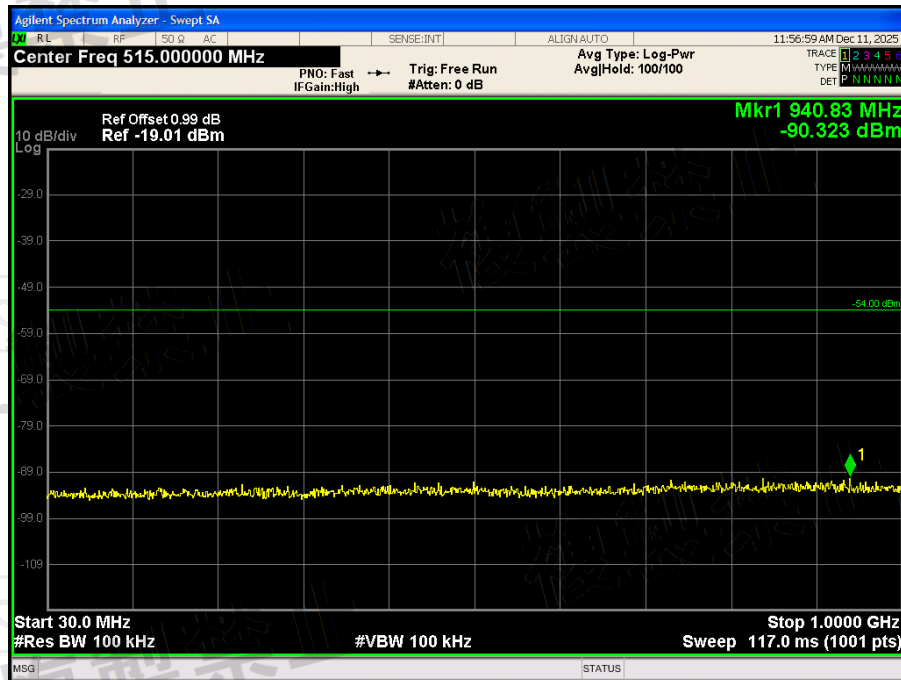


30MHz~1GHz

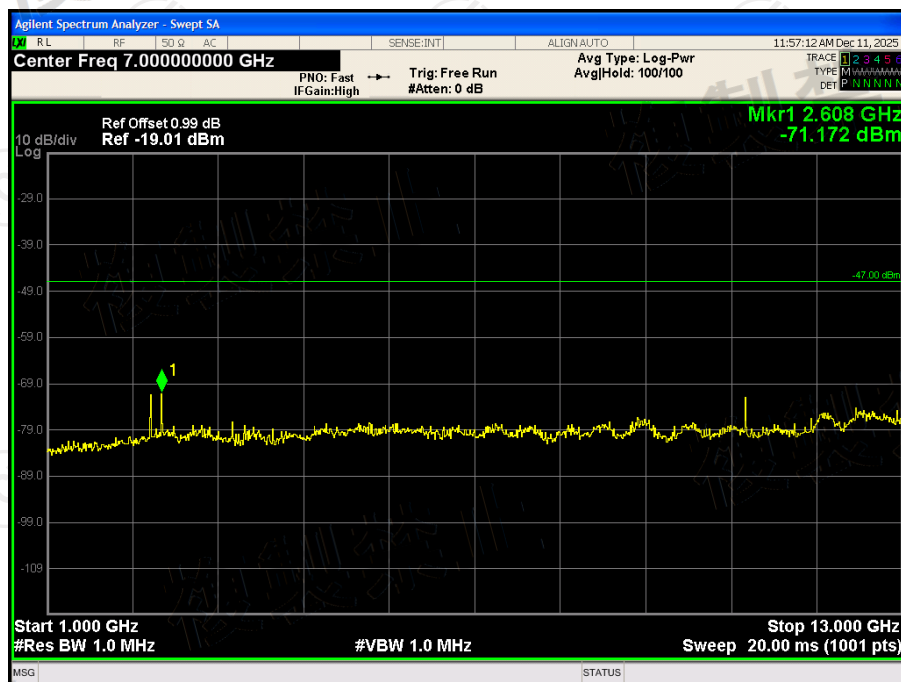


1GHz~13GHz

Pi/4DQPSK

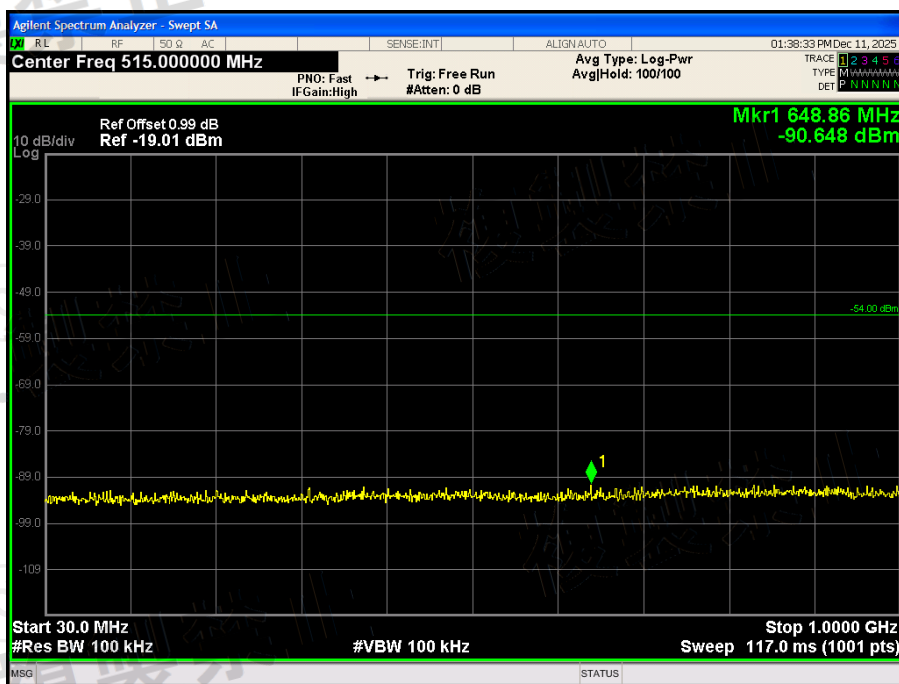


30MHz~1GHz

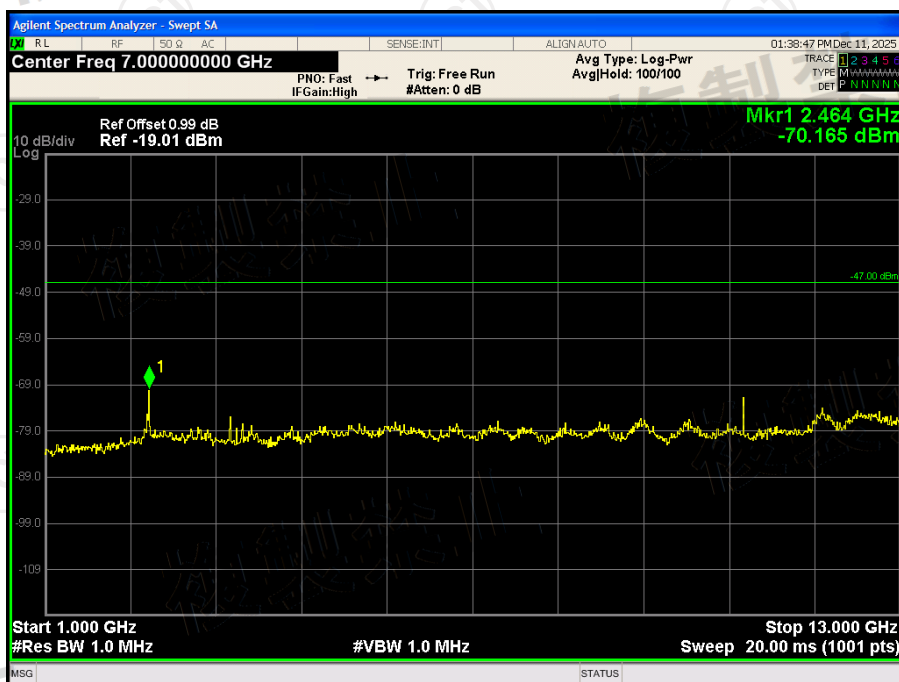


1GHz~13GHz

8DPSK



30MHz~1GHz



1GHz~13GHz

6.4. Antenna power and deviation

6.4.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 6
Limit:	Antenna Power: 3mW/MHz Deviation: + 20% EIRP Limit: 6.91dBm/MHz
Test Setup:	 Spectrum Analyzer EUT
Test Procedure:	- Setting of SA is following as: RBW:1000 kHz / VBW: 1000 kHz / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold - EUT have transmitted the maximum modulation signal and fixed channel (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device) - When the trace is complete, find the peak value of the power envelope and calculate the antenna power - Calculated the Maximum deviation and recorded the results.
Test Result:	PASS

6.4.2. Test data

Test Condition		mode	Measured Power (dBm)	Antenna Power (mW/MHz)	Limit (mW/MHz)	Rated Power (mW/MHz)	Maximum Tolerance (%)	Limit (%)	Result
Volt. (dc)	Temp.								
3.7V	25°C	GFSK	-12.38	0.001	3	0.002	-50	20	PASS

The Rated Power is 0.001mW/MHz, which declared by manufacturer.
 Antenna Power = Measured Power / Spread bandwidth
 Where spreading bandwidth for 3.7V = 70.21MHz
 Maximum Tolerance = (Antenna Power - Rated Power)/Rated power * 100%

Test Condition		mode	Measured Power (dBm)	Antenna Power (mW/MHz)	Limit (mW/MHz)	Rated Power (mW/MHz)	Maximum Tolerance (%)	Limit (%)	Result
Volt. (dc)	Temp.								
3.7V	25°C	Pi/4DQPSK	-12.50	0.001	3	0.002	-50	20	PASS

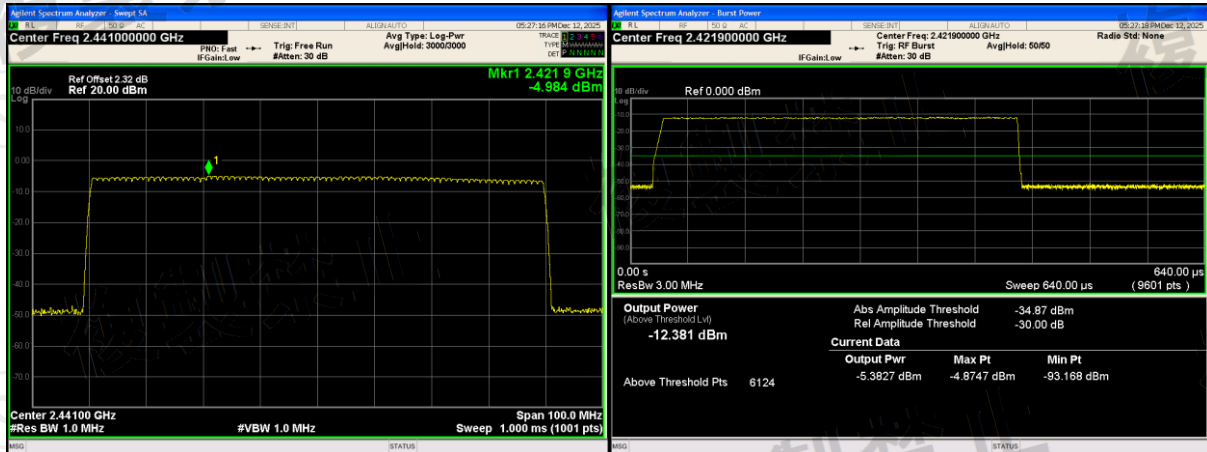
The Rated Power is 0.001mW/MHz, which declared by manufacturer.
 Antenna Power = Measured Power / Spread bandwidth
 Where spreading bandwidth for 3.7V = 70.70MHz
 Maximum Tolerance = (Antenna Power - Rated Power)/Rated power * 100%

Test Condition		mode	Measured Power (dBm)	Antenna Power (mW/MHz)	Limit (mW/MHz)	Rated Power (mW/MHz)	Maximum Tolerance (%)	Limit (%)	Result
Volt. (dc)	Temp.								
3.7V	25°C	8DPSK	-12.89	0.001	3	0.002	-50	20	PASS

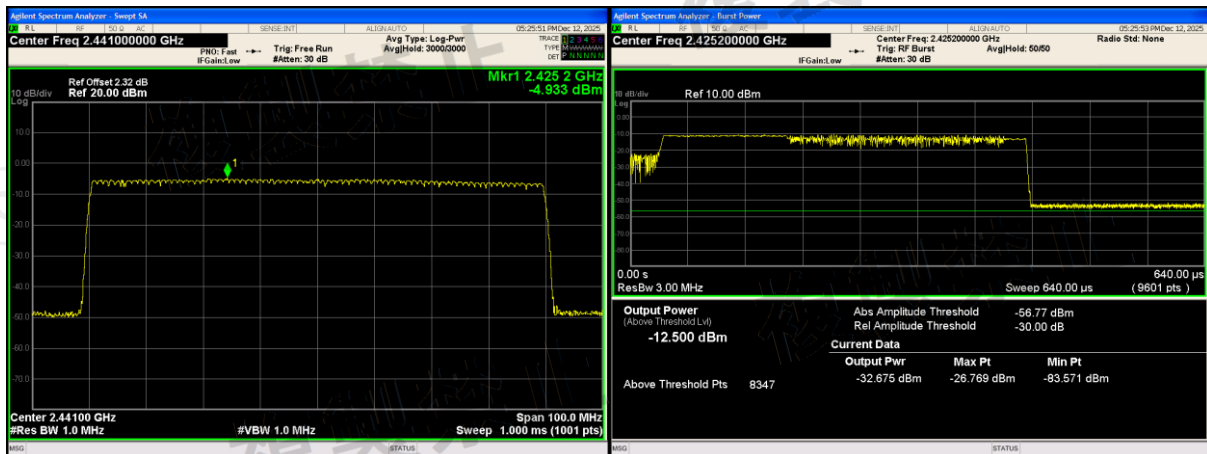
The Rated Power is 0.001mW/MHz, which declared by manufacturer.
 Antenna Power = Measured Power / Spread bandwidth
 Where spreading bandwidth for 3.7V = 70.33MHz
 Maximum Tolerance = (Antenna Power - Rated Power)/Rated power * 100%

Test plots as follows:

GFSK



Pi/4DQPSK



8DPSK



EIRP Power

Test Condition		mode	Antenna Power (dBm/MHz)	EIRP (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
Volt. (dc)	Temp.					
3.7V	25°C	GFSK	-30.00	-30.00	6.91	PASS

Antenna Power = Measured Power / Spread bandwidth

HPBA=360°, When the absolute gain of the transmitting antenna of the radio equipment is less than 2.14dBi, effective radiation power (measured value) is to be the antenna power.

Test Condition		mode	Antenna Power (dBm/MHz)	EIRP (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
Volt. (dc)	Temp.					
3.7V	25°C	PI/4DQPSK	-30.00	-30.00	6.91	PASS

Antenna Power = Measured Power / Spread bandwidth

HPBA=360°, When the absolute gain of the transmitting antenna of the radio equipment is less than 2.14dBi, effective radiation power (measured value) is to be the antenna power.

Test Condition		mode	Antenna Power (dBm/MHz)	EIRP (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
Volt. (dc)	Temp.					
3.7V	25°C	8DPSK	-30.00	-30.00	6.91	PASS

Antenna Power = Measured Power / Spread bandwidth

HPBA=360°, When the absolute gain of the transmitting antenna of the radio equipment is less than 2.14dBi, effective radiation power (measured value) is to be the antenna power.

6.5. Spurious Radiation Or Extraneous Emission Strength

6.5.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 5
Limit:	30~1000MHz: 2.5 μ W/MHz (-26dBm) 1000~2387MHz: 2.5 μ W/MHz (-26dBm) 2387~ 2400MHz: 25 μ W/MHz (-16dBm) 2483.5 ~ 2496.5MHz: 25 μ W/MHz (-16dBm) Over 2496.5MHz: 2.5 μ W/MHz (-26dBm)
Test Setup:	 Spectrum Analyzer EUT
Test Procedure:	1. EUT have transmitted the maximum modulation signal and fixed channelize. 2. Setting of SA is following as: RBW: 1MHz / VBW: 1MHz/ Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold. EUT have transmitted the maximum modulation signal and fixed channel (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device)
Test Result:	PASS

6.5.2. Test Data

GFSK

Lowest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	921.43	-68.47	10	-58.47	0.001	2.5	PASS
		1000-2387	2080.50	-58.25	/	-58.25	0.001	2.5	
		2387-2400	2399.97	-44.24	/	-44.24	0.038	25	
		2483.5-2496.5	2492.31	-58.90	/	-58.90	0.001	25	
		2496.5-13000	4807.00	-41.85	/	-41.85	0.065	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Middle

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	854.50	-68.52	10	-58.52	0.001	2.5	PASS
		1000-2387	2223.30	-58.34	/	-58.34	0.001	2.5	
		2387-2400	2399.42	-59.34	/	-59.34	0.001	25	
		2483.5-2496.5	2495.77	-58.29	/	-58.29	0.001	25	
		2496.5-13000	4881.00	-43.46	/	-43.46	0.045	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Highest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	870.99	-68.17	10	-58.17	0.002	2.5	PASS
		1000-2387	2341.20	-58.41	/	-58.41	0.001	2.5	
		2387-2400	2389.26	-58.53	/	-58.53	0.001	25	
		2483.5-2496.5	2484.74	-52.41	/	-52.41	0.006	25	
		2496.5-13000	4965.00	-44.48	/	-44.48	0.036	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Pi/4DQPSK

Lowest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	883.60	-68.07	10	-58.07	0.002	2.5	PASS
		1000-2387	2158.10	-58.31	/	-58.31	0.001	2.5	
		2387-2400	2399.99	-40.47	/	-40.47	0.090	25	
		2483.5-2496.5	2496.02	-57.97	/	-57.97	0.002	25	
		2496.5-13000	2612.00	-39.17	/	-39.17	0.121	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Middle

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	848.68	-67.99	10	-57.99	0.002	2.5	PASS
		1000-2387	2334.30	-58.34	/	-58.34	0.001	2.5	
		2387-2400	2391.19	-58.93	/	-58.93	0.001	25	
		2483.5-2496.5	2493.19	-58.61	/	-58.61	0.001	25	
		2496.5-13000	2517.51	-36.55	/	-36.55	0.221	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Highest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	823.46	-67.69	10	-57.69	0.002	2.5	PASS
		1000-2387	1957.00	-59.09	/	-59.09	0.001	2.5	
		2387-2400	2392.97	-58.73	/	-58.73	0.001	25	
		2483.5-2496.5	2483.58	-47.62	/	-47.62	0.017	25	
		2496.5-13000	2518.00	-31.57	/	-31.57	0.697	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

8DPSK

Lowest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	881.66	-68.44	10	-58.44	0.001	2.5	PASS
		1000-2387	2331.50	-58.56	/	-58.56	0.001	2.5	
		2387-2400	2399.99	-41.14	/	-41.14	0.077	25	
		2483.5-2496.5	2484.76	-59.04	/	-59.04	0.001	25	
		2496.5-13000	4807.00	-42.18	/	-42.18	0.061	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth/RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Middle

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	851.59	-68.14	10	-58.14	0.002	2.5	PASS
		1000-2387	2366.20	-58.66	/	-58.66	0.001	2.5	
		2387-2400	2396.54	-58.65	/	-58.65	0.001	25	
		2483.5-2496.5	2490.23	-58.54	/	-58.54	0.001	25	
		2496.5-13000	4881.00	-43.21	/	-43.21	0.048	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth/RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Highest

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	870.02	-67.58	10	-57.58	0.002	2.5	PASS
		1000-2387	2337.10	-57.64	/	-57.64	0.002	2.5	
		2387-2400	2392.21	-59.23	/	-59.23	0.001	25	
		2483.5-2496.5	2483.50	-47.14	/	-47.14	0.019	25	
		2496.5-13000	2612.00	-38.98	/	-38.98	0.126	2.5	

Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth/RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

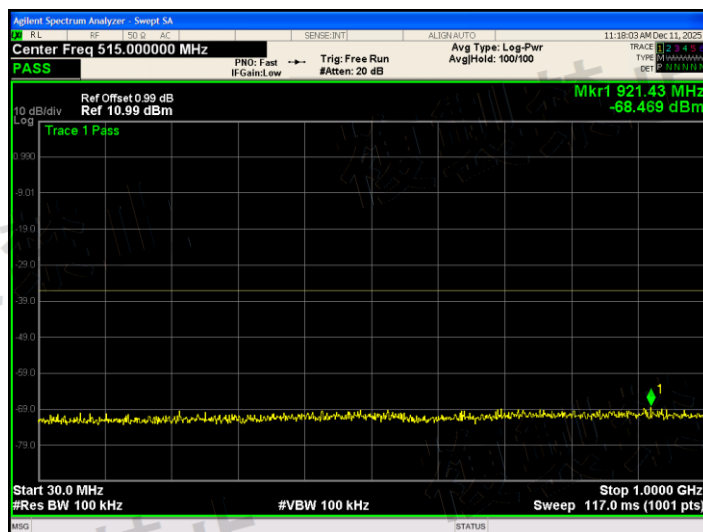
Hopping

Test Condition		Frequency Range (MHz)	Record Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt.(dc)	Temp.								
3.7V	25°C	30-1000	884.57	-68.04	10	-58.04	0.002	2.5	PASS
		1000-2387	2141.50	-58.62	/	-58.62	0.001	2.5	
		2387-2400	2399.82	-46.70	/	-46.70	0.021	25	
		2483.5-2496.5	2484.63	-56.81	/	-56.81	0.002	25	
		2496.5-13000	4828.28	-43.00	/	-43.00	0.050	2.5	

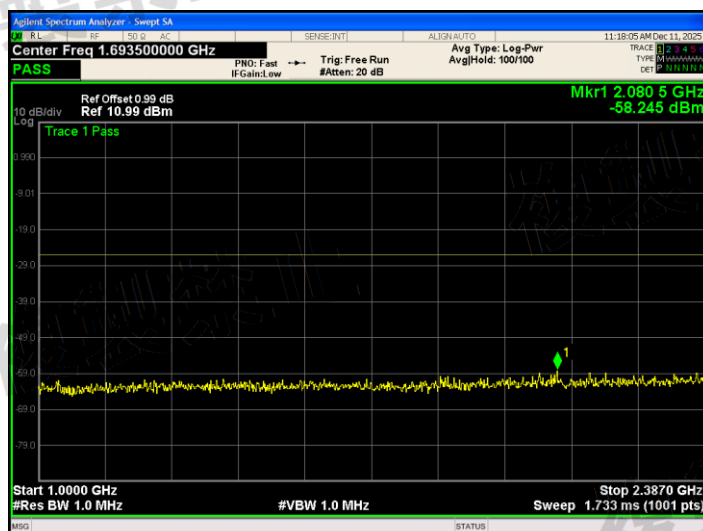
Compensate 10dB is for Exchange rate of RBW, Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth/RBW at measurement}) = 10[\text{dB}]$, where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

Test plots as follows:

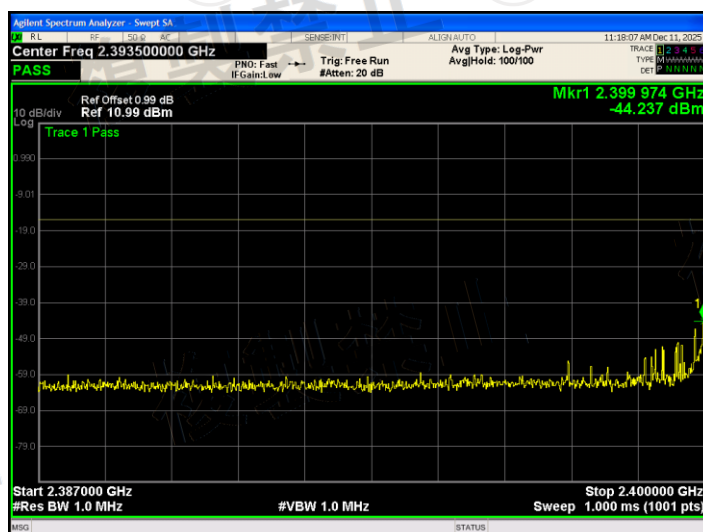
Lowest channel
30MHz~1000MHz



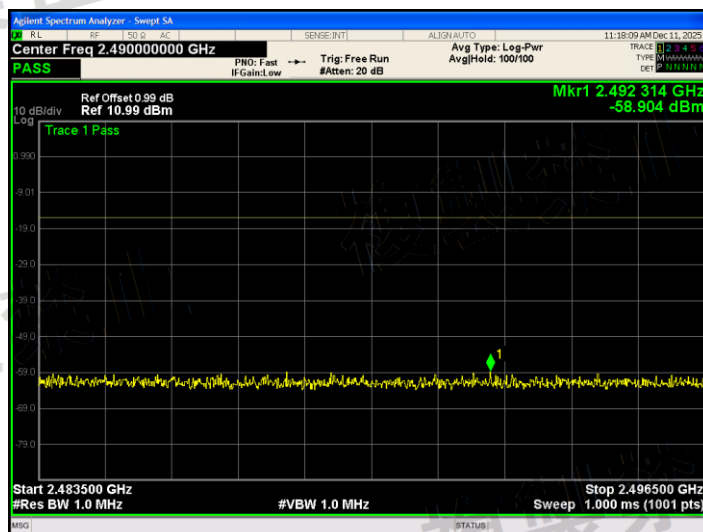
1000MHz~2387MHz



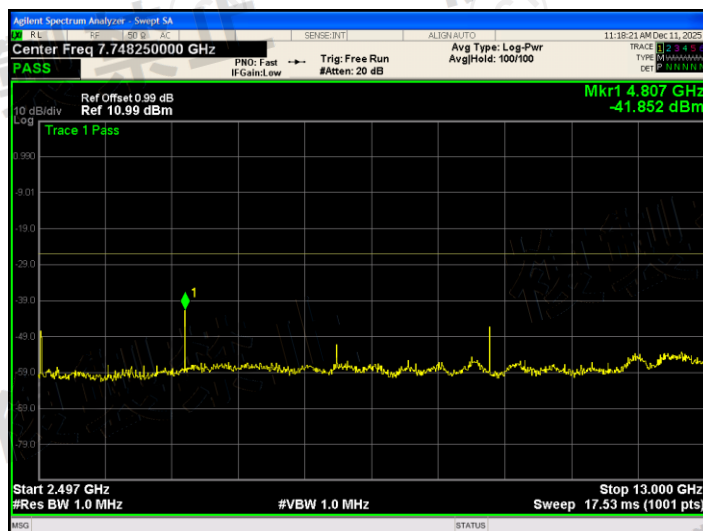
2387MHz~2400MHz



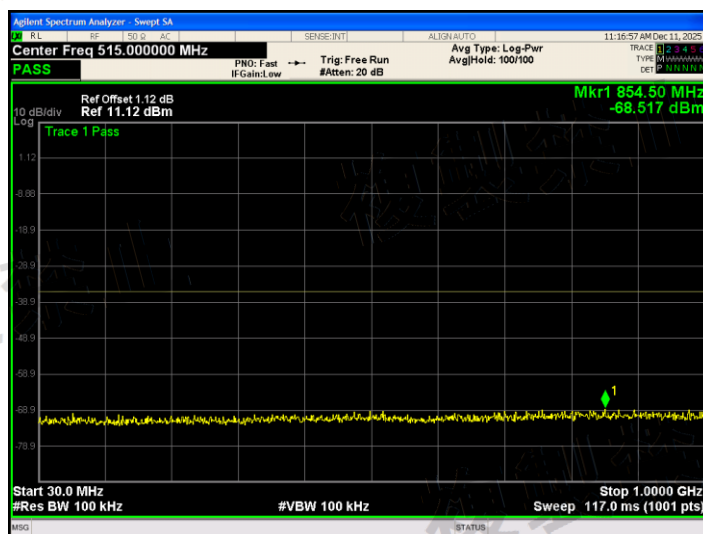
2483.5MHz ~ 2496.5MHz



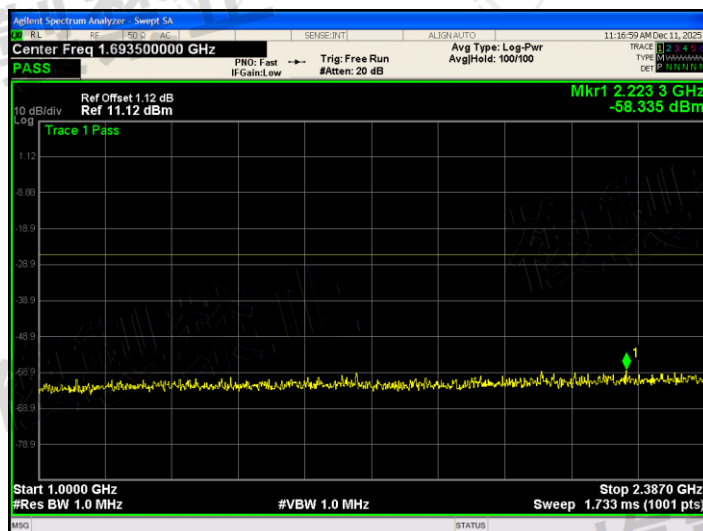
2497MHz ~ 13000MHz



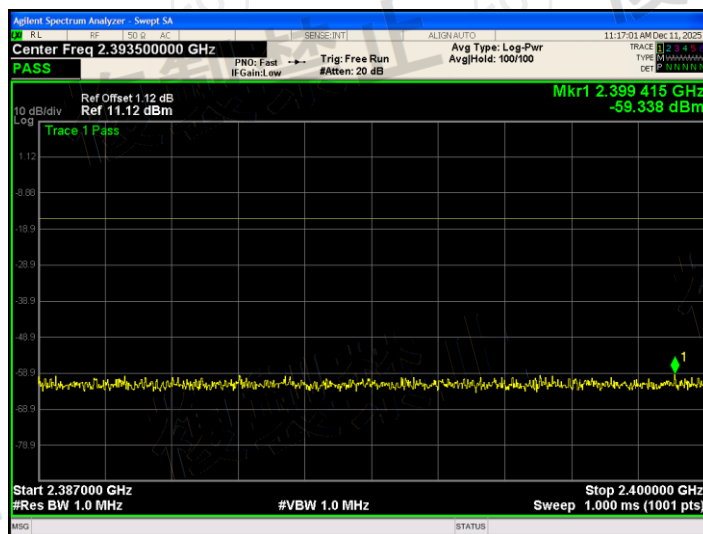
Middle channel 30MHz ~1000MHz



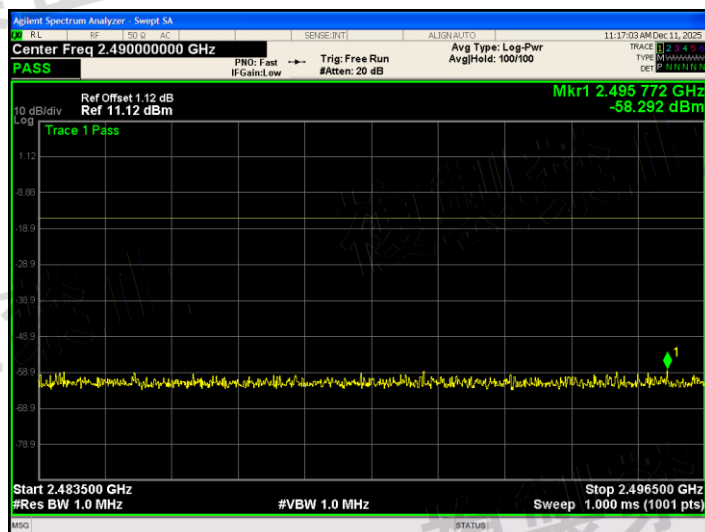
1000MHz ~2387MHz



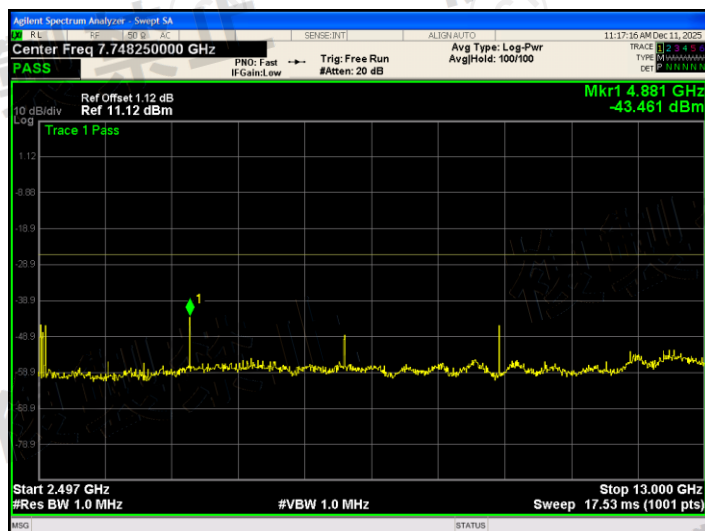
2387MHz ~2400MHz



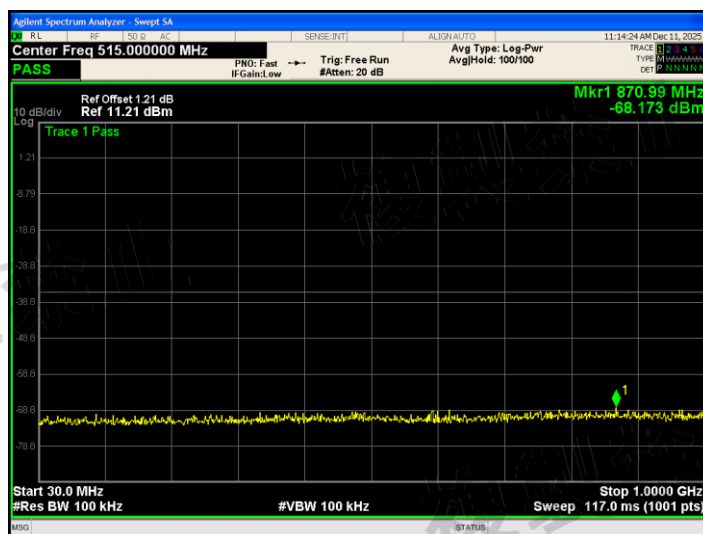
2483.5MHz ~ 2496.5MHz



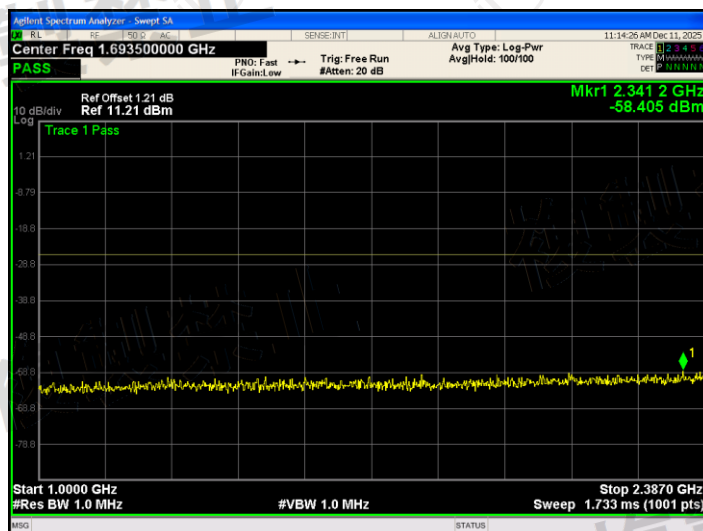
2497MHz ~ 13000MHz



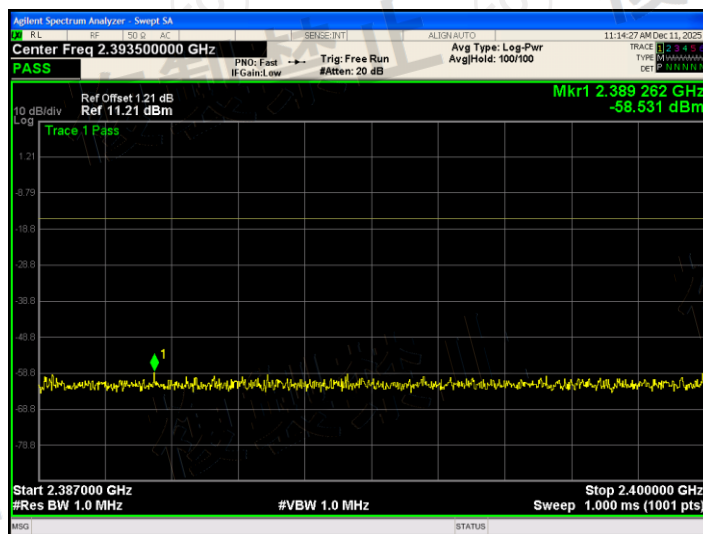
Highest channel 30MHz ~1000MHz



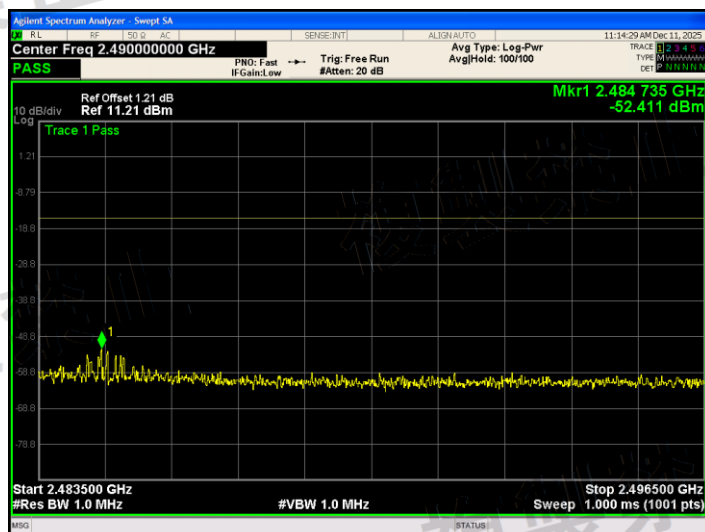
1000MHz ~2387MHz



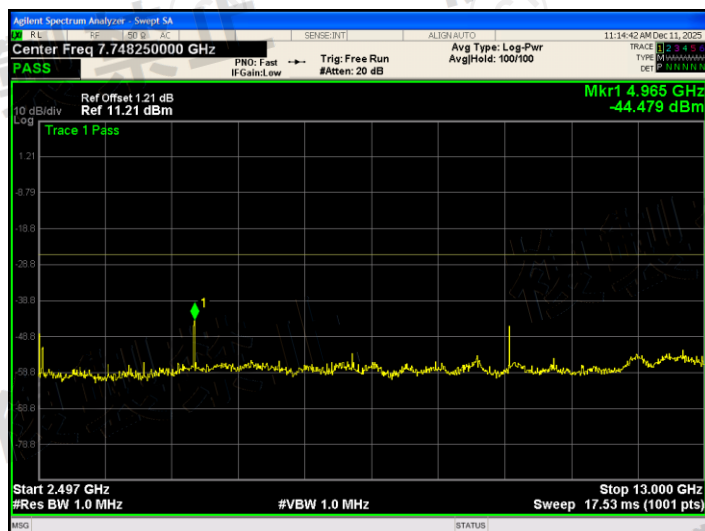
2387MHz ~2400MHz



2483.5MHz ~ 2496.5MHz

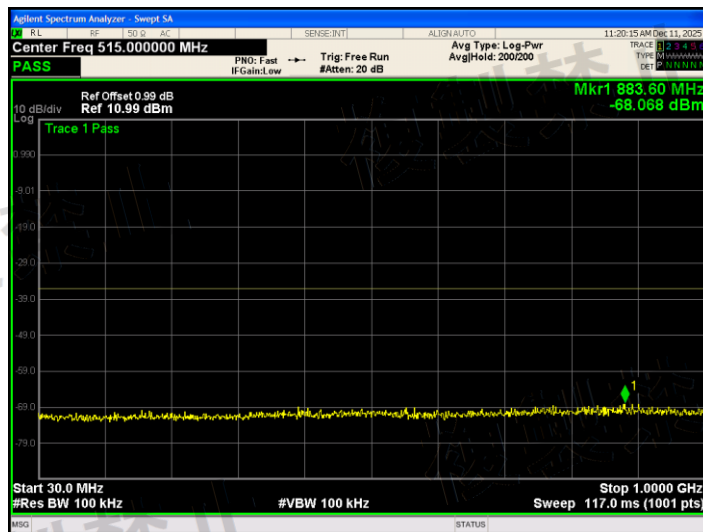


2497MHz ~ 13000MHz

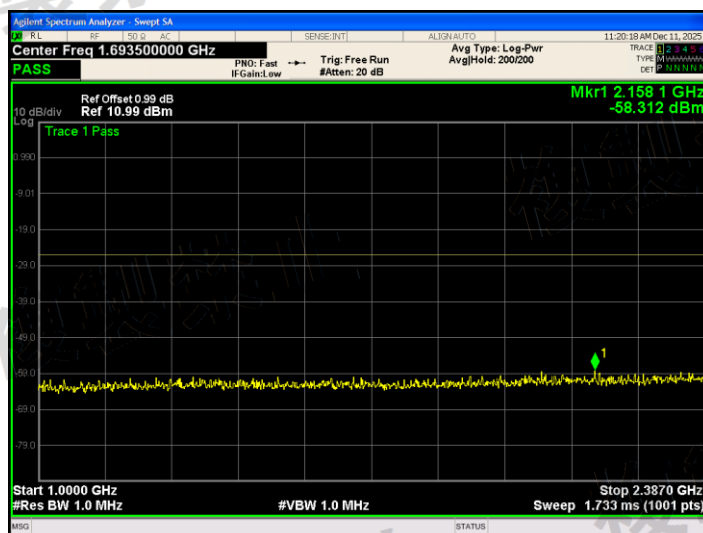


Pi/4DQPSK

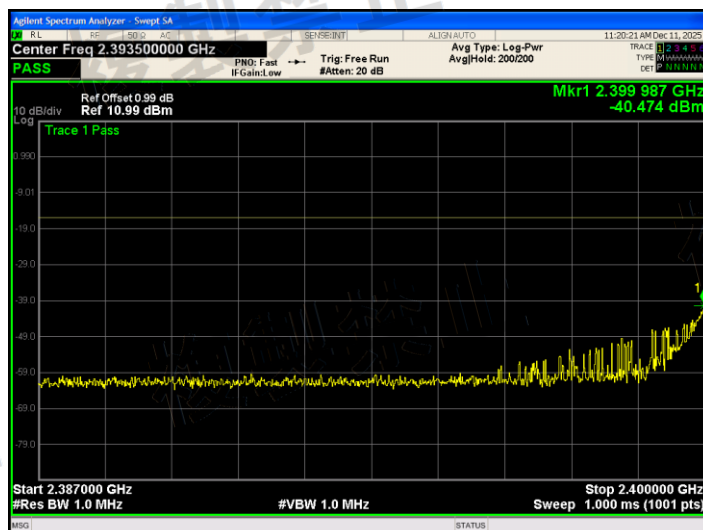
Lowest channel
30MHz ~1000MHz



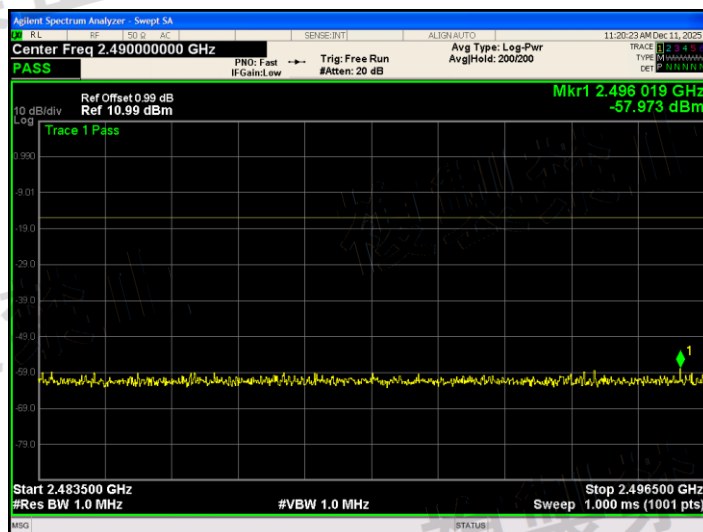
1000MHz ~2387MHz



2387MHz ~2400MHz



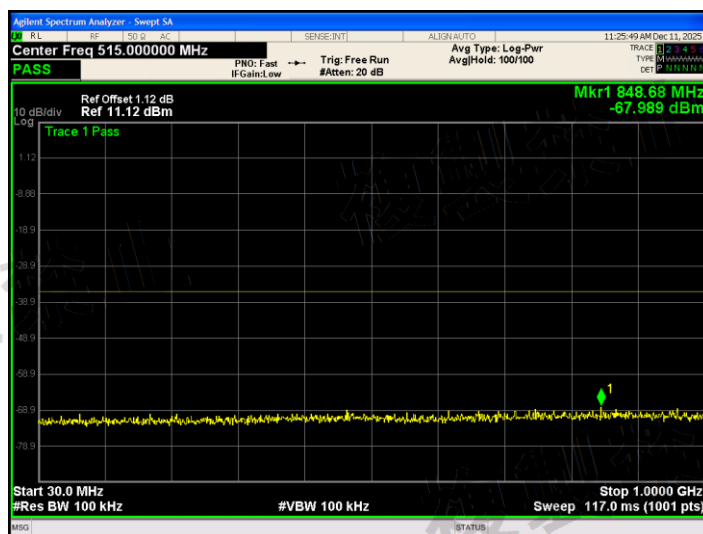
2483.5MHz ~ 2496.5MHz



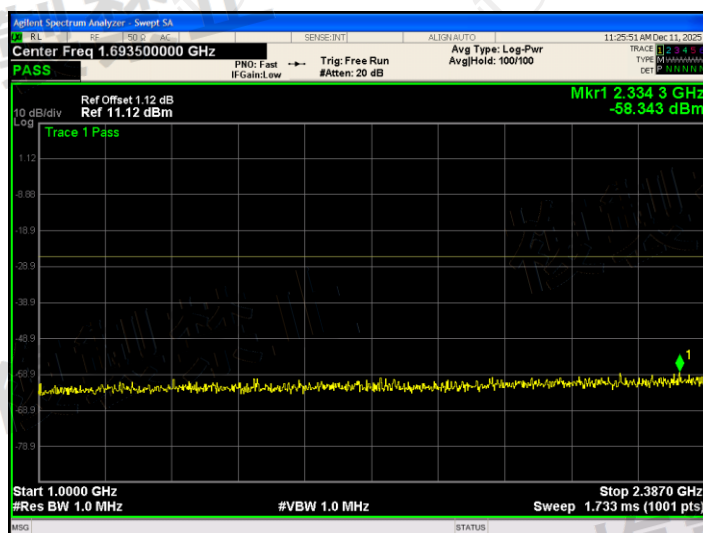
2497MHz ~ 13000MHz



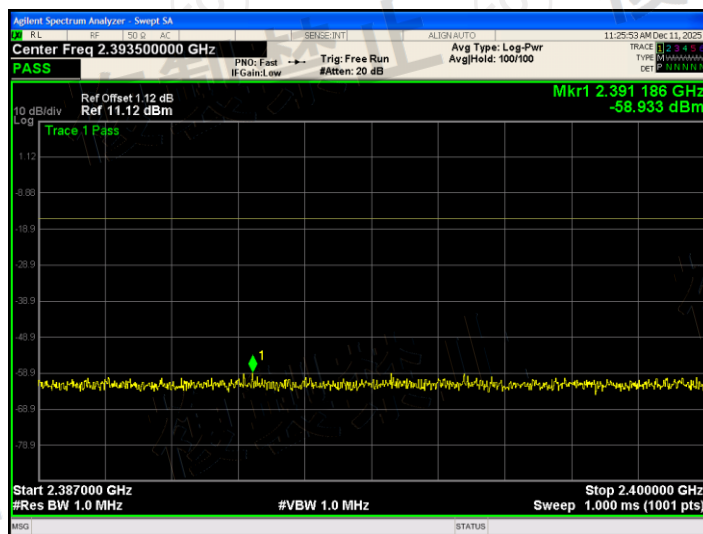
Middle channel
30MHz ~ 1000MHz



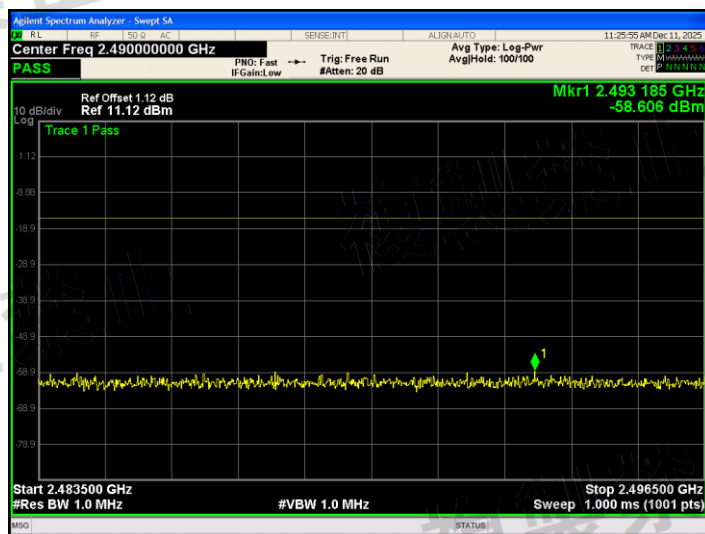
1000MHz ~ 2387MHz



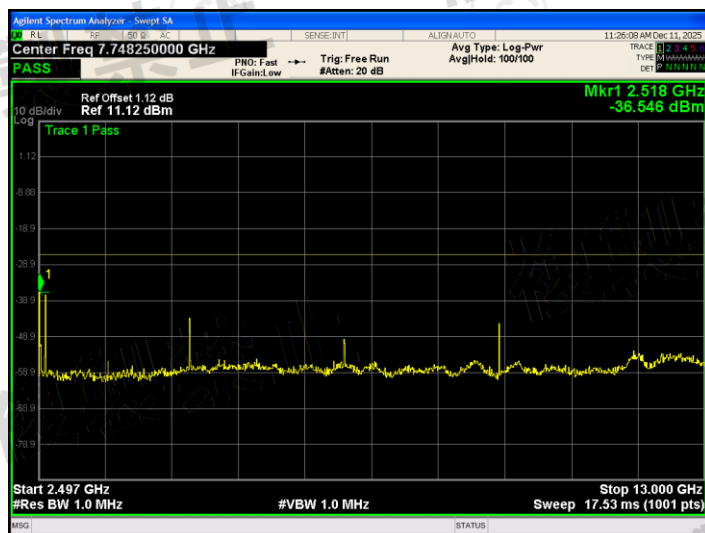
2387MHz ~ 2400MHz



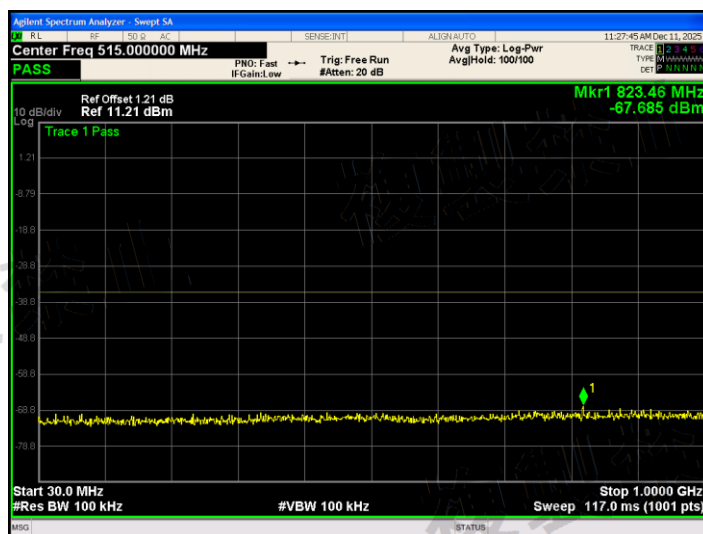
2483.5MHz ~ 2496.5MHz



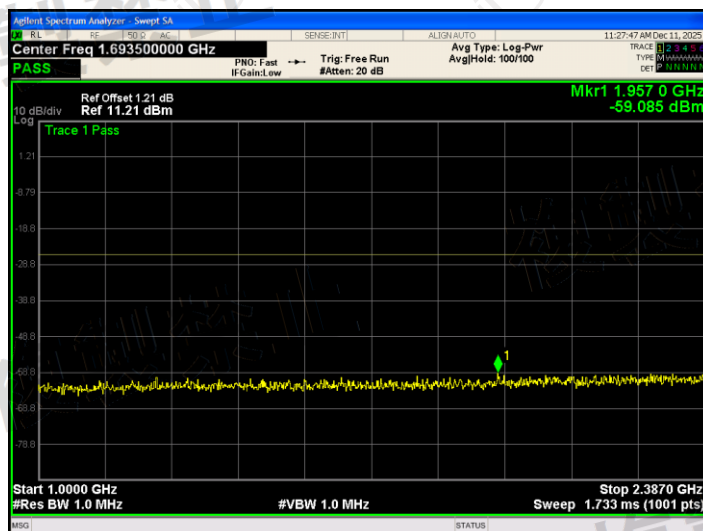
2497MHz ~ 13000MHz



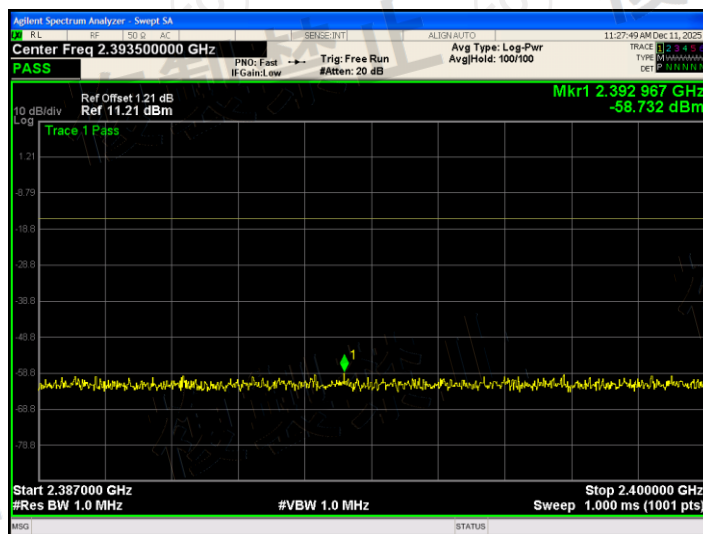
Highest channel 30MHz~1000MHz



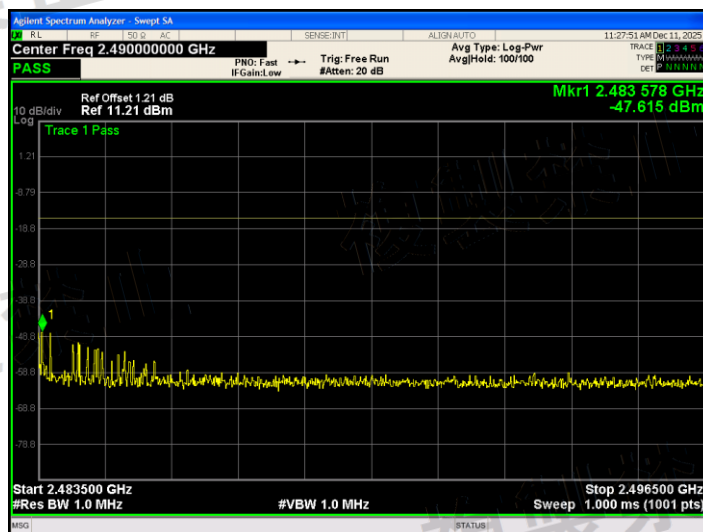
1000MHz~2387MHz



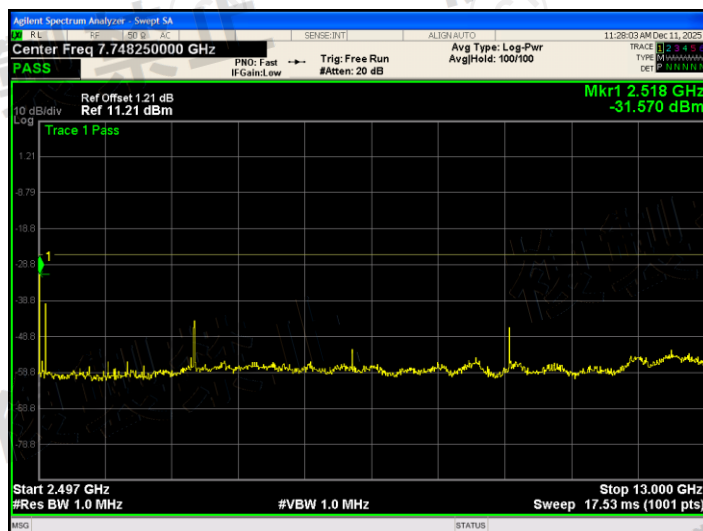
2387MHz~2400MHz



2483.5MHz ~ 2496.5MHz

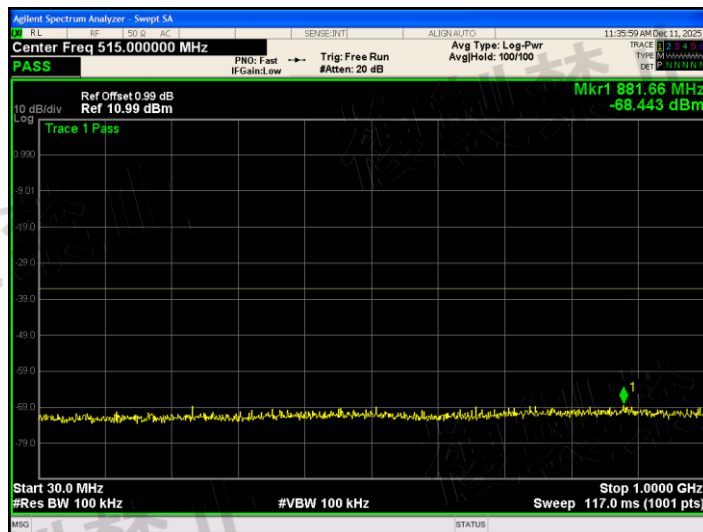


2497MHz ~ 13000MHz

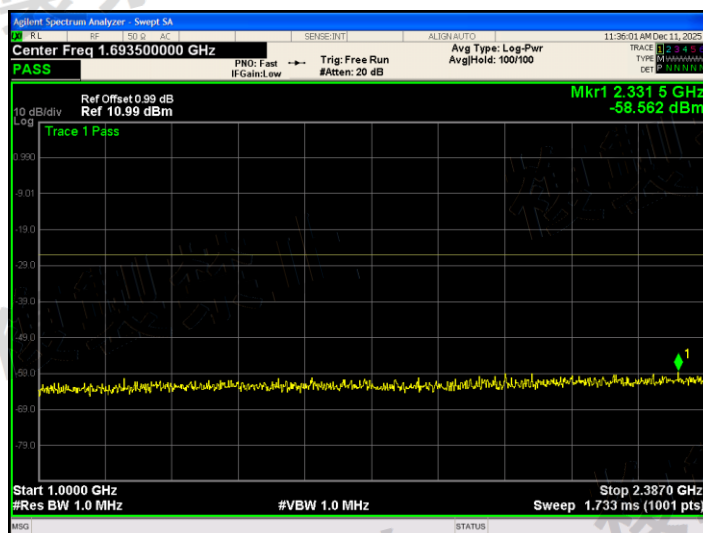


8DPSK

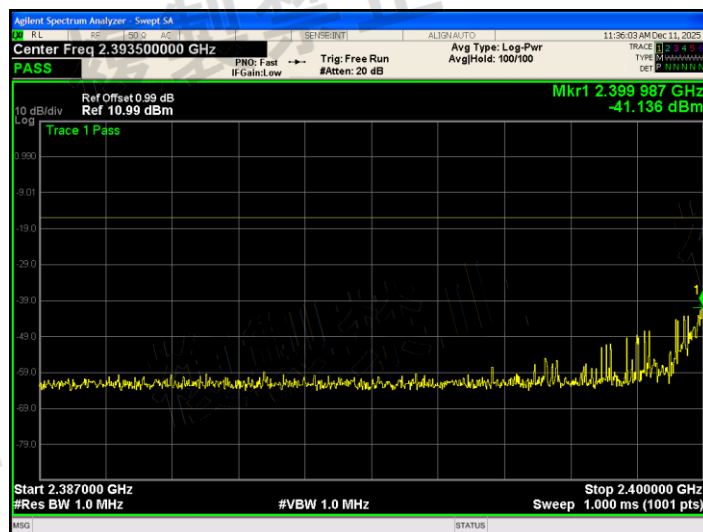
Lowest channel
30MHz ~1000MHz



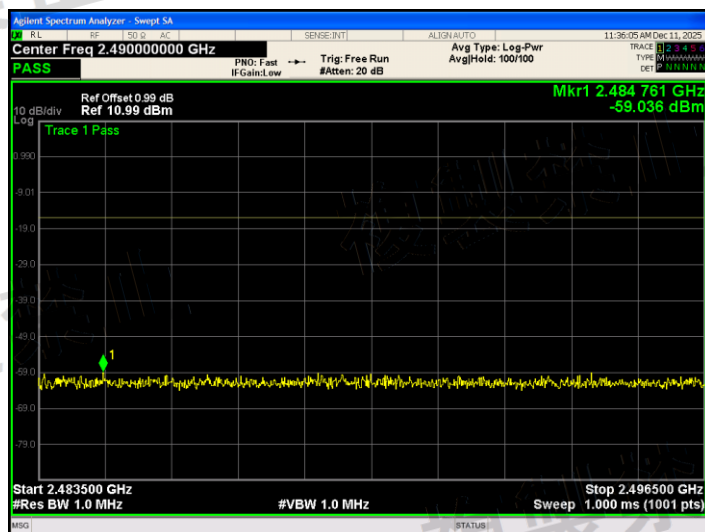
1000MHz ~2387MHz



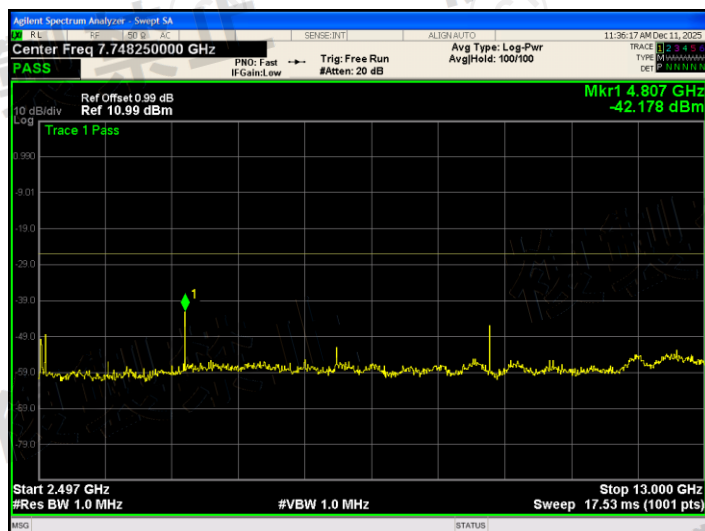
2387MHz ~2400MHz



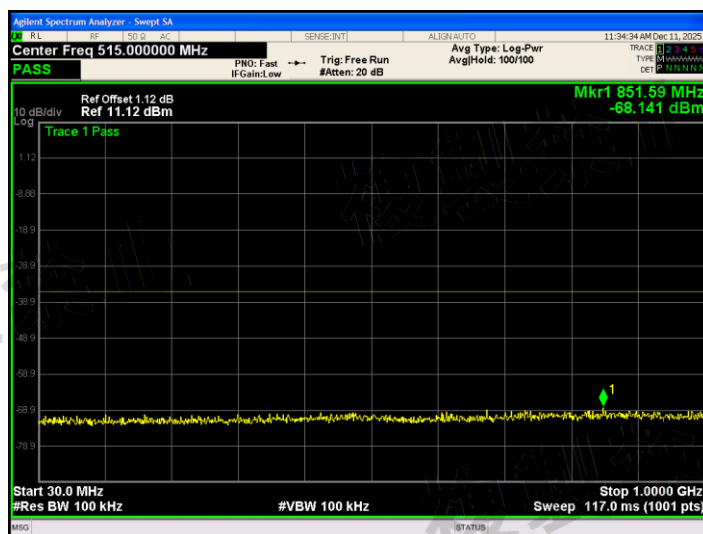
2483.5MHz ~ 2496.5MHz



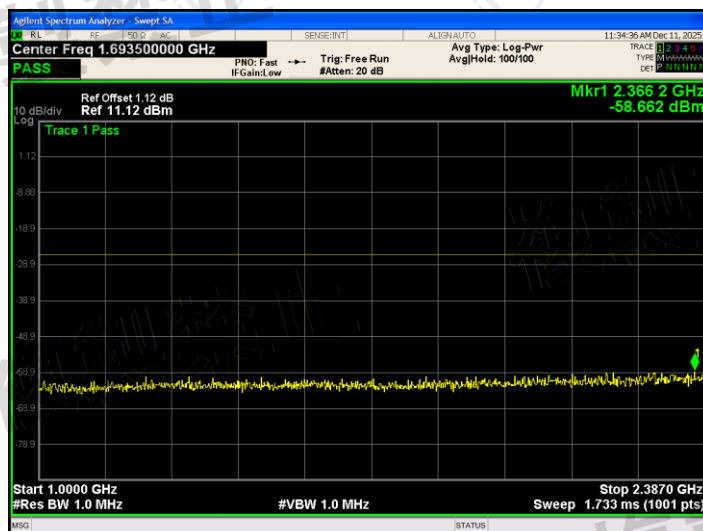
2497MHz ~ 13000MHz



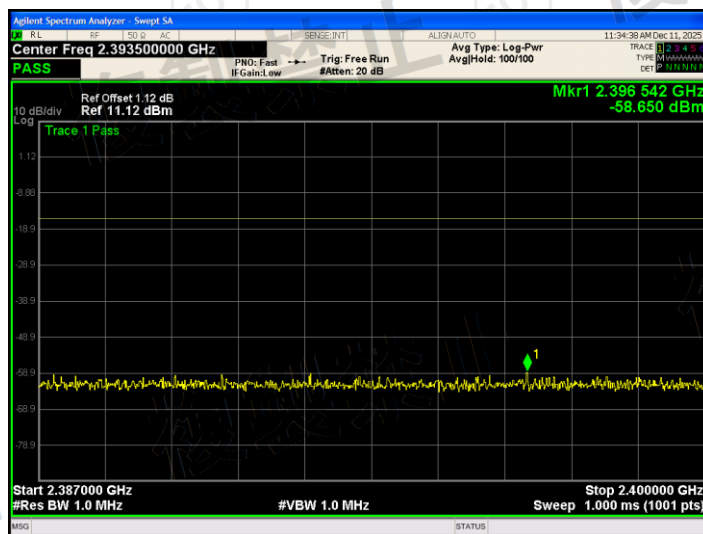
Middle channel 30MHz ~1000MHz



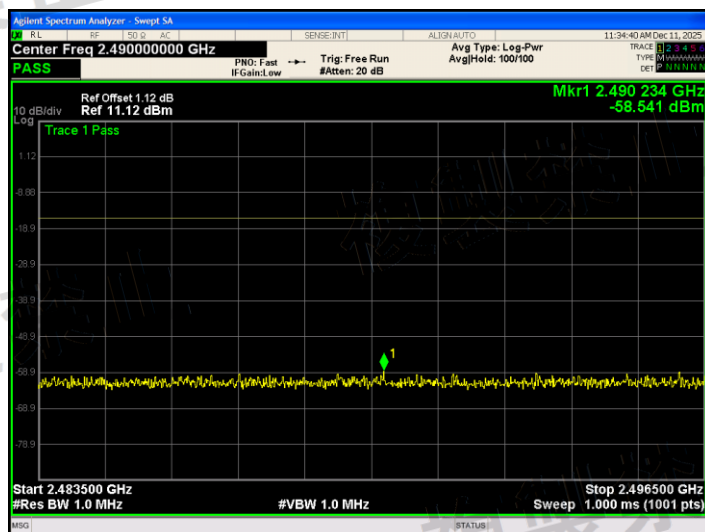
1000MHz ~2387MHz



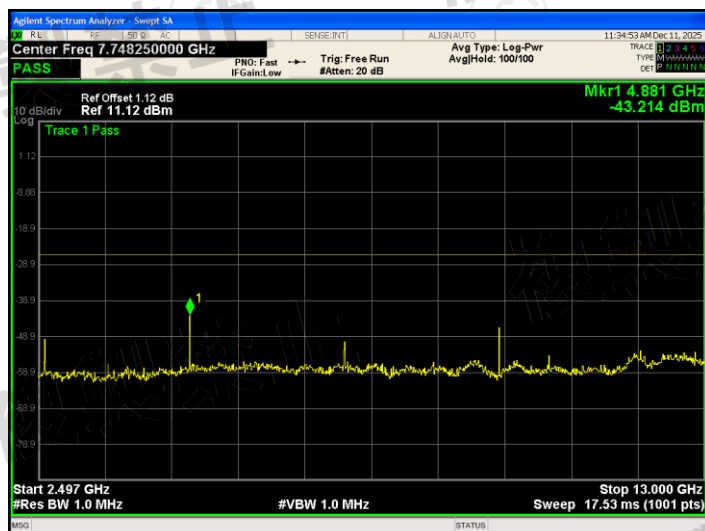
2387MHz ~2400MHz



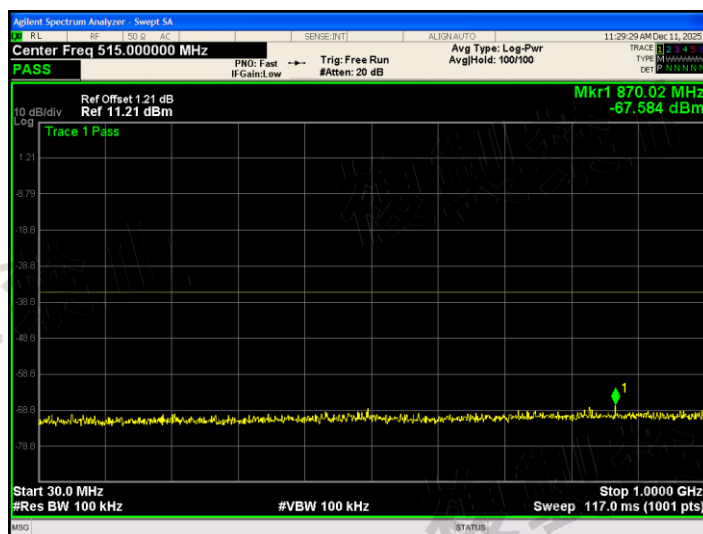
2483.5MHz ~ 2496.5MHz



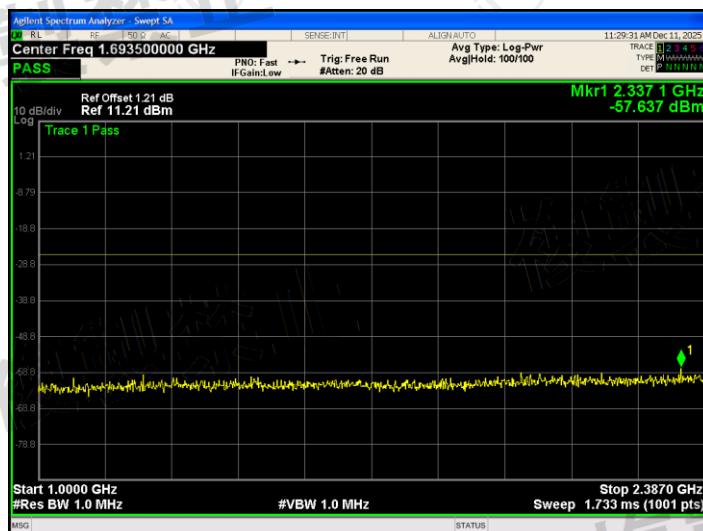
2497MHz ~ 13000MHz



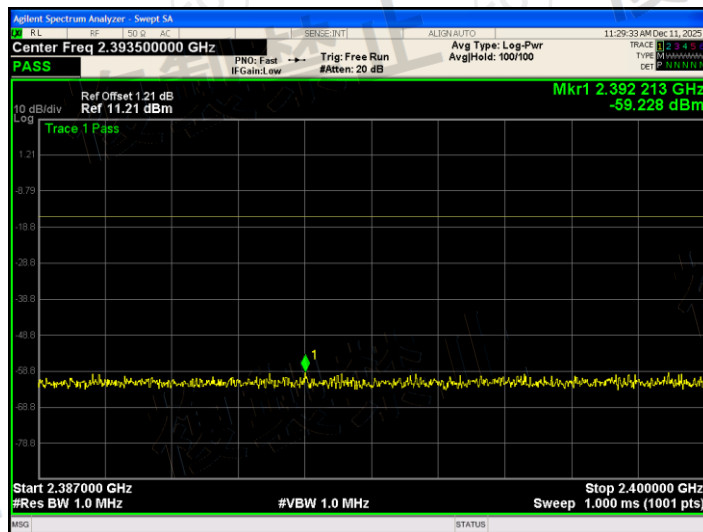
Highest channel 30MHz ~1000MHz



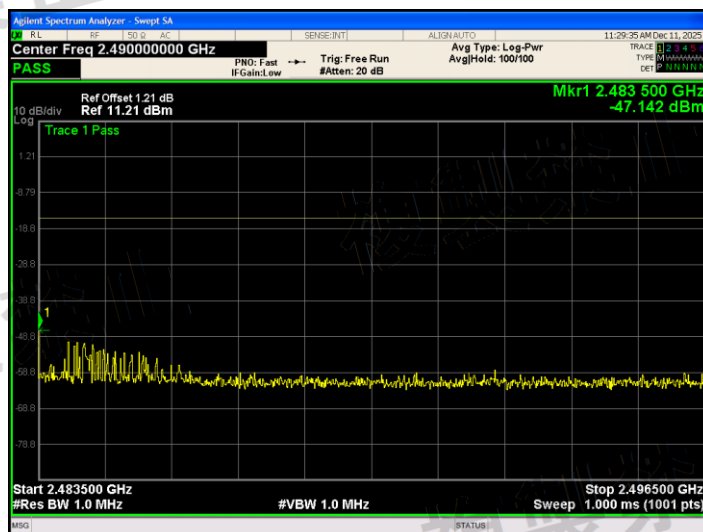
1000MHz ~2387MHz



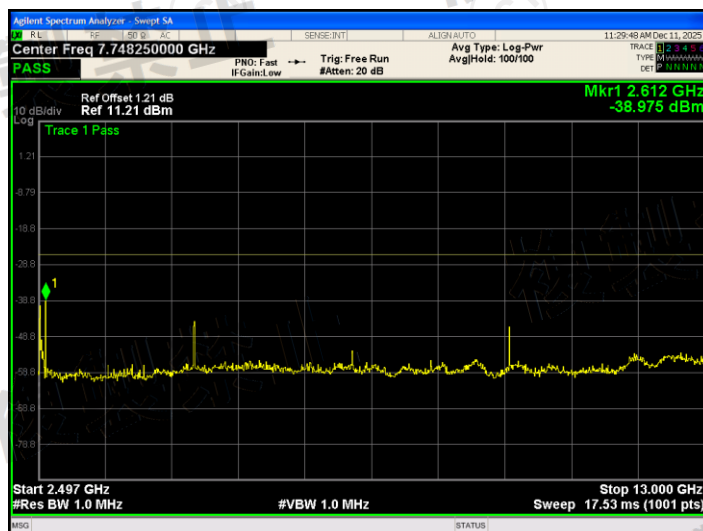
2387MHz ~2400MHz



2483.5MHz ~ 2496.5MHz

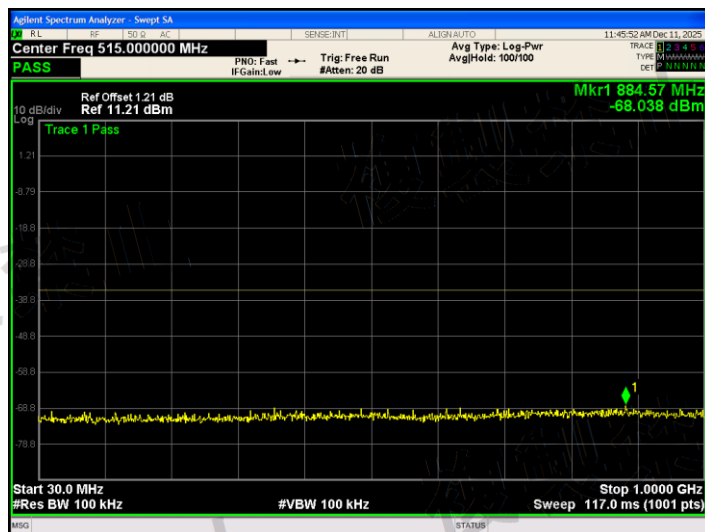


2497MHz ~ 13000MHz

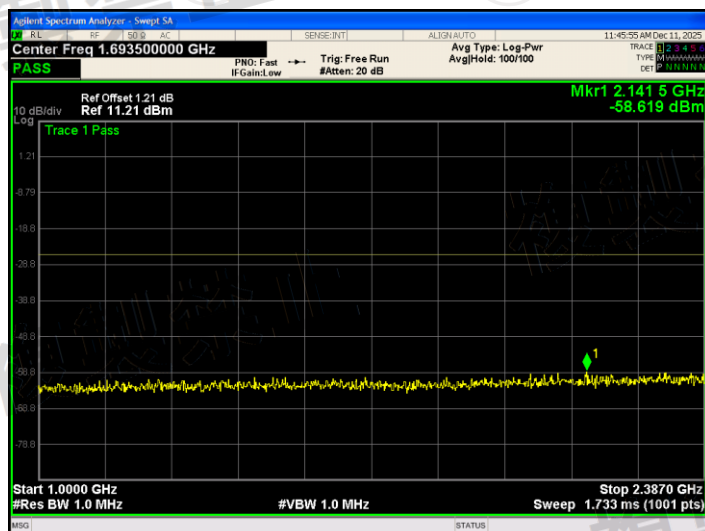


Hopping

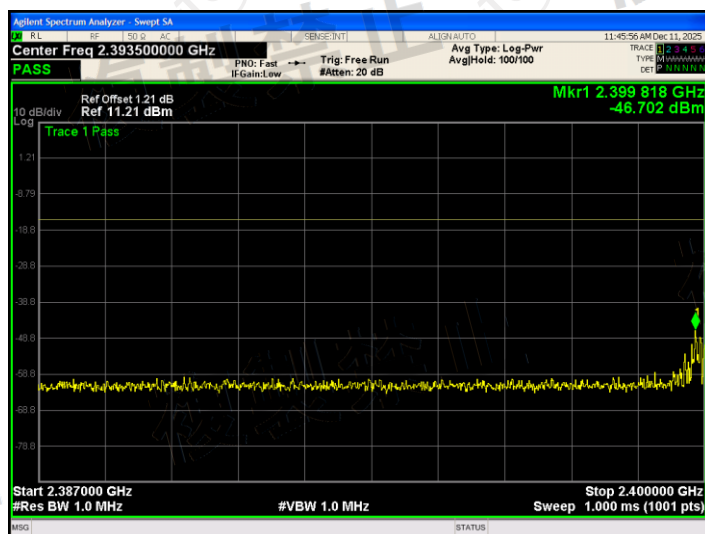
30MHz ~ 1000MHz



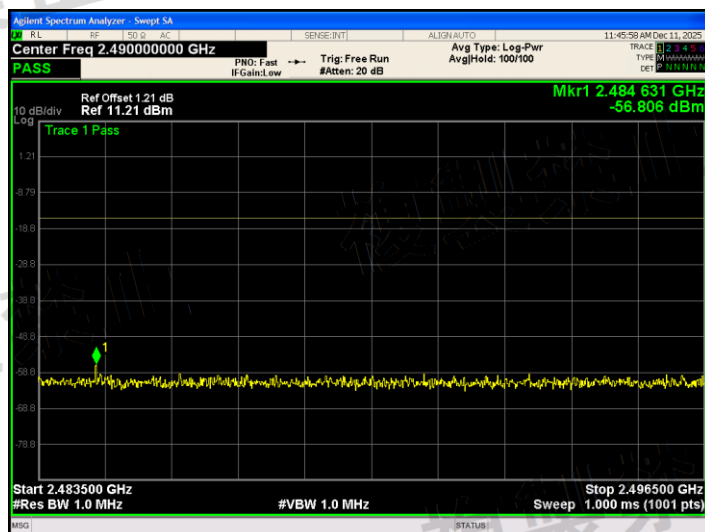
1000MHz ~ 2387MHz



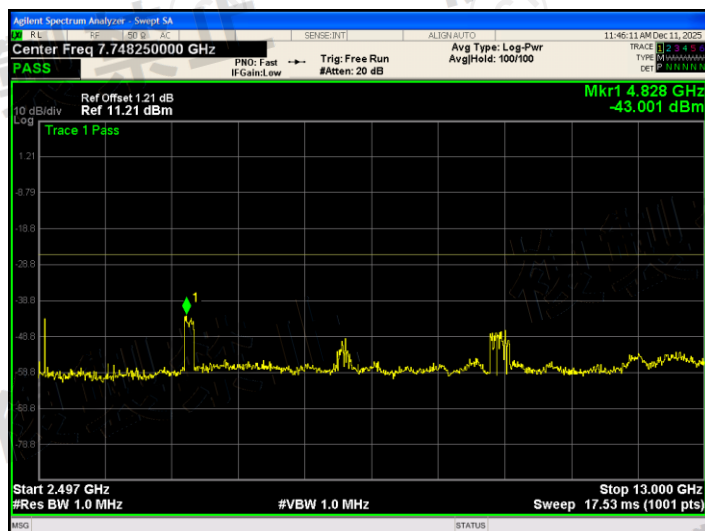
2387MHz ~ 2400MHz



2483.5MHz ~ 2496.5MHz

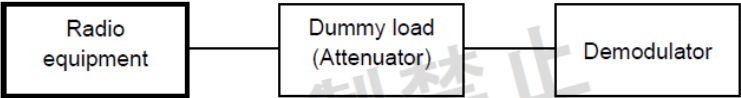
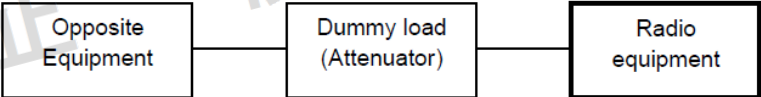


2497MHz ~ 13000MHz



6.6. Interference suppression function

6.6.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 10
Operation Mode:	Usual operation condition.
Test setup:	(1) Transmission of identification code  <pre> graph LR A[Radio equipment] --- B[Dummy load (Attenuator)] B --- C[Demodulator] </pre> (2) Reception of identification code  <pre> graph LR A[Opposite Equipment] --- B[Dummy load (Attenuator)] B --- C[Radio equipment] </pre>
Test Procedure:	1 The radio equipment with automatic transmitting function of identification code A. Transmit the assigned identification code from the radio equipment. B. Confirm the identification code received by the demodulator. 2 The radio equipment with automatic receiving function of identification code A. Transmit the assigned identification code from the opposite equipment. B. Confirm that the usual communication is available. C. Transmit the identification code distinct from the assigned one from the opposite equipment. D. Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.
Test results:	GOOD, The device has the function of automatic transmission and reception of identification sign. The MAC address is EF:3A:8E:33:35:15.

6.7. Hopping Frequency Residence Time

6.7.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 13
Limit:	0.4 Second
Test setup:	 Spectrum Analyzer EUT
Test Mode:	Hopping Mode
Test Procedure:	1. Connect EUT antenna terminal to the spectrum analyzer with a low loss cable. Equipment mode: spectrum analyzer, detector function: Peak RBW=1MHz, VBW=1MHz, Span=zero. 2. Adjust the center frequency of spectrum analyzer on any frequency be measured. 3. Measure the Dwell Time by spectrum analyzer Marker-Delta function. 4. Repeat above procedures until all frequencies and modulation mode measured were complete.
Test results:	PASS

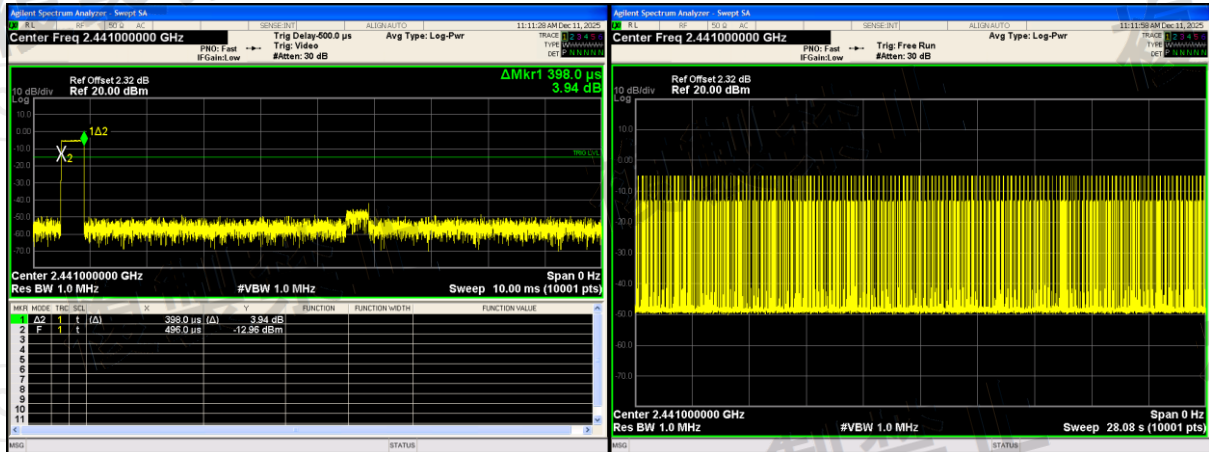
6.7.2. Test Data

Mode	Pulse Time (ms)	Hopping Number	Hopping cycle (ms)	Total Dwell Time (ms)	Limit (ms)	Verdict
1-DH1	0.398	283	28082	112.64	400	Pass
1-DH3	1.655	165	31600	242.69	400	Pass
1-DH5	2.902	113	31600	291.44	400	Pass
2-DH1	0.386	285	28280.4	55.00	400	Pass
2-DH3	1.660	171	31600	127.02	400	Pass
2-DH5	2.885	105	31600	135.55	400	Pass
3-DH1	0.410	285	28130.8	38.95	400	Pass
3-DH3	1.657	172	31600	84.56	400	Pass
3-DH5	2.911	108	31600	93.28	400	Pass

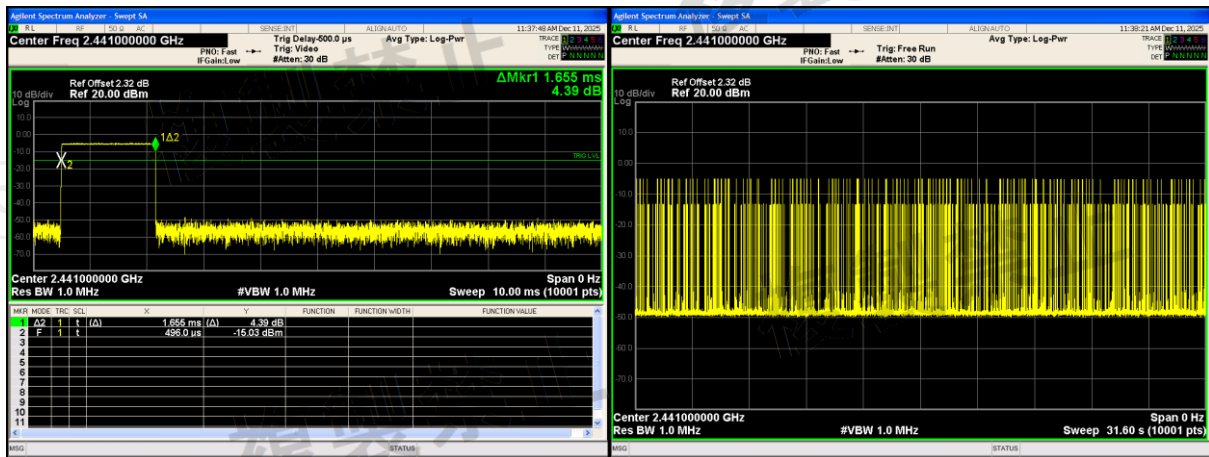
Total dwell time = (0.4s x diffusion rate / hopping cycle) x sum of the residence time.
diffusion rate=diffusion bandwidth/transmitting velocity

Test plot as follows:

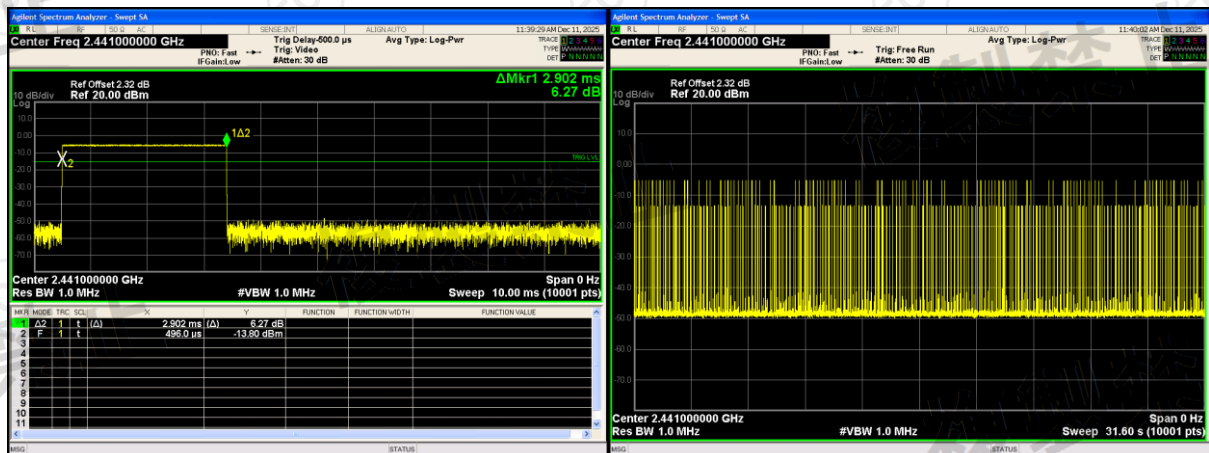
DH1



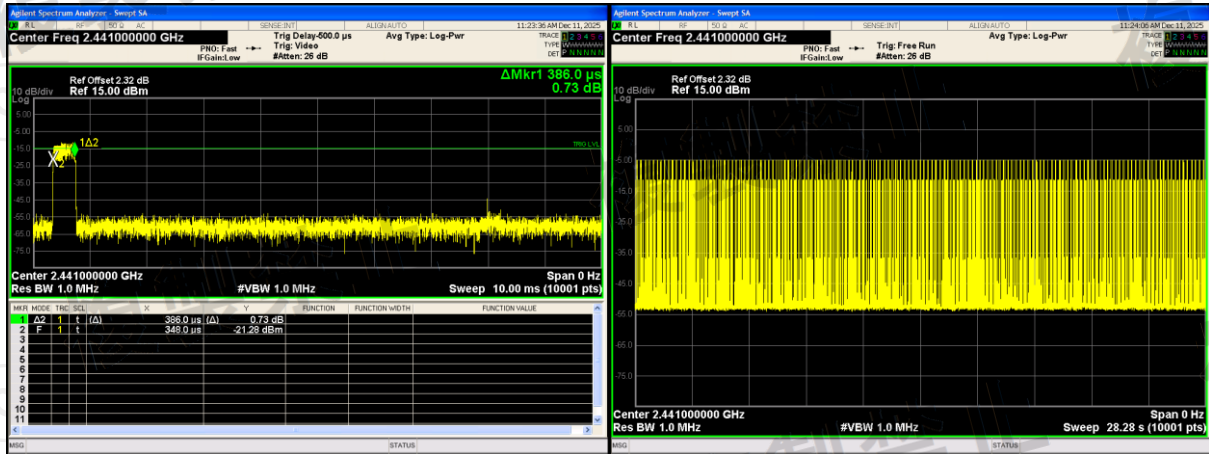
DH3



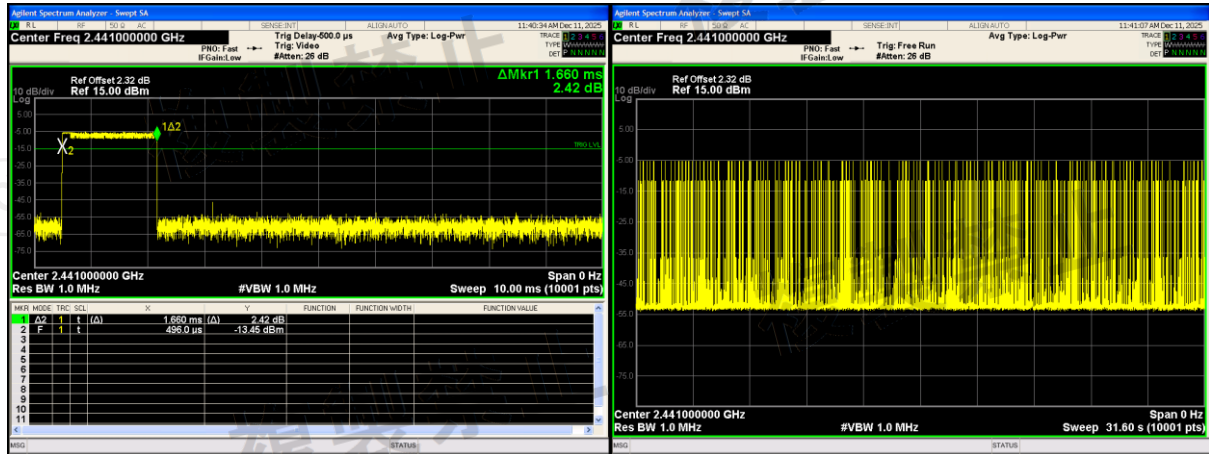
DH5



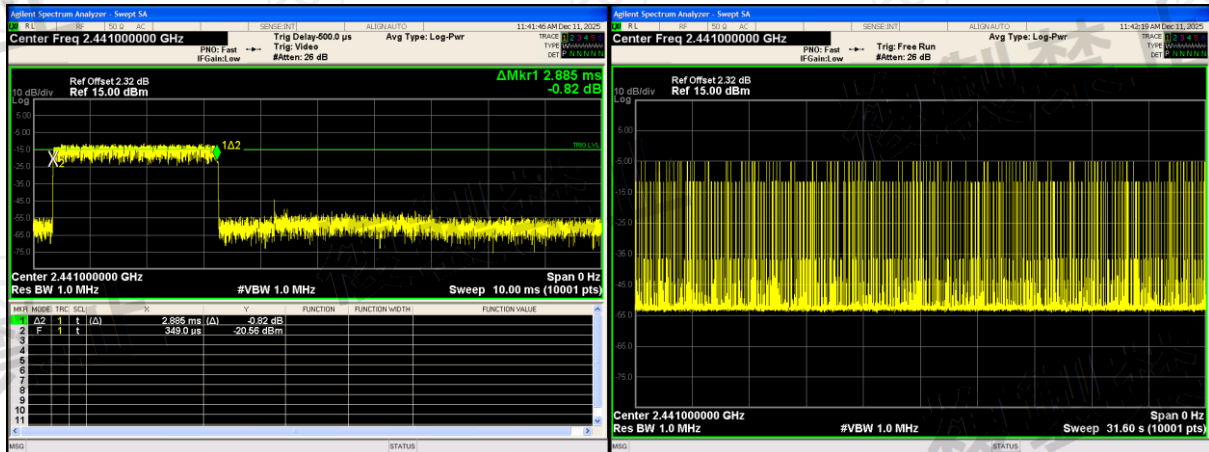
2DH1



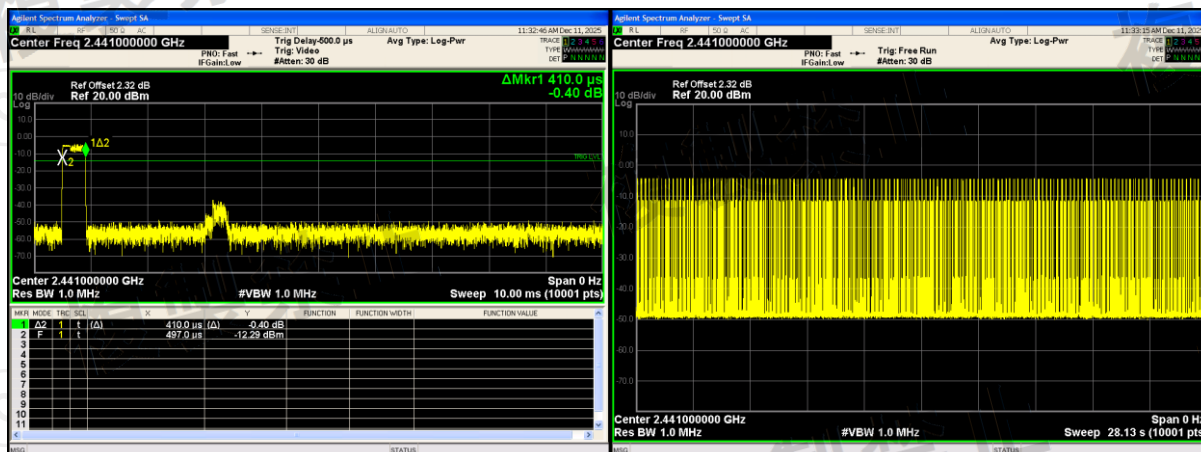
2DH3



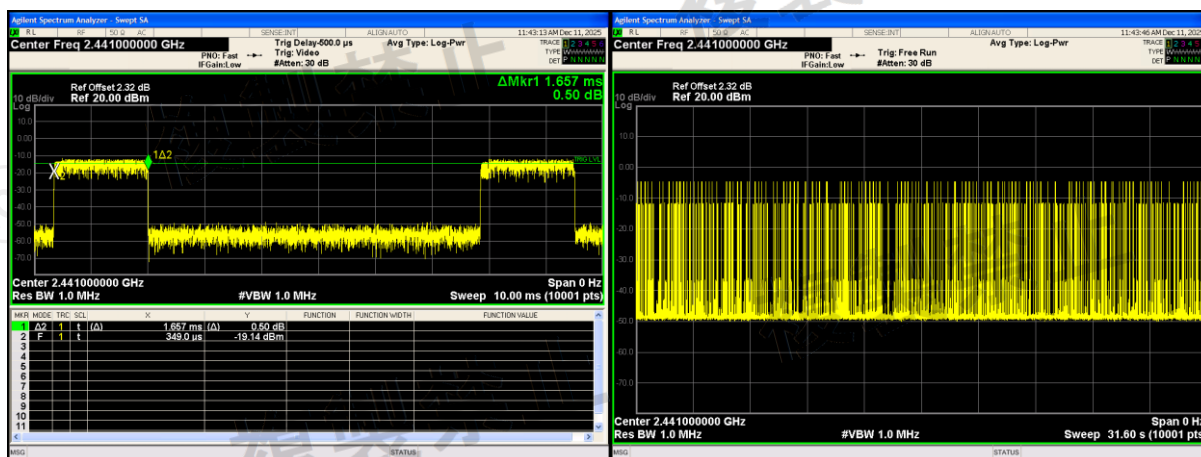
2DH5



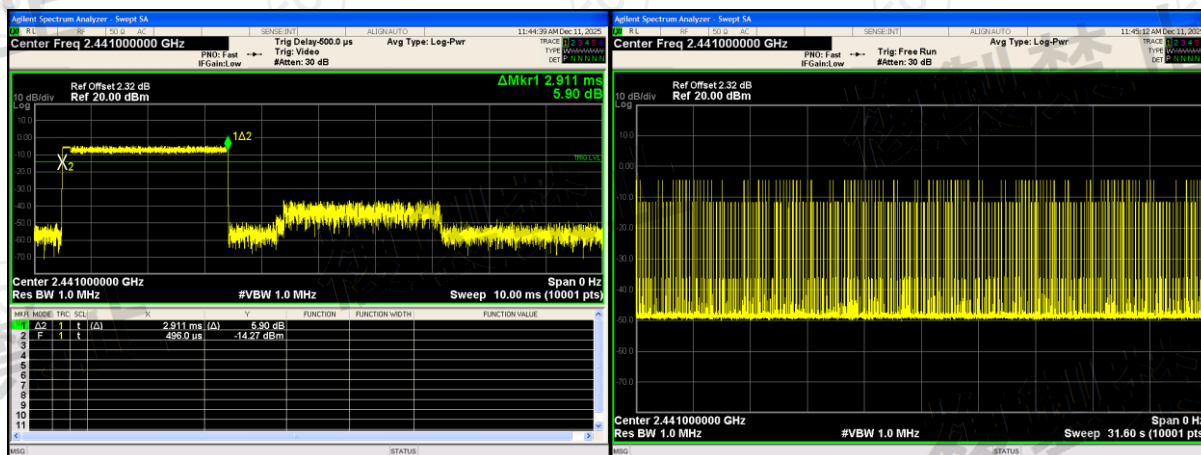
3DH1



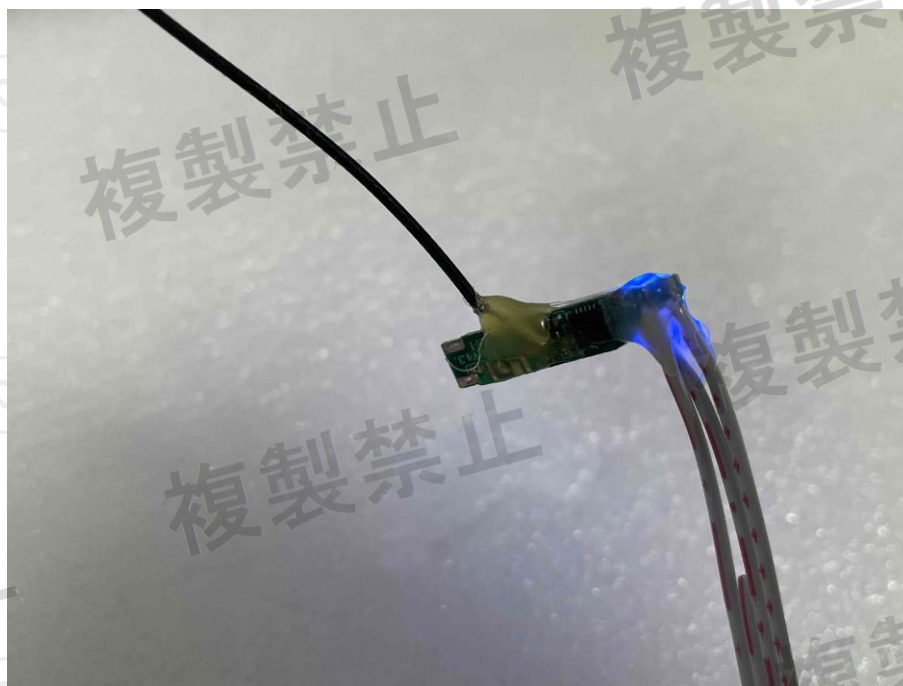
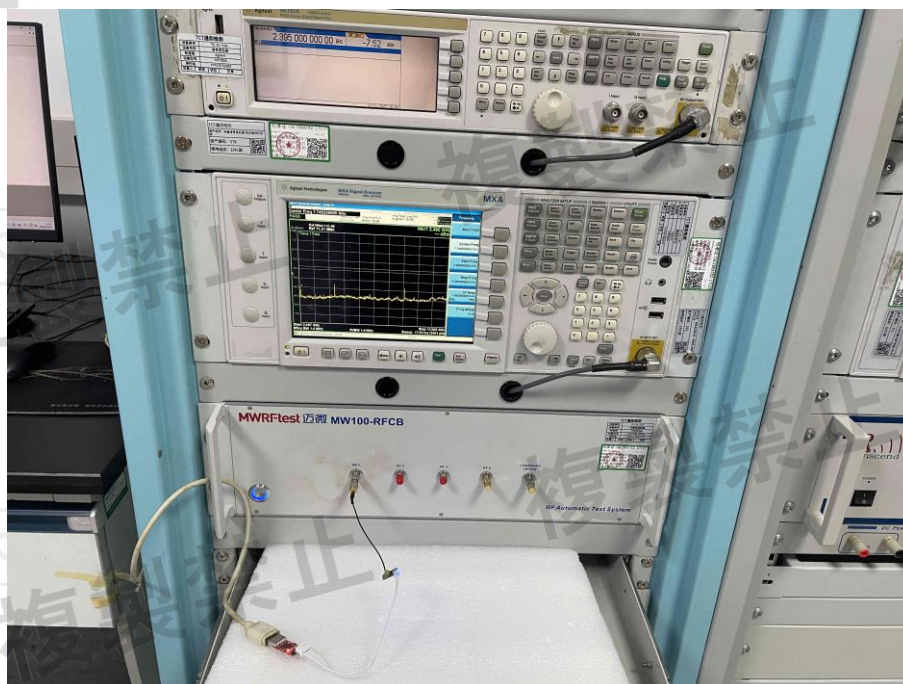
3DH3



3DH5



7. Photographs of Test Configuration



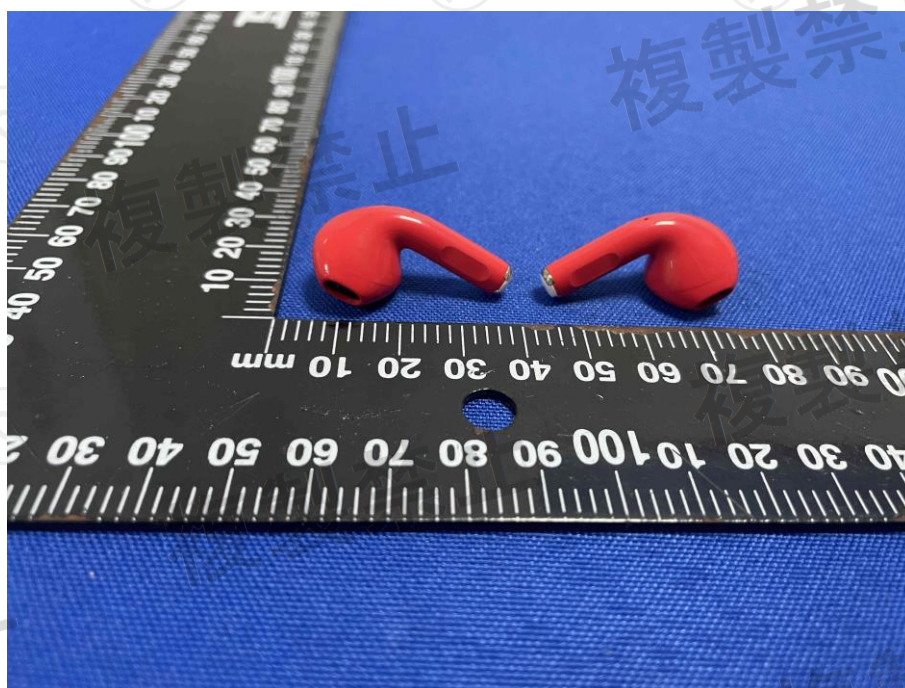
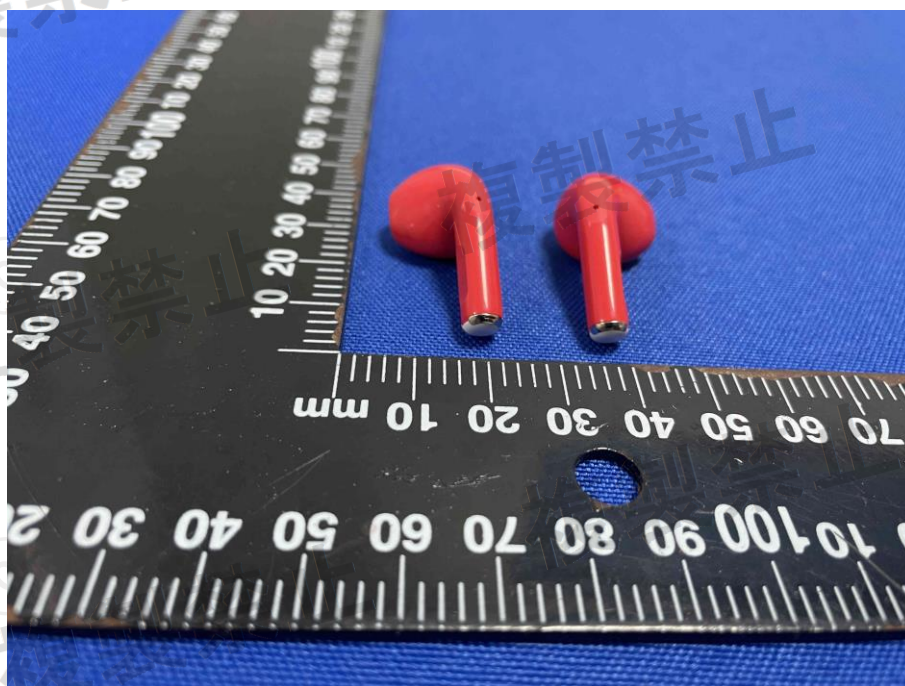
8. Photographs of EUT

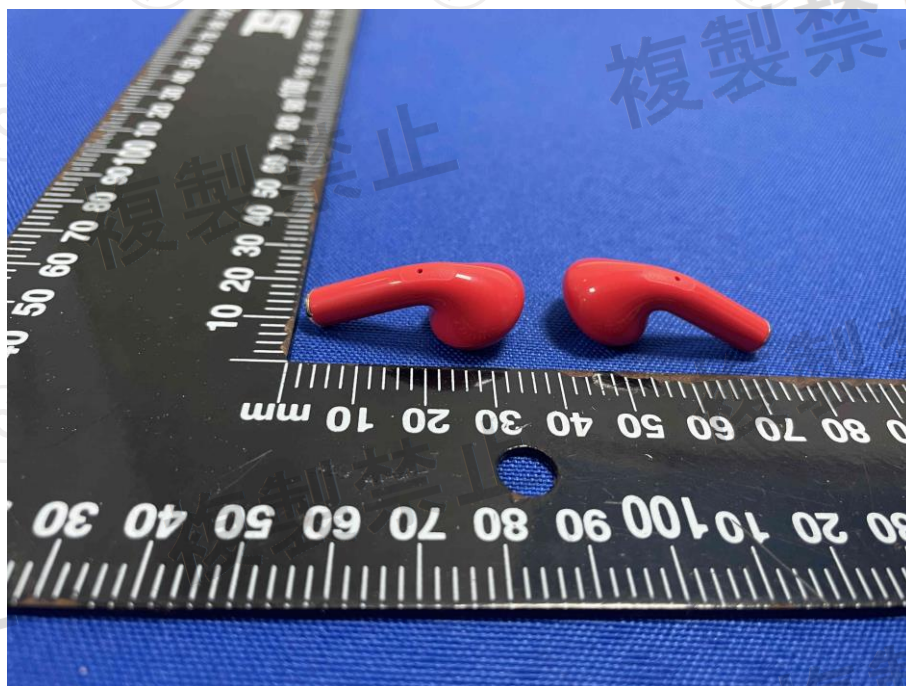
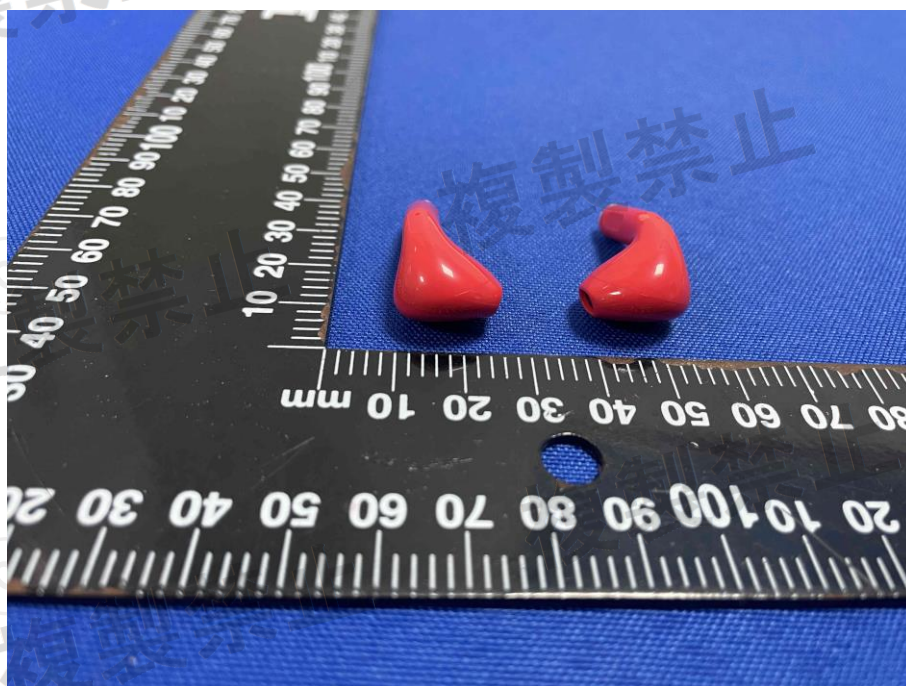
Outside View





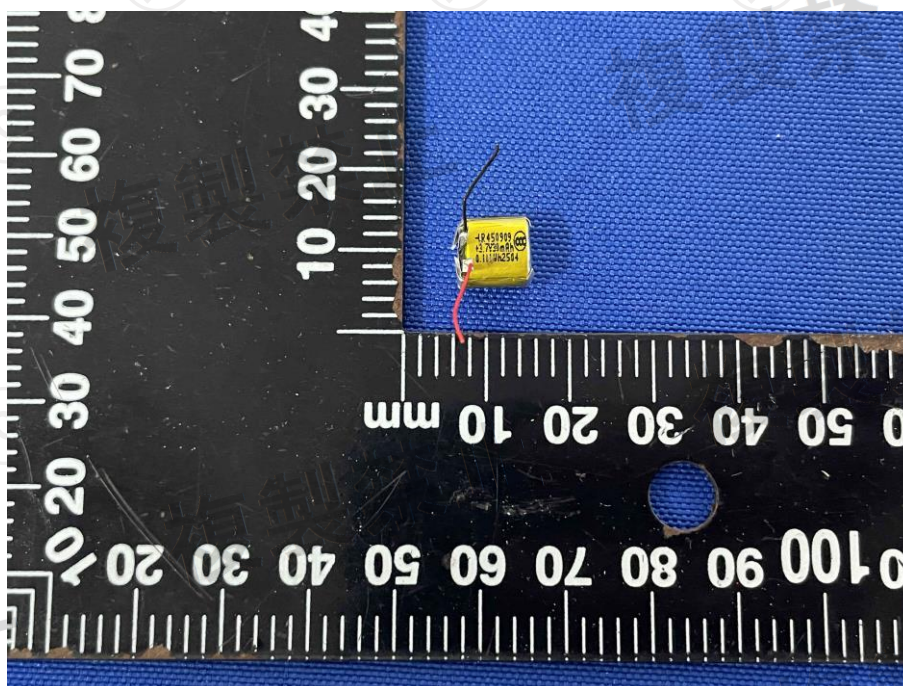
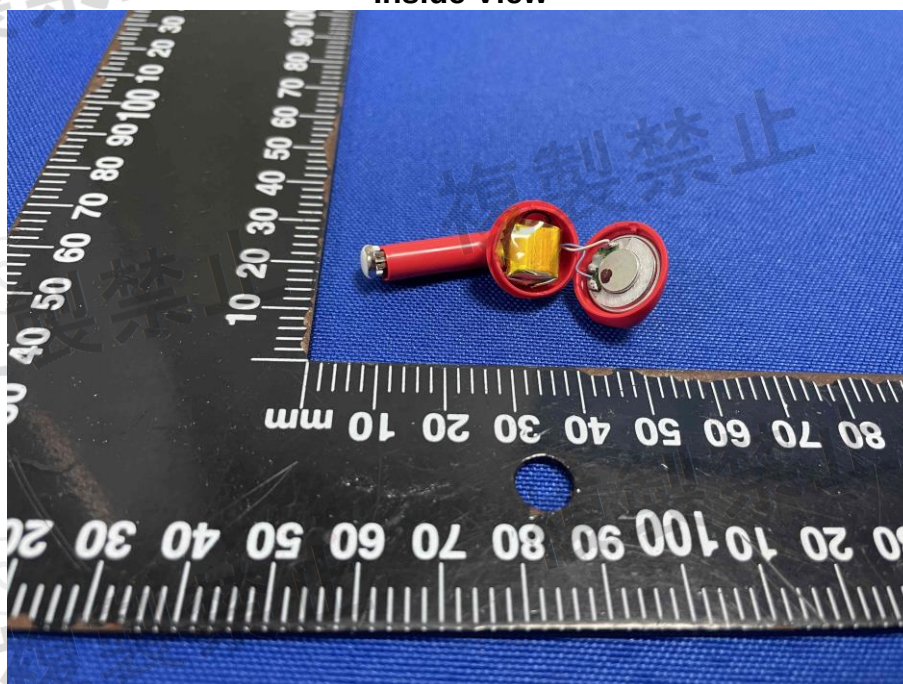


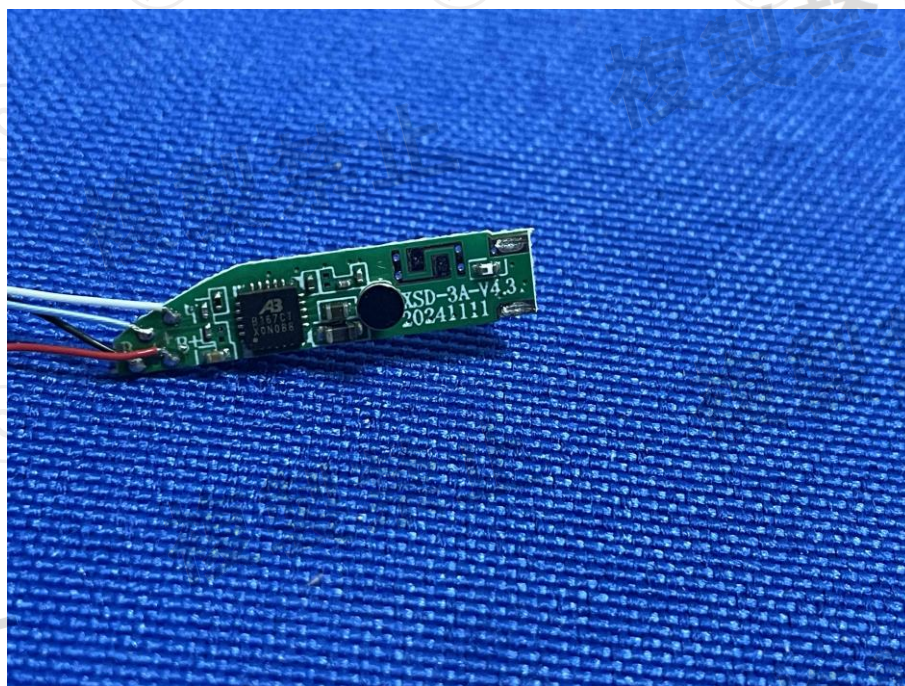
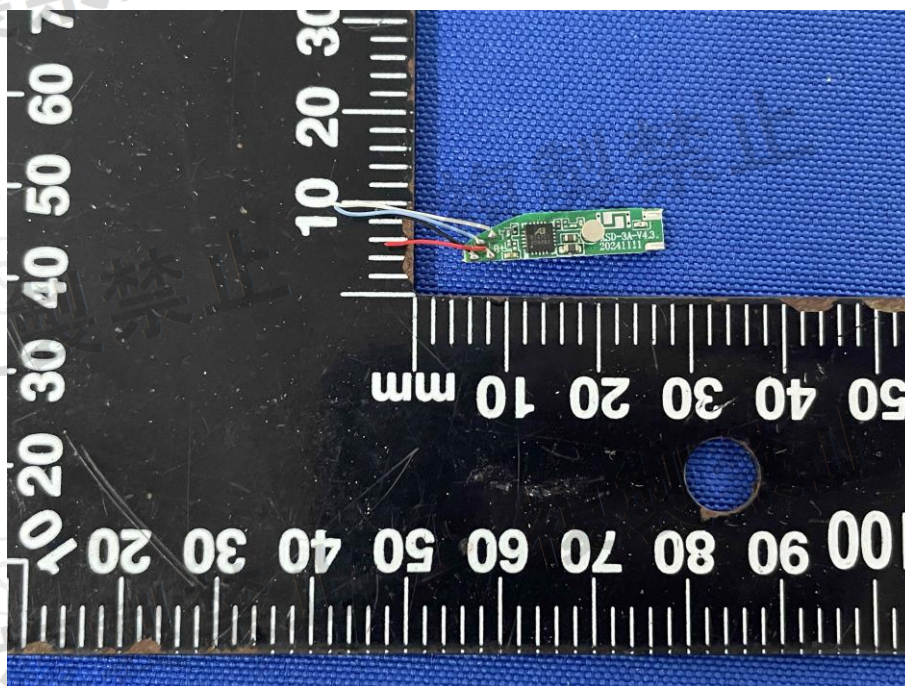


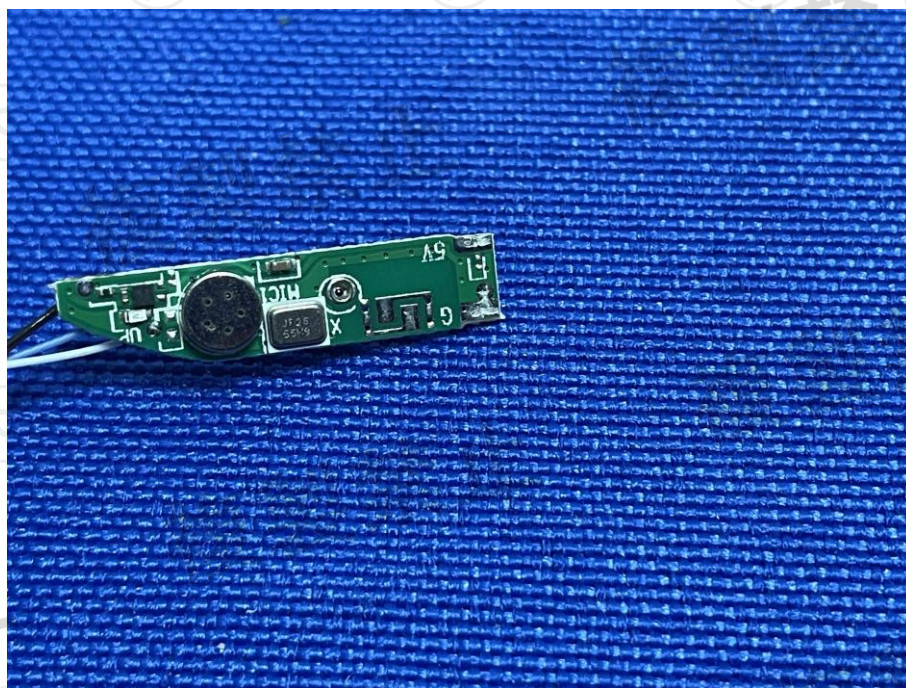
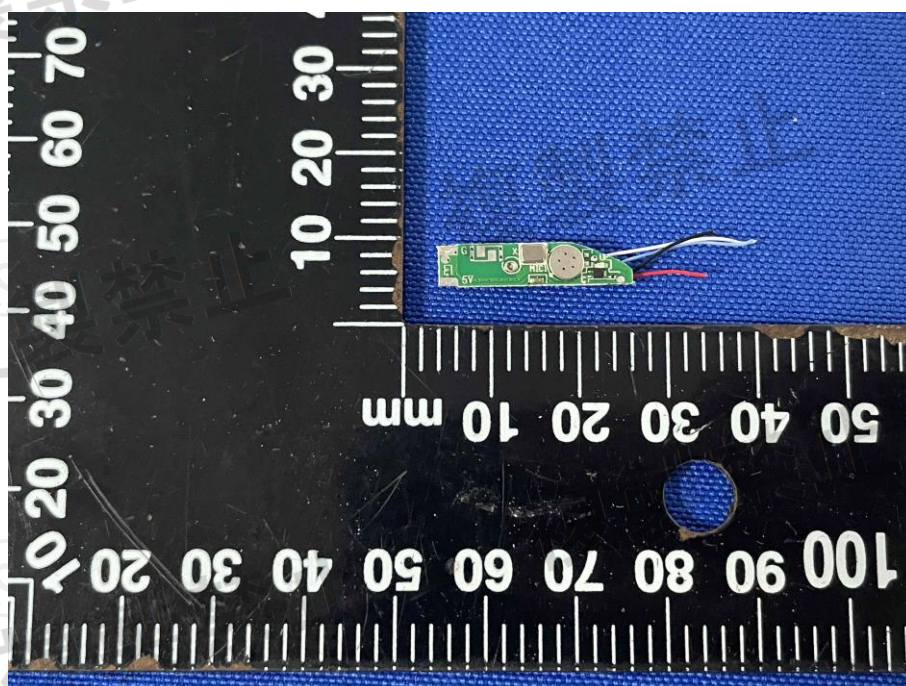


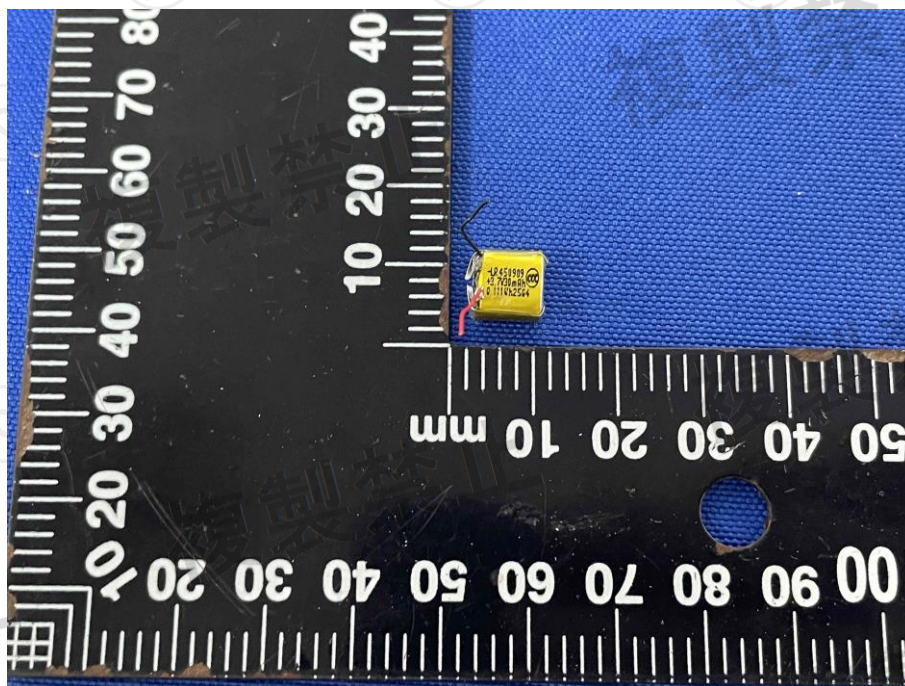
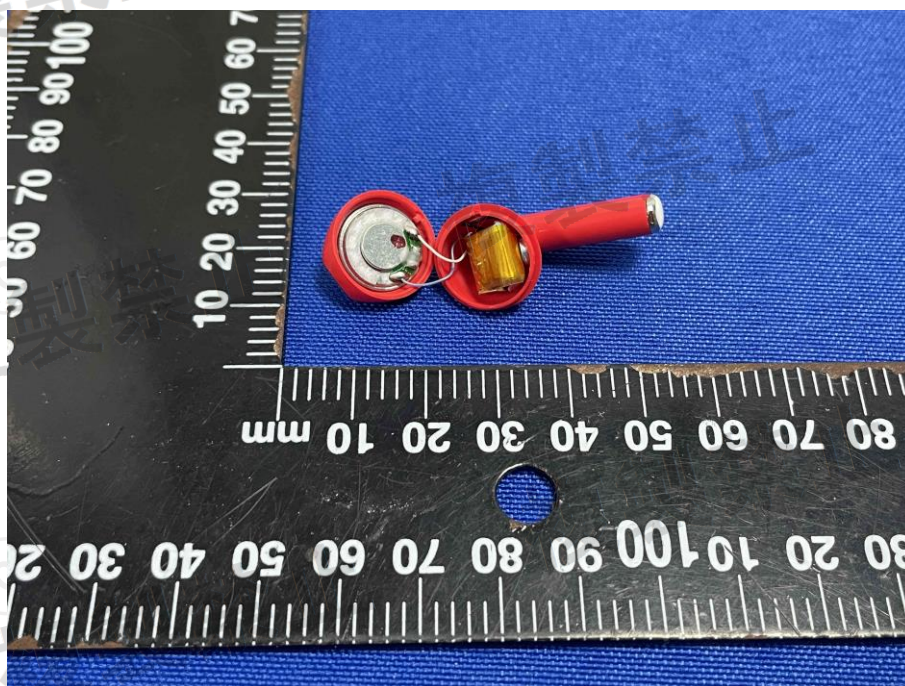


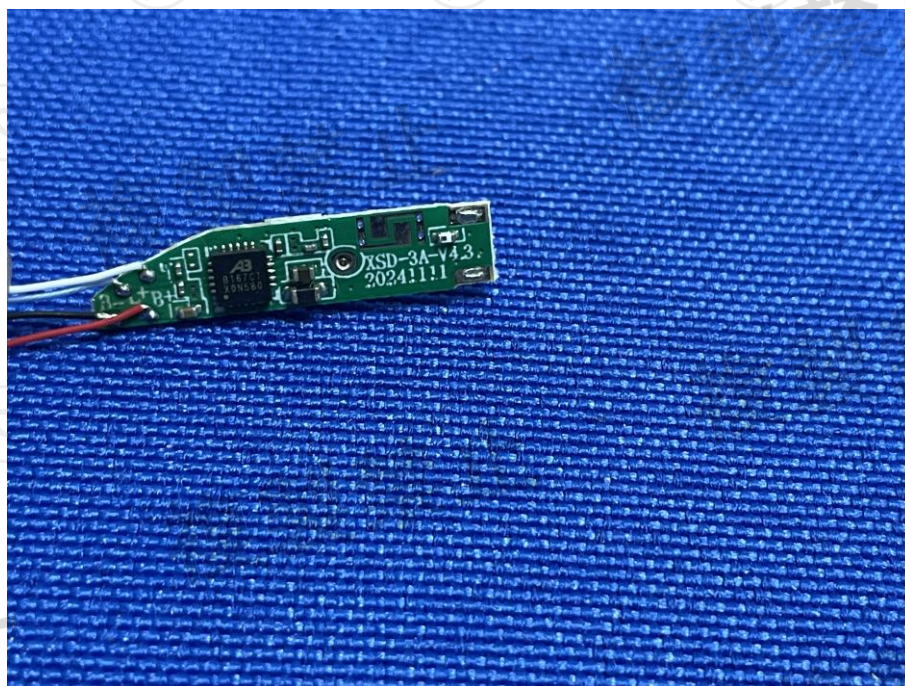
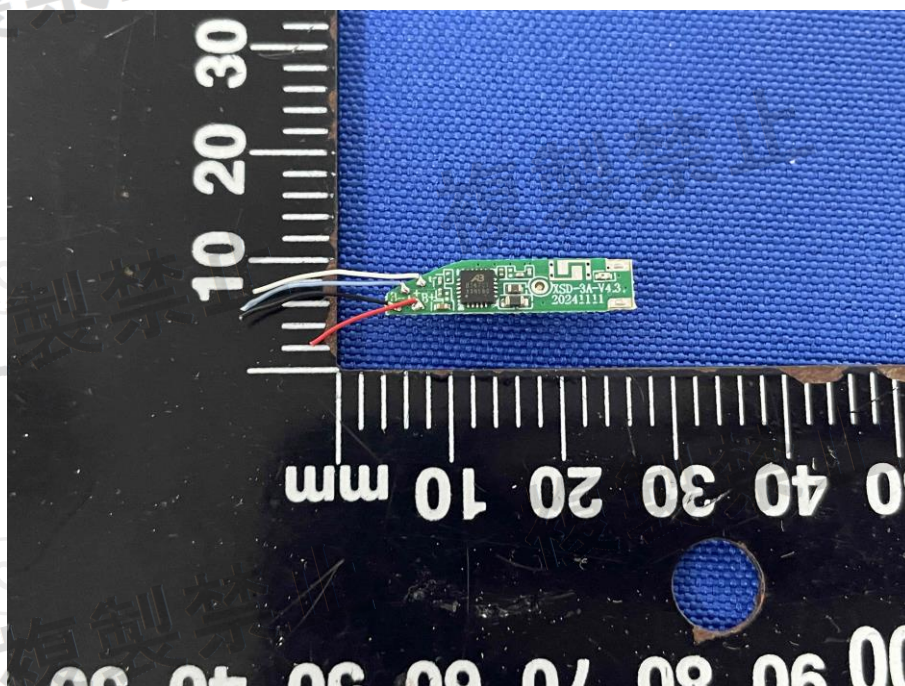
Inside View

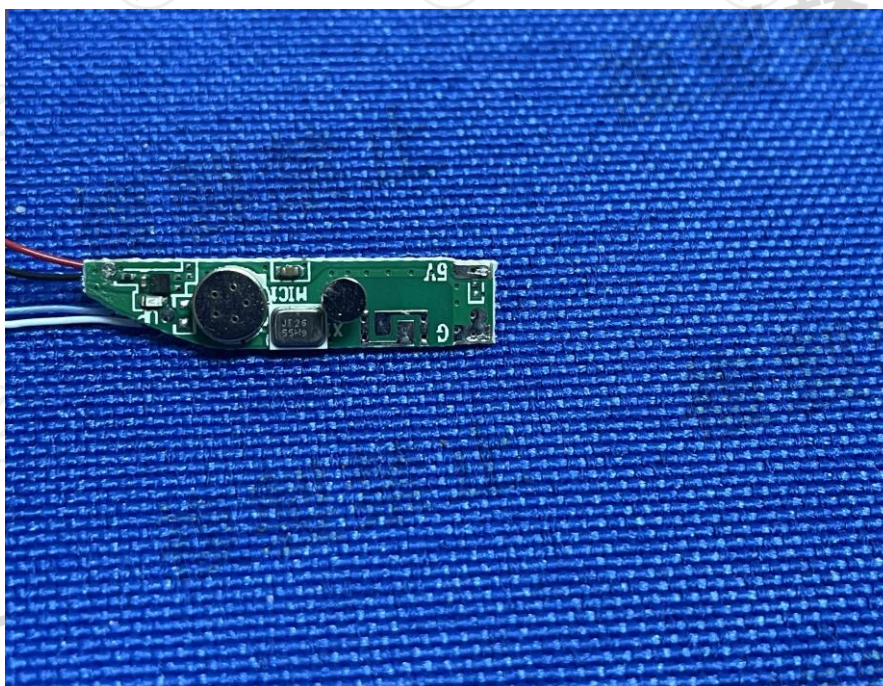
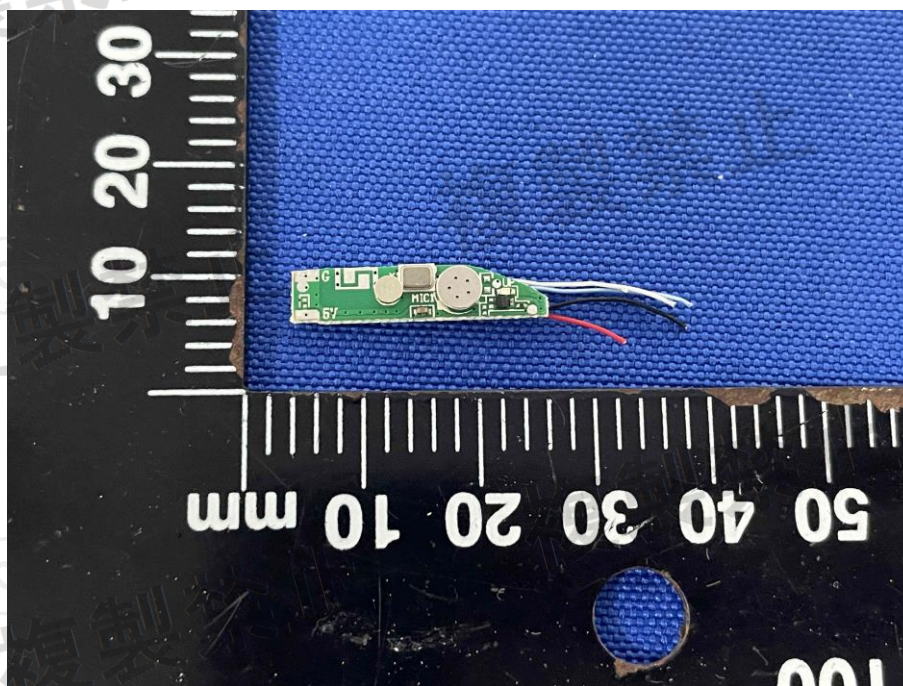












*******END OF REPORT*******