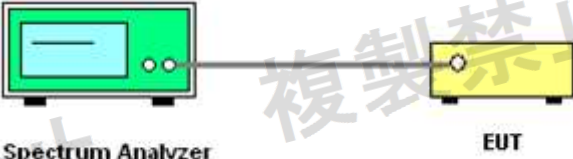


6.5. Spurious Radiation Or Extraneous Emission Strength

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:	30MHz~1000MHz: 2.5 μ W/MHz (-26dBm) 1000MHz~2387MHz: 2.5 μ W/MHz (-26dBm) 2387MHz~2400MHz: 25 μ W/MHz (-16dBm) 2483.5 MHz~2496.5MHz: 25 μ W/MHz (-16dBm) 2496.5MHz~12.75 GHz: 2.5 μ W/MHz (-26dBm)
Test Setup:	 The diagram illustrates the test setup. On the left is a green rectangular device labeled 'Spectrum Analyzer'. A black cable connects it to a yellow rectangular device on the right labeled '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

BLE 1M:

Lowest Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	825.40	-63.06	10	-53.06	0.005	2.5	PASS
		1000-2387	2240.00	-53.83	/	-53.83	0.004	2.5	
		2387-2400	2400.00	-29.05	/	-29.05	1.245	25	
		2483.5-2496.5	2493.42	-53.23	/	-53.23	0.005	25	
		2496.5-13000	2518.00	-44.79	/	-44.79	0.033	2.5	

Middle Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	240.49	-66.15	10	-56.15	0.002	2.5	PASS
		1000-2387	2356.50	-52.96	/	-52.96	0.005	2.5	
		2387-2400	2399.65	-49.76	/	-49.76	0.011	25	
		2483.5-2496.5	2494.91	-53.05	/	-53.05	0.005	25	
		2496.5-13000	2518.00	-52.05	/	-52.05	0.006	2.5	

Highest channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	765.26	-66.63	10	-56.63	0.002	2.5	PASS
		1000-2387	2296.80	-55.12	/	-55.12	0.003	2.5	
		2387-2400	2388.48	-56.07	/	-56.07	0.002	25	
		2483.5-2496.5	2492.77	-55.75	/	-55.75	0.003	25	
		2496.5-13000	2539.00	-49.84	/	-49.84	0.010	2.5	

Note: 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

BLE 2M:

Lowest Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	851.59	-66.66	10	-56.66	0.002	2.5	PASS
		1000-2387	1897.40	-43.11	/	-43.11	0.049	2.5	
		2387-2400	2399.74	-51.81	/	-51.81	0.007	25	
		2483.5-2496.5	2483.58	-39.21	/	-39.21	0.120	25	
		2496.5-13000	2497.00	-51.85	/	-51.85	0.007	2.5	

Middle Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	853.53	-66.79	10	-56.79	0.002	2.5	PASS
		1000-2387	2381.50	-53.56	/	-53.56	0.004	2.5	
		2387-2400	2399.94	-49.07	/	-49.07	0.012	25	
		2483.5-2496.5	2492.70	-53.42	/	-53.42	0.005	25	
		2496.5-13000	2570.02	-51.30	/	-51.30	0.007	2.5	

Highest channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	240.49	-65.83	10	-55.83	0.003	2.5	PASS
		1000-2387	1904.30	-48.36	/	-48.36	0.015	2.5	
		2387-2400	2399.84	-49.70	/	-49.70	0.011	25	
		2483.5-2496.5	2483.80	-38.57	/	-38.57	0.139	25	
		2496.5-13000	2518.00	-43.39	/	-43.39	0.046	2.5	

Note: 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

LE Coded (S=2):

Lowest Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	159.98	-66.37	10	-56.37	0.002	2.5	PASS
		1000-2387	1904.30	-48.36	/	-48.36	0.015	2.5	
		2387-2400	2400.00	-29.04	/	-29.04	1.247	25	
		2483.5-2496.5	2488.04	-52.74	/	-52.74	0.005	25	
		2496.5-13000	2560.00	-51.78	/	-51.78	0.007	2.5	

Middle Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	828.31	-63.68	10	-53.68	0.004	2.5	PASS
		1000-2387	2382.80	-54.54	/	-54.54	0.004	2.5	
		2387-2400	2399.84	-49.00	/	-49.00	0.013	25	
		2483.5-2496.5	2485.50	-52.97	/	-52.97	0.005	25	
		2496.5-13000	2518.00	-43.04	/	-43.04	0.050	2.5	

Highest channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	825.40	-62.55	10	-52.55	0.006	2.5	PASS
		1000-2387	2296.80	-54.42	/	-54.42	0.004	2.5	
		2387-2400	2399.78	-49.74	/	-49.74	0.011	25	
		2483.5-2496.5	2483.90	-42.14	/	-42.14	0.061	25	
		2496.5-13000	2528.00	-43.16	/	-43.16	0.048	2.5	

Note: 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

LE Coded (S=8):

Lowest Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	182.29	-65.89	10	-55.89	0.003	2.5	PASS
		1000-2387	2385.60	-52.39	/	-52.39	0.006	2.5	
		2387-2400	2399.99	-30.28	/	-30.28	0.938	25	
		2483.5-2496.5	2491.73	-52.98	/	-52.98	0.005	25	
		2496.5-13000	2539.00	-49.82	/	-49.82	0.010	2.5	

Middle Channel

Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	240.49	-65.70	10	-55.70	0.003	2.5	PASS
		1000-2387	1889.10	-45.54	/	-45.54	0.028	2.5	
		2387-2400	2399.97	-49.66	/	-49.66	0.011	25	
		2483.5-2496.5	2485.62	-52.76	/	-52.76	0.005	25	
		2496.5-13000	3631.00	-51.54	/	-51.54	0.007	2.5	

Highest channel

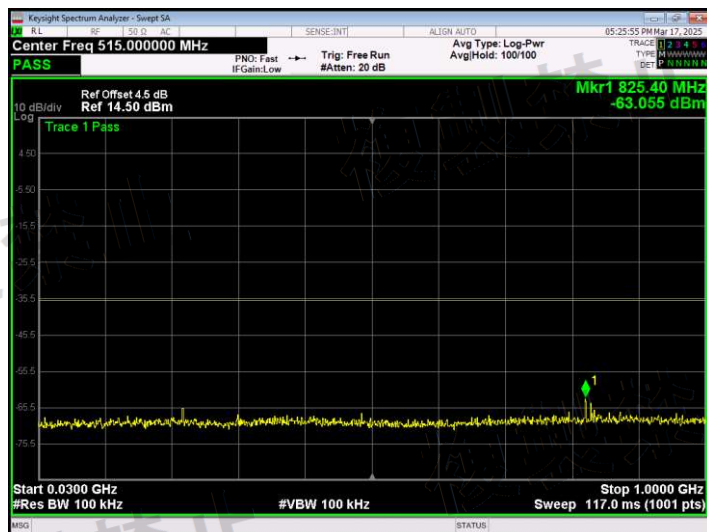
Test Condition		Frequency Range (MHz)	Frequency (MHz)	Read Level (dBm)	Compensate for RBW(dB)	Result (dBm)	Result (μW/MHz)	Limit (μW/MHz)	Result
Volt. (ac)	Temp. (°C)								
100V	25°C	30-1000	240.49	-65.54	10	-55.54	0.003	2.5	PASS
		1000-2387	2240.00	-53.11	/	-53.11	0.005	2.5	
		2387-2400	2399.89	-49.75	/	-49.75	0.011	25	
		2483.5-2496.5	2483.50	-40.67	/	-40.67	0.086	25	
		2496.5-13000	2497.00	-50.50	/	-50.50	0.009	2.5	

Note: Compensate 10dB is for Exchange rate of RBW

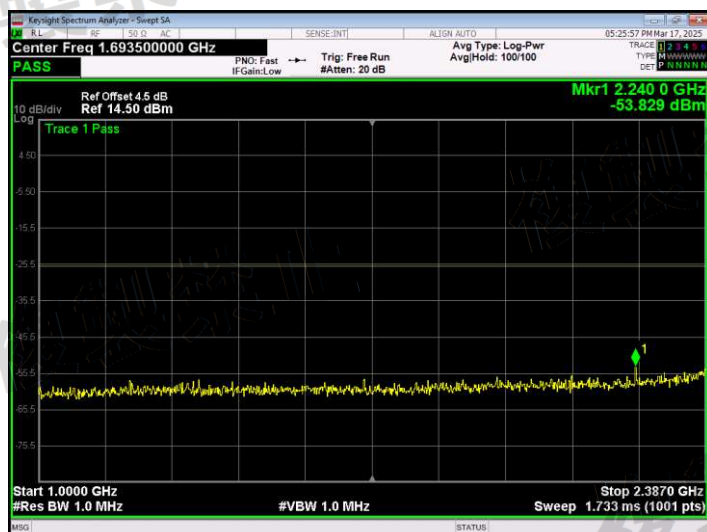
Exchange rate of RBW = $10 \cdot \log_{10}(\text{Reference bandwidth}/\text{RBW at measurement}) = 10[\text{dB}]$

where Reference bandwidth = 1 MHz, RBW at measurement = 100 kHz

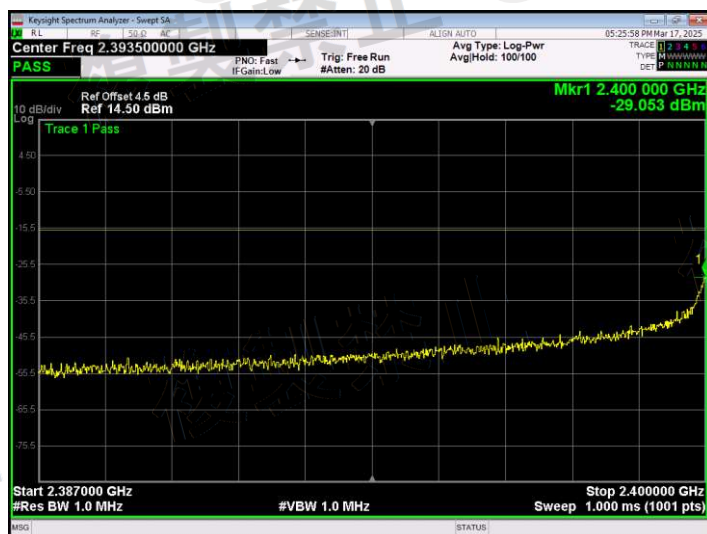
Lowest channel



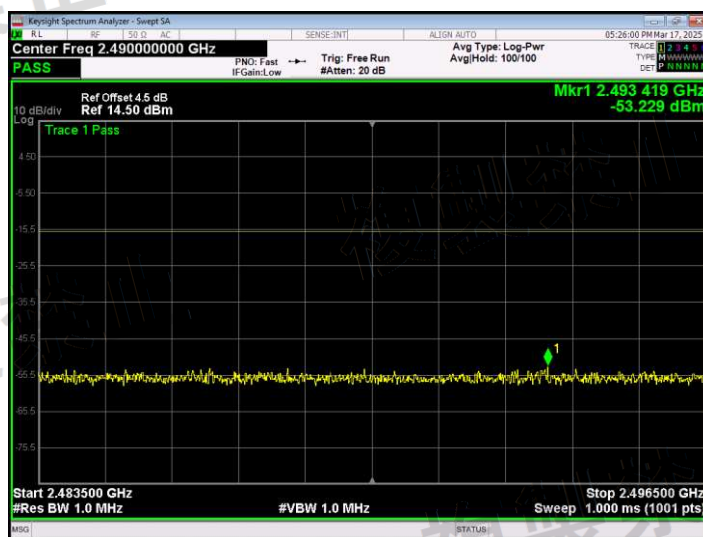
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

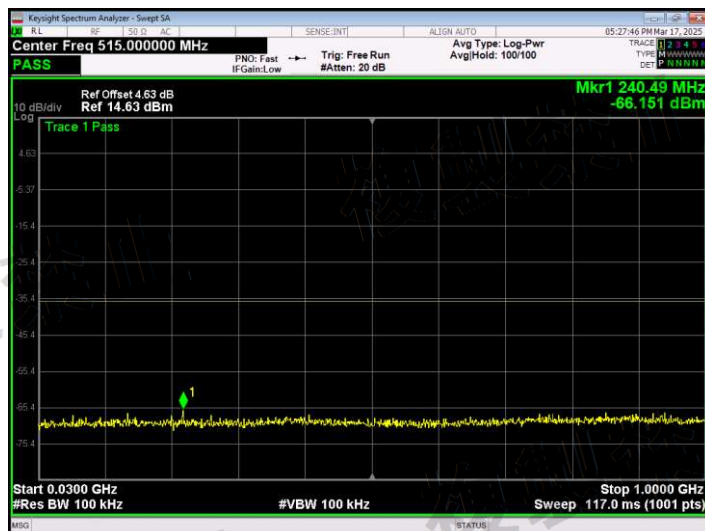


2483.5 MHz – 2496.5 MHz

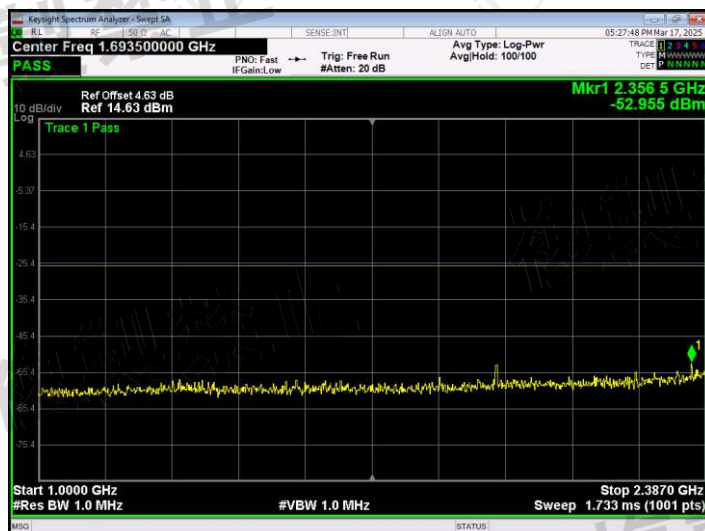


2496.5 MHz – 13000 MHz

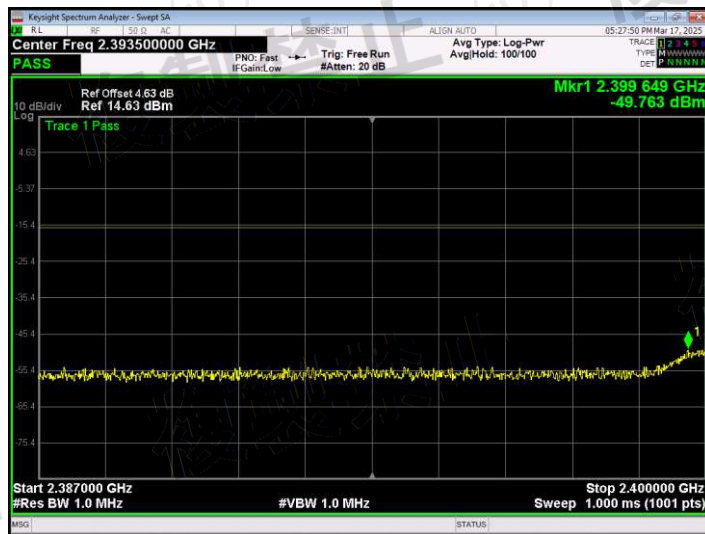
Middle channel



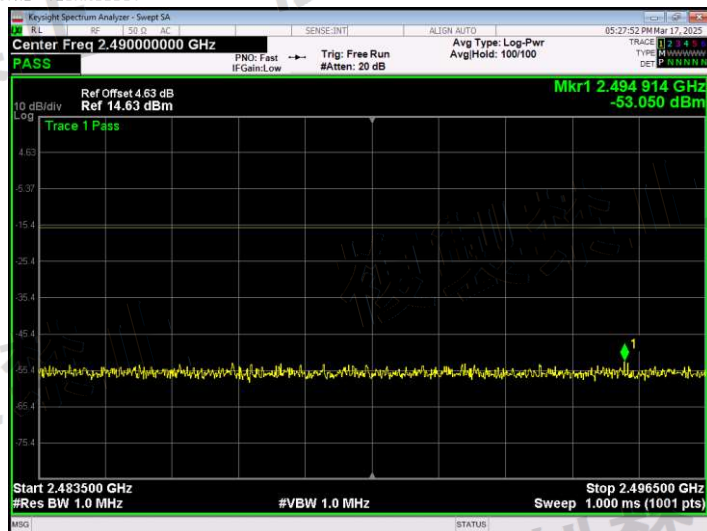
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

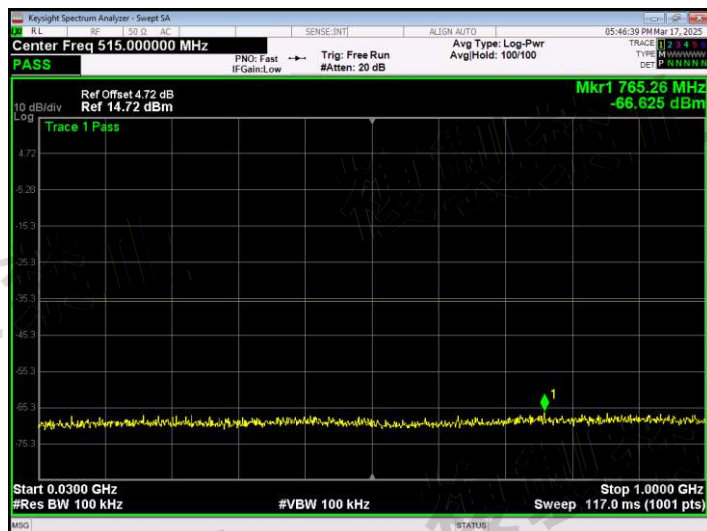


2483.5 MHz – 2496.5 MHz

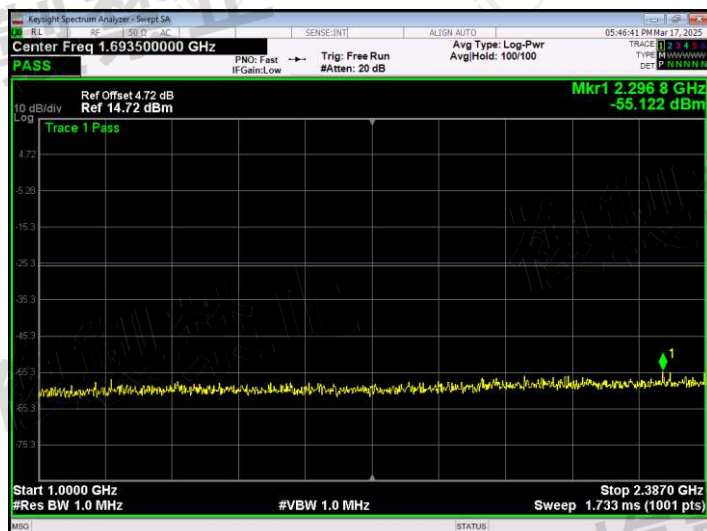


2496.5 MHz – 13000 MHz

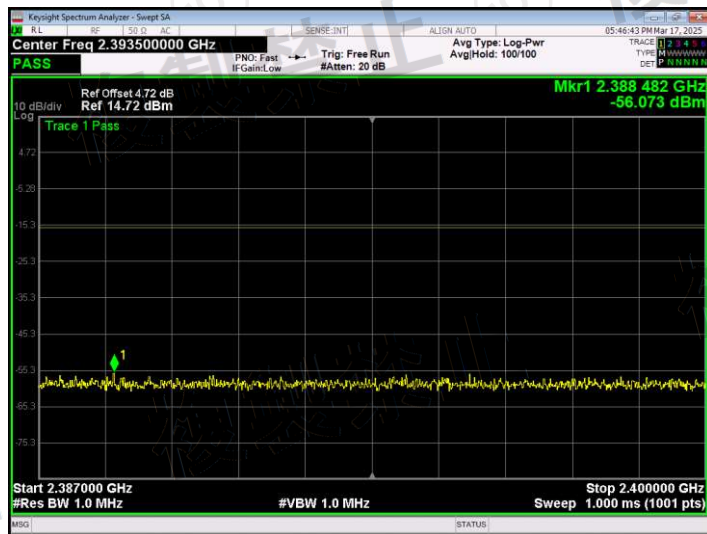
Highest channel



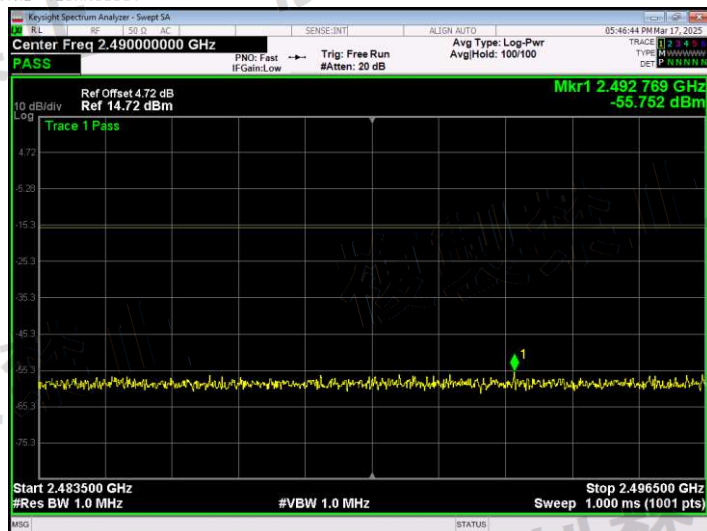
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz



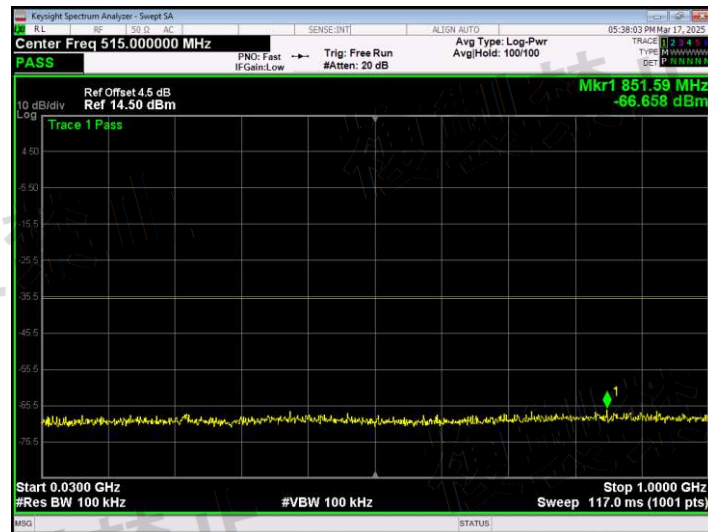
2483.5 MHz – 2496.5 MHz



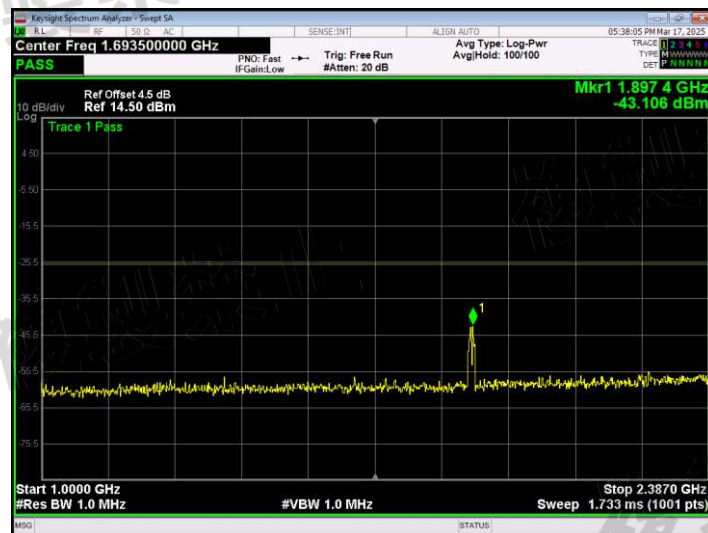
2496.5 MHz – 13000 MHz

BLE 2M:

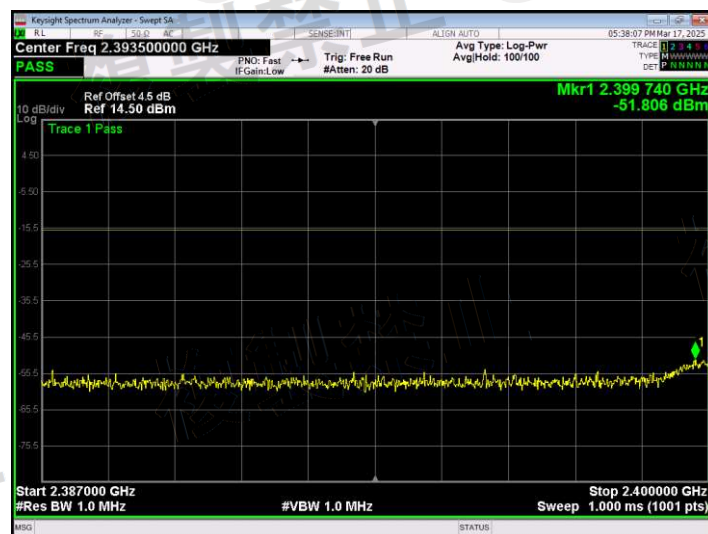
Lowest channel



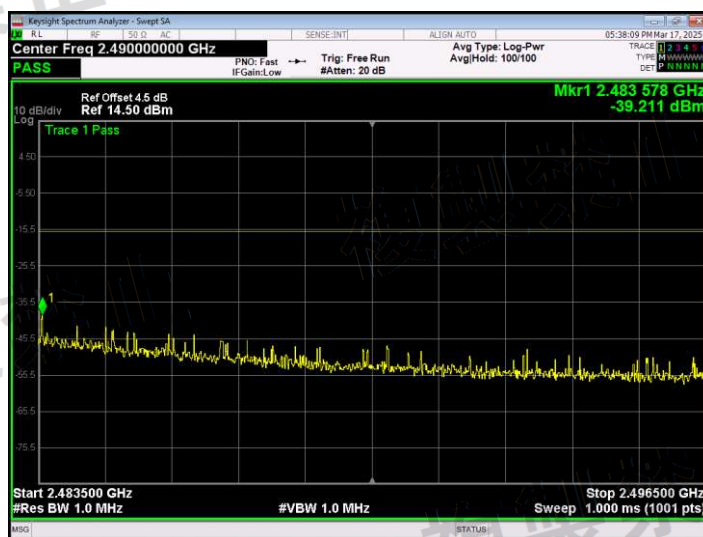
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

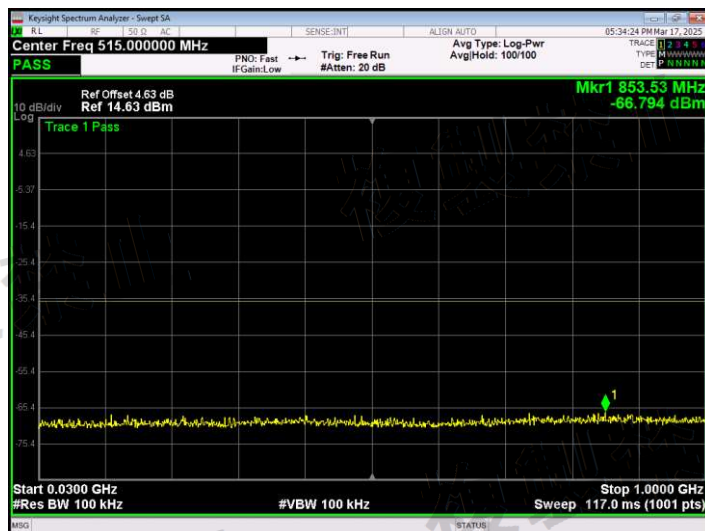


2483.5 MHz – 2496.5 MHz

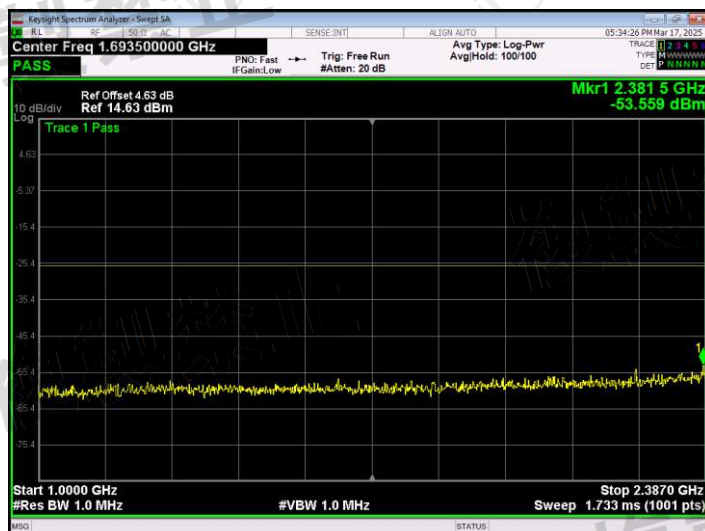


2496.5 MHz – 13000 MHz

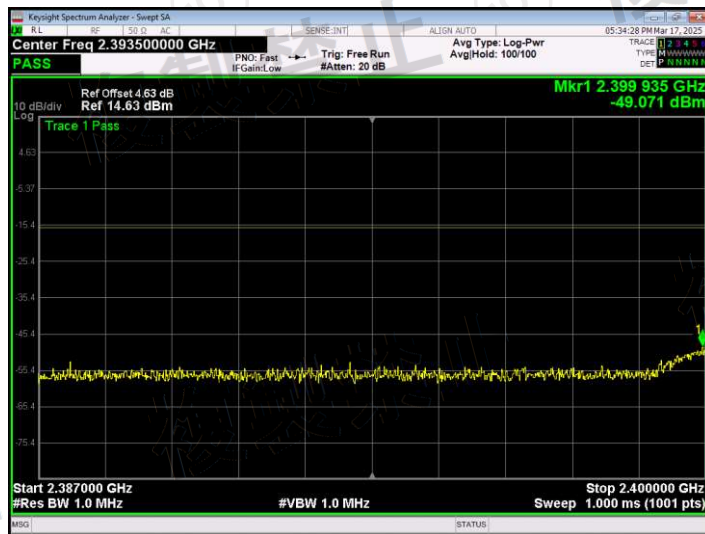
Middle channel



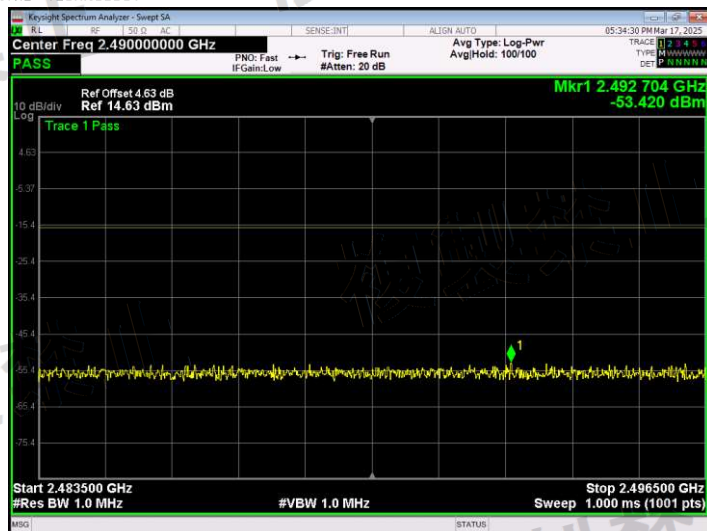
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

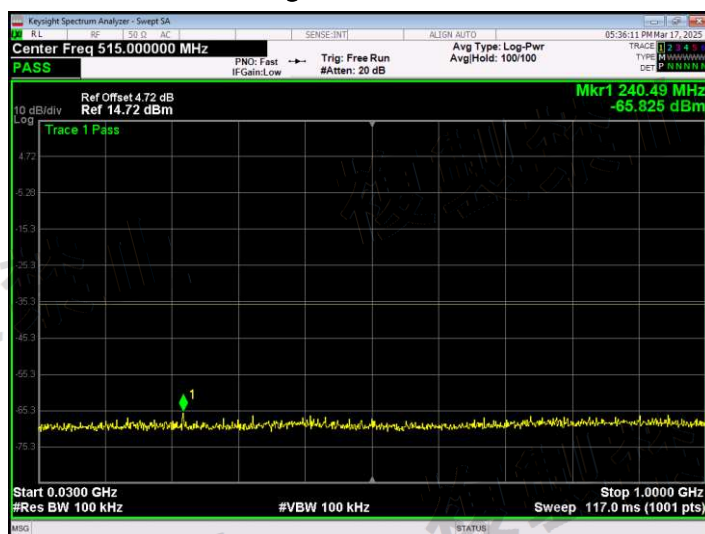


2483.5 MHz – 2496.5 MHz

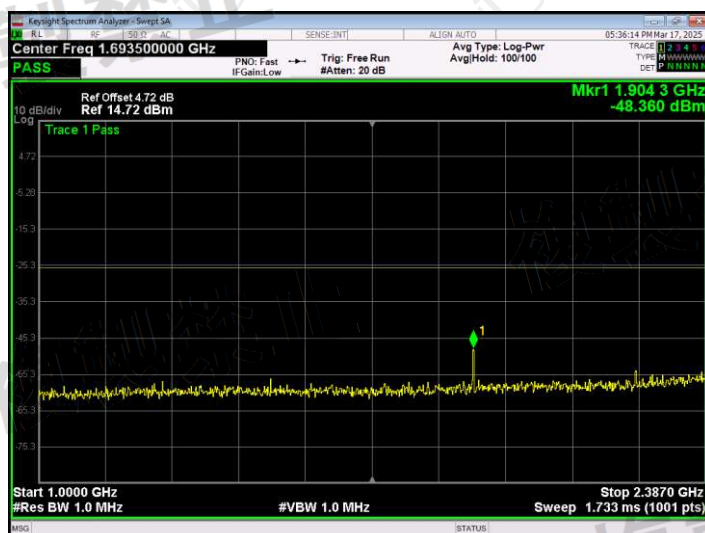


2496.5 MHz – 13000 MHz

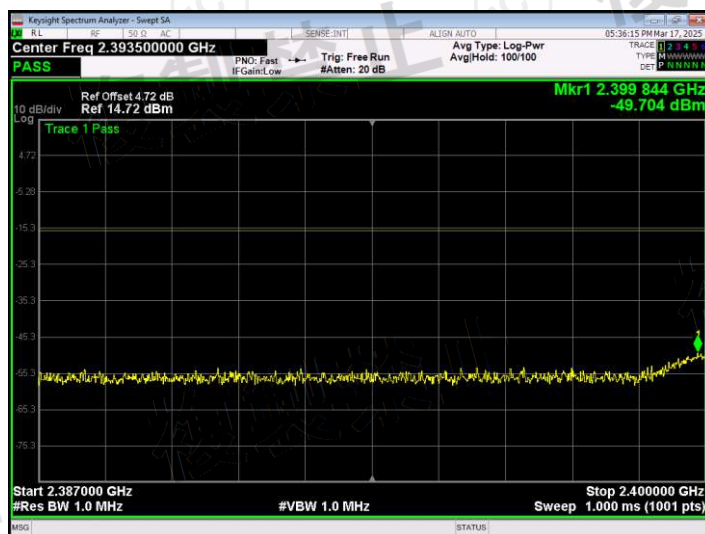
Highest channel



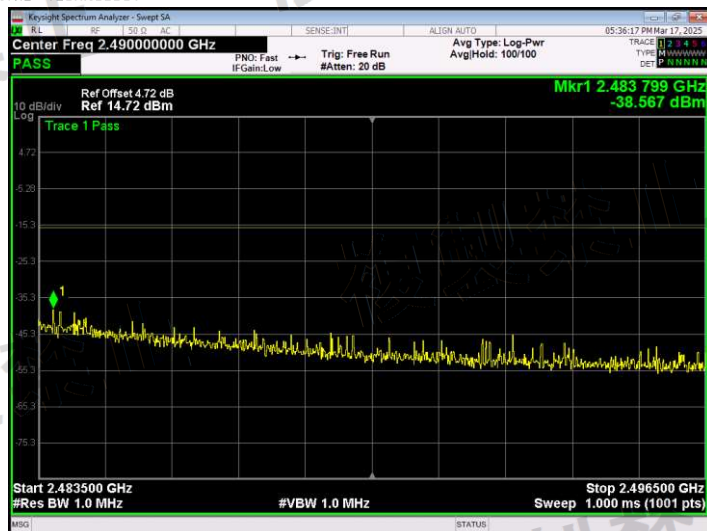
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz



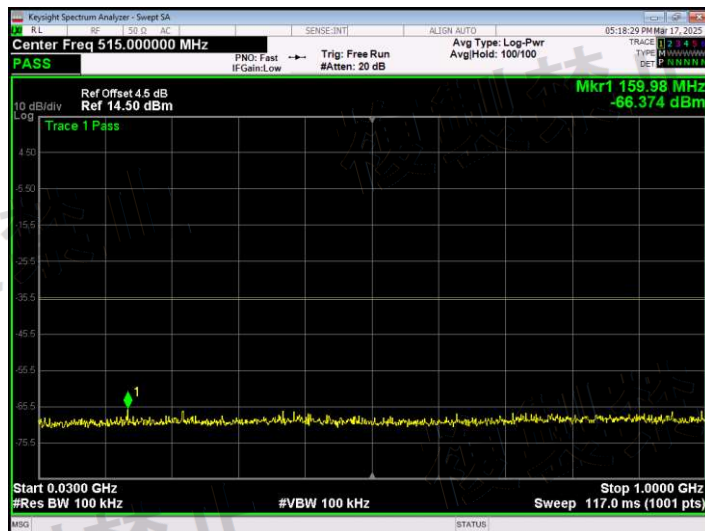
2483.5 MHz – 2496.5 MHz



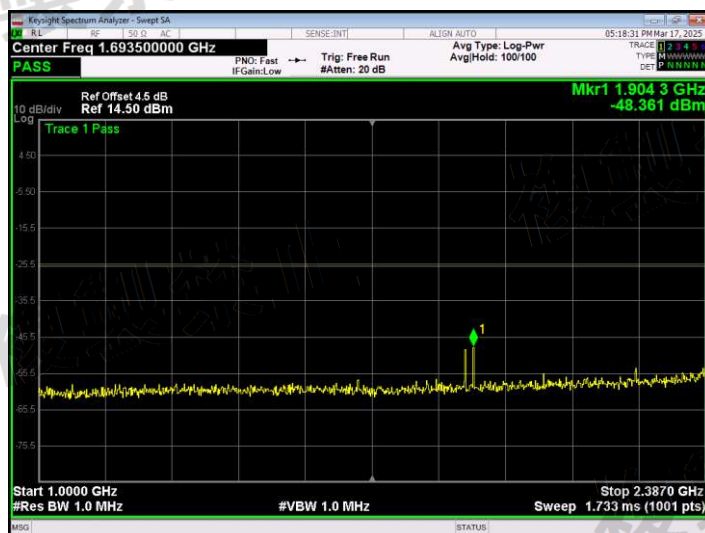
2496.5 MHz – 13000 MHz

LE Coded (S=2):

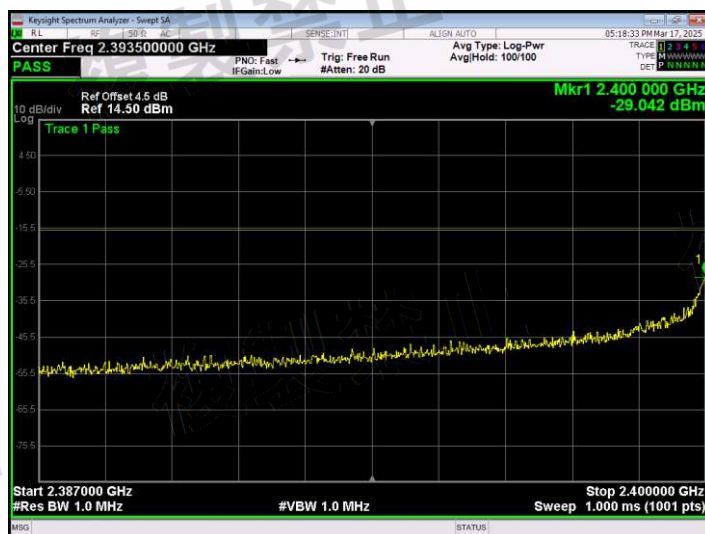
Lowest channel



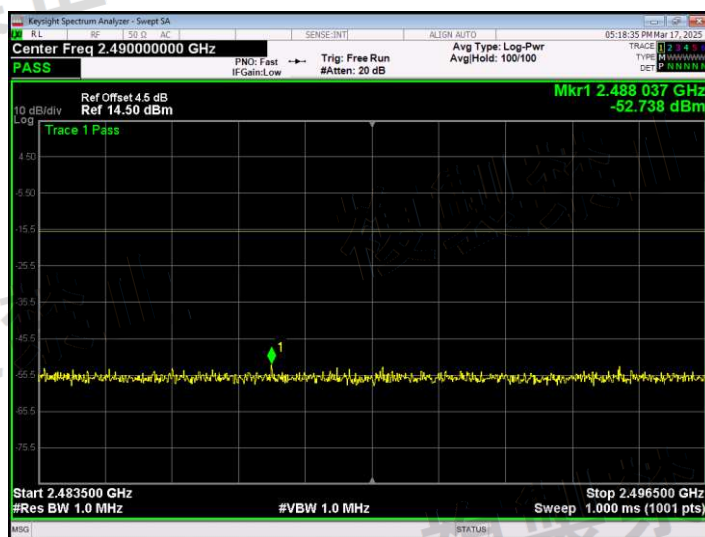
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

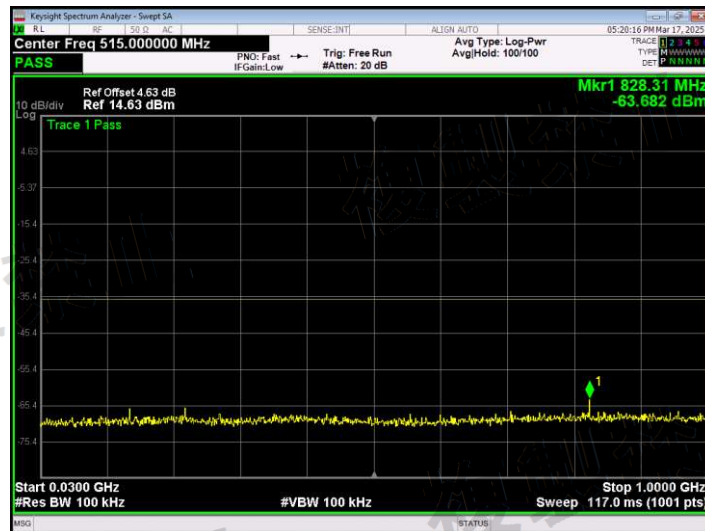


2483.5 MHz – 2496.5 MHz

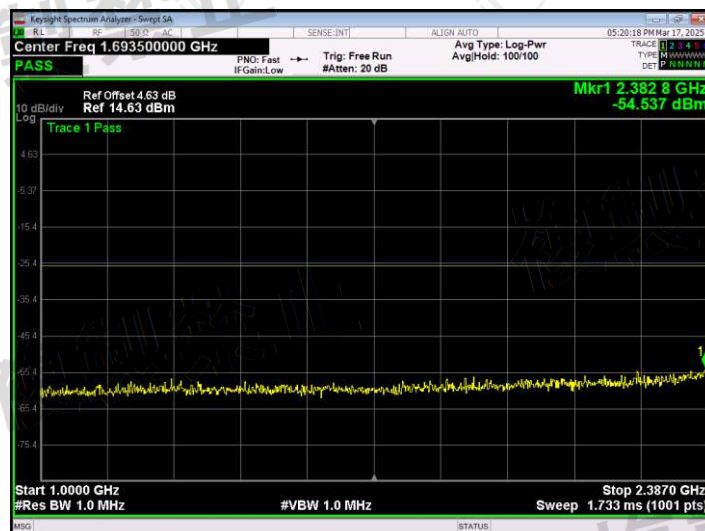


2496.5 MHz – 13000 MHz

Middle channel



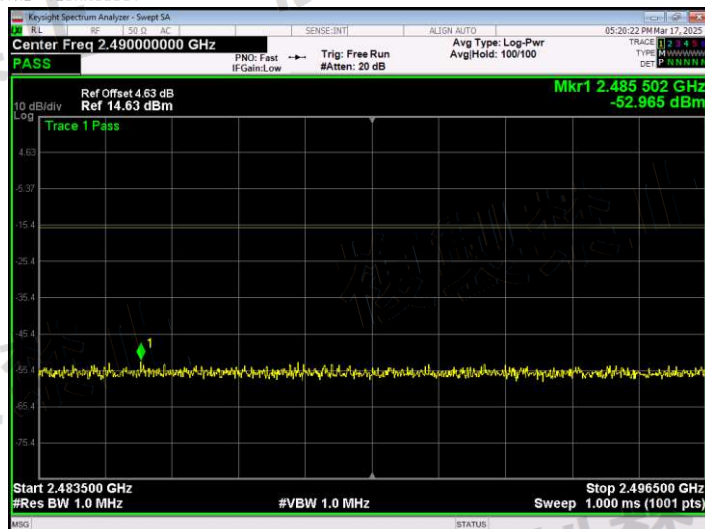
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

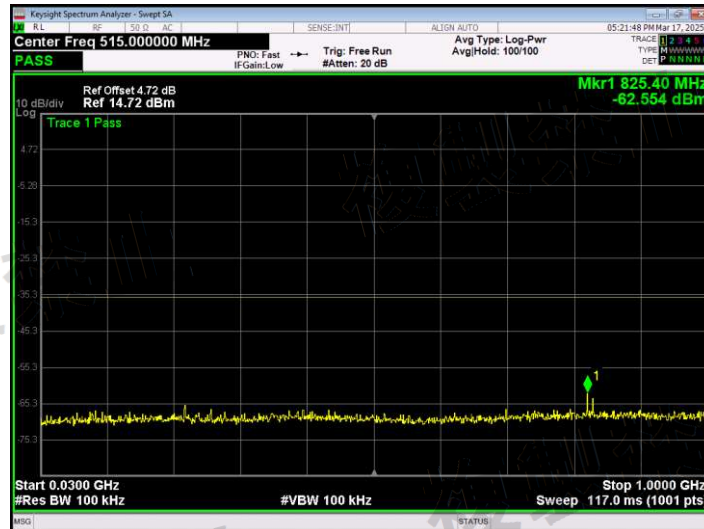


2483.5 MHz – 2496.5 MHz

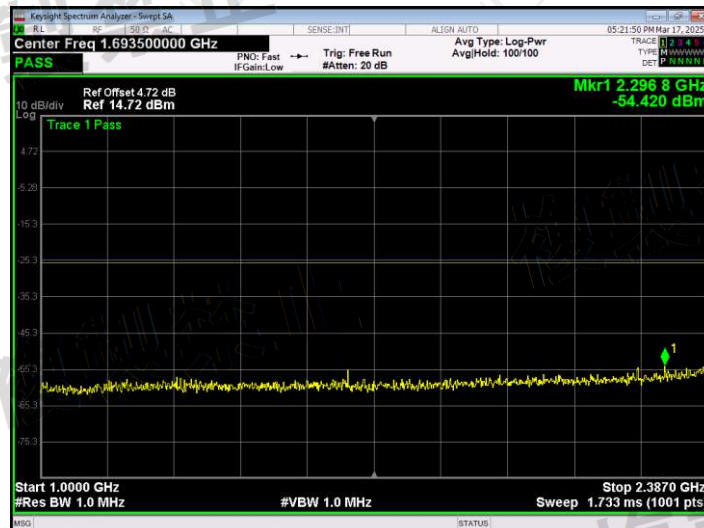


2496.5 MHz – 13000 MHz

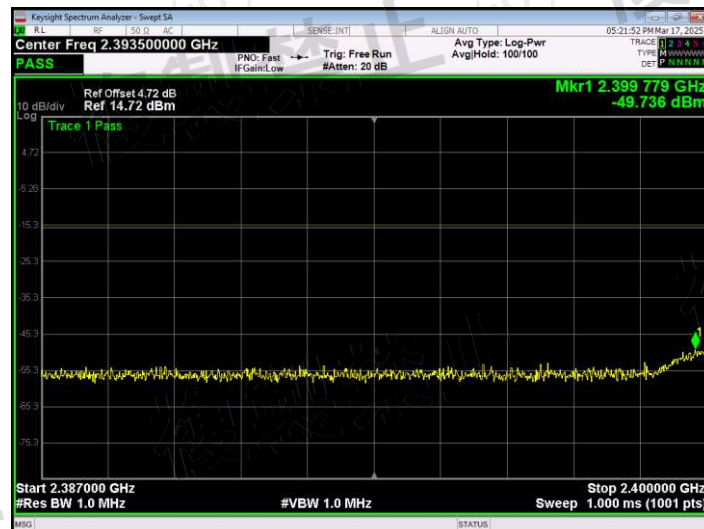
Highest channel



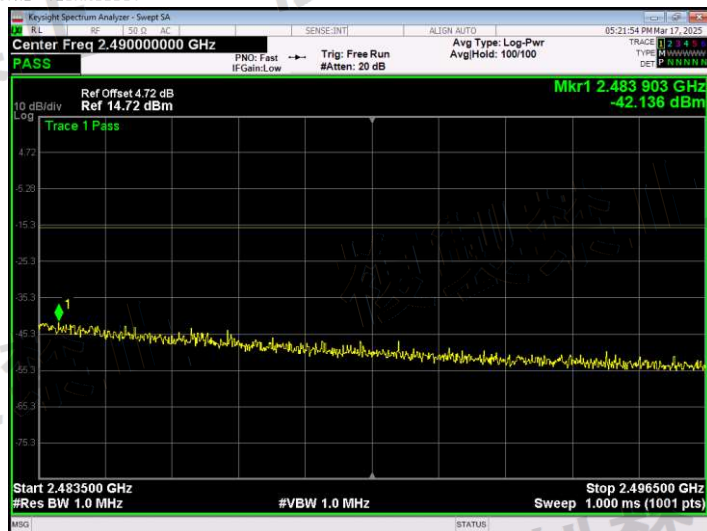
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz



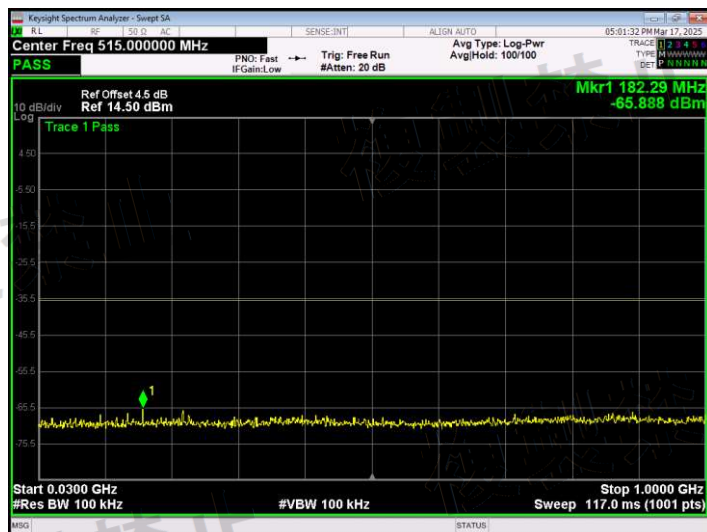
2483.5 MHz – 2496.5 MHz



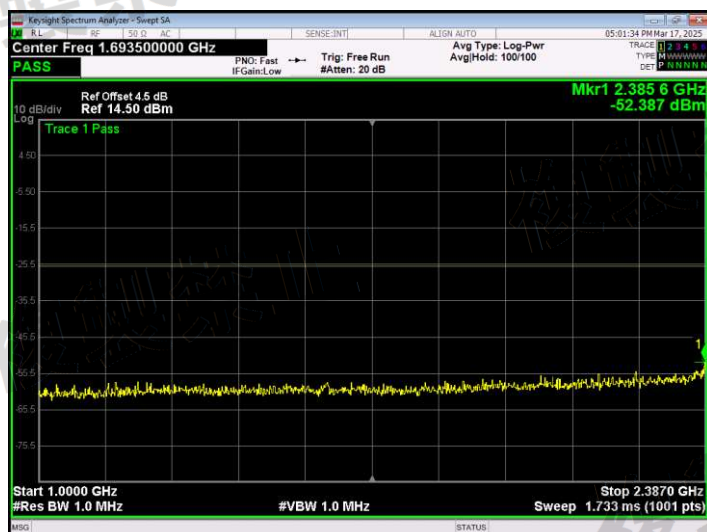
2496.5 MHz – 13000 MHz

LE Coded (S=8):

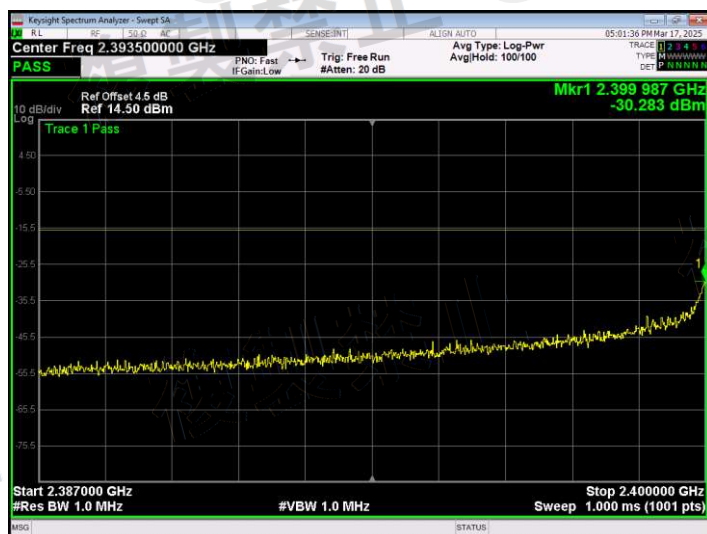
Lowest channel



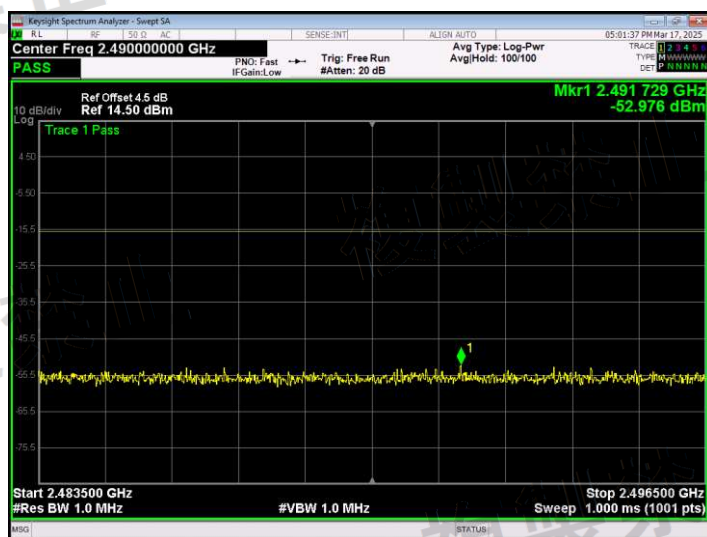
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

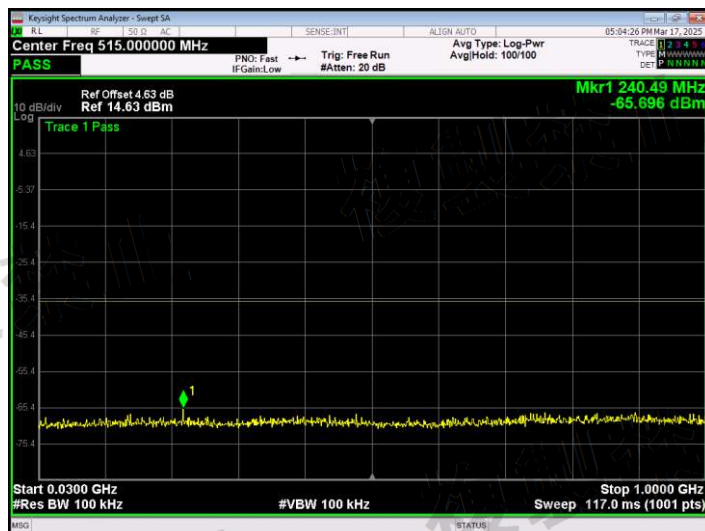


2483.5 MHz – 2496.5 MHz

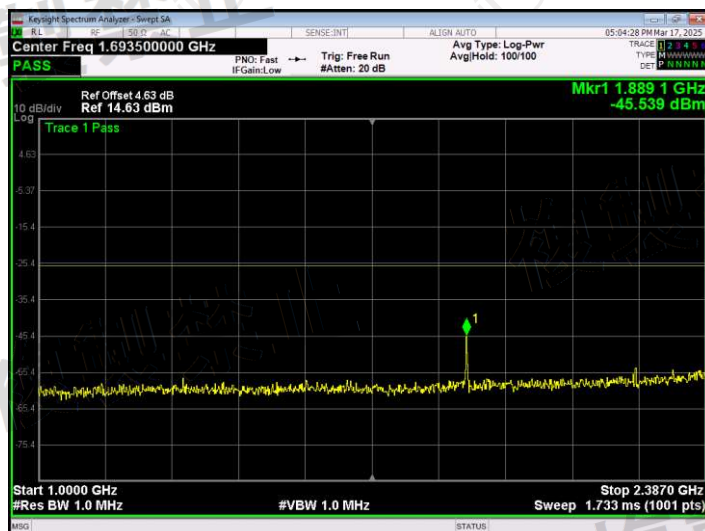


2496.5 MHz – 13000 MHz

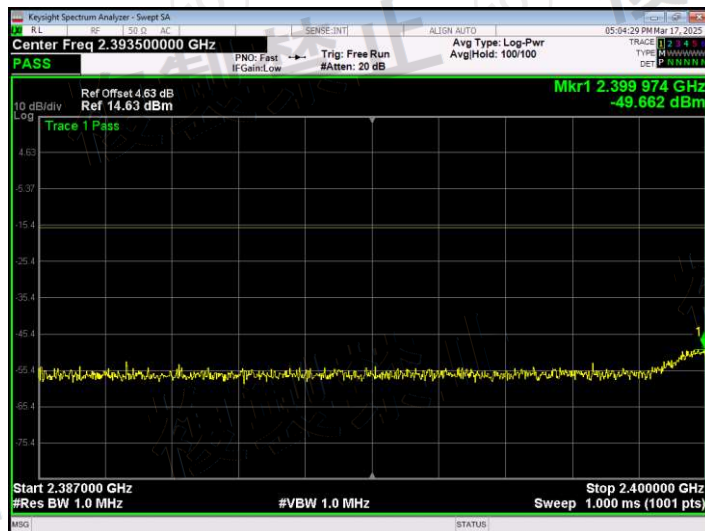
Middle channel



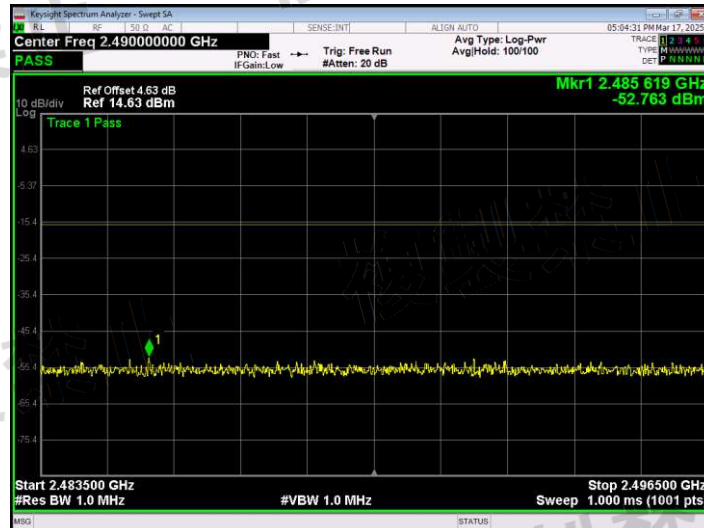
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz

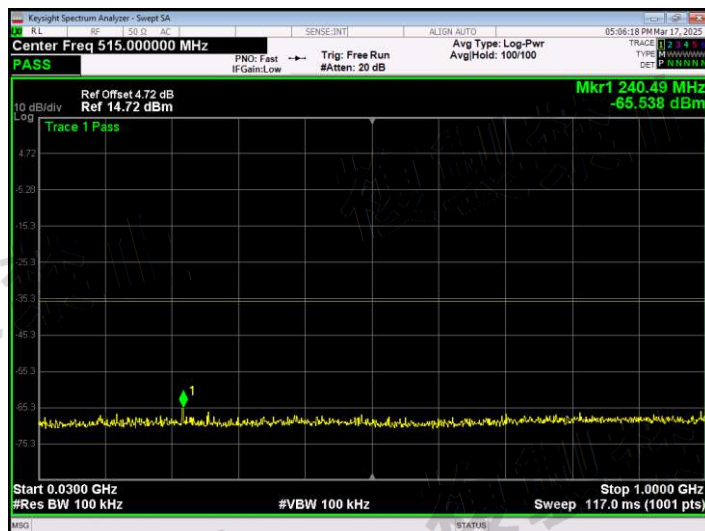


2483.5 MHz – 2496.5 MHz

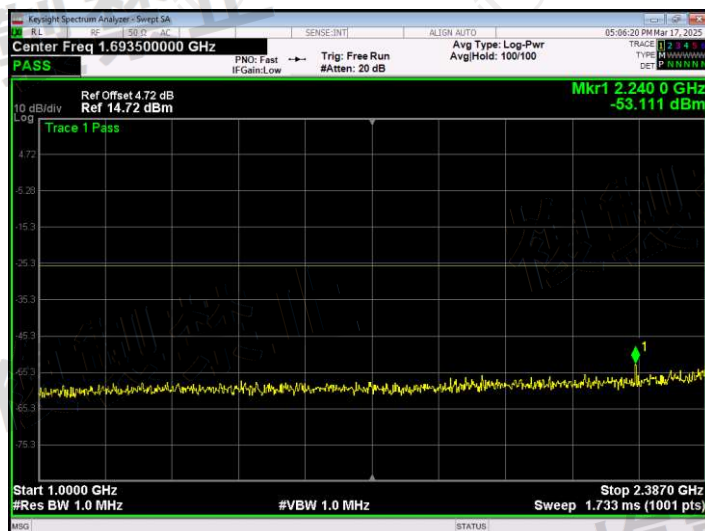


2496.5 MHz – 13000 MHz

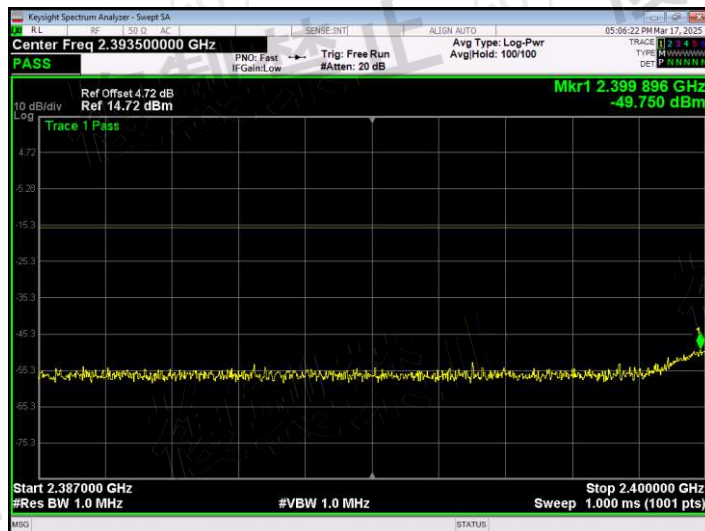
Highest channel



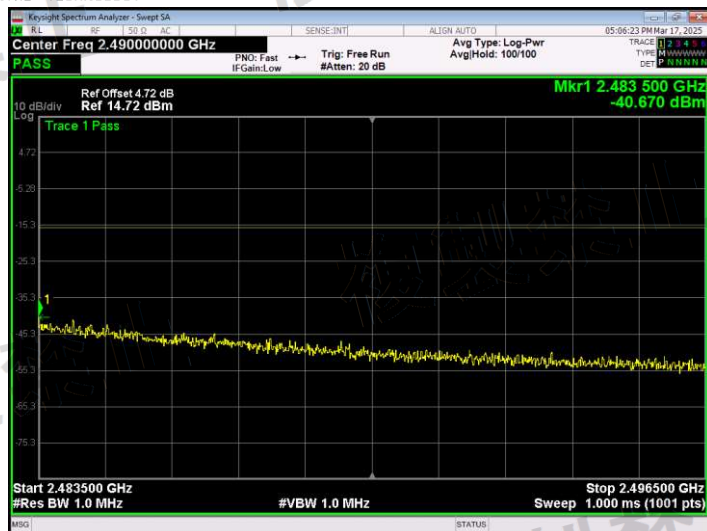
30 MHz – 1000 MHz



1000 MHz – 2387 MHz



2387 MHz – 2400 MHz



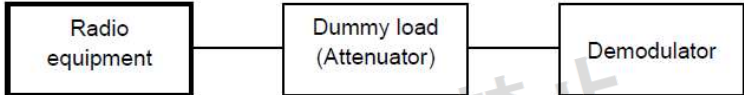
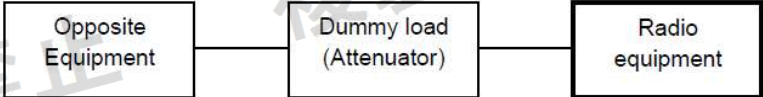
2483.5 MHz – 2496.5 MHz



2496.5 MHz – 13000 MHz

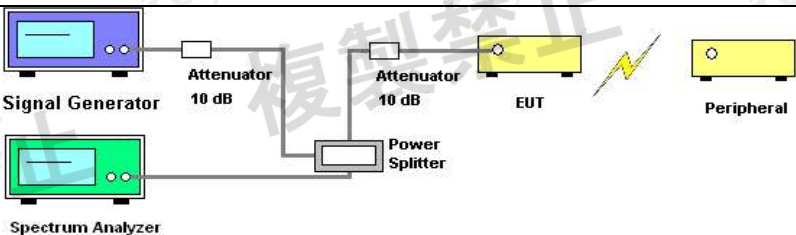
6.6. Interference suppression function

6.6.1. Test Specification

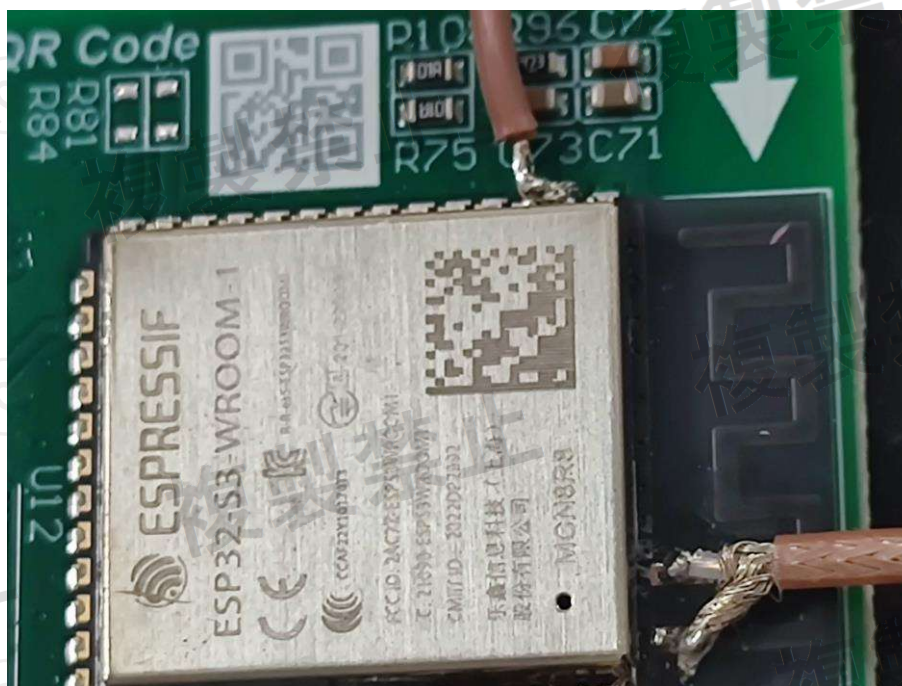
Test Requirement:	Article 2 paragraph 1 item 19
Test Method:	Appendix No.43 Notification No.88 of MIC, 2004 section 10
Operation Mode:	Usual operation condition.
Test setup:	(1) Transmission of identification code  <pre> graph LR A[Radio equipment] --- B[Dummy load (Attenuator)] B --- C[Demodulator] </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 - Transmit the assigned identification code from the radio equipment. - Confirm the identification code received by the demodulator. 2 The radio equipment with automatic receiving function of identification code - Transmit the assigned identification code from the opposite equipment. - Confirm that the usual communication is available. - Transmit the identification code distinct from the assigned one from the opposite equipment. - 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 58:20:59:be:42:69.

6.7. Carrier sensing function

6.7.1. Test Specification

Test Requirement:	Article 2 paragraph 1 item 19
Limit	Good – EUT stop RF transmission signal after carrier inject to EUT. (On $22.79 + Gr - 20 \cdot \log(f)$ [dBm] (Gr: dBi; f: MHz) or 100mV/m)
Operation Mode:	The EUT was programmed to be in normal transmitting mode.
Test setup:	 The diagram illustrates the test setup. A Signal Generator (blue box) is connected to an Attenuator (10 dB, white box). The output of the attenuator is connected to a Power Splitter (white box). The Power Splitter has two outputs: one connected to the EUT (yellow box) and another connected to a Peripheral (yellow box). A Spectrum Analyzer (green box) is also connected to the Power Splitter. A lightning bolt symbol is shown between the EUT and the Peripheral.
Test Procedure:	- SSG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SSG and power level is (On $22.79 + Gr - 20 \cdot \log(f)$ [dBm] (Gr: dBi; f: MHz). Then turn off the function RF signal of SSG. - EUT have transmitted the maximum modulation signal and fixed channelize. - Setting of SA is following as: RB:1MHz / VB:1MHz / SPAN: 50MHz / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak. - SSG RF Signal On. - EUT shall be stop the transmitted any signal and SSG RF Signal Off. Then EUT will be continuous transmitted signal.
Test results:	N/A, since EIRP does not require compensation through antenna power.

7. Photographs of Test Configuration



8. Photographs of EUT

Outside View

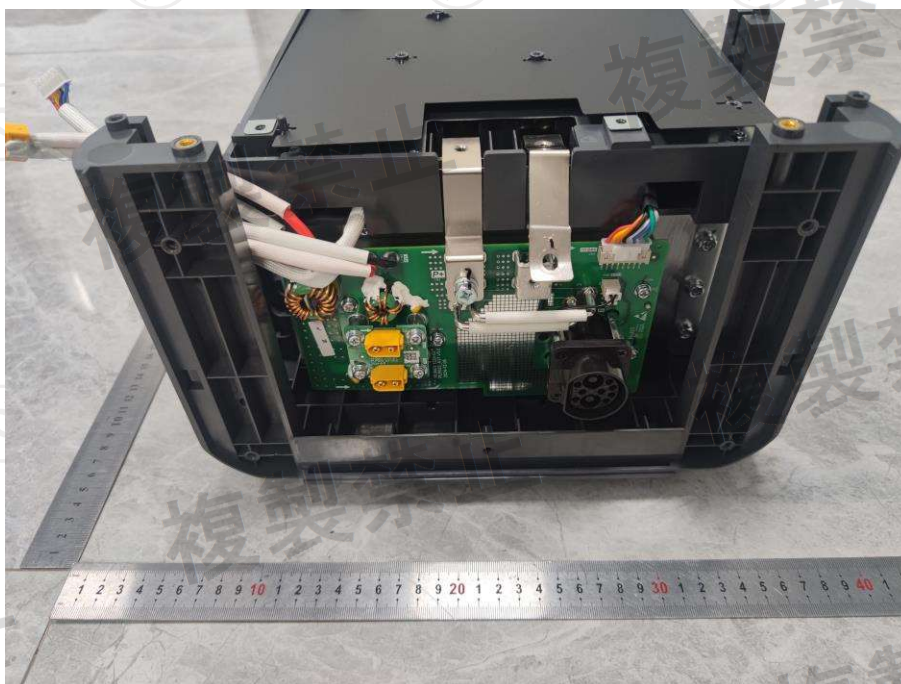
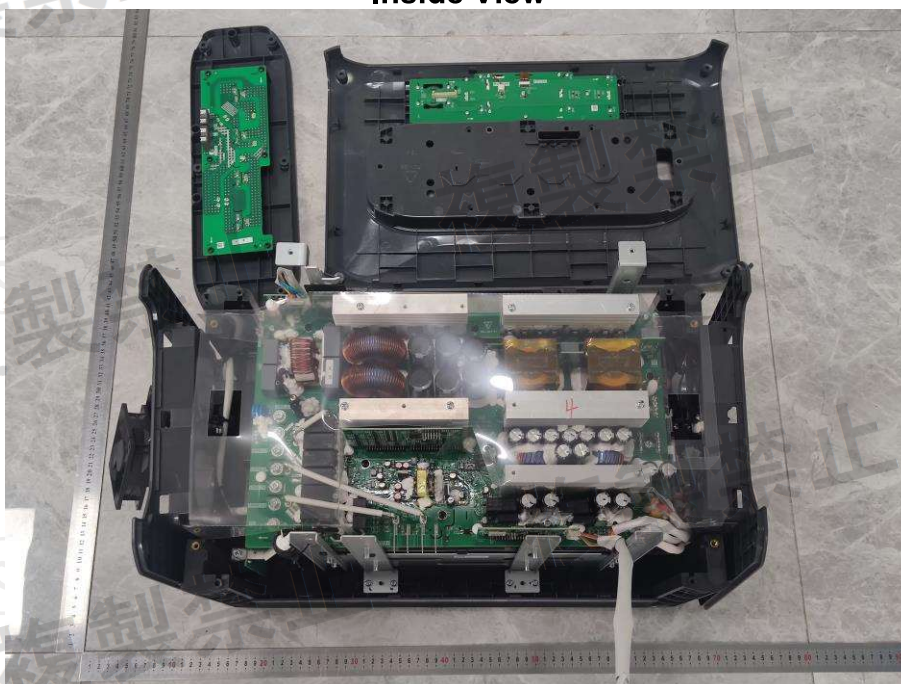


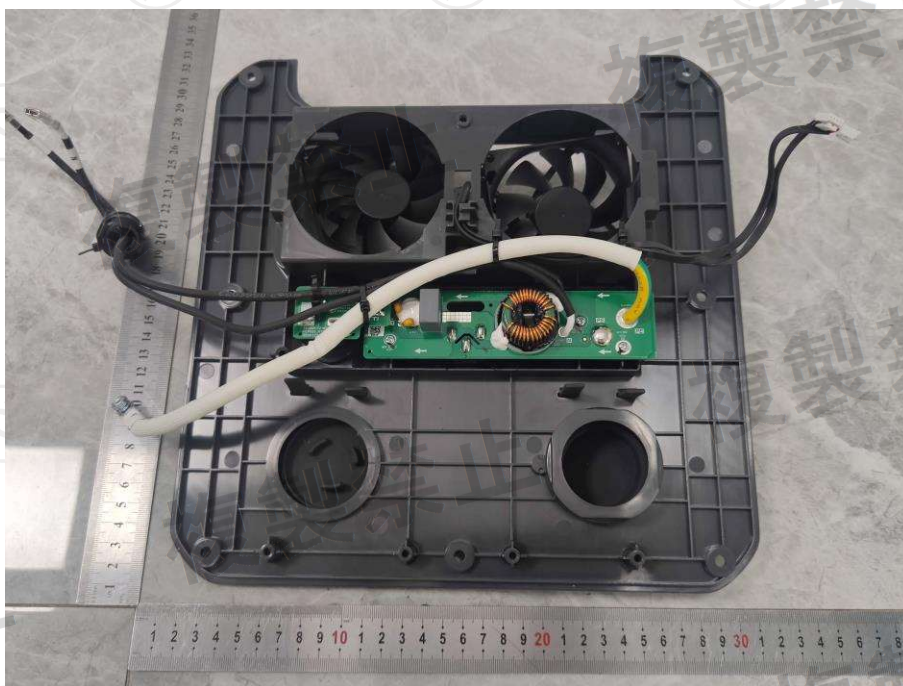
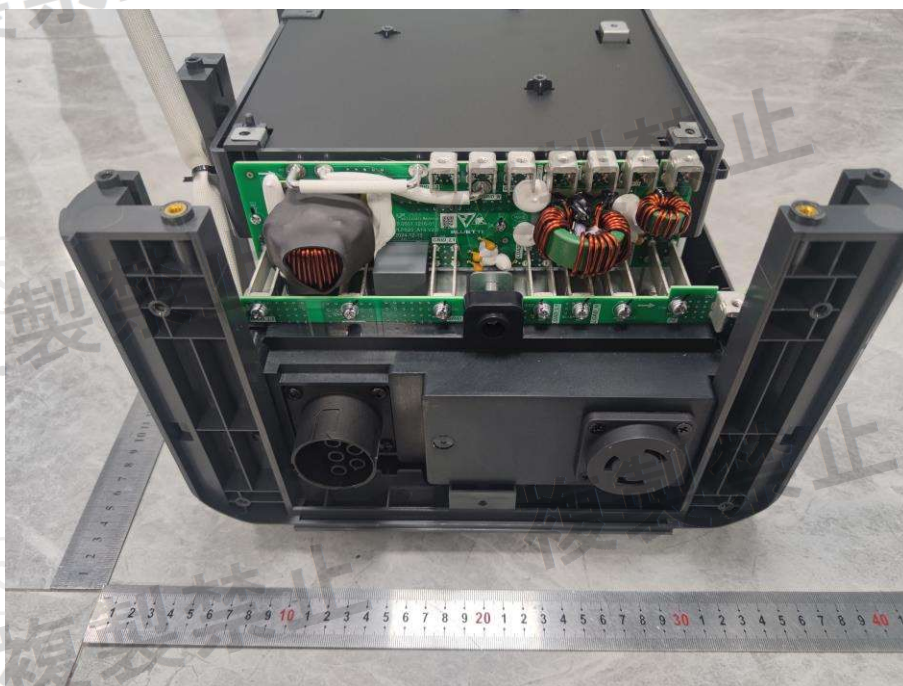




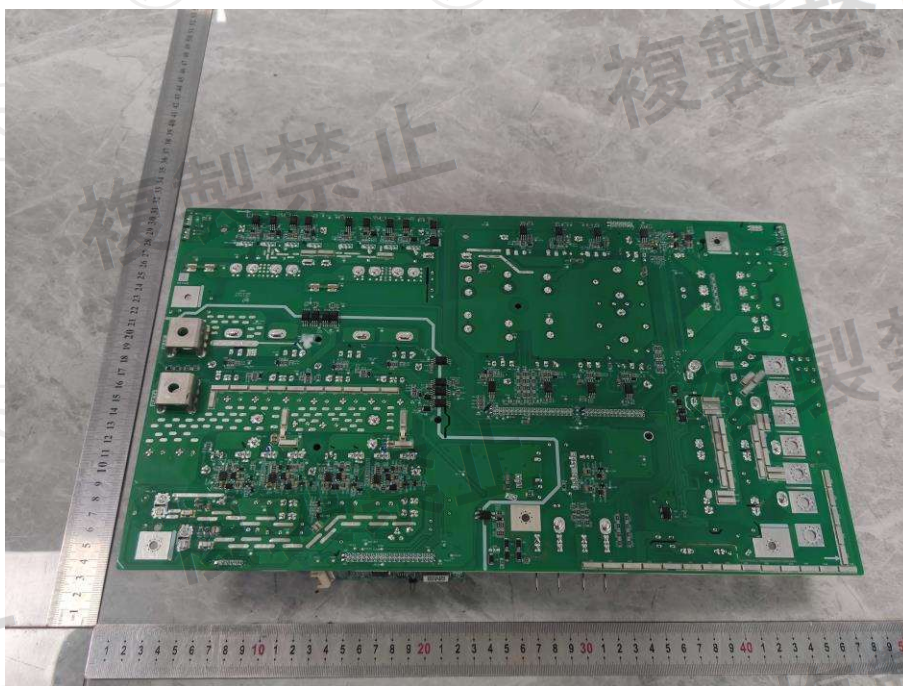
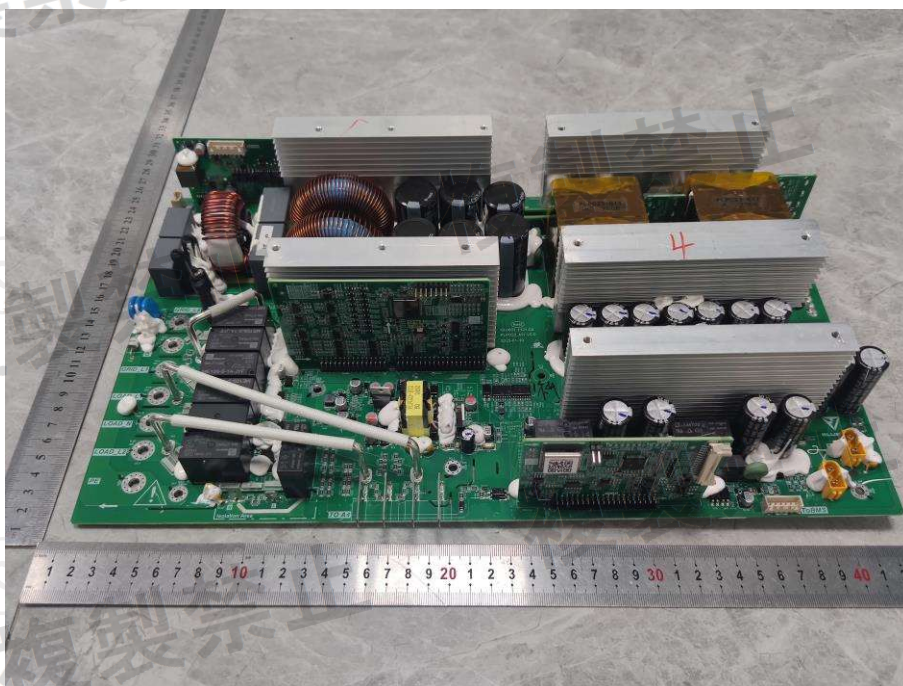


Inside View

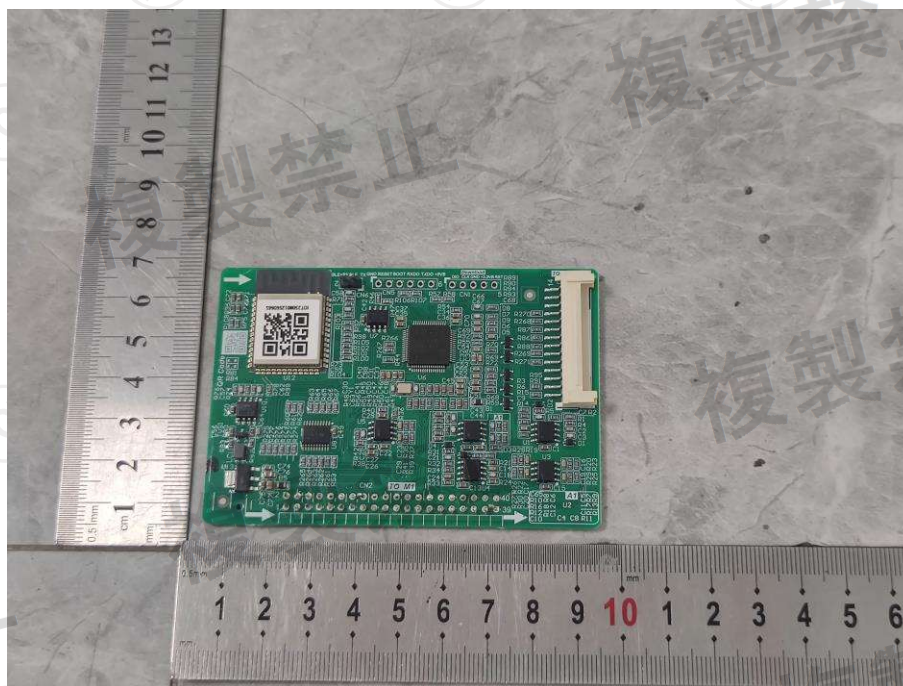
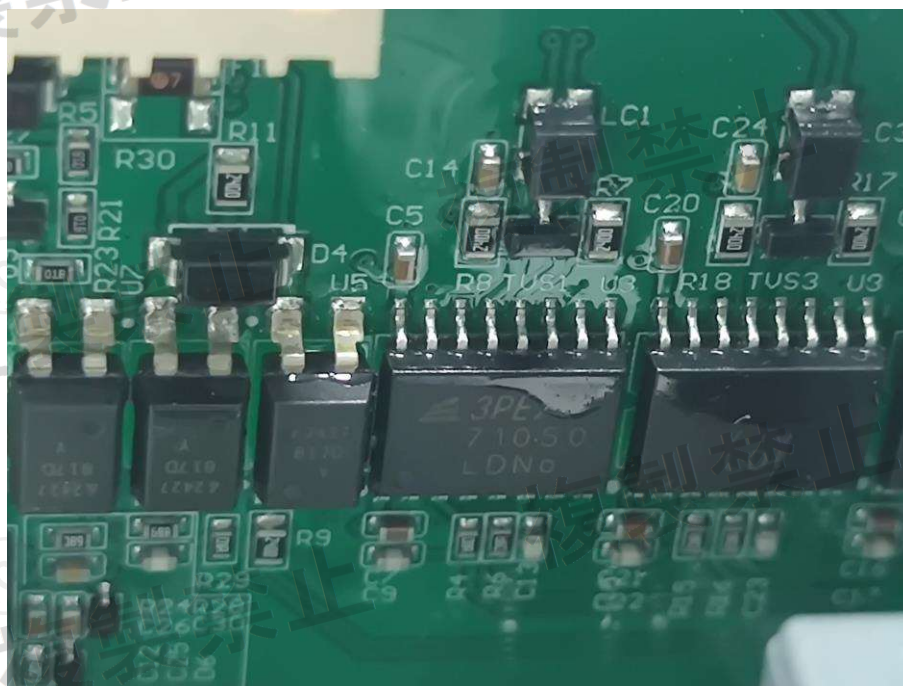


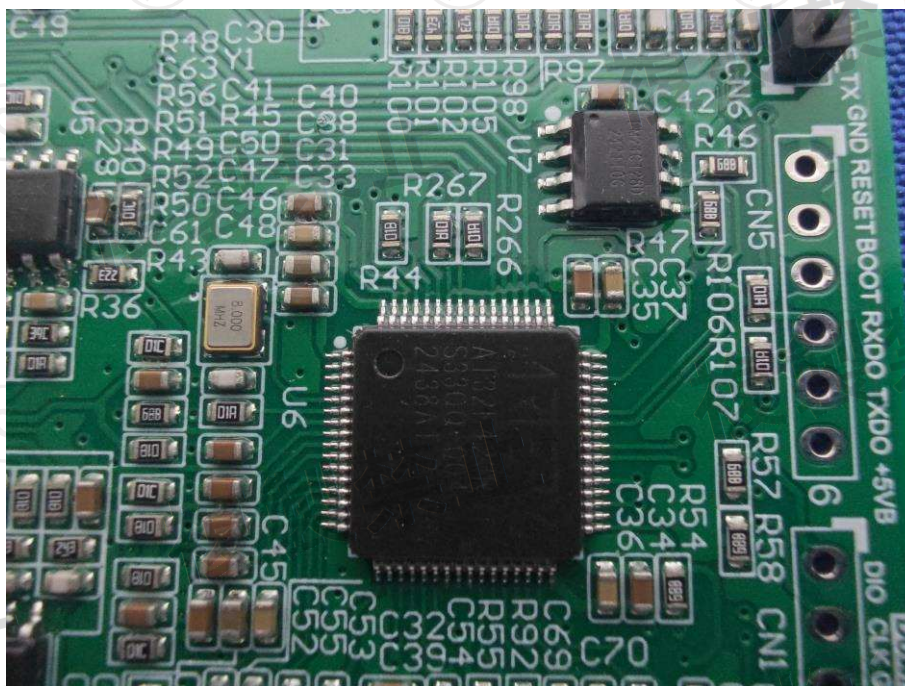
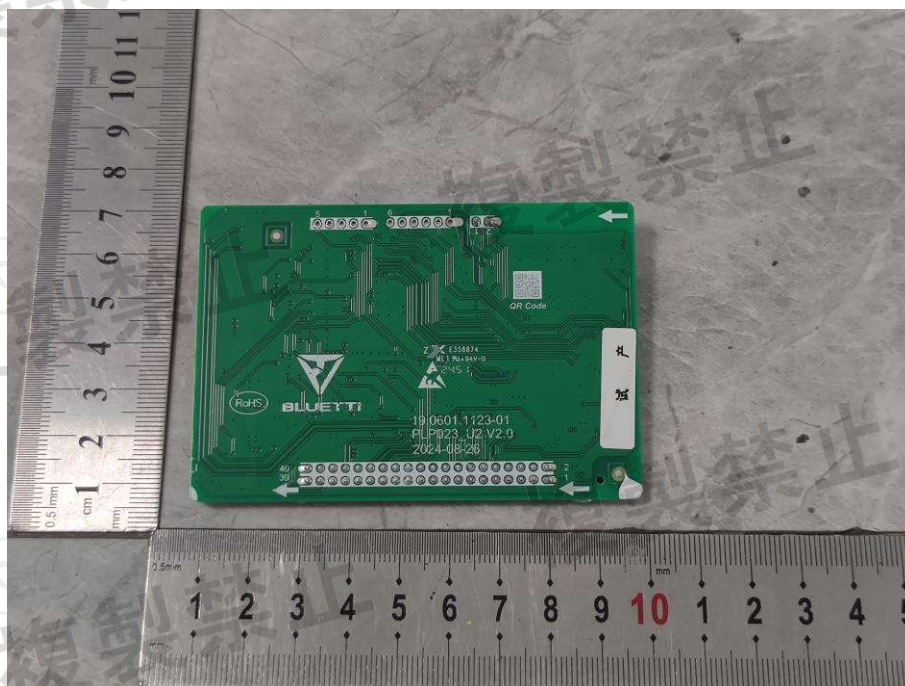


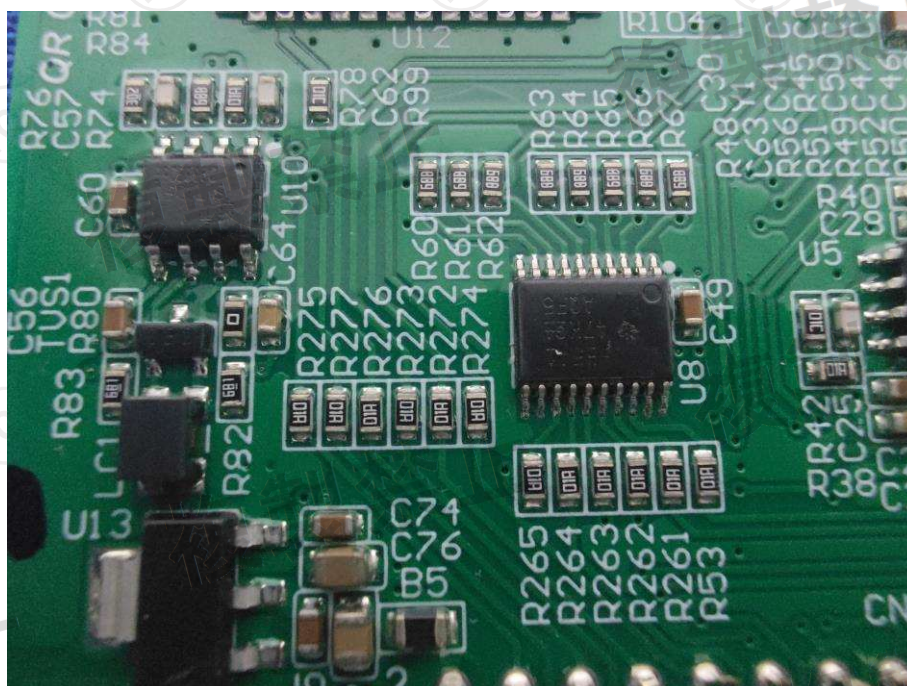
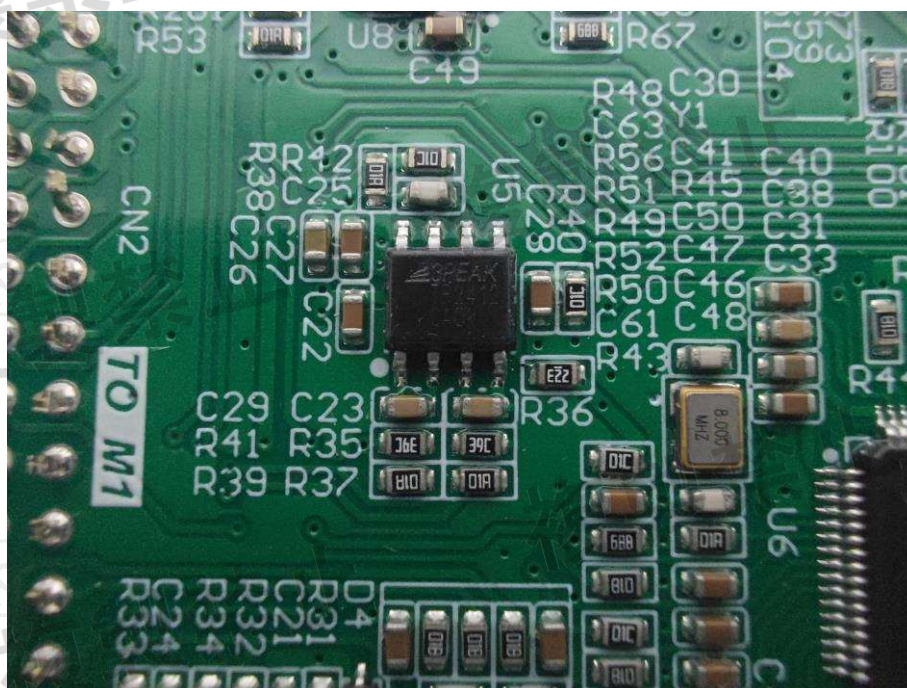


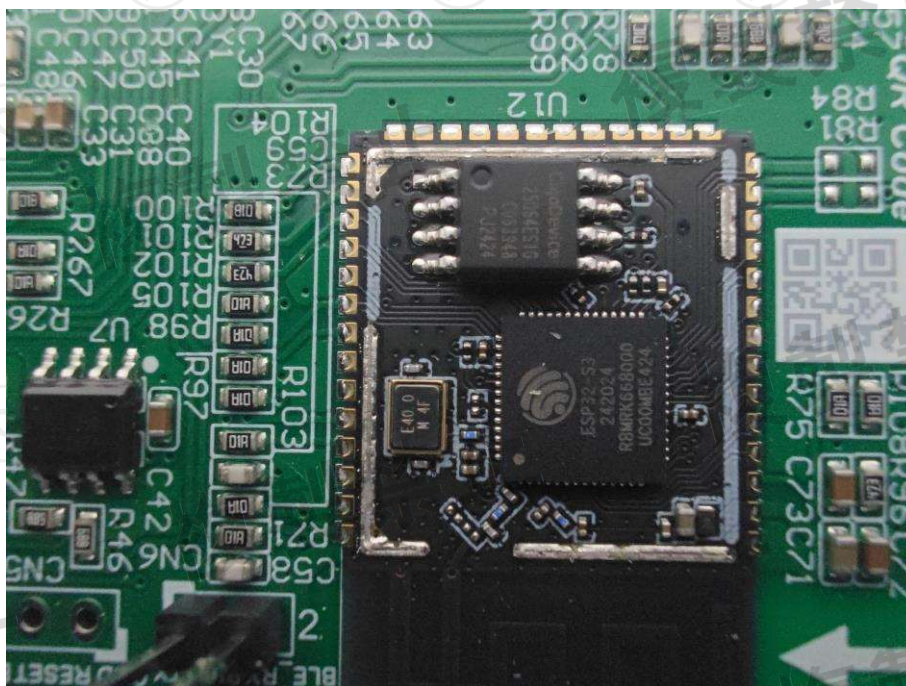
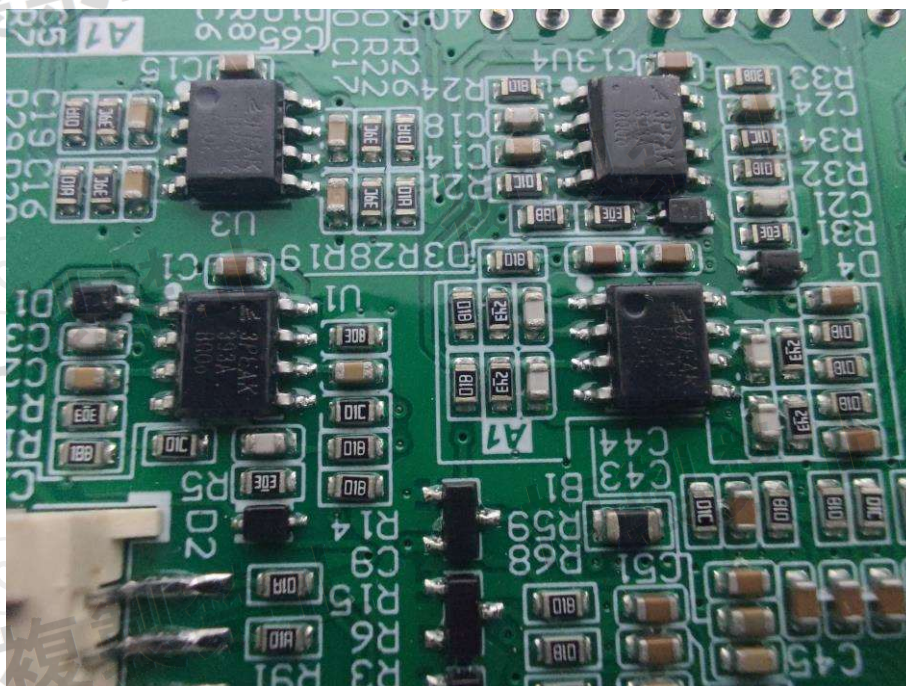












*****END OF REPORT*****