



FCC LISTED, REGISTRATION
NUMBER: 2764.01

ISED LISTED REGISTRATION
NUMBER: 23595-1

Test report No:

3922ERM.001A1

Test report

Ordinance Regulating Radio Equipment, Radio Regulatory Commission Regulations
No 18 - November 30, 1950 (as amended).
Second generation low power data communication system / Wireless LAN system.

(*) Identification of item tested	BT unit
(*) Trademark	Visteon Corporation
(*) Model and /or type reference tested	SAB01
Other identification of the product	--
(*) Features	BT 5.0 LE
Manufacturer	VISTEON CORPORATION One Village Center Drive. Van Buren Township, MI Postcode/Zip Code: 48111.
Test method requested, standard	平成十六年総務省告示第八十八号(特定無線設備の技術基準適合証明等に関する規則別表第一号一(3)の規定に基づく特性試験の試験方法)別表第四十三 Public notice of MIC No. 88 test method of specified radio equipment Annex 43, Article 2 Paragraph 1 Item 19
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC & RF Lab Manager
Date of issue	04-17-2023
Report template No	FDT08_23 (*) "Data provided by the client"

Digitally signed by Domingo Galvez
DN: cn=Domingo Galvez,
o=DEKRA Certification Inc.,
ou=Regulatory Lab,
email=dgalvez@dekra.com, c=US

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Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Testing Site

Test Site	DEKRA Certification Inc.
Test Site Location	405 Glenn Dr. Suite 12, Sterling, VA 20164 United States of America

Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Certification internal document PODT000.

Test case	Frequency (MHz)	U (k=2)	Units
Antenna power and tolerances for antenna power	2402-2483	0.78	dB
Frequency tolerance		10.03	kHz
Spurious emission intensity	0.01 - 1000	0.48	dB
Receiving equipment. Limit on secondary radiated emissions	1000 - 25000	0.94	dB
Permissible value for occupied bandwidth, Spread Bandwidth	2402-2483	5.0	kHz
Antenna gain		0.2	dB

Data provided by the client

The following data has been provided by the client:

The SAB01 is a gateway unit, which links together the steering switch, vehicle meter and Drive mode application and allows the user to interact safely with their smartphone device contents while driving.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples used for test have been selected by: The client.

- Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
3922/07	RF Conducted Sample	SAB01	--	02/21/2023

- Sample S/01 is composed of the following accessories:

Control N°	Description	Model	Serial N°	Date of reception
3922/02	Harness Cable	--	--	02/21/2023
3922/03	Test Box	--	--	02/21/2023
3922/06	Mini USB cable	--	--	02/21/2023

1. Sample S/01 was used for the following test(s): All tests indicated in appendix A.

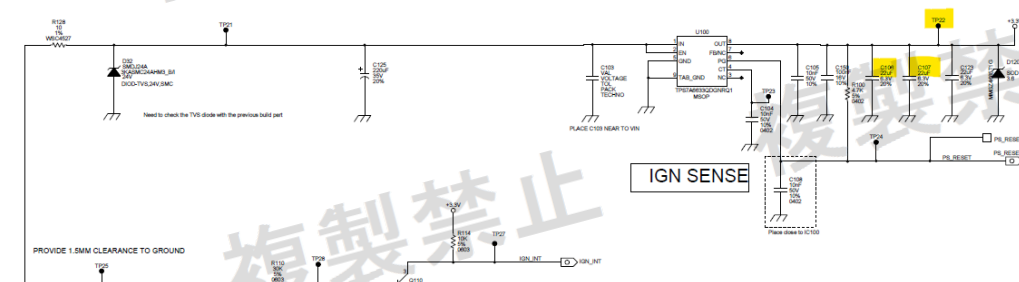
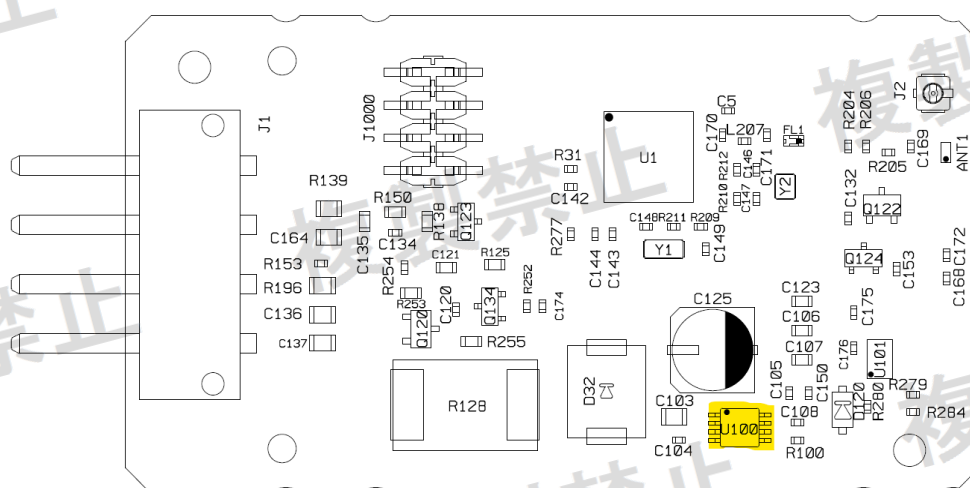
Test sample description

Ports..... :	Port name and description	Cable											
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾								
	8 PIN External connector		☒	☐	☐								
			☐	☐	☐								
Supplementary information to the ports..... :	No Data Provided												
Rated power supply	Voltage and Frequency		Reference poles										
			L1	L2	L3	N	PE						
	☐	AC:	☐	☐	☐	☐	☐						
	☐	AC:	☐	☐	☐	☐	☐						
	☐	DC : Nominal voltage DC 13.2V											
	☐	DC:											
Rated Power	No Data Provided												
Clock frequencies.....	No Data Provided												
Other parameters	No Data Provided												
Software version	1.8.3												
Hardware version	PWB25224												
Dimensions in cm (W x H x D)	56.8 x 30.2 x 84.6												
Mounting position	☐	Table top equipment											
	☐	Wall/Ceiling mounted equipment											
	☐	Floor standing equipment											
	☐	Hand-held equipment											
	☒	Other: Installed on 2- and 4-wheels vehicle											

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	No Data Provided		
Accessories (not part of the test item)	Description	Type	Manufacturer
	No Data Provided		
Documents as provided by the applicant.....:	Description	File name	Issue date
	Declaration Equipment Data	SAB01 FDT30_14	07/10/2020
	Declaration Equipment Data		
<p>Copy of marking plate:</p> <div style="border: 1px solid black; padding: 10px; text-align: center;">  </div>			

Voltage fluctuation test was performed at the test points shown in the following diagrams and photo, and the deviations of the input voltages to the RF module were within + or – 1% as shown in the table below.

External Power Supply (V)	IC Power Supply (V)	Deviation From Nominal Voltage (mV)	Deviation (%)	Comments
13.2	3.3	12	0.36	No abnormality found while performing test.
11.88	3.3	9	0.27	No abnormality found while performing test.
14.52	3.3	15	0.45	No abnormality found while performing test.



Identification of the client

VISTEON CORPORATION
One Village Center Drive. Van Buren Township
MI 48111

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	03-22-2023
Date (finish)	03-27-2023

Document history

Report number	Date	Description
3922ERM.001	04-12-2023	First release
3922ERM.001A1	04-17-2023	Second release. Finish date was updated in Testing period and place. This modification of the test report cancels and replaces the test report 3922ERM.001.

Environmental conditions

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C
	Max. = 35 °C
Relative humidity	Min. = 45 %
	Max. = 75 %
Air pressure	Min. = 860 mbar
	Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Juliana Cherry.

List of equipment used during the test

Conducted Measurements

Manufacture	Device	Type	Serial No.	Calibration Authority	Date of last calibration	Date of next calibration	Calibration method
Rohde & Schwarz	Spectrum analyzer	FSV40	101627	Rohde & Schwarz	2022-11-01	2023-11-01	c)
Rohde & Schwarz	NRP6AN Average power sensor	NRP6AN	101029	HCT	2022-06-09	2023-06-09	c)

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) of the Radio Law.
- b) Calibration 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).

Testing verdicts

Not applicable:	N/A
Pass :	P
Fail :	F
Not measured:	N/M

Summary

1. Bluetooth Low Energy

Requirement – Test case	Verdict	Remark
Antenna power and tolerances for antenna power	P	N/A
Frequency tolerance	P	N/A
Spurious emission intensity	P	N/A
Permissible value for occupied bandwidth	P	N/A
Receiving equipment. Limit on secondary radiated emissions	P	N/A
Interference prevention function	P	N/A
Antenna gain	P	N/A

Appendix A: Test results. Bluetooth Low Energy

PRODUCT INFORMATION

Modulation:	GFSK
Spread spectrum system:	No (Other digital modulation methods).
Nominal necessary Bandwidth:	1 MHz
Maximum declared antenna gain:	+0.2 dBi.
Declared Antenna Power:	1.64 mW
Type of antenna:	Multilayer Chip Antenna
Operating nominal frequency range:	2402 MHz to 2480 MHz
Type of power supply:	DC voltage

DESCRIPTION OF TEST CONDITIONS

TEST CONDITIONS	DESCRIPTION
TC#01	<p>Power supply (V):</p> <p style="padding-left: 40px;">$V_{nominal} = 13.2 \text{ Vdc}$</p> <p>GFSK</p> <p>Bandwidth: 1 MHz</p> <p><u>Test Frequencies for Conducted tests:</u></p> <p>Lowest Channel: 2402 MHz</p> <p>Middle Channel: 2440 MHz</p> <p>Highest Channel: 2480 MHz</p>

CONDUCTED MEASUREMENTS

The equipment under test (EUT) was set up in a shielded room and its antenna port (SMA type) is directly connected to the spectrum analyzer.

The EUT is set in continuous transmission with and without modulation using an implemented test mode

Test Results

試験機器の状態 Test Condition	試験項目（注3） Test Case	単位 Unit	制限 Limit	常圧（13.2V） Nominal Voltage				
				2402 MHz	2440MHz	2480 MHz		
常温 Nominal Temperature （16℃） （47%）	空中線電力 Antenna power and tolerances for antenna power		dBm	---	0.01	0.58	-0.60	
		Duty Cycle Correction	dB	---	0.00	0.00	0.00	
		Corrected power	dBm	---	0.01	0.58	-0.60	
		Corrected power	mW	10	1.00	1.14	0.87	
	周波数の偏差 Frequency Tolerance		%	-80% to +20%	-38.91	-30.28	-46.83	
			ppm	50	-9.92	-9.95	-9.99	
	スプリアス発射の不要発射 Spurious Emissions		MHz	---	2401.976	2439.976	2479.975	
		30 to 2387 MHz	dBm/MHz	-26	-48.00	-47.43	-47.26	
			MHz	---	831.03	2296.61	1018.17	
		2387 to 2400 MHz	dBm/MHz	-16	-34.95	-47.54	-48.24	
			MHz	---	2399.99	2387.73	2393.13	
		2483.5 to 2496.5 MHz	dBm/MHz	-16	-47.40	-47.34	-47.39	
			MHz	---	2483.74	2487.77	2487.15	
		2496.5 to 12500 MHz	dBm/MHz	-26	-42.36	-42.08	-42.44	
			MHz	---	6911.50	12345.40	6983.60	
	占有周波数帯幅	Permissible value for occupied bandwidth		MHz	26	0.65	0.65	0.65
	副次的に発する電波等の強度 Collateral Emissions	30 MHz to 1 GHz	dBm/100kHz	-54	-80.15	-80.11	-79.77	
			MHz	---	592.07	892.86	894.32	
		1 to 12.5 GHz	dBm/MHz	-47	-65.05	-65.13	-65.09	
			MHz	---	6961.03	6980.57	6994.37	
	混信防止機能	Interference prevention function	良・否 Pass/Fail	---	Pass	Pass	Pass	
	空中線利得	Antenna gain (A = EIRP (mW/MHz) /16.37, A < 1)		--	A < 1	A < 1	A < 1	A < 1

Appendix B: Photographs

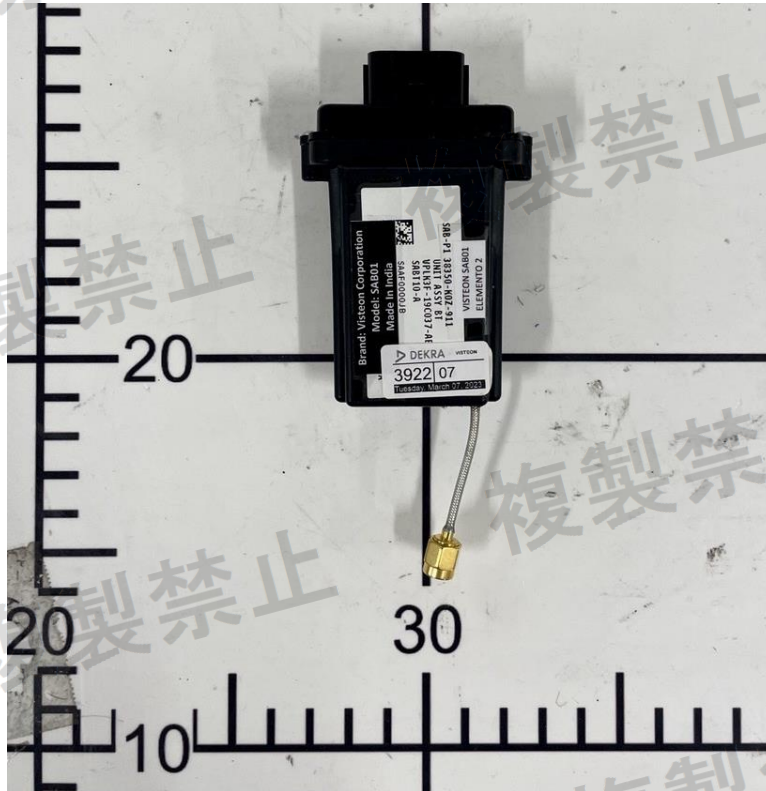


Figure B1: Front View of DUT

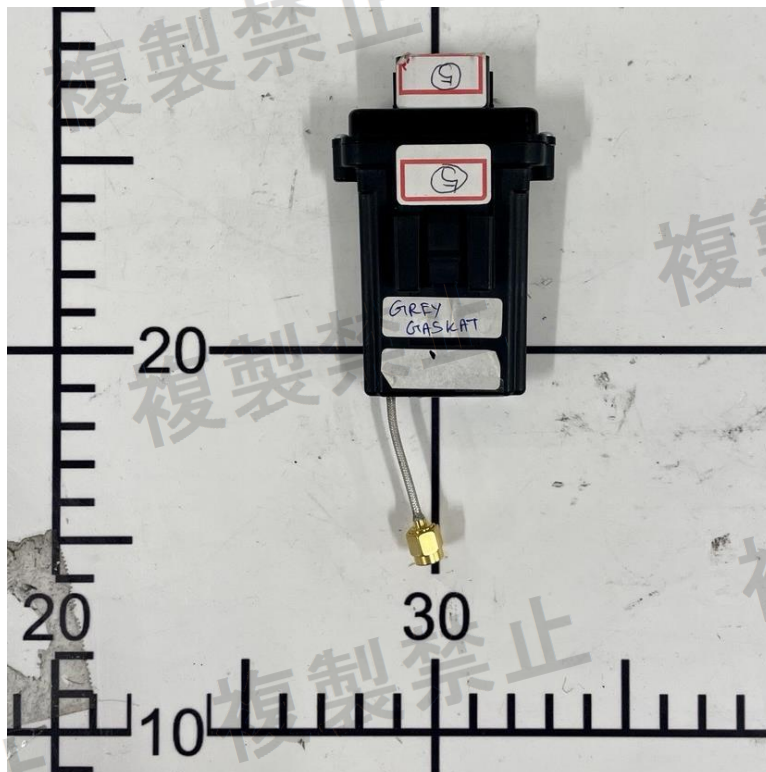
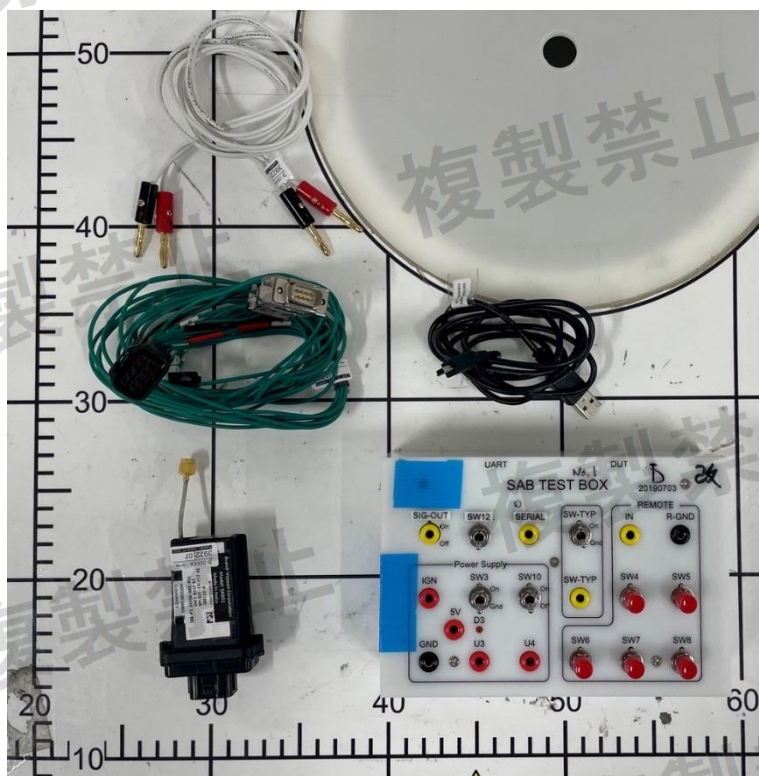
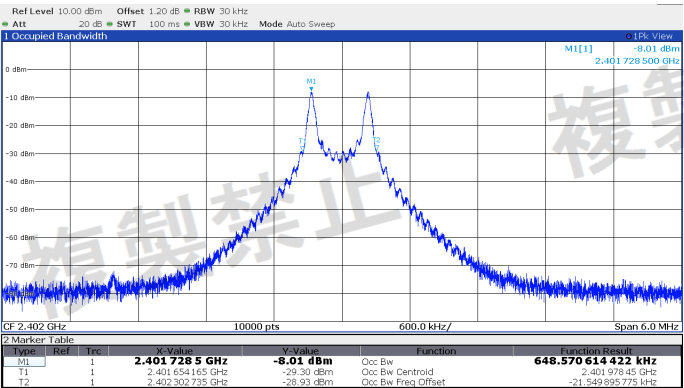


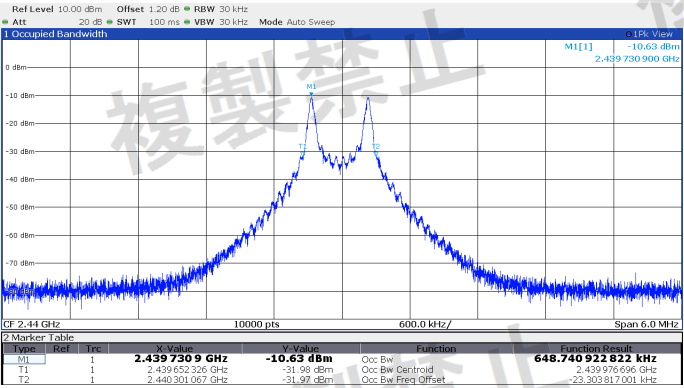
Figure B2: Rear View of DUT



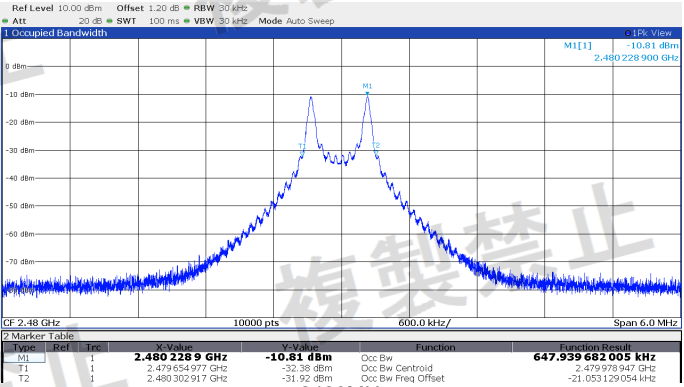
Permissible value for occupied bandwidth (SAB01)



2402MHz

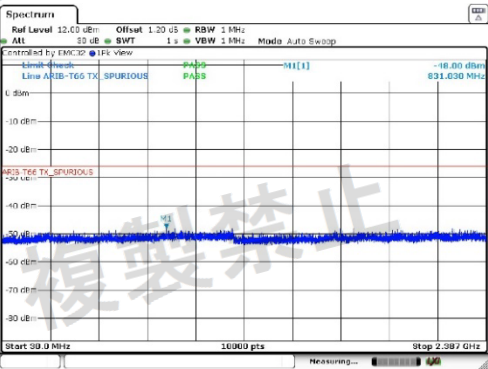


2440MHz

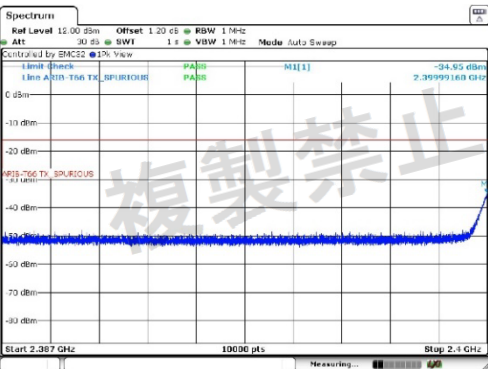


2480MHz

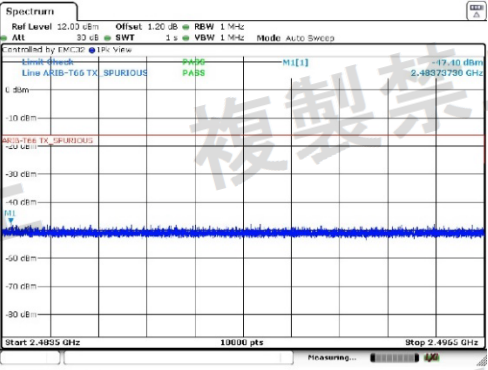
Spurious emission intensity (2402MHz)



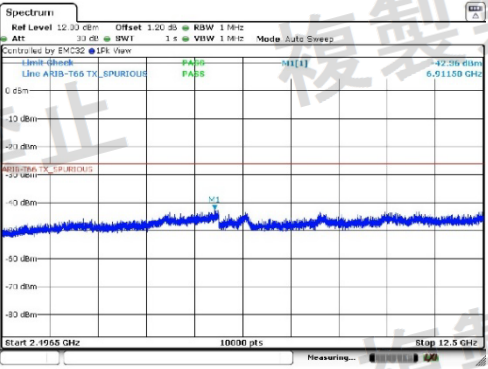
$f < 2387\text{MHz}$



$2387\text{MHz} \leq f < 2400\text{MHz}$

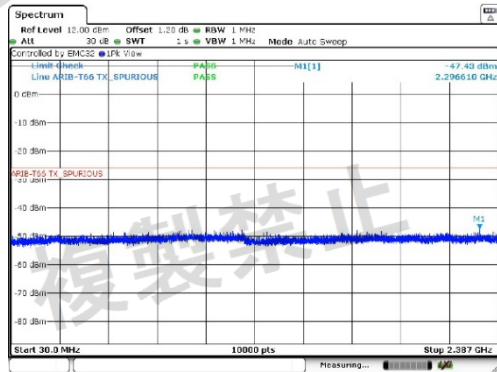


$2483.5\text{MHz} < f \leq 2496.5\text{MHz}$

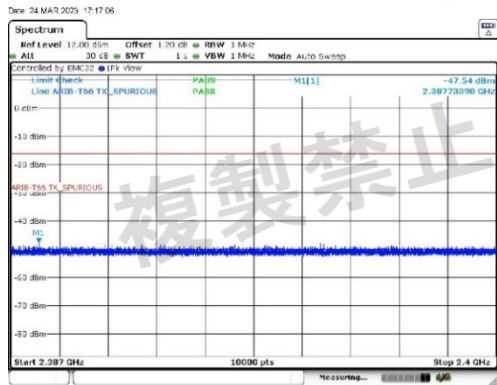


$2496.5\text{MHz} < f$

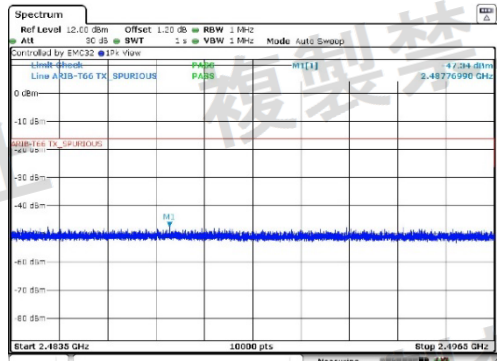
Spurious emission intensity (2442MHz)



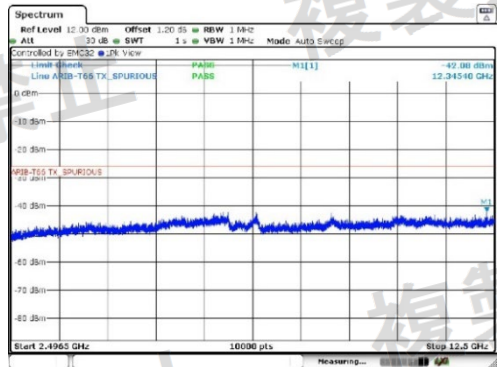
$f < 2387\text{MHz}$



$2387\text{MHz} \leq f < 2400\text{MHz}$

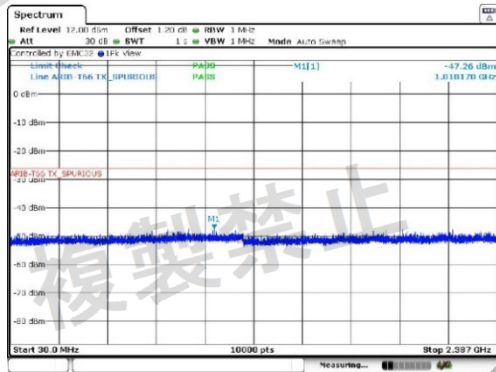


$2483.5\text{MHz} < f \leq 2496.5\text{MHz}$

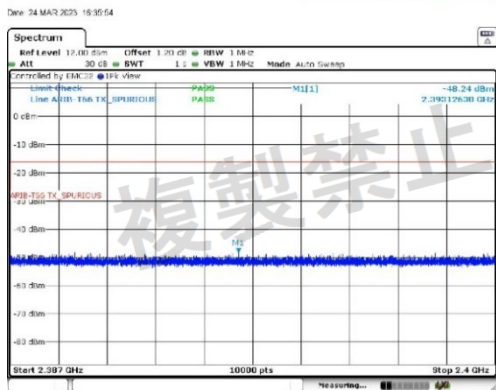


$2496.5\text{MHz} < f$

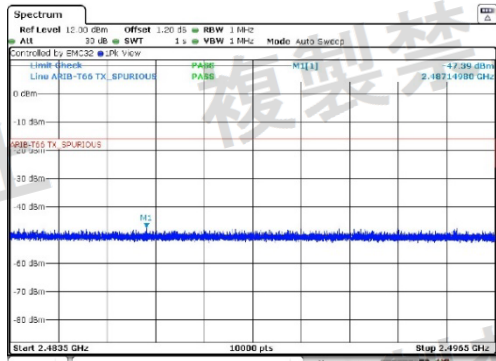
Spurious emission intensity (2480MHz)



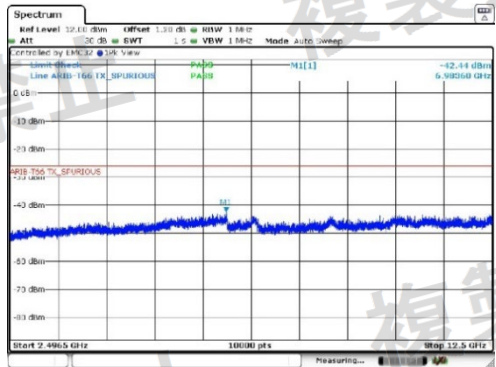
$f < 2387\text{MHz}$



$2387\text{MHz} \leq f < 2400\text{MHz}$



$2483.5\text{MHz} < f \leq 2496.5\text{MHz}$



$2496.5\text{MHz} < f$