



RADIO TEST REPORT

MIC Notice No.88 Appendix No.22.1

Product : Automotive key

Trade Mark : FinDreams

Model Name : B10A01-3791200

Family Model : N/A

Report No. : S23080906701001

Prepared for

FinDreams Technology Company Limited

No. 3001- 3009, BYD Road, Pingshan New District, Shenzhen

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community,
Hangcheng Street, Baoan District, Shenzhen ,Guangdong, China

Tel. 400-800-6106, 0755-2320 0050, 0755-2320 0090

Website:<http://www.ntek.org.cn>

TEST RESULT CERTIFICATION

Applicant's name : FinDreams Technology Company Limited

Address : No. 3001- 3009, BYD Road, Pingshan New District, Shenzhen

Manufacturer's Name : FinDreams Technology Company Limited

Address : No. 3001- 3009, BYD Road, Pingshan New District, Shenzhen

Test specification:

Standard : MIC Notice No.88 Appendix No.22.1
Item 8 of Article 2 Paragraph 1

Test item description

Product name : Automotive key

Model and/or type reference .. : B10A01-3791200

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with MIC Notice No.88 Appendix No.22.1 requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd, personnel only, and shall be noted in the revision of the document

Test sample number : S230809067001

Testing

Date (s) of performance of tests : Aug 09, 2023 ~ Dec 08 2023;

Date of Issue..... : Dec 08 2023;

Test Result : **Pass**

Prepared
By : Mukzi Lee
(Project Engineer)

Reviewed
By : Aaron Cheng
(Supervisor)

Approved
By : Alex Li
(Manager)

※ ※ Revision History ※ ※

REV.	REPORT NO.	Page Revised	ISSUED DATE	Contents
Original	S23080906701001	Rev.01	Dec 08 2023	N/A

Table of Contents

	Page
1 . SUMMARY OF TEST RESULTS	6
1.1 TEST FACILITY	7
1.2 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	9
2.3 TEST CONDITIONS	9
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	10
2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	11
2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS	12
3 . ANTENNA POWER	13
3.1 STANDARD APPLICABLE	13
3.2 TEST PROCEDURE	13
3.3TEST SETUP LAYOUT	13
3.4 ENVIRONMENTAL CONDITIONS	13
3.5 TEST RESULT	14
4 . TOLERANCE OF OCCUPIED BANDWIDTH	15
4.1 STANDARD APPLICABLE	15
4.2 TEST PROCEDURE	15
4.3 TEST SETUP LAYOUT	15
4.4 ENVIRONMENTAL CONDITIONS	15
4.5 TEST RESULT	16
5 . TOLERANCE OF UNWANTED EMISSION INTENSITY	18
5.1 STANDARD APPLICABLE	18
5.2 TEST PROCEDURE	18
5.3TEST SETUP LAYOUT	18
5.4 ENVIRONMENTAL CONDITIONS	18
5.5 TEST RESULT	19
6 . LIMIT OF SECONDARY RADIATED	26
6.1 STANDARD APPLICABLE	26
6.2 TEST PROCEDURE	26

Table of Contents

	Page
6.3 TEST SETUP LAYOUT	26
6.4 ENVIRONMENTAL CONDITIONS	26
6.5 TEST RESULT	26
7. TRANSMISSION TIME	27
7.1 STANDARD APPLICABLE	27
7.2 TEST PROCEDURE	27
7.3 TEST SETUP LAYOUT	27
7.4 ENVIRONMENTAL CONDITIONS	27
7.5 TEST RESULT	28
8. ASSIGNED FREQUENCY OR DESIGNATED FREQUENCY	32
8.1 STANDARD APPLICABLE	32
8.2 TEST PROCEDURE	32
8.3 TEST SETUP LAYOUT	32
8.4 ENVIRONMENTAL CONDITIONS	32
8.5 TEST RESULT	33

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

MIC Notice No.88 Appendix No.22.1			
Standard Section	Test Item	Judgment	Remark
General provisions			
Item 8	EIRP Power	PASS	
Item 8	Tolerance of occupied bandwidth	PASS	
Item 8	Tolerance of unwanted emission intensity	PASS	
Item 8	Limit of secondary radiated	N/A	Not applicable
Item 8	Transmission time control	PASS	
Item 8	Assigned frequency or designated frequency	PASS	

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd

Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street

Bao'an District, Shenzhen 518126 P.R. China

FCC Registration No.:463705; IC Registration No.:9270A-1

CNAS Registration No.:L5516

1.2 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	Uncertainty
1	Conducted Emission Test	$\pm 3.2\text{dB}$
2	Radiated Emission Test	$\pm 4.7\text{dB}$
3	RF power,conducted	$\pm 0.16\text{dB}$
4	Spurious emissions,conducted	$\pm 0.21\text{dB}$
5	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
6	All emissions,radiated(>1G)	$\pm 5.0\text{dB}$
7	Radio Frequency	$\pm 1 \times 10^{-6}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Automotive key	
Trade Mark	FinDreams	
Model Name	B10A01-3791200	
Family Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a Automotive key	
	Operation Frequency:	315 MHz
	Modulation Type:	ASK
	Number Of Channel	1 CH
	Antenna Designation:	PCB Antenna
	Antenna Gain(Peak)	-5dBi
	Rated Power:	0.250mW
Battery	DC 3V	
Power Rating	DC 3V from battery	
Hardware Version	N/A	
Software Version	N/A	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description	Remark
Mode 1(Tx)	Transmitting	DC 3V
Mode 2(Tx)	Transmitting	DC 3.3V
Mode 3(Tx)	Transmitting	DC 2.7V

2.3 TEST CONDITIONS

Voltage Fluctuation Test	Normal Voltage	High Voltage + 10% of Normal Voltage	Low Voltage - 10% of Normal Voltage
DC Power(TX)	3V	3.3V	2.7V
RF Chip	3.6V	3.6V	3.6V

NOTE:

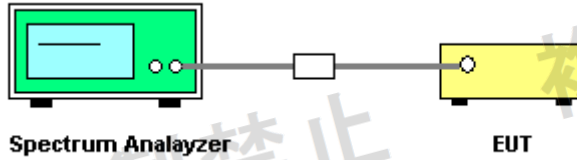
Voltage Variation (%)

= (Output high or Low Voltage - Output Normal Voltage) / Output Normal Voltage * 100

During the input supply voltage to the EUT from the external power source is varied by +/- 10%, + / - 10% of the external power change, will not affect the voltage of the RF.

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode :



2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Automotive key	B10A01-3791200	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	SPECTRUM ANALYZER	AGLIENT	E4440A	MY41000130	2023.03.27	2024.03.26	1 year
2	SPECTRUM ANALYZER	AGILENT	N9020A	MY49100060	2023.03.27	2024.03.26	1 year
3	TEST RECEIVER	R&S	ESPI7	101318	2023.03.27	2024.03.26	1 year
4	50Ω COAXIAL SWITCH	ANRITSU	MP59B	6200983705	2023.05.06	2026.05.05	3 year
5	HORN ANTENNA	EM	EM-AH-10180	2011071402	2022.03.31	2025.03.30	3 year
6	HORN ANT	SCHWARZBECK	BBHA 9170	9170-181	2022.11.07	2025.11.06	3 year
7	PRE-AMPLIFIER	EMC	EMC051835SE	980246	2023.05.29	2024.05.28	1 year
8	POWER METER	DARE	RPR3006W	15100041SN084	2023.05.29	2024.05.28	1 year
9	TEMPORARY ANTENNA CONNECTOR (NOTE)	NTS	R001	N/A	N/A	N/A	N/A
10	DC POWER SUPPLY	ZHAOXIN	PS-6005D	20170402923	2023.05.06	2026.05.05	3 year

Note: All the equipments for Guangzhou Lisai Calibration.

3. ANTENNA POWER

3.1 STANDARD APPLICABLE

According to Item 8 of Article 2 Paragraph 1, the maximum permit antenna power is

Over 312 MHz to 315.05 MHz: 250 μ W or less

Over 315.05 MHz to 315.25 MHz: 25 μ W or less

Tolerance: Upper limit: +20%, Lower limit: Not specified.

3.2 TEST PROCEDURE

(1) Connected the EUT's antenna port to the Power Meter.

(2) The cable loss and attenuator loss have been put into the result.

3.3 TEST SETUP LAYOUT



3.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

3.5 TEST RESULT

Test carries out on the remote control (Tx)

Test Voltage (V)	Frequency (MHz)	Measure Value (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	EIRP Limit (mW)
3	315	-1.5	-5	-6.5	0.224	0.250
3.3	315	-1.769	-5	-6.769	0.210	0.250
2.7	315	-1.067	-5	-6.067	0.247	0.250

Test Voltage (V)	Frequency (MHz)	EIRP (mW)	Rated EIRP (mW)	Tolerance (%)	Limit (%)
3	315	0.224	0.250	-10.40%	<+20%
3.3	315	0.210	0.250	-16.00%	<+20%
2.7	315	0.247	0.250	-1.20%	<+20%

4. TOLERANCE OF OCCUPIED BANDWIDTH

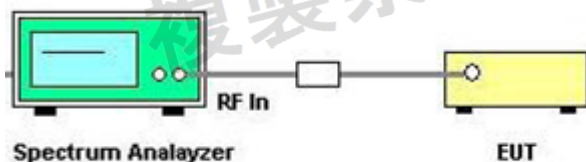
4.1 STANDARD APPLICABLE

According to Item 8 of Article 2 Paragraph 1, the occupied bandwidth is 1MHz or less.

4.2 TEST PROCEDURE

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW = approximately 3% or less of the allowable value specified in the facility regulations, VBW= RBW
Span = 2 to 3.5 times of the allowable value specified in the equipment regulations.
- 4 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided emission is repetitive in nature.
5. Repeat above procedures until all frequency measured was complete.

4.3 TEST SETUP LAYOUT



4.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

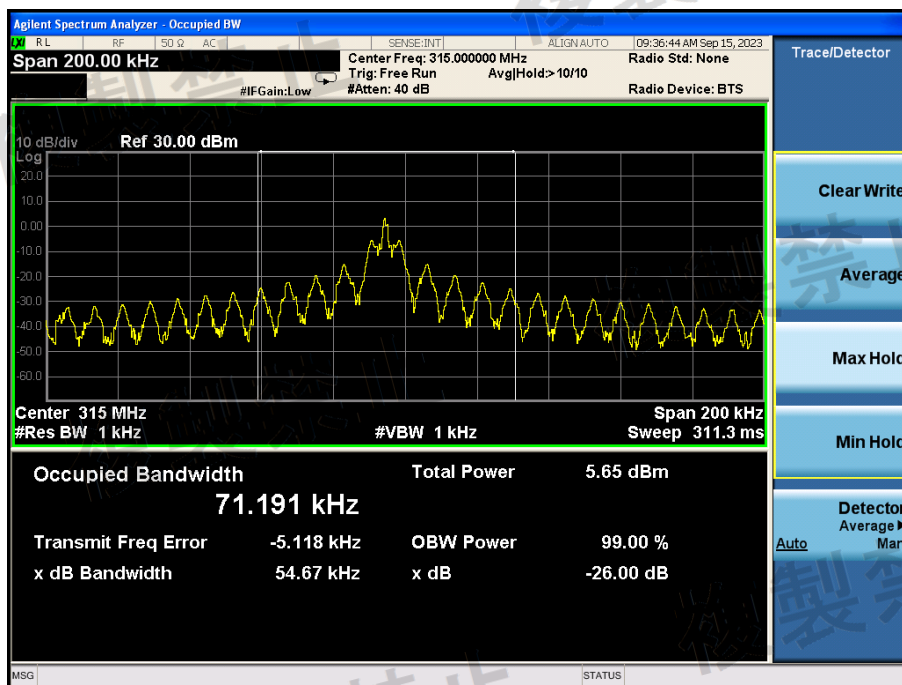
4.5 TEST RESULT

Test carries out on the remote control (Tx)

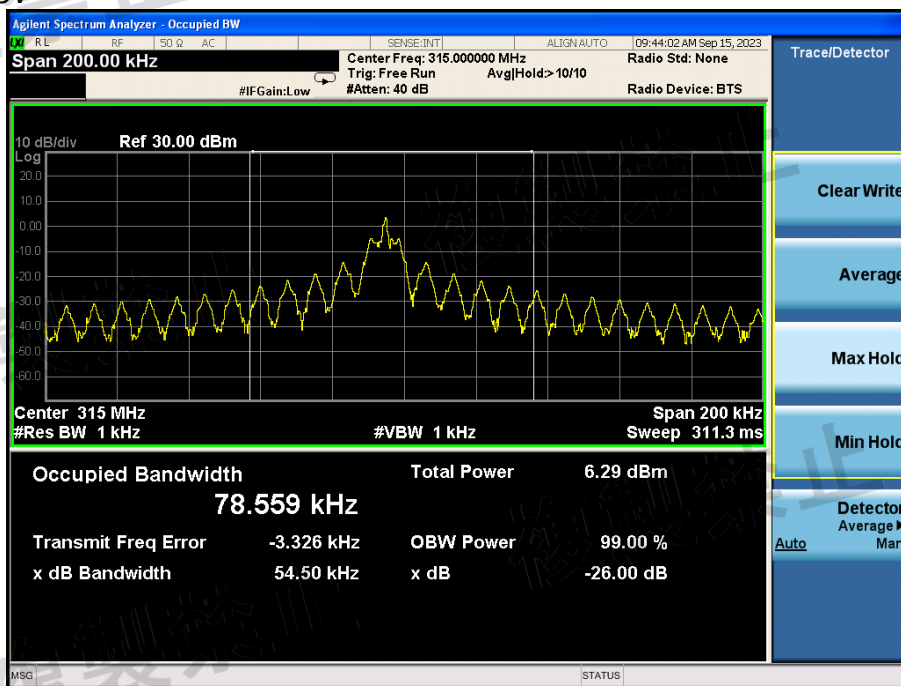
Test Voltage (V)	Test Frequency MHz	99%Bandwidth kHz	Limit kHz	Result
3	315	71.191	1000	Pass
3.3	315	78.559	1000	Pass
2.7	315	73.600	1000	Pass

Please refer to the attached plots.

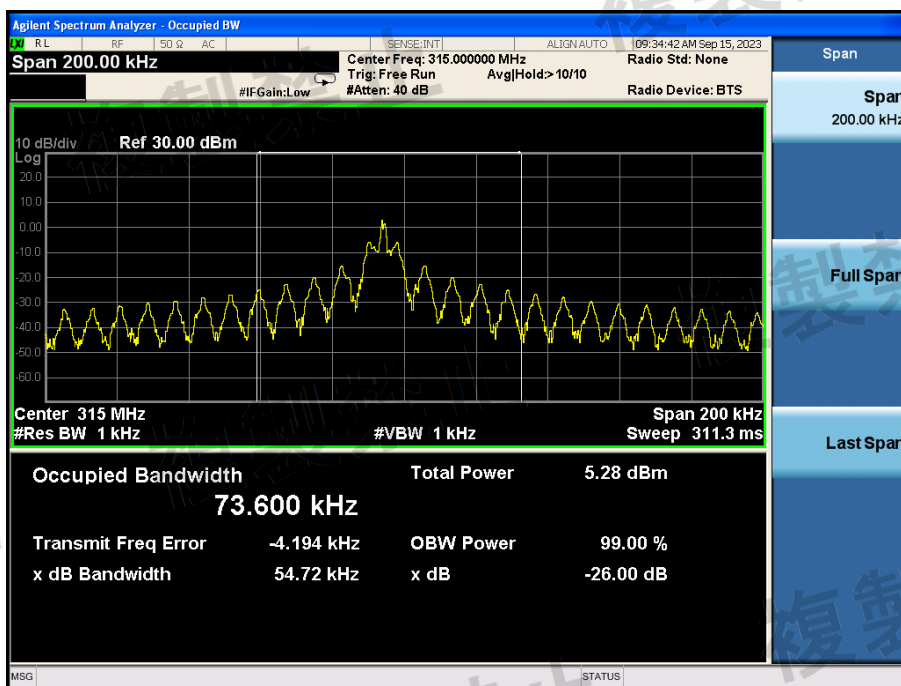
Test for DC 3V



Test for DC 3.3V



Test for DC 2.7V



5. TOLERANCE OF UNWANTED EMISSION INTENSITY

5.1 STANDARD APPLICABLE

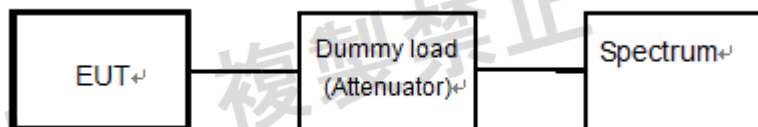
According to Item 8 of Article 2 Paragraph 1. The transmitter spurious emissions shall not exceed the following limit:

- (1) 1GHz or lower: 250 nW/100 kHz or less
- (2) Over 1 GHz: 1 μ W/1MHz or less

5.2 TEST PROCEDURE

- (1) A spectrumIn case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.
- (2) The measurement equipment shall be set for peak hold mode of operation.
- (3) The resolution bandwidth shall be set to 100kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz , and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.
- (4) When the searched result is less than the specified limit, the maximum one shall be recorded, when the result is more than the specified limit, all measured values shall be recorded.
- (5) This measurement shall be repeated with the transmitter in standby mode where applicable.

5.3 TEST SETUP LAYOUT



5.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 TEST RESULT

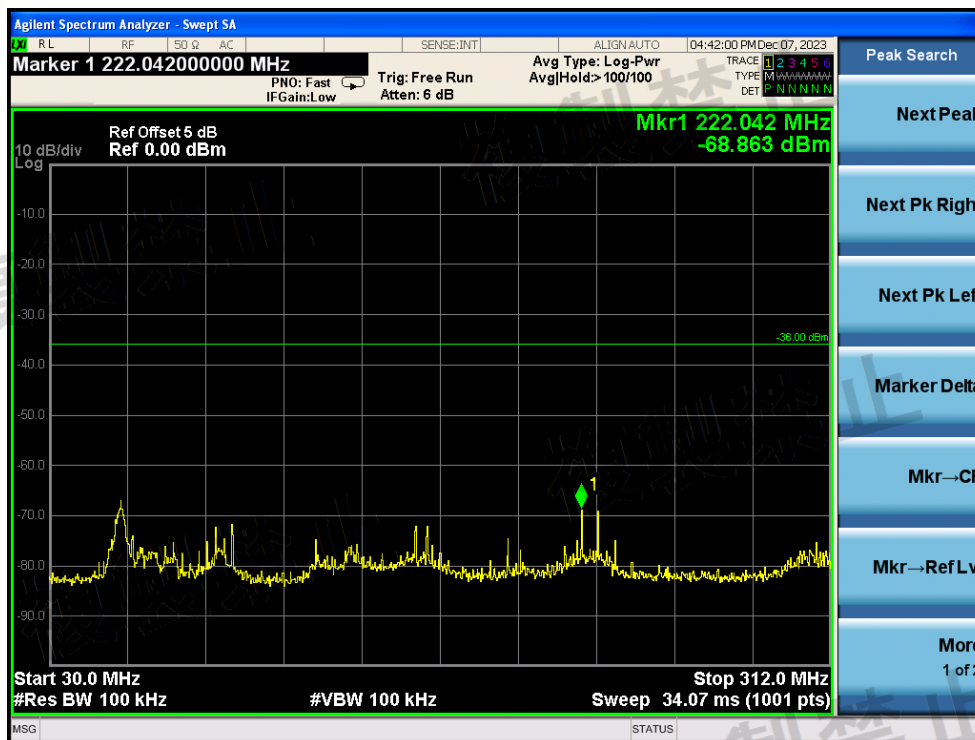
Test carries out on the remote control (Tx)

Transmitter Spurious Emissions

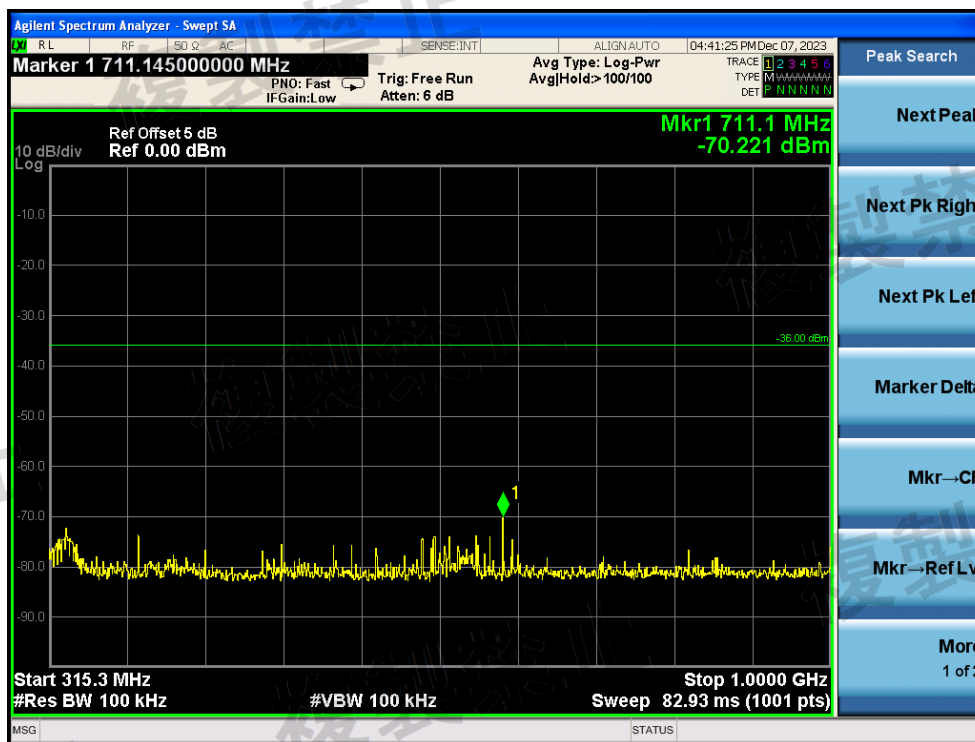
Frequency Range (MHz)	Maximum Spurious Emission Value (dBm)	Limit (dBm)
Test for DC 3V		
30-312	-68.863	-36 (250 nW)
315.25-1000	-70.221	-36 (250 nW)
1000-4000	-52.843	-30 (1 μ W)
Test for DC 3.3V		
30-312	-67.327	-36 (250 nW)
315.25-1000	-70.403	-36 (250 nW)
1000-4000	-42.698	-30 (1 μ W)
Test for DC 2.7V		
30-312	-66.295	-36 (250 nW)
315.25-1000	-70.369	-36 (250 nW)
1000-4000	-67.701	-30 (1 μ W)

Please refer to the following test plots

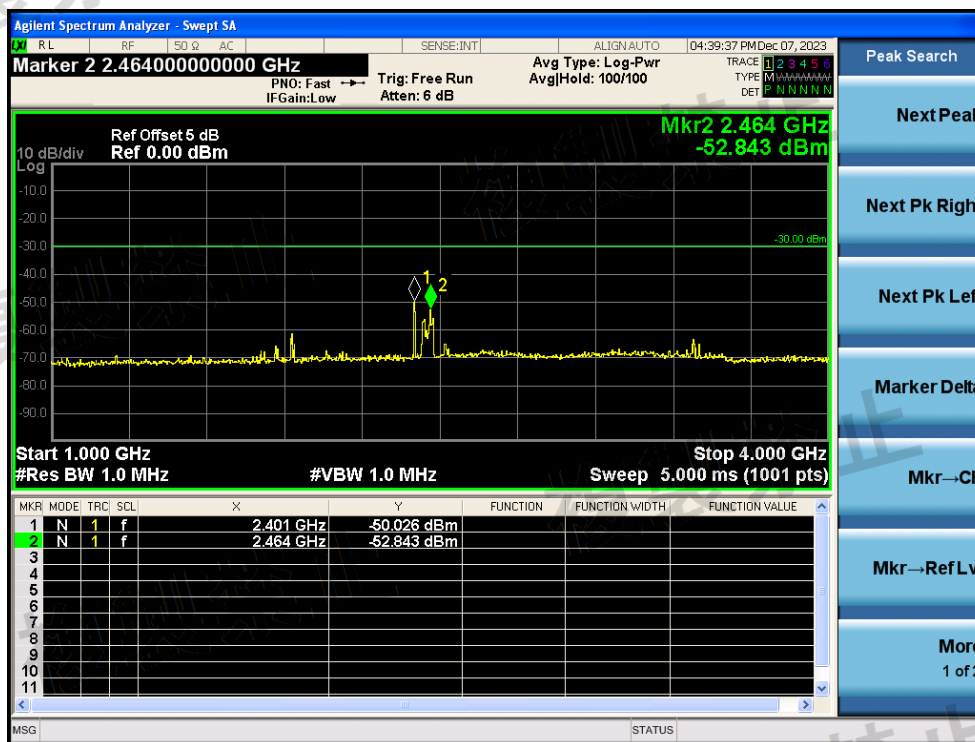
Test for DC 3V
30-312 MHz



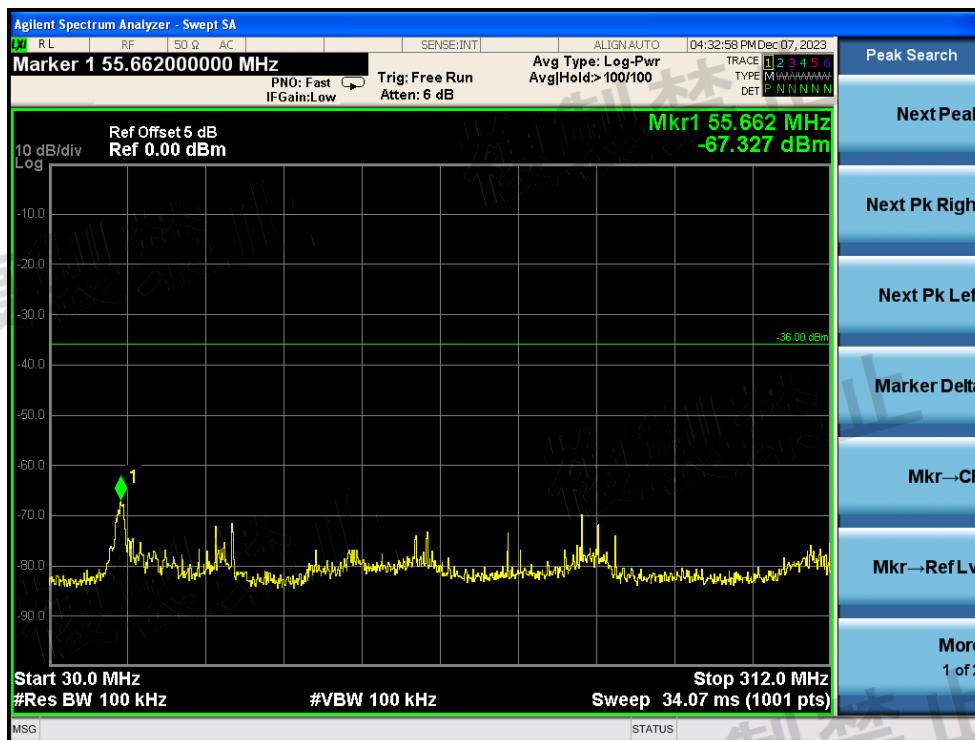
315.25-1000 MHz



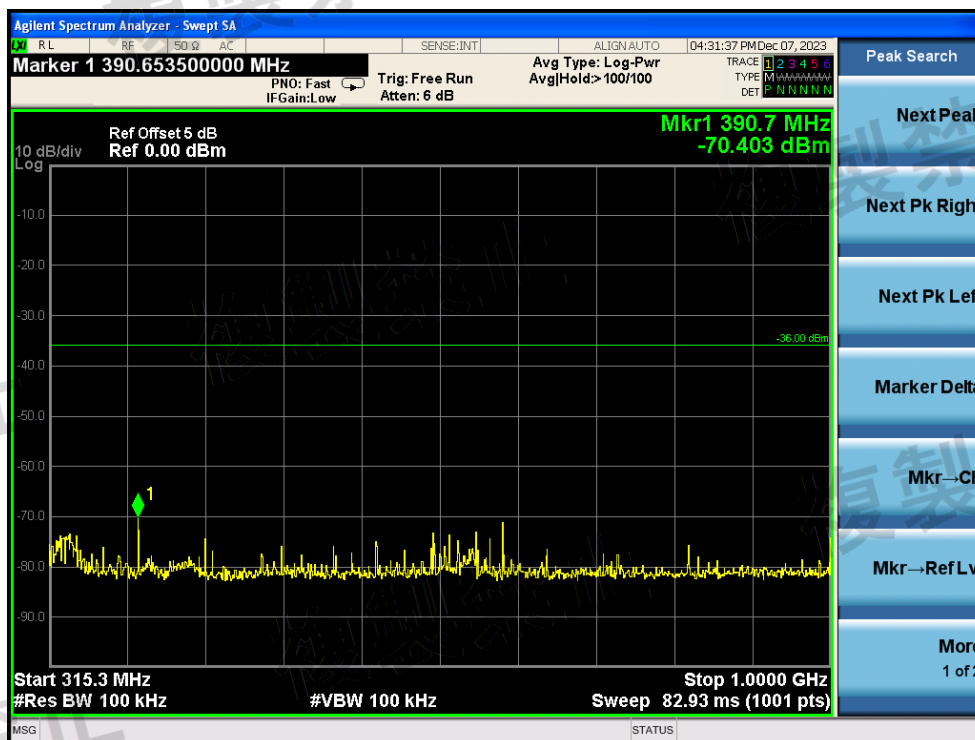
1000-4000 MHz



Test for DC 3.3V
30-312 MHz

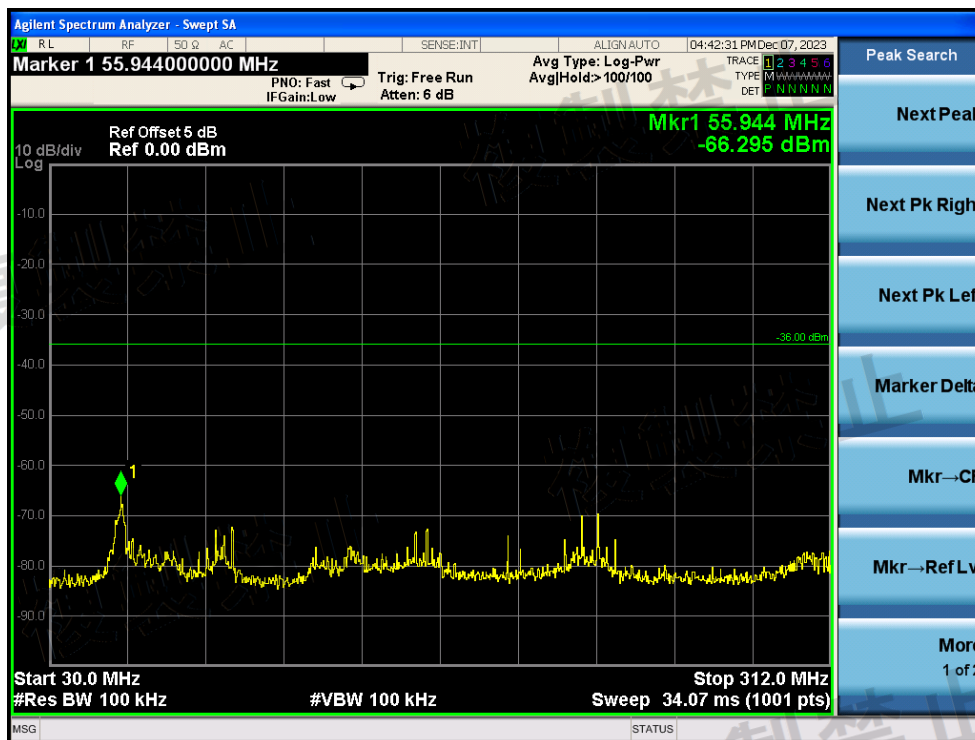


315.25-1000 MHz

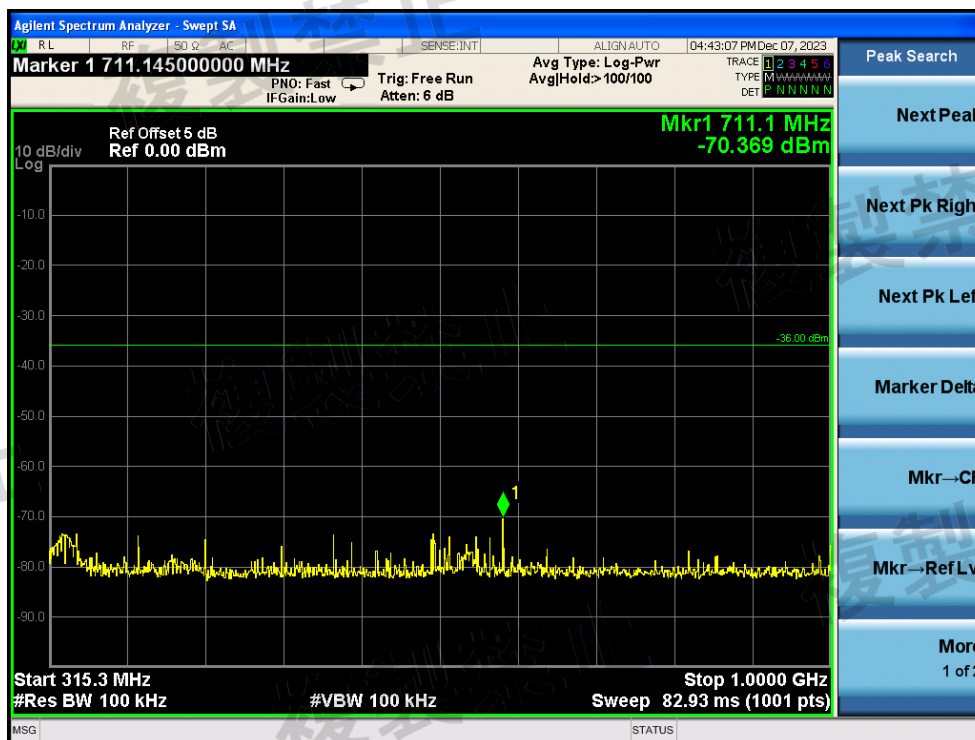


[illegible]

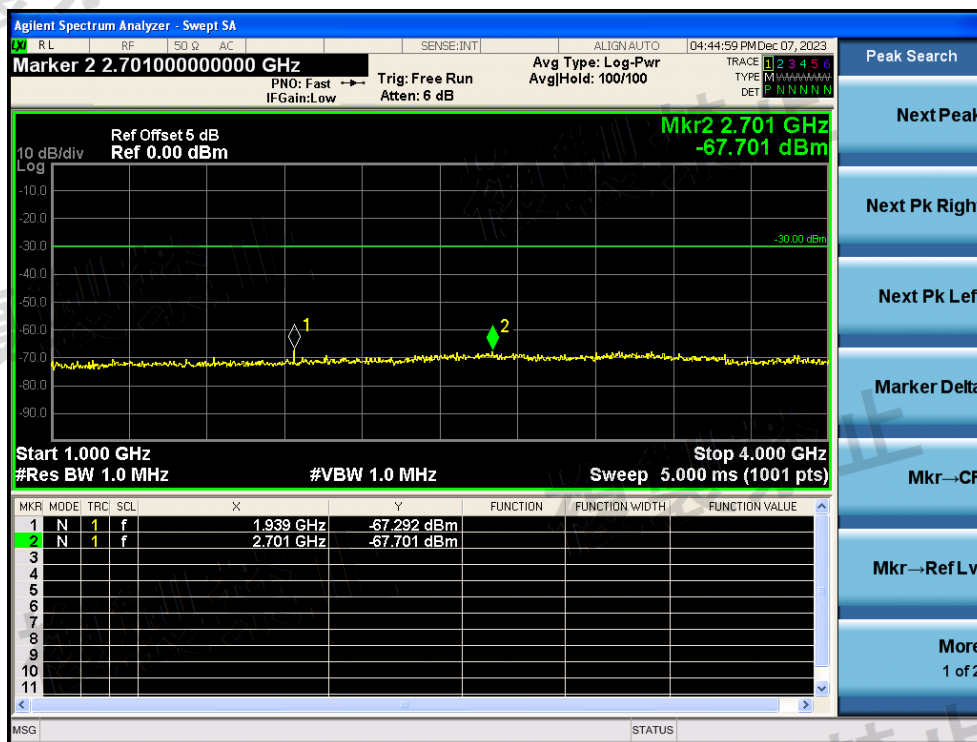
Test for DC 2.7V
30-312 MHz



315.25-1000 MHz



1000-4000 MHz



6. LIMIT OF SECONDARY RADIATED

6.1 STANDARD APPLICABLE

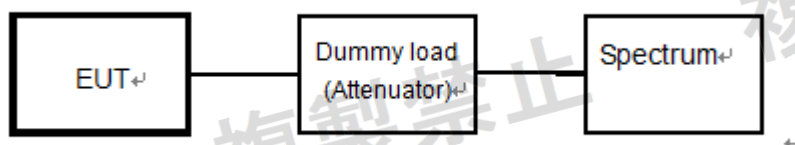
According to Item 8 of Article 2 Paragraph 1. The receiver spurious emissions shall not exceeded the following limit:

- (1) 1GHz or lower: 4 nW/100 kHz or less
- (2) Over 1 GHz: 4 nW/1MHz or less

6.2 TEST PROCEDURE

- (1) A spectrumIn case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.
- (2) The measurement equipment shall be set for peak hold mode of operation.
- (3) The resolution bandwidth shall be set to 100kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz , and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.
- (4) When the searched result is less than the specified limit, the maximum one shall be recorded, when the result is more than the specified limit, all measured values shall be recorded.
- (5) This measurement shall be repeated with the receiver in standby mode where applicable.

6.3TEST SETUP LAYOUT



6.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

6.5 TEST RESULT

Not applicable

7. TRANSMISSION TIME

7.1 STANDARD APPLICABLE

According to Item 8 of Article 2 Paragraph 1. the transmitter shall be complied the following requirements:

Duration of transmission and suspension

(1) For radio equipment which transmission is not periodic: Duration of transmission is 5 seconds or less. However, 90 seconds or less for radio equipment which transmission is manually performed

(2) For radio equipment which transmission is periodic: Duration of transmission at a time: 1 seconds or less. Duration of transmission suspension: 30 times or more of transmission duration and 10 seconds or more. However, when radion equipment is used for safety traffic of vehicles and any compelling.

7.2 TEST PROCEDURE

(1) A spectrum In case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.

(2) Carrier frequency: Center of reception frequency band to be used

Frequency sweep width: 0 MHz

Resolution bandwidth: 1MHz

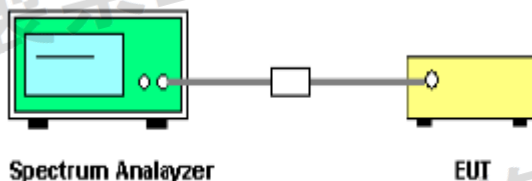
Video bandwidth: 1MHz

Detection mode: Positive peak

(3) When the searched result is less than the specified limit, the maximum one shall be recorded, when the result is more than the specified limit, all measured values shall be recorded.

(4) This measurement shall be repeated with the transmitter in standby mode where applicable.

7.3 TEST SETUP LAYOUT



7.4 ENVIRONMENTAL CONDITIONS

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

7.5 TEST RESULT

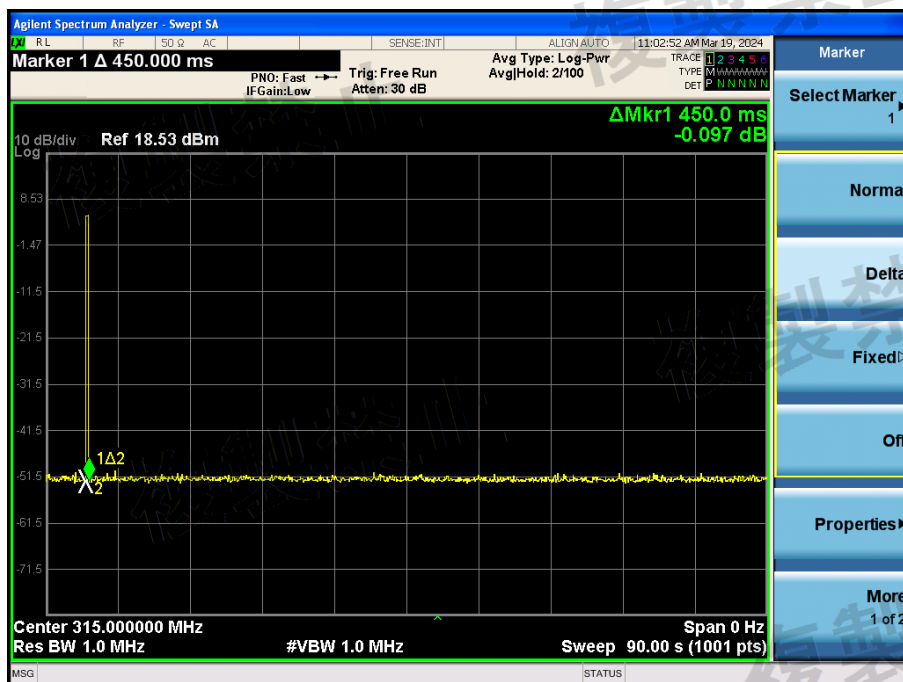
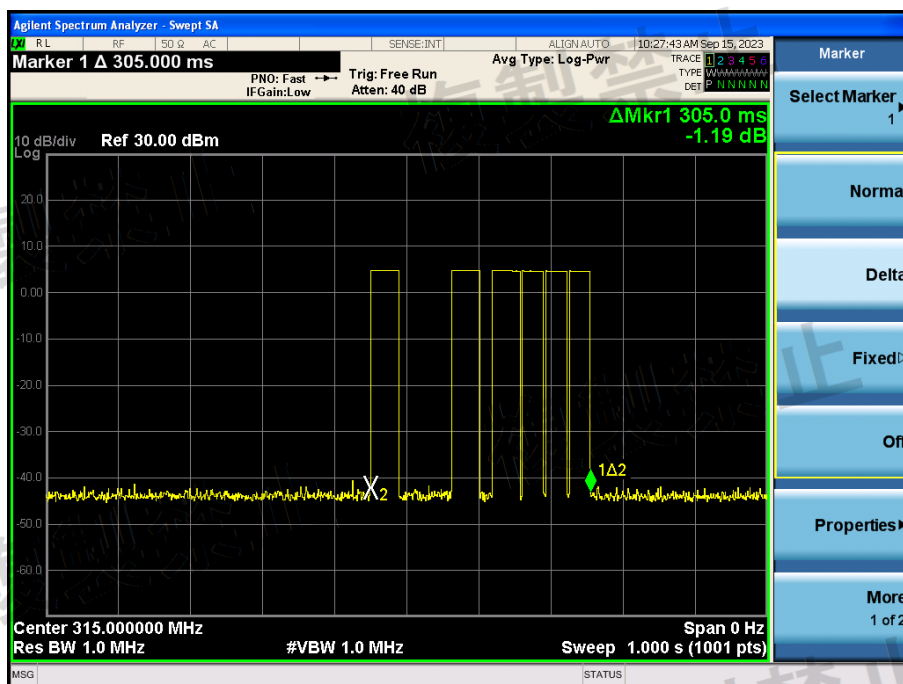
Test carry out on the remote

The product is a manual device

Test Voltage (V)	Transmission Type	Test Frequency (MHz)	Transmission Time (S)	Limit (S)	Result
3	Manually	315	0.305	90	Pass
3.3	Manually	315	0.295	90	Pass
2.7	Manually	315	0.361	90	Pass

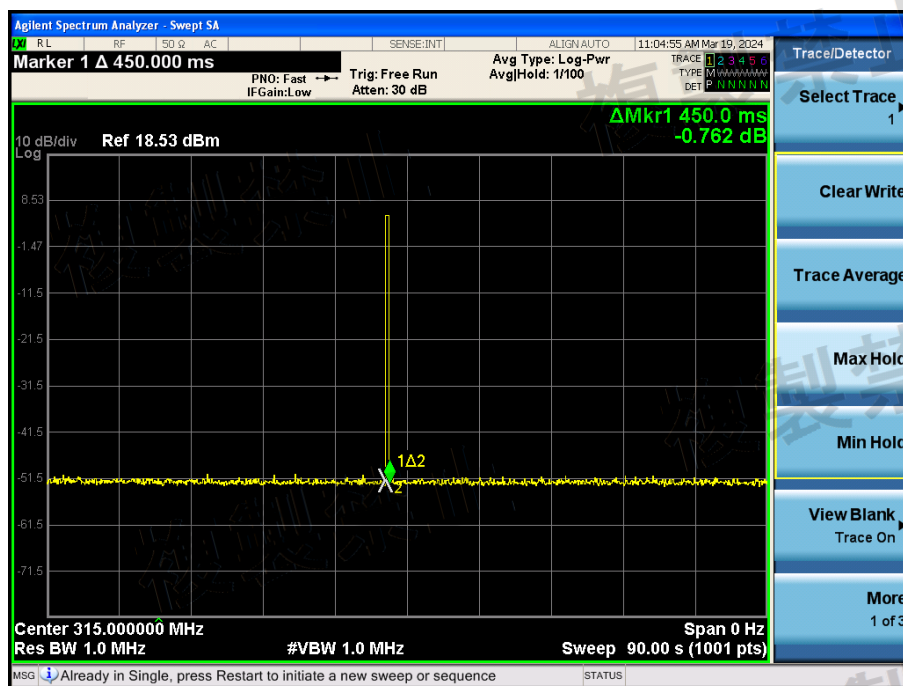
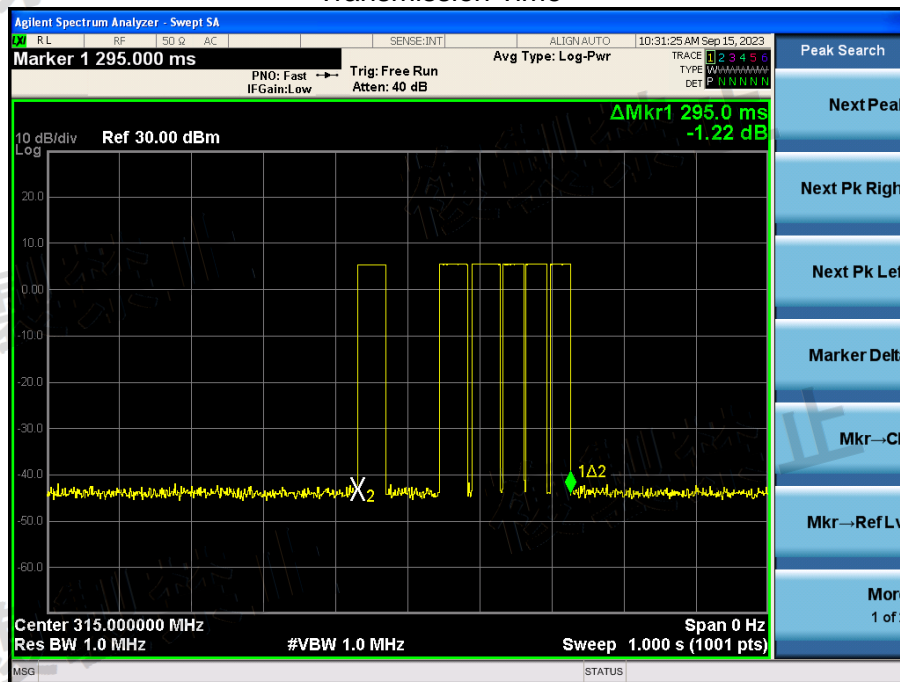
Please refer to the attached plots.
Test for DC 3V

Transmission Time



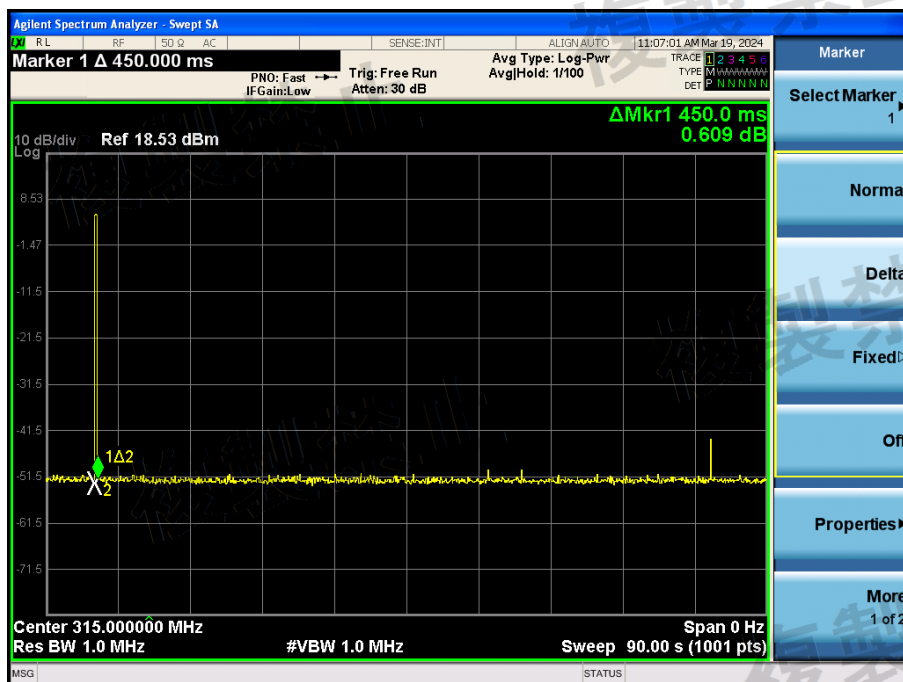
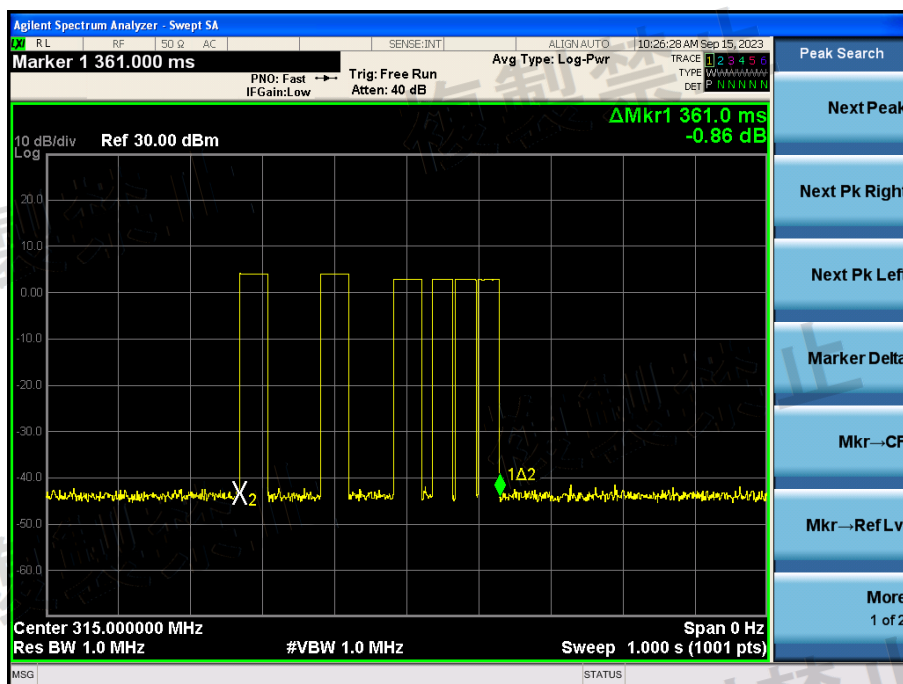
Test for DC 3.3V

Transmission Time



Test for DC 2.7V

Transmission Time



8. ASSIGNED FREQUENCY OR DESIGNATED FREQUENCY

8.1 STANDARD APPLICABLE

According to Item 8 of Article 2 Paragraph 1.

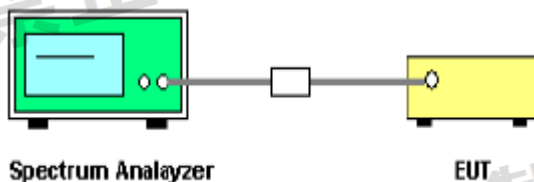
Assigned frequency : 315MHz

(Designated frequency band : 312-315.25MHz)

8.2 TEST PROCEDURE

- (1) A spectrumIn case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.
- (2) The measurement equipment shall be set for peak hold mode of operation.
- (3) Read the frequency and record it

8.3 TEST SETUP LAYOUT



8.4 ENVIRONMENTAL CONDITIONS

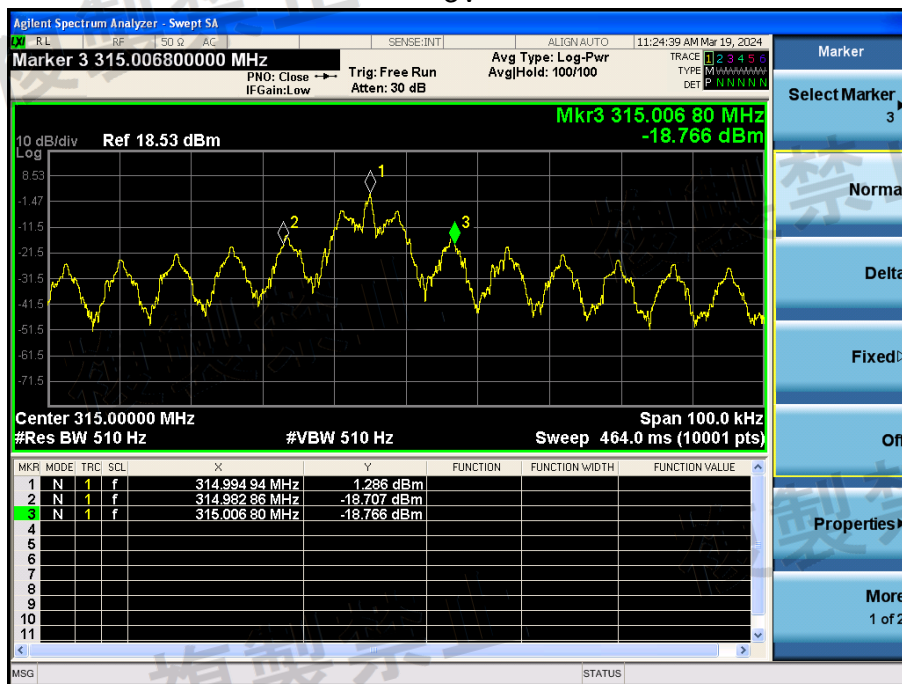
Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

8.5 TEST RESULT

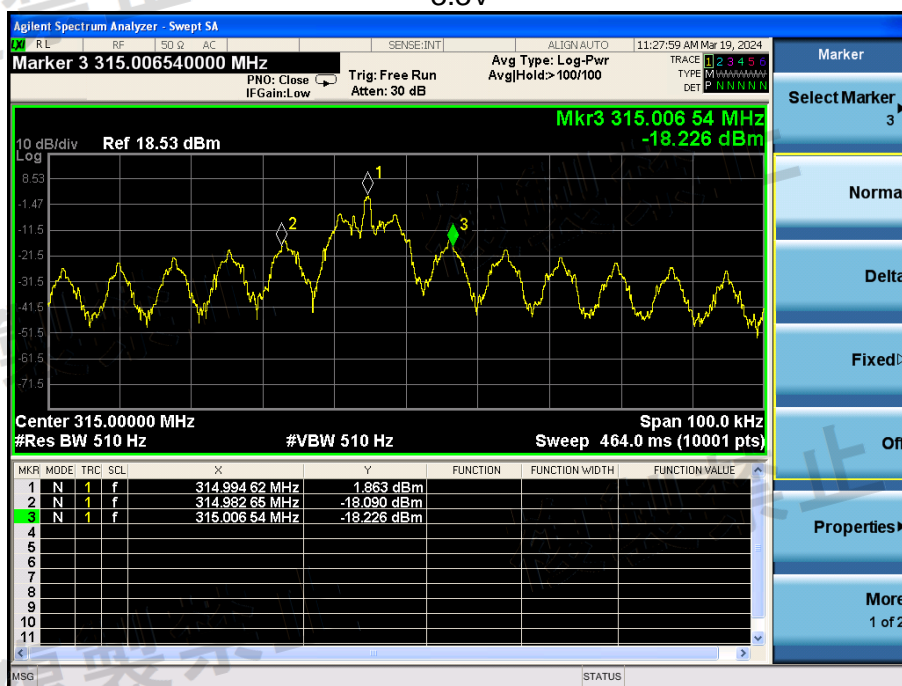
Test carry out on the remote control (Tx)

Test	Channel Frequency	-20dB Bandwidth	Measured frequencies			Limit	PASS/FAIL
			Fc (MHz)	FL (MHz)	FH (MHz)		
3	315	23.94	314.99494	314.9829	315.0068	312-315.05	PASS
3.3	315	23.89	314.99462	314.9827	315.0065	312-315.05	PASS
2.7	315	23.93	314.99426	314.9827	315.0066	312-315.05	PASS

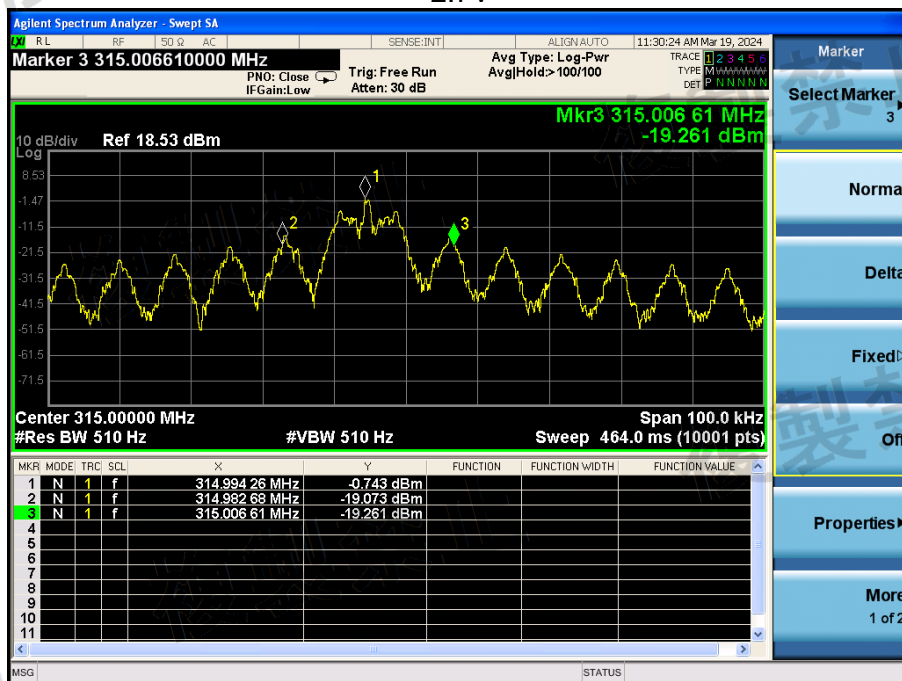
3V



3.3V



2.7V



END OF REPORT