

TEST REPORT

FOR

Remote burglar alarm

Model No.: SC213-PT-48/72V

Trademark: N/A

Report No.: NCT240514319XE

Date of Test: Dec. 18, 2024-Jan. 23, 2025

Issue Date: Jan. 23, 2025

Prepared for

WITH CO.,LTD

3-3-16, KASHIMA, YODOGAWA-KU, OSAKA CITY,
OSAKA, JAPAN

Prepared by

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Shenzhen NCT Testing Technology Co., Ltd.

TEST RESULT CERTIFICATION

Applicant : WITH CO.,LTD
3-3-16, KASHIMA, YODOGAWA-KU, OSAKA CITY, OSAKA, JAPAN

Manufacture : WITH CO.,LTD
3-3-16, KASHIMA, YODOGAWA-KU, OSAKA CITY, OSAKA, JAPAN

EUT : Remote burglar alarm

Model : SC213-PT-48/72V

Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS		
STANDARD	Test Procedure	TEST RESULT
Item 8 of Article 2 Paragraph 1	MIC notification No.88 of 2004, Annex 22-1	PASS

The device described above is tested by Shenzhen NCT Testing Technology Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen NCT Testing Technology Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) was measured according to the test methods of Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment in Annex 1, the objective is to determine compliance with Specified low-power radio equipment (Item 8 of Article 2 Paragraph 1 of Certification Ordinance) for telemeter, telecontrol or data transmission (315MHz band)

The test results of this report relate only to the tested sample identified in this report

Test Engineer:

Keven Wu
Keven Wu / Engineer

Technical Manager:

Henry Wang
Henry Wang / Manager

The logo is a circular seal for Shenzhen NCT Testing Technology Co., Ltd. It features a central emblem with a stylized 'N' and 'T' inside a circle, surrounded by the company name in English and Chinese. The year '2008' is inscribed at the bottom of the seal.

Modified Information

Rev.	Summary	Date of Rev.	Report No.
Ver.1.0	Original Report	2025-01-23	NCT240514319XE

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1 EUT TECHNICAL DESCRIPTION

Characteristics	Description
Assigned Frequency:	315MHz
EUT	Remote burglar alarm
Model	SC213-PT-48/72V
Modulation	OOK
Data rate	0.5/30 kbps
type of emissions	A1D
Operating Frequency Range	312MHz ~315.25MHz
Number of Channels	1 channels
Rated Antenna power	250uW
Antenna Type	PCB Antenna
Antenna Gain	0dBi
Power supply	☒ DC supply: DC 3.0V
	☐ Adapter supply:
Hardware version:	1.0
Software version:	1.0
Temperature Range	0°C ~ +45°C
Transmission Time Restriction Device	No cyclic transmission" on the right side

Note: for more details, please refer to the User's manual of the EUT.
Channel List::

Channel	Frequency (MHz)
00	315

2 SUMMARY OF TEST RESULT

TELEC RULES	Test Parameter	Verdict	Remark
Item 8	Antenna power(EIRP)	Compliant	
Item 8	Tolerance of occupied bandwidth	Compliant	
Item 8	Tolerance of unwanted emission intensity(EIRP)	Compliant	
Item 8	Limit of secondary radiated(EIRP)	Compliant	
Item 8	Transmission time control	Compliant	
Item 8	Assigned frequency (Frequency range)	Compliant	
Item 8	Housing requirements	Compliant	
Item 8	INTERFERENCE PREVENTION FUNCTION	Compliant	
NOTE1: N/A (Not Applicable)			

3 TEST METHODOLOGY

3.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

The objective is to determine compliance with Specified low-power radio equipment (Item 8 of Article 2 Paragraph 1 of Certification Ordinance) for telemeter, telecontrol or data transmission (315MHz band)

All measurements contained in this report were conducted with test method for radio equipment specified in MIC public notice 88:2004, annex 22-1 for certification.

3.2 MEASUREMENT EQUIPMENT USED

3.2.1 Radiated Emission Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date	Cal. Method
966 Shielded Room	966 Room	/	EMToni	2022/5/31	2025/5/30	c)
EMI Test Receiver	ESCI	101178	Rohde & Schwarz	2024/6/17	2025/6/16	c)
Amplifier (30MHz-1GHz)	BBV 9743 B	00374	SCHNWARZBECK	2024/6/17	2025/6/16	c)
Bilog Antenna (30MHz-1GHz)	VULB9162	00473	SCHNWARZBECK	2023/3/19	2025/3/18	c)
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02622	SCHNWARZBECK	2023/3/19	2025/3/18	c)
Preamplifier (1GHz-18GHz)	BBV 9718D	0024	SCHNWARZBECK	2024/6/17	2025/6/16	c)
Spectrum Analyzer (10Hz-40GHz)	FSV 40	100952	Rohde & Schwarz	2024/6/17	2025/6/16	c)
Preamplifier (18GHz-40GHz)	BBV 9721	0056	SCHNWARZBECK	2024/6/17	2025/6/16	c)
Double Ridge Guide Horn Antenna (18GHz-40GHz)	SAS-574	588	A.H.System	2023/3/19	2025/3/18	c)
Loop Antenna (9KHz-30MHz)	FMZB1519 B	014	SCHNWARZBECK	2024/6/17	2025/6/16	c)
Amplifier (9KHz-30MHz)	CVP 9222 C	00109	CHNWARZBECK	2024/6/17	2025/6/16	c)
MXG Signal Analyzer	N9020A	MY505102 02	Agilent	2024/6/17	2025/6/16	c)
MXG Vector Signal Generator	N5182A	MY501400 20	Agilent	2024/6/17	2025/6/16	c)
MXG Analog Signal Generator	N5181A	MY474209 19	Agilent	2024/6/17	2025/6/16	c)
Power Sensor	TR1029-2	512364	Techoy	2024/6/17	2025/6/16	c)
RF Swith	TR1029-1	512364	Techoy	2024/6/17	2025/6/16	c)
Cable	DA800- 4000MM	NA	DA	2024/6/17	2025/6/16	c)
Cable	DA800- 11000MM	N/A	DA	2024/6/17	2025/6/16	c)
Bilog Antenna (30MHz-1GHz)	VULB9162	00478	SCHNWARZBECK	2023/3/19	2025/3/18	c)
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02627	SCHNWARZBECK	2023/3/19	2025/3/18	c)

3.2.2 Radio Frequency Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date	Cal. Method
MXG Signal Analyzer	N9020A	MY50510202	Agilent	2024/6/17	2025/6/16	c)
MXG Vector Signal Generator	N5182A	MY50140020	Agilent	2024/6/17	2025/6/16	c)
MXG Analog Signal Generator	N5181A	MY47420919	Agilent	2024/6/17	2025/6/16	c)
Power Sensor	TR1029-2	512364	Techoy	2024/6/17	2025/6/16	c)
RF Swith	TR1029-1	512364	Techoy	2024/6/17	2025/6/16	c)

Note: these equipments are Calibration by CEPREI Calibration and Testing Center.

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).

3.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

3.4 SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

Notes:

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. Unless otherwise denoted as EUT in [Remark] column, device(s) used in tested system is a support equipment

4 FACILITIES AND ACCREDITATIONS

4.1 FACILITIES

All measurement facilities used to collect the measurement data are located at A101&2F B2, Fuqiao 6th Area, Xintian Community, Fuhai Street, Baoan District, Shenzhen, People's Republic of China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22."

4.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: Accredited by CNAS, 2022-09-27

The certificate is valid until 2028.01.07

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2017)

The Certificate Registration Number is L8251

Designation Number: CN1347

Test Firm Registration Number: 894804

Accredited by A2LA, June 14, 2023

The Certificate Registration Number is 6837.01

Accredited by Industry Canada, November 09, 2018

The Conformity Assessment Body Identifier is CN0150

Company Number: 30806

Name of Firm : Shenzhen NCT Testing Technology Co., Ltd.

Site Location : A101&2F B2, Fuqiao 6th Area, Xintian Community, Fuhai Street, Baoan District, Shenzhen, People's Republic of China

5 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10 ⁻⁶
Bandwidth	± 1.5 x 10 ⁻⁶
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9KHz~30MHz)	±4.51dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Radiated Emission(25GHz~40GHz)	±3.38dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

6 SETUP OF EQUIPMENT UNDER TEST

6.1 RADIO FREQUENCY TEST SETUP

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

Above 30MHz:

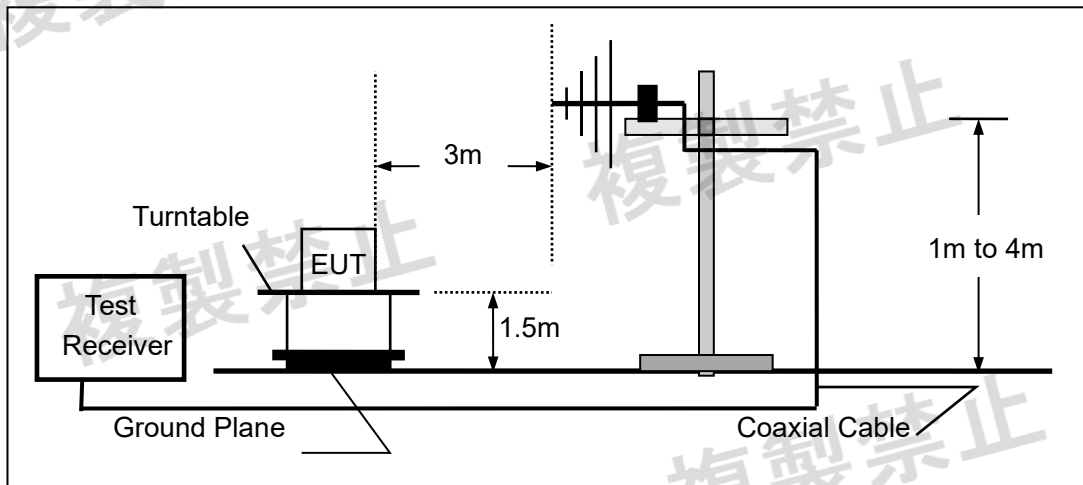
The EUT is placed on a turntable 1.5meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

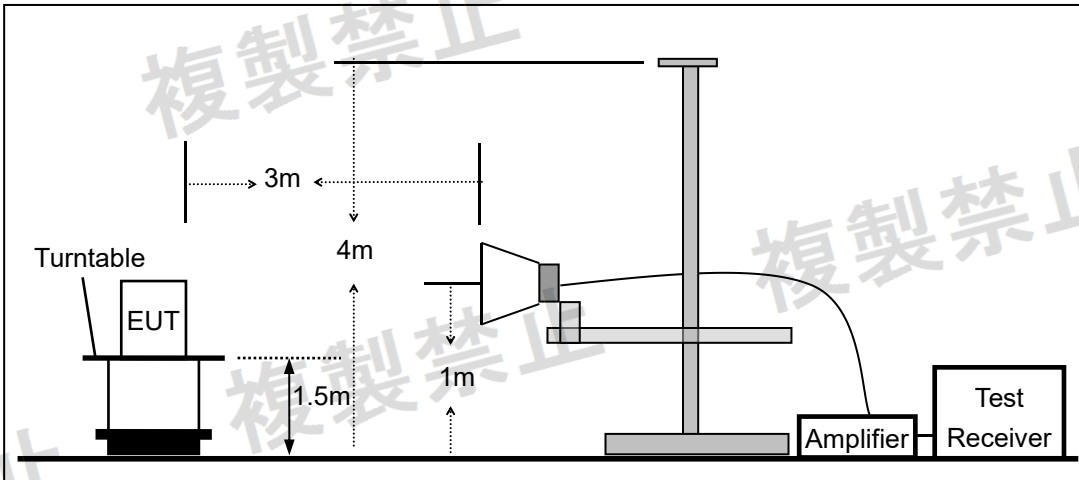
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

(a) Radiated Emission Test Set-Up, Frequency below 1000MHz



(b) Radiated Emission Test Set-Up, Frequency above 1000MHz



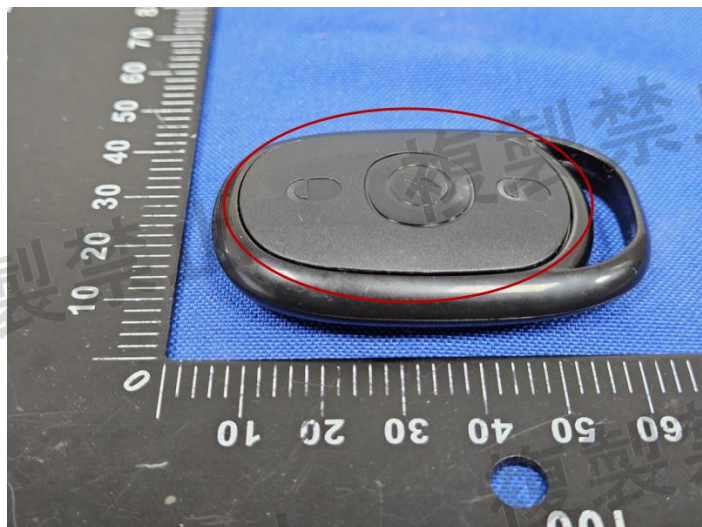
7 HOUSING REQUIREMENTS

We apply the product for Japan RF certification. The shell of the product is glued with special glue (please see picture 1). The RF chip is soldered on the PCB, making it very difficult for anyone to remove it. Number of RF chip pins: 8, spacing distance: 1.3mm (please see picture 2).

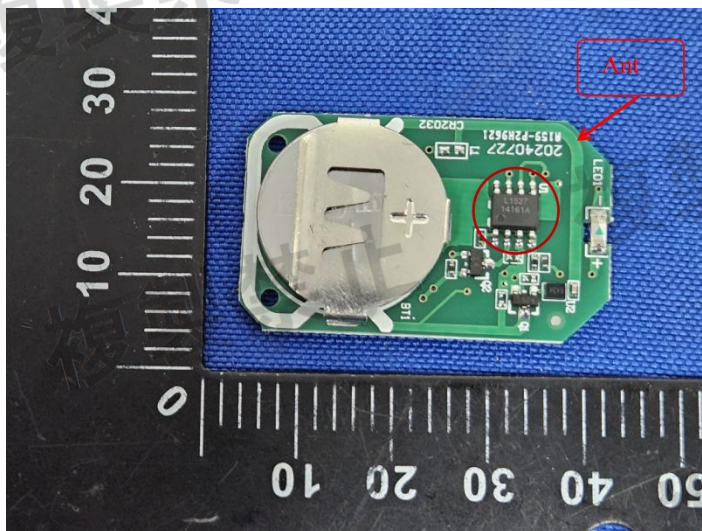
The glue model: EA E-30CL

The Manufacturer: Loctite

Picture 1



Picture 2

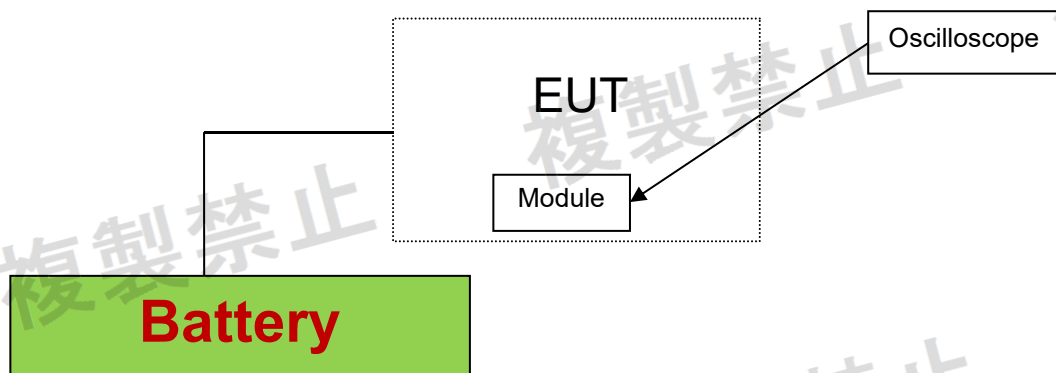


8 WIRELESS MODULE VOLTAGE TEST IN EXTREME CONDITIONS

8.1 Applicable Standard

When there is a fluctuation of +/-10% input voltage from external power to the test equipment. If the fluctuation of input voltage to the circuit of the radio part (excl. power) in the test equipment is confirmed below +/-1%, Measurement shall be tested with the rated voltage.

8.2 Test Configuration



8.3 Test Results

Voltage Fluctuation Test	Normal Voltage	High Voltage + 10% of Normal Voltage	Low Voltage - 10% of Normal Voltage
Test Voltage	DC 3.0V	DC 3.3V	DC 2.7V
Module Test voltage	DC 3.31V	DC 3.32V	DC 3.31V
Module Rated voltage	DC 3.30V	DC 3.30V	DC 3.30V
The Range of Module Voltage(%)	0.3	0.6	0.3

Note: In extreme conditions, EUT module power is confirmed below +/-1%.

9 TEST REQUIREMENTS

9.1 ANTENNA POWER (EIRP)

9.1.1 Applicable Standard

According to Item 8 of Article 2 Paragraph 1

9.1.2 Conformance Limit

The maximum permit antenna power is

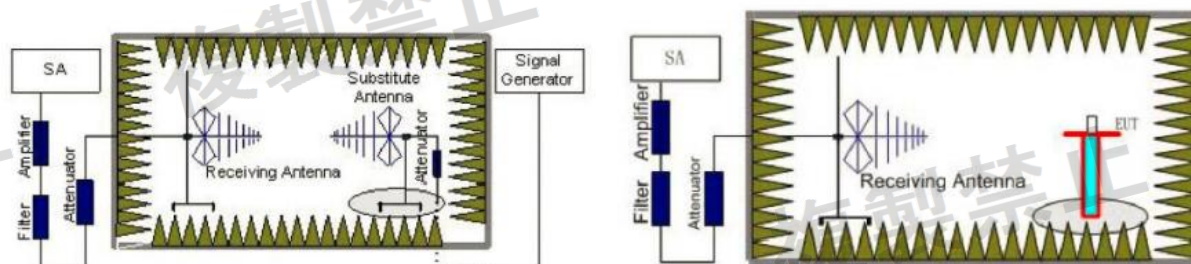
Over 312 MHz to 315.05 MHz: 250 μ W (-6dBm) or less

Over 315.05 MHz to 315.25 MHz: 25 μ W (-16dBm) or less

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

9.1.3 Test Setup Block Diagram

Test according to clause 6.1 radio frequency test setup



Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

QP Detector function = peak, AV

9.1.4 Test Procedure

1. The EUT was placed on a turntable with 1.5m height
 2. The test distance between the receiving antenna and the EUT is 3 meter, while the receiving (test)antenna is kept at 1.5 meter height.
 3. Set EUT in continuous transmitting with maximum output power at test frequency.
 4. The table was rotated from 0 to 360 degree to search the highest radiated emission.
 5. Repeat step 3 to 4 for each polarization and test channel to find the worst emission level
- The results obtained are compared to the limits in order to prove compliance with the requirement

9.1.5 Environmental Conditions

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

9.1.6 Test Results

RF Output Power:

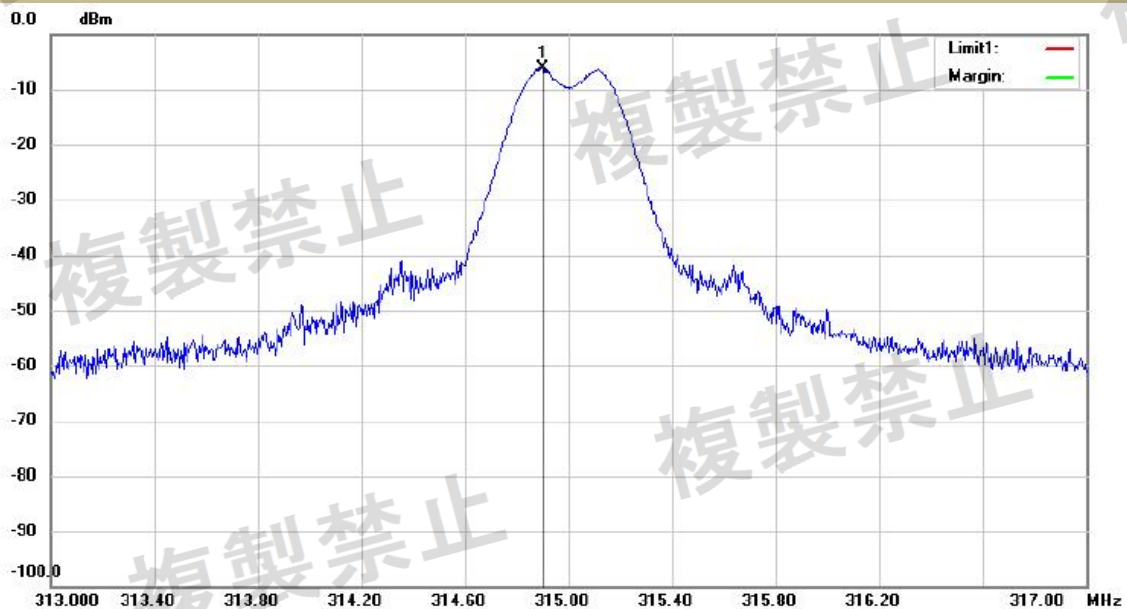
Frequency	Reading	Correct	Result	Limit	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	H/V
315	-8.45	2.24	-6.21	-6	H
315	-13.65	2.27	-11.38	-6	V
Please refer to the test plots:					

Tolerance of Power:

Frequency	Measure	Measure	Rated Power	Tolerance of Power	Limit
(MHz)	(dBm)	(uW)	(uW)	%	%
315	-6.21	239	250	-4.40	<+20
315	-11.38	73	250	-70.80	<+20

RF Output Power

Test Model Channel 315MHz H



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 22 C

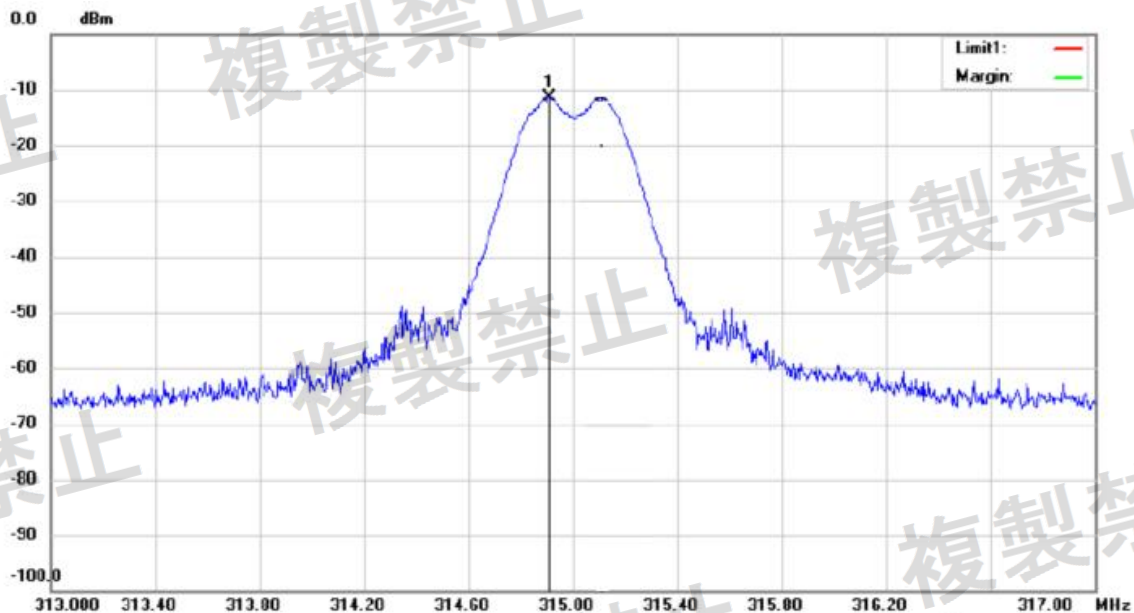
Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

RF Output Power

Test Model Channel 315MHz V



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 22 C

Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

9.2 TOLERANCE OF OCCUPIED BANDWIDTH

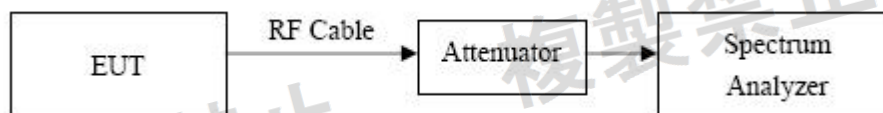
9.2.1 Applicable Standard

According to Item 8 of Article 2 Paragraph 1.

9.2.2 Conformance Limit

Occupied bandwidth is 1MHz or less

9.2.3 Test Setup Block Diagram



9.2.4 Test Procedure

- 1) Spectrum analyzer is set as below

Central Frequency	Test frequency
Span	Up to about 3.5 times from twice the value of equipment acceptable to the Regulations
RBW	Less than 3% of the allowable value specified in Equipment Regulations
VBW	Comparable to the resolution bandwidth
Input level	That the carrier level is high enough than the noise level of the spectrum analyzer
Sweep time	The minimum time is guaranteed measurement accuracy (in the case of wave burst, a burst that enters per sample)
Sweep mode	(Until it does not change the waveform) continuous
Detection mode	Positive peak
Display mode	Max Hold
- 2) After two and as the setting of spectrum analyzer, sweep was repeated until no observed change in the display, an array of computer work to a variable the value of all data points.
- 3) For all data, converted to the true number of value-dimensional power dB
- 4) Determine the total power of all data, stored as a "full power".
- 5) Seek the data points on the power limit of addition are carried out sequentially from the lowest frequency data, consisting of 0.5% of the "total power" is this value. Converted to a frequency that breaking point, to be remembered as the "lower frequency".

- 6) Determine the data point limit of addition is carried out under power sequentially from the data of the highest frequency, consisting of 0.5% of the "total power" is this value. Converted to a frequency that breaking point, to be remembered as the "maximum frequency". Environmental Conditions

9.2.5 Environmental Conditions

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

9.2.6 Test Results

Occupied Bandwidth

Channel Frequency (MHz)	Occupied Bandwidth (KHz)	Limit (MHz)	Verdict
315	203.96	1	PASS

Occupied Bandwidth			
Test Model	Test voltage	Normal voltage	Channel Frequency 315MHz



9.3 TOLERANCE OF UNWANTED EMISSION INTENSITY (EIRP)

9.3.1 Applicable Standard

According to Item 8 of Article 2 Paragraph 1.

9.3.2 Conformance Limit

The transmitter spurious emissions shall not exceed the following limit:

- (1) 1GHz or lower: 250 nW/100 kHz (-36dBm/59.20dBuV/m) or less
- (2) Over 1 GHz: 1 μ W/1MHz (-30dBm/65.20dBuV/m) or less

9.3.3 Test Setup Block Diagram

Test according to clause 6.1 radio frequency test setup

9.3.4 Test Procedure

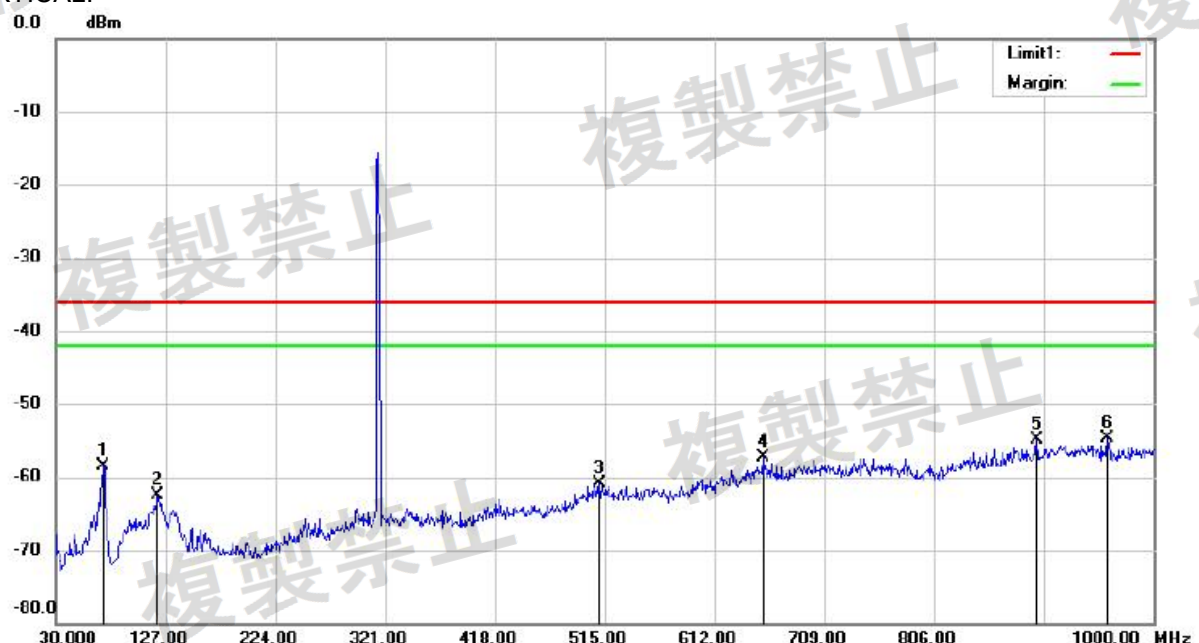
- 1) The measurement equipment shall be set for peak hold mode of operation.
- 2) The resolution bandwidth shall be set to 100 kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz, and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.
- 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
- 5) In addition, varying from 1m to 4m between the degrees of antenna height above ground for the measurement, find the position to adjust the orientation of the antenna for the measurement, power becomes the maximum.

9.3.5 Environmental Conditions

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

9.3.6 Test Results

VERTICAL:



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 22 C

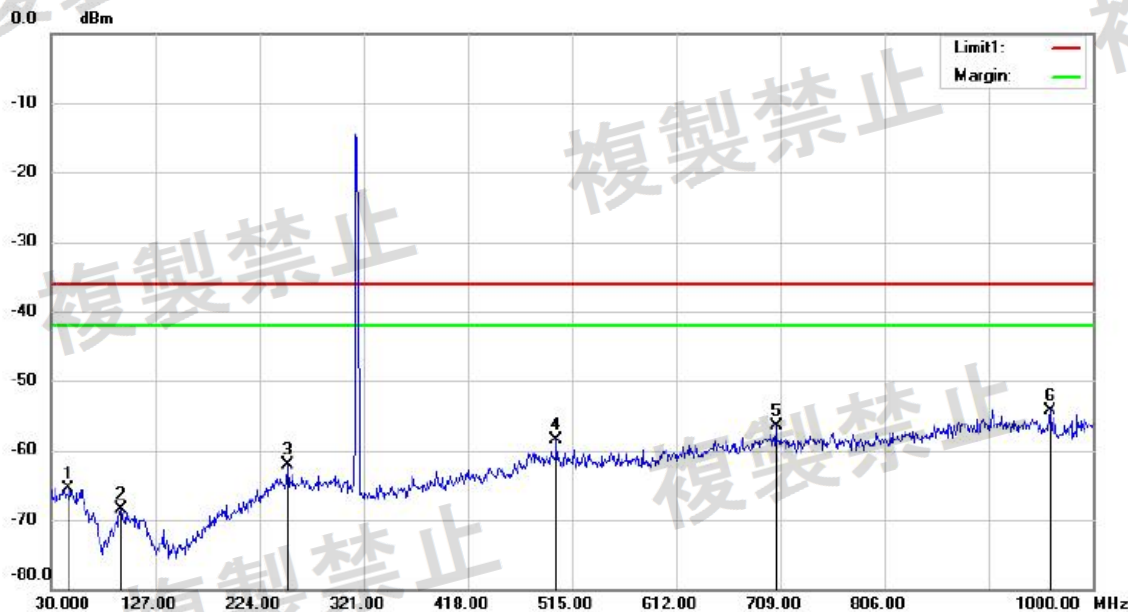
Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		71.7100	-53.62	-4.87	-58.49	-36.00	-22.49	QP		
2		120.2100	-61.50	-1.05	-62.55	-36.00	-26.55	QP		
3		510.1500	-66.98	6.12	-60.86	-36.00	-24.86	QP		
4		654.6800	-66.13	8.81	-57.32	-36.00	-21.32	QP		
5		897.1800	-65.87	11.04	-54.83	-36.00	-18.83	QP		
6	*	959.2600	-66.05	11.26	-54.79	-36.00	-18.79	QP		

HORIZONTAL:



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 22 C

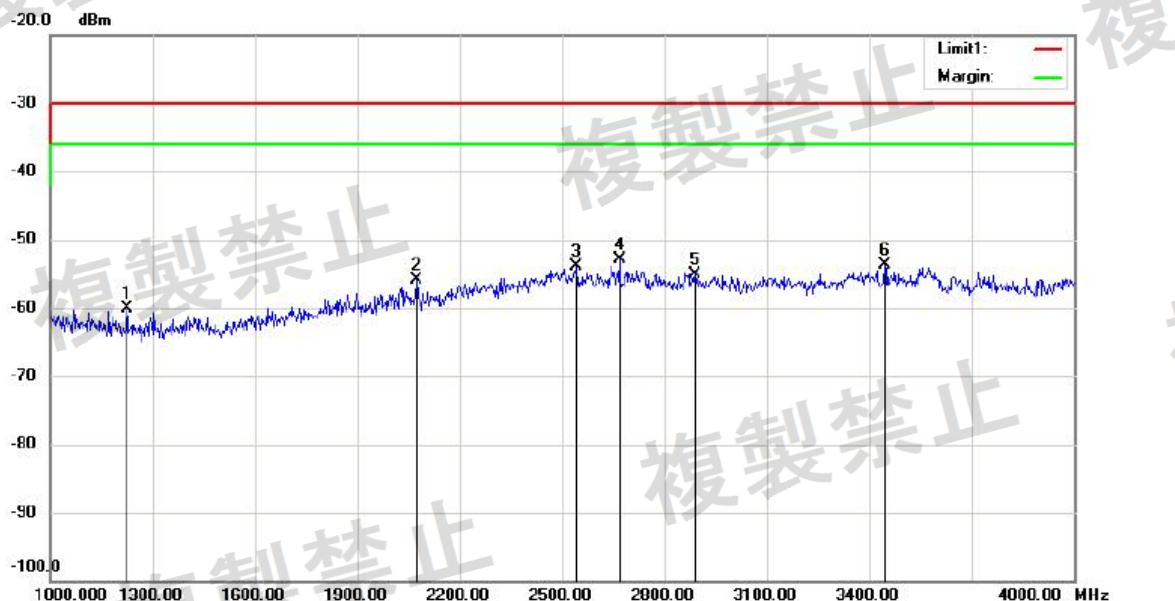
Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

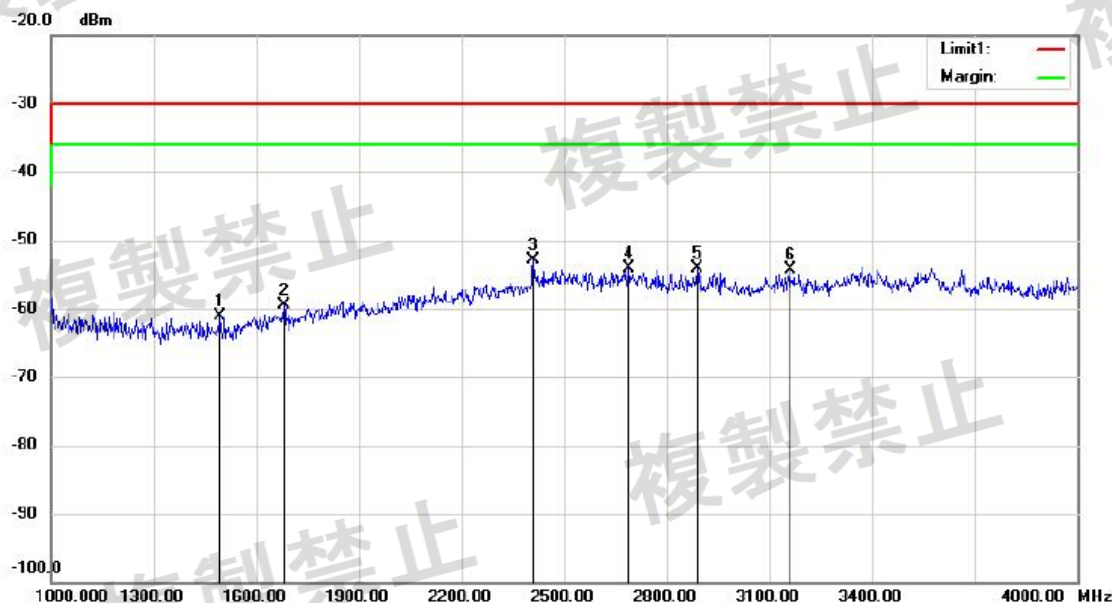
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		46.4900	-67.67	2.10	-65.57	-36.00	-29.57	QP		
2		94.9900	-66.97	-1.53	-68.50	-36.00	-32.50	QP		
3		250.1900	-65.03	2.94	-62.09	-36.00	-26.09	QP		
4		500.4500	-65.51	7.01	-58.50	-36.00	-22.50	QP		
5		705.1200	-65.86	9.29	-56.57	-36.00	-20.57	QP		
6	*	960.2300	-64.94	10.73	-54.21	-36.00	-18.21	QP		

VERTICAL:



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1225.000	-54.91	-5.28	-60.19	-30.00	-30.19	peak		
2		2074.000	-53.48	-2.44	-55.92	-30.00	-25.92	peak		
3		2542.000	-54.68	0.84	-53.84	-30.00	-23.84	peak		
4	*	2668.000	-53.59	0.76	-52.83	-30.00	-22.83	peak		
5		2890.000	-55.73	0.63	-55.10	-30.00	-25.10	peak		
6		3445.000	-56.17	2.51	-53.66	-30.00	-23.66	peak		

HORIZONTAL:



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 22 C

Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1		1495.000	-55.49	-5.68	-61.17	-30.00	-31.17	peak	
2		1681.000	-54.87	-4.60	-59.47	-30.00	-29.47	peak	
3	*	2410.000	-52.73	-0.07	-52.80	-30.00	-22.80	peak	
4		2689.000	-54.62	0.47	-54.15	-30.00	-24.15	peak	
5		2890.000	-54.56	0.42	-54.14	-30.00	-24.14	peak	
6		3160.000	-55.28	1.07	-54.21	-30.00	-24.21	peak	

9.4 LIMIT OF SECONDARY RADIATED EMISSIONS (EIRP)

9.4.1 Applicable Standard

According to Item 8 of Article 2 Paragraph 1.

9.4.2 Conformance Limit

The secondary radiated emission shall not exceed the following limit:

- (1) 1GHz or lower: 4 nW/100 kHz (-54dBm/41.20dBuV/m) or less
- (2) Over 1 GHz: 4 nW /1MHz (-54dBm/41.20dBuV/m) or less

9.4.3 Test Setup Block Diagram

Test according to clause 6.1 radio frequency test setup

9.4.4 Test Procedure

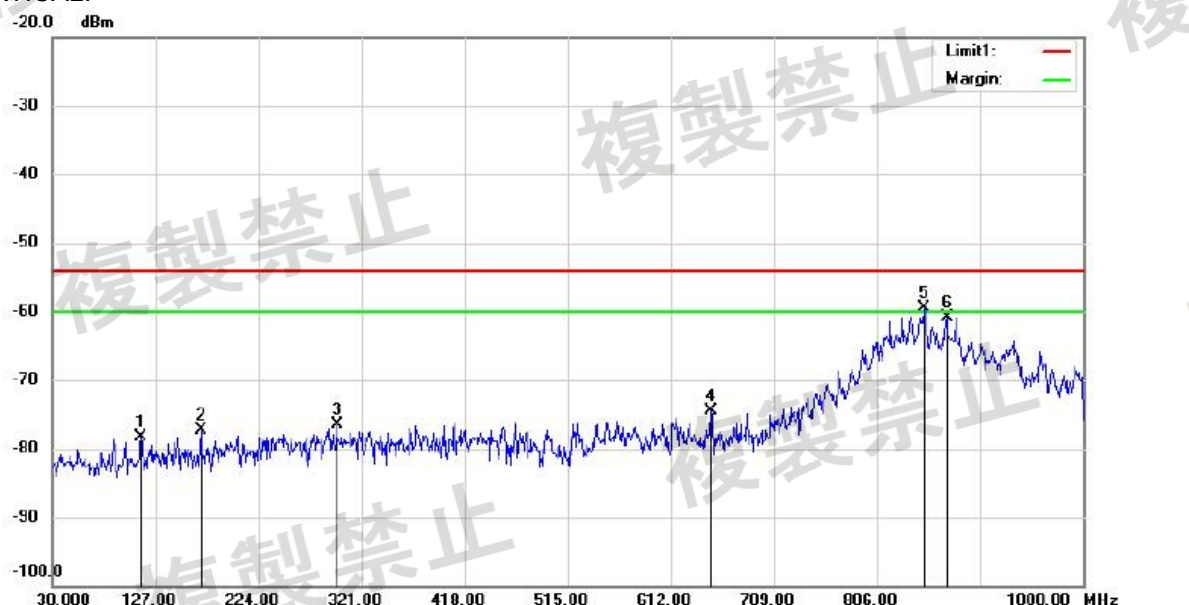
- 1) The measurement equipment shall be set for peak hold mode of operation.
- 2) The resolution bandwidth shall be set to 100 kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz, and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.
- 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
- 5) In addition, varying from 1m to 4m between the degrees of antenna height above ground for the measurement, find the position to adjust the orientation of the antenna for the measurement, power becomes the maximum.

9.4.5 Environmental Conditions

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

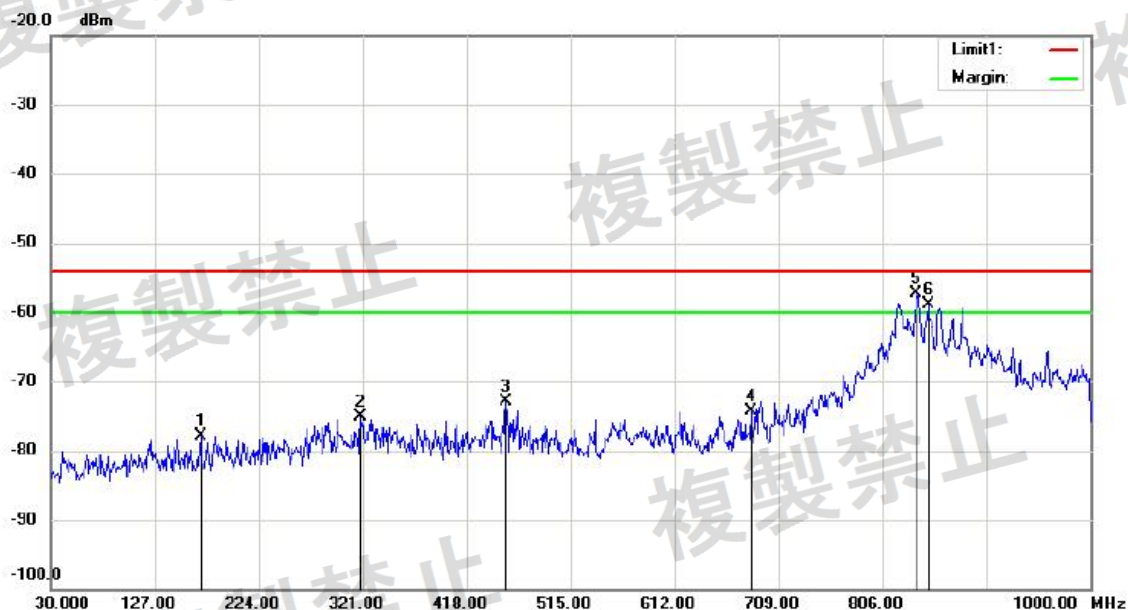
9.4.6 Test Results

VERTICAL:



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		113.4200	-79.05	0.70	-78.35	-54.00	-24.35	peak		
2		169.6800	-78.20	0.85	-77.35	-54.00	-23.35	peak		
3		297.7200	-77.58	1.12	-76.46	-54.00	-22.46	peak		
4		649.8300	-76.06	1.63	-74.43	-54.00	-20.43	peak		
5	*	850.6200	-61.46	1.88	-59.58	-54.00	-5.58	peak		
6		871.9600	-62.81	1.90	-60.91	-54.00	-6.91	peak		

HORIZONTAL:



Site: 3m Chamber #3

Polarization: **Horizontal**

Temperature: 22 C

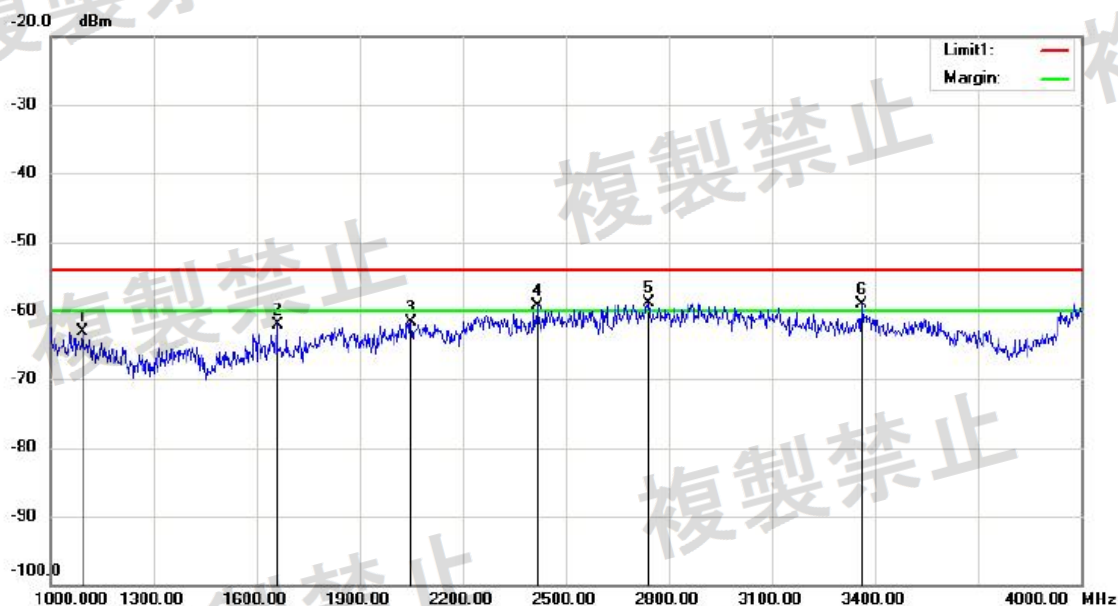
Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		169.6800	-78.70	0.85	-77.85	-54.00	-23.85	peak		
2		319.0600	-76.23	1.16	-75.07	-54.00	-21.07	peak		
3		454.8600	-74.21	1.40	-72.81	-54.00	-18.81	peak		
4		683.7800	-76.04	1.68	-74.36	-54.00	-20.36	peak		
5	*	838.0100	-59.19	1.87	-57.32	-54.00	-3.32	peak		
6	!	848.6800	-60.76	1.88	-58.88	-54.00	-4.88	peak		

VERTICAL:



Site: 3m Chamber #3

Polarization: **Vertical**

Temperature: 22 C

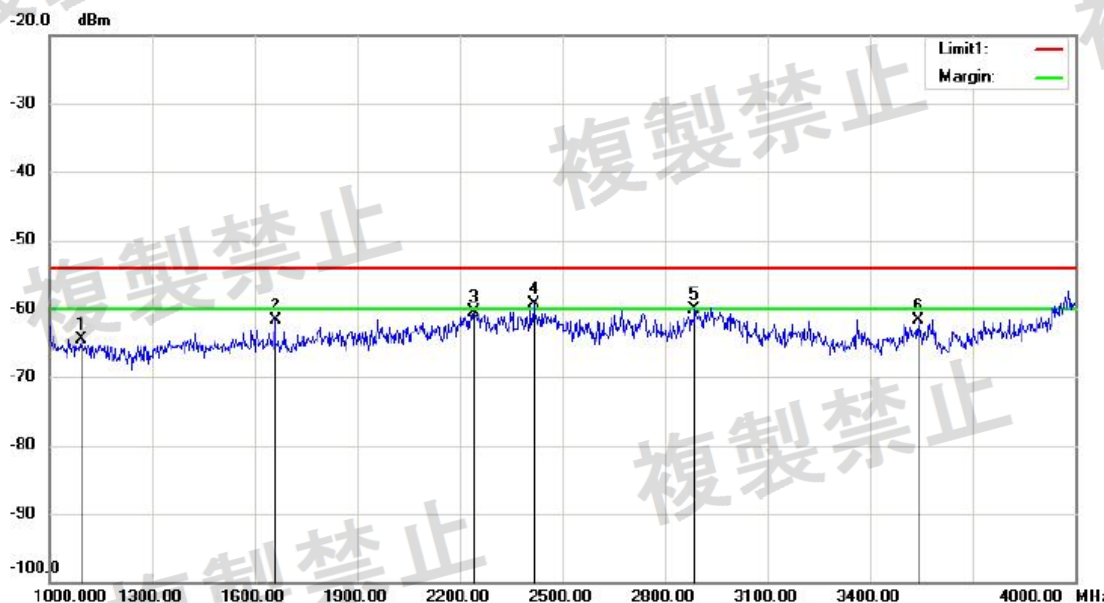
Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1093.000	-57.85	-5.22	-63.07	-54.00	-9.07	peak		
2		1660.000	-57.52	-4.64	-62.16	-54.00	-8.16	peak		
3		2050.000	-59.11	-2.61	-61.72	-54.00	-7.72	peak		
4	!	2416.000	-59.56	0.21	-59.35	-54.00	-5.35	peak		
5	*	2743.000	-59.72	0.73	-58.99	-54.00	-4.99	peak		
6	!	3361.000	-61.32	2.15	-59.17	-54.00	-5.17	peak		

HORIZONTAL:



Site 3m Chamber #3

Polarization: **Horizontal**

Temperature: 22 C

Limit: Item 8 of Article 2 Paragraph 1

Power:

Humidity: 50 %

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1093.000	-59.29	-5.28	-64.57	-54.00	-10.57	peak		
2		1660.000	-56.94	-4.72	-61.66	-54.00	-7.66	peak		
3		2242.000	-59.33	-1.12	-60.45	-54.00	-6.45	peak		
4	*	2416.000	-59.33	-0.02	-59.35	-54.00	-5.35	peak		
5		2887.000	-60.48	0.42	-60.06	-54.00	-6.06	peak		
6		3541.000	-64.16	2.55	-61.61	-54.00	-7.61	peak		

9.5 ASSIGNED FREQUENCY (FREQUENCY RANGE)

9.5.1 Applicable Standard

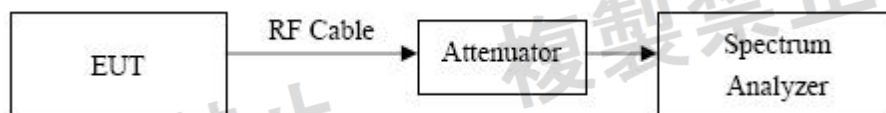
According to Item 8 of Article 2 Paragraph 1.

9.5.2 Conformance Limit

Frequency allocation: 312MHz – 315.25MHz

Frequency tolerance: 312MHz – 315.25MHz

9.5.3 Test Setup Block Diagram



9.5.4 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) The measurement equipment shall be set for peak hold mode of operation.
- 3) Read the frequency and record it

9.5.5 Environmental Conditions

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

9.5.6 Test Results

Test Voltage (V)	Test Frequency (MHz)	Measured Frequency (MHz)	Limit (MHz)	Verdict
3.0	315.00	315.1126	312-315.25	PASS
3.3	315.00	315.127	312-315.25	PASS
2.7	315.00	315.132	312-315.25	PASS

3.0V



3.3V

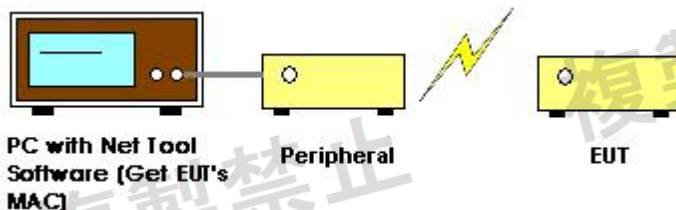


2.7V



10 INTERFERENCE PREVENTION FUNCTION

10.1.1 TEST SETUP



10.1.2 Radio interference prevention function

	Normal voltage	High voltage	Low voltage
Result	OK	OK	OK

MAC:3a:2b:6c:7d:12:e3

Result:

11 TRANSMISSION TIME RESTRICTION

11.1.1 Limit

Limits
Not transmit cyclically One transmission ON time: 5 sec.or less One transmission ON time (Manual Case): 90 sec.or less

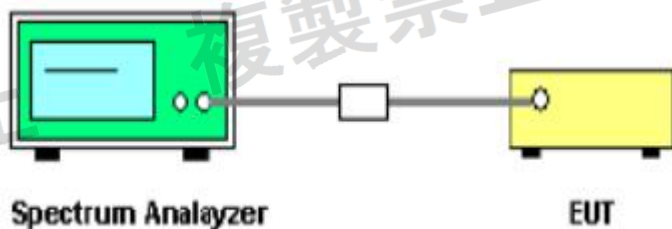
11.1.2 MTASURING INSTRUMENTS AND SETTING

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	11MHz/1MHz
Detector	Peak
Trace	Max Hold
Sweep Mode	Signal
Sweep Time	10s

11.1.3 TEST DEVIATION

There is no deviation with the original standard.

11.1.4 TEST SETUP



11.1.5 TEST RESULTS

Dwell time (second)	Limit (second)	Result
2.76	<5s	Pass



12 APPENDIX PHOTOGRAPHS OF TEST SETUP

