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TEST REPORT

Product Name : Bluetooth Remote Control

Model Number : RC605A

Prepared for	:	Formovie (Chongqing) Innovative Technology Co., Ltd.
Address	:	4-401, #2 Longgang Road, Guojiatuo Area, Jiangbei District, Chongqing, China
Prepared by	:	EMTEK (SHENZHEN) CO., LTD.
Address	:	Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China Tel: (0755) 26954280 Fax: (0755) 26954282

Report Number	:	ENS2108260004W00601R
Date(s) of Tests	:	Aug 26, 2021 to Sept 10, 2021
Date of issue	:	Sept 10, 2021

TEST RESULT CERTIFICATION

Applicant	:	Formovie (Chongqing) Innovative Technology Co., Ltd.
Address	:	4-401, #2 Longgang Road, Guojiatuo Area, Jiangbei District, Chongqing, China
Manufacturer	:	Formovie (Chongqing) Innovative Technology Co., Ltd.
Address	:	4-401, #2 Longgang Road, Guojiatuo Area, Jiangbei District, Chongqing, China
EUT	:	Bluetooth Remote Control
Model Name	:	RC605A
Trademark	:	FORMOVIE

Measurement Procedure Used:

APPLICABLE STANDARDS		
STANDARD	**Test Procedure**	**TEST RESULT**
Item 19 of Article 2 Paragraph 1	MIC public notice 88:2004, annex 43	PASS

The device described above is tested by EMTEK (SHENZHEN) 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 EMTEK (SHENZHEN) 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 Ministry of Internal Affairs and Communication notification in Annex “43” of Article 88, Paragraph 1 or the test method more than equivalent and the result is technically compliant with the ARIB STD T-66 requirements.
The test results of this report relate only to the tested sample identified in this report

Date of Test : Aug 26, 2021 to Sept 10, 2021

Prepared by : Xiaolan Yu /Editor

Reviewer : Sewen Guo /Supervisor

Approve & Authorized Signer : Lisa Wang/Manager

EMTEK (SHENZHEN) CO., LTD. TESTING

Modified Information

Rev.	Summary	Date of Rev.	Report No.
Ver.1.0	Original Report	/	ENS2108260004W00601R

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1 EUT TECHNICAL DESCRIPTION

Characteristics	Description
BT Version	BLE Mode
Data Rate	1Mbps
Modulation:	GFSK
Operating Frequency Range(s):	2402-2480MHz;
Number of Channels:	40 channels;
Rated Antenna power：	2 mW
Antenna Type：	PCB Antenna
Antenna Gain:	2.64 dBi;
Power supply:	☒DC supply: DC 3V
	☐Adapter supply: Model： Input： Output：
Hardware version:	RF464A
Software version:	RF464A001
Temperature Range	0°C ~ +40°C

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

2 SUMMARY OF TEST RESULT

MIC RULES	DESCRIPTION OF TEST	RESULT
Item 19	RF Output Power	Compliant
Item 19	Frequency Tolerance	Compliant
Item 19	Occupied Bandwidth /Spreading Bandwidth/Spread Factor	Compliant
Item 19	Transmitter Spurious Emissions	Compliant
Item 19	Receiver Spurious Emissions	Compliant
Item 19	Interference Prevention Function	Compliant

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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: Item 19 of Article 2 Paragraph 1 of the TELEC rules for 2.4GHz band wide-band low-power data communication system. All measurements contained in this report were conducted with test method for radio equipment specified in MIC public notice 88:2004, annex 43 for certification. And measuring method for electric field intensity of radio station with remarkably weak radiowave transmitted.

3.2 MEASUREMENT EQUIPMENT USED

3.2.1 Conducted Emission Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	May 15, 2021
L.I.S.N.	ROHDE & SCHWARZ	ESH3-Z5	100191	May 15, 2021
50Ω Coaxial Switch	Anritsu	MP59B	M20531	May 15, 2021
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	May 15, 2021

3.2.2 Radiated Emission Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 15, 2021
Pre-Amplifier	HP	8447F	2944A07999	May 15, 2021
Bilog Antenna	Schwarzbeck	VULB9163	142	May 15, 2021
Cable	Schwarzbeck	AK9513	ACRX1	May 15, 2021
Cable	Rosenberger	N/A	FP2RX2	May 15, 2021
Cable	Schwarzbeck	AK9513	CRPX1	May 15, 2021
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 15, 2021
Pre-Amplifier	A.H.	PAM-0126	1415261	May 15, 2021
Horn Antenna	Schwarzbeck	BBHA 9120	707	May 15, 2021
Cable	H+B	0.5M SF104-26.5	289147/4	May 15, 2021
Cable	H+B	3M SF104-26.5	295838/4	May 15, 2021
Cable	H+B	6M SF104-26.5	295840/4	May 15, 2021

3.2.3 Radio Frequency Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.
Spectrum Analyzer	Agilent	E4407B	88156318	May 15, 2021
Spectrum Analyzer	Agilent	N9010A	My53470879	May 15, 2021
Spectrum Analyzer	R & S	FSV40	132.1-3008K39-100967-AP	May 15, 2021
Power meter	Anritsu	ML2495A	0824006	May 15, 2021
Power sensor	Anritsu	MA2411B	0738172	May 15, 2021
Oscilloscope	Tektronix	TDS3012B	071-0964-03	May 15, 2021

Remark: *Each piece of equipment is scheduled for calibration once a year.*

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.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (Bluetooth v5.0 with BLE mode: 1Mbps) were used for all test.

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

Frequency and Channel list for Bluetooth v5.0 with BLE mode:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	19	2440	…	…
2	2404	20	2442	37	2476
4	2406	21	2444	38	2478
…	…	…	…	39	2480
Note: fc=2402MHz+k×2MHz k=0 to 39					

Test Frequency and channel for Bluetooth v5.0 with BLE mode:

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	19	2440	39	2480

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
Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, 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**
The Certificate Registration Number is L2291.
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC
Designation Number: CN1204
Test Firm Registration Number: 882943

Accredited by A2LA
The Certificate Number is 4321.01.

Accredited by Industry Canada
The Conformity Assessment Body Identifier is CN0008

Name of Firm : EMTEK (SHENZHEN) CO., LTD.

Site Location : Building 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

5 TEST SYSTEM UNCERTAINTY

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

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Uncertainty for Output power test	±0.83dB
Conducted Emissions Test	±2.0dB
Radiated Emission Test	±2.0dB
Occupied Bandwidth Test	±1.0dB
Power density test	±1.85dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5℃
Humidity	±3%

Measurement Uncertainty for a level of Confidence of 95%

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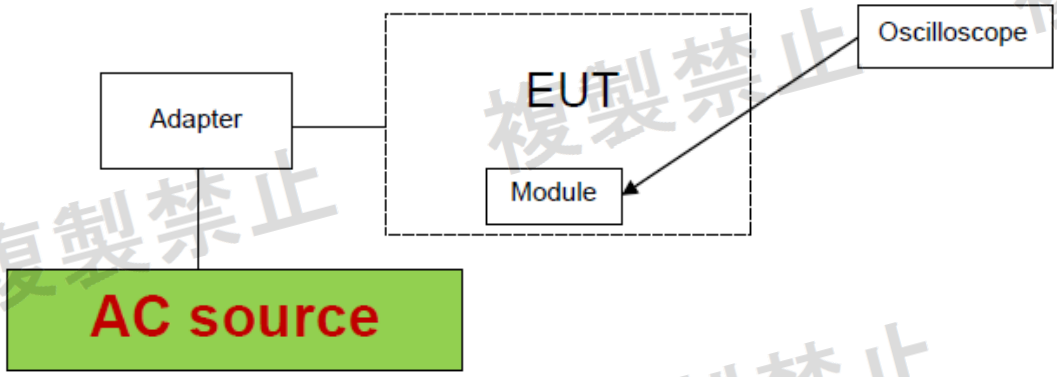
6 SETUP OF EQUIPMENT UNDER TEST

6.1 Applicable Standard

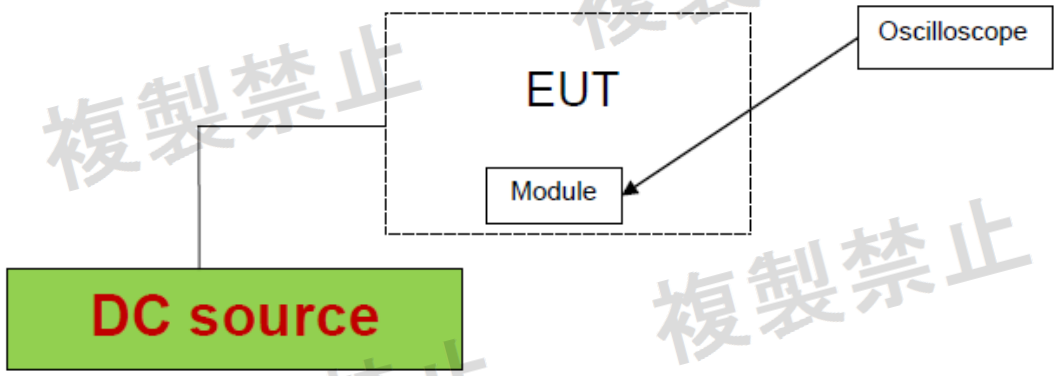
When there is a fluctuation of +/-10% input voltage from external power to the test equipment. If the fluctuation of input voltage to the circuit of the radio part (excl. power) in the test equipment is confirmed below +/-1%, Measurement shall be tested with the rated voltage.

6.2 Test Configuration

Config A



Config B



6.3 Test Results

Test Voltage	DC2.7V	DC 3V	DC 3.3V
Module Test voltage	3.31	3.30	3.31
Module Ratedvoltage	3.30	3.30	3.30
The Range of Module Voltage(%)	0.3	0	0.3

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

7 TEST REQUIREMENTS

7.1 FREQUENCY TOLERANCE

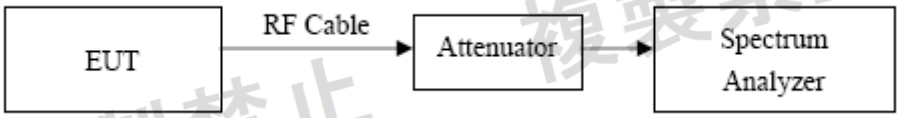
7.1.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.1.2 Conformance Limit

For the 2.4 GHz bands it shall be better than 50 ppm under the operational conditions.

7.1.3 Test Setup Block Diagram



7.1.4 Test Procedure

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.
When there is a fluctuation of +/-10% input voltage from external power to the test equipment. In case the test equipment is designed to function only within the specified fluctuation range of +/-10% for the voltage source tests shall be conducted applying the rated voltage and a respective specified maximum/minimum value of fluctuation range.
Set the EUT on the test frequency and transmit.
Stop the modulation (stop the spreading), set on “continuous transmission of no-modulated radiation” in principle. If impossible, on “continuous burst transmission of no-modulated radiation”, or a modulation mode to generate a specific frequency spectrum so that the frequency can be measured using a spectrum analyzer (example: a wave of the sub-carrier).
In case of no-modulation (consecutive or continuous burst), direct measurement is conducted with the frequency meter.
In case of burst wave, the measurement is conducted for a time period to achieve a sufficient accuracy. The mean value is employed as the measurement value.
In case of a test mode generating specific frequency spectrum, the spectrum frequency is measured with the spectrum analyzer.

7.1.5 Environmental Conditions

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

7.1.6 Test Results

Modulation Mode	Channel Number	Channel Frequency (MHz)	Reading (MHz)	Deviation (kHz)	Tolerance(ppm)	Limit (ppm)	Verdict
Non-Modulation	0	2402	2401.999	-1	-0.42	50	PASS
	19	2440	2439.999	-1	-0.41	50	PASS
	39	2480	2479.999	-1	-0.40	50	PASS
Note: N/A (Not Applicable)							

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7.2 OCCUPIED BANDWIDTH / SPREADING BANDWIDTH

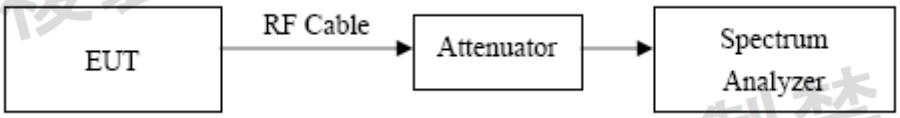
7.2.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1

7.2.2 Conformance Limit

Permissible value for occupied bandwidth for DSSS & OFDM equipment (Carrier frequencies from 2,400MHz to 2,483.5MHz or from 2,471MHz to 2,497MHz, for all equipment except for 40 MHz channel separation) shall be 26MHz or less.
In spread spectrum systems, spread bandwidth (which refers to a frequency bandwidth with an upper limit and lower limit such that each of the mean powers radiated above the upper frequency limit and below the lower frequency limit is equal to 5% of the total mean power radiated ,this also applies hereafter) shall be 500kHz or more.

7.2.3 Test Setup Block Diagram



7.2.4 Test Procedure

Spectrum analyzer is set as below

Central Frequency	Test frequency
Sweeping Bandwidth	2 to 3.5 times the allowable value (SPAN=4MHz)
Resolution Bandwidth	Lower than 3 % of allowable value (RBW=10kHz)
Video Bandwidth	Same level as Resolution Bandwidth
Y-Axis Scale	10 dB/Div
Input Level	Carrier level is sufficiently higher than spectrum analyzer noise
Sweep Time	Minimum time to assure the measurement accuracy (In case of burst wave, 1 burst per 1 sample)
Sampling points	More than 400 points
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Positive peak
Trigger Condition	Max-hold

The measured value of the spectrum analyzer is processed by the computer internally or externally
Conditions of EUT
Set the test frequency and the modulation is performed with the standard coded test signal. In case of OFDM with burst wave, the modulation is conducted to minimize the rate of the time that the number of sub-carrier is less (short preamble).
After a repetition of sweep so that no variation is found, values of all the data points are loaded into the array variable on the computer.
For all the data, the dB values are converted to antilogarithm of power dimension.
Power summation of all the data is estimated and stored as “total power value”.
Starting with the data of the minimum frequency, the power is summed sequentially, and the limiting data point where the value achieves 0.5% of the total power is sensed. The limiting point is converted to

frequency, stored as “lower limit”.
Starting with the data of the maximum frequency, the power is summed sequentially, and the limiting data point where the value achieves 0.5% of the total power is sensed. The limiting point is converted to frequency, stored as “upper limit”

7.2.5 Environmental Conditions

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

7.2.6 Test Results

99% Emission bandwidth

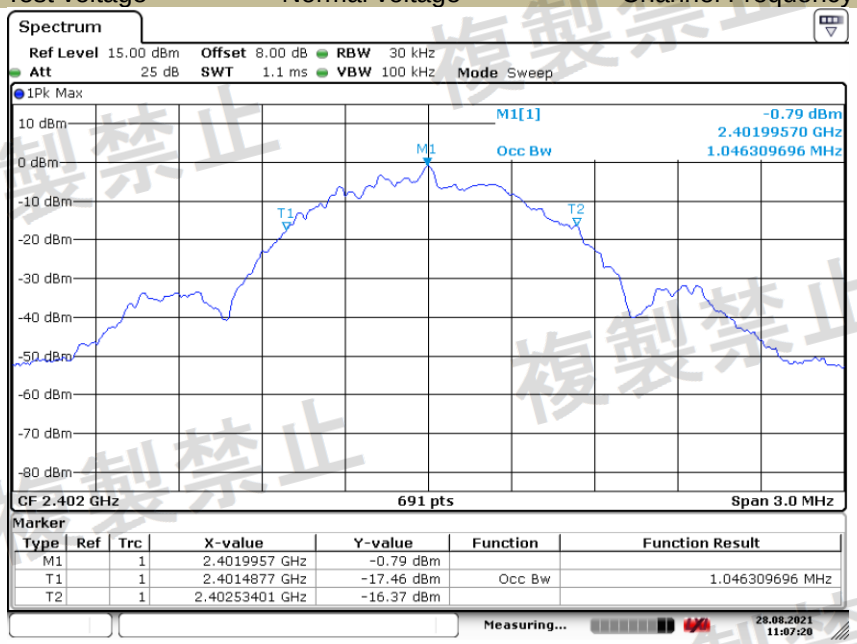
Modulation Mode	Channel Number	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	0	2402	1.046	<=26	PASS
	19	2440	1.055	<=26	PASS
	39	2480	1.038	<=26	PASS
Note: N/A (Not Applicable)					

90% Emission bandwidth

Modulation Mode	Channel Number	Channel Frequency (MHz)	Spreading Bandwidth (KHz)	Limit (kHz)	Verdict
GFSK	0	2402	677.28	>=500	PASS
	19	2440	655.57	>=500	PASS
	39	2480	646.89	>=500	PASS
Note: N/A (Not Applicable)					

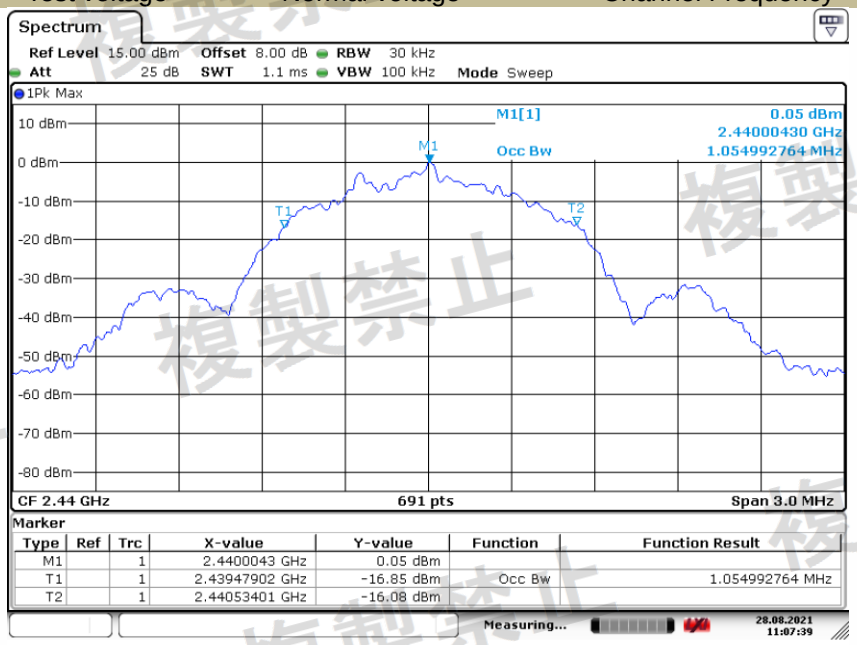
99% Emission bandwidth

Test Model	Occupied Bandwidth BLE mode			
Test voltage	Normal voltage		Channel Frequency	2402MHz



Date: 28.AUG.2021 11:07:20

Test Model	Occupied Bandwidth BLE mode			
Test voltage	Normal voltage		Channel Frequency	2440MHz



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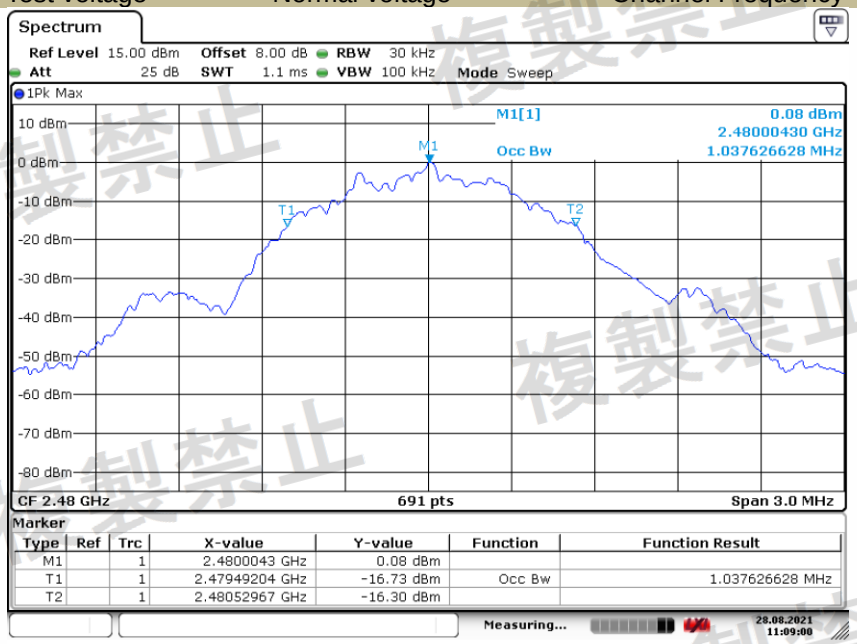
Test Model	Occupied Bandwidth BLE mode		
Test voltage	Normal voltage	Channel Frequency	2480MHz



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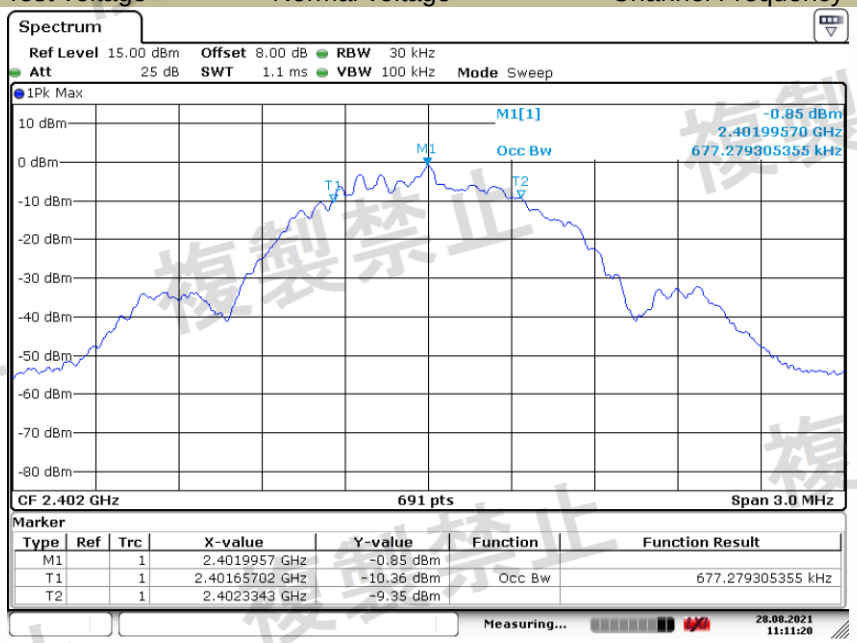
90% Emission bandwidth

Test Model	Occupied Bandwidth BLE mode		
Test voltage	Normal voltage	Channel Frequency	2402MHz



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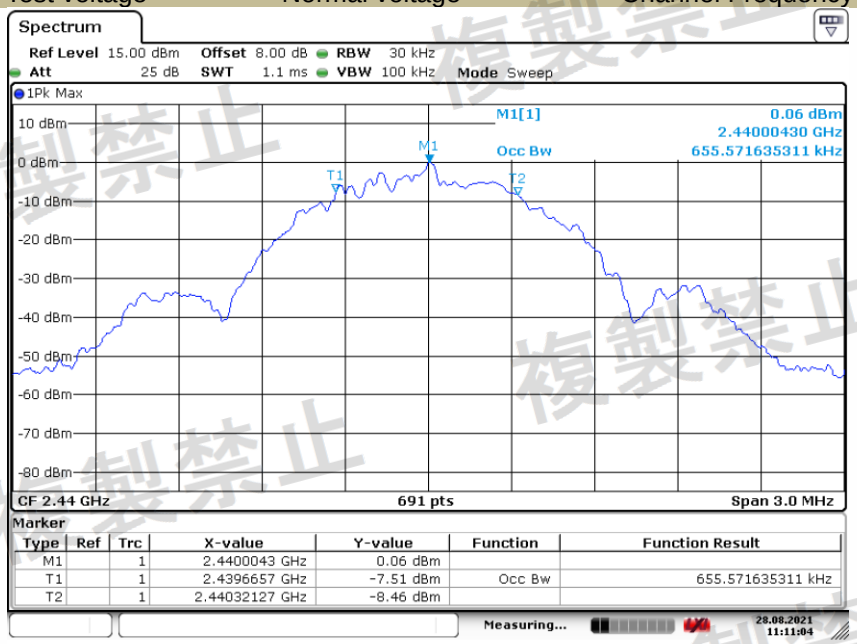
Test Model		Occupied Bandwidth BLE mode			
Test voltage	Normal voltage		Channel Frequency		2440MHz



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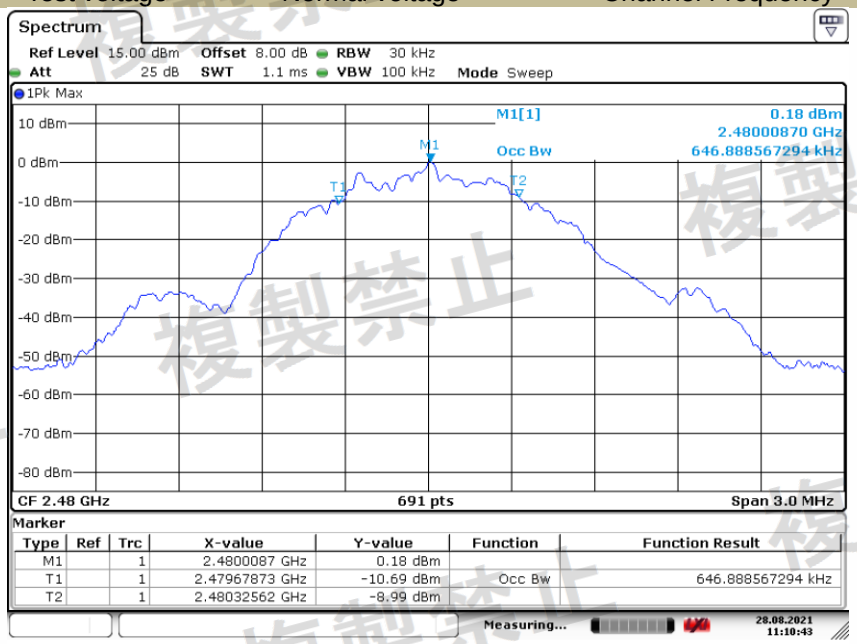
Test Model		Occupied Bandwidth BLE mode			
Test voltage	Normal voltage		Channel Frequency		2480MHz



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7.3 POWER TO ANTENNA (CONDUCTED)

7.3.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.3.2 Conformance Limit

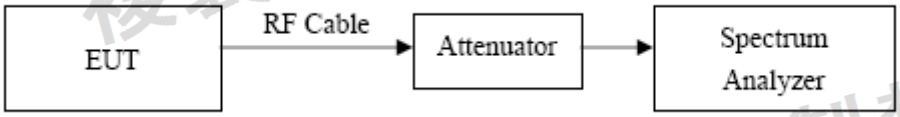
- ≤ 3 mW /MHz(FHSS from 2402-2480 MHz)
- ≤ 10 mW /MHz(DS OFDM (Occupied Bandwith <26MHz) from 2400-2483.5 MHz)
- ≤ 5 mW/MHz (OFDM(26MHz<Occupied Bandwith <38MHz) from 2400-2483.5 MHz)
- ≤ 10 mW (other from 2400-2483.5 MHz)

The Output Power Tolerance must be within +20%, -80%.
E.i.r.p:

- ≤ 6.91dBm /MHz(FHSS from 2402-2480 MHz)
- ≤ 12.14 dBm /MHz(DS OFDM (Occupied Bandwith <26MHz) from 2400-2483.5 MHz)
- ≤ 9.14 dBm /MHz (OFDM(26MHz<Occupied Bandwith <38MHz) from 2400-2483.5 MHz)
- ≤ 12.14 dBm (other from 2400-2483.5 MHz)

Note: E.I.R.P will not be applied to the transmission antenna which has a gain of 2.14dBi or less.

7.3.3 Test Setup Block Diagram



7.3.4 Test Procedure

Set the EUT on the test frequency and the consecutive TX mode or continuous (constant period, constant burst length) burst TX mode.
In case of spreading code used, set on the test spreading code, then the modulation is performed with standard coding test signal.
(1) Measure the equivalent noise bandwidth at the spectrum analyzer for resolution bandwidth of 1 MHz, then read the value correcting the resolution bandwidth on the 1 MHz equivalent bandwidth. In case of a spreading bandwidth lower than 1 MHz, however, perform the correction only for a higher value than “Spreading bandwidth (MHz) / Equivalent noise bandwidth (MHz)”.
(2)The attenuation value of the attenuator shall be set to achieve the optimal operating input level at the spectrum analyzer.
(3)Spectrum analyzer for seeking the maximum antenna power is set as below.

Central Frequency	Test frequency
Sweeping Bandwidth	Approx. twice the Occupied Bandwidth
Resolution Bandwidth	1 MHz
Video Bandwidth	Approx. twice the resolution bandwidth (VBW=2MHz)
Y-Axis Scale	10 dB/Div
Sweep Time	Minimum time to assure the measurement accuracy

	(In case of burst wave, 1 burst per 1 sample)
Trigger Condition	Free run
Data points	More than 400 points
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Positive peak
Display mode	Max-hold

(4) Spectrum analyzer for measuring the antenna power is set as below. In this case, calibrate the indication of the RF Power Meter on the output of the EUT with the RF Power Meter connected to the IF output of the spectrum analyzer.

Central Frequency	Frequency to achieve the maximum power (sought frequency)
Sweeping Bandwidth	0 Hz
Resolution Bandwidth	1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Sample

Measurement Procedure
(1) No frequency hopping systems:
a. Configure the settings of the spectrum analyzer to 2(3).
b. After repeating sweeps (until no display changes are found), measure the maximum power frequency per MHz.
c. Connect the high frequency power meter to the IF output of the spectrum analysers.
d. Configure the settings of the spectrum analyzer to 2(4).
e. Set the antenna power as follows:
- Continuous waves: value indicated on the high frequency power meter, corrected according to 2(1).
- Burst waves: value similarly corrected in the case of continuous waves and value calculated from the average power within bursts from rates of transmission times (i.e. correction on the duty-cycle, to find the average within the transmit burst)

7.3.5 Environmental Conditions

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

7.3.6 Test Results

Modulation Mode	Channel number	Channel Frequency (MHz)	Conducted power (mW)	Rated Antenna power (mW)	Antenna Power Error (+20%,-80%)	Limit (mW)
1GFSK	0	2402	1.47	2	-26.50	10
	19	2440	1.69	2	-15.50	10
	39	2480	1.76	2	-12.00	10
Note:						

7.4 SPURIOUS EMISSIONS INTENSITY

7.4.1 Applicable Standard

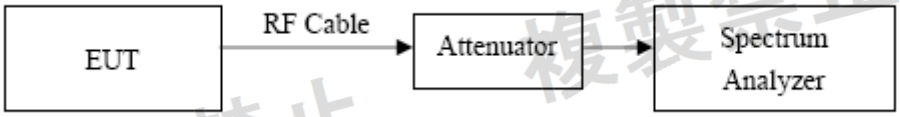
According to Item 19 of Article 2 Paragraph 1.

7.4.2 Conformance Limit

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

a. 2,387MHz ≤ f ≤ 2,400MHz and 2,483.5MHz < f ≤ 2,496.5MHz 25 μW(-16dB) or less
b. 2,387MHz > f and 2,496.5MHz < f 2.5 μW(-26dB) or less

7.4.3 Test Setup Block Diagram



7.4.4 Test Procedure

(1)Spectrum analyzer for seeking the spurious emission is set as below

Sweeping Bandwidth	For seeking the spurious emission, from frequency lowest possible to the 5 times the carrier frequency
Resolution Bandwidth	1 MHz
Video Bandwidth	Approx. As same as Resolution bandwidth
Y-Axis Scale	10 dB/Div
Input Level	Value of maximum dynamic range
Sweep Time	Minimum time to assure the measurement accuracy (Note 1)
Sweep Mode	Single sweep
Phase-Detection Mode	Positive peak

(2)The settings of the spectrum analyzer while conducting spurious amplitude measurements are as follows:

- Central Frequency: Acquired spurious frequencies in (1)
- Sweep Frequency 0 Hz
- Resolution Bandwidth 1 MHz
- Video Bandwidth same as Resolution Bandwidth
- Note: take into account that the requirement limits the power in a bandwidth of 1 MHz.
- If the measurement is carried out with a bandwidth of 100 kHz (for frequencies below 1 GHz), the limit shall be reduced with 10 dB.
- For example 2.5 uW in 1 MHz = -26 dBm limit, becomes –36 dBm for 100 kHz bandwidth.
- Y-Axis Scale 10 dB/Div
- Input Level: choose input level within the linear range of the SA mixer (so that no additional spurious are generated by the mixer)
- Sweep Time: Minimum amount of time to ensure measurement accuracy. However, in the case of burst waves, time exceeds duration of 1 burst.
- Data Points Over 400 points
- Sweep Mode: Single sweep

- Detection Mode Sample (BIN-Width << RBW, so that all spurious emissions are captured) [BIN-width is the frequency difference between 2 adjacent sample points on the display)

(3)Set EUT as occupied bandwidth is measure. That is, Set the EUT on the test frequency and the continuous TX mode or continuous (constant period, constant burst length) burst TX mode. In case of spreading code used, set on the test spreading code, then the modulation is performed with standard coding test signal.

The spectrum analyzer is set as 2 (1). Seek the spurious emission If the amplitude of the sought spurious emission satisfies the specified value (in case of 2 (2) Note 1, the specified value is –3dB), the measurement

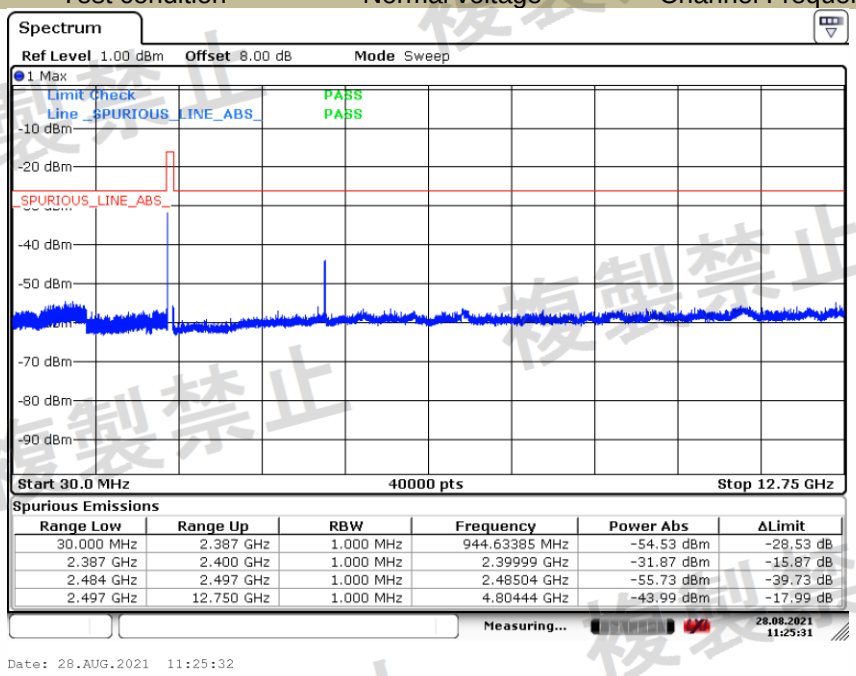
of 2 (2) is not performed, then the estimated value is employed as the measured value.
In case the sought spurious emission amplitude exceeds the specified value, seek the spurious frequency by narrowing the sweeping band sequentially as 100 MHz, 10 MHz, 1 MHz for the purpose of higher accuracy of the spectrum analyzer. Set the spectrum analyzer as 2 (2). Estimate the mean value of the spurious amplitude, then employ it as the measured value (In case DSSS as well as OFDM with burst wave, the mean inside of the burst).
Sweep Bandwidth: 30MHz~2387MHz, 2483.5MHz~2496.5MHz, 2496.5MHz~12500MHz
Respectively mark the maximum results in the above sweep bandwidth.

7.4.5 Environmental Conditions

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

7.4.6 Test Results

Test Model	Spurious Emission Intensity (30MHz to 12.5GHz)			
	GFSK			
Test condition	Normal voltage		Channel Frequency	2402MHz



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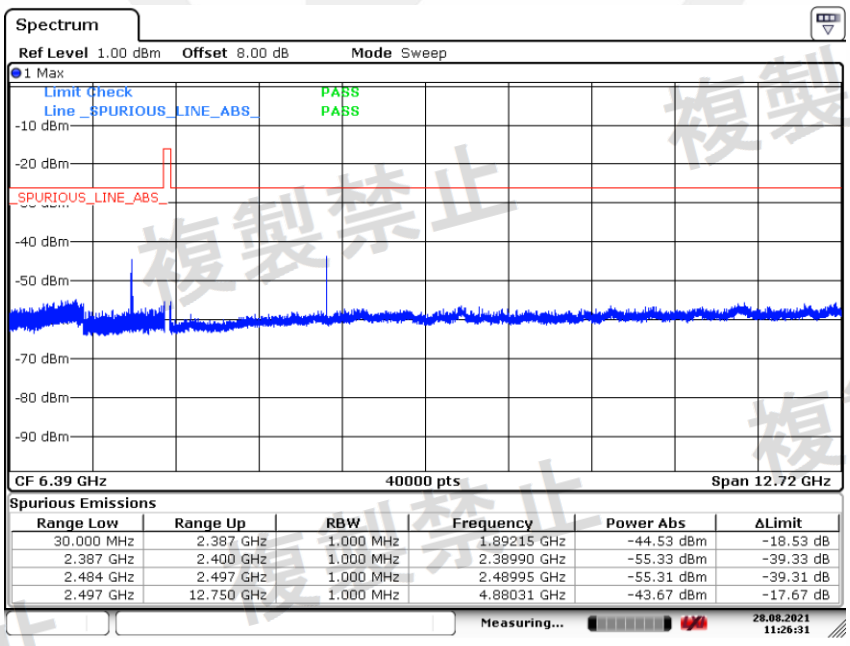
Test Model	Spurious Emission Intensity (30MHz to 12.5GHz)			
	GFSK			
Test condition	Normal voltage		Channel Frequency	2440MHz



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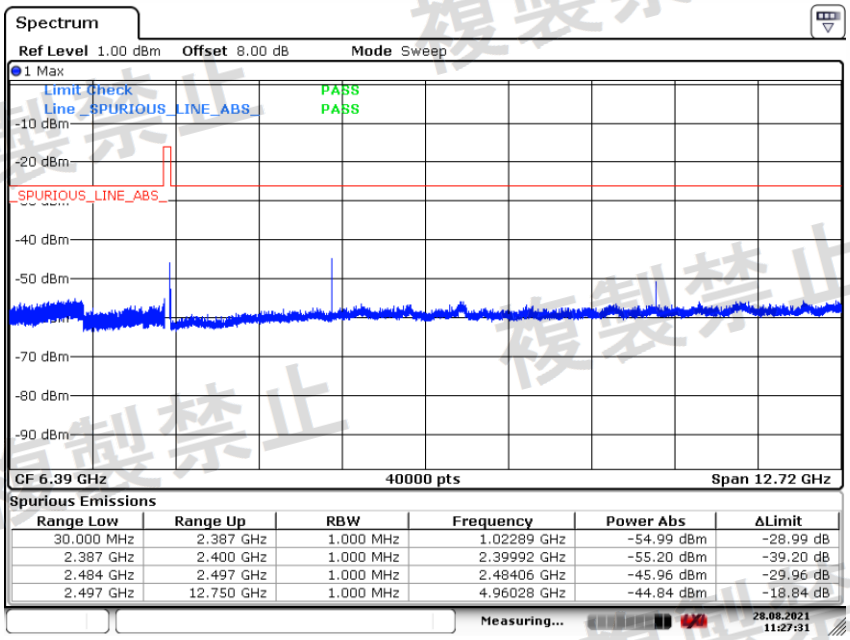
Test Model	Spurious Emission Intensity (30MHz to 12.5GHz)			
	Test condition	GFSK Normal voltage	Channel Frequency	2480MHz



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7.5 COLLATERAL EMISSIONS OF RECEIVER

7.5.1 Applicable Standard

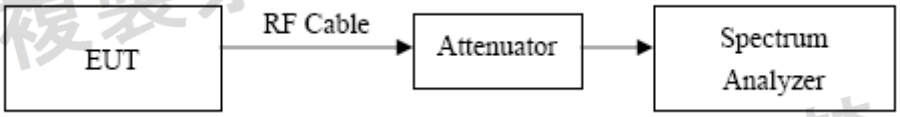
According to Item 19 of Article 2 Paragraph 1

7.5.2 Conformance Limit

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4 nW (-54dBm) or less at a frequency below 1 GHz and 20 nW(-47dBm) or less at a frequency of 1 GHz or higher as measured using the circuit.

a. 30 MHz - 1000 MHz	4 nW (-54dBm) or less
b. 1GHz – 12.5 GHz	20 nW(-47dBm) or less

7.5.3 Test Setup Block Diagram



7.5.4 Test Procedure

Set the EUT so that the test frequency is can be measured receipt consecutively all the time.

(1) Set the attenuation value of the dummy load lowest as possible, due to low level of the measured object.

(2) Set Spectrum analyzer for seeking the collateral emission is set as below.

Sweeping Bandwidth	30MHz to 5 times of carrier frequency
Resolution Bandwidth	In case of frequency lower than 1 GHz, 100 kHz In case of frequency higher than 1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Time	Minimum time to assure the measurement accuracy
Y-Axis Scale	10 dB/Div
Sweep Mode	Single sweep
Phase-Detection Mode	Positive peak

(3) Spectrum analyzer for measuring the collateral emission is set as below.

Central Frequency	Collateral emission frequency
Sweeping Bandwidth	0 Hz
Resolution Bandwidth	In case of frequency lower than 1 GHz, 100 kHz In case of frequency higher than 1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Mode	Single sweep
Detection Mode	Sample

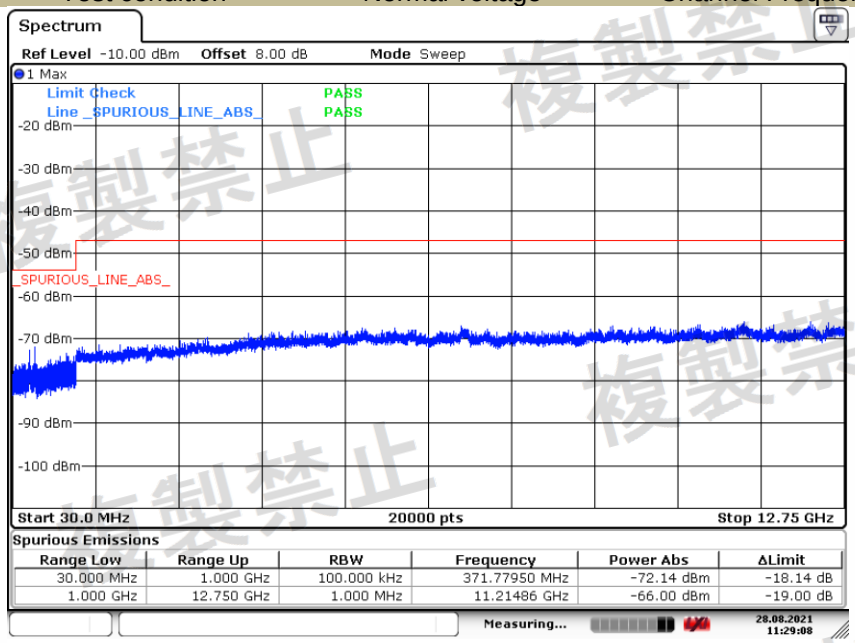
Set the spectrum analyzer as (2), seek the maximum amplitude of the collateral emission.
In case of sought result lower than 1/10 limit value, employ the sought value as the measured value.
In case the sought value exceeds 1/10 limit value, seek the collateral emission frequency by narrowing the sweeping band sequentially to 1/10 for the purpose of higher accuracy of the spectrum analyzer. Set the spectrum analyzer as (3).

7.5.5 Environmental Conditions

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

7.5.6 Test Results

Test Model	Collateral Emissions of Receiver (30MHz to 12.5GHz) GFSK			
	Test condition	Normal voltage	Channel Frequency	2402MHz



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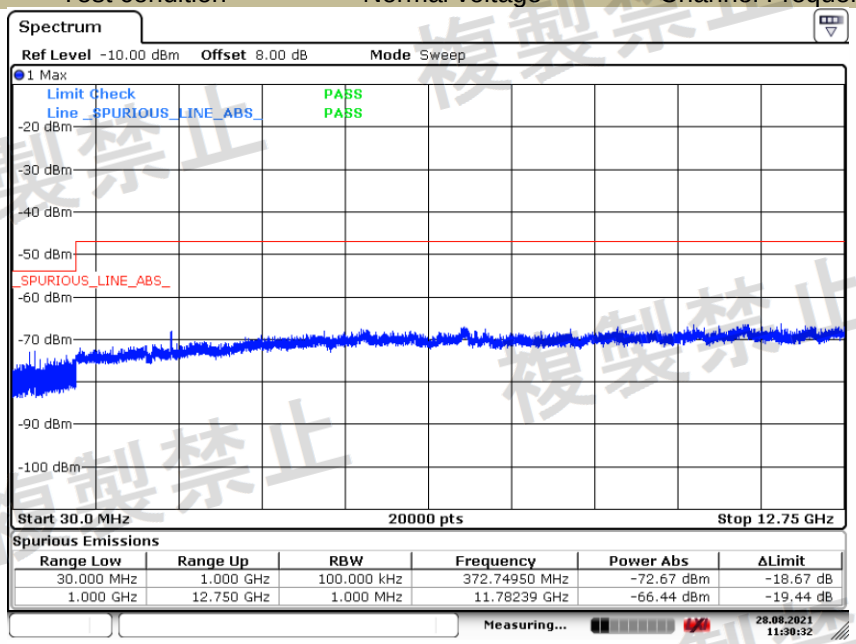
Test Model	Collateral Emissions of Receiver (30MHz to 12.5GHz)			
	GFSK			
Test condition	Normal voltage	Channel Frequency	2440MHz	



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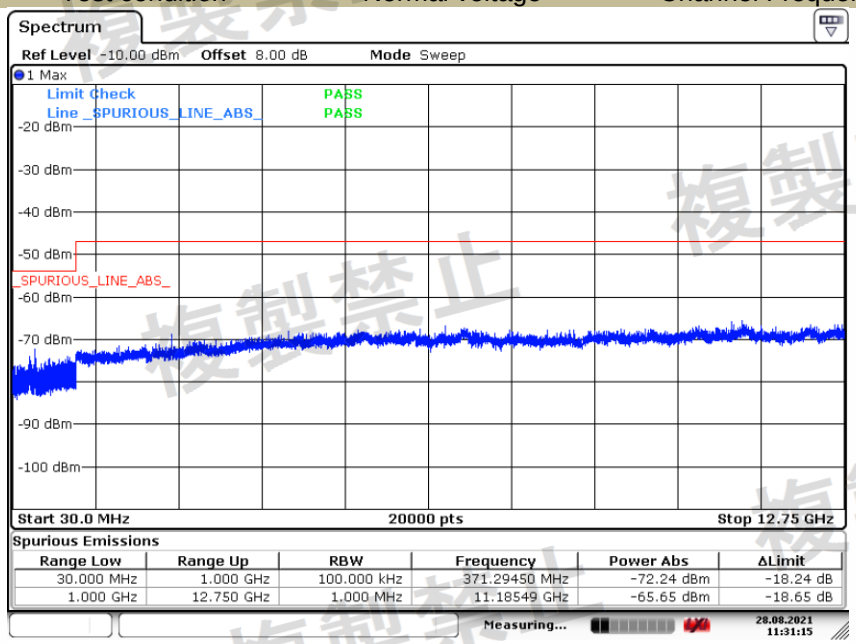
Test Model	Collateral Emissions of Receiver (30MHz to 12.5GHz)			
	GFSK			
Test condition	Normal voltage	Channel Frequency	2480MHz	



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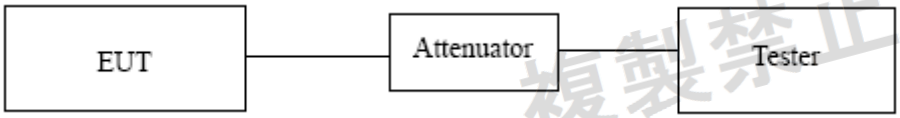
7.6 INTERFACE PREVENTION FUNCTION

7.6.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1. The device shall have the function of automatic transmission or reception of identification code.

7.6.2 Test Setup Block Diagram



7.6.3 Test Procedure

1. Set the EUT in the usual operation condition

2. 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.

3. The radio equipment with automatic receiving function of identification code

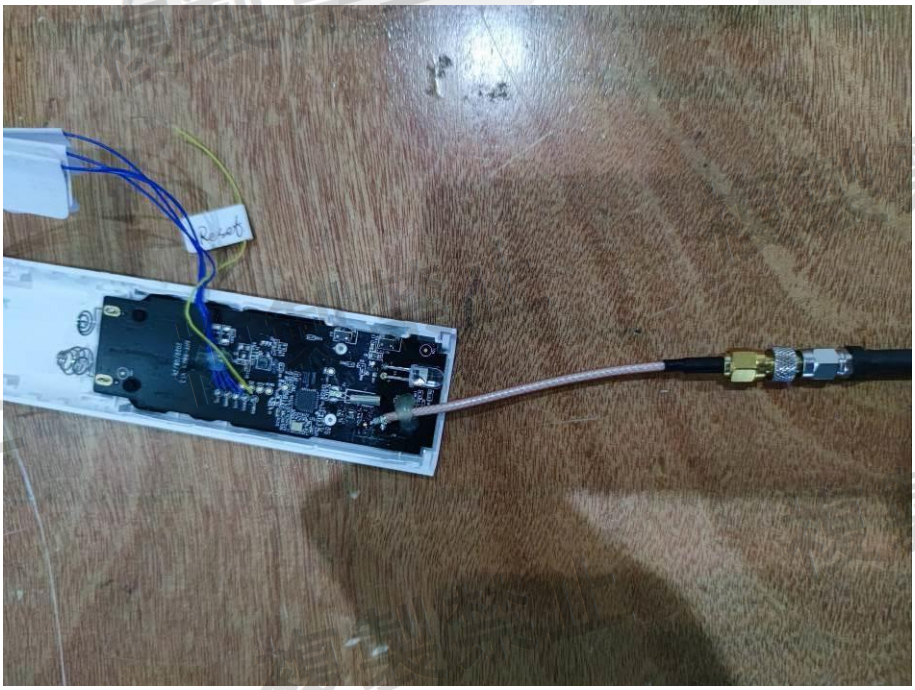
A. Transmit the assigned identification code from the opposite equipment.
B. Confirm that the usual communication is available.
C. Transmit the identification code distinct from the assigned one from the opposite equipment.
D. Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.

The identification function shall be recorded.

7.6.4 Summary of Test Results/Plots

Test Item	Test Result
Transmitting Function of Identification Code	>48 bits
Receiving Function of Identification Code	>48 bits

8 APPENDIX PHOTOGRAPHS OF TEST SETUP



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