



Report No.: 26CST070004M01

TEST REPORT

Applicant: Shenzhen Bilian Electronic Co.,Ltd.

Address of Applicant: Room 501, Building 3, No. 32, Dafu Road, Zhangge Community, Fucheng Street, Longhua District, Shenzhen City, China

Manufacturer : Shenzhen Bilian Electronic Co.,Ltd.

Address of Manufacturer : Room 501, Building 3, No. 32, Dafu Road, Zhangge Community, Fucheng Street, Longhua District, Shenzhen City, China

Factory : Dingnan county Fulong Technology Co.,Ltd.

Address of Factory: Yingtang industry park, Qinghua Blvd Liangfu industry district, Lishi town, Dingnan, Ganzhou, JiangXi province, China

Equipment Under Test (EUT)

Product Name: 802.11b/g/n 150Mbps 1T1R WLAN SDIO Module

Model No.: BL-M8189FS6

Trade Mark

Applicable standards: Article 2, Paragraph 1, Item (19)
MIC Notice No.88 Annex 1
MIC Notice No.88 Annex 43

Date of sample receipt: Jul. 07,2026

Date of Test: Jul. 07,2026-Jul. 16,2026

Date of report issued: Jul. 16,2026

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Frank Cheng

Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



2 Version

Version No.	Date	Description
00	Jul. 16,2026	Original

Prepared By:

Li Jun

Date:

Jul. 16,2026

Project Engineer

Check By:

Tongli

Date:

Jul. 16,2026

Reviewer



3 Contents

Page

1	COVER PAGE.....	1
2	VERSION	2
3	CONTENTS	3
4	TEST SUMMARY	4
5	GENERAL INFORMATION	5
5.1	GENERAL DESCRIPTION OF EUT	5
5.2	TEST MODE	7
5.3	TEST CONDITION	8
5.4	TEST LOCATION	8
5.5	OTHER INFORMATION REQUESTED BY THE CUSTOMER	8
5.6	TEST INSTRUMENTS LIST	9
5.7	MEASUREMENT UNCERTAINTY	10
6	TEST RESULTS AND MEASUREMENT DATA	11
6.1	FREQUENCY ERROR	11
6.2	ANTENNA OUTPUT POWER, ANTENNA POWER TOLERANCE AND TRANSMISSION ANTENNA GAIN	12
6.3	OCCUPY BANDWIDTH (99%)	13
6.4	SPREAD SPECTRUM BANDWIDTH (90%)	14
6.5	TRANSMITTER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY	15
6.6	SECONDARY RADIATED EMISSIONS	16
6.7	INTERFERENCE PREVENTION FUNCTION	17
6.8	CARRIER SENSE CAPABILITY	18
6.9	CONSTRUCTION PROTECTION CONFIRMATION	19
7	TEST SETUP PHOTO	20
8	EUT CONSTRUCTIONAL DETAILS	20

4 Test Summary

MIC Notice No.88 Appendix No.43 Article 2 Paragraph 1 Item 19		
Clause	Test Item	Result
3	Construction Protection Confirmation	Pass
3	Frequency Error	Pass
6	Antenna Output Power and Output Power Tolerance	Pass
4	99% Occupied bandwidth	Pass
4	Spread spectrum bandwidth	Pass
11	Transmitter Spurious Emissions and Unwanted Emission Intensity	Pass
11	Secondary radiated emissions	Pass
12	Interference Prevention Function	Pass
8	Carrier Sense Capability	Pass
10	Transmission Antenna Gain	N/A ^{Note 2}
11	Transmission Radiation Angle Width(3dB Beam width)	N/A ^{Note 2}
3	Number of carrier	Pass ^{Note 3}
4	Spread factor	Pass

Notes:

1. The product uses the CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance) mechanism described in IEEE 802.11.
2. EIRP does not exceed 12.14dBm/MHz
3. This device has more than 1 subcarrier in 1MHz, compliances with the requirement.



5 General Information

5.1 General Description of EUT

Product Name:	802.11b/g/n 150Mbps 1T1R WLAN SDIO Module
Model No.:	BL-M8189FS6
Hardware version	V2.2
Software version	V1.0
Operation Frequency:	802.11b/802.11g/802.11n(HT20) : 2412MHz~2472MHz 802.11n(HT40) : 2422MHz~2462MHz
Channel numbers:	802.11b/g/n(HT20) :13 802.11n(HT40) : 9
Channel separation:	5MHz
Modulation technology:	802.11b: DSSS (DBPSK/DQPSK/CCK) 802.11g/802.11n(HT20)/802.11n(HT40):OFDM(BPSK/QPSK/16QAM/64QAM)
Rated power:	802.11b: 4.90mW/MHz 802.11g: 2.20mW/MHz 802.11 n(HT20): 0.93mW/MHz 802.11 n(HT40): 0.39mW/MHz
Antenna Specification:	PCB antenna
Antenna Gain:	2.52 dBi
Power supply:	DC 3.3V

**Operation Frequency of each channel**

802.11b/802.11g/802.11n(H20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452	13	2472
2	2417	6	2437	10	2457		
3	2422	7	2442	11	2462		
4	2427	8	2447	12	2467		
802.11n(H40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)		
3	2422	6	2437	9	2452		
4	2427	7	2442	10	2457		
5	2432	8	2447	11	2462		

Final test channel as follows:

802.11b/802.11g/802.11n(H20)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442	13	2472
802.11n(H40)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442	11	2462

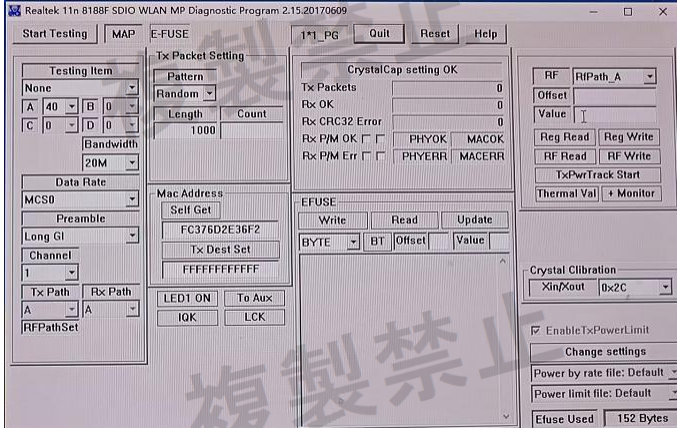
5.2 Test mode

Software is used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Pre-scan all kinds of data rate, and found the follow modulation which it is worse case.

802.11b: 1Mbps, 802.11g: 6Mbps, 802.11n(HT20): 6.5Mbps, 802.11n(HT40): 13Mbps:

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.



POWER LEVEL SETUP	Frequency		
	2412MHz/2422MHz	2442MHz	2462MHz/2472MHz
	Default	Default	Default
Pretest Mode	Description		
Mode 1	802.11b		
Mode 2	802.11g		
Mode 3	802.11n(HT20)		
Mode 4	802.11n(HT40)		
Final Test Mode	For Conduction Test		
Mode 1	802.11b		
Mode 2	802.11g		
Mode 3	802.11n(HT20)		
Mode 4	802.11n(HT40)		

5.3 Test condition

During the input supply voltage to the EUT from the external power source is varied by $\pm 10\%$, the fluctuation of input voltage to the circuit of RF unit of test equipment is exceed $\pm 1\%$. So, all measurement has been conducted by normal and limit voltage.

External power supply	RF IC power supply	Deviation from normal	Deviation
3.300V	3.300V	-	-
3.333V	3.333V	-	-
3.267V	3.267V	-	-
Temperature:	25 °C		
Humidity:	52%		
Atmospheric Pressure	1010mbar		

5.4 Test Location

All tests were performed at:

Shenzhen CST Testing Co., Ltd

Address: Room 530、531, Block A, Huafeng Internet Creative Park, No. 107 Gonghe Industrial Road, Xixiang Street, Baoan District, Shenzhen, China. 518101

Tel: 0755-27907627

Fax: 0755-27907627

5.5 Other Information Requested by the Customer

None.



5.6 Test Instruments list

RF TEST:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Radio Test Software	TST	V2	CST210	Oct. 14, 2025	Oct. 13, 2026
2	TST PASS RF control box V2	TST	V2	CST210	Oct. 14, 2025	Oct. 13, 2026
3	Power measuring unit	TST	V2	CST210	Oct. 14, 2025	Oct. 13, 2026
4	Automatic path switching module	TST	V2	CST210	Oct. 14, 2025	Oct. 13, 2026
5	Spectrum Analyzer	Agilent	N9020A	CST001	Oct. 14, 2025	Oct. 13, 2026
6	Signal Generator	Agilent	N5182A	CST211	Oct. 14, 2025	Oct. 13, 2026
7	Signal Generator	Agilent	N5181A	CST212	Oct. 14, 2025	Oct. 13, 2026
8	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW200	CST002	Oct. 14, 2025	Oct. 13, 2026
9	Splitter	Agilent	11636B	CST213	Oct. 14, 2025	Oct. 13, 2026
10	Power Attenuator	BTI	30dB/250W	CST216	Oct. 14, 2025	Oct. 13, 2026
11	Power Attenuator	BTI	20dB	CST217	Oct. 14, 2025	Oct. 13, 2026
12	D.C. Power Supply	Gwinstek	GPC-3060D	CST018	Oct. 14, 2025	Oct. 13, 2026
13	Coaxial Cable	CST	N/A	CST219	Oct. 14, 2025	Oct. 13, 2026
14	Coaxial Cable	CST	N/A	CST220	Oct. 14, 2025	Oct. 13, 2026
15	Coaxial cable	CST	N/A	CST222	Oct. 14, 2025	Oct. 13, 2026
16	Coaxial Cable	CST	N/A	CST223	Oct. 14, 2025	Oct. 13, 2026
17	Temperature and humidity box	ATOINSTRUMENT	ATH-2254-CP	CST026	Oct. 14, 2025	Oct. 13, 2026
18	Temperature and humidity meter	GEMLEAD	STH130	CST042	Oct. 14, 2025	Oct. 13, 2026
19	Digital oscilloscope	Tektronix	TDS3032B	CST043	Oct. 14, 2025	Oct. 13, 2026

All of the instruments are calibrated by CEPREI Calibration and Testing Center.

- ☐ (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio Act.
- ☐ (b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act.
- ☒ (c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 of the Radio Act.
- ☐ (d) Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a) through (c) above.

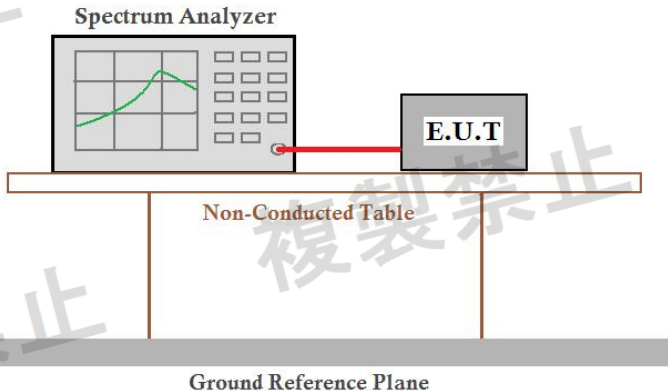
5.7 Measurement uncertainty

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with TR100028-1 [2] and shall correspond to an expansion factor (coverage factor) $K=1.96$ or $K=2$ (which provide confidence levels of respectively 95% and 95.5% in the case where the distributions characterizing the actual measurement uncertainties are normal).

Parameter	Uncertainty
RF frequency	$\pm 6 \times 10^{-7}$
Total RF power, conducted	$\pm 0.8\text{dB}$
Spurious emissions, conducted	$\pm 0.8\text{dB}$
DC and low frequency voltages	$\pm 3\%$
Humidity	$\pm 5\%$
Temperature	$\pm 1^\circ\text{C}$

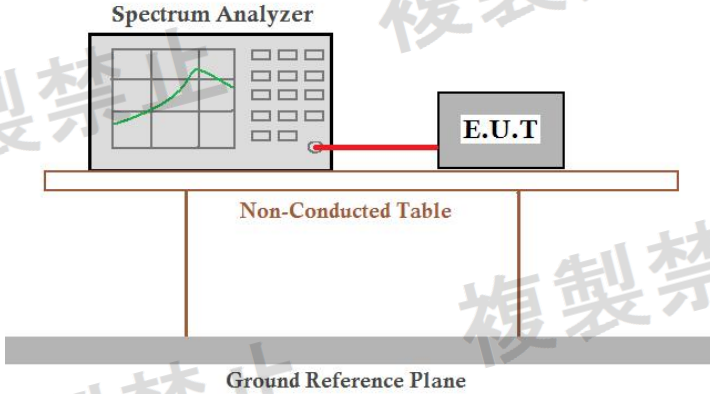
6 Test results and Measurement Data

6.1 Frequency Error

Test condition:	Without modulation, continuously transmitting.
Spectrum set:	Test Frequency: test channel, RBW=10kHz, VBW=10kHz, Span=1MHz, Sweep time=Auto, Detector mode=Positive peak
Limit:	±50ppm
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test results:	Pass

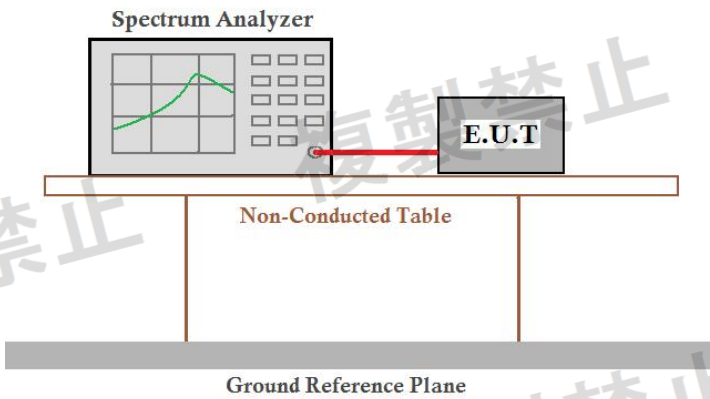
Measurement Data : The detailed test data see Appendix I

6.2 Antenna Output Power, Antenna Power Tolerance and Transmission Antenna Gain

Test condition:	Test diffusion code and modulate with standard coding test signal
Test Procedure:	1. Search Frequency of Peak Power Test Frequency: test channel, RBW=1M,VBW=3M, Span=40MHz, Sweep time=Auto, Detector mode =Positive peak,Sweep time=Auto,Sweep Type:Continue 2. Measure of average burst power Test Frequency: frequency of peak power RBW=1M,VBW=3M, Span=0Hz, Detector mode =RMS,Sweep time=Auto,Sweep Type:Single Antenna power= average burst power
Rating power:	802.11b: 4.90mW/MHz 802.11g: 2.20mW/MHz 802.11 n(HT20): 0.93mW/MHz 802.11 n(HT40): 0.39mW/MHz
Limit:	10mW/MHz for Occupy Bandwidth within 26MHz 5mW/MHz for Occupy Bandwidth 26-40MHz The output power tolerance must be within +20% E.I.R.P: $\leq 12.14\text{dBm/MHz}$ (OFDM, DSSS from 2400-2483.5MHz) $\leq 9.13\text{dBm/MHz}$ (OFDM, DSSS from 2400-2483.5MHz) for 802.11n(HT40)
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an Equipment Under Test (E.U.T.) via a cable. The E.U.T. is placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test results:	Pass

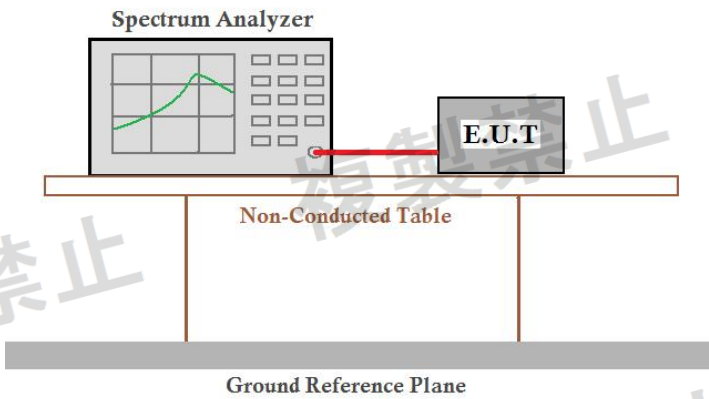
Measurement Data : The detailed test data see Appendix I

6.3 Occupy Bandwidth (99%)

Test condition:	Test diffusion code and modulate with standard coding test signal
Spectrum set:	Test Frequency: test channel, 802.11b/g/n20/ax20 mode: RBW=VBW=300kHz, Span=40MHz, Sweep time=Auto, Detector mode=Positive peak 802.11n40/ax40 mode: RBW=VBW=300kHz, Span=80MHz, Sweep time=Auto, Detector mode=Positive peak
Limit:	OFDM modulation: 40MHz or less Other Modulation: 26MHz or less
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test mode:	Transmitting mode
Test results:	Pass

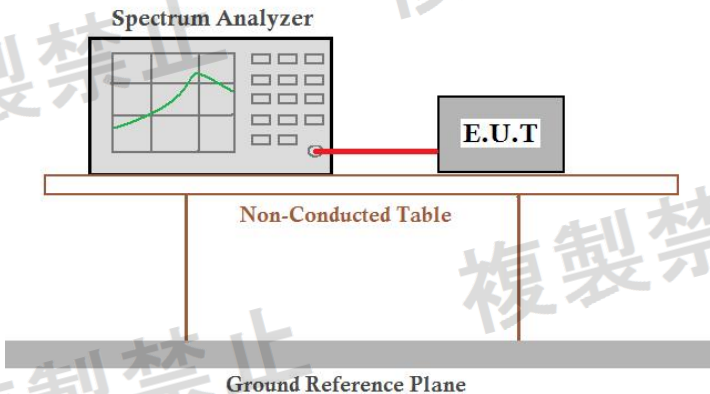
Measurement Data : The detailed test data see Appendix I

6.4 Spread spectrum bandwidth (90%)

Test condition:	Test diffusion code and modulate with standard coding test signal
Spectrum set:	Test Frequency: test channel, 802.11b/g/n20 mode: RBW=VBW=300kHz, Span=40MHz, Sweep time=Auto, Detector mode=Positive peak 802.11n40 mode: RBW=VBW=300kHz, Span=80MHz, Sweep time=Auto, Detector mode=Positive peak
Limit:	500kHz or more
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test results:	Pass

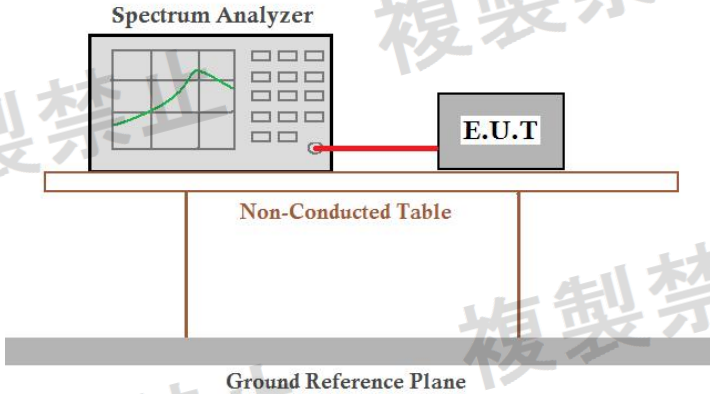
Measurement Data : The detailed test data see Appendix I

6.5 Transmitter Spurious emission and Unwanted Emission intensity

Test condition:	Test diffusion code and modulate with standard coding test signal
Measurement procedure:	Step 1 All spurious are measured from 30MHz to 12.5GHz by peak mode. Step 2 If the value measured by Step1 is 3dB or less to the limit, measure in average mode.
Spectrum set:	Step 1: Test Frequency: test channel, Below 1GHz RBW=VBW=1MHz, Above 1GHz RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak Step 2: Test Frequency: spurious frequency RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Sample, Span=0Hz
Limit:	Below 2387 MHz: 2.5 μ W/MHz or less 2387 to 2400 MHz: 25 μ W/MHz or less 2483.5 through 2496.5 MHz: 25 μ W/MHz or less Over 2496.5 MHz: 2.5 μ W/MHz or less STD-T33 a. 2,458MHz $\leq f \leq$ 2,471MHz and 2,497MHz $< f \leq$ 2,510MHz 25 μ W or less b. 2,458MHz $> f$ and 2,510MHz $< f$ 2.5 μ W or less
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an Equipment Under Test (E.U.T.). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test results:	Pass

Measurement Data : The detailed test data see Appendix I

6.6 Secondary radiated emissions

Test condition:	Receiving mode
Measurement procedure:	Step 1 All spurious are measured from 30MHz to 12.5GHz by peak mode. Step 2 If the value measured by Step1 is 3dB or less to the limit, measure in average mode.
Spectrum set:	Step 1: Test Frequency: test channel, Below 1GHz, RBW=VBW=100kHz; Above 1GHz, RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak Step 2: Test Frequency: spurious frequency Test Frequency: test channel, Below 1GHz, RBW=VBW=100kHz; Above 1GHz, RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Sample, Span=0Hz
Limit:	Below 1GHz: 4.0nW or less Above 1GHz: 20nW or less
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 5.6 for details
Test results:	Pass

Measurement Data : The detailed test data see Appendix I

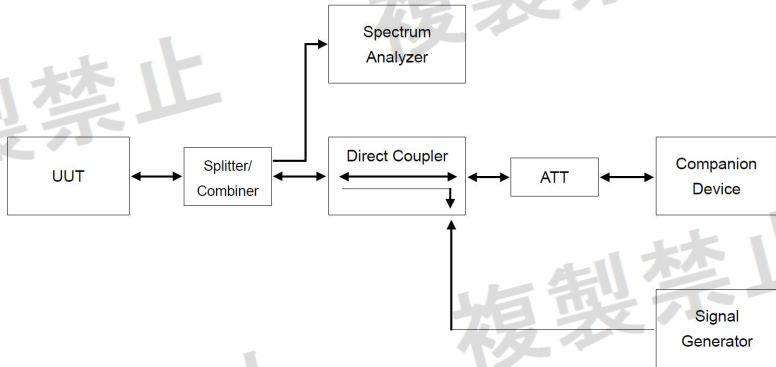
6.7 Interference prevention function

Measurement procedure:	(1) 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. (2) 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.		
Test setup:	Radio equipment	Dummy load Attenuator)	Demodulator
Test Instruments:	Refer to section 5.6 for details		
Test results:	Pass		

Measurement data:

Identification function:	Good; The MAC address is FC:37:6D:2E:36:F2
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6.8 Carrier Sense Capability

Limit:	Stop transmission for interference signal level above 100mV/m (or level at $22.79 + Gr - 20 \cdot \log(f) [\text{dBm}]$) f: indicated frequency in MHz Gr: indicated the antenna gain in dBi	
Spectrum set:	Attenuation	Auto
	RBW/VBW	1MHz/1MHz
	Span	0Hz
	Sweep time	10s
	Detector	Peak
	Trigger mode	Free Run
Measurement procedure:	1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG. Then turn off the RF signal of SG. 2. EUT have transmitted the maximum modulation signal and fixed channelize. 3. Set the Spectrum per the above form. 4. SG RF signal on, and adjust the signal level until the EUT stop transmission at the tested frequency. Record the signal level. 5. EUT shall be stop the transmission and SG RF signal off. Then EUT will be continuously transmitted signal.	
Test setup:	 <pre> graph LR UUT[UUT] <--> SC[Splitter/Combiner] SC <--> DC[Direct Coupler] DC <--> SA[Spectrum Analyzer] DC <--> ATT[ATT] DC <--> CD[Companion Device] SG[Signal Generator] <--> DC </pre>	
Test Instruments:	Refer to section 5.6 for details	
Test results:	Good	

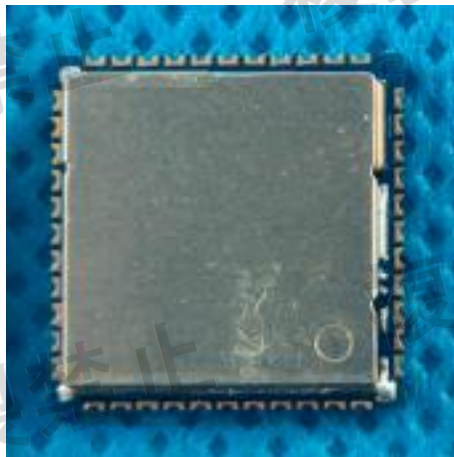
6.9 Construction Protection Confirmation

Limit

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

Confirmation Method

RF line use SMD components and Modulation components are covered with iron shield. This shield is not easily removed, the equipment can be damaged if the user tries to open it, Please refer to following for photo for details.



7 Test Setup Photo

Reference to the **Setup photo** for details

8 EUT Constructional Details

Reference to the **External Photos** and **Internal Photos** for details

-----End-----