MEASUREMENT REPORT

FCC PART 90

FCC ID:	2AJYU-8EC0002
Application:	SIMCom Wireless Solutions Limited
Application Type:	Certification
Product:	Wireless MODULE
Model No.:	SIM7028
Brand Name:	SIMCOM
FCC Rule Part(s):	Part 90 Subpart S
Test Procedure(s):	ANSI C63.26-2015
Test Date:	September 07 ~ October 19, 2021

Reviewed By: Sunny Sun

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2109RSU011-U7	Rev. 01	Initial Report	11-13-2021	Valid

Note: “SIM7022” and “SIM7028” are only different models, and all the other circuits are the same. This report is based on the MRT report “2109RSU011-U3” and FCC ID “2AJYU-8EC0001” to update the model No.

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Description Page

1. GENERAL INFORMATION

1.1. Applicant

SIMCom Wireless Solutions Limited

No.633 Jinzhong Road, Shanghai, China

1.2. Manufacturer

SIMCom Wireless Solutions Limited

No.633 Jinzhong Road, Shanghai, China

1.3. Testing Facility

☒	**Test Site - MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site - MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site - MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Wireless MODULE
Model No.	SIM7028
Brand Name	SIMCOM
IMEI	863266050008153
Operating Temp.	-40 ~ 85 °C
Supply Voltage	3.0 ~ 4.3Vdc, typical 3.7Vdc
NB-IoT Specification	
Single Band	NB-IoT Band 2, 4, 5, 12, 13, 14, 17, 25, 26, 66
Modulation	BPSK, QPSK
Category	Cat NB2
Sub-carrier Spacing	3.75kHz, 15kHz

Remark:

1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.
2. NB-IoT band 26 transmit frequency for part 90 rule is 814 ~ 824MHz and part 22 rule is 824 ~ 849MHz. ERP over 15MHz bandwidth complies the ERP limit line of part 22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies.

1.5. Radio Specification under Test

FDD T_X Frequency Range:	Band 26: 814 ~ 824 MHz
FDD R_X Frequency Range:	Band 26: 859 ~ 869 MHz
Type of Modulation:	BPSK, QPSK

1.6. Test Methodology

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

- ANSI C63.26:2015
- FCC CFR 47 Part 2, 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

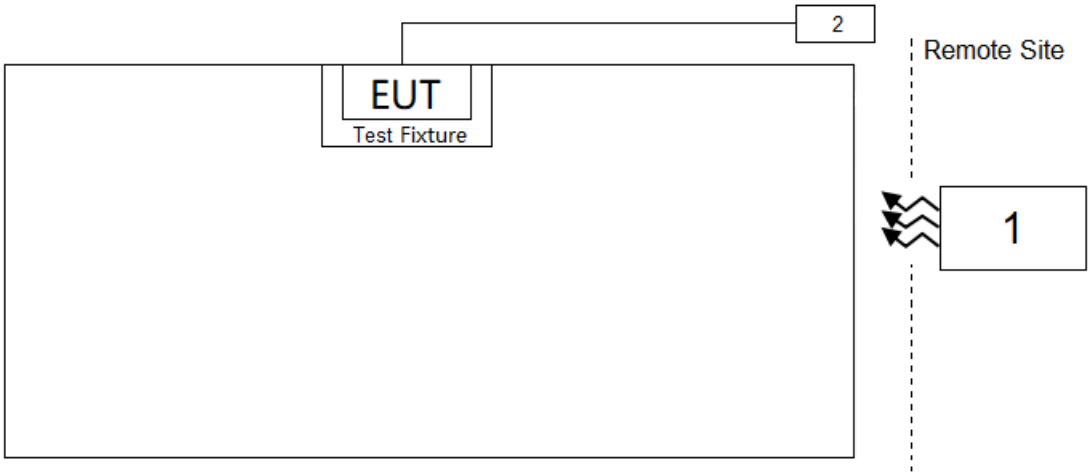
1.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

1.8. Maximum Power, Frequency Tolerance, and Emission Designator

LTE Band 26		BPSK			QPSK		
BW (MHz)	Feq. (MHz)	Designator	Tolerance (ppm)	Max Power (W)	Designator	Tolerance (ppm)	Max Power (W)
200	824 ~ 849	--	--	0.1445	179KG7D	0.0040	0.1507

1.9. Configuration of Tested System



Product		Manufacturer	Model No.
1	Wideband Radio Communication Tester	R&S	CMW 500

1.10. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20% ~ 75%RH

2. TEST EQUIPMENT CALIBRATION DATE

Radiated Emission (WZ- AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022/01/04
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2021/11/07
PXA Signal Analyzer	Keysight	9030B	MRTSUE06395	1 year	2022/08/08
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/10
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2022/08/05
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2021/09/15
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2022/09/16
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2021/12/14
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2021/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2022/06/09
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2022/06/28
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2022/04/29

Radiated Emission (WZ-AC2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Keysight	N9038A	MRTSUE06125	1 year	2022/06/24
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2021/11/07
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/10
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2022/05/24
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2021/10/27
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2021/12/14
Broad Band Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2021/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2022/06/09
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2021/12/15
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2022/04/29

Conducted Test Equipment (WZ-SR6, WZ-TR3)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2022/04/13
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06452	1 year	2022/07/10
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2022/04/13
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2021/11/07
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2021/11/18
DC Power Supply	GWINSTEK	DPS-3303C	MRTSUE06064	N/A	N/A
True RMS Clamp Meter	Fluke	319	MRTSUE06080	1 year	2022/05/05
Directional Coupler	Agilent	87301D	MRTSUE06082	1 year	2022/03/24
Dual Directional Coupler	Agilent	7778D	MRTSUE06083	1 year	2022/03/24
Attenuator	MVE	6dB	MRTSUE06534	1 year	2021/12/12
Attenuator	MVE	10dB	MRTSUE06543	1 year	2021/12/12
Temperature & Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2021/11/07
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2022/06/28

Software	Version	Function
EMI Software	V3	EMI Test Software

3. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Radiated Spurious Emissions
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): Horizontal: 9kHz ~ 300MHz: 5.04dB 300MHz ~ 1GHz: 4.95dB 1GHz ~ 40GHz: 6.40dB Vertical: 9kHz ~ 300MHz: 5.24dB 300MHz ~ 1GHz: 6.03dB 1GHz ~ 40GHz: 6.40dB
Conducted Spurious Emissions
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.13dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.28%
Frequency Stability
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 76.2Hz

4. TEST RESULT

4.1. Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied Bandwidth	N/A	Conducted	Pass	Section 4.2
2.1055, 90.213	Frequency Stability	< 2.5 ppm		Pass	Section 4.3
90.635	Conducted Output Power	< 100W		Pass	Section 4.4
2.1051, 90.691(a)	Band Edge	< 50 + 10log10 (P[Watts]) within 37.5kHz of Block Edge		Pass	Section 4.5
2.1051, 90.691(a)	Spurious Emission	< 43 + 10log10 (P[Watts])		Pass	Section 4.7
2.1053, 90.691(a)	Spurious Emissions	< 43 + 10log10 (P[Watts])	Radiated	Pass	Section 4.8

Notes:

1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, the Frequency Stability, Channel Band Edge, Radiated & Conducted Spurious Emission were presented worst-case in the test report.
3) The antenna gain was provided by customer to calculate the EIRP or ERP.

4.2. Occupied Bandwidth

4.2.1.Test Limit

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

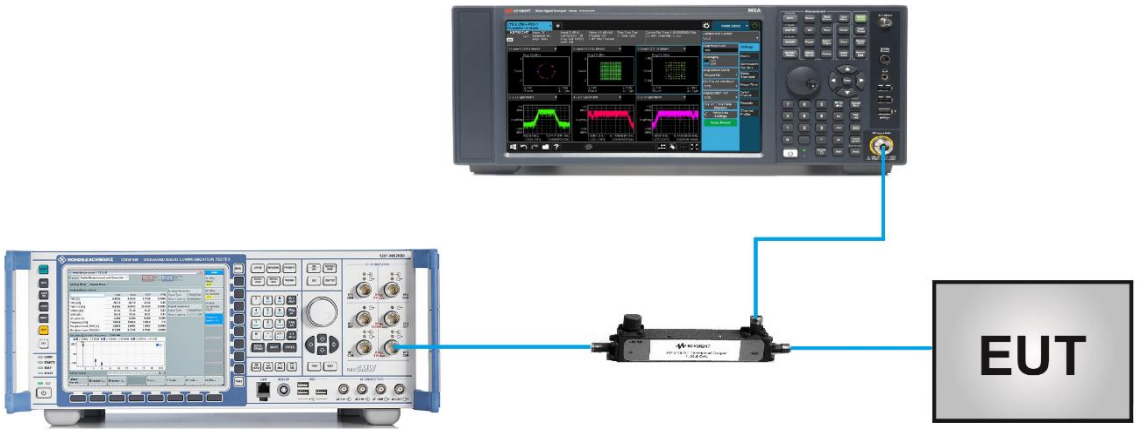
4.2.2.Test Procedure

ANSI C63.26-2015 - Section 5.4

4.2.3.Test Setting

1. Set center frequency to the nominal EUT channel center frequency
2. RBW = The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW
3. VBW ≥ 3 × RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize
8. Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

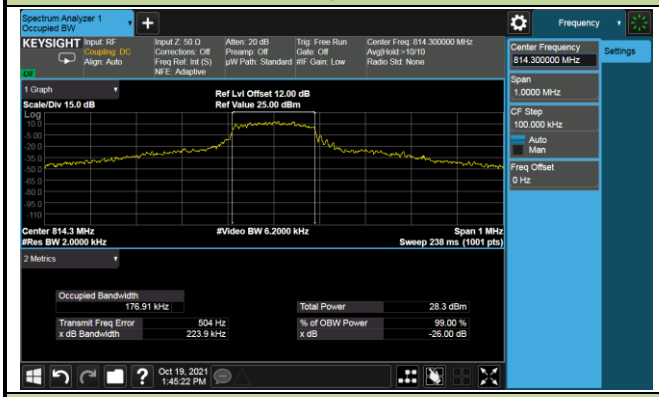
4.2.4.Test Setup



4.2.5.Test Result

Product	Wireless MODULE	Test Site	WZ-SR6
Test Engineer	Cloud Guo	Test Date	2021/09/14 ~ 2021/10/19

Frequency (MHz)	Modulation	Sub-carrier spacing (kHz)	N_{tones}	99% Bandwidth (kHz)
814.3	QPSK	15	12@0	176.91
819.0				177.00
823.7				178.55

99% Bandwidth	
15kHz 12@0 CH-Low	15kHz 12@0 CH-Middle
	
15kHz 12@0 CH-High	
	

4.3. Frequency Stability Measurement

4.3.1.Test Limit

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

4.3.2.Test Procedures Used

ANSI C63.26-2015 - Section 5.6

4.3.3.Test Setting

Frequency Stability Under Temperature Variations:

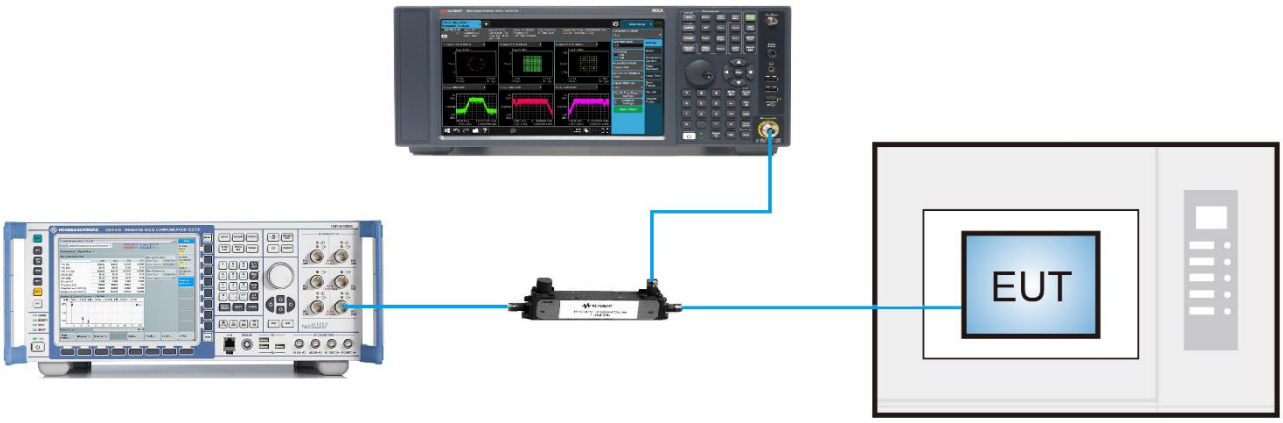
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, recordthe maximum frequency change.

4.3.4.Test Setup



4.3.5.Test Result

Product	Wireless MODULE	Test Site	WZ-TR3
Test Engineer	Cloud Guo	Test Date	2021/09/24

Power (Vdc)	Temp. (°C)	Frequency Tolerance (ppm)
3.7	- 30	0.0228
	- 20	0.0283
	- 10	0.0213
	0	0.0141
	+ 10	0.0164
	+ 20	-0.0037
	+ 30	0.0199
	+ 40	0.0119
	+ 50	0.0091
4.3	+ 20	0.0177
3.0	+ 20	0.0098

4.4. Conducted Output Power Measurement

4.4.1.Test Limit

The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).

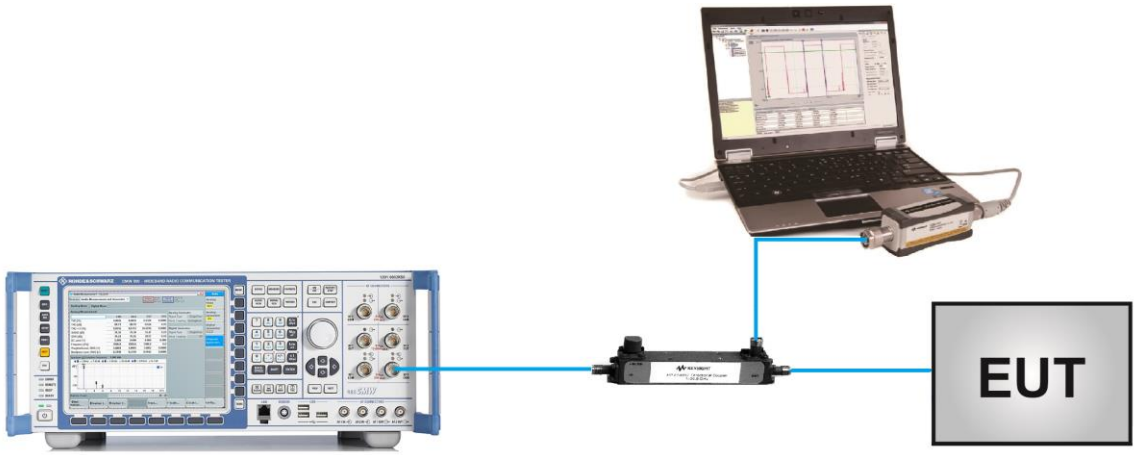
4.4.2.Test Procedures Used

ANSI C63.26-2015 - Section 5.2

4.4.3.Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

4.4.4.Test Setup



4.4.5.Test Result

Product	Wireless MODULE	Test Site	WZ-SR6
Test Engineer	Cloud Guo	Test Date	2021/09/20

Frequency (MHz)	Sub-carrier spacing (kHz)	N_{tones}	Output Power (dBm)	ERP (dBm)	Limit (dBm)
BPSK					
814.3	3.75	1@0	22.35	21.60	< 50.00
819.0			22.20	21.45	< 50.00
823.7			22.35	21.60	< 50.00
814.3		1@47	22.33	21.58	< 50.00
819.0			22.19	21.44	< 50.00
823.7			22.33	21.58	< 50.00
814.3	15	1@0	22.31	21.56	< 50.00
819.0			22.16	21.41	< 50.00
823.7			22.30	21.55	< 50.00
814.3		1@11	22.34	21.59	< 50.00
819.0			22.17	21.42	< 50.00
823.7			22.32	21.57	< 50.00
QPSK					
814.1	3.75	1@0	22.37	21.62	< 50.00
819.0			22.23	21.48	< 50.00
823.9			22.39	21.64	< 50.00
814.1		1@47	22.36	21.61	< 50.00
819.0			22.19	21.44	< 50.00
823.9			22.35	21.60	< 50.00
814.1	15	1@0	22.45	21.70	< 50.00
819.0			22.37	21.62	< 50.00
823.9			22.46	21.71	< 50.00
814.1		1@11	22.53	21.78	< 50.00
819.0			22.41	21.66	< 50.00
823.9			22.49	21.74	< 50.00
814.1		12@0	20.88	20.13	< 50.00
819.0			20.70	19.95	< 50.00
823.9			20.80	20.05	< 50.00

4.5. Band Edge Measurement

4.5.1.Test Limit

Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log(f/6.1) decibels or 50 + 10 Log(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

4.5.2.Test Procedure Used

ANSI C63.26-2015 - Section 5.7

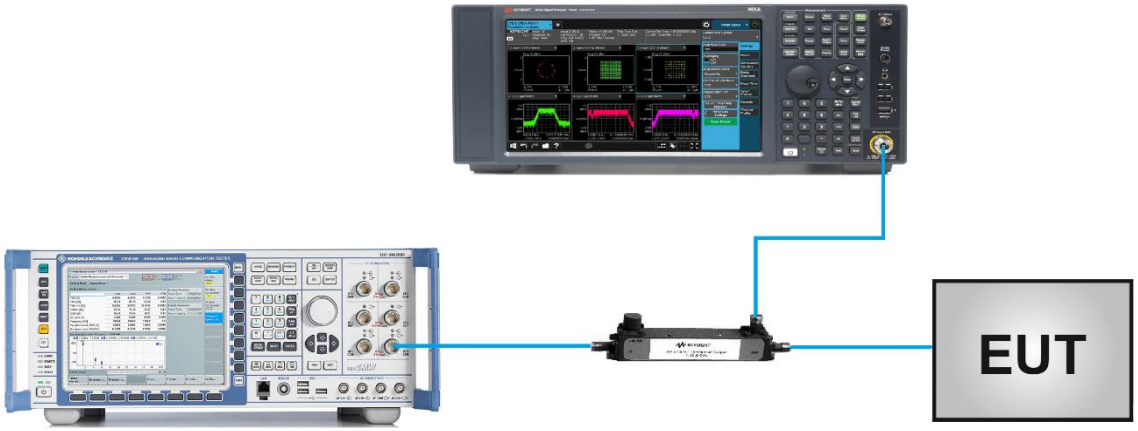
4.5.3.Test Setting

1. Set the analyzer frequency to low or high channel
2. RBW ≥ The nominal RBW shall be in the range of 1% of the anticipated OBW (in the 1MHz band immediately outside and adjacent to the band edge). For improvement of the accuracy in the measurement of the average power of a noise-like emission, a RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the OBW), provided that a subsequent integration is performed over the full required measurement bandwidth. This integration should be performed using the spectrum analyzer’s band power functions.
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to “free run.”
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full

power

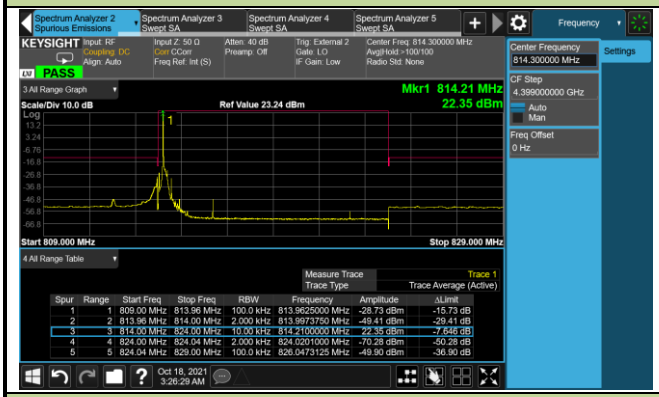
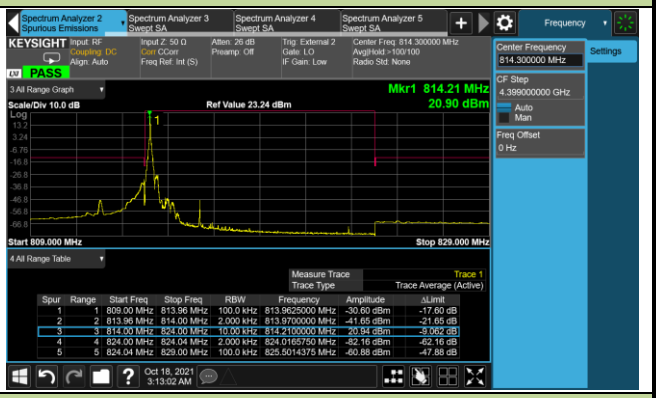
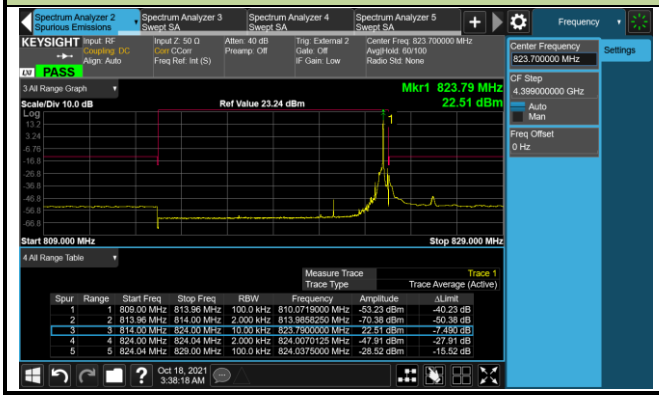
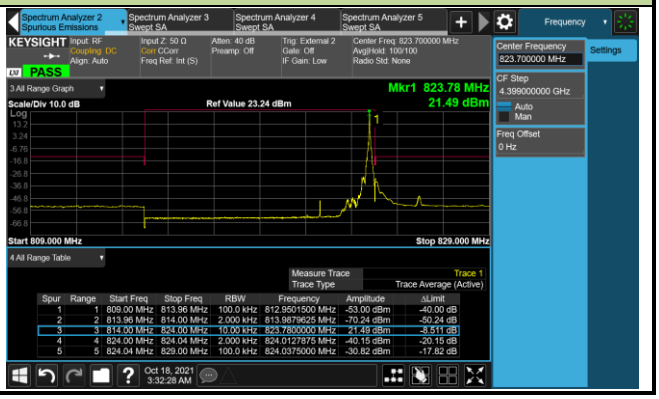
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

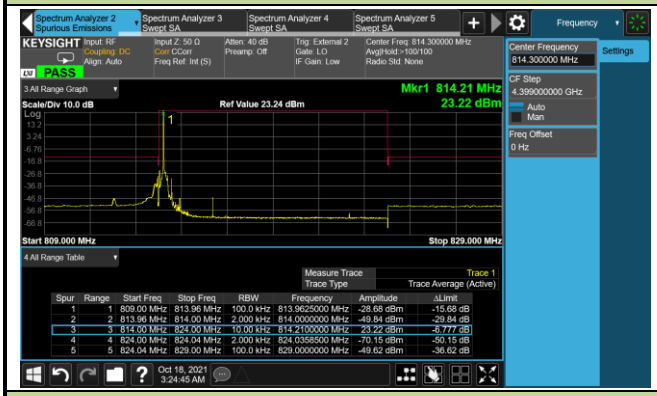
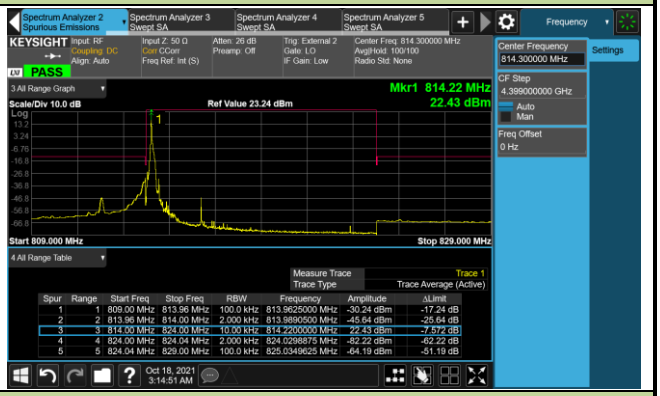
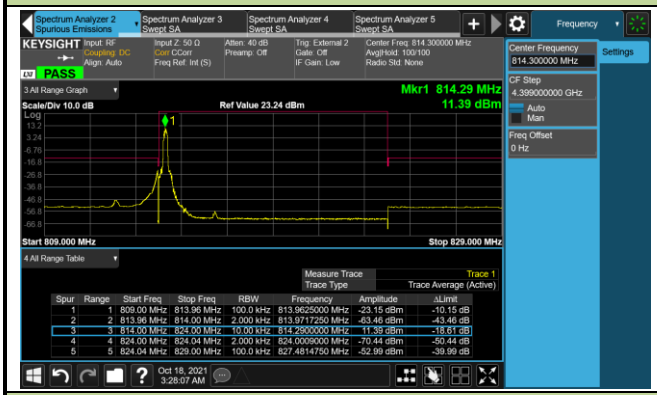
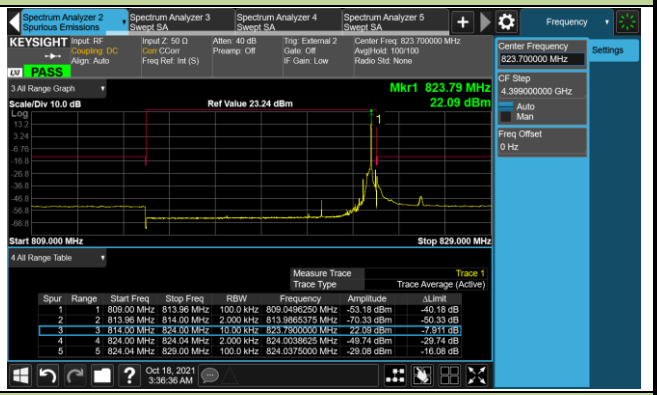
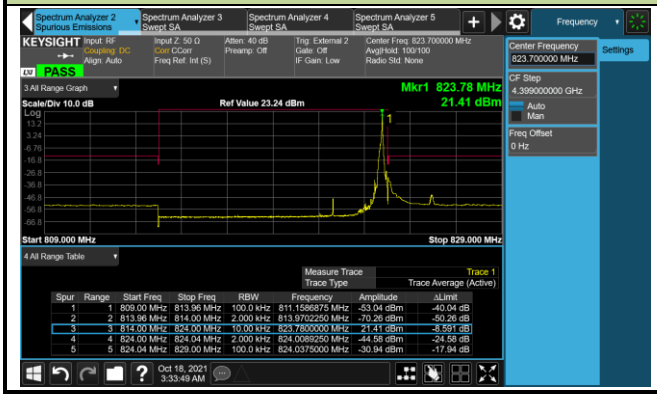
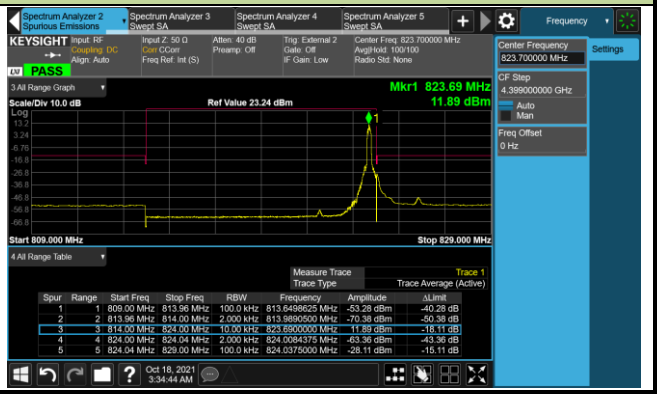
4.5.4.Test Setup



4.5.5.Test Result

Product	Wireless MODULE	Test Site	WZ-SR6
Test Engineer	Cloud Guo	Test Date	2021/10/18
Test Result	Pass		

BPSK	
3.75kHz 1@0 CH-Low	15kHz 1@0 CH-Low
	
3.75kHz 1@47 CH-High	15kHz 1@11 CH-High
	

QPSK	
3.75kHz 1@0 CH-Low	15kHz 1@0 CH-Low
	
15 kHz 12@0 CH-Low	3.75kHz 1@47 CH-High
	
15kHz 1@11 CH-High	15kHz 12@0 CH-High
	

4.6. Conducted Spurious Emissions

4.6.1.Test Limit

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

4.6.2.Test Procedure Used

ANSI C63.26-2015 - Section 5.7

4.6.3.Test Setting

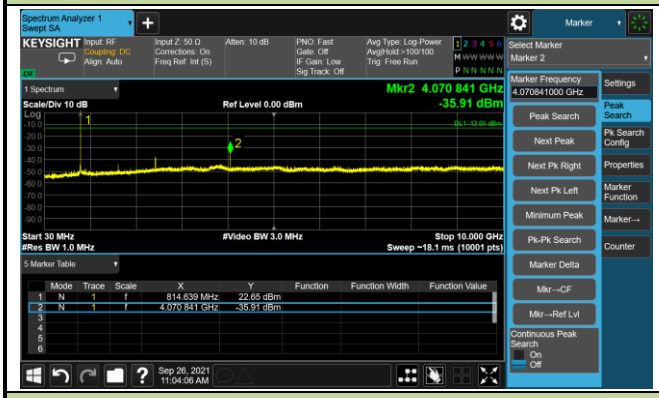
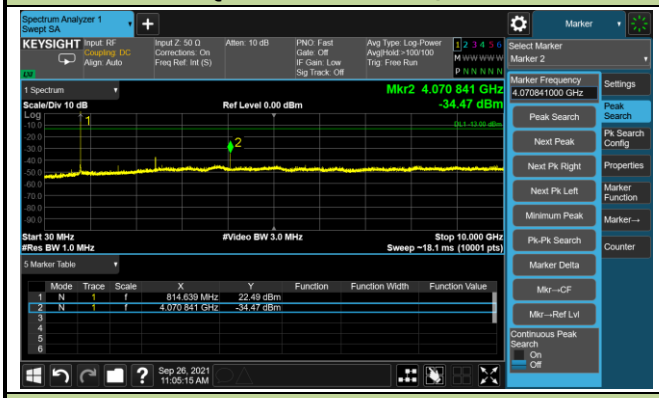
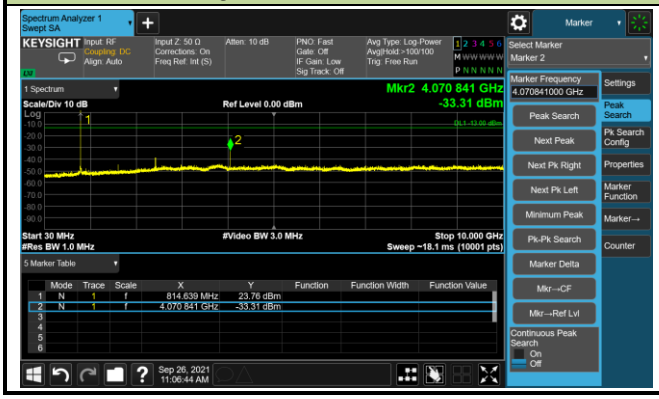
1. Set the analyzer frequency to low, mid, high channel.
2. RBW = 1MHz
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to “free run.”
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power.
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

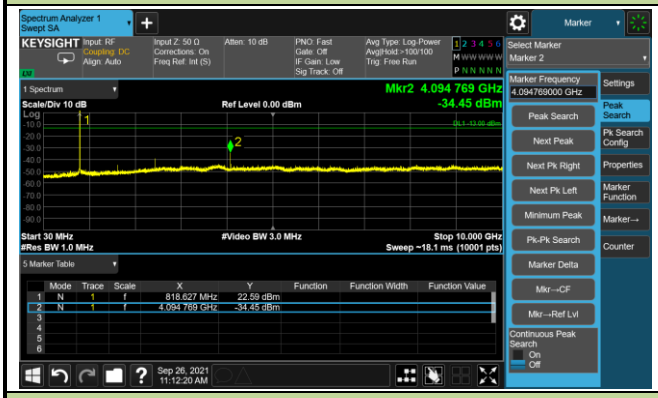
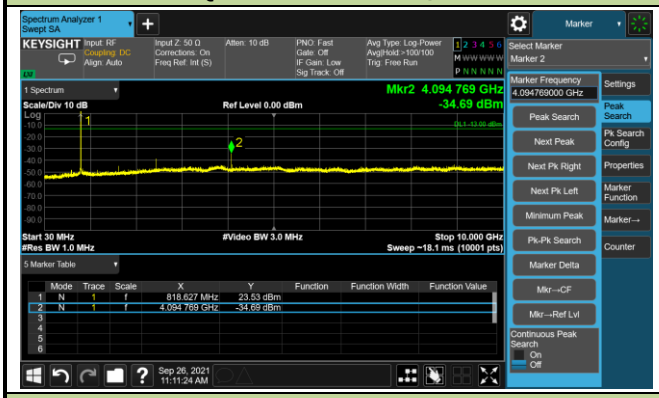
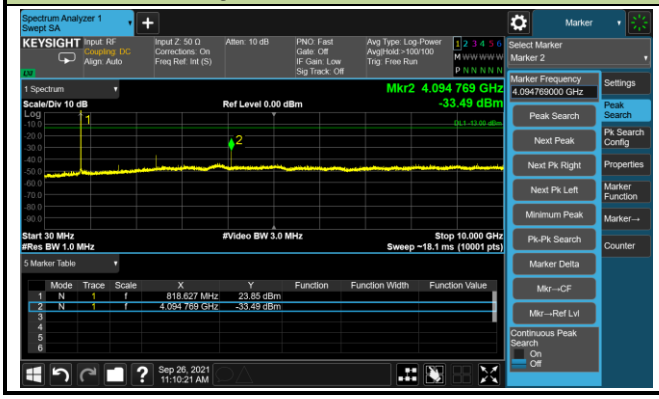
4.6.4.Test Setup

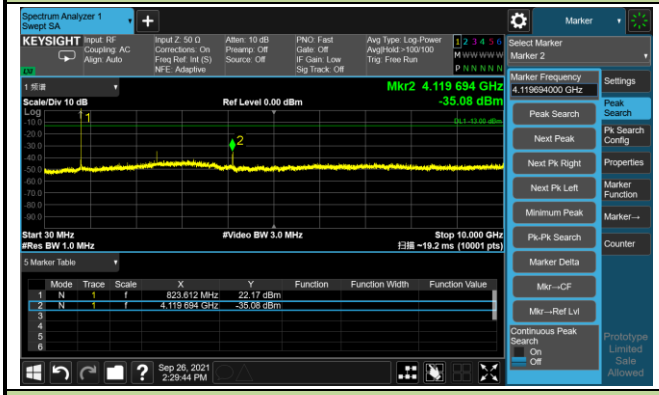
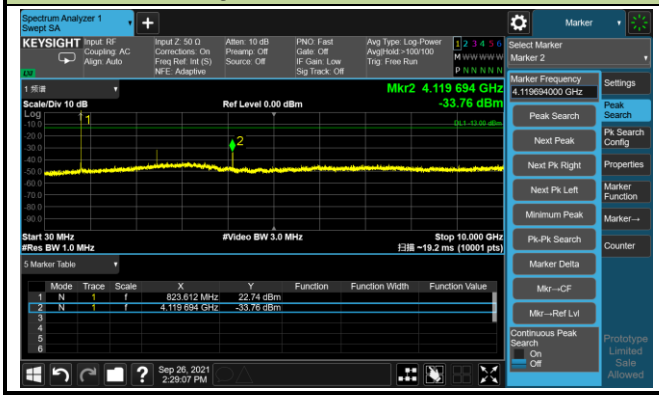
4.6.5.Test Result

Product	Wireless MODULE	Test Site	WZ-SR6
Test Engineer	Cloud Guo	Test Date	2021/09/26

Frequency (MHz)	Sub-carrier spacing (kHz)	N_{tones}	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
BPSK						
814.3	3.75	1@0	30 ~ 10000	-35.91	≤ -13.00	Pass
814.3	15	1@0	30 ~ 10000	-35.50	≤ -13.00	Pass
819.0	3.75	1@23	30 ~ 10000	-34.45	≤ -13.00	Pass
819.0	15	1@5	30 ~ 10000	-35.48	≤ -13.00	Pass
823.7	3.75	1@47	30 ~ 10000	-35.21	≤ -13.00	Pass
823.7	15	1@11	30 ~ 10000	-34.63	≤ -13.00	Pass
QPSK						
814.3	3.75	1@0	30 ~ 10000	-34.47	≤ -13.00	Pass
814.3	15	1@0	30 ~ 10000	-35.75	≤ -13.00	Pass
814.3	15	12@0	30 ~ 10000	-33.31	≤ -13.00	Pass
819.0	3.75	1@23	30 ~ 10000	-34.69	≤ -13.00	Pass
819.0	15	1@5	30 ~ 10000	-34.24	≤ -13.00	Pass
819.0	15	12@0	30 ~ 10000	-33.49	≤ -13.00	Pass
823.7	3.75	1@47	30 ~ 10000	-35.08	≤ -13.00	Pass
823.7	15	1@11	30 ~ 10000	-35.18	≤ -13.00	Pass
823.7	15	12@0	30 ~ 10000	-33.76	≤ -13.00	Pass

Channel 26693 (814.3 MHz)	
BPSK 3.75kHz 1@0	BPSK 15kHz 1@0
	
QPSK 3.75kHz 1@0	QPSK 15kHz 1@0
	
QPSK 15kHz 12@0	
	

Channel 26740 (819 MHz)	
BPSK 3.75kHz 1@23	BPSK 15kHz 1@5
	
QPSK 3.75kHz 1@23	QPSK 15kHz 1@5
	
QPSK 15kHz 12@0	
	

Channel 26787 (823.7 MHz)	
BPSK 3.75kHz 1@47	BPSK 15kHz 1@11
	
QPSK 3.75kHz 1@47	QPSK 15kHz 1@11
	
QPSK 15kHz 12@0	
	

4.7. Radiated Spurious Emissions Measurements

4.7.1.Test Limit

Out of band emissions: The powerof any emission outside of theauthorized operating frequency ranges must be attenuated below the transmitting power (P) by a factorof at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

E (dBμV/m) = EIRP (dBm) - 20 log D + 104.8; where D is the measurement distance in meters. The emission limit equal to 82.3dBμV/m.

4.7.2.Test Procedure Used

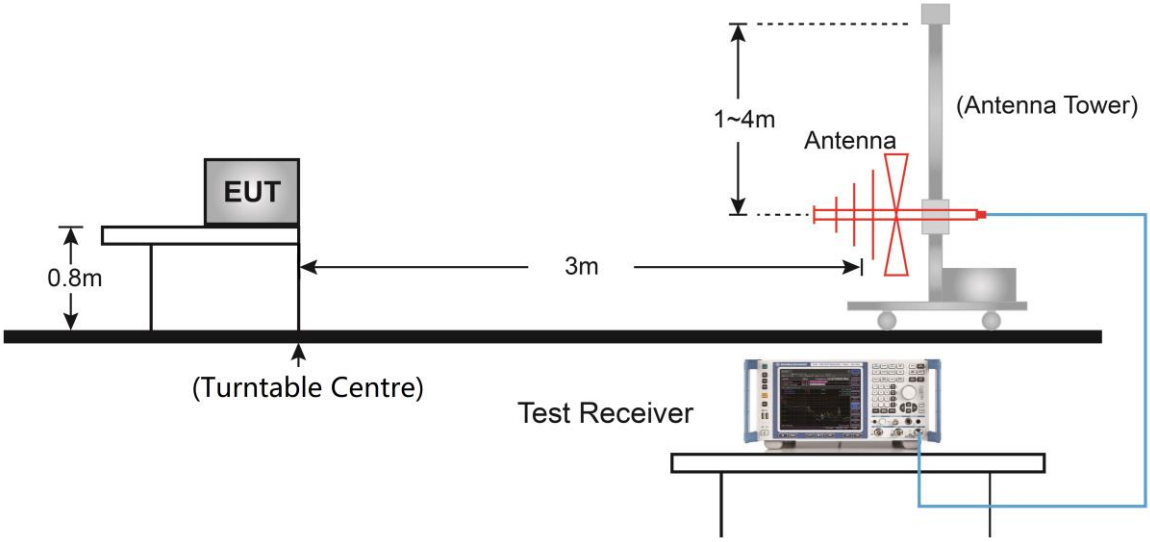
ANSI C63.26-2015 - Section 5.2.7 & 5.5

4.7.3.Test Setting

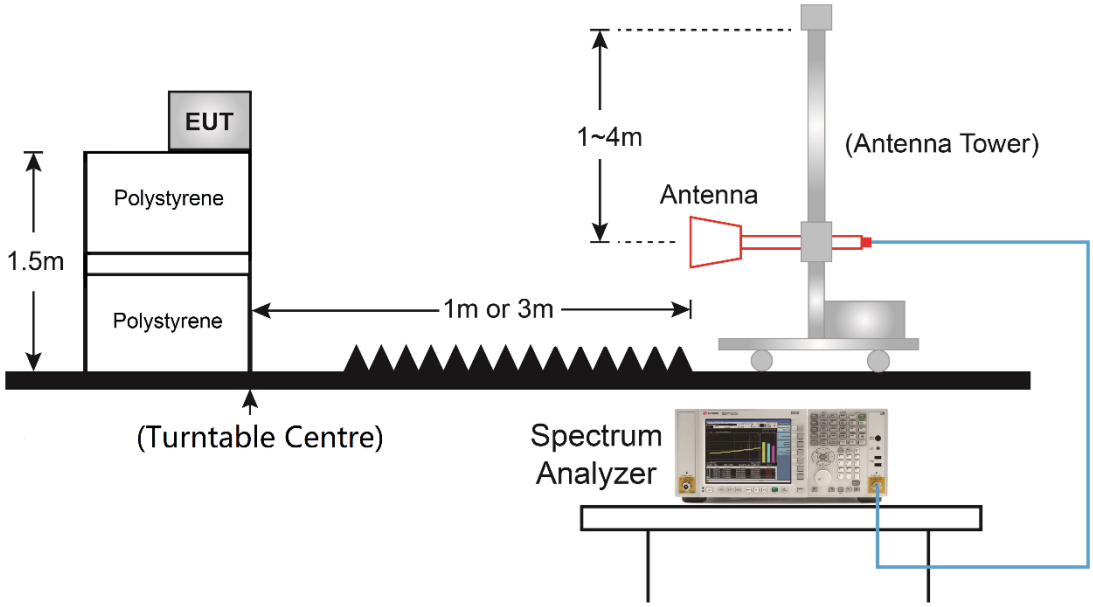
1. RBW = 100kHz or 1MHz
2. VBW ≥ 3*RBW
3. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

4.7.4.Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.7.5.Test Result

Product	Wireless MODULE	Test Site	WZ-AC2
Test Engineer	Hyde Yu	Test Date	2021/09/10
Test Band	NB-IoT Band 26, 3.75KHz, 1RB		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Bottom Channel							
406.8	4.7	23.5	28.2	82.3	-54.1	Peak	Horizontal
937.0	9.0	31.3	40.3	82.3	-42.0	Peak	Horizontal
39.7	13.9	19.2	33.1	82.3	-49.2	Peak	Vertical
691.1	6.4	28.7	35.1	82.3	-47.2	Peak	Vertical
2445.0	51.3	2.6	53.9	82.3	-28.4	Peak	Horizontal
4068.5	51.1	4.4	55.5	82.3	-26.8	Peak	Horizontal
2445.0	56.5	2.6	59.1	82.3	-23.2	Peak	Vertical
4068.5	51.9	4.4	56.3	82.3	-26.0	Peak	Vertical
Middle Channel							
409.8	4.3	23.5	27.8	82.3	-54.5	Peak	Horizontal
941.8	6.5	31.4	37.9	82.3	-44.4	Peak	Horizontal
38.2	13.6	18.8	32.4	82.3	-49.9	Peak	Vertical
757.5	5.5	29.8	35.3	82.3	-47.0	Peak	Vertical
2453.5	50.2	2.5	52.7	82.3	-29.6	Peak	Horizontal
4094.0	51.3	4.7	56.0	82.3	-26.3	Peak	Horizontal
2453.5	55.8	2.5	58.3	82.3	-24.0	Peak	Vertical
4094.0	52.4	4.7	57.1	82.3	-25.2	Peak	Vertical
Top Channel							
402.0	3.4	23.4	26.8	82.3	-55.5	Peak	Horizontal
869.1	5.0	31.3	36.3	82.3	-46.0	Peak	Horizontal
37.8	14.0	18.7	32.7	82.3	-49.6	Peak	Vertical
551.9	5.2	26.0	31.2	82.3	-51.1	Peak	Vertical
2470.5	51.3	2.6	53.9	82.3	-28.4	Peak	Horizontal
4119.5	49.8	4.7	54.5	82.3	-27.8	Peak	Horizontal
2470.5	55.6	2.6	58.2	82.3	-24.1	Peak	Vertical
4119.5	51.8	4.7	56.5	82.3	-25.8	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

5. CONCLUSION

The data collected relate only the item(s) tested and show that unit is compliance with FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to “2109RSU011-UT” file.

Appendix B - EUT Photograph

Refer to “2109RSU011-UE” file.