

ARIB STD-T71 Test Report

Product Name : Wireless Access Point

Model No. : AP460SC

Applicant : Extreme Networks, Inc

Address : 6480 Via Del Oro, San Jose, CA 95119 USA

Date of Receipt : May. 11, 2020

Test Date : Oct. 28, 2019 ~ Apr. 07, 2020

Issued Date : Feb. 05, 2021

Report No. : 2032034R-RF-JP-P03V01

Report Version : V 1.0

The test results presented in this report relate only to the object tested.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.

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Test Report Certification

Issued Date : Feb. 05, 2021

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Applicant : Extreme Networks, Inc
Address : 6480 Via Del Oro, San Jose, CA 95119 USA
Manufacturer : Extreme Networks, Inc
Address : 6480 Via Del Oro, San Jose, CA 95119 USA
Model No. : AP460SC
Brand Name : Extreme Networks
EUT Voltage : DC 37~57V
Test Voltage : AC 100V/60Hz
Applicable Standard : ARIB STD-T71 V6.2 (2018-07)
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,215006,
Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

Documented By :



(Project Engineer: Scott Shen)

Approved By :



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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
2032034R-RF-JP-P03V01	V1.0	Initial issued report	Feb. 05, 2021

1. General Information

1.1. EUT Description

Product Name	Wireless Access Point
Model No.	AP460SC
EUT Voltage	DC 37~57V
Test Voltage	AC 100V/60Hz
Type of Modulation	OFDM
Declared Power	<p>Radio 1:</p> <p>4.0mW/MHz for 802.11a/n/ac/ax(20MHz)</p> <p>1.0mW/MHz for 802.11n/ac/ax(40MHz)</p> <p>0.5mW/MHz for 802.11ac/ax(80MHz)</p> <p>Radio 2:</p> <p>2.0mW/MHz for 802.11a/n/ac/ax(20MHz)</p> <p>1.0mW/MHz for 802.11n/ac/ax(40MHz)</p> <p>0.5mW/MHz for 802.11ac/ax(80MHz)</p> <p>Radio 3-Dual 2.4GHz & 5GHz mode:</p> <p>2.0mW/MHz for 802.11a/n/ac/ax(20MHz) for 5.15~5.35GHz CDD</p> <p>6.0mW/MHz for 802.11a/n/ac/ax(20MHz) for 5.47~5.73GHz CDD</p> <p>1.0mW/MHz for 802.11n/ac/ax(40MHz) for 5.15~5.35GHz CDD</p> <p>2.5mW/MHz for 802.11n/ac/ax(40MHz) for 5.47~5.73GHz CDD</p> <p>0.5mW/MHz for 802.11ac/ax(80MHz) for 5.15~5.35GHz CDD</p> <p>1.5mW/MHz for 802.11ac/ax(80MHz) for 5.47~5.73GHz CDD</p> <p>0.05mW/MHz for 802.11ax(160MHz)</p> <p>0.65mW/MHz for 802.11a/n/ac/ax(20MHz) for 5.15~5.35GHz beamforming</p> <p>2.5mW/MHz for 802.11a/n/ac/ax(20MHz) for 5.47~5.73GHz beamforming</p> <p>0.3mW/MHz for 802.11n/ac/ax(40MHz) for 5.15~5.35GHz beamforming</p> <p>1.0mW/MHz for 802.11n/ac/ax(40MHz) for 5.47~5.73GHz beamforming</p> <p>0.15mW/MHz for 802.11ac/ax(80MHz) for 5.15~5.35GHz beamforming</p> <p>0.5mW/MHz for 802.11ac/ax(80MHz) for 5.47~5.73GHz beamforming</p> <p>0.02mW/MHz for 802.11ax(160MHz) for beamforming</p> <p>Radio 3-Dual 5GHz mode:</p> <p>6mW/MHz for 802.11a/n/ac/ax(20MHz) for CDD</p> <p>2.5mW/MHz for 802.11n/ac/ax(40MHz) for CDD</p> <p>1.5mW/MHz for 802.11ac/ax(80MHz) for CDD</p> <p>0.05mW/MHz for 802.11ax(160MHz) for CDD</p> <p>2.5mW/MHz for 802.11a/n/ac/ax(20MHz) for beamforming</p> <p>1.0mW/MHz for 802.11n/ac/ax(40MHz) for beamforming</p> <p>0.5mW/MHz for 802.11ac/ax(80MHz) for beamforming</p>

	0.02mW/MHz for 802.11ax(160MHz) for beamforming					
Transmit modes	☒	802.11a	☒	802.11n(20MHz)	☒	802.11n(40MHz)
	☒	802.11ac(20MHz)	☒	802.11ac(40MHz)	☒	802.11ac(80MHz)
	☒	802.11ax(20MHz)	☒	802.11ax(40MHz)	☒	802.11ax(80MHz)
	☒	802.11ax(160MHz)				
Support Bands			☐	Outdoor AP		
			☒	Indoor AP		
	☒	5150MHz~5250MHz	☐	Fixed point-to-point AP		
			☐	Mobile and Portable Client		
			☐	Peer to peer Client		
	☒	5250MHz~5350MHz				
	☒	5470MHz~5730MHz				
Frequency Range	802.11a/n/ac/ax(20MHz): 5180 – 5240 MHz, 5260 -5320 MHz, 5500 – 5720MHz 802.11n/ac/ax(40MHz): 5190 – 5230 MHz, 5270 – 5310MHz, 5510 – 5710MHz 802.11ac/ax(80MHz): 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5690MHz 802.11ax(160MHz): 5250MHz, 5570MHz					
Channel Number	802.11a/n/ac/ax(20MHz): 20 802.11n/ac/ax(40MHz): 10 802.11ac/ax(80MHz): 5 802.11ax(160MHz): 2					
Type of Modulation	802.11a/n/ac/ax: OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM					
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps					
	802.11n: up to 600 Mbps					
	802.11ac: up to 1732 Mbps					
	802.11ax: up to 4.8 Gbps					

Antenna list for 5.0GHz Band

AP460S6C:

Antenna Model No.		N/A											
Antenna Manufacturer		N/A											
Antenna Delivery		☒	1*TX+1*RX		☒	2*TX+2*RX		☒	3*TX+3*RX		☒	4*TX+4*RX	
Antenna Technology		☒	SISO										
		☒	MIMO	☒	Basic methodology								
				☒	Beamforming								
Antenna Type		PIFA											
Antenna Gain(Radio 1)													
Antenna Technology		Ant Gain (dBi)											
Ant 4(Radio 1)		6.36											
Antenna Gain(Radio 2)													
Antenna Technology		Ant Gain (dBi)											
☒	SISO	☒	Ant1 (Radio 2)		7.29								
		☒	Ant2 (Radio 2)		7.79								
☒	Beam-forming		3.01										

Antenna Gain(Radio 3)			
Antenna Technology			Ant Gain (dBi)
☒	SISO	☒ Ant3 (Radio 3)	7.84
		☒ Ant5 (Radio 3)	8.06
		☒ Ant6 (Radio 3)	7.91
		☒ Ant7 (Radio 3)	7.65
☒	2*2 Beam-forming		3.01
☒	4*4 Beam-forming		6.02

AP460S12C:

Antenna Model No.	N/A							
Antenna Manufacturer	N/A							
Antenna Delivery	☒	1*TX+1*RX	☒	2*TX+2*RX	☒	3*TX+3*RX	☒	4*TX+4*RX
Antenna Technology	☒	SISO						
	☒	MIMO	☒	Basic methodology				
			☒	Beamforming				
Antenna Type	PIFA							
Antenna Gain(Radio 1)								
Antenna Technology	Ant Gain (dBi)							
Ant 4(Radio 1)	5.54							
Antenna Gain(Radio 2)								
Antenna Technology	Ant Gain (dBi)							
☒	SISO	☒	Ant1 (Radio 2)	6.34				
		☒	Ant2 (Radio 2)	6.11				
☒	Beam-forming							3.01

Antenna Gain(Radio 3)			
Antenna Technology			Ant Gain (dBi)
☒	SISO	☒ Ant3 (Radio 3)	6.12
		☒ Ant5 (Radio 3)	6.15
		☒ Ant6 (Radio 3)	5.37
		☒ Ant7 (Radio 3)	5.31
☒	2*2 Beam-forming		3.01
☒	4*4 Beam-forming		6.02

Note1: The device supports 3 radios, radio 1(1*1 2.4GHz & 1*1 5GHz full band); radio 2(2*2 2.4GHz & 2*2 5GHz low band); radio 3(4*4 5GHz full band & 1*1 BLE), and radio 2 & 3 can works with Dual 2.4GHz & 5GHz mode and Dual 5GHz mode. As the 5GHz high band filter is different between two modes, additional Radio 3 5GHz high band mode is tested for compliance.

Dual 2.4GHz & 5GHz mode: Radio 2(2.4GHz 2*2) + Radio 3(5GHz full band 4*4)

Dual 5GHz mode: Radio 2(5GHz low band 2*2) + Radio 3(5GHz high band 4*4)

2: Radio 3 1*1 and 3*3 power will follow 2*2 and 4*4 power setting, so only 2*2 and 4*4 data are tested.

1.2. Mode of Operation

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode Listed
Mode 1: Transmit by 802.11a
Mode 2: Transmit by 802.11n (20MHz)
Mode 3: Transmit by 802.11n (40MHz)
Mode 4: Transmit by 802.11ac (20MHz)
Mode 5: Transmit by 802.11ac (40MHz)
Mode 6: Transmit by 802.11ac (80MHz)
Mode 7: Transmit by 802.11ax (20MHz)
Mode 8: Transmit by 802.11ax (40MHz)
Mode 9: Transmit by 802.11ax (80MHz)
Mode 10: Transmit by 802.11ax (160MHz)
Mode 11: Receive by 802.11a
Mode 12: Receive by 802.11n (20MHz)
Mode 13: Receive by 802.11n (40MHz)
Mode 14: Receive by 802.11ac (20MHz)
Mode 15: Receive by 802.11ac (40MHz)
Mode 16: Receive by 802.11ac (80MHz)
Mode 17: Receive by 802.11ax (20MHz)
Mode 18: Receive by 802.11ax (40MHz)
Mode 19: Receive by 802.11ax (80MHz)
Mode 20: Receive by 802.11ax (160MHz)
Mode 21: Normal Operating by 802.11a

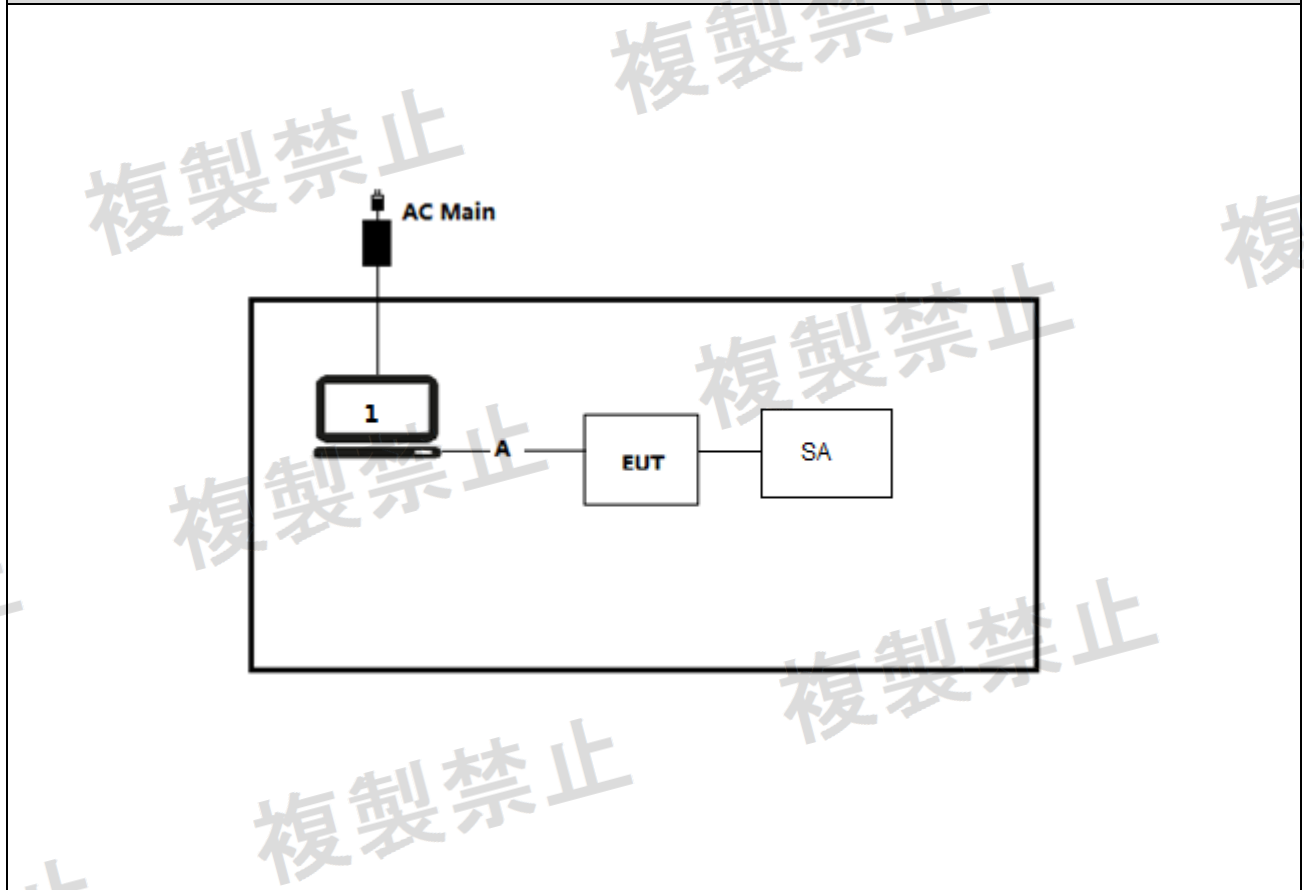
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Asus	N80V	8BN0AS226971468	Non-shielded
A	USB cable	N/A	N/A	N/A	Shielded,0.5m

1.4. Configuration of Tested System

Test setup Diagram- Conducted Test



1.5. EUT Exercise Software

1	Setup the EUT and notebook as shown on above.
2	Turn on the power of all equipment.
3	Run the test software [MTool].
4	Select the test mode and test channel, then start test.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Output Power and Output Power Tolerance	ARIB STD-T71 3.1.2 (2), (3)	Yes	No
Spread Bandwidth	ARIB STD-T71 3.1.2 (11)	Yes	No
Occupied Bandwidth	ARIB STD-T71 3.1.2 (11)	Yes	No
Frequency Tolerance	ARIB STD-T71 3.1.2 (4)	Yes	No
Transmitter Spurious Emissions	ARIB STD-T71 3.1.2 (8)	Yes	No
Adjacent Channel Emitted Power	ARIB STD-T71 3.1.2 (9)	Yes	No
Out-Band Leakage Power	ARIB STD-T71 3.1.2 (10)	Yes	No
Receiver Spurious Emissions	ARIB STD-T71 3.1.3	Yes	No
Transmission burst length	ARIB STD-T71 3.1.2 (7)	Yes	No

Note: The DFS report refers to 2032034R-RF-JPDFS-P03V02

2.2. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Output Power and Output Power Tolerance	$\pm 1.27\text{dB}$
Spread Bandwidth	$\pm 150\text{Hz}$
Occupied Bandwidth	$\pm 150\text{Hz}$
Frequency Tolerance	$\pm 150\text{Hz}$
Transmitter Spurious Emissions	$\pm 1.27\text{dB}$
Adjacent Channel Emitted Power	$\pm 1.27\text{dB}$
Out-Band Leakage Power	$\pm 1.27\text{dB}$
Receiver Spurious Emissions	$\pm 1.27\text{dB}$
Transmission burst length	$\pm 150\text{Hz}$

2.3. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	0-40	25
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Output Power and Output Power Tolerance

3.1. Test Equipment

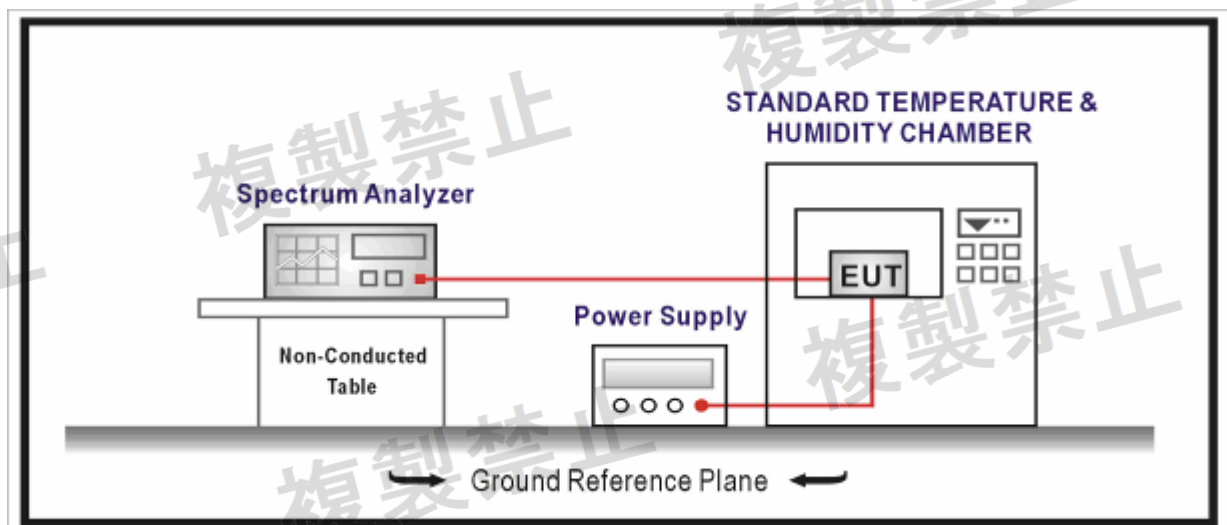
Output Power and Output Power Tolerance /TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
4TX MIMO Power Sensor	Keysight	X8750A	MY59400102	2021.02.10
EXA Signal Analyzer	Keysight	N9010A	MY55370495	2021.04.16
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2021.08.12

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup

For Conducted Measurement



3.3. Limit

Output Power	
☒	Conducted Power of OFDM
☒	Nominal Bandwidth = 20MHz, the limit should $\leq 10\text{mW/MHz}$
☒	Nominal Bandwidth = 40MHz, the limit should $\leq 5\text{mW/MHz}$
☒	Nominal Bandwidth = 80MHz, the limit should $\leq 2.5\text{mW/MHz}$
☒	Nominal Bandwidth = 160MHz(Continuous 80+80), the limit should $\leq 1.25\text{mW/MHz}$
☐	Nominal Bandwidth = 160MHz(Non-continuous 80+80), the limit should $\leq 1.25\text{mW/MHz}$
☒	EIRP of OFDM
☒	Nominal Bandwidth = 20MHz, the limit should $\leq 10\text{mW/MHz}$ for 5150~5350MHz Nominal Bandwidth = 20MHz, the limit should $\leq 50\text{mW/MHz}$ for 5470~5730MHz
☒	Nominal Bandwidth = 40MHz, the limit should $\leq 5\text{mW/MHz}$ for 5150~5350MHz Nominal Bandwidth = 40MHz, the limit should $\leq 25\text{mW/MHz}$ for 5470~5730MHz
☒	Nominal Bandwidth = 80MHz, the limit should $\leq 2.5\text{mW/MHz}$ for 5150~5350MHz Nominal Bandwidth = 80MHz, the limit should $\leq 12.5\text{mW/MHz}$ for 5470~5730MHz
☒	Nominal Bandwidth = 160MHz(Continuous 80+80), the limit should $\leq 1.25\text{mW/MHz}$ for 5150~5350MHz Nominal Bandwidth = 160MHz(Continuous 80+80), the limit should $\leq 6.25\text{mW/MHz}$ for 5470~5730MHz
☐	Nominal Bandwidth = 160MHz(Non-continuous 80+80), the limit should $\leq 1.25\text{mW/MHz}$ for 5150~5350MHz Nominal Bandwidth = 160MHz(Non-continuous 80+80), the limit should $\leq 6.25\text{mW/MHz}$ for 5470~5730MHz
Output Power Tolerance	
☒	5150~5350MHz, Output Power Tolerance: +20% to -80%
☒	5470~5730MHz, Output Power Tolerance: +50% to -50%

3.4. Test Procedure

Test Method	
☒	A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.
Step 1	
A sample detector function must be used.	
Step 2	
A measurement instrument with an integrated 1MHz power bandwidth function may be used to automate the test process.	
Step 3	
The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slowly, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.	
Step 4	
'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.	

3.5. Test Result

The RF output power and power draft test data please refer to the files attached.

Appendix 2: MIC-5G Dual 2.4GHz+5GHz mode Power Table

Appendix 3: MIC-5G Dual 5GHz mode Power Table

Test Result	PASS
-------------	------

4. Spread Bandwidth

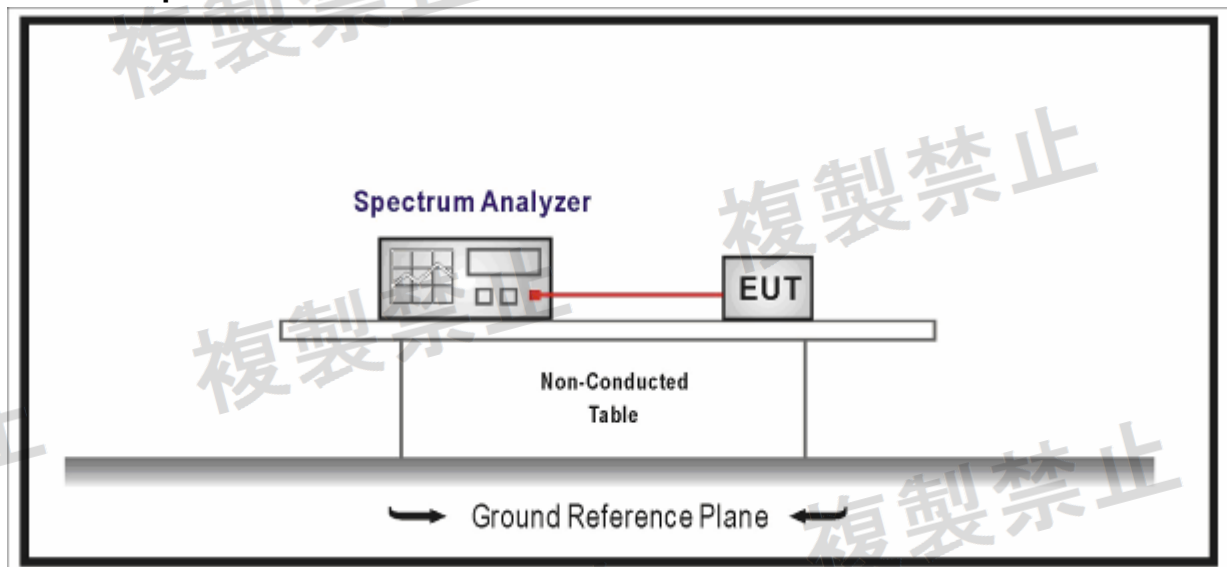
4.1. Test Equipment

Spread Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup



4.3. Limit

Spread Bandwidth ≥ 500 kHz

4.4. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- A positive peak detector function must be used.
- A measurement instrument with an integrated 90% power bandwidth function may be used to automate the test process.
- The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slowly, to ensure all major modulation products are captured. Note that the

measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.

- (d) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

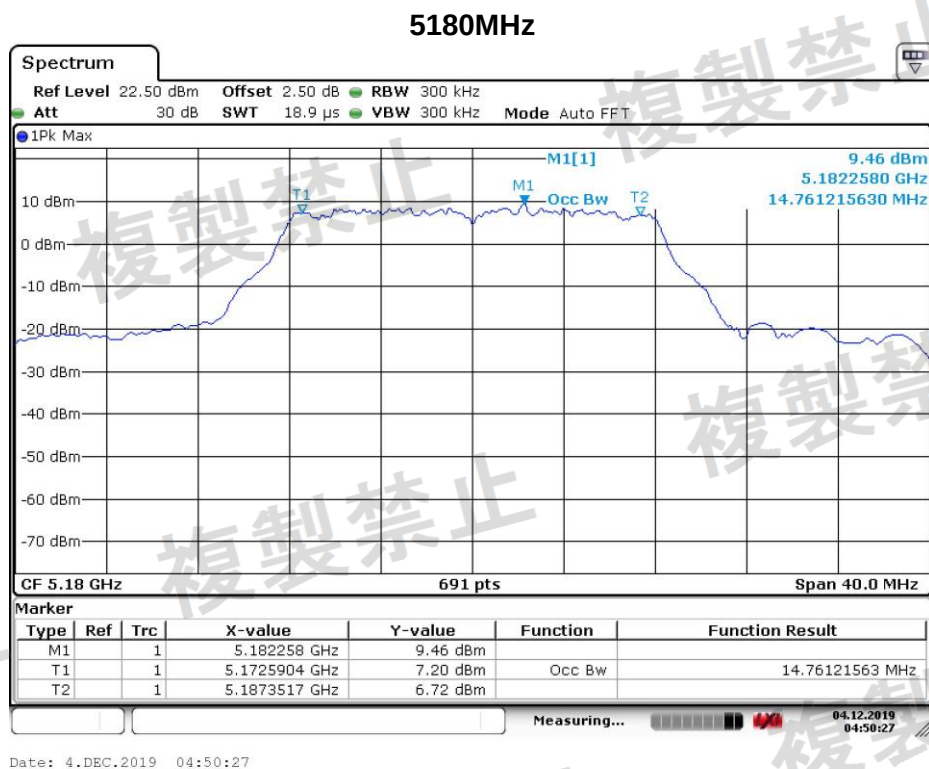
4.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Spread Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a

Frequency (MHz)	90% Bandwidth (MHz)	Limit (kHz)
5180	14.76	≥ 500
5320	14.88	≥ 500
5500	14.88	≥ 500
5700	14.93	≥ 500

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



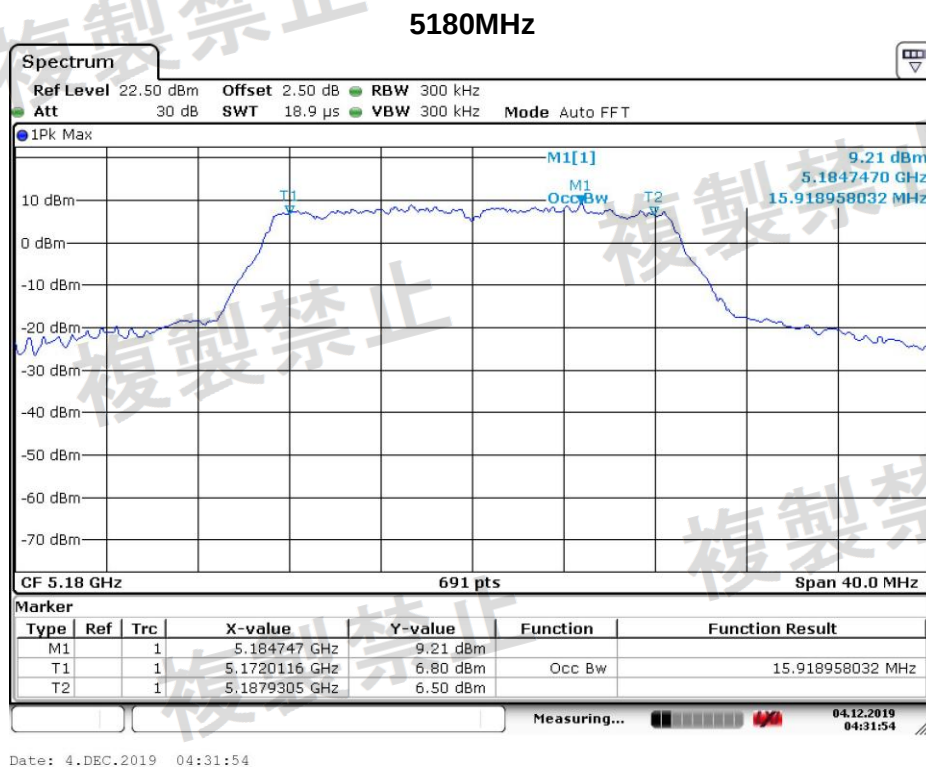
Product	:	Wireless Access Point
---------	---	-----------------------

Test Item	: Spread Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

Frequency (MHz)	90% Bandwidth (MHz)	Limit (kHz)
5180	15.92	>= 500
5320	15.92	>= 500
5500	15.98	>= 500
5700	15.92	>= 500

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



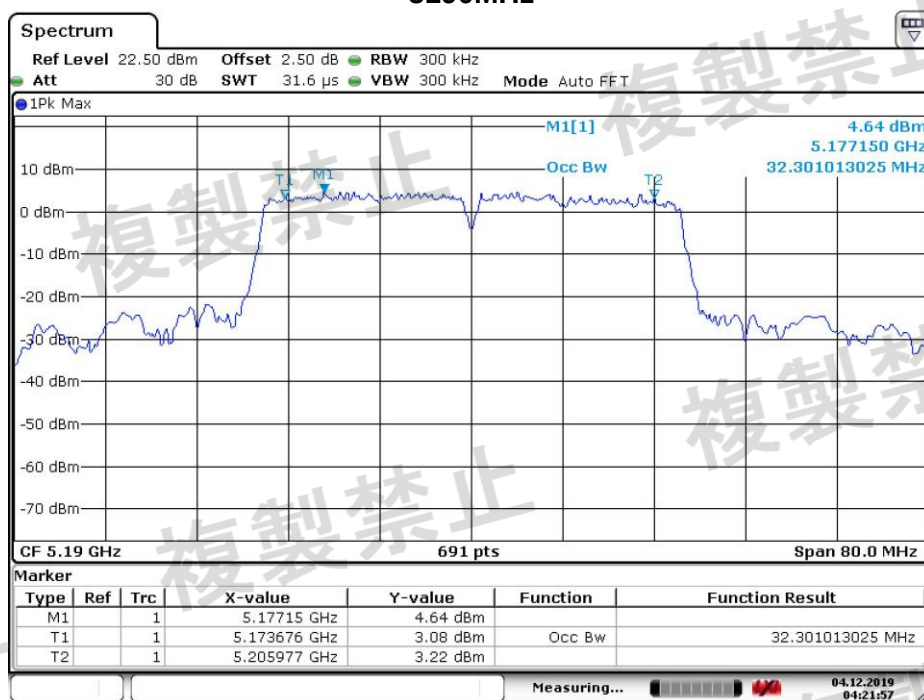
Product	:	Wireless Access Point
Test Item	:	Spread Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz)

Frequency (MHz)	90% Bandwidth (MHz)	Limit (kHz)
5190	32.30	>= 500
5310	32.76	>= 500
5510	32.42	>= 500
5670	32.65	>= 500

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5190MHz



Date: 4.DEC.2019 04:21:57

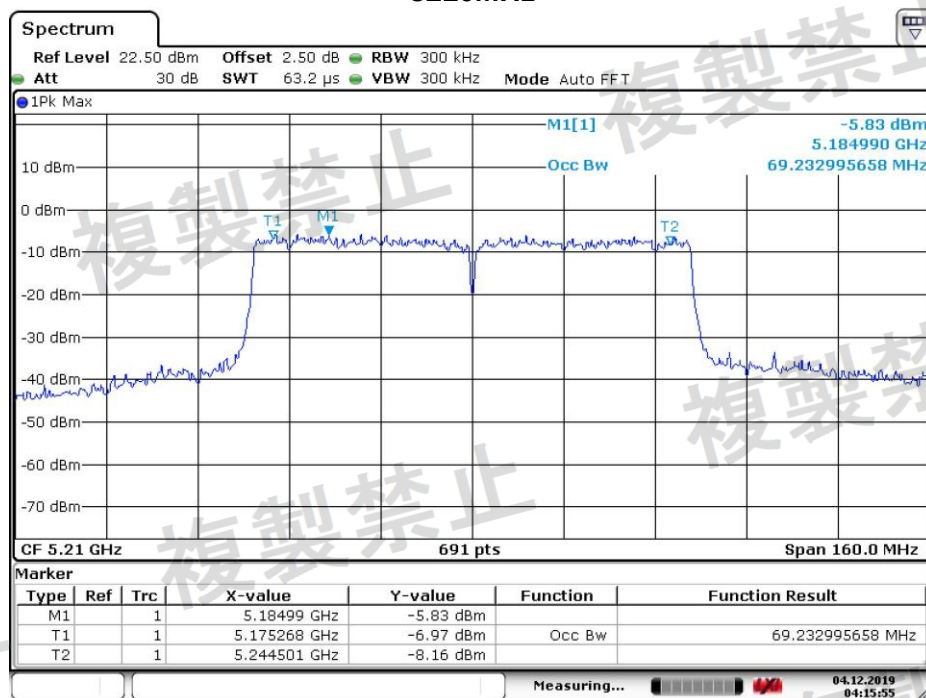
Product	:	Wireless Access Point
Test Item	:	Spread Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 6: Transmit by 802.11ac(80MHz)

Frequency (MHz)	90% Bandwidth (MHz)	Limit (kHz)
5210	69.23	≥ 500
5290	67.38	≥ 500
5530	68.77	≥ 500
5610	67.84	≥ 500

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5210MHz



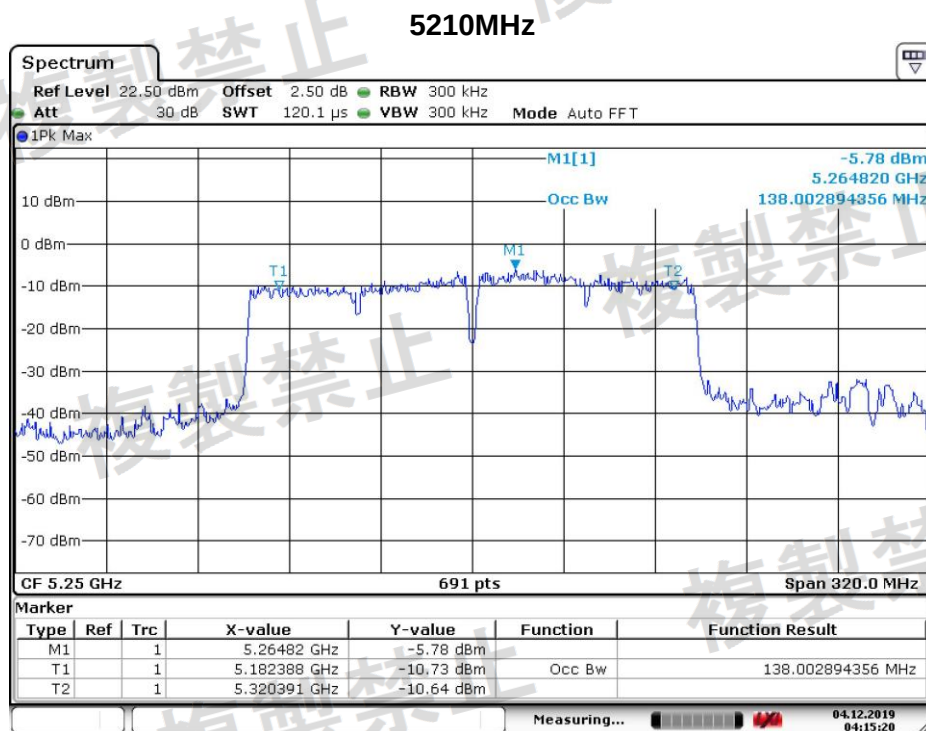
Date: 4.DEC.2019 04:15:55

Product	: Wireless Access Point
Test Item	: Spread Bandwidth
Test Site	: TR-8
Test Mode	: Mode 10: Transmit by 802.11ax(160MHz)

Frequency (MHz)	90% Bandwidth (MHz)	Limit (kHz)
5250	138.00	>= 500
5570	138.00	>= 500

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



Date: 4.DEC.2019 04:15:20

5. Occupied Channel Bandwidth

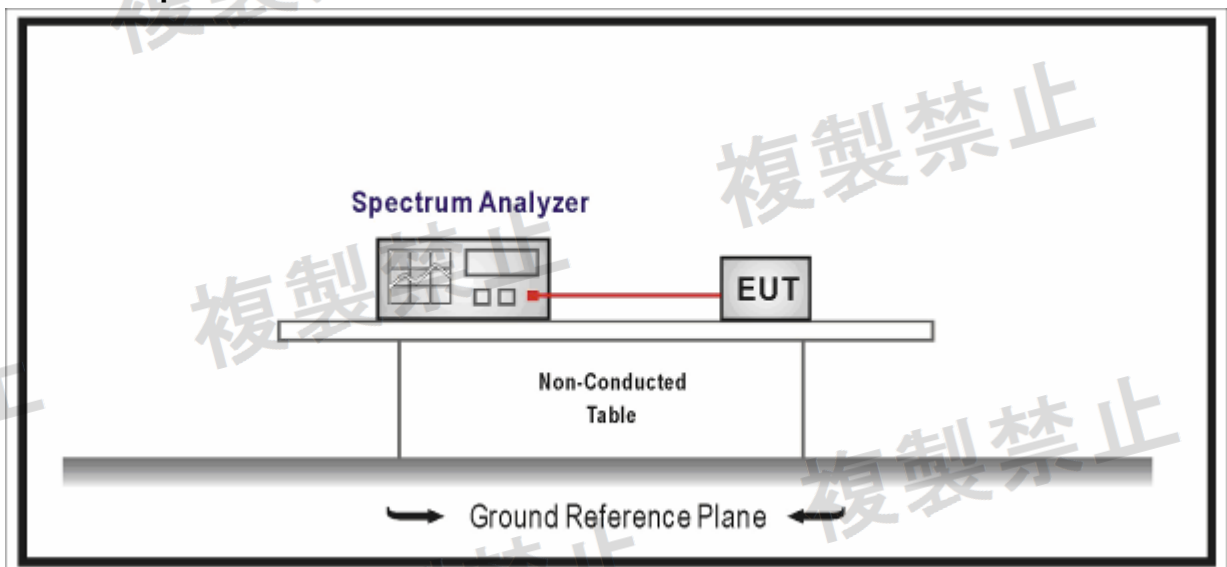
5.1. Test Equipment

Occupied Channel Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

5150~5350MHz, 5470~5730MHz $\leq$ 20MHz for BW=20MHz
 5150~5350MHz, 5470~5730MHz $\leq$ 40MHz for BW=40MHz
 5150~5350MHz, 5470~5730MHz $\leq$ 80MHz for BW=80MHz
 5150~5350MHz, 5470~5730MHz $\leq$ 160MHz for BW=160MHz

5.4. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) A measurement instrument with an integrated 99% power bandwidth function may be used to automate the test process.
- (c) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (d) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

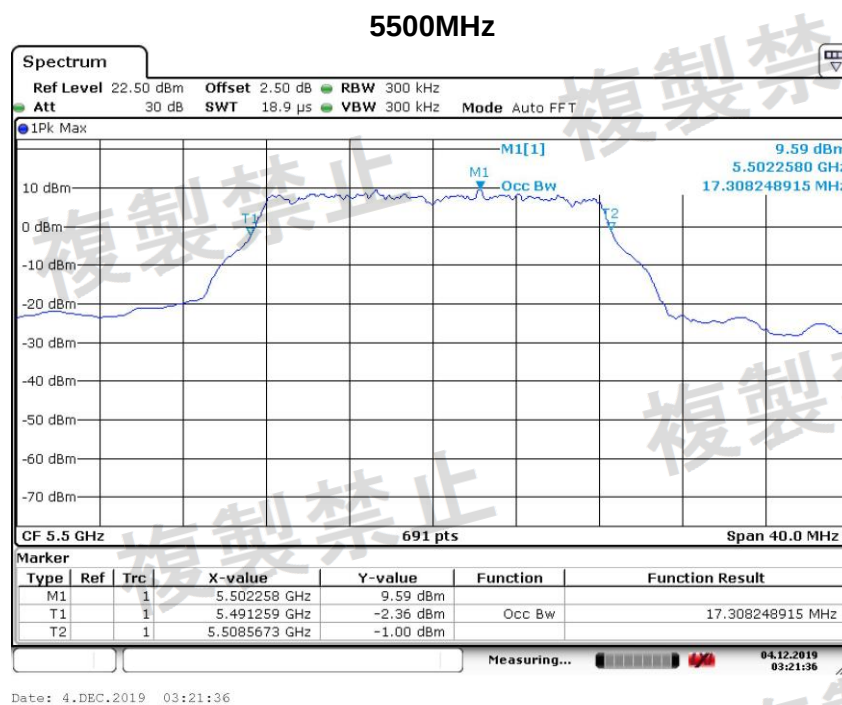
5.5. Test Result

Product	: Wireless Access Point
Test Item	: Occupied Channel Bandwidth
Test Site	: TR-8
Test Mode	: Mode 1: Transmit by 802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
5180	17.25	≤ 20
5320	17.13	≤ 20
5500	17.30	≤ 20
5700	17.19	≤ 20

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



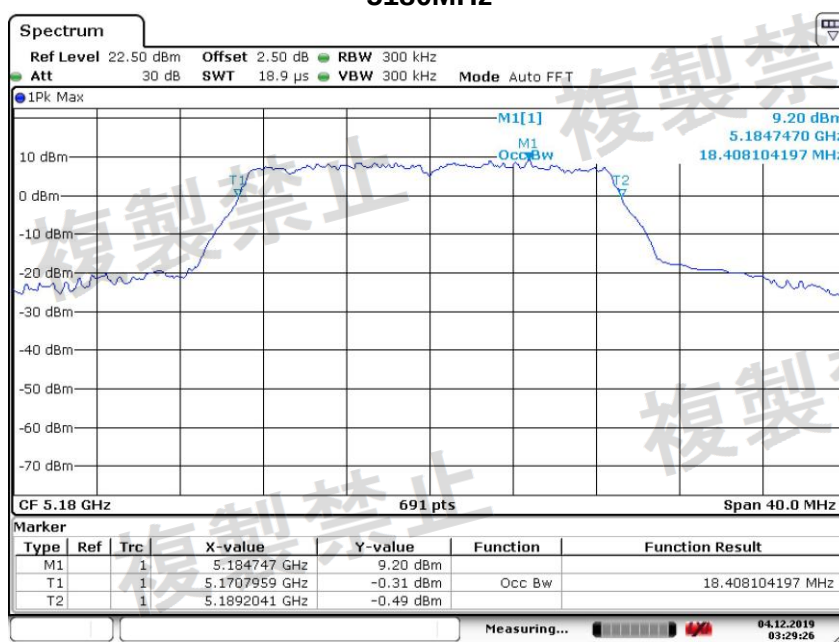
Product	: Wireless Access Point
Test Item	: Occupied Channel Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11n(20MHz)

Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
5180	18.41	<= 20
5320	18.18	<= 20
5500	18.29	<= 20
5700	18.29	<= 20

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5180MHz



Date: 4.DEC.2019 03:29:26

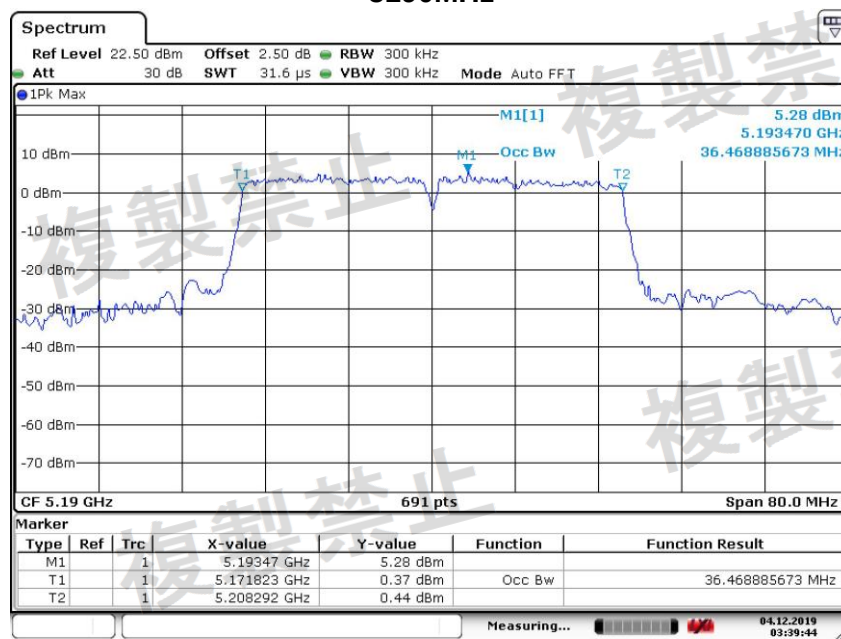
Product	: Wireless Access Point
Test Item	: Occupied Channel Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11n(40MHz)

Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
5190	36.47	<= 40
5310	36.47	<= 40
5510	36.47	<= 40
5670	36.35	<= 40

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5190MHz



Date: 4.DEC.2019 03:39:44

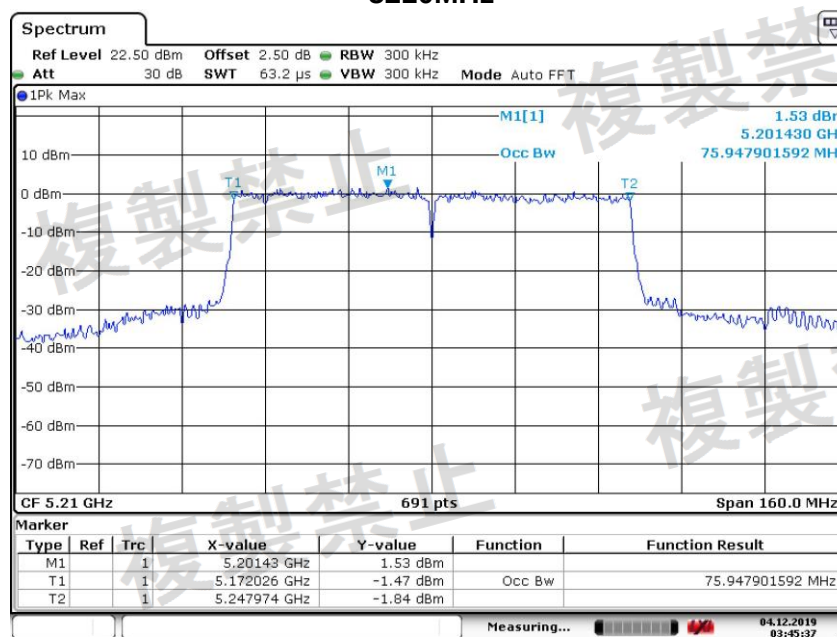
Product	:	Wireless Access Point
Test Item	:	Occupied Channel Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 6: Transmit by 802.11ac(80MHz)

Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
5210	75.95	<= 80
5290	75.72	<= 80
5530	75.95	<= 80
5610	75.72	<= 80

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5210MHz

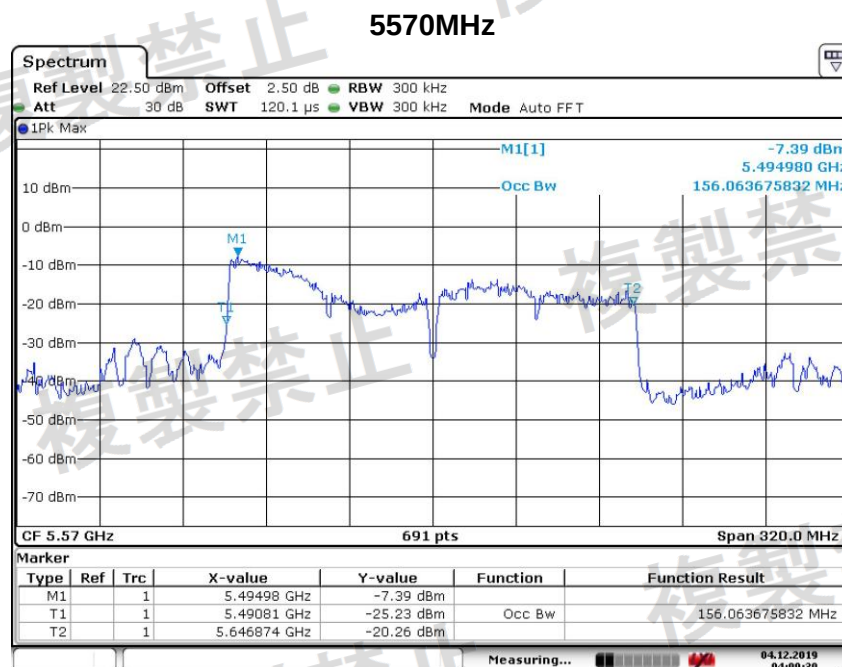


Product	:	Wireless Access Point
Test Item	:	Occupied Channel Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 10: Transmit by 802.11ax(160MHz)

Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
5250	154.67	<= 160
5570	156.06	<= 160

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



Date: 4.DEC.2019 04:09:31

6. Frequency Tolerance

6.1. Test Equipment

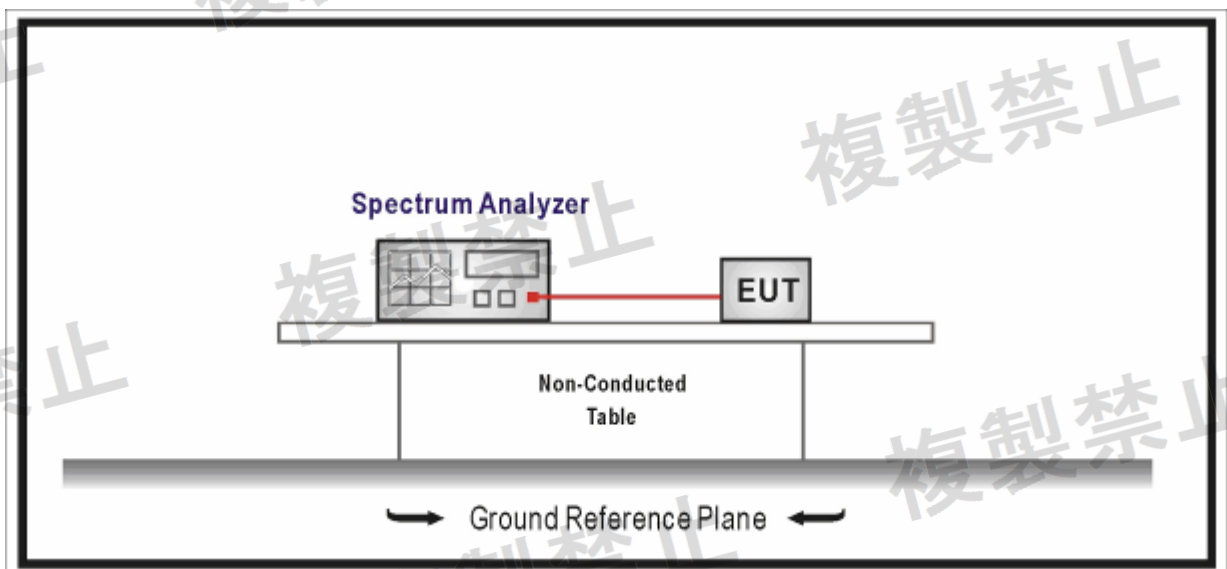
Frequency Tolerance / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
AC Power Supply	IDRC	CF-500TP	979422	2020.09.16
Programmable Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2021.01.04
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup

Conducted Measurement



6.3. Limit

$\leq \pm 20 \text{ ppm}$

6.4. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slowly, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.

'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

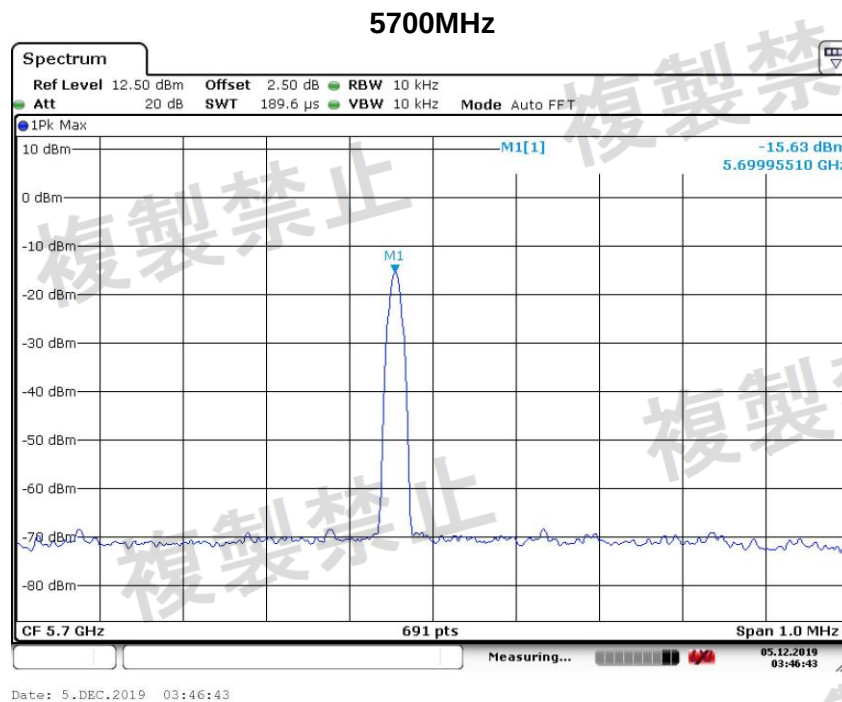
6.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Frequency Tolerance
Test Site	:	TR-8
Test Mode	:	Mode: Transmit by carrier

Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)
5180	5179.9624	-7.26	$\leq \pm 20$
5320	5319.9609	-7.35	$\leq \pm 20$
5500	5499.9580	-7.64	$\leq \pm 20$
5700	5699.9551	-7.88	$\leq \pm 20$

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:



Test Result	Pass
-------------	------

7. Unwanted Emission Strength

7.1. Transmitter Spurious Emissions

7.1.1. Test Equipment

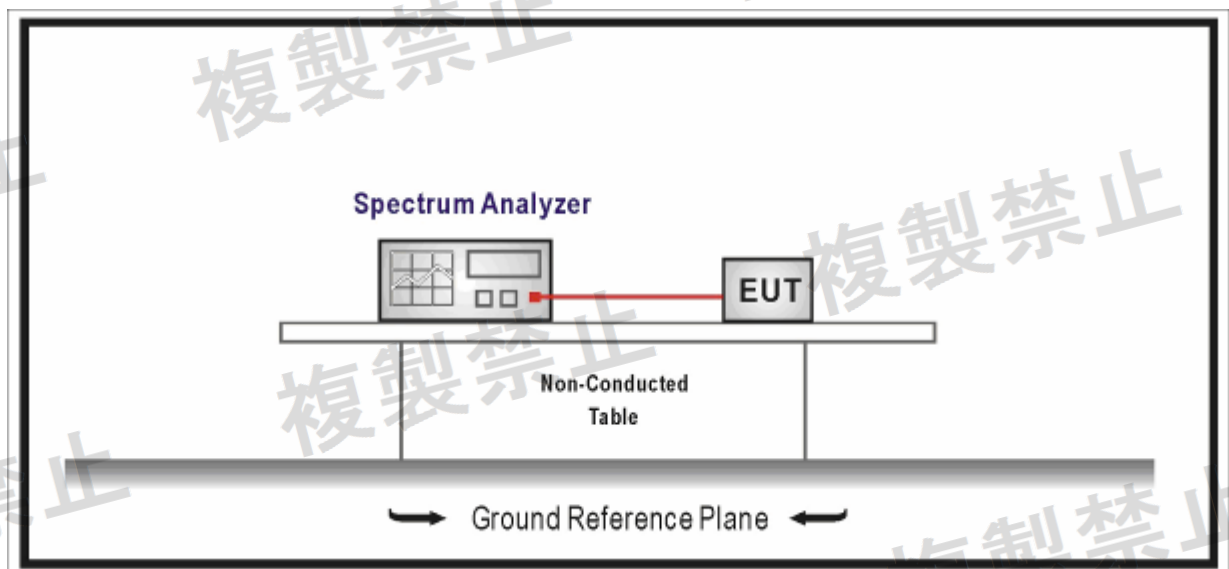
Transmitter Spurious Emissions / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
EXA Signal Analyzer	Keysight	N9010A	MY55370495	2021.04.16
Signal Analyzer	R&S	FSV30	104212	2021.12.05
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2021.08.12

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.1.2. Test Setup

Conducted Measurement



7.1.3. Limit

$\leq 2.5\mu\text{W}/\text{MHz}$

7.1.4. Test Procedure

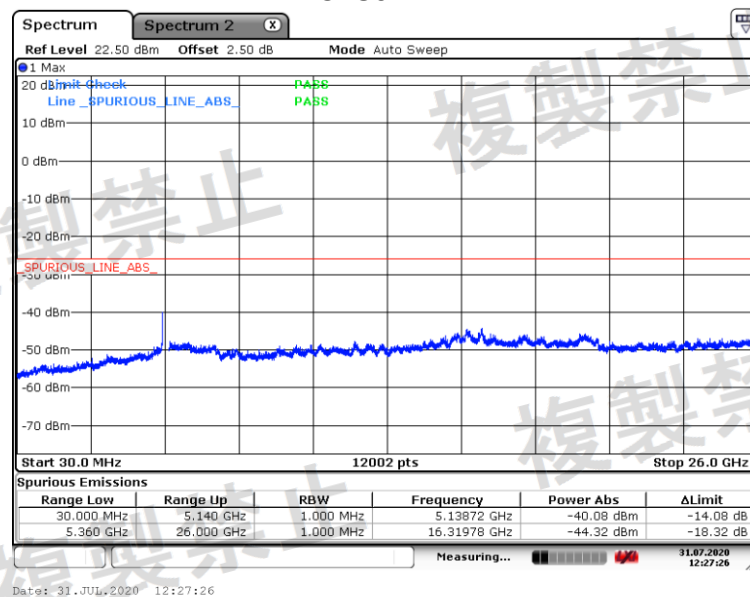
A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (c) A positive peak detector function must be used.
- (d) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (e) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

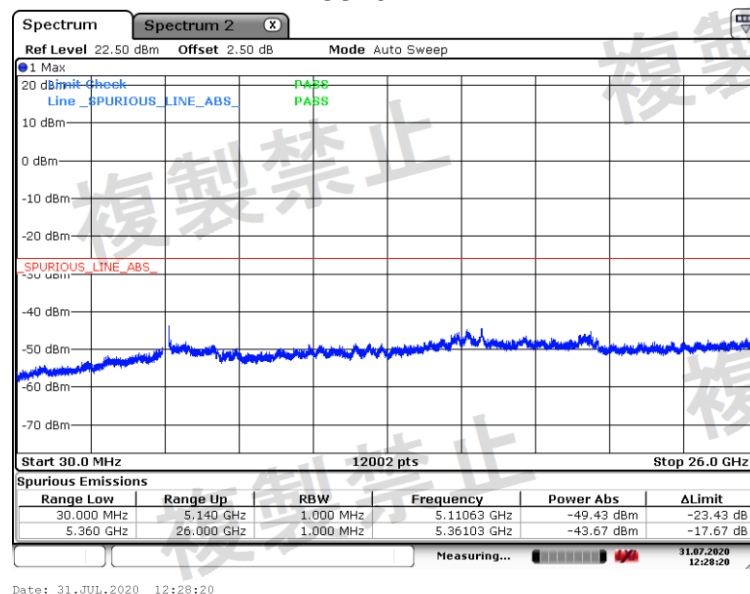
7.1.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Transmitter Spurious Emissions
Test Site	:	TR-8
Test Mode	:	Mode1: Transmit by 802.11a

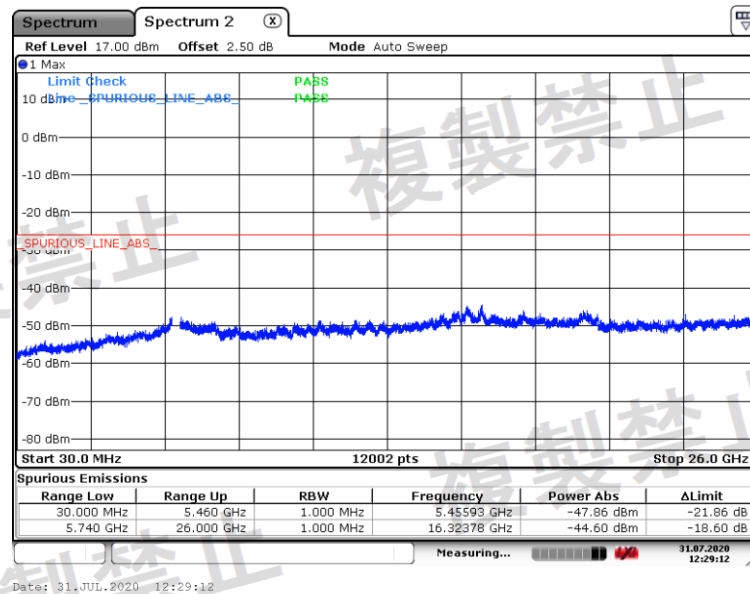
5180MHz



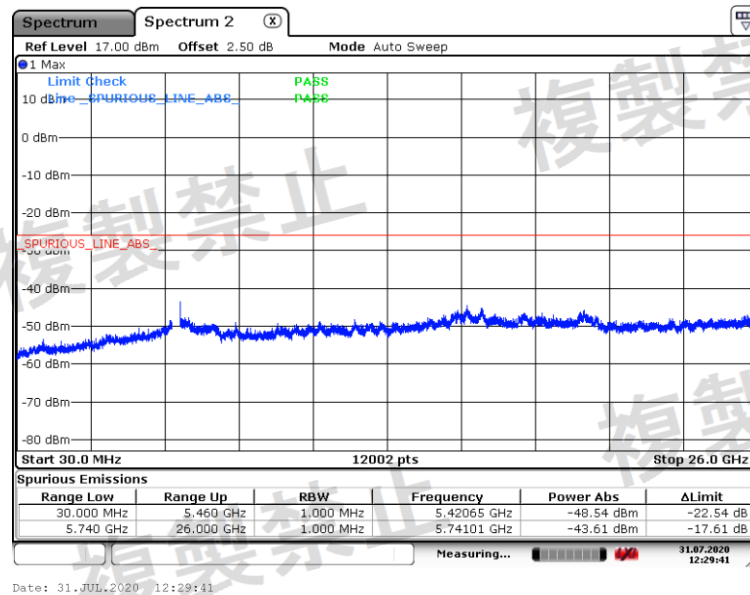
5320MHz



5500MHz



5700MHz

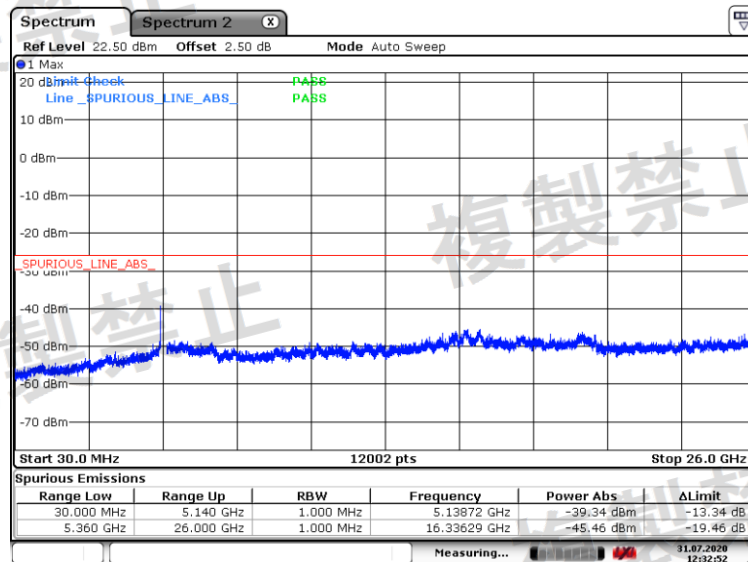


Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

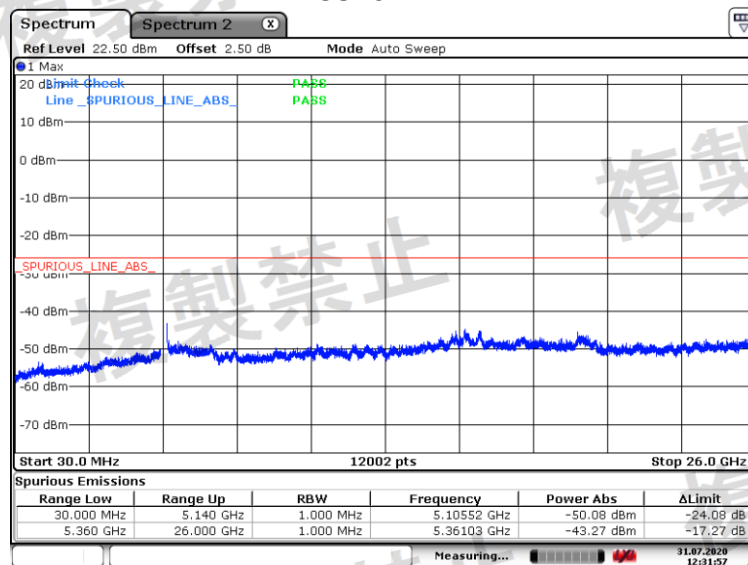
Product	:	Wireless Access Point
Test Item	:	Transmitter Spurious Emissions
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz)

5180MHz



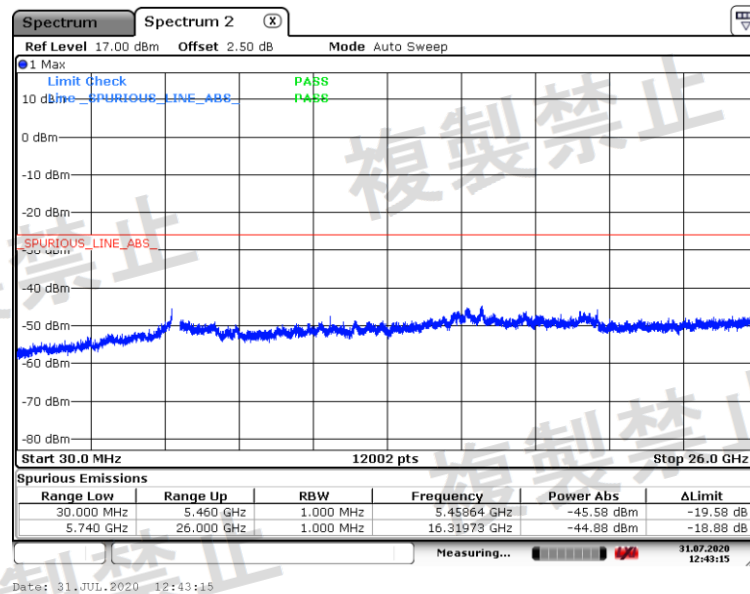
Date: 31.JUL.2020 12:32:52

5320MHz

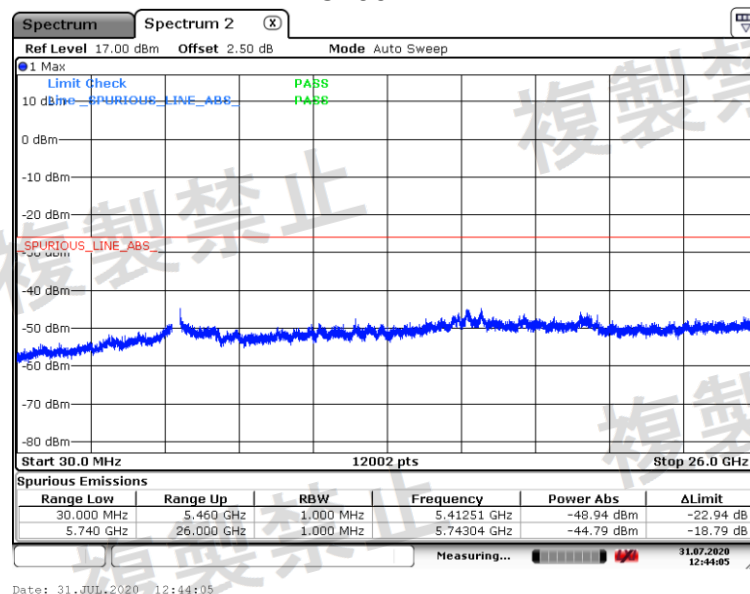


Date: 31.JUL.2020 12:31:57

5500MHz



5700MHz



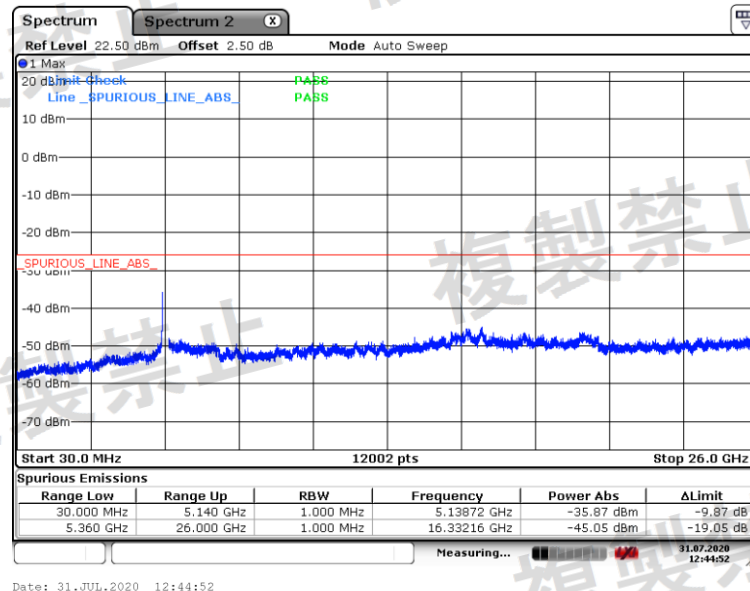
Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated n/ac/ax(20MHz) mode, shown in the report is the worst data.

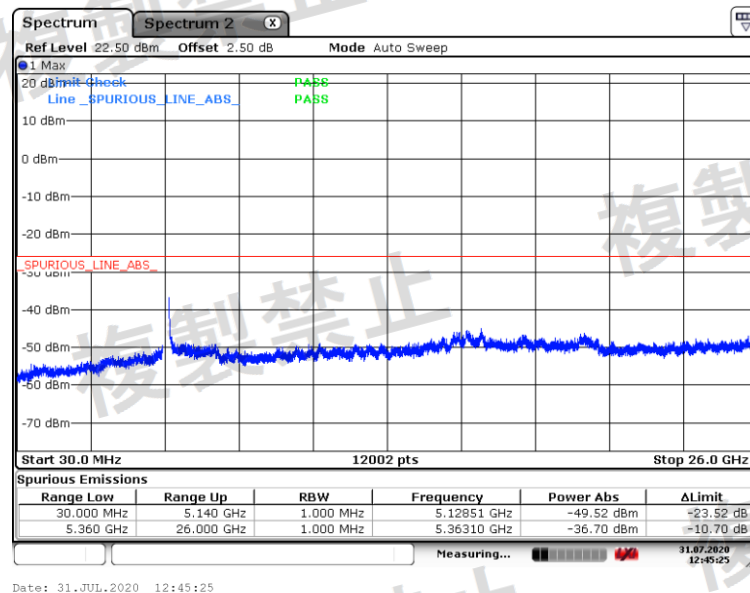
Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

Product	:	Wireless Access Point
Test Item	:	Transmitter Spurious Emissions
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz)

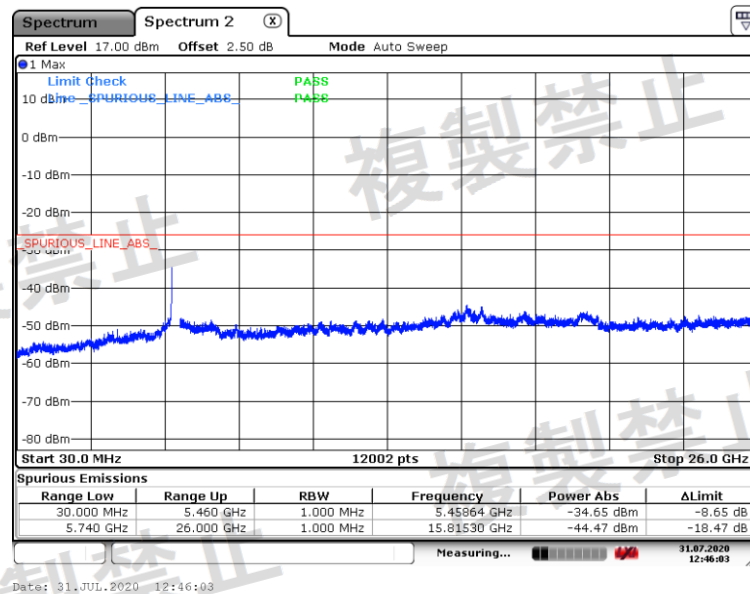
5190MHz



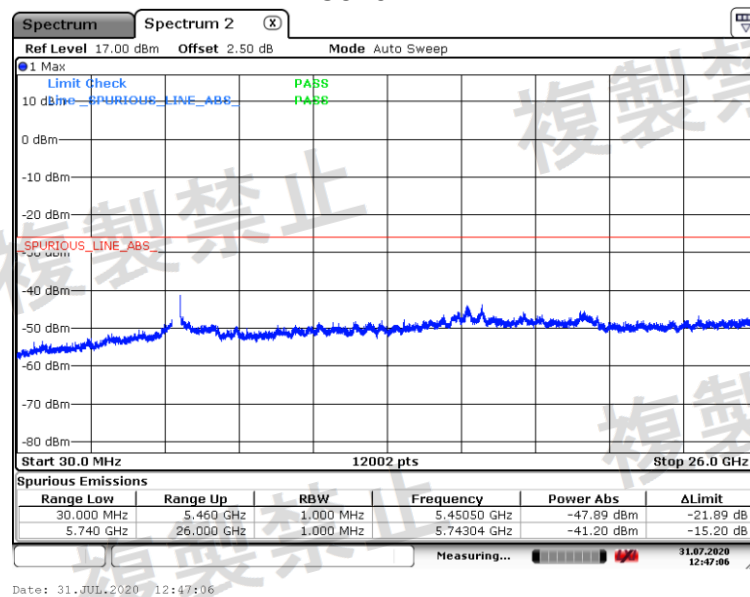
5310MHz



5510MHz



5670MHz



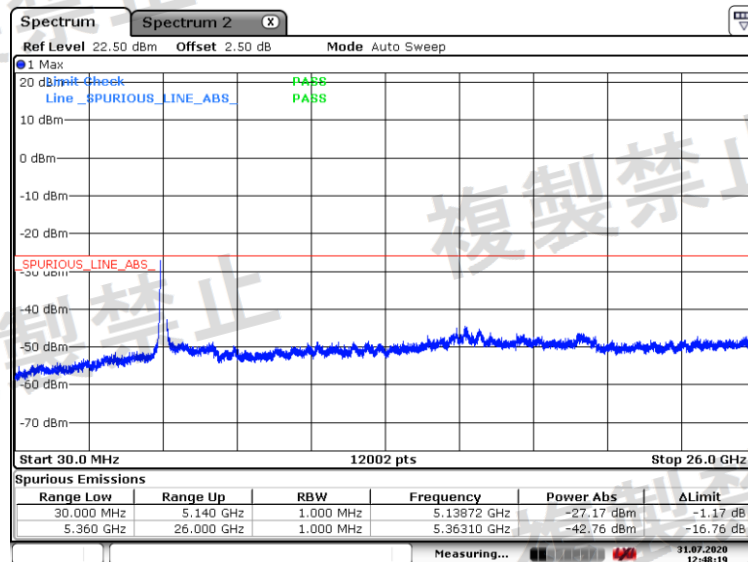
Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated n/ac/ax(40MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

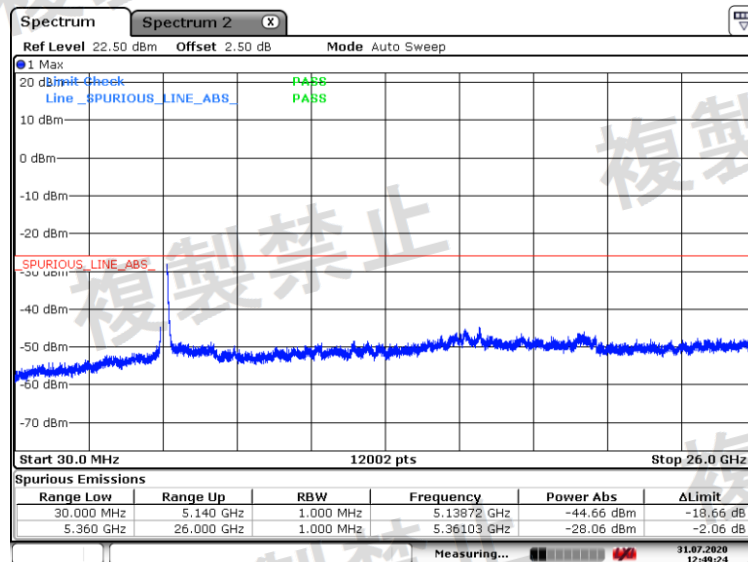
Product	:	Wireless Access Point
Test Item	:	Transmitter Spurious Emissions
Test Site	:	TR-8
Test Mode	:	Mode 6: Transmit by 802.11ac(80MHz)

5210MHz



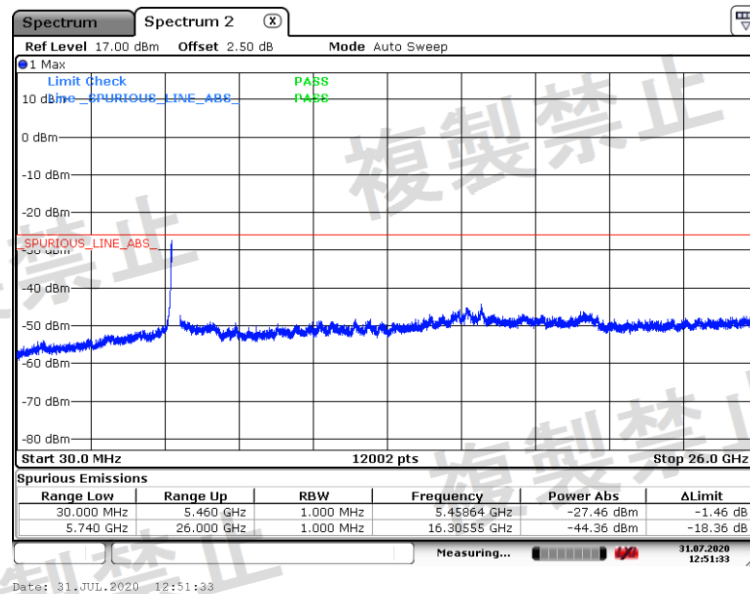
Date: 31.JUL.2020 12:48:19

5290MHz

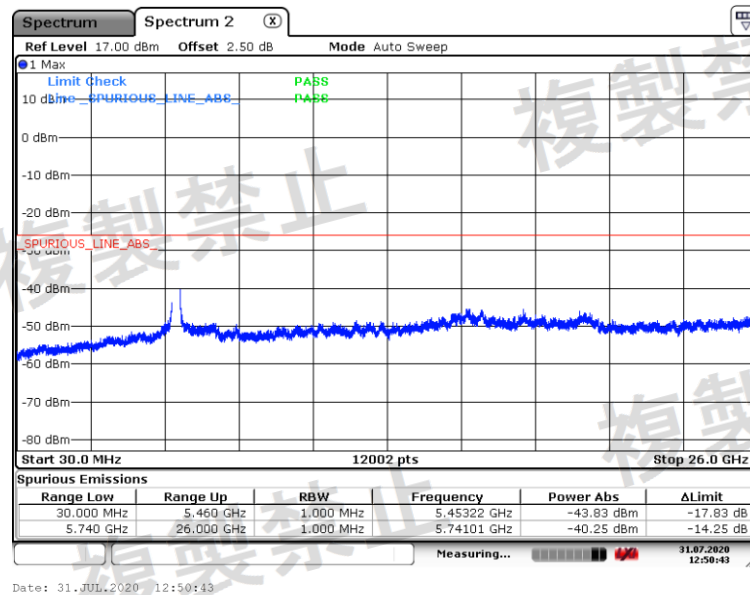


Date: 31.JUL.2020 12:49:24

5530MHz



5610MHz



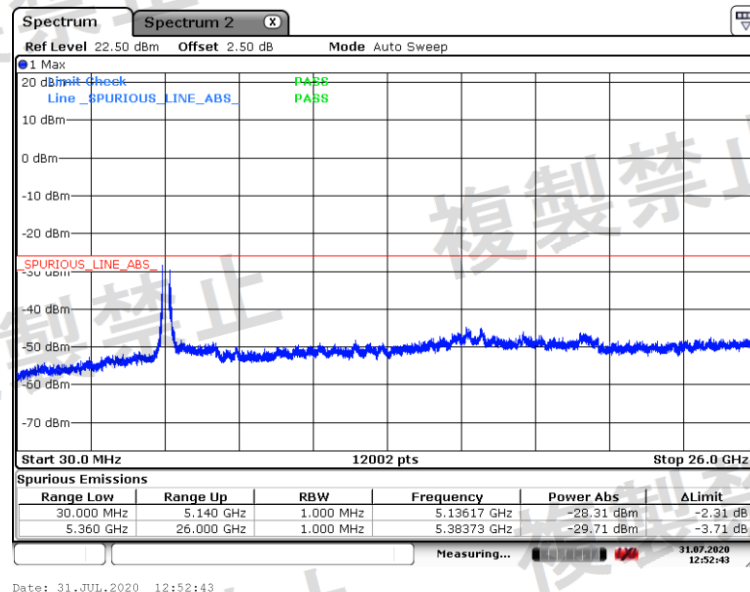
Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated ac/ax(80MHz) mode, shown in the report is the worst data.

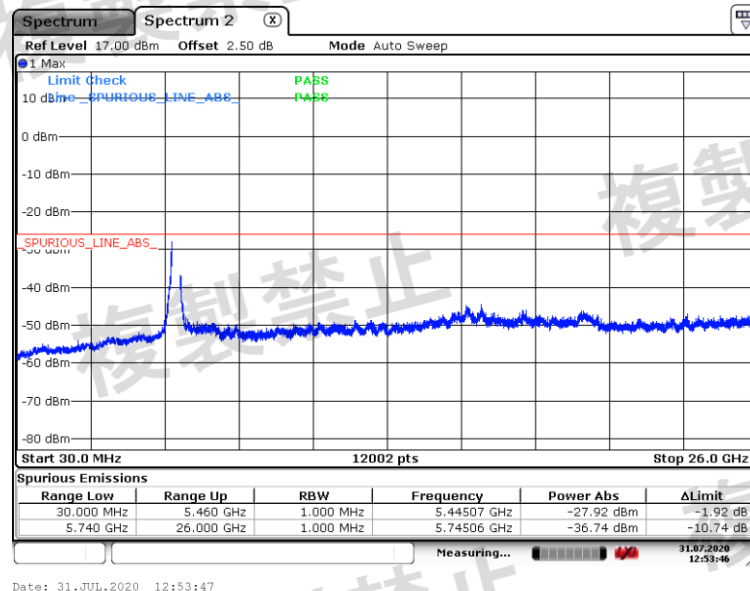
Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

Product	:	Wireless Access Point
Test Item	:	Transmitter Spurious Emissions
Test Site	:	TR-8
Test Mode	:	Mode 10: Transmit by 802.11ax(160MHz)

5250MHz



5570MHz



Note1: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

Test Result	Pass
-------------	------

7.2. Out-Band Leakage Power

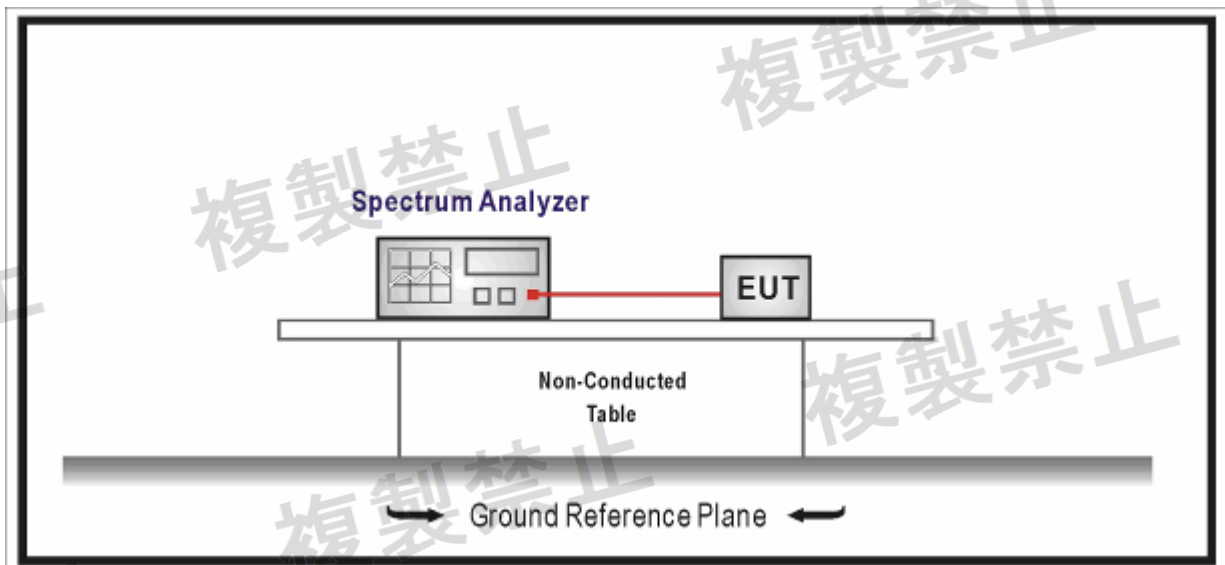
7.2.1. Test Equipment

Out-Band Leakage Power / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
EXA Signal Analyzer	Keysight	N9010A	MY55370495	2021.04.16
Signal Analyzer	R&S	FSV30	104212	2021.12.05
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2021.08.12
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.				

7.2.2. Test Setup

Conducted Measurement



7.2.3. Limit

W52			
20MHz system		40MHz system	80MHz system
OBW : 18MHz or less	OBW : 18 - 20 MHz		
5,142 MHz or less : 2.5 μ W/MHz	5,142 MHz or less : 2.5 μ W/MHz	5,141.6 MHz or less : 2.5 μ W/MHz	5,123.2 MHz or less : 2.5 μ W/MHz
5,142 - 5,150 MHz : 15 μ W/MHz	5,142 - 5,150 MHz : 15 μ W/MHz	5,141.6 - 5,150 MHz : 15 μ W/MHz	5,123.2 - 5,150 MHz : 15 μ W/MHz
5,250 - 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz	5,250.2 - 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz	5,250 - 5,251 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,250 - 5,251 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,251 - 5,260 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,251 - 5,260 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,251 - 5,270 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,251 - 5,290 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,260 - 5,266.7 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,260 - 5,266.7 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,270 - 5,278.4 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,290 - 5,296.7 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,266.7 MHz or more : 2.5 μ W/MHz	5,266.7 MHz or more : 2.5 μ W/MHz	5,278.4 MHz or more : 2.5 μ W/MHz	5,296.7 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5230 (MHz)	f = MHz, Difference from 5210 (MHz)

W53			
20MHz system		40MHz system	80MHz system
OBW : 18MHz or less	OBW : 18 - 20 MHz		
5,233.3 MHz or less : 2.5 μ W/MHz	5,233.3 MHz or less : 2.5 μ W/MHz	5,221.6 MHz or less : 2.5 μ W/MHz	5,203.3 MHz or less : 2.5 μ W/MHz
5,233.3 - 5,240 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,233.3 - 5,240 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,221.6 - 5,230 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,203.3 - 5,210 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,240 - 5,249 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,240 - 5,249 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,230 - 5,249 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,210 - 5,249 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,249 - 5,250 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,249 - 5,249.8 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,249 - 5,250 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,249 - 5,250 MHz : $10^{-(f-5240)/10}$ mW/MHz
5,350 MHz or more : 2.5 μ W/MHz	5,249.8 - 5,250 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,350 - 5,358.4 MHz : 15 μ W/MHz	5,350 - 5,376.8 MHz : 15 μ W/MHz
f = MHz, Difference from 5260 (MHz)	f = MHz, Difference from 5260 (MHz)	f = MHz, Difference from 5270 (MHz)	f = MHz, Difference from 5290 (MHz)

W56			
20MHz system		40MHz system	80MHz system
DSSS, etc.	OFDM		
5,470 MHz or less : 12.5 μ W/MHz	5,460 MHz or less : 2.5 μ W/MHz	5,460 MHz or less : 12.5 μ W/MHz	5,460 MHz or less : 12.5 μ W/MHz
	5,460 - 5,470 MHz : 12.5 μ W/MHz	5,460 - 5,470 MHz : 50 μ W/MHz	5,460 - 5,469.5 MHz : 50 μ W/MHz
5,730 MHz or more : 12.5 μ W/MHz	5,745 - 5,765 MHz : 12.5 μ W/MHz	5,770 MHz or more : 12.5 μ W/MHz	5,469.5 - 5,470 MHz : 51.2 μ W/MHz
	Over 5,765 MHz : 2.5 μ W/MHz		5,770 MHz or more : 12.5 μ W/MHz

W52 + W53	W56
160MHz system	
5,099.6 MHz or less : 2.5 μ W/MHz	5,419.6 MHz or less : 12.5 μ W/MHz
5,099.6 - 5,150 MHz : 15 μ W/MHz	5,419.6 - 5,470 MHz : 50 μ W/MHz
5,350 - 5,400.4 MHz : 15 μ W/MHz	5,725 MHz or more : 12.5 μ W/MHz
5,400.4 MHz or more : 2.5 μ W/MHz	

* A rated value is defined by the E.I.R.P. .

* Measurement range: 30MHz to 26GHz

5.21GHz & (5.53GHz, 5.61GHz or 5.69GHz)	5.29GHz & (5.53GHz, 5.61GHz or 5.69GHz)	5.53GHz & 5.69GHz
80MHz + 80MHz system (Not adjacent radio)		
5,134.8 MHz or less : 2.5 μ W/MHz	5,214.8 MHz or less : 2.5 μ W/MHz	5,419.6 MHz or less : 12.5 μ W/MHz
5,134.8 - 5,150 MHz : 162.5 μ W/MHz	5,214.8 - 5,249 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,419.6 - 5,470 MHz : 50 μ W/MHz
5,250 - 5,251 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,249 - 5,250 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,770 MHz or more : 12.5 μ W/MHz
5,251 - 5,285.2 MHz : $10^{-(f-5240)/10}$ mW/MHz	5,350 - 5,365.2 MHz : 15 μ W/MHz	
5,285.2 - 5,370 MHz : 2.5 μ W/MHz	5,365.2 - 5,410 MHz : 2.5 μ W/MHz	
5,370 - 5,454.8 MHz : 2.5 μ W/MHz (When used simultaneously with a 5.2GHz band high-power radio station : 12.5 μ W/MHz)	5,410 - 5,454.8 MHz : 2.5 μ W/MHz	
5,454.8 - 5,470 MHz : 15 μ W/MHz (When used simultaneously with a 5.2GHz band high-power radio station : 50 μ W/MHz)	5,454.8 - 5,470 MHz : 15 μ W/MHz	
5,730 MHz or more : 15 μ W/MHz	5,730 MHz or more : 15 μ W/MHz	
(*When used 5690MHz)	(*When used 5690MHz)	
5,770 MHz or more : 15 μ W/MHz	5,770 MHz or more : 15 μ W/MHz	
f = MHz, Difference from 5210 (MHz)	f = MHz, Difference from 5290 (MHz)	

7.2.4. Test Procedure

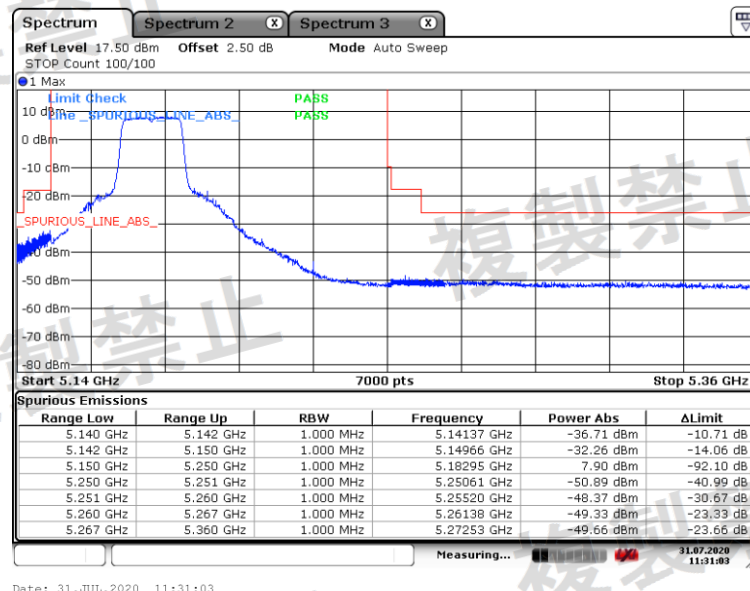
A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (f) A positive peak detector function must be used.
- (g) The measurement instrument bandwidth and span must be set sufficiently with, and, the scan time set sufficiently slow, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (h) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

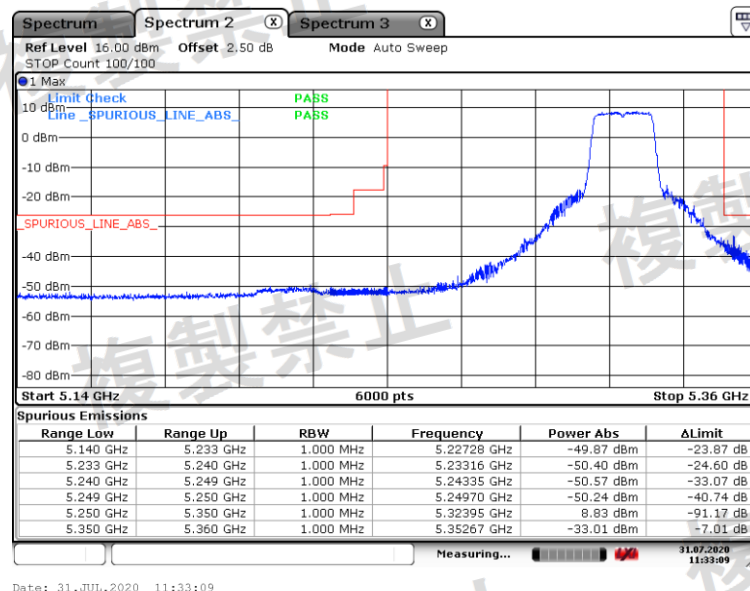
7.2.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Out-Band Leakage Power
Test Site	:	TR-8
Test Mode	:	Mode1: Transmit by 802.11a

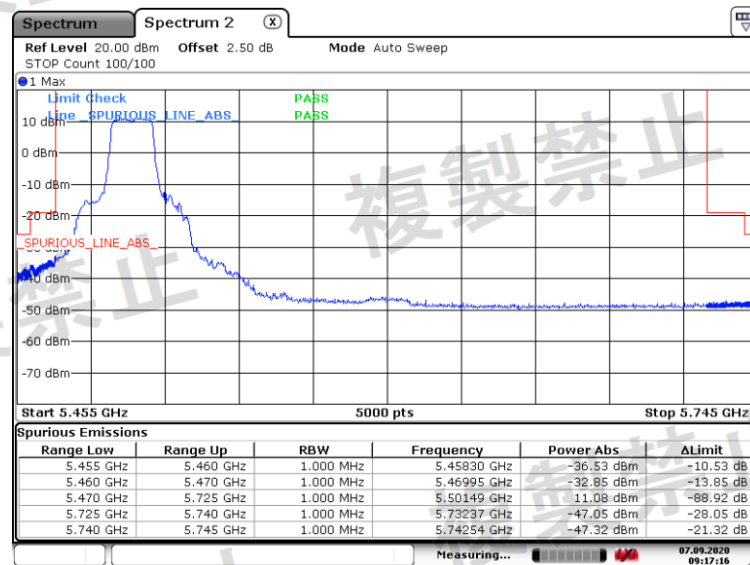
5180MHz



5320MHz

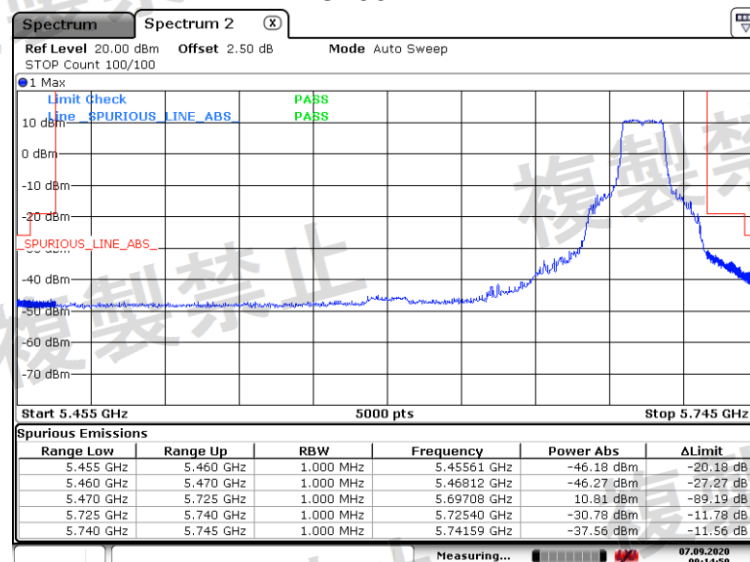


5500MHz



Date: 7.SEP.2020 09:17:17

5700MHz



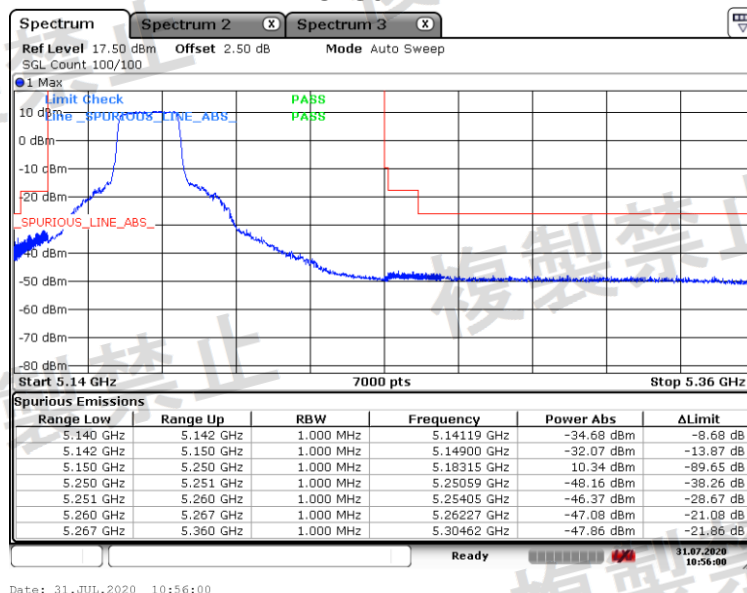
Date: 7.SEP.2020 09:14:59

Note1: We have evaluated all radios, shown in the report is the worst data.

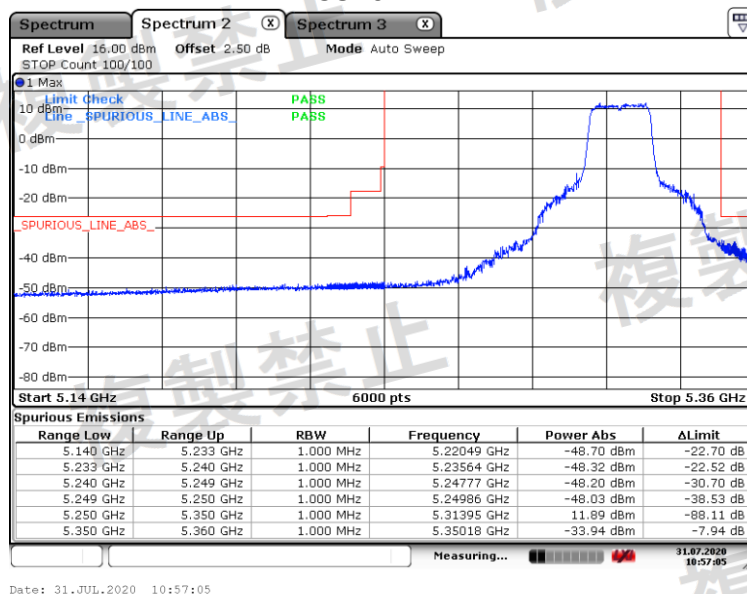
Note2: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

Product	:	Wireless Access Point
Test Item	:	Out-Band Leakage Power
Test Site	:	TR-8
Test Mode	:	Mode2: Transmit by 802.11n(20MHz)

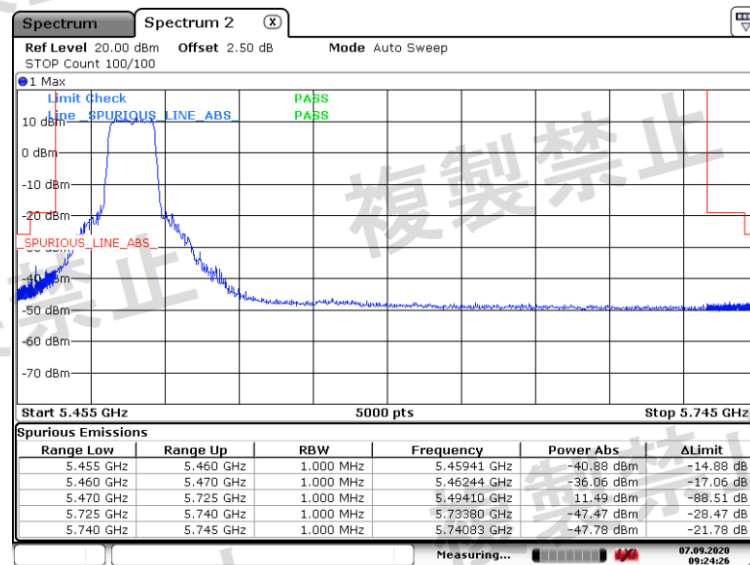
5180MHz



5320MHz

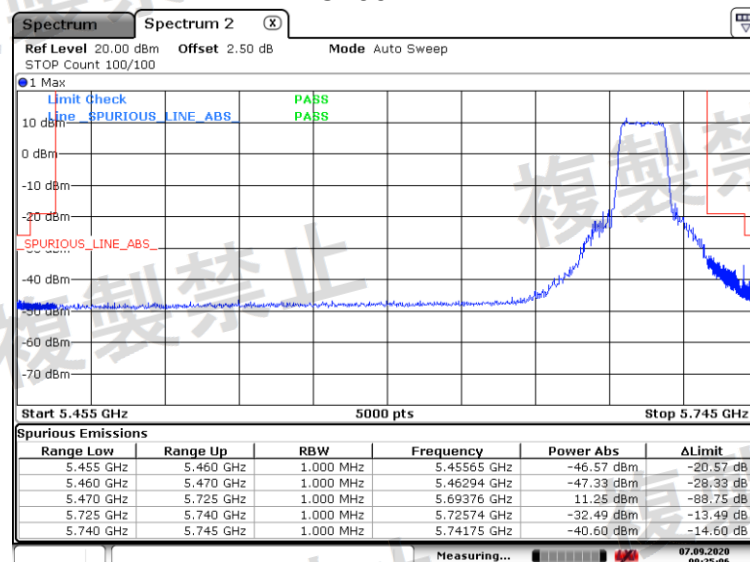


5500MHz



Date: 7.SEP.2020 09:24:26

5700MHz



Date: 7.SEP.2020 09:25:07

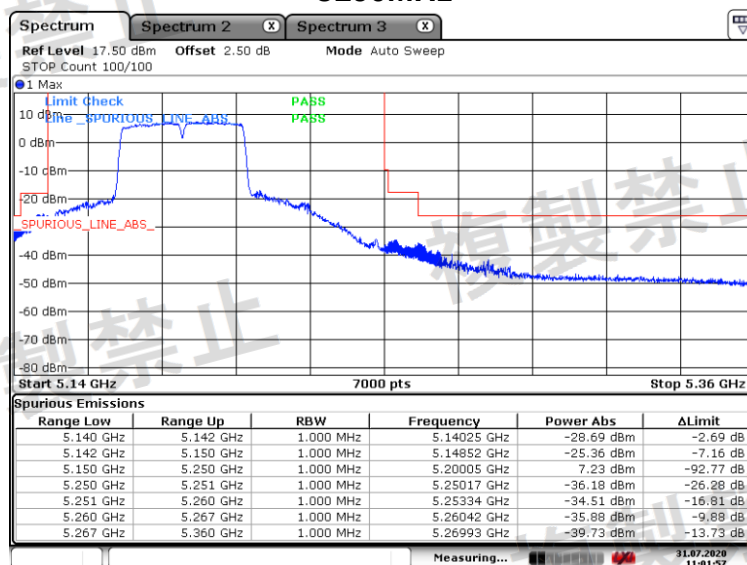
Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated n/ac/ax(20MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

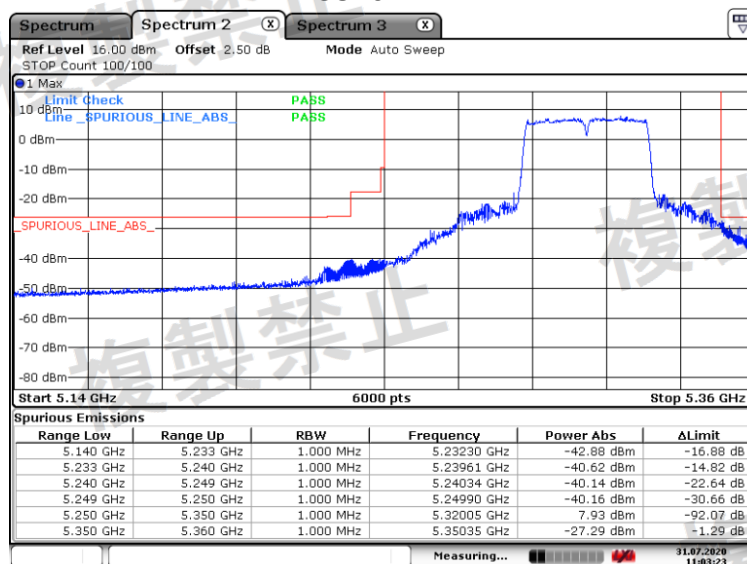
Product	:	Wireless Access Point
Test Item	:	Out-Band Leakage Power
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz)

5190MHz



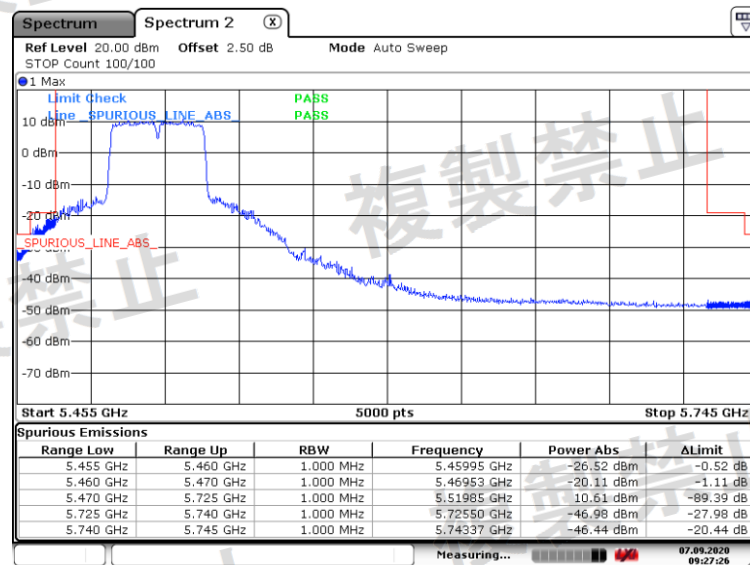
Date: 31.JUL.2020 11:01:57

5310MHz



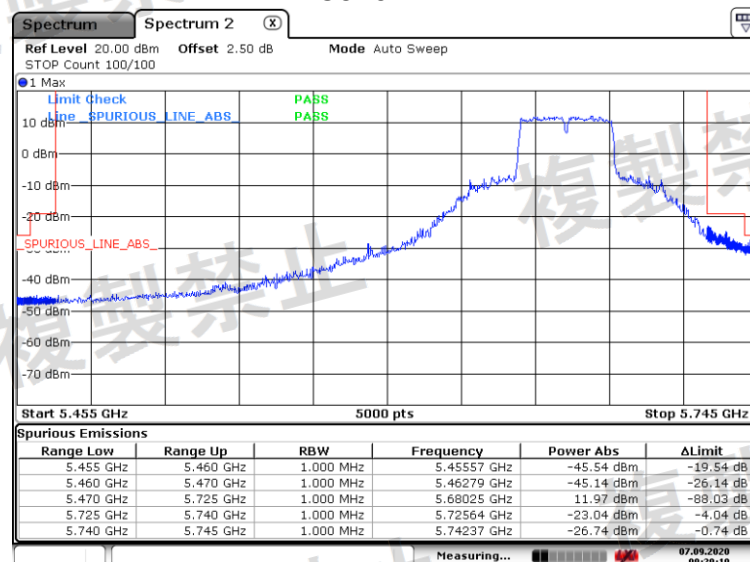
Date: 31.JUL.2020 11:03:23

5510MHz



Date: 7.SEP.2020 09:27:26

5670MHz



Date: 7.SEP.2020 09:29:10

Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated n/ac/ax(40MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

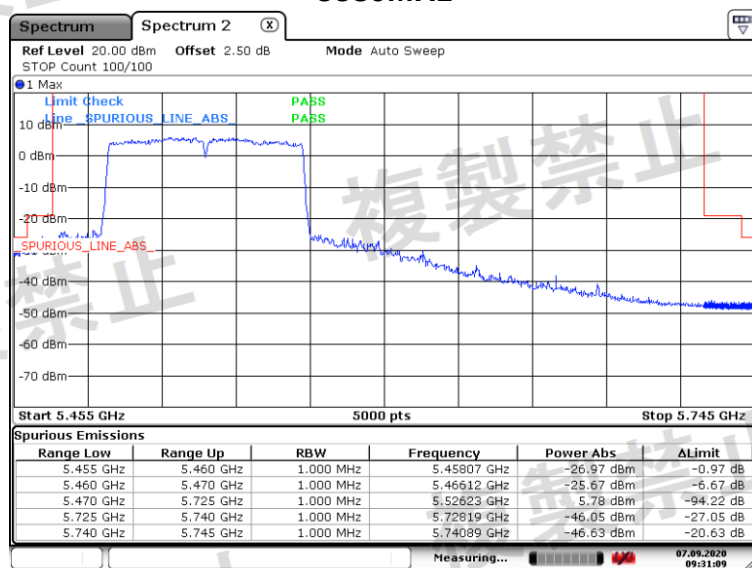
5210MHz



5290MHz

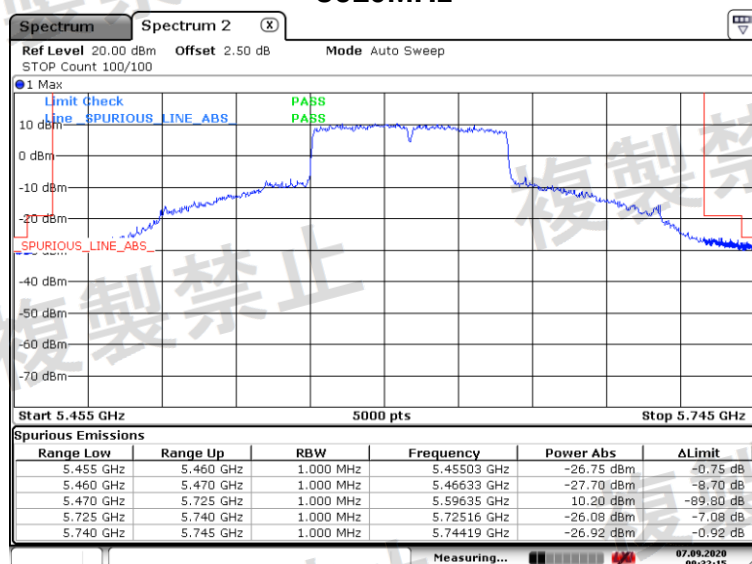


5530MHz



Date: 7.SEP.2020 09:31:09

5610MHz



Date: 7.SEP.2020 09:32:15

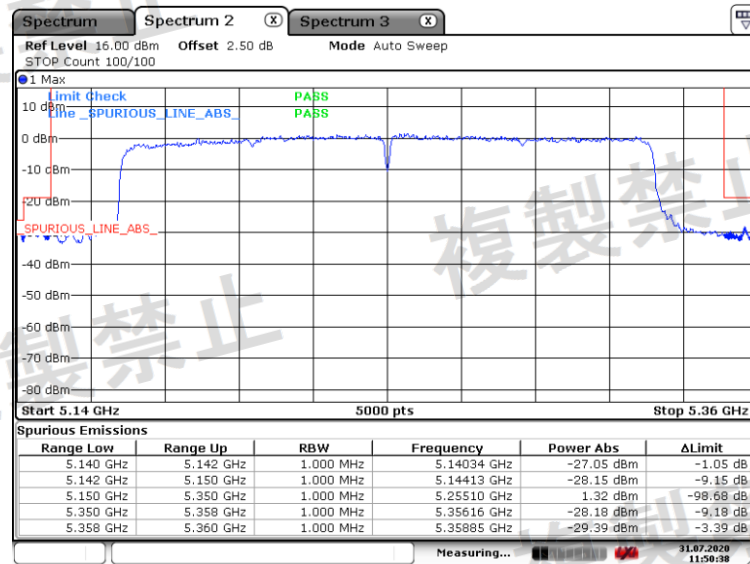
Note1: We have evaluated all radios, shown in the report is the worst data.

Note2: We have evaluated ac/ax(80MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

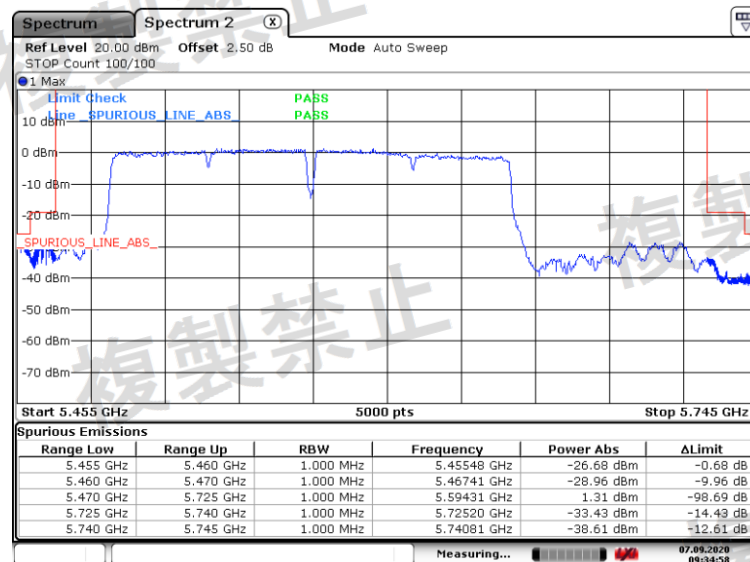
Product	:	Wireless Access Point
Test Item	:	Out-Band Leakage Power
Test Site	:	TR-8
Test Mode	:	Mode 10: Transmit by 802.11ax(160MHz)

5250MHz



Date: 31.JUL.2020 11:50:38

5570MHz



Date: 7.SEP.2020 09:34:59

Note1: We have evaluated SISO, MIMO mode, shown in the report is the worst data.

8. Adjacent Channel Emitted Power

8.1. Test Equipment

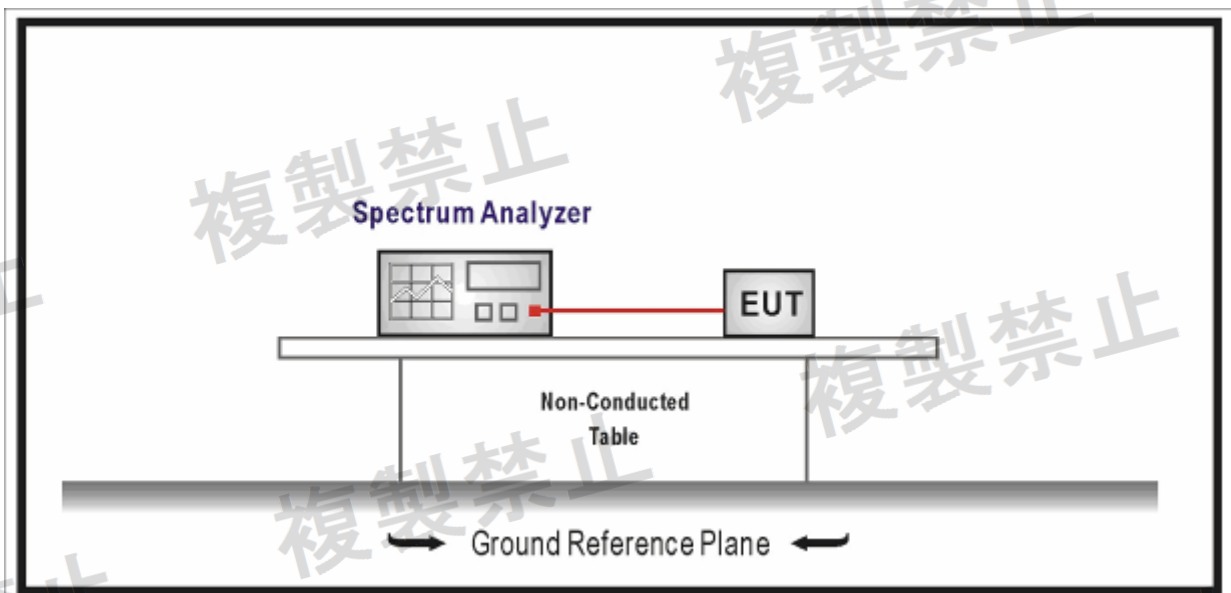
Adjacent Channel Emitted Power / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup

For Conducted Measurement



8.3. Limit

20MHz Bandwidth:

$F_c \pm 20\text{MHz} (\pm 10\text{MHz BW})$: -25dB

$F_c \pm 40\text{MHz} (\pm 10\text{MHz BW})$: -40dB

40MHz Bandwidth:

$F_c \pm 40\text{MHz} (\pm 20\text{MHz BW})$: -25dB

$F_c \pm 80\text{MHz} (\pm 20\text{MHz BW})$: -40dB

80MHz Bandwidth:

$F_c \pm 80\text{MHz} (\pm 40\text{MHz BW})$: -25dB

160MHz Bandwidth: N/A

8.4. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A sample detector function must be used.
- (b) Open spectrum analyzer 'Adj Channel Power' function.
- (c) Set points of $\pm 20\text{MHz}$ and $\pm 40\text{MHz}$ as 18MHz band.
- (d) The measurement instrument bandwidth and span must be set sufficiently with, and the scan time set sufficiently slow to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (e) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

8.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Adjacent Channel Emitted Power
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a

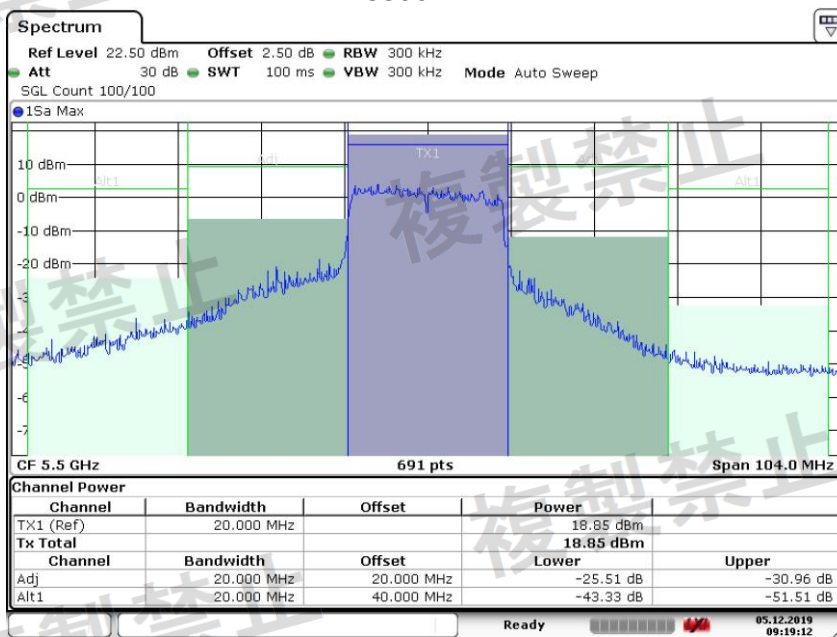
Frequency	Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
5180	-40	44.57	40
	-20	26.32	25
	+20	26.56	25
	+40	44.00	40
5320	-40	48.74	40
	-20	28.71	25
	+20	27.91	25
	+40	46.64	40
5500	-40	43.33	40
	-20	25.51	25
	+20	30.96	25
	+40	51.51	40
5700	-40	48.89	40
	-20	26.58	25
	+20	25.98	25
	+40	43.12	40

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated a/n/ac/ax(20MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5500MHz



Date: 5 DEC 2019 09:19:12

Product	:	Wireless Access Point
Test Item	:	Adjacent Channel Emittted Power
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz)

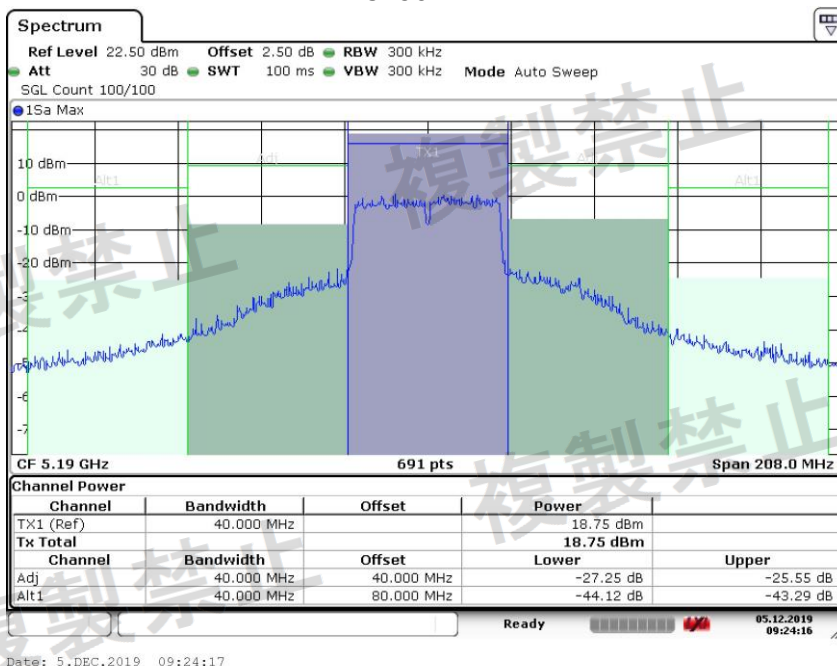
Frequency	Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
5190	-80	44.12	40
	-40	27.25	25
	+40	25.55	25
	+80	43.29	40
5310	-80	48.07	40
	-40	32.46	25
	+40	29.50	25
	+80	45.87	40
5510	-80	41.60	40
	-40	25.73	25
	+40	39.31	25
	+80	46.74	40
5670	-80	45.11	40
	-40	30.11	25
	+40	25.56	25
	+80	38.14	40

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated n/ac/ax(40MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5190MHz



Product	:	Wireless Access Point
Test Item	:	Adjacent Channel Emitted Power
Test Site	:	TR-8
Test Mode	:	Mode 6: Transmit by 802.11ac(80MHz)

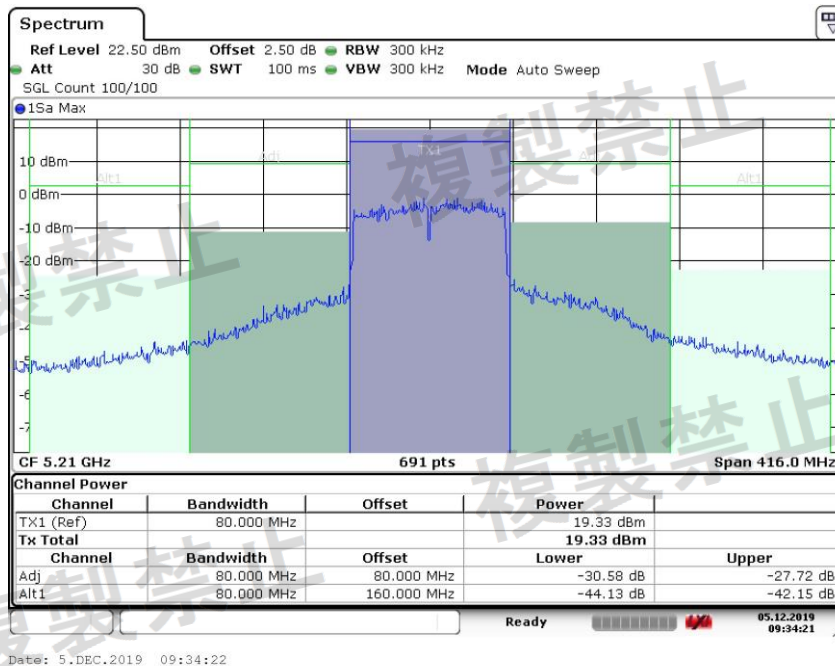
Frequency	Frequency Range (MHz)	Reading Value (dBc)	Limit (dBc)
5210	-160	44.13	40
	-80	30.58	25
	+80	27.72	25
	+160	42.15	40
5290	-160	45.67	40
	-80	32.43	25
	+80	28.07	25
	+160	43.53	40
5530	-160	42.52	40
	-80	27.36	25
	+80	29.41	25
	+160	42.59	40
5610	-160	42.29	40
	-80	33.65	25
	+80	28.67	25
	+160	42.39	40

Note1: We have evaluated both radio module, shown in the report is the worst data.

Note2: We have evaluated ac/ax(80MHz) mode, shown in the report is the worst data.

Note3: We have evaluated SISO, MIMO mode and all antenna combinations, the worst data is as below:

5210MHz



9. Receiver Spurious Emissions

9.1. Test Equipment

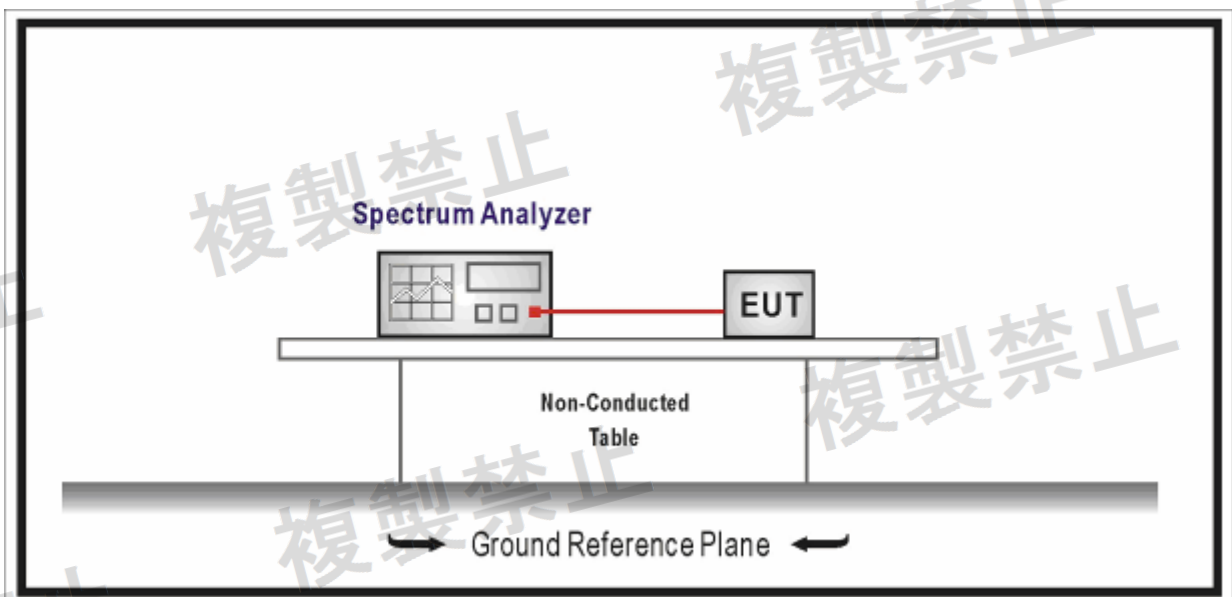
Receiver Spurious Emissions / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup

For Conducted Measurement



9.3. Limit

$\leq 4\text{nW}$ for 30 – 1000 MHz

$\leq 20\text{nW}$ for 1000 – 26000MHz

9.4. Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (f) A sample detector function must be used.
- (g) Open spectrum analyzer 'Adj Channel Power' function.
- (h) Set points of $\pm 20\text{MHz}$ and $\pm 40\text{MHz}$ as 18MHz band.
- (i) The measurement instrument bandwidth and span must be set sufficiently with, and the scan time set sufficiently slow to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (j) 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided the emission is repetitive in nature.

9.5. Test Result

Note: The receiver spurious emission is below the noise floor, so no data was showed in the report.

10. Transmission burst length

10.1. Test Equipment

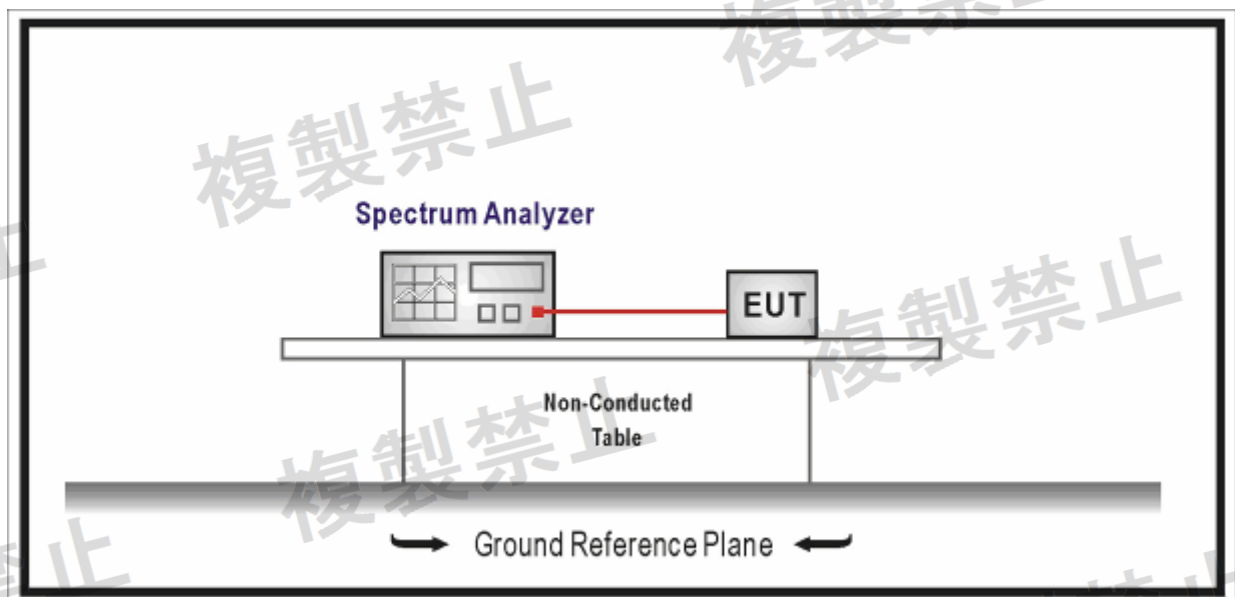
Transmission burst length / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2021.01.04
Signal Analyzer	R&S	FSV	104212	2021.02.22
Temperature/Humidity Meter	Zhicheng	ZC1-2	TR8-TH	2021.04.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

10.2. Test Setup

For Conducted Measurement



10.3. Limit

$\leq 8\text{ms}$

10.4. Test Procedure

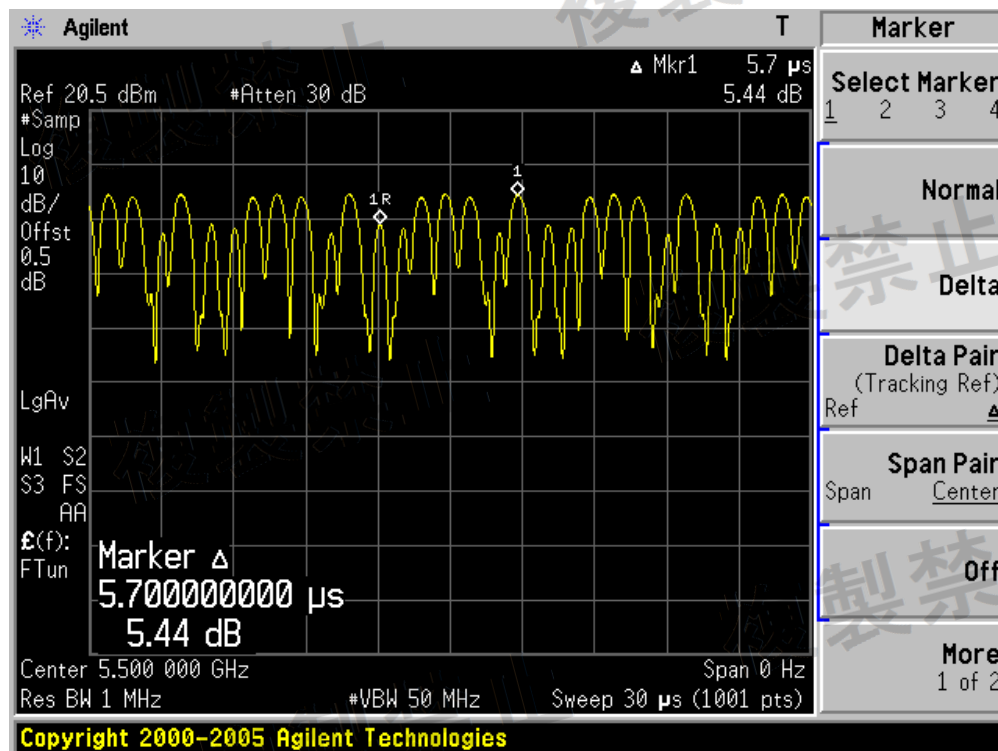
A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

- (a) A positive peak detector function must be used.
- (b) The center frequency is set to the test frequency and the span is switched to zero.
- (c) The measurement instrument bandwidth must be set sufficiently with, and, the scan time set sufficiently slowly, to ensure all major modulation products are captured. Note that the measurement bandwidth should also be set sufficiently narrow to avoid adding significant error to the test result.
- (d) "Single sweep" mode may be used to capture a packet over a single scan.

10.5. Test Result

Product	:	Wireless Access Point
Test Item	:	Transmission burst length
Test Site	:	TR-8
Test Mode	:	Mode1: Transmit by 802.11a

Frequency (MHz)	Reading Value (ms)	Limit (ms)
5500	0.0057	<=8ms



11. Conforming the structure that is difficult to open

The Radio Equipment:	
☐	Use Special Screw
☒	Metal Shielding is Soldered
☐	Use Ball Grid Array (BGA)
☐	RF module/Chip Pins > 20
☐	RF module/Chip Pins distance < 1.5 mm

The high-frequency section and modulation section (except for the antenna system) are not capable of being opened easily.

_____ The End _____