

TEST REPORT

Product Name	: WiFi Stick
Model Number	: S5-WiFi-ST-4Pin, S5-WiFi-ST-USB
FCC ID	: 2AWE8-S5-WIFI

Prepared for Address	::	Ginlong Technologies Co., Ltd. No.57 Jintong Road, Binhai Industrial Park, Xiangshan, Zhejiang			
Prepared by Address	:	EMTEK (NINGBO) CO., LTD. No. 8, Building 8, Lane 216, Qingyi Road, Hi-Tech Zone, Ningbo, Zhejiang, China			
		Tel: +86-574-27907998 Fax: +86-574-27721538			
Report Number	:	ENB2312280211W00201R			

December 28, 2023 to March 18, 2024

 宁波市信测检测技术有限公司
 地址: 浙江省宁波市高新区清逸路216拜8幢8号
 网址: Http://www.emtek.com.cn
 邮箱: nb@emtek.com.cn

 EMTEK(Ningbo) Co., Ltd.
 Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China
 Http://www.emtek.com.cn
 E-mail: nb@emtek.com.cn

Report No. ENB2312280211W00201R

Date(s) of Tests :

Date of issue

:

March 25, 2024



1 TEST RESULT CERTIFICATION

Applicant	:	Ginlong Technologies Co., Ltd.
Address	:	No.57 Jintong Road, Binhai Industrial Park, Xiangshan, Zhejiang
Manufacturer	:	Ginlong Technologies Co., Ltd.
Address	:	No.57 Jintong Road, Binhai Industrial Park, Xiangshan, Zhejiang
EUT	:	WiFi Stick
Model Name	:	S5-WiFi-ST-4Pin, S5-WiFi-ST-USB
Trademark	:	N/A

Measurement Procedure Used:

APPLICABLE STANDARDS				
STANDARD	TEST RESULT			
FCC 47 CFR Part 2, Subpart J FCC 47 CFR Part 15, Subpart E	PASS			

The above equipment was tested by EMTEK (NINGBO) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.407

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

December 28, 2023 to March 18, 2024
June Gao
June Gao /Engineer
Vinay /Supervisce
Vinay /Supervisor
Tony wei/Manager



TABLE OF CONTENTS

1 .	TEST RESULT CERTIFICATION	2
2	EUT TECHNICAL DESCRIPTION	4
3	SUMMARY OF TEST RESULT	5
4 [.]	TEST METHODOLOGY	6
4.1 4.2 4.3 4.4	2 MEASUREMENT EQUIPMENT USED	6 8
5	FACILITIES AND ACCREDITATIONS	10
5.1 5.2	2 LABORATORY ACCREDITATIONS AND LISTINGS	10
-	TEST SYSTEM UNCERTAINTY	
7 3	SETUP OF EQUIPMENT UNDER TEST	12
7.1 7.2 7.3 7.4 7.5	 RADIO FREQUENCY TEST SETUP	12 14 15 15
8	TEST REQUIREMENTS	
8.1 8.2 8.3 8.4 8.5 8.6 8.7	 MAXIMUM CONDUCTED OUTPUT POWER MAXIMUM PEAK POWER DENSITY	41 60 71 74 93

宁波市信测检测技术有限公司 地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



2 EUT TECHNICAL DESCRIPTION

WiFi Stick S5-WiFi-ST-4Pin, S5-WiFi-ST-USB (Note: The two models only have different power supply interfaces. PCB Layout, schematic design, etc. are the same. We chose S5-WiFi-ST-4Pin for testing.)			
(Note: The two models only have different power supply interfaces. PCB Layout,			
schematic design, etc. are the same. We chose 65-Wir 1-01-41 in for testing.			
ENB2312280211W002-1-1			
Vifi 5G with 5150MHz-5250MHz Band Vifi 5G with 5725MHz-5850MHz Band			
802.11a/n			
802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: MCS0-MCS15			
OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n			
UNII-1: 5150MHz-5250MHz Band 5180-5240MHz for 802.11a/n(HT20); 5190-5230MHz for 802.11n(HT40); UNII-3 with 5725MHz-5850MHz Band 5745-5825MHz for 802.11a/n(HT20); 5755-5795MHz for 802.11n(HT40);			
Not Applicable			
PCB Antenna			
-0.69 dBi			
UNII-1 Band: 10.13 dBm UNII-3 Band: 7.45 dBm			
DC 5V			
December 28, 2023			
-30°C ~ +65°C			

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

宁波市信测检测技术有限公司 地址:浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



3 SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark			
15.407 (a)	99%,6dB and 26dB Bandwidth	PASS				
15.407 (e)		FA33				
15.407 (a)	Maximum Conducted Output Power	PASS				
15.407 (a)	Peak Power Spectral Density	PASS				
15.407 (b)	Radiated Spurious Emission	PASS				
15.407(g)	Frequency Stability	PASS				
15.407 (b)(6) 15.207	Power Line Conducted Emission	PASS				
15.407(a) 15.203 Antenna Application		PASS				
NOTE1: N/A (Not						
NOTE2: According to FCC OET KDB 789033 D2 General UNII Test Procedures New Rules v02r01, In						
addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet						
also comply with th	e applicable limits.					

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2AWE8-S5-WIFI filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

 宁波市信测检测技术有限公司
 地址: 浙江省宁波市高新区清逸路216拜8幢8号
 网址: Http://www.emtek.com.cn
 邮箱: nb@emtek.com.cn

 EMTEK(Ningbo) Co., Ltd.
 Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China
 Http://www.emtek.com.cn
 E-mail: nb@emtek.com.cn



4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards: FCC 47 CFR Part 2, Subpart J

FCC 47 CFR Part 15, Subpart E

FCC KDB 789033 D2 General UNII Test Procedures New Rules v02r01

4.2 MEASUREMENT EQUIPMENT USED

4.2.1 Conducted Emission Test Equipment

Equ.No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
ENE-002	EMI Test Receiver	R & S	ESCI	101107	July 06, 2023	1 Year
ENE-158	L.I.S.N	Schwarzbeck	NNLK 8129	0373	Nov 17, 2023	1 Year
ENE-004	L.I.S.N	Schwarzbeck	NSLK 8126	8126-462	July 06, 2023	1 Year
ENE-162- 1	RF Cable	TIMES	2M(N-N)	605236-0001	May 31, 2023	1 Year
ENE-070	Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00525	Mar 15, 2023	1 Year
ENE-150	Conduction Test Room 2#	SKET	6.5*5*4m	1	Apr 17, 2023	3 Year

4.2.2 Radiated Emission Test Equipment

Equ.No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
ENE-185	EMI Test Receiver	R&S	ESR7	102480	Apr 28, 2023	1 Year
ENE-190	Antenna Multiple	Schwarzbeck	VULB 9163	01499	May 21, 2022	2 Year
ENE-195	Pre-Amplifier	JS Denki	PA09K03-40	JSPA21019	Apr 28, 2023	1 Year
ENE-204	Low Frequency Notch Filter RF Switching	JS Denki	JSDSW-F	JSDSW2211D 02	Apr 28, 2023	1 Year
ENE-251	6dB Attenuator	Mini-Circuits	UNAT-6+	11542	July 06, 2023	1 Year
ENE-279-1	RF Cable	Rosenberger	L17-C001-7000	/	May 31, 2023	1 Year
ENE-279-2	RF Cable	Rosenberger	L17-C001-3500	/	May 31, 2023	1 Year
ENE-279-3	RF Cable	Rosenberger	L17-C001-1500	/	May 31, 2023	1 Year
ENE-279-4	RF Cable	Rosenberger	/	/	May 31, 2023	1 Year
ENE-279-5	RF Cable	Rosenberger	1	/	May 31, 2023	1 Year
ENE-279-6	RF Cable	Rosenberger	L08-C446-1500	/	May 31, 2023	1 Year
ENE-144	3-Meter Anechoic Chamber2#	SKET	9*6*6m	/	June 19, 2022	3 Year
ENE-171	EXA Signal Analyzer	KEYSIGHT	N9010B	MY60242467	Feb 28, 2023	1 Year
ENE-191	Horn Antenna	Schwarzbeck	BBHA 9120 D	02588	May 21, 2022	2 Year
ENE-198	Pre-Amplifier	JS Denki	PA0118-50	JSPA21022	Apr 28, 2023	1 Year

宁波市信测检测技术有限公司

地址:浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn EMTEK(Ningbo) Co., Ltd. Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China Http://www.emtek.com.cn E-mail: nb@emtek.com.cn

Report No. ENB2312280211W00201R



ENE-281-1	RF Cable	Rosenberger	LA2-C125-3500	1	May 31, 2023	1 Year
ENE-281-2	RF Cable	Rosenberger	LA2-C125-1500	/	May 31, 2023	1 Year
ENE-281-3	RF Cable	Rosenberger	LU7-C1511-120 0	/	May 31, 2023	1 Year
ENE-285-1	RF Cable	Rosenberger	LA2-C199-6500	/	May 31, 2023	1 Year
ENE-206	High Frequency Notch FilterRf Switching	JS Denki	JSDSW-F	202083582	Apr 28, 2023	1 Year

4.2.3 Radio Frequency Test Equipment

Equ. No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
ENE-256	EXA Signal Anaalyzer	Keysight	N9010B	MY62060219	July 05, 2023	1 Year
ENE-172	RF Control Unit	Tonscend	JS0806-2(V.6E)	21L8060521	March 01, 2023	1 Year
ENE-172	RF Control Unit	Tonscend	JS0806-2(V.6E)	21L8060521	Feb 27, 2024	1 Year
ENE-092	DC Power Supply	KEFUNA	KDP3603	2004D3062946	July 07, 2023	1 Year

Note: The ENE-172 was calibrated on February 27, 2024, and was not tested on that date.

 宁波市信测检测技术有限公司
 地址: 浙江省宁波市高新区清逸路216拜8幢8号
 网址: Http://www.emtek.com.cn
 邮箱: nb@emtek.com.cn

 EMTEK(Ningbo) Co., Ltd.
 Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China
 Http://www.emtek.com.cn
 E-mail: nb@emtek.com.cn



4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

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

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

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

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

Wifi 5G with U-NII - 1

Frequency and Channel list for 802.11a/n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220		
40	5200	48	5240		

Frequency and Channel list for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190				
46	5230				

Test Frequency and Channel for 802.11a, 802.11n (HT20):

Lowest F	Lowest Frequency		Middle Frequency		st Frequency
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220	48	5240

Test Frequency and channel for 802.11n (HT40):

Lowest F	Lowest Frequency		Middle Frequency		st Frequency
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	N/A	N/A	46	5230

Wifi 5G with U-NII - 3

Frequency and Channel list for 802.11a/n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825
153	5765	161	5805		

Frequency and Channel list for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795		

宁波市信測检測技术有限公司 FMTEK(Ningho) Co. Ltd

地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



Test Frequency and Channel for 802.11a, 802.11n (HT20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825

Test Frequency and channel for 802.11n (HT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	N/A	N/A	159	5795

4.4 TEST SOFTWARE

Item	Software
Radiated Emission:	UI_mptool (V2.0)



5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

No. 8, Building 8, Lane 216, Qingyi Road, Ningbo Hi-Tech Zone, Ningbo, Zhejiang, China The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and **CISPR** Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description	
EMC Lab.	Accredited by CNAS
	The Certificate Registration Number is L6666.
	The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2018 (identical to ISO/IEC 17025:2017)
	Designation by FCC
	Designation Number: CN1354
	Test Firm Registration Number: 427606
	Accredited by A2LA
	The certificate is valid until May 31, 2025
	Accredited by Industry Canada
	The Conformity Assessment Body Identifier is CN0114
Name of Firm	: EMTEK (NINGBO) CO., LTD.
Site Location	 No. 8, Building 8, Lane 216, Qingyi Road, Ningbo Hi-Tech Zone, Ningbo, Zhejiang, China



TEST SYSTEM UNCERTAINTY 6

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

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Maximum Peak Output Power Test	±1.0dB
Conducted Emissions Test	±2.0dB
Radiated Emission Test	±2.0dB
Power Density	±2.0dB
Occupied Bandwidth Test	±1.0dB
Band Edge Test	±3dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5°C
Humidity	±3%

Measurement Uncertainty for a level of Confidence of 95%



7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP

The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP

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

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

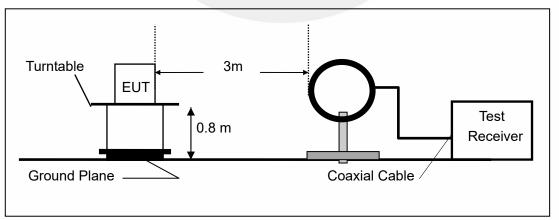
Above 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360° , and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

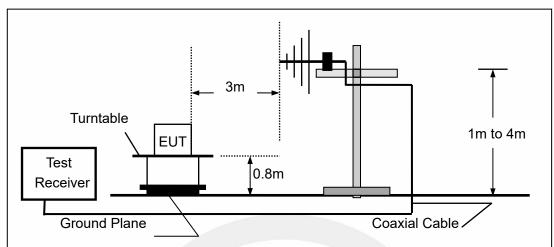
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



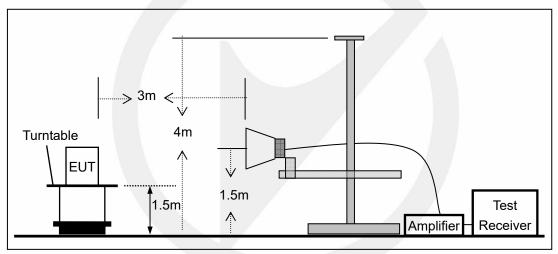
宁波市信测检测技术有限公司 地址:浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn





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

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



 宁波市信测检测技术有限公司
 地址: 浙江省宁波市高新区清逸路216弄9幢8号
 网址: Http://www.emtek.com.cn
 邮箱: nb@emtek.com.cn

 EMTEK(Ningbo) Co., Ltd.
 Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China
 Http://www.emtek.com.cn
 E-mail: nb@emtek.com.cn

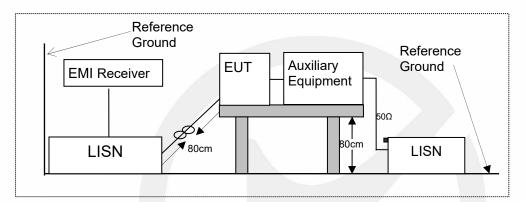


7.3 CONDUCTED EMISSION TEST SETUP

The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

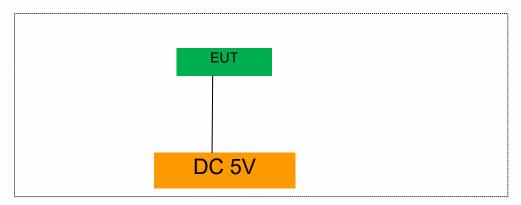
According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



宁波市信测检测技术有限公司 地址:浙江省宁波市高新 [EMTEK(Ningbo) Co., Ltd. Add: No. 8, Building 8



7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



7.5 SUPPORT EQUIPMENT

EUT Cable List and Details						
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite			
	1	1	/			

Auxiliary Cable List and Details							
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite				
/	1	1	/				

Auxiliary Equipment List and Details							
Description	Manufacturer	Model	Serial Number				
	1	1	1				

Notes:

1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

宁波市信测检测技术有限公司 地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



8 TEST REQUIREMENTS 8.1 BANDWIDTH MEASUREMENT

8.1.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C According to FCC Part 15.407(a)(3) for UNII Band III According to FCC Part 15.407(e) for UNII Band III According to 789033 D02 Section II(C) According to 789033 D02 Section II(D)

8.1.2 Conformance Limit

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

8.1.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

8.1.4 Test Procedure

According to 789033 D02 v02r01 section C&D, the following is the measurement procedure.

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.

 宁波市信测检测技术有限公司
 地址: 浙江省宁波市高新区清逸路216弄8幢8号
 网址: Http://www.emtek.com.cn
 邮箱: nb@emtek.com.cn

 EMTEK(Ningbo) Co., Ltd.
 Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China
 Http://www.emtek.com.cn
 E-mail: nb@emtek.com.cn



Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) \geq 3 \times RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

D. 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to 789033 D02 v01r02 General UNII Test Procedures New Rules v01 define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW \geq 3 • RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99 % power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

宁波市信测检测技术有限公司 地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn



8.1.5 Test Results

Temperature:	19°C
Relative Humidity:	41%
ATM Pressure:	1011 mbar

Note: N/A

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Verdict
	Ant1	5180	20.280	5169.880	5190.160	PASS
	Ant1	5220	21.120	5189.680	5210.800	PASS
11A	Ant1	5240	20.560	5229.880	5250.440	PASS
ПА	Ant1	5745	27.360	5731.160	5758.520	PASS
	Ant1	5785	21.800	5774.120	5795.920	PASS
	Ant1	5825	21.720	5814.080	5835.800	PASS
	Ant1	5180	21.960	5169.040	5191.000	PASS
	Ant1	5220	20.880	5189.720	5210.600	PASS
11N20SISO	Ant1	5240	21.520	5229.280	5250.800	PASS
1111203130	Ant1	5745	24.160	5731.600	5755.760	PASS
	Ant1	5785	21.360	5774.320	5795.680	PASS
	Ant1	5825	21.200	5814.360	5835.560	PASS
11N40SISO	Ant1	5190	38.720	5170.800	5209.520	PASS
	Ant1	5230	38.640	5210.720	5249.360	PASS
	Ant1	5755	38.800	5735.720	5774.520	PASS
	Ant1	5795	38.960	5775.480	5814.440	PASS



nission Ban		1			J-NII - 1		-400	
est Model	802.1	ia		Freque	ncy(MHz)	5	5180	
Spectrum Analyzo Swept SA	er 1 🛛 🗸 🗖	F					Freque	ency 🔻 🔀
	nput: RF Coupling. DC Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S)	#Atten: 30 dB µW Path. Standa	PNO: Fast rd Gale. Off IF Gain: Low Sig Track: Off	#Avg Type: Po Trig. Free Run	wer (RMS <mark>1</mark> 23456 М ₩₩₩₩₩ РРРРРР	5.180000000 GHz	Settings
1 Spectrum Scale/Div 10 dB	•		Ref LvI Offset 13 Ref Level 20.00 d		ΔΜ	kr3 20.28 MHz -0.02 dB	+0.0000000 Mil 12	
							Swept Span Zero Span	
-10.0			and and a stream of the	monte the monte of the second	<u>v</u>		Full Span	
-20.0		1			<u></u> 3∆1	LL1-26.08 dBm	Start Freq 5.160000000 GHz	
40.0 -50.0	Stadle Shall a				- 144	hand a stand and a seal of the	' Stop Freq 5.200000000 GHz	
-70.0							AUTO TUNE	
Center 5.18000 (#Res BW 220 kH			#Video BW 680	kHz	Swee	Span 40.00 MHz p 1.00 ms (1001 pts)	CF Step	
5 Marker Table							4.000000 MHz	
	race Scale	X	Y	Function	Function Width	Function Value	Man	
1 N 2 N	1 f 1 f	5 169 88 GHz 5 183 04 GHz					Freq Offset	
<u>3</u> Δ1	1 f (Δ) 20.28 MHz	(Δ) -0.02 dB				0 Hz	Local
4 5 6							X Axls Scale Log Lin	Local
4 50	<u>؟</u> [] اد	Mar 14, 2024 11:08:07 AM					Signal Track (Span Zoom)	







































nission Ban					U-NII - 3			
est Model	802.1	11n(HT40)		Freque	ency(MHz)	ļ	5755	
Spectrum Analyz Swept SA	`	+					Frequer	ncy 🔻 👯
	input: RF Coupling, DC Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S)	#Atten: 30 dB µW Path. Standa	PNO: Fast rd Gale: Off IF Gain: Low Sig Track: Off	Ing. Free Run	wer (RMS <mark>123456</mark> M \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	5.755000000 GHz	Settings
1 Spectrum Scale/Div 10 dB	•		ef Lvi Offset 14 ef Level 20.00 d		ΔΜ	kr3 38.80 MH2 -3.62 dE	Swept Span	
10 0 0.00 -10.0		6	2 marine m	NUM May and a start and a	mur ul y		Zero Span Full Span	
10.0	and of the low of the	NAIMAN A			3Δ1 Www.www	DL1-28.95 dBn ԽՄԳԽՆԻՆութուն /////////ութութուն		
-50.0 -60.0 -70.0							5.795000000 GHz	
Center 5.75500 #Res BW 430 kH 5 Marker Table			#Video BW 1.3	MHz	Swee	Span 80.00 MH p 1.00 ms (1001 pts	z	
Mode T	Trace Scale	X 5.735 72 GHz	Y -29.06 dBm	Function	Function Width	Function Value	Auto Man	
2 Ν 3 Δ1	1 f 1 f	5.748 76 GHz 5.748 76 GHz (Δ) 38.80 MHz	-2.95 dBm				Freq Offset 0 Hz	
4 5 6							X Axls Scale Log Lin	Local
4 50		? Mar 14, 2024 2:20:30 PM					Signal Track (Span Zoom)	



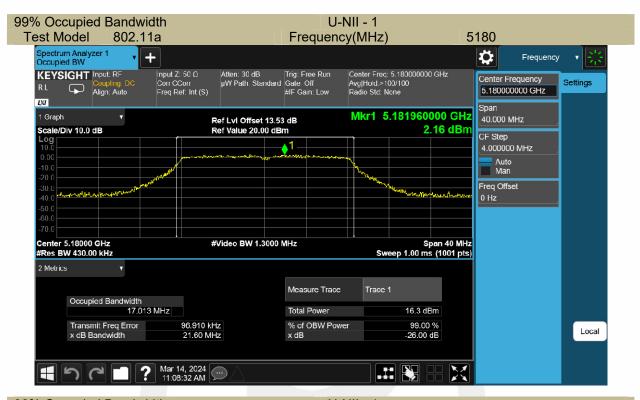


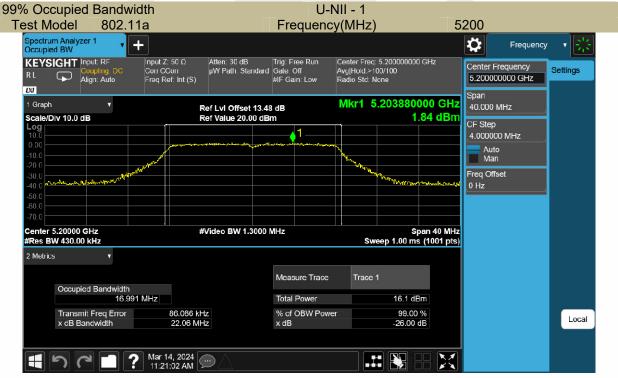
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
	Ant1	5180	17.014	5171.5922	5188.6062	PASS
	Ant1	5220	16.966	5191.6113	5208.5773	PASS
11A	Ant1	5240	16.999	5231.5935	5248.5925	PASS
IIA	Ant1	5745	17.342	5736.4123	5753.7543	PASS
	Ant1	5785	17.156	5776.5513	5793.7073	PASS
	Ant1	5825	17.163	5816.5249	5833.6879	PASS
	Ant1	5180	18.236	5170.9391	5189.1751	PASS
	Ant1	5220	18.029	5191.1322	5209.1612	PASS
11N20SISO	Ant1	5240	18.005	5231.0859	5249.0909	PASS
1111203130	Ant1	5745	18.232	5735.9350	5754.1670	PASS
	Ant1	5785	17.981	5776.0954	5794.0764	PASS
	Ant1	5825	17.946	5816.1832	5834.1292	PASS
11N40SISO	Ant1	5190	35.949	5172.1616	5208.1106	PASS
	Ant1	5230	35.860	5212.1731	5248.0331	PASS
	Ant1	5755	36.099	5737.0137	5773.1127	PASS
	Ant1	5795	35.946	5777.1241	5813.0701	PASS

宁波市信测检测技术有限公司

地址:浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn EMTEK(Ningbo) Co., Ltd. Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China Http://www.emtek.com.cn E-mail: nb@emtek.com.cn







宁波市信测检测技术有限公司 EMTEK(Ningbo) Co., Ltd. 地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址: Http://www.emtek.com.cn 邮箱: nb@emtek.com.cn Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China Http://www.emtek.com.cn E-mail: nb@emtek.com.cn

Report No. ENB2312280211W00201R





宁波市信测检测技术有限公司 EMTEK(Ningbo) Co., Ltd. 地址: 浙江省宁波市高新区清逸路216弄8幢8号 网址:Http://www.emtek.com.cn 邮箱:nb@emtek.com.cn Add: No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo, Zhejiang, China Http://www.emtek.com.cn E-mail: nb@emtek.com.cn

Report No. ENB2312280211W00201R