



FCC - TEST REPORT

Report Number : **709502279703-02A** Date of Issue: March 22, 2024

Model : **Aoralscan 3 Wireless, Aoralscan 3i Wireless**

Product Type : Intraoral Scanner

FCC ID : 2AMG4-AOS3W

Applicant : SHINING 3D Tech Co., Ltd.

Address : No.1398, Xiangbin Road, Wenyan, Xiaoshan, Hangzhou,
Zhejiang, China

Manufacturer : SHINING 3D Tech Co., Ltd.

Address : No.1398, Xiangbin Road, Wenyan, Xiaoshan, Hangzhou,
Zhejiang, China

Test Result : Positive Negative

Total pages including
Appendices : 26

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch No.16 Lane, 1951 Du Hui Road, Shanghai 201108, P.R. China
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FCC Designation Number:	CN1183
ISED CAB identifier	CN0101
IC Registration No.:	31668

3 Description of the Equipment under Test

Product:	Intraoral Scanner
Model no.:	Aoralscan 3 Wireless, Aoralscan 3i Wireless
FCC ID:	2AMG4-AOS3W
Options and accessories:	NA
Rating:	DC 3.6V
RF Transmission Frequency:	For 5G Wi-Fi For 802.11a/n/ac/ax: 5180~5240 MHz (U-NII-1) 5260~5320 MHz (U-NII-2A) 5500~5720 MHz (U-NII-2C) 5745~5825 MHz (U-NII-3)
No. of Operated Channel:	5180~5240 MHz (U-NII-1) 5260~5320 MHz (U-NII-2A) 5500~5720 MHz (U-NII-2C) 5745~5825 MHz (U-NII-3)
Modulation:	Orthogonal Frequency Division Multiplexing (OFDM) for 802.11a/n/ac/ax
Hardware Version:	V1.0
Software Version:	3
Data speed:	Wi-Fi: SISO: 11a 6 ~ 54Mbps, 11n HT20 6.5 ~ 72.2Mbps, 11n HT 40 13.5 ~ 150Mbps, 11ac VHT20 6.5 ~ 86.7Mbps, 11ac VHT40 13.5 ~ 200Mbps, 11ac VHT80 29.3 ~ 433.3Mbps 11ax HE20 7.313 ~ 143.382Mbps, 11ax HE40 14.625 ~ 286.765Mbps, 11ax HE80 30.625 ~ 600.490Mbps MIMO: 11a 6 ~ 54Mbps, 11n HT20 13 ~ 144.4Mbps, 11n HT 40 27 ~ 300Mbps, 11ac VHT20 13 ~ 173.3Mbps, 11ac VHT40 27 ~ 400Mbps, 11ac VHT80 58.5 ~ 866.7Mbps 11ax HE20 14.625 ~ 286.765Mbps, 11ax HE40 29.250 ~ 573.529Mbps, 11ax HE80 61.250 ~ 1200.980Mbps
Antenna Type:	FPC
Antenna Gain:	Antenna1: 1.54 dBi, Antenna2: 1.46 dBi



Directional gain: For output power: 1.54 dBi
Max. gain +array gain
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$
For power spectral density: 4.55 dBi
 $G_{ANT} + \text{Array Gain}$
Array Gain = $10 \log(N_{ANT}/N_{ss})$ dB.

Description of the EUT: The Equipment Under Test (EUT) is an Intraoral Scanner with Wi-Fi Module.
The EUT support Wi-Fi operated at 5GHz.

Test sample no.: SHA-765400-1

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied.



4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart E, 2021 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart E - Unlicensed National Information Infrastructure Devices

Test Method:

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band

ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices



5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition	Pages	Test Site	Test Result			
			Pass	Fail	N/A	
§15.207	Conducted emission AC power port	--	--	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.407(e)	Emission bandwidth	--	--	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(a)(i)	Maximum Conducted Output Power	--	--	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(a)(i)	Maximum Power Spectral Density	--	--	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.407(g)	Frequencies Stability	--	--	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.407(b)(1), 15.407(b)(2), 15.407(b)(3), 15.407(b)(4), 15.407(b)(5), 15.407(b)(6), 15.407(b)(7), 15.209	Unwanted Emissions	14-21	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.203	Antenna requirement	See note 1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remark 1: The EUT only operation at 5G Wi-Fi UNII Band (5180MHz-5240MHz, 5260MHz-5320MHz, 5500MHz-5720MHz, 5745MHz-5825MHz). The EUT operate as Clients Device without Radar Detection.

Note 1: The EUT uses a FPC antenna, which gain is Antenna1: 1.54 dBi, Antenna2: 1.46 dBi. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

6 General Remarks

Remarks

NOTICE: This report is a SUPPLEMENT OF PROJECT 709502279703-00A and 709502279703-01A. So the report is not valid without the report of 709502279703-00A and 709502279703-01A.

This submittal(s) (test report) is intended for FCC ID: 2AMG4-AOS3W complies with Section 15.207, 15.209, 15.407 of the FCC Part 15, Subpart E Rules.

According to the client's declaration, the new model Aoralscan 3i Wireless needs to be added to the report.

According to the client's declaration, the button and decorative ring material of certified models Aoralscan 3 Wireless and Aoralscan 3i Wireless has been changed from plastic to metal. And Aoralscan 3i Wireless and the certified model Aoralscan 3 Wireless are all the same except for Aoralscan 3i Wireless with the near-infrared function by the software to turn on the LED light to be used to detect early-stage cavities and Aoralscan 3 Wireless without.

So in this test report only test data of "Spurious radiated emissions for transmitter" was new data, other tests were referred from 709502279703-00A, and the test data are still effective.

SUMMARY:

All tests according to the regulations cited on page 6 were

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: November 2, 2023

Testing Start Date: November 2, 2023

Testing End Date: November 9, 2023



- TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:

Prepared by:

Tested by:

Handwritten signature of Hui Tong in blue ink.

Handwritten signature of Cheng Huali in blue ink.

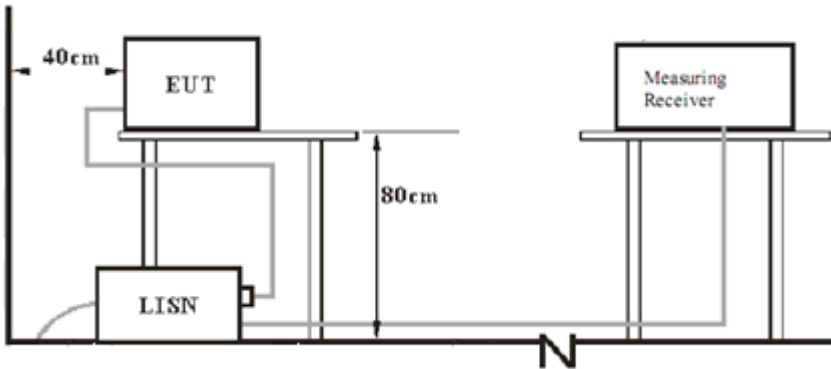
Hui TONG
Review Engineer

Wenqiang LU
Project Engineer

Huali CHENG
Test Engineer

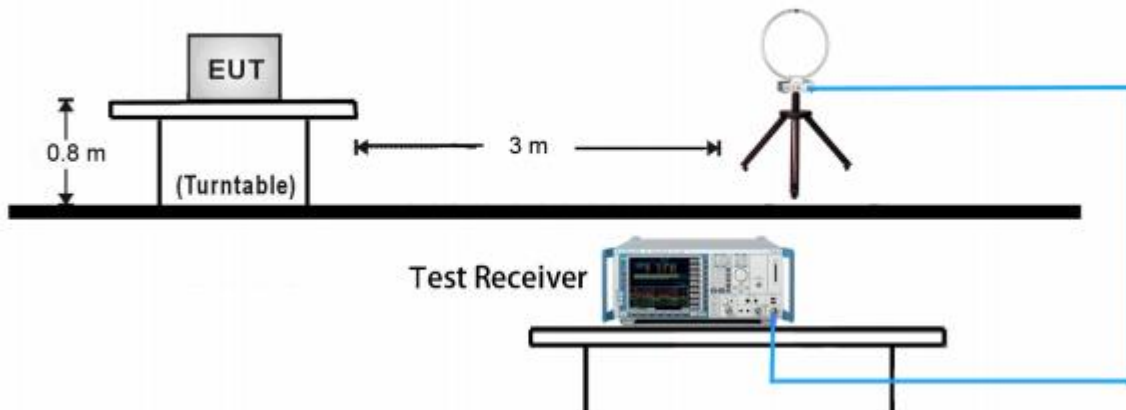
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

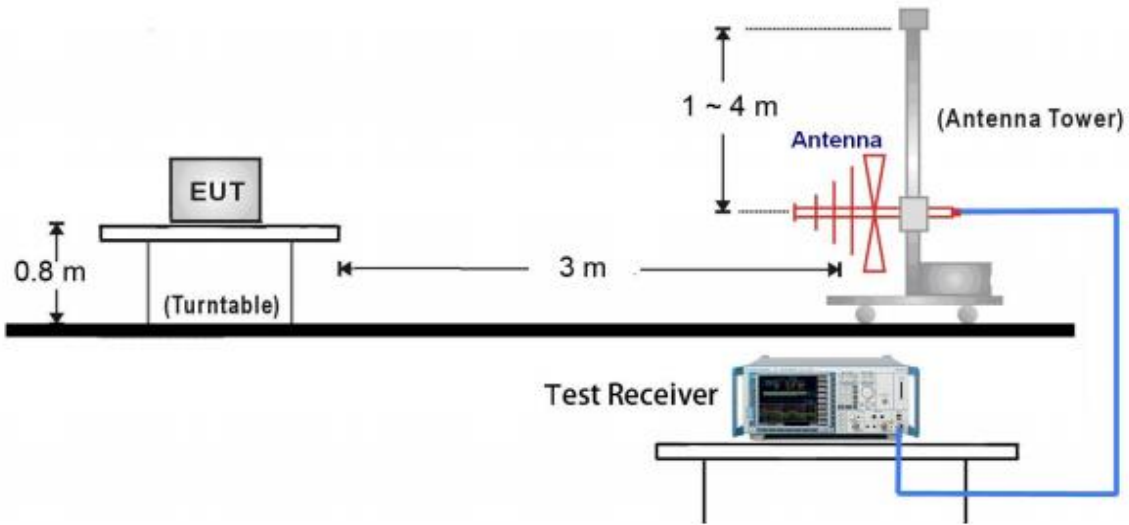


7.2 Radiated test setups

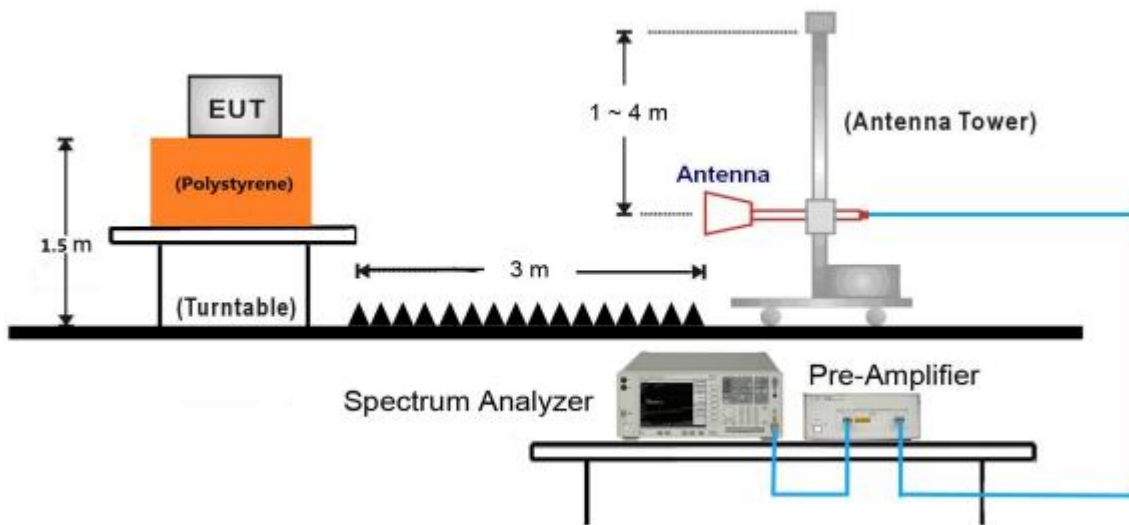
9kHz ~ 30MHz Test Setup:



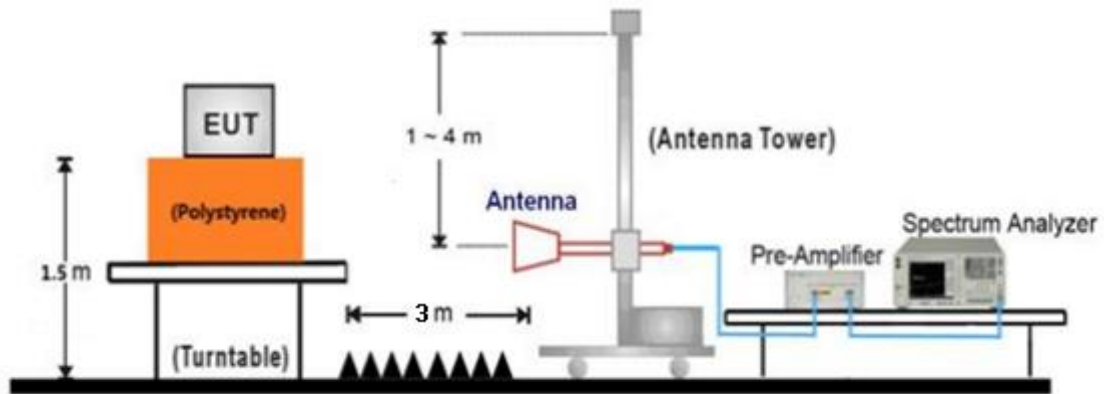
30MHz ~ 1GHz Test Setup:



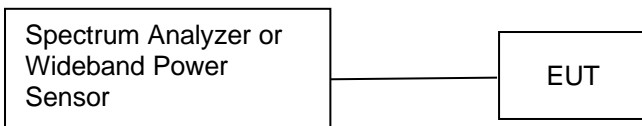
1GHz ~ 18GHz Test Setup:



18GHz ~ 40GHz Test Setup:



7.3 Conducted RF test setups



8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	MSI	Crossnair 15 R6E B12UEZ	--

Test software: cmd.exe, which used to control the EUT in continues transmitting mode.
The system was configured to channel:

Test Mode	Channel (MHz)		
802.11a, 802.11n HT20 802.11ac VHT20 802.11ac HE20	5G WIFI-Band 1		
	CH36 (5180MHz)	CH40 (5200MHz)	CH48 (5240MHz)
	5G WIFI-Band 2		
	CH52 (5260MHz)	CH56 (5300MHz)	CH64 (5320MHz)
	5G WIFI-Band 3		
	CH100 (5500MHz)	CH116 (5580MHz)	CH140 (5700MHz)
	CH144 (5720MHz)		
	5G WIFI-Band 4		
CH149 (5745MHz),	CH157 (5785MHz)	CH165 (5825MHz)	

Test Mode	Channel (MHz)		
802.11n HT40 802.11ac VHT40	5G WIFI-Band 1		
	CH38 (5190MHz)	CH46 (5230MHz)	
	5G WIFI-Band 2		
	CH54 (5270MHz)	CH62 (5310MHz)	
	5G WIFI-Band 3		
	CH102 (5510MHz)	CH110 (5550MHz)	CH134 (5670MHz)
	CH142 (5710MHz)		
	5G WIFI-Band 4		
CH151 (5755MHz)	CH159 (5795MHz)		

Test Mode	Channel (MHz)		
802.11ac VHT80	5G WIFI-Band 1		
	CH42 (5210MHz)		
	5G WIFI-Band 2		
	CH58 (5290MHz)		
	5G WIFI-Band 3		
	CH106 (5530MHz)	CH123 (5610MHz)	CH138 (5690MHz)
	5G WIFI-Band 4		
	CH155 (5775MHz)		



The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

	Modulation Type	Data Rate
SISO	802.11a OFDM	6Mbps
	802.11n (HT20): OFDM	MCS0 (6.5Mbps)
	802.11n (HT40): OFDM	MCS0 (13.5Mbps)
	802.11ac (VHT20): OFDM	11ac 6.5Mbps
	802.11ac (VHT40): OFDM	11ac 13.5Mbps
	802.11ac (VHT80): OFDM	11ac 29.3Mbps
	802.11ax (HE20): OFDM	11ax 7.313Mbps
	802.11ax (HE40): OFDM	11ax 14.625Mbps
	802.11ax (HE80): OFDM	11ax 30.625Mbps
		Modulation Type
MIMO	802.11a OFDM	6Mbps
	802.11n (HT20): OFDM	MCS0 (13Mbps)
	802.11n (HT40): OFDM	MCS0 (27Mbps)
	802.11ac (VHT20): OFDM	11ac 13Mbps
	802.11ac (VHT40): OFDM	11ac 27Mbps
	802.11ac (VHT80): OFDM	11ac 58.5Mbps
	802.11ax (HE20): OFDM	11ax 14.625Mbps
	802.11ax (HE40): OFDM	11ax 29.250Mbps
	802.11ax (HE80): OFDM	11ax 61.250Mbps

9 Technical Requirement

9.1 Unwanted emissions

Transmitting spurious emission test result as below:

Test Method

Radiated Mode:

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned

5. Use the following spectrum analyzer settings According to C63.10:

For Above 1GHz

Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 1MHz, VBW \geq RBW for peak measurement and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Below 1GHz

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 KHz, VBW \geq RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

Limit



(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

According to part 15.407(b), the radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dB μ V/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

The only worse case (which is subject to the maximum EIRP, 802.11a MIMO mode) listed in the report.

Transmitting spurious emission worse case test result:

Transmitting spurious emission test result as below:



802.11a Modulation 5180MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10360	Horizontal	47.64	PK	68.2	20.56	Pass
7000-40000	10360	Vertical	48.81	PK	68.2	19.39	Pass

802.11a Modulation 5200MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10440	Horizontal	47.47	PK	68.2	20.73	Pass
7000-40000	10440	Vertical	46.4	PK	68.2	21.8	Pass

802.11a Modulation 5240MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10480	Horizontal	48.44	PK	68.2	19.76	Pass
7000-40000	10480	Vertical	48.27	PK	68.2	19.93	Pass

802.11a Modulation 5260MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10520	Horizontal	47.46	PK	68.2	20.74	Pass
7000-40000	10520	Vertical	46.17	PK	68.2	22.03	Pass



802.11a Modulation 5280MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10560	Horizontal	46.89	PK	68.2	21.31	Pass
7000-40000	10560	Vertical	46.18	PK	68.2	22.02	Pass

802.11a Modulation 5320MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	10640	Horizontal	45.72	PK	74	28.28	Pass
7000-40000	10640	Vertical	46.69	PK	74	27.31	Pass

802.11a Modulation 5500MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11000	Horizontal	48.82	PK	74	25.18	Pass
7000-40000	11000	Vertical	47.08	PK	74	26.92	Pass

802.11a Modulation 5600MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11200	Horizontal	47.46	PK	74	26.54	Pass
7000-40000	11200	Vertical	47.43	PK	74	26.57	Pass



802.11a Modulation 5700MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11400	Horizontal	48.85	PK	74	25.15	Pass
7000-40000	11400	Vertical	49.65	PK	74	24.35	Pass

802.11a Modulation 5720MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11440	Horizontal	47.92	PK	74	26.08	Pass
7000-40000	11440	Vertical	48.17	PK	74	25.83	Pass

802.11a Modulation 5745MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11490	Horizontal	48.36	PK	74	25.64	Pass
7000-40000	11490	Vertical	49.5	PK	74	24.5	Pass

802.11a Modulation 5785MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11570	Horizontal	47.42	PK	74	26.58	Pass
7000-40000	11570	Vertical	46.86	PK	74	27.14	Pass



802.11a Modulation 5825MHz MIMO							
Frequency Range MHz	Frequency MHz	Antenna Polarization	Emission Level(dBm)	Detector	Limit (dBm)	Margin (dB)	Result
1000-7000	--	Horizontal	--	PK	74	--	Pass
1000-7000	--	Vertical	--	PK	74	--	Pass
7000-40000	11650	Horizontal	48.3	PK	74	25.7	Pass
7000-40000	11650	Vertical	48.63	PK	74	25.37	Pass

Remark:

- (1) Above 1GHz Corrector factor= Antenna Factor +Cable Loss - Amp. Factor.
- (2) Below 1GHz Corrector factor= Antenna Factor +Cable Loss.
- (3) "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBµV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.
- (4) We test all modes and only the worst case for each bandwidth recorded in the report.
- (5) Testing is carried out with frequency rang 30MHz to 40GHz, which data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) The Low frequency, which start from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

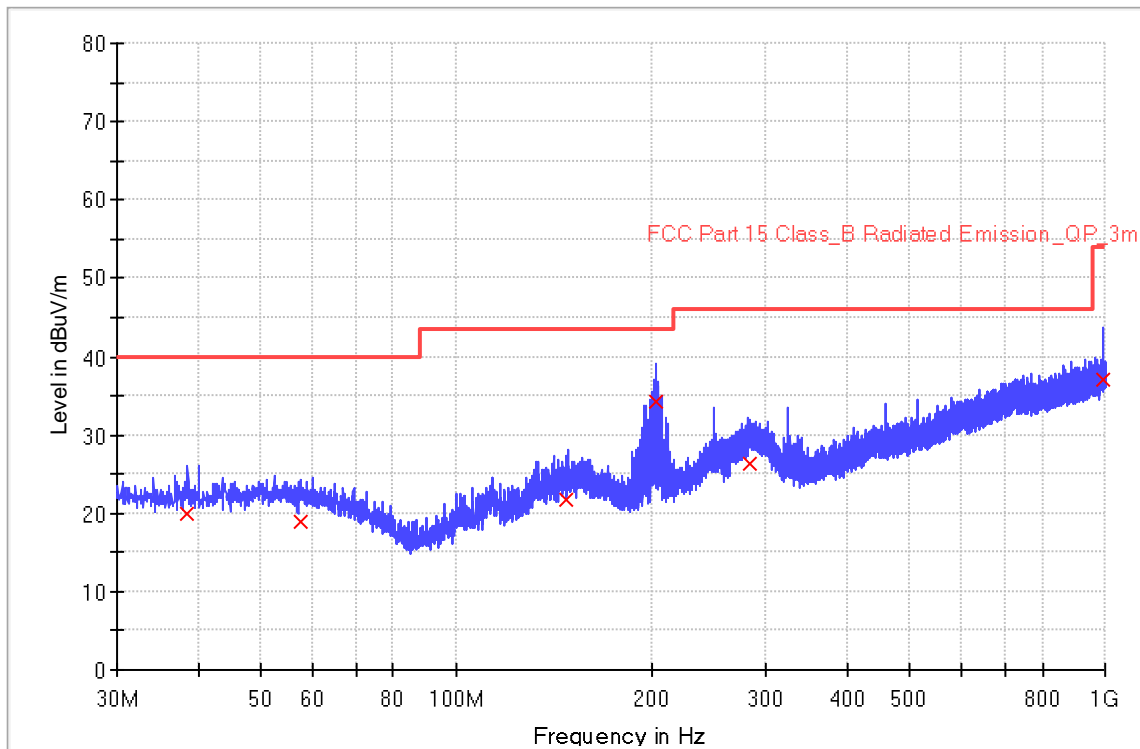


Transmitting spurious emission test result as below:

The worst case of Radiated Emission below 1GHz:

Site: 3 meter chamber	Time: 2023/11/02 - 10:33
Limit: FCC_Part15.209_RE(3m)_ClassB	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Horizontal
EUT: Intraoral Scanner, Model no: Aoralscan 3i Wireless	Power: 120VAC, 60Hz for Cradle
Note: Transmit by at 802.11a channel 5500MHz MIMO.	
Note: Pre-scan with three orthogonal axis and the worst case as X axis.	

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

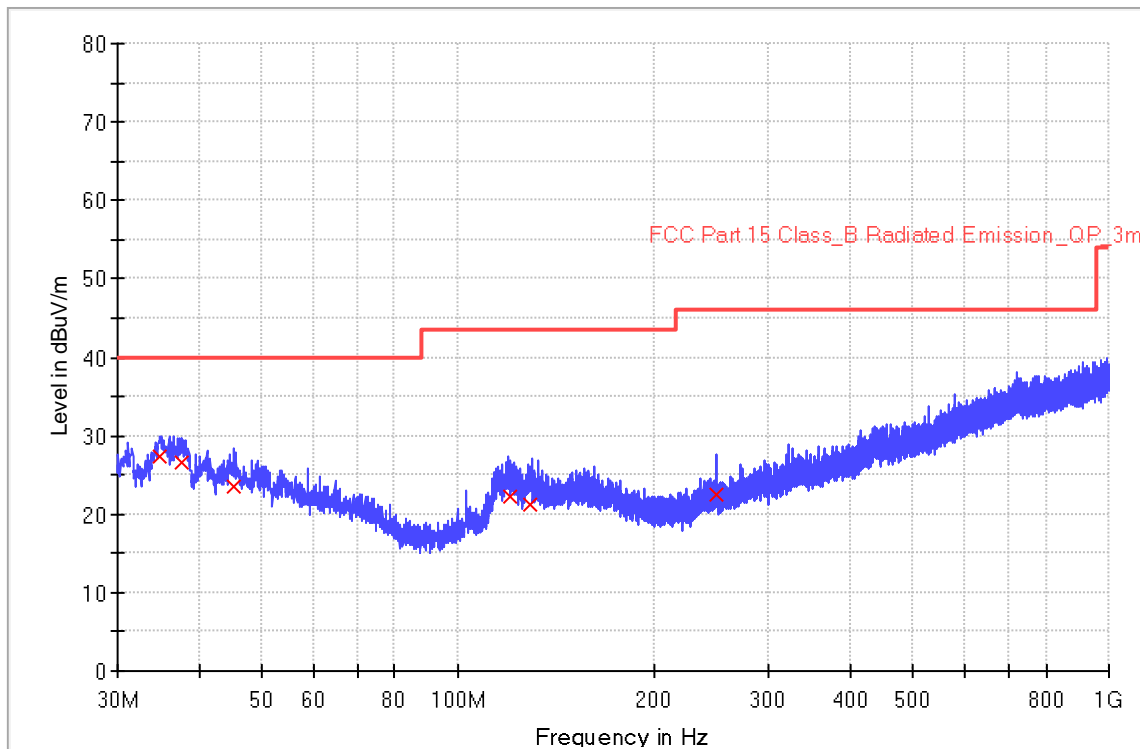
Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
38.520000	19.8	1000.0	120.000	231.0	H	231.0	19.8	20.2	40.0
57.680000	19.0	1000.0	120.000	115.0	H	164.0	20.3	21.0	40.0
147.480000	21.7	1000.0	120.000	251.0	H	314.0	20.9	21.8	43.5
203.600000	34.3	1000.0	120.000	241.0	H	115.0	17.6	9.2	43.5
284.080000	26.3	1000.0	120.000	124.0	H	123.0	21.1	19.7	46.0
990.000000	37.1	1000.0	120.000	154.0	H	359.0	34.4	16.9	54.0



The worst case of Radiated Emission below 1GHz:

Site: 3 meter chamber	Time: 2023/11/02 - 12:01
Limit: FCC_Part15.209_RE(3m)_ClassB	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Vertical
EUT: Intraoral Scanner, Model no: Aoralscan 3i Wireless	Power: 120VAC, 60Hz for Cradle
Note: Transmit by at 802.11a channel 5500MHz MIMO.	
Note: Pre-scan with three orthogonal axis and the worst case as X axis.	

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
34.720000	27.3	1000.0	120.000	123.0	V	321.0	19.4	12.7	40.0
37.520000	26.5	1000.0	120.000	113.0	V	124.0	19.7	13.5	40.0
45.320000	23.5	1000.0	120.000	176.0	V	164.0	20.4	16.5	40.0
120.000000	22.3	1000.0	120.000	121.0	V	211.0	18.1	21.2	43.5
129.020000	21.3	1000.0	120.000	118.0	V	187.0	19.3	22.2	43.5
250.000000	22.5	1000.0	120.000	125.0	V	121.0	19.9	23.5	46.0

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.



10 Test Equipment List

List of Test Instruments
Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
RE	EMI Test Receiver	Rohde & Schwarz	ESR3	101906	2023-8-1	2024-7-31
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2023-8-1	2024-7-31
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	961	2021-9-23	2024-9-22
	Horn Antenna	Rohde & Schwarz	HF907	102393	2021-4-13	2024-4-12
	Pre-amplifier	Rohde & Schwarz	SCU-18D	19006451	2023-8-1	2024-7-31
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2023-6-15	2024-6-14
	Double Ridged Horn Antenna	ETS-Lindgren	3116C	00246076	2023-7-7	2026-7-6
	3m Semi-anechoic chamber	TDK	9X6X6	----	2021-5-8	2024-5-7

Measurement Software Information			
Test Item	Software	Manufacturer	Version
RE	EMC 32	Rohde & Schwarz	V10.50.40

C - Conducted RF tests

- Conducted peak output power
- 6dB Occupied Bandwidth
- Power spectral density*
- Conducted Band Edge and Out-of-Band Emissions



11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Radiated Disturbance	30MHz to 1GHz, ± 5.03 dB (Horizontal) ± 5.12 dB (Vertical) 1GHz to 18GHz, ± 5.15 dB (Horizontal) ± 5.12 dB (Vertical) 18GHz to 25GHz, ± 4.76 dB

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.



12 Photographs of Test Set-ups

Refer to the < Test Setup photos >.



13 Photographs of EUT

Refer to the < External Photos > & < Internal Photos >.

THE END