

FCC - TEST REPORT

Report Number : **709502279703-01A** Date of Issue: July 4, 2023

Model : **Aoralscan 3 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 : 25

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.



1 Table of Contents

1	Table of Contents.....	2
2	Details about the Test Laboratory	3
3	Description of the Equipment under Test	4
4	Summary of Test Standards.....	6
5	Summary of Test Results	7
6	General Remarks.....	8
7	Test Setups.....	9
8	Systems test configuration.....	12
9	Technical Requirement	14
9.1	Unwanted emissions	14
10	Test Equipment List	22
11	System Measurement Uncertainty.....	23
12	Photographs of Test Set-ups	24
13	Photographs of EUT	25



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

Telephone: +86 21 6141 0123

Fax: +86 21 6140 8600

FCC Registration No.: 820234

FCC Designation CN1183
Number:

IC Registration No.: 25988

CAB identifier: CN0101



3 Description of the Equipment under Test

Product:	Intraoral Scanner
Model no.:	Aoralscan 3 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-732724-1

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. So the report is not valid without the report of 709502279703-00A.

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 antenna position of the product is changed. 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: May 31, 2023

Testing Start Date: May 30, 2023


Testing End Date: May 31, 2023

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

Reviewed by:

Prepared by:

Tested by:



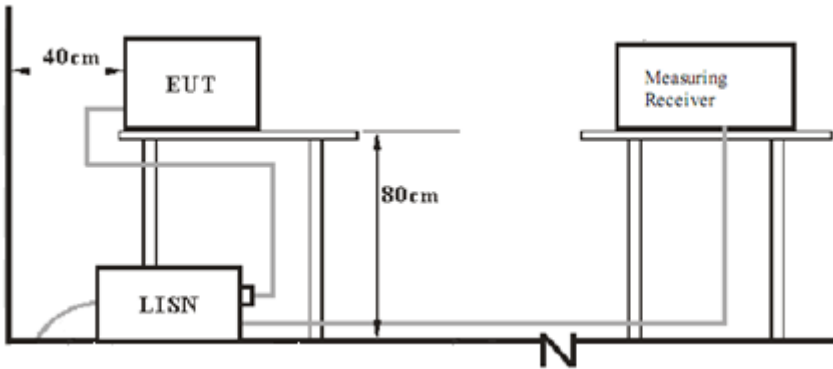

Hui TONG
Review Engineer

Wenqiang LU
Project Engineer

Huali CHENG
Test Engineer

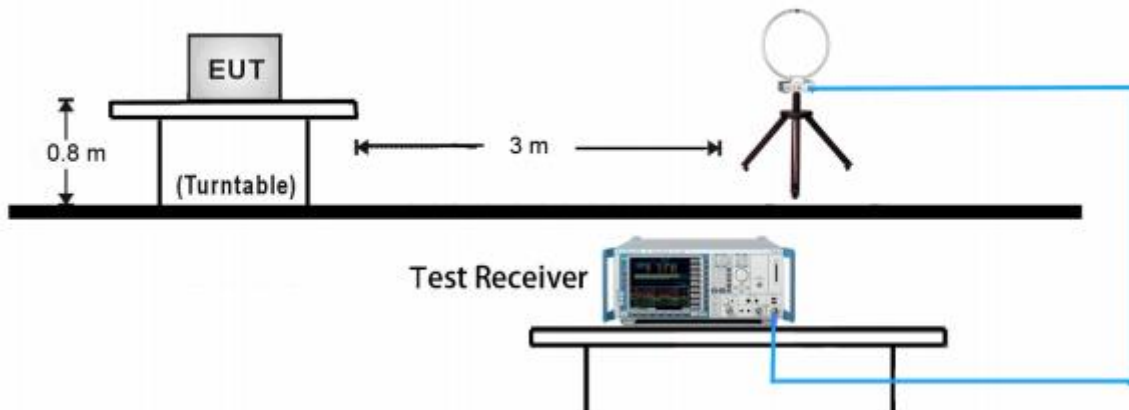
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

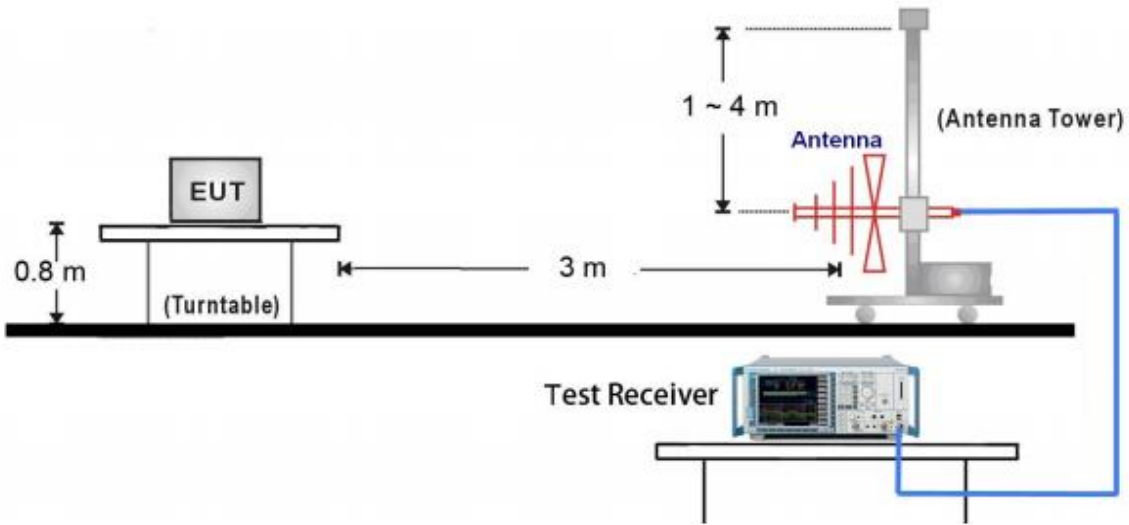


7.2 Radiated test setups

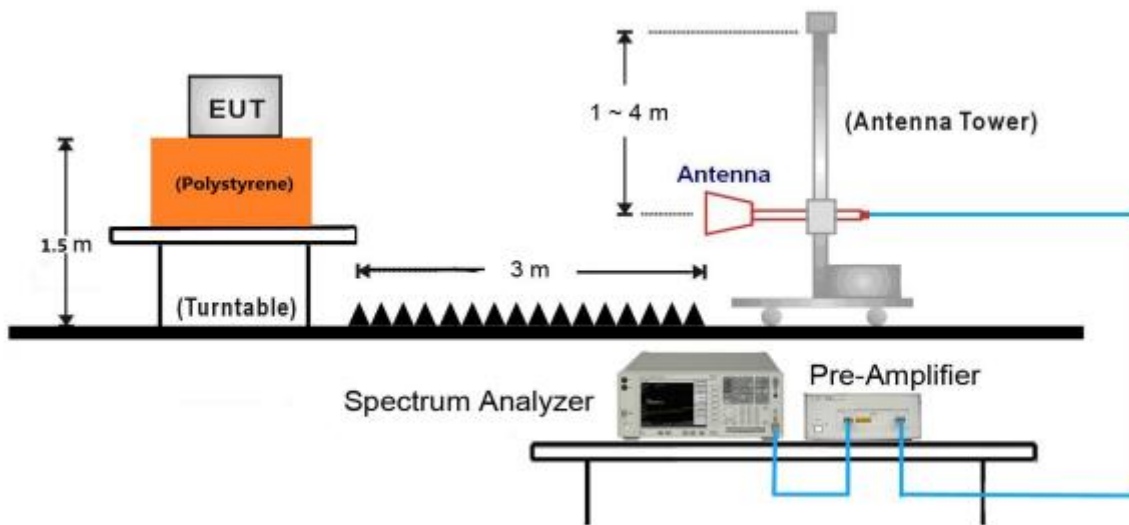
9kHz ~ 30MHz Test Setup:



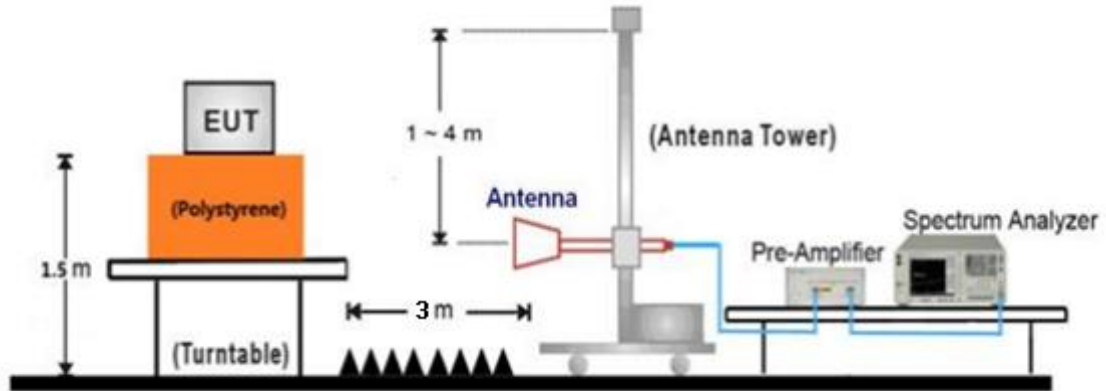
30MHz ~ 1GHz Test Setup:



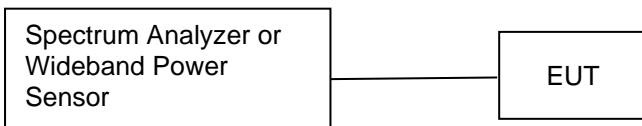
1GHz ~ 18GHz Test Setup:



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	Data Rate
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	48.37	PK	68.2	19.83	Pass
7000-40000	10360	Vertical	48.68	PK	68.2	19.52	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	48.72	PK	68.2	19.48	Pass
7000-40000	10440	Vertical	48.75	PK	68.2	19.45	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	48.57	PK	68.2	19.63	Pass
7000-40000	10480	Vertical	49.53	PK	68.2	18.67	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	48.56	PK	68.2	19.64	Pass
7000-40000	10520	Vertical	48.92	PK	68.2	19.28	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	48.43	PK	68.2	19.77	Pass
7000-40000	10560	Vertical	48.39	PK	68.2	19.81	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	49.67	PK	74	24.33	Pass
7000-40000	10640	Vertical	47.94	PK	74	26.06	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	48.61	PK	74	25.39	Pass
7000-40000	11000	Vertical	48.8	PK	74	25.2	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	48.99	PK	74	25.01	Pass
7000-40000	11200	Vertical	49.15	PK	74	24.85	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	49.59	PK	74	24.41	Pass
7000-40000	11400	Vertical	49.69	PK	74	24.31	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	49.2	PK	74	24.8	Pass
7000-40000	11440	Vertical	49.96	PK	74	24.04	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	49.13	PK	74	24.87	Pass
7000-40000	11490	Vertical	50.03	PK	74	23.97	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	50.38	PK	74	23.62	Pass
7000-40000	11570	Vertical	49.75	PK	74	24.25	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	50	PK	74	24	Pass
7000-40000	11650	Vertical	49.3	PK	74	24.7	Pass

Remark:

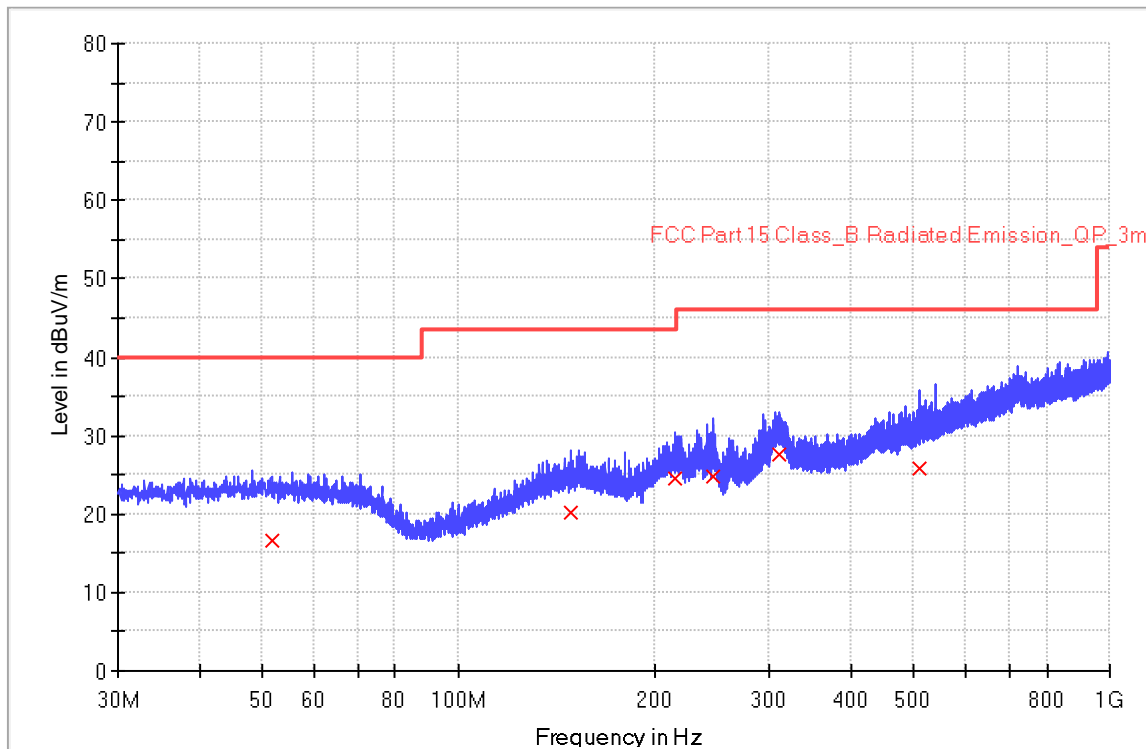
- (1) Above 1GHz Corrector factor= Antenna Factor +Cable Loss - Amp. Factor.
- (2) Below 1GHz Corrector factor= Antenna Factor +Cable Loss.
- (3) "*" is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a "conversion" 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: 2023/05/31 - 11:27
Limit: FCC_Part15.209_RE(3m)_ClassB	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Horizontal
EUT: Intraoral Scanner, Model no: Aoralscan 3 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



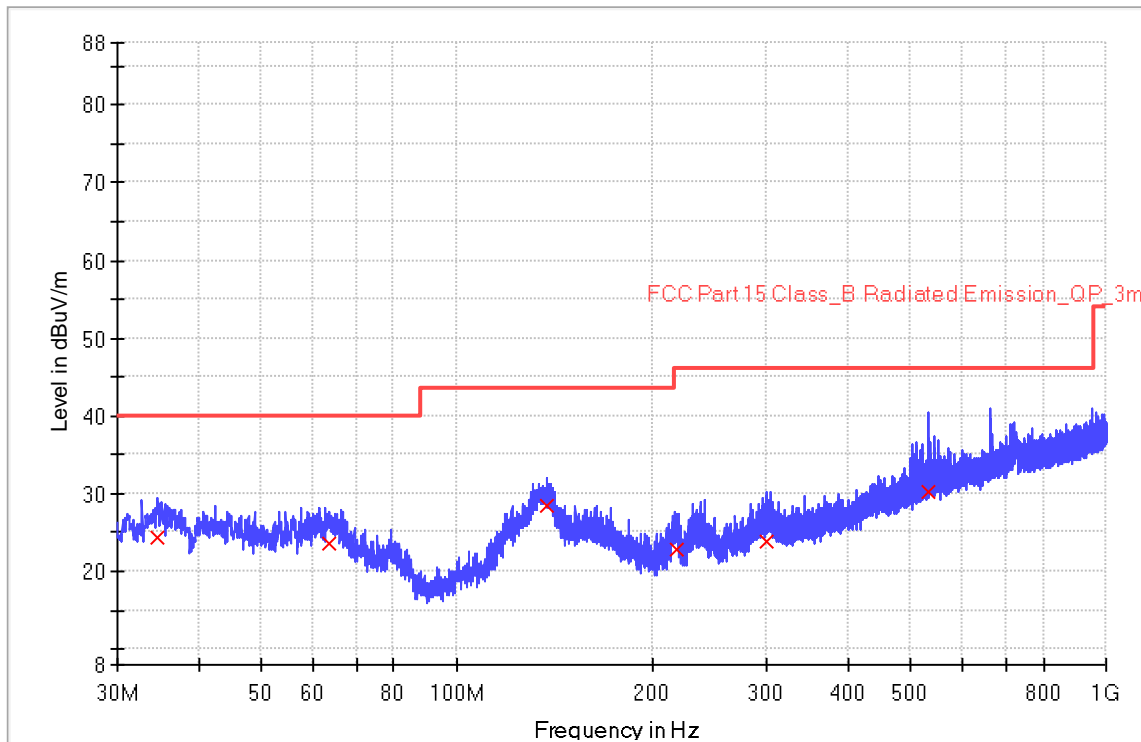
Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
51.600000	16.7	1000.0	120.000	126.0	H	351.0	20.6	23.3	40.0
149.000000	20.3	1000.0	120.000	210.0	H	203.0	21.0	23.2	43.5
214.280000	24.4	1000.0	120.000	114.0	H	245.0	17.5	19.1	43.5
245.280000	24.8	1000.0	120.000	185.0	H	155.0	19.8	21.2	46.0
310.280000	27.6	1000.0	120.000	200.0	H	100.0	21.8	18.5	46.0
511.640000	25.7	1000.0	120.000	103.0	H	310.0	26.8	20.3	46.0

The worst case of Radiated Emission below 1GHz:

Site: 3 meter chamber	Time: 2023/05/31 - 12:49
Limit: FCC_Part15.209_RE(3m)_ClassB	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Vertical
EUT: Intraoral Scanner, Model no: Aoralscan 3 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)
34.560000	24.4	1000.0	120.000	136.0	V	263.0	19.4	15.6	40.0
63.600000	23.6	1000.0	120.000	156.0	V	172.0	19.6	16.4	40.0
137.360000	28.5	1000.0	120.000	114.0	V	314.0	20.1	15.0	43.5
218.720000	22.8	1000.0	120.000	100.0	V	45.0	17.5	23.2	46.0
300.480000	23.9	1000.0	120.000	185.0	V	135.0	21.5	22.2	46.0
531.800000	30.2	1000.0	120.000	105.0	V	216.0	27.0	15.9	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	2022-8-1	2023-7-31
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2022-8-1	2023-7-31
	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	2022-8-1	2023-7-31
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2022-6-13	2023-6-12
	DOUBLE-RIDGED WAVEGUIDE HORN WITH PRE-AMPLIFIER (18 GHZ - 40 GHZ)	ETS-Lindgren	3116C-PA	002222727	2020-9-23	2023-9-22
	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