

1 Cover Page

RF Exposure Evaluation Report

Application No.: KSCR2208001539AT
FCC ID: 2AMSP-DTI1
Applicant: Carl Zeiss AG
Address of Applicant: Carl-Zeiss-Str.22,73447 Oberkochen,Germany
Manufacturer: Carl Zeiss AG
Address of Manufacturer: Carl-Zeiss-Str.22,73447 Oberkochen,Germany
Equipment Under Test (EUT):
EUT Name: Zeiss DTI1
Model No.: DTI 1/19;DTI 1/25

Trade mark:



Standard(s) : FCC Rules 47 CFR §2.1093
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2022-08-26
Date of Test: 2022-08-31 to 2022-09-01
Date of Issue: 2022-09-03

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin
EMC Laboratory Manager



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Compliance Certification Services (Kunshan) Inc.

Report No.: KSCR220800153902

Page: 2 of 7

Revision Record			
Version	Description	Date	Remark
00	Original	2022-09-03	/

Authorized for issue by:				
		Pawn. Liu		
		Pawn.Liu/Project Engineer		
		Eric Lin		
		Eric Lin /Reviewer		



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2 Contents

	Page
1 COVER PAGE	1
2 CONTENTS	3
3 GENERAL INFORMATION	4
3.1 GENERAL DESCRIPTION OF E.U.T.	4
3.2 DETAILS OF E.U.T.	4
3.3 TEST LOCATION.....	5
3.4 TEST FACILITY.....	5
4 TEST STANDARDS AND LIMITS	6
4.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:.....	6
4.2 DUT ANTENNA LOCATIONS	6
5 MEASUREMENT AND CALCULATION.....	7
5.1 MAXIMUM TRANSMIT POWER	7
5.2 RF EXPOSURE CALCULATION.....	7



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 5V 2A by Adapter Battery model:18650 MJ1 Rated Voltage:3.635V Rated Capacity:3350mAh 12.18Wh Typical Capacity:3400mAh 12.3Wh
Product Type:	<input checked="" type="checkbox"/> Portable device <input type="checkbox"/> Mobile device <input type="checkbox"/> Fixed device

3.2 Details of E.U.T.

Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK);802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11;802.11n(HT40):7
Channel Spacing:	5MHz
Data rate:	802.11b: 1/2/5.5/11Mbps, 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n(HT20): MCS0/MCS1/ MCS2/ MCS3/ MCS4/ MCS5/ MCS6/ MCS7 802.11n(HT40): MCS0/MCS1/ MCS2/ MCS3/ MCS4/ MCS5/ MCS6/ MCS7
Antenna Type:	PCB Antenna
Antenna Gain:	-1dBi (Provided by the manufacturer)



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3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

- 1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
- 2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS

Compliance Certification Services (Kunshan) Inc. is accredited by the China National Accreditation Service for Conformity Assessment (CNAS). Registration No. CNAS L4354

• A2LA

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• VCCI

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.



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4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits:

a) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max power of channel})/(\text{min test separation distance})] \cdot \sqrt{f(\text{GHz})} \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

$$P_{\text{max}} \leq 3 \cdot D_{\text{min}} / \sqrt{f} = 3 \cdot 5 / \sqrt{2.462} = 9.56 \text{ mW}$$

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):32

1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz

2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

4.2 DUT Antenna Locations

Refer to internal photosNote

- 1) The distance between WIFI antenna and handle of the EUT is < 5 mm.
- 2) The distance between WIFI antenna and the head of human is 84 mm.
- 3) Only the handle is in contact with human hand in practical use condition.



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5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSCR220800153901.

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	9.43	8.77
11B	2437	Ant1	9.68	9.29
11B	2462	Ant1	9.68	9.29
11G	2412	Ant1	8.96	7.87
11G	2437	Ant1	9.31	8.53
11G	2462	Ant1	9.32	8.55
11N20SISO	2412	Ant1	8.82	7.62
11N20SISO	2437	Ant1	9.16	8.24
11N20SISO	2462	Ant1	9.17	8.26
11N40SISO	2422	Ant1	8.57	7.19
11N40SISO	2437	Ant1	8.73	7.46
11N40SISO	2452	Ant1	8.76	7.52

5.2 RF Exposure Calculation

The Max Conducted Average Output Power is $9.29\text{mW} < 9.56\text{mW}$. The best case gain of the antenna is -1dBi.

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

--End of the Report--



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