

Prüfbericht-Nr.: Test report no.:	CN26E9RY 003	Auftrags-Nr.: Order no.:	27219597	Seite 1 von 10 Page 1 of 10	
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2026-01-24		
Auftraggeber: Client:	Shining 3D Tech Co., Ltd. No. 1398 Xiangbin Road, Wenyan Street, Xiaoshan District, Hangzhou, Zhejiang, 311258, P.R. China				
Prüfgegenstand: Test item:	3D Printer				
Bezeichnung / Typ-Nr.: Identification / Type no.:	Ceramix-Nano				
Auftrags-Inhalt: Order content:	Test Report				
Prüfgrundlage: Test specification:	CFR Title 47 FCC Part 2: Section 2.1091 RSS-102 Issue 6 December 2023				
Wareneingangsdatum: Date of sample receipt:	2026-04-01	Please refer to photo documents			
Prüfmuster-Nr.: Test sample no.:	A004240480-001 A004243109-001-003				
Prüfzeitraum: Testing period:	2026-04-08 - 2026-05-23				
Ort der Prüfung: Place of testing:	Refer to section 2.1				
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: Test result*:	Pass				
geprüft von: tested by:			genehmigt von: authorized by:		
Datum: Date:	2026-06-30	Signed by: Bell Hu		Ausstellungsdatum: Issue date:	2026-06-30
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: 24652-NANO IC: 24652-NANO HVIN: Ceramix-Nano PMN: Ceramix-Nano				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged				
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.					

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfbedingungen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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Test Summary

3.1.1 RF EXPOSURE COMPLIANCE
RESULT: Pass

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1. Test Sites

1.1 Test Facilities

Shenzhen PSI Testing Co., Ltd.

1-2F, Building 5, Yudafu Industrial Park, No. 10, Xingye West Road, Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104
A2LA Certificate Number: 6975.01

CNAS Registration Number: CNAS L19010

Note: TÜV Rheinland (Shenzhen) Co., Ltd. subcontracts the whole test to Shenzhen PSI Testing Co., Ltd., the tests at the test sites have been conducted under the supervision of a TÜV engineer

1.2 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

1.3 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

1.4 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendixes of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2. General Product Information

2.1 Product Function and Intended Use

The product is 3D Printer. It supports 5GHz Wi-Fi and 2.4GHz Wi-Fi.

For details refer to the User Manual, Technical Description and Circuit Diagram.

2.2 Rating and System details

Table 1: General Information of EUT

General Information of EUT	Description
Kind of Equipment:	3D Printer
Type Designation:	Ceramix-Nano
Operating Voltage:	SHINING 3D
Testing Voltage:	120V AC Via AC/DC Adapter
FCC ID:	24652-NANO
IC ID:	24652-NANO
HVIN	Ceramix-Nano
PMN:	Ceramix-Nano
Technical Specification of Wi-Fi 802.11 b/g/n	
Characteristic	Description
Operating Frequency:	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation:	DSSS, OFDM
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0~MCS 7 for 802.11n(HT20/40) (All data rates considered, only the Worst-cases reported)
Channel Number:	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Type:	Integral Antennas
Number of Antenna:	2Tx2Rx
Antenna Gain:	4.15dBi for Antenna 1; 3.23dBi for Antenna 2; Max (Provided by the Client)
Technical Specification of Wi-Fi 802.11 a/n/ac	
Characteristic	Description
Frequency Band:	5150-5250MHz, 5725-5875MHz
Operating Frequency:	5180-5240MHz, 5745-5825MHz
Protocol:	802.11 a/n20/n40/ac20/ac40/ac80
Channel Number:	5180-5240MHz, 7CHs 5745-5825MHz, 8CHs
Type of Modulation:	OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Data Rate:	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS0~MCS7 for 802.11n

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	MCS0~MCS9 for 802.11ac
Channel Separation:	20MHz, 40MHz, 80MHz
TX Power Control (TPC):	Not Support
Antenna Type:	Integral Antenna
Antenna Number:	2Tx2Rx
Antenna Gain:	5150-5250MHz: 3.15dBi for Antenna 1; 2.03dBi for Antenna 2; 5725-5875MHz 5.19dBi for Antenna 1; 1.95dBi for Antenna 2; Max (Provided by the Client)

3. Test Results

3.1 RF Exposure Evaluation

3.1.1 RF Exposure Compliance

RESULT:

Pass

Test standard : CFR Title 47 FCC Part 2.1091
KDB 447498 D01 General RF Exposure Guidance v06
RSS-102 Issue 6

Limit : Table 1 of CFR Title 47 FCC Part 1.1310
Section 6.6 of RSS-102 Issue 6

This device is mobile device, and the applicant declares that the minimum separation distance is greater than 20cm. Therefore, MPE measurement or computational modelling should be used to determine compliance.

3.1.1.1 RF Exposure Compliance Requirement for FCC

a) Radio Frequency Exposure Limit

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

b) Radio Frequency Exposure Calculation Formula

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

or:

$$S = \frac{EIRP}{4\pi R^2}$$

where: EIRP = equivalent (or effective) isotropically radiated power

c) RF Exposure Calculations for FCC, stand-alone mode

Operating Mode	Max. conducted incl. tune-up (dBm)	Max Antenna Gain(dBi)	Distance (cm)	MPE P _d (mW/cm ²)	Limit (mW/cm ²)	Verdict
2.4GHz Wi-Fi	19.00	4.15	20	0.041	1.0	Pass
5.2GHz Wi-Fi	19.50	3.15	20	0.037	1.0	Pass
5.8GHz Wi-Fi	22.50	5.19	20	0.117	1.0	Pass

Refer to reports CN26E9RY 001~002 for power data.

d) RF Exposure Calculations for FCC, Simultaneous mode

Per KDB 447498 D01 v06, simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on calculated or measured field strengths or power density, is ≤ 1.0.

N/A

2.4GHz Wi-Fi and 5GHz Wi-Fi cannot support simultaneous transmission.

e) Conclusion

Therefore the maximum calculations result of above are meet the requirement of Radio Frequency Exposure (MPE) limit.

3.1.1.2 RSS-102 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

The EUT shall comply with the requirement of RSS-102 section 6.6.

Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

a) RF Exposure Calculations for ISED, Stand-alone mode

Operating Mode	Max. conducted incl. tune-up (dBm)	Max Antenna Gain(dBi)	Maximum EIRP (W)	Distance (cm)	Threshold power (W)	Verdict
2.4GHz Wi-Fi	19.00	4.15	0.207	20	2.68	Pass
5.2GHz Wi-Fi	19.50	3.15	0.184	20	4.53	Pass
5.8GHz Wi-Fi	22.50	5.19	0.587	20	4.84	Pass

Note: Refer to reports CN26E9RY 001~002 for power data.

The maximum EIRP lower than the threshold power in section 6.6, thus compliant.

b) RF Exposure Calculations for ISED, Simultaneous mode

N/A

2.4GHz Wi-Fi and 5GHz Wi-Fi cannot support simultaneous transmission.

c) Conclusion

"RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons."