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RF Exposure Evaluation Report

Report No.: CQASZ20240200301E-02
Applicant: TOPDON TECHNOLOGY Co., Ltd.
Address of Applicant: Unit 2005 20/F, Qianhai Shimao Tower, Qianhai Shenzhen-Hong kong Cooperation Zone Shenzhen China
Equipment Under Test (EUT):
EUT Name: Universal Programmer
Model No.: T-Kunai
Test Model No.: T-Kunai
Brand Name: **TOPDON**
FCC ID: 2AVYW-TKUNAI
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt: 2024-02-21
Date of Test: 2024-02-21 to 2024-03-22
Date of Issue: 2024-03-28
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

Lewis Zhou

(Lewis Zhou)

Reviewed By:

Timo Lei

(Timo Lei)

Approved By:

Alex

(Alex Wang)



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20240200301E-02	Rev.01	Initial report	2024-03-28

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3 General Information

3.1 Client Information

Applicant:	TOPDON TECHNOLOGY Co., Ltd.
Address of Applicant:	Unit 2005 20/F, Qianhai Shima Tower, Qianhai Shenzhen-Hong kong Cooperation Zone Shenzhen China
Manufacturer:	TOPDON TECHNOLOGY Co., Ltd.
Address of Manufacturer:	Unit 2005 20/F, Qianhai Shima Tower, Qianhai Shenzhen-Hong kong Cooperation Zone Shenzhen China
Factory:	TOPDON TECHNOLOGY Co., Ltd.
Address of Factory:	Unit 2005 20/F, Qianhai Shima Tower, Qianhai Shenzhen-Hong kong Cooperation Zone Shenzhen China

3.2 General Description of EUT

Product Name:	Universal Programmer
Model No.:	T-Kunai
Test Model No.:	T-Kunai
Trade Mark:	TOPDON
Software Version:	V1.00
Hardware Version:	V1.00
EUT Power Supply:	Power supply adapter
	Model:MX24Z1-1202000
	Input:100-240V~50-60Hz 0.7A
	Output:12V 2.0A 24W

3.3 General Description of NFC

Operation Frequency:	13.56MHz
Modulation Type:	ASK
Number of Channel:	1
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	FPC antenna
Antenna Gain:	0dBi
Cable loss:	1.0 dB

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave Dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure

1) For NFC

Measurement Data

$$EIRP = E_{Meas} + 20\log(d_{Meas}) - 104.7$$

where

$EIRP$ is the equivalent isotropically radiated power, in dBm
 E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m
 d_{Meas} is the measurement distance, in m

EIRP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
-25.84	0.003	1.0

The ERP of this product is less than 1mW

Note: 1) Refer to report No. CQASZ20240200301E-01 for EUT test Max Power value.

2) EUT's module is more than 20cm away from the human body.

*** END OF REPORT ***