TEST REPORT

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1. Applicant

- Name : THINKWARE CORPORATION
- Address : A, 9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
- Date of Receipt : 2025-07-30

2. Use of Report : Certification

3. Type of Equipment / Model : CAR DASH CAM / U3000 PRO

4. Manufacturer / Country of Origin : THINKWARE CORPORATION / South Korea

5. FCC ID : 2ADTG-U3000PRO

6. Date of Test : 2025-08-28 to 2025-09-05

7. Test Standard(method) used : 47 CRF Part 1.1310

8. Test Result : Refer to the test result in the test report

	Tested by	Technical Manager
Affirmation	Name : Seongil Choi (Signature)	Name : Kwonse Kim (Signature)

2025-09-12

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2025-09-09	Originally issued	-
2025-09-12	Added calculation for simultaneous transmission	-

Note. The report No. KR25-SRF0163 is superseded by the report No. KR25-SRF0163-A**.**

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

CONTENTS

1. General information

Applicant	:	THINKWARE CORPORATION.
Address	:	A, 9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
Manufacturer	:	THINKWARE CORPORATION
Address	:	A, 9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132
		VCCI Registration No. : R-20080, G-20078, C-20059, T-20056
		CAB Identifier: KR0040, ISED Number: 8035A
		KOLAS No.: KT231

2. Device information

Equipment under test	:	CAR DASH CAM
Model	:	U3000 PRO
Modulation technique	:	FMCW
Frequency range	:	59 500 ㎒ ~ 62 400 ㎒
Power source	:	DC 12.0 V, DC 24.0 V
Antenna specification	:	Integrated patch Antenna
Antenna gain	:	4.0 dBi
Software version	:	V1.0
Hardware version	:	V4.0
Test device serial No.	:	KAUDAAQ8000131A
Operation temperature	:	-10 ℃ ~ 60 ℃

2.1. Frequency/channel operations

This device contains the following capabilities:
FMCW

Ch.	Frequency (㎓)
01	59.5 ~ 62.4

Table 2.1.1. FMCW

3. RF Exposure

Regulation

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC rules and Regulations.
The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 1-1.
According to FCC §1.1310: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

Table 1 – Limits for Maximum Permissible Exposure (MPE)

Frequency Range (㎒)	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [㎽/㎠]	Averaging Time [minute]
(A) Limits for Occupational / Controlled Exposure				
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 ~ 1 500	/	/	f/300	6
1 500 ~ 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 ~ 1 500	/	/	f/1 500	30
1 500 ~ 100 000	/	/	1.0	30

*f=frequency in ㎒, *= plane-wave equivalent power density*

3.1. Test results

MPE (Maximum Permissive Exposure) Prediction

Predication of MPE limit at a given distance: Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2 \quad \left(\Rightarrow R = \sqrt{PG/4\pi S}\right)$$

S = power density [㎽/㎠]

P = Power input to antenna [㎽]

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 [㎝]

Calculation Result of RF exposure

Frequency [㎒]	Max Tune-up Power [dBm]	Max Tune-up Power [㎽]	Power density at 20 ㎝ [㎽/㎠]	Limit [㎽/㎠]
59 500 ~ 62 400	14.00	25.12	0.004 997	1.00

Note.

1. Maximum tune up: 14.00 ㏈m
2. The power density “Pd” at a distance of 20 ㎝ is calculated.

Simultaneous transmission results of RF exposure

Mode	Frequency Range [㎒]	Max Tune-up Power [dBm]	Power density at 20 ㎝ [㎽/㎠]	Limit [㎽/㎠]
60 ㎓ Radar	59 500 ~ 62 400	14.00	0.004 997	1.00
Low Energy	2 402 ~ 2 480	-3.53	0.000 088	1.00
2.4 ㎓ WLAN (11g)	2 412 ~ 2 462	14.47	0.005 568	1.00
Summation			0.010 653	< 1 (Ratio)

Note.

1. When the sum of ratios of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the 1.0 the additional equipment approval is not required.
2. RF Calculation
   - (0.004 997 / 1) + (0.000 088 / 1) + (0.005 568 / 1) = 0.010 653

End of test report