

RF Exposure Evaluation Declaration

Product Name : TracKing V5
Brand Name : Thermo King
Model No. : TKV5C4
FCC ID : Q37TKV5C4

Applicant : Thermo King Corporation
Address : 314 West 90th Street, Minneapolis, MN USA 55420

Date of Receipt : Dec. 09, 2021
Issued Date : May 24, 2022
Report No. : 21C0364R-RFUSMPEV02-A
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.



Product Name : TrackKing V5
 Applicant : Thermo King Corporation
 Address : 314 West 90th Street, Minneapolis, MN USA 55420
 Manufacturer : Thermo King Corporation
 Address : 314 West 90th Street, Minneapolis, MN USA 55420
 Brand Name : Thermo King
 Model No. : TKV5C4
 FCC ID : Q37TKV5C4
 EUT Voltage : DC 14.2V
 Testing Voltage : DC 14.2V
 Applicable Standard : FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.
 Laboratory Name : DEKRA Testing and Certification Co., Ltd.
 Hsin Chu Laboratory
 Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.
 Test Result : Complied

Documented By : Hailey Peng

 (Hailey Peng / Senior Engineer)

Approved By : Rueyyan Lin

 (Rueyyan Lin / Supervisor)

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Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	May 24, 2022

1. General Information

1.1. EUT General Information

RF General Information				
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)		Modulation Type
Bluetooth	2400-2483.5	2402-2480		LE: GFSK
Evaluation Mode	Band	Frequency Range (MHz)		Modulation Type
		TX	RX	
WWAN WCDMA	WCDMA Band 2	1852.4-1907.6	1932.4-1987.6	BPSK / QPSK / 16QAM / 64QAM
	WCDMA Band 4	1712.4-1752.6	2112.4-2152.6	
	WCDMA Band 5	826.4-846.6	871.4-891.6	
Evaluation Mode	Band	Frequency Range (MHz)		Modulation Type
		Uplink	Downlink	
WWAN LTE	LTE Band 2	1850-1910	1930-1990	QPSK / 16QAM / 64QAM
	LTE Band 4	1710-1755	2110-2115	
	LTE Band 5	824-849	869-894	
	LTE Band 12	699-716	729-746	
	LTE Band 13	777-787	746-756	
	LTE Band 25	1850-1915	1930-1995	
	LTE Band 26	814-849	859-894	

Note:

1. The above EUT information is declared by the manufacturer.
2. The 64QAM modulation for downlink only.

1.2. Test Facility

Laboratory Information

USA : **FCC Registration Number: TW3024**

Canada **CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our

Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	<ol style="list-style-type: none"> No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	<ol style="list-style-type: none"> +886-3-582-8001 +886-3-582-8001
Fax number	<ol style="list-style-type: none"> +886-3-582-8958 +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
<p>Note: Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.</p>	

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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) Test Limit for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Note: f = frequency in MHz; *Plane-wave equivalent power density

Power Density (S) is calculated by the following formula:

$$S=(P*G)/4\pi R^2$$

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

π = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Test Result (PASS/FAIL)
Bluetooth LE	13.780	23.878	0.005	1.000	PASS
WCDMA Band 2	26.830	481.948	0.096	1.000	PASS
WCDMA Band 4	27.890	615.177	0.122	1.000	PASS
WCDMA Band 5	24.230	264.850	0.053	0.549	PASS
LTE Band 2/25	27.330	540.754	0.108	1.000	PASS
LTE Band 4	28.390	690.240	0.137	1.000	PASS
LTE Band 5/26 (Part 22)	24.730	297.167	0.059	0.543	PASS
LTE Band 12	24.340	271.644	0.054	0.466	PASS
LTE Band 13	25.360	343.558	0.068	0.518	PASS
LTE Band 26 (Part 90)	24.780	300.608	0.060	0.543	PASS

Distance (cm): 20

Co-location
<p>Conclusion:</p> <p>The formula of calculated the MPE is: CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1 CPD = Calculation power density LPD = Limit of power density</p> <p>Simultaneous Transmission Analysis Mode:</p> <ol style="list-style-type: none"> Bluetooth function + WWAN WCDMA function = $0.005 + 0.122 = 0.127$, therefore the maximum calculations of above situations are less than the "1" limit. Bluetooth function + WWAN LTE function = $0.005 + 0.137 = 0.142$, therefore the maximum calculations of above situations are less than the "1" limit.

Note:

- The above EUT information is declared by the manufacturer.
- The results are evaluated using the maximum power.