

RF Exposure Report

Report No.: SABURR-WTW-P21040075

FCC ID: S4L4FIC1

Contains module FCC ID: QIPELS61-US

Test Model: 4FIC1

Series Model: 4FIC0

Received Date: May 26, 2021

Test Date: Jun. 01 ~ Jun. 03, 2021

Issued Date: Jun. 16, 2021

Applicant: TomTom International B.V.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003
Designation Number (1):

FCC Registration / 427177 / TW0011
Designation Number (2):



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Release Control Record

Issue No.	Description	Date Issued
SABURR-WTW-P21040075	Original release	Jun. 16, 2021

1 Certificate of Conformity

Product: TomTom BRIDGE Hub

Brand: TOMTOM

Test Model: 4FIC1

Series Model: 4FIC0

Sample Status: Pre-MFB build sample

Applicant: TomTom International B.V.

Test Date: Jun. 01 ~ Jun. 03, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

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Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Jun. 16, 2021
Bruce Chen / Senior Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

For WLAN, BT and BT LE:

Function	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	2412-2462	14.82	1.69	20	0.0089	1
	5180-5240	12.90	3.11	20	0.0079	1
	5260-5320	12.91	3.11	20	0.0080	1
	5500-5700	12.92	3.11	20	0.0080	1
	5745-5825	12.88	3.11	20	0.0079	1
BT EDR	2402-2480	2.14	1.69	20	0.0005	1
BT LE	2402-2480	0.14	1.69	20	0.0003	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

For WWAN: (Base on WWAN module report (model no.: ELS61-US, brand name: GEMALTO, FCC ID: QIPELS61-US))

Function	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WCDMA Band 2	1850-1910	21.53	-5.00	20	0.0089	1
WCDMA Band 4	1710-1755	21.48	-5.00	20	0.0088	1
WCDMA Band 5	824-849	23.93	-5.00	20	0.0155	0.549
LTE Band 2	1850-1910	20.95	-5.00	20	0.0078	1
LTE Band 4	1710-1755	20.96	-5.00	20	0.0078	1
LTE Band 5	824-849	23.12	-5.00	20	0.0129	0.549
LTE Band 12	698-716	23.26	-5.00	20	0.0133	0.465

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

Conclusion:

WLAN (2.4GHz or 5GHz), BT (BT EDR or BT LE) and WWAN technology can transmit simultaneously.

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4GHz + BT + WWAN = 0.0089 / 1 + 0.0005 / 1 + 0.0133 / 0.465 = 0.038$

Therefore the maximum calculations of above situations are less than the "1" limit.

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