

# FCC SAR Exclusion Report

Report No. : SA150106C11  
Applicant : TomTom International BV.  
Address : Rembrandtplein 35 1017 CT Amsterdam The Netherlands  
Product : Video Camera  
Brand : TomTom  
FCC ID : S4L4LB00  
Model No. : 4LB00  
Standards : FCC 47 CFR Part 2 (2.1093) / IEEE C95.1:1992 / IEEE 1528:2003  
IEEE 1528a-2005 / KDB 865664 D01 v01r02  
KDB 248227 D01 v01r02 / KDB 447498 D01 v05r02  
Sample Received Date : Jan. 06, 2015  
Date of Evaluation : Feb. 09, 2015

**CERTIFICATION:** The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, 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 SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

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## Release Control Record

Issue No.	Reason for Change	Date Issued
SA150106C11	Initial release	Feb. 10, 2015

## 1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest Reported SAR <sub>1g</sub> (W/kg)
DTS	2.4G WLAN	Not Required
DSS	Bluetooth	Not Required

**Note:**

1. The SAR limit (**SAR<sub>1g</sub> 1.6 W/kg**) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

## 2. Description of Equipment Under Test

<b>EUT Type</b>	Video Camera
<b>Brand Name</b>	TomTom
<b>FCC ID</b>	S4L4LB00
<b>Model Name</b>	4LB00
<b>Tx Frequency Bands (Unit: MHz)</b>	WLAN : 2412 ~ 2462 Bluetooth : 2402 ~ 2480
<b>Uplink Modulations</b>	802.11b : DSSS 802.11g/n : OFDM Bluetooth : GFSK
<b>Maximum Tune-up Conducted Power (Unit: dBm)</b>	WLAN 2.4G : 6.5 Bluetooth : 8.5
<b>Antenna Type</b>	PIFA Antenna
<b>EUT Stage</b>	Production Unit

### Note:

- The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

### List of Accessory:

<b>Battery Stick</b>	<b>Brand Name</b>	TomTom
	<b>Model Name</b>	4LB02
	<b>Power Rating</b>	3.7Vdc, 1900mAh
	<b>Type</b>	Li-ion
<b>BT Remote Control</b>	<b>Brand Name</b>	TomTom
	<b>Model Name</b>	4LBA2
<b>USB Cable</b>	<b>Brand Name</b>	TomTom
	<b>Model Name</b>	4LBA5
	<b>Signal Line Type</b>	1.5 meter shielded cable without ferrite core

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### 3. SAR Measurement Evaluation

#### 3.1 Maximum Output Power

The maximum conducted power (Unit: dBm) including tune-up tolerance is shown as below.

Mode	2.4G WLAN
802.11b	6.5
802.11g	6.5
802.11n HT20	6.5
802.11n HT40	6.5

Mode	Bluetooth
All	8.5

#### 3.2 SAR Testing Exclusions

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

- For the test separation distance  $\leq 50$  mm

$$\frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \sqrt{f_{(\text{GHz})}} \leq 3.0$$

When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

- For the test separation distance  $> 50$  mm, and the frequency at 100 MHz to 1500 MHz

$$\left[ (\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times \left( \frac{f_{(\text{MHz})}}{150} \right) \right]_{(\text{mW})}$$

- For the test separation distance  $> 50$  mm, and the frequency at  $> 1500$  MHz to 6 GHz

$$[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times 10]_{(\text{mW})}$$

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
WLAN2.4G	6.5	4	0	1.3	No
BT	8.5	7	0	2.2	No

#### Note:

- When separation distance  $\leq 50$  mm and the calculated result shown in above table is  $\leq 3.0$ , the SAR testing exclusion is applied.
- When separation distance  $> 50$  mm and the device output power is less than the calculated result (power threshold, mW) shown in above table, the SAR testing exclusion is applied.

#### Summary:

Since the SAR testing for all device orientations apply SAR test exclusion per KDB 447498, SAR testing for this device is not required.

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### 4. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Taiwan HwaYa EMC/RF/Safety/Telecom Lab:**

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The road map of all our labs can be found in our web site also.

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