

RF Exposure Report

Report No.: MFBDBQ-WTW-P22030274

FCC ID: JUP-TD540

Test Model: TD540-W

Series Model: TD540

Received Date: Mar. 18, 2022

Date of Evaluation: May 26, 2022

Issued Date: Jun. 14, 2022

Applicant: Trimble Inc.

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



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Release Control Record

Issue No.	Description	Date Issued
MFBDBQ-WTW-P22030274	Original Release	Jun. 14, 2022

1 Certificate of Conformity

Product: 10" Touch Display

Brand: Trimble

Test Model: TD540-W

Series Model: TD540

Sample Status: Engineering Sample

Applicant: Trimble Inc.

Date of Evaluation: May 26, 2022

FCC Rule Part: FCC Part 2 (Section 2.1091)

Standards: 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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Approved by : Jeremy Lin, **Date:** Jun. 14, 2022
Jeremy Lin / 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				
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

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

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

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

Maximum measured transmitter power:

Frequency (MHz)	Electric field (dBuV/m) @3m	Max. Power EIRP (dBm)	Max. Power EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)
13.56	59.80	-35.43	0.0002864	0.00000006	0.978

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	2412-2462	20.97	5.57	20	0.090	1.00
	5180-5240	20.76	7.15	20	0.123	1.00
	5260-5320	21.06	7.15	20	0.132	1.00
	5500-5700	21.03	7.15	20	0.131	1.00
	5745-5825	22.41	7.15	20	0.180	1.00
BT EDR	2402-2480	3.57	2.68	20	0.001	1.00
BT LE	2402-2480	3.62	2.68	20	0.001	1.00

Note:

1. The EUT contains certified WLAN+BT module (Brand: AzureWave, Model: AW-CM276NF, FCC ID: TLZ-CM276NF).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
3. Calculate SAR test exclusion thresholds from condition "3" formulas.
4. Field Strength (dBuV/m@3m) = Field Strength (dBuV/m@30m) + 40*log(30/3).
5. Max Power (dBm) = Field Strength of Fundamental (dBuV/m@3m) – 95.23,
 Max Power (mW) = 10^{(Max power (dBm)/10)}

4 Conclusion

Both of the WLAN, BT and NFC can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

For WLAN and BT density data, please refer to report no.: MFBECO-WTW-P20100054F

$$\text{WLAN 5GHz} + \text{BT} + \text{NFC} = 0.180/1 + 0.001/1 + 0.00000006/0.978 = 0.181$$

$$\text{WLAN 2.4GHz} + \text{BT} + \text{NFC} = 0.090/1 + 0.001/1 + 0.00000006/0.978 = 0.091$$

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

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