RF Exposure Report

Report No.:	FCC_RF_SL19121803-TRB-030_RF Exposure Rev_1.0
FCC ID:	JUP-8311891
Test Model:	SPS855
Series Model:	N/A
Received Date:	02/04/2020
Issued Date:	02/26/2020
Applicant:	Trimble Inc.
Address:	935 Stewart Drive, Sunnyvale, CA 94085, USA
Manufacturer:	Trimble Inc.
Address:	935 Stewart Drive, Sunnyvale, CA 94085, USA
Issued By:	Bureau Veritas Consumer Products Services, Inc.
Lab Address:	775 Montague Expressway, Milpitas, CA 95035
FCC Registration / Designation Number:	540430

TESTING CERT # 2742-01

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Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL19121803-TRB-030_RF Exposure	Orignal Release	02/05/2020
FCC_RF_SL19121803-TRB-030_RF Exposure Rev_1.0	Update Per Customer Review	02/26/2020

1 Certificate of Conformity

Product:	GNSS Receiver with integrated 900MHz FHSS radio and optional BT modem
Brand:	Trimble Inc.
Test Model:	SPS855
Series Model:	N/A
Sample Status:	Engineering sample
Applicant:	Trimble Inc.
Issue Date:	02/26/2020
Standards:	FCC Part 2 (Section 2.1093) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas 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 EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** 02/26/2020

Deon Dai / Test Engineer

Approved by : _____ , **Date:** 02/26/2020

Chen Ge / Engineer Reviewer

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

$Pd = (Pout*G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 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 25cm away from the body of the user. So, this device is classified as Mobile Device.

2.4 Antenna Gain

900MHz antenna is 2dBi / BT antenna is 2.5dBi

2.5 Co-location

BT Module FCC ID: Z64-2564N

2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Max Power (mW)	Turn-Up Tolerance	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2440	11.36	13.68	±1dB	2	25	0.0035	1
902.6	28.62	727.78	±1dB	2.5	25	0.208	0.602

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Calculate MPE thresholds from condition “1” formulas.

3 Conclusion

The formula for colocation MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

Total = 0.0035 + 0.208/0.602 = 0.0035 + 0.34 = 0.349 < 1

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

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