

RF Exposure Evaluation

Test report

**On Behalf of
The Tintometer Ltd**

**For
Portable Spectrophotometer**

Model No.: TR500

FCC ID: 2AWMG-TR500

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Date of Test: **Jun. 05, 2020 ~ Jun.18, 2020**

Date of Report: **Jun. 18, 2020**

1 General Description of EUT

Product Name	Portable Spectrophotometer
Model/Type reference	TR500
Serial Model	TR520, TR515
Model Difference	All models have the same functionality, software and electronics, only the color, front frame shape and model names may differ. Test sample model: TR500
Trade Mark	Lovibond
FCC ID	2AWMG-TR500
Hardware Version	2.002.40.0108
Software Version	V1.0.1.2
Operation frequency	2402MHz ~ 2480MHz
Channel separation	2MHz
Channel number	40
Modulation Technology	GFSK
Antenna Type	Chip Antenna
Antenna Gain	2dBi
Power Supply	DC 3.7V from battery & Adapter
Adapter Information	MODEL: DSA-12PFU-05 FUS 050200 INPUT: 100V-240V~50/60Hz 0.5A OUTPUT: 5V ---2A

2 RF Exposure Compliance Requirement

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}$$

Where $f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The results is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

3 EUT RFExposure

Antenna Gain: 0dBi

Define the minimum distance: 5mm

For Bluetooth:

GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	5.239	0±1	6.0	3.9811	1.2340	3.0
Middle (2440MHz)	6.554	0±1	6.0	3.9811	1.2437	
Highest (2480MHz)	6.938	0±1	6.0	3.9811	1.2539	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Note: For maximum peak conducted output power, please refer to Test report BLE