

RF Exposure Report

Report No.: SA151229C25

FCC ID: M82-TREK733L

Test Model: TREK-733L

Received Date: Apr. 14, 2016

Test Date: Jun. 09 ~ Nov. 24, 2016

Issued Date: Nov. 25, 2016

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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Release Control Record

Issue No.	Description	Date Issued
SA151229C25	Original release.	Nov. 25, 2016

1 Certificate of Conformity

Product: Computer

Brand: Advantech

Test Model: TREK-733L

Sample Status: Engineering sample

Applicant: ADVANTECH CO., LTD

Test Date: Jun. 09 ~ Nov. 24, 2016

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 (October 23, 2015)

IEEE C95.1

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 EMC characteristics under the conditions specified in this report.

Prepared by : , **Date:** Nov. 25, 2016

Suntee Liu / Specialist

Approved by : , **Date:** Nov. 25, 2016

Ken Liu / Senior Manager

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

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

where

Pd = power density in mW/cm²

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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN: 2412~2462	21.77	2.87	20	0.058	1
BT EDR: 2402~2480	0.18	2.87	20	0.0004	1
BT LE: 2402~2480	7.01	2.87	20	0.002	1

Note: WLAN 2.4GHz, BT EDR and BT LE technologies can not transmit at same time.

Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
GPRS: 824.2 ~ 848.8	30.3	32.45	20	0.350	0.549
EDGE: 824.2 ~ 848.8	27.3	29.45	20	0.175	0.549
WCDMA Band 5: 826.4 ~ 846.6	20.7	22.85	20	0.038	0.551
CDMA BC0: 824.7 ~ 848.31	22.7	24.85	20	0.061	0.550
CDMA BC10: 824.7 ~ 848.31	19.0	21.15	20	0.026	0.550
EVDO BC10: 824.7 ~ 848.31	18.7	20.85	20	0.024	0.550
LTE Band 5	23.1	25.25	20	0.067	0.550
LTE Band 13	21.9	24.05	20	0.031	0.520
LTE Band 17	21.8	23.95	20	0.030	0.471

Note: ERP=EIRP-2.15

Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
GPRS: 1850.2 ~ 1909.8	27.5	20	0.112	1
EDGE: 1850.2 ~ 1909.8	24.5	20	0.056	1
WCDMA Band 2: 1852.4 ~ 1907.6	20.2	20	0.021	1
WCDMA Band 4: 1712.4 ~ 1752.6	21.1	20	0.026	1
CDMA BC1: 1851.25 ~ 1908.75	21.9	20	0.031	1
LTE Band 2	24.5	20	0.056	1
LTE Band 4	22.6	20	0.036	1
LTE Band 25	24.6	20	0.057	1

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WWAN 2/3G + LTE 4G = 0.058/1 + 0.350/0.549 + 0.067/0.550 = 0.058 + 0.638 + 0.122 = 0.818 < 1

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