

RF Exposure Report

Report No.: SABHAA-WTW-P21040941

FCC ID: JOYCW1011

Test Model: AL-T51A2-2

Series Model: AL-T52V1, AL-T51A2-1

Received Date: Apr. 25, 2021

Test Date: Apr. 29 ~ May 02, 2021

Issued Date: May 10, 2021

Applicant: Kyocera Corporation

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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SABHAA-WTW-P21040941	Original release.	May 10, 2021

1 Certificate of Conformity

Product: Telematics Module

Brand: Kyocera

Test Model: AL-T51A2-2

Series Model: AL-T52V1, AL-T51A2-1

Sample Status: Engineering Sample

Applicant: Kyocera Corporation

Test Date: Apr. 29 ~ May 02, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.3 -2002

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.

Prepared by : Gina Liu, **Date:** May 10, 2021
Gina Liu / Specialist

Approved by : Dylan Chiou, **Date:** May 10, 2021
Dylan Chiou / Senior 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 Power

Function	Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WCDMA Band 5	826.4~846.6	16.5	18.65	20	0.015	0.551
FCC Part 22: LTE Band 26 (Channel Bandwidth 1.4MHz)	824.7~848.3	21.3	23.45	20	0.044	0.550
FCC Part 90: LTE Band 26 (Channel Bandwidth 1.4MHz)	814.7~823.3	22.6	24.75	20	0.059	0.543

Note: ERP=EIRP-2.15

Function	Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WCDMA Band 2	1852.4~1907.6	21.6	20	0.029	1
WCDMA Band 4	1712.4~1752.6	17.8	20	0.012	1
LTE Band 2 (Channel Bandwidth 10MHz)	1850.7~1909.3	25.9	20	0.077	1
LTE Band 4 (Channel Bandwidth 10MHz)	1715.0~1750.0	24.0	20	0.050	1
LTE Band 12 (Channel Bandwidth 1.4MHz)	699.7~715.3	23.2	20	0.042	0.466

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Max.: WWAN 3G + WWAN 4G = $0.029/1 + 0.059/0.543 = 0.029 + 0.109 = 0.138 < 1$

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