

RF Exposure Report

Report No.: SABHAA-WTW-P20090611

FCC ID: JOYDA39

Test Model: AL-T51A2-2

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

Received Date: Sep. 26, 2020

Test Date: Sep. 29 ~ Oct. 06, 2020

Issued Date: Oct. 15, 2020

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-P20090611 | Original release. | Oct. 15, 2020 |

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: Sep. 29 ~ Oct. 06, 2020

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.

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Approved by : Bruce Chen, **Date:** Oct. 15, 2020
Bruce Chen / 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

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

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 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 | 17.0 | 19.15 | 20 | 0.016 | 0.551 |
| LTE Band 12 (Channel Bandwidth 1.4MHz) | 699.7~715.3 | 21.75 | 23.90 | 20 | 0.049 | 0.466 |
| FCC Part 22: LTE Band 26 (Channel Bandwidth 1.4MHz) | 824.7~848.3 | 21.8 | 23.95 | 20 | 0.049 | 0.550 |
| FCC Part 90: LTE Band 26 (Channel Bandwidth 1.4MHz) | 814.7~823.3 | 23.1 | 25.25 | 20 | 0.067 | 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 | 22.1 | 20 | 0.032 | 1 |
| WCDMA Band 4 | 1712.4~1752.6 | 18.1 | 20 | 0.013 | 1 |
| LTE Band 2 (Channel Bandwidth 10MHz) | 1850.7~1909.3 | 27.5 | 20 | 0.112 | 1 |
| LTE Band 4 (Channel Bandwidth 10MHz) | 1715.0~1750.0 | 24.5 | 20 | 0.056 | 1 |

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 = $0.032/1 + 0.112/1 = 0.032 + 0.112 = 0.144 < 1$

---END---