

MPE REPORT

FCC

APPLICANT

Universal Electronics Inc

MODEL NAME

H74426

FCC ID

MG3-H74426

REPORT NUMBER

HA210825-UEI-008-R04

TEST REPORT

Date of Issue
January 24, 2022

Test Site
Hyundai C-Tech, Inc. dba HCT America, Inc.
1726 Ringwood Ave, San Jose, CA 95131, USA

| | |
|---------------------------|--|
| Applicant | Universal Electronics Inc |
| Applicant Address | 201 East Sandpointe Ave 7 th Floor, Santa Ana, CA 92707, U.S.A. |
| FCC ID | MG3-H74426 |
| Model Name | H74426 |
| EUT Type | Motion Sensor |
| FCC Classification | Digital Transmission System (DTS) |
| FCC Rule Part(s) | Part 1 (§1.1310), Part 2 (§2.1091) |
| Test Procedure | KDB 447498 D01 v06 |

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was in accordance with the procedures specified in §2.947. The results in this report apply only to the product which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Hyundai C-Tech, Inc. dba HCT America, Inc. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By

Yongsoo Park

Test Engineer

Reviewed By

Sunwoo Kim

Technical Manager

REVISION HISTORY

The revision history for this document is shown in table.

| TEST REPORT NO. | DATE | DESCRIPTION |
|----------------------|------------------|---------------|
| HA210825-UEI-008-R04 | January 24, 2022 | Initial Issue |
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1. EUT DESCRIPTION

| | |
|--|--|
| Model | H74426 |
| EUT Type | Motion Sensor |
| Power Supply | 3 V d.c. (3 V d.c. Non-rechargeable Lithium Battery) |
| RF Specification | IEEE 802.15.4 |
| Transmitter Chain | 1 |
| Antenna Specification ¹⁾ | Antenna Type : PCB trace Peak Gain : 1.5 dBi |
| Operating Environment | Indoor |
| Operating Temperature | 0 °C ~ +45 °C |

Note(s) :

1. Antenna information is based on the document provided.

2. INTRODUCTION

2.1. LIMIT

The limit for Maximum Permissible Exposure (MPE), specified in FCC Rule Part §1.1310 listed in the table below, shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation specified in §1.1310 (b)

| Frequency Range (MHz) | E- Field Strength (V/m) | H- Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (Minutes) |
|--|-------------------------|-------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational / Controlled Exposure | | | | |
| 0.3 – 3.0 | 614 | 1.63 | *100 | 6 |
| 3.0 – 30 | 1842 / f | 4.89 / f | *900 / f ² | 6 |
| 30 – 300 | 61.4 | 0.163 | 1.0 | 6 |
| 300 – 1,500 | - | - | f / 300 | 6 |
| 1,500 – 100,000 | - | - | 5 | 6 |
| (B) 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 – 1,500 | - | - | f / 1500 | 30 |
| 1,500 – 100,000 | - | - | 1.0 | 30 |

f = frequency in MHz, * = Plane-wave equivalent power density

2.2. MAXIMUM PERMISSIBLE EXPOSURE PREDICTION

Prediction of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S : Power density (mW/cm²)

P : Output power to antenna (mW)

G : Antenna gain in linear scale

R : Distance between the center of radiator and observation point (cm)

3. RESULT

3.1. MPE Calculation

| IEEE 802.15.4 | | | | |
|-------------------------------------|-----------------|--------------------|------------------------------|----|
| Frequency (MHz) | 2405 - 2480 | MHz | | |
| MPE Limit (mW/cm ²) | 1 | mW/cm ² | | |
| Distance (R) | 20 | Cm | | |
| Output Power (P) ¹⁾ | 19.9 | dBm | 97.72 | mW |
| Antenna Gain (G) | 1.5 | dBi | 1.41 | - |
| Power density (S) at distance 20 cm | 0.027462 | mW/cm ² | at 20 cm separation distance | |

Note :

1) Maximum output power including tune-up tolerance

3.2. SUMMARY OF RESULTS

| Mode | Frequency Range (MHz) | Ant Gain (dBi) | MPE Calculation (mW/cm ²) | MPE Ratio (PD/MPE Limit) |
|---------------|-----------------------|----------------|---------------------------------------|--------------------------|
| IEEE 802.15.4 | 2405 – 2480 | 1.5 | 0.027462 | 0.027462 |

Sample Calculation

TOTAL MPE (20cm distance) = $0.027462/1 = 0.027462 < 1.0$

END OF TEST REPORT