# RF Exposure Evaluation Declaration

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|---|---|---|
| Product Name | : | basicDIM Wireless Sensor |
| Model No. | : | basicDIM Wireless Sensor 5DP 38rc US |
| FCC ID | : | 2AMXZ-0004 |

| | | |
|---|---|---|
| Applicant | : | Tridonic GmbH&Co KG |
| Address | : | Färbergasse 15 6851 Dornbirn Austria |

| | | |
|---|---|---|
| Date of Receipt | : | Feb. 22, 2019 |
| Test Date | | Feb. 23, 2019~ Mar. 15, 2019 |
| Issued Date | : | Mar. 28, 2019 |
| Report No. | : | 1922064R-RF-US-P20V01 |
| Report Version | : | V1.0 |

# Test Report Certification

Issued Date : Mar. 28, 2019
Report No. : 1922064R-RF-US-P20V01

| | | |
|---|---|---|
| Product Name | : | basicDIM Wireless Sensor |
| Applicant | : | Tridonic GmbH&Co KG |
| Address | : | Färbergasse 15 6851 Dornbirn Austria |
| Manufacturer | : | Hytronik Electronics Co., LTD. |
| Address | : | 3rd Floor, block C, complex building, 155#, Bai'gang road south, Xiao Jin Kou town, Huicheng district, Huizhou, Guangdong, china<br>Guangdong, china south, Xiao Jin Kou town, Huicheng district, Huizhou,<br>Guangdong, china |
| Model No. | : | basicDIM Wireless Sensor 5DP 38rc US |
| FCC ID | : | 2AMXZ-0004 |
| EUT Voltage | : | 120-277VAC 50/60Hz Max.0.01A |
| Test Voltage | : | AC 120V/60Hz |
| Brand Name | | TRIDONIC |
| Applicable Standard | : | KDB 447498D01V06<br>FCC Part1.1310 |
| Test Result | : | Complied |
| Performed Location | : | DEKRA Testing and Certification (Suzhou) Co., Ltd.<br>No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China<br>TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098<br>FCC Registration Number: CN1199 |

Documented By : Kitty Li

( Adm. Specialist: Kitty Li )

Reviewed By : Frank he

(Senior Project Manager: Frank He )

Approved By : Jack zhang

(Engineering Supervisor: Jack Zhang)

# 1. RF Exposure Evaluation

## 1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm2) | Average Time (Minutes) |
|---|---|---|---|---|
| (A) Limits for Occupational/ Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100,000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/ Uncontrolled Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100,000 | -- | -- | 1 | 30 |

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

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

Pd is the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

## 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18℃and 78% RH.

## 1.3. Test Result of RF Exposure Evaluation

| | | |
|---|---|---|
| Product | : | basicDIM Wireless Sensor |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6 |

Antenna Information:

| | | | | | | |
|---|---|---|---|---|---|---|
| Model No. | N/A | | | | | |
| Antenna manufacturer | N/A | | | | | |
| Antenna Delivery | ☒ | 1*TX+1*RX | ☐ | 2*TX+2*RX | ☐ | 3*TX+3*RX |
| Antenna technology | ☒ | SISO | | | | |
| | ☐ | MIMO | ☐ | Basic | | |
| | | | ☐ | CDD | | |
| | | | ☐ | Sectorized | | |
| | | | ☐ | Beam-forming | | |
| Antenna Type | ☐ | External | ☐ | Dipole | | |
| | | | ☐ | Sectorized | | |
| | ☒ | Internal | ☐ | PIFA | | |
| | | | ☒ | PCB | | |
| | | | ☐ | Ceramic Chip Antenna | | |
| | | | ☐ | Dipole Antenna | | |

| Antenna Technology | Ant Gain (dBi) |
|---|---|
| ☒ SISO | 0 |

- Output Power into Antenna & RF Exposure Evaluation Distance
- Standlone modes

| Test Mode | Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|---|
| BLE | 2400 ~ 2483.5 | 2.36 | 0 | 0.1078 | 1.0 |

Note: The simultaneous transmission power density is 0.1078mW/cm$^2$ for basicDIM Wireless Sensor without any other radio equipment.

The End