



RF Exposure Evaluation Declaration

FCC ID: BRWDUETARG1
APPLICANT: Yuneec Technology Co., Limited

Application Type: Certification
Product: Hobbyzone Duet RTF
Model No.: HBZ5300
Brand Name: E-flite
FCC Classification: Digital Transmission System (DTS)
Test Procedure(s): KDB 447498 D01v06

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The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.
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Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|----------------|------------|-------|
| 1809RSU015-U2 | Rev. 01 | Initial Report | 10-14-2018 | Valid |
| | | | | |

1. PRODUCT INFORMATION

1.1. Equipment Description

| | |
|----------------------|-------------------------|
| Product Name | Hobbyzone Duet RTF |
| Model No. | HBZ5300 |
| Brand Name | E-flite |
| ZigBee Specification | 802.15.4 |
| Power Supply | By Battery 3.7V, 150mAh |

1.2. Product Specification Subjective

| | |
|--------------------|---------------------------|
| Frequency Range | 802.15.4: 2405 ~ 2475 MHz |
| Type of Modulation | O-QPSK |
| Antenna Type | Dipole Antenna |
| Antenna Gain | 1dBi |

2. RF Exposure Evaluation

2.1. Limits

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

| MHz | 5 | 10 | 15 | 20 | 25 | mm |
|------|----|----|-----|-----|-----|-----------------------------------|
| 150 | 39 | 77 | 116 | 155 | 194 | SAR Test Exclusion Threshold (mW) |
| 300 | 27 | 55 | 82 | 110 | 137 | |
| 450 | 22 | 45 | 67 | 89 | 112 | |
| 835 | 16 | 33 | 49 | 66 | 82 | |
| 900 | 16 | 32 | 47 | 63 | 79 | |
| 1500 | 12 | 24 | 37 | 49 | 61 | |
| 1900 | 11 | 22 | 33 | 44 | 54 | |
| 2450 | 10 | 19 | 29 | 38 | 48 | |
| 3600 | 8 | 16 | 24 | 32 | 40 | |
| 5200 | 7 | 13 | 20 | 26 | 33 | |
| 5400 | 6 | 13 | 19 | 26 | 32 | |
| 5800 | 6 | 12 | 19 | 25 | 31 | |

| MHz | 30 | 35 | 40 | 45 | 50 | mm |
|------|-----|-----|-----|-----|-----|-----------------------------------|
| 150 | 232 | 271 | 310 | 349 | 387 | SAR Test Exclusion Threshold (mW) |
| 300 | 164 | 192 | 219 | 246 | 274 | |
| 450 | 134 | 157 | 179 | 201 | 224 | |
| 835 | 98 | 115 | 131 | 148 | 164 | |
| 900 | 95 | 111 | 126 | 142 | 158 | |
| 1500 | 73 | 86 | 98 | 110 | 122 | |
| 1900 | 65 | 76 | 87 | 98 | 109 | |
| 2450 | 57 | 67 | 77 | 86 | 96 | |
| 3600 | 47 | 55 | 63 | 71 | 79 | |
| 5200 | 39 | 46 | 53 | 59 | 66 | |
| 5400 | 39 | 45 | 52 | 58 | 65 | |
| 5800 | 37 | 44 | 50 | 56 | 62 | |

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * \sqrt{f(\text{GHz})} \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

2.2. Test Result of RF Exposure Evaluation

| | |
|-----------|------------------------|
| Product | Hobbyzone Duet RTF |
| Test Item | RF Exposure Evaluation |

| Test Mode | Frequency Band (MHz) | Maximum Output Power (dBm) | SAR Test Exclusion Threshold (mW) |
|-----------|----------------------|----------------------------|-----------------------------------|
| ZigBee | 2405 ~ 2475 | -4.93 | 10 |

Note: Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances < 50mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth SAR was not required;

$$[(0.3214\text{mW}/5) * \sqrt{2.405}] = 0.10 < 3.0$$

Note: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

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