# Bestway Inflatables & Material Corp.

# MPE ASSESSMENT REPORT

**Report Type:**
FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

**Model:**
54185E

**REPORT NUMBER:**
190402507SHA-003

**ISSUE DATE:**
July 1, 2019

**DOCUMENT CONTROL NUMBER:**
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Report no.: 190402507SHA-003

Total Quality. Assured.

**TEST REPORT**

| | |
|---|---|
| **Applicant:** | Bestway Inflatables & Material Corp.<br>No. 3065 Cao An Road, Shanghai, China |
| **Manufacturer:** | Bestway Inflatables & Material Corp.<br>No. 3065 Cao An Road, Shanghai, China |
| **Manufacturing site:** | Bestway (Nantong) Recreation Corp.<br>No.8 West Huimin Road, Rugao Economic Development Zone, Jiangsu, China |
| **Product Name:** | SPA |
| **Type/Model:** | 54185E |
| **FCC ID:** | 2ACGN-BW54185 |

**SUMMARY:**

| The equipment complies with the requirements according to the following standard(s) or Specification: |
|---|
| KDB447498 D01 General RF Exposure Guidance v06<br>FCC Part2.1091, FCC Part2.1093, FCC Part1.1307(b) |

| **PREPARED BY:** | **REVIEWED BY:** |
|---|---|
| Wade zhang | Daniel |
| Project Engineer<br>Wade Zhang | Reviewer<br>Daniel Zhao |

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# Revision History

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| 190402507SHA-003 | Rev. 01 | Initial issue of report | July 1, 2019 |
| | | | |
| | | | |

TEST REPORT

# 1 GENERAL INFORMATION

## 1.1 Description of Equipment Under Test (EUT)

| | |
|---|---|
| Product name: | SPA |
| Type/Model: | 54185E |
| Description of EUT: | The EUT is a SPA which was install a WIFI module. |
| Rating: | 110~120VAC 60Hz, 12A |
| Software Version: | / |
| Hardware Version: | / |
| Sample received date: | May 20, 2019 |
| Date of test: | May 20, 2019 ~ June 28, 2019 |

## 1.2 Technical Specification

| | |
|---|---|
| Frequency Range: | 2412MHz ~ 2462MHz |
| Support Standards: | IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40 |
| Type of Modulation: | IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK)<br>IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK)<br>IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK) |
| Channel Number: | 11 Channels for 802.11b, 802.11g and 802.11n(HT20)<br>7 Channels for 802.11n(HT40) |
| Data Rate: | IEEE 802.11b: Up to 11 Mbps<br>IEEE 802.11g: Up to 54 Mbps<br>IEEE 802.11n-HT20: Up to MCS7<br>IEEE 802.11n-HT40: Up to MCS7 |
| Channel Separation: | 5 MHz |
| Antenna: | Internal antenna, 2.0dBi Peak gain |

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## 1.3 Description of Test Facility

| | |
|---|---|
| Name: | Intertek Testing Services Shanghai |
| Address: | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China |
| Telephone: | 86 21 61278200 |
| Telefax: | 86 21 54262353 |

| | |
|---|---|
| The test facility is recognized, certified, or accredited by these organizations: | CNAS Accreditation Lab<br>Registration No. CNAS L0139 |
| | FCC Accredited Lab<br>Designation Number: CN1175 |
| | IC Registration Lab<br>CAB identifier.: CN0051 |
| | VCCI Registration Lab<br>Registration No.: R-14243, G-10845, C-14723, T-12252 |
| | A2LA Accreditation Lab<br>Certificate Number: 3309.02 |

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# 2 MPE Assessment

**Test result: Pass**

## 2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

| Frequency range | E-field strength (V/m) | H-field strength (A/m) | B-field (uT) | Equivalent plane wave power density $S_{eq}$ ($W/m^2$) |
|---|---|---|---|---|
| 0-1 Hz | - | $3,2 \times 10^4$ | $4 \times 10^4$ | - |
| 1-8 Hz | 10 000 | $3,2 \times 10^4/f^2$ | $4 \times 10^4/f^2$ | - |
| 8-25 Hz | 10 000 | 4 000/f | 5 000/f | - |
| 0,025-0,8 kHz | 250/f | 4/f | 5/f | - |
| 0,8-3 kHz | 250/f | 5 | 6,25 | - |
| 3-150 kHz | 87 | 5 | 6,25 | - |
| 0,15-1 MHz | 87 | 0,73/f | 0,92/f | - |
| 1-10 MHz | $87/f^{1/2}$ | 0,73/f | 0,92/f | - |
| 10-400 MHz | 28 | 0,073 | 0,092 | 2 |
| 400-2 000 MHz | $1,375\ f^{1/2}$ | $0,0037\ f^{1/2}$ | $0,0046\ f^{1/2}$ | f/200 |
| 2-300 GHz | 61 | 0,16 | 0,20 | 10 |

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

## 2.2 Assessment Results

Power density (S) is calculated according to the formula:

**$S = PG / (4\pi R^2)$**

Where S = power density in $mW/cm^2$
P = Radiated transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

As we can see from the test report 190402507SHA-001:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

| Frequency band | Power | | Antenna Gain | | R | S | Limits |
|---|---|---|---|---|---|---|---|
| (MHz) | dBm | mW | dBi | (Numeric) | (cm) | ($mW/cm^2$) | ($mW/cm^2$) |
| 2412 - 2462 | 18.71 | 74.30 | 2 | 1.58 | 20 | 0.023 | 1 |

Note: 1 mW/cm2 from 1.310 Table 1

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# Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

********** END **********