



RF Exposure Evaluation Declaration

FCC ID: Q6WBSE151
Applicant: Steelmate Co., Ltd.
Application Type: Certification
Product: Microwave Blind Spot Detection System
Model No.: SBS-1
Serial Model No.: SBS-2, SBS-3, MBS-1, PB-1, TBS-1
Brand Name: STEEL MATE
Test Rule(s): Part 95 Subpart M, Section 95.3385
Test Date: November 27 ~ December 21, 2018

Reviewed By: *Sunny Sun*
(Sunny Sun)

Approved By: *Robin Wu*
(Robin Wu)



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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|----------------|------------|-------|
| 1811RSU007-U2 | Rev. 01 | Initial Report | 12-21-2018 | Valid |
| | | | | |

§2.1033 General Information

| | |
|--------------------------------|---|
| Applicant: | Steelmate Co., Ltd. |
| Applicant Address: | Steelmate Industrial Park, Heping Street, Dongfu Road, Dongfeng Town, Zhongshan City, Guangdong, P.R. China |
| Manufacturer: | Steelmate Co., Ltd. |
| Manufacturer Address: | Steelmate Industrial Park, Heping Street, Dongfu Road, Dongfeng Town, Zhongshan City, Guangdong, P.R. China |
| Test Site: | MRT Technology (Suzhou) Co., Ltd |
| Test Site Address: | D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China |
| FCC Registration No.: | 893164 |
| Test Device Serial No.: | N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering |

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



1. PRODUCT INFORMATION

1.1. Equipment Description

| | |
|---------------------|---------------------------------------|
| Product Name | Microwave Blind Spot Detection System |
| Brand Name | STEEL MATE |
| Model No. | SBS-1 |
| Serial Model No. | SBS-2, SBS-3, MBS-1, PB-1, TBS-1 |
| Frequency Range | 77~81GHz |
| Type of Modulation | FMCW |
| Emission Designator | 3G03N0N |
| Antenna Type | Integrated antenna |

Note: The difference between models is only for marketing requirements.

2. RF EXPOSURE EVALUATION

2.1. Limits

FCC 95.3385

Regardless of the power density levels permitted under this subpart, devices operating under the provisions of this subpart are subject to the radiofrequency radiation exposure requirements specified in §§1.1307(b), 2.1091, and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

§2.1091 Radiofrequency radiation exposure evaluation: portable devices

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (Minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/ Control Exposures | | | | |
| 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 Exposures | | | | |
| 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

Calculation Formula: $Pd = (Pout * G) / (4 * Pi * r^2) = E / (4 * Pi * r^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

E = EIRP in mW

G = gain of antenna in linear scale

Pi = 3.14

r = distance between observation point and center of the radiator in cm

2.2. Test Result of RF Exposure Evaluation

| | |
|-----------|---------------------------------------|
| Product | Microwave Blind Spot Detection System |
| Test Item | RF Exposure Evaluation |

| Frequency Range (GHz) | Maximum EIRP (dBm) | Power Density at r = 20 cm (mW/cm ²) | Limit (mW/cm ²) |
|-----------------------|--------------------|--|-----------------------------|
| 77 ~ 81 | 26 | 0.0792 | 1 |

CONCLUSION:

The **Power density** at 20cm as below:

$$P_d(20\text{cm}) = E/(4 \cdot \pi \cdot r^2) = 10^{(26/10)} / (4 \cdot 3.14 \cdot 20^2) \text{ mW/cm}^2 = 0.0792 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

So the EUT complies with the FCC 95.3385 requirement.

_____ The End _____

Appendix A - Test Setup Photograph

Refer to "1811RSU007-UT" file.

Appendix B - EUT Photograph

Refer to "1811RSU007-UE" file.