



EMF TEST REPORT

Applicant RAE Systems, Inc
Product RMBLED
Brand Honeywell
Model RMBLED
Report No. R1908A0478-M1
Issue Date September 11, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **EN 50665:2017, EN 62311:2008**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Approved by: Guangchang Fan

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment under Test

Client Information

Applicant	RAE Systems, Inc
Applicant address	1349 Moffett Park Drive, Sunnyvale, CA94089, USA
Manufacturer	RAE Systems, Inc
Manufacturer address	1349 Moffett Park Drive, Sunnyvale, CA94089, USA

General Technologies

Model	RMBLED
IMEI	/
Hardware Version	Rev A
Software Version	V2.0
Date of Testing:	August 28, 2019 ~ September 8, 2019

3 Maximum conducted output power (measured) and antenna Gain

Band	Maximum Average Conducted Output Power (dBm)	Antenna Gain (dBi)
BLE	4.930	2.000

4 Test Result

According to EN62311:2008 and 2014/53/EU, limits for maximum permissible exposure (EMF) are as following:

Frequency range	E-field strength (V m ⁻¹)	H-field strength (A m ⁻¹)	B-field (μT)	Equivalent plane wave power density S _{eq} (W m ⁻²)
up to 1 Hz	—	3.2 × 10 ⁴	4 × 10 ⁴	—
1–8 Hz	10,000	3.2 × 10 ⁴ /f ²	4 × 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	1.375f ^{1/2}	0.0037f ^{1/2}	0.0046f ^{1/2}	f/200
2–300 GHz	61	0.16	0.20	10

The maximum permissible exposure for 2-300GHz is 10, so

Band	The maximum permissible exposure (W/ m ²)
BLE	10.000

The transmitter is using external antennas that operate at 20 cm or more from nearby persons.
The maximum permitted level is calculated using the general equation:

$$S = PG / 4\pi R^2$$

where: S = power density (in appropriate units, e.g. W/m²)
P = power input to the antenna (in appropriate units, e.g., W)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., m)

Solving for S, the power density at 20 cm is

Band	PG (dBm)	PG (W)	Test Result (W/m ²)	Limit Value (W/m ²)	Conclusion
BLE	6.930	0.005	0.010	10.000	Pass
Note: R = 0.2 m π = 3.1416					

So the limit is kept.

Note: For mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate EMF distance is less.