

RF EXPOSURE TEST REPORT

Report No.: SHE23100021-01CER

Date: 2023-10-24

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Applicant

: Atlas Aerospace SIA

Address of Applicant

: Ulbrokas Street 19A, 1021 Riga, Latvia

Product Name

: Atlas Radio Module

Brand Name

: ATLAS

Model Name

: ATR-200

Sample Acquisition Method

: Sent by Client

Sample No.

: E23100021-01#02

FCC ID

: 2BCPM-ATLATR200

Standard

: FCC Part 2.1093

Date of Receipt

: 2023-10-11

Date of Test

: 2023-10-11~2023-10-18

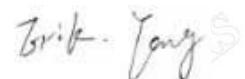
Date of Issue

: 2023-10-24

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

Prepared by:



(Erik Yang)

Reviewed by:



(Jennifer Zhou)

Approved by:



报告专用章



NCA

英格尔检测技术服务(上海)有限公司
ICAS TESTING TECHNOLOGY SERVICE (SHANGHAI) CO., LTD

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1 General Information

1.1 Testing Laboratory

| | |
|--------------|---|
| Company Name | ICAS Testing Technology Service (Shanghai) Co., Ltd. |
| Address | No.1298, Pingan Road, Minhang District, Shanghai, China |
| Telephone | 0086 21-51682999 |
| Fax | 0086 21-54711112 |
| Homepage | www.icasiso.com |

1.2 Details of Application

| | |
|---------------------------|---------------------------------------|
| Applicant Company Name | Atlas Aerospace SIA |
| Address | Ulbokas Street 19A, 1021 Riga, Latvia |
| Contact Person | Arturs Neitals |
| Telephone | +37129778900 |
| Email | certification@atlasdynamics.eu |
| Manufacturer Company Name | Atlas Aerospace SIA |
| Address | Ulbokas Street 19A, 1021 Riga, Latvia |

1.3 Details of EUT

| | |
|------------------|---|
| Product Name | Atlas Radio Module |
| Brand Name | ATLAS |
| Test Model Name | ATR-200 |
| FCC ID | 2BCPM-ATLATR200 |
| Frequency Range | 2405MHz ~ 2469MHz |
| Modulation Type | OFDM |
| RF Output Power | Bandwidth 5M: 20.67dBm Bandwidth 20M: 21.28dBm |
| Antenna Type | External Antenna |
| Antenna Gain | 1.52dBi |
| Hardware Version | ATR-200-04-FD2 |
| Software Version | r0+13092-74da93979e |

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2 Assessment methods

According to KDB 447498 D04 Interim General RF Exposure Guidance v01

Appendix B

Exemptions for Single RF Sources

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of $\lambda/4$.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) | | | | | | | | | |
|-----------------|---------------|----|----|-----|-----|-----|-----|-----|-----|-----|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 300 | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450 | 22 | 44 | 67 | 89 | 112 | 135 | 158 | 180 | 203 | 226 |
| 835 | 9 | 25 | 44 | 66 | 90 | 116 | 145 | 175 | 207 | 240 |
| 1900 | 3 | 12 | 26 | 44 | 66 | 92 | 122 | 157 | 195 | 236 |
| 2450 | 3 | 10 | 22 | 38 | 59 | 83 | 111 | 143 | 179 | 219 |
| 3600 | 2 | 8 | 18 | 32 | 49 | 71 | 96 | 125 | 158 | 195 |
| 5800 | 1 | 6 | 14 | 25 | 40 | 58 | 80 | 106 | 136 | 169 |

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3 Conclusion

Per KDB 447498 D04 Interim General RF Exposure Guidance v01 Appendix B, when the minimum test separation distance is 40 mm, a distance of 40 mm is applied to determine SAR test exclusion. The test exclusion threshold is <143mW.

RF Maximum Output Power:

Bandwidth 5M: 20.67dBm

Bandwidth 20M: 21.28dBm

ERP:

Bandwidth 5M: 20.04dBm (100.93mW) <143mW

Bandwidth 20M: 20.65dBm (116.14mW) <143mW

So SAR testing is not required. RF exposure Evaluation Results: Compliance

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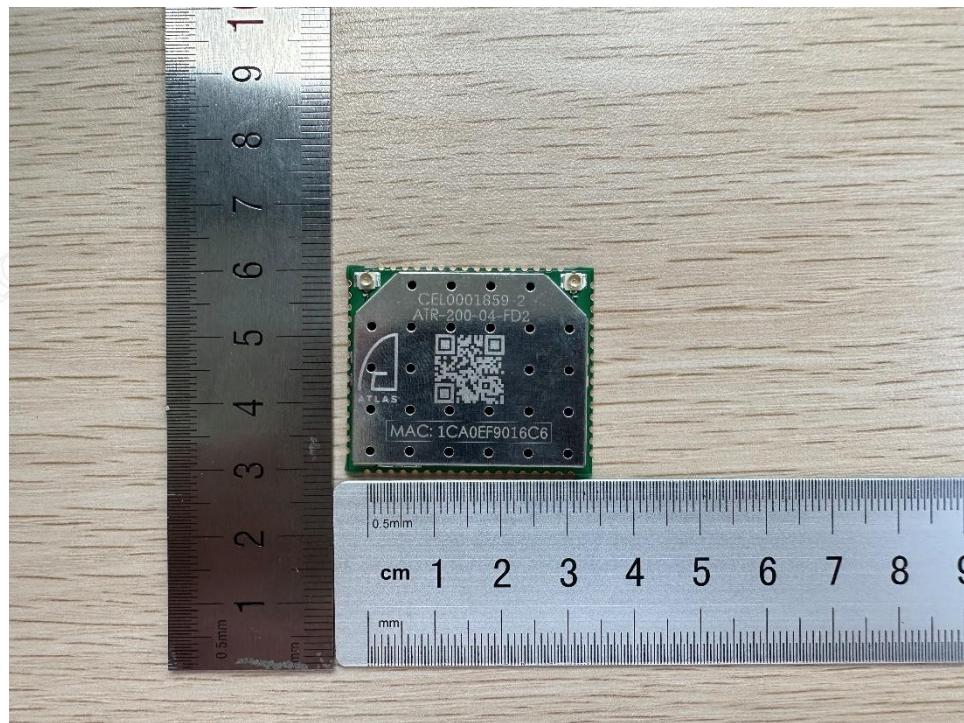
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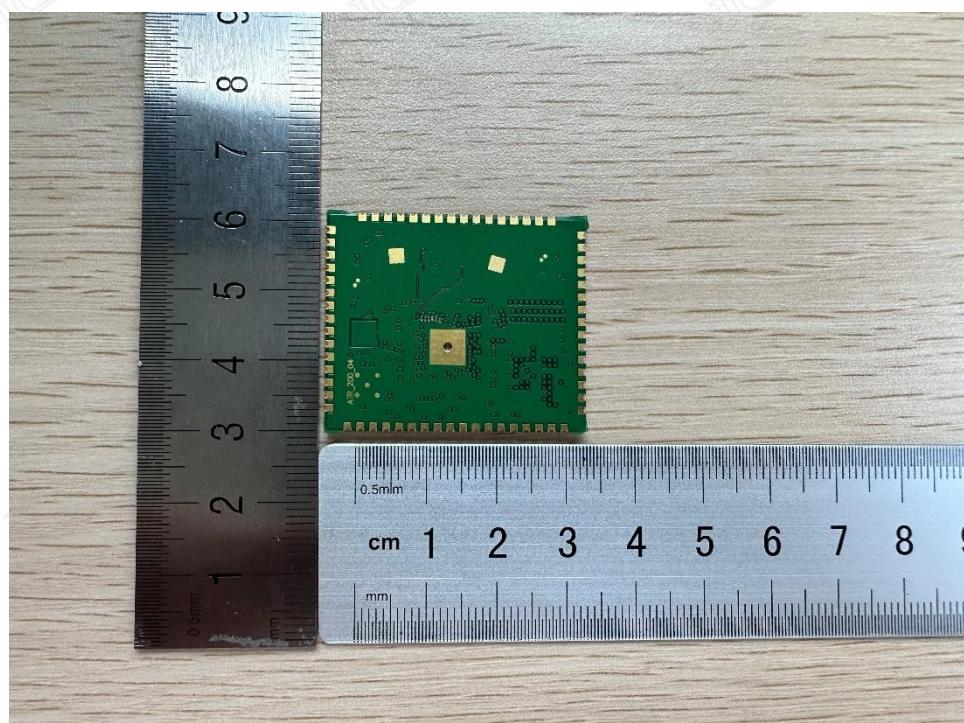
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4 Appendixes

4.1 Sample Photograph



Front of the sample



Rear of the sample

End of the report

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