



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.

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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	Ulbrokas Street 19A, 1021 Riga, Latvia
Contact Person	Arturs Neitals
Telephone	+37129778900
Email	certification@atlasdynamics.eu
Manufacturer Company Name	Atlas Aerospace SIA
Address	Ulbrokas 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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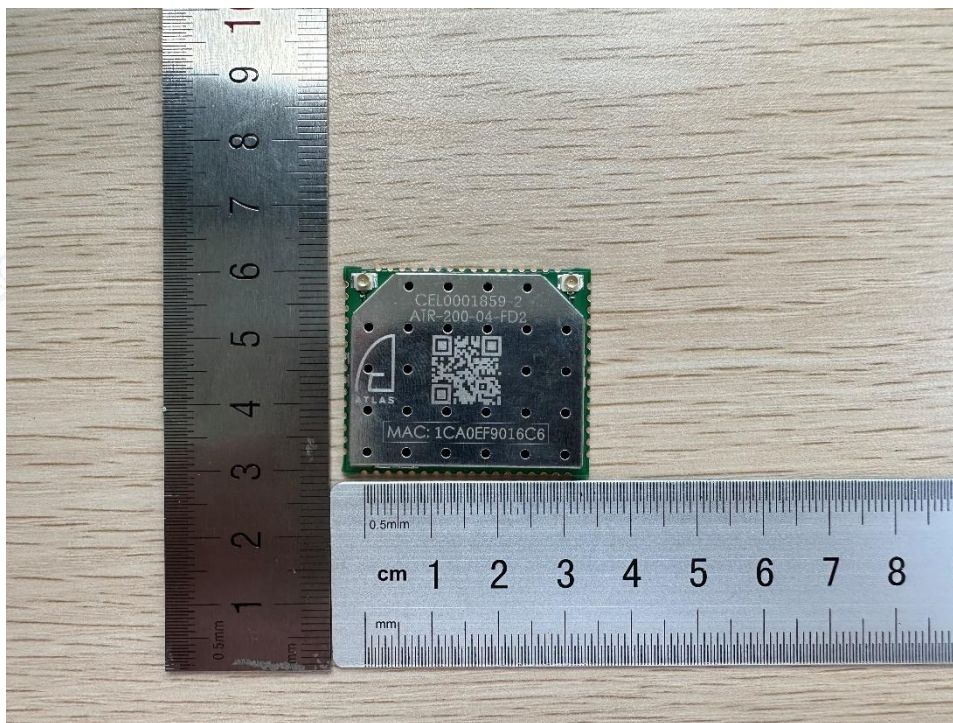
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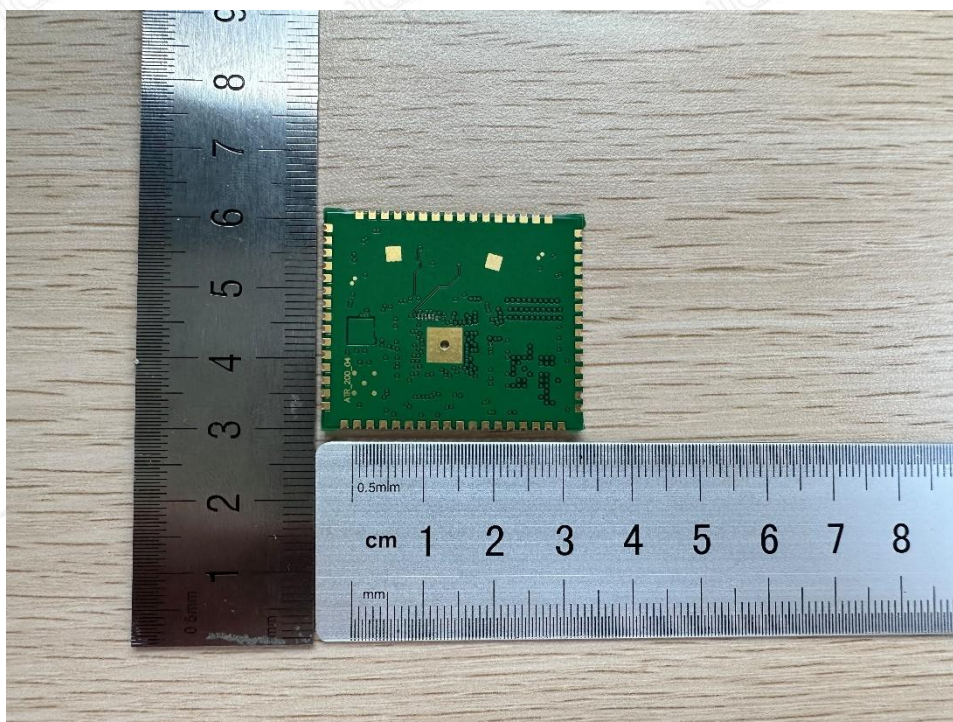
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4 Appendixes

4.1 Sample Photograph



Front of the sample



Rear of the sample

End of the report

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