

HAIER US APPLIANCE SOLUTIONS, INC. **SAR EXEMPTION REPORT**

SCOPE OF WORK

SAR EXEMPTION – RFID MODULE (239D8341)

REPORT NUMBER

106491368ATL-004

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RF EXPOSURE REPORT

Report Number: 106491368ATL-004

Project Number: G106491368

Issue Date: 06 March 2026

PMN: Next Gen RFID Board

Model(s) Tested: 239D8341

FCC ID: ZKJ-239D8341

IC: 10229A-239D8341

Standards: FCC Title 47 CFR Parts 1.1307
RSS-102, Issue 6

Test Location

Intertek
1950 Evergreen Blvd., Suite 100
Duluth, GA 30096 USA
FCC Designation: US1046
CAB Designator: US0128

Client

Haier US Appliance Solutions, Inc.
Appliance Park AP5-2N-65
Louisville, KY 40225 USA

Report prepared by



Jeremy Pickens / Senior Staff Engineer

Report reviewed by



Uri Spector / Sr. EMC Staff Engineer

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1 Introduction and Conclusion

RF Exposure measurements were performed on the product constructed as described in Section 4.

Based on the results of our investigation, we have concluded the product under evaluation complies with the standard(s) indicated. The results obtained in this test report pertain only to the item(s) evaluated. Intertek does not make any claims of compliance for samples or variants which were not evaluated.

2 Evaluation Summary

Section	Test full name	Result
5	SAR Exemption (FCC Title 47 CFR Part 1.1307)	Compliant
6	SAR Exemption (RSS-102 Issue 6)	Compliant

3 Client Information

This evaluation was performed at the request of

Client: Haier US Appliance Solutions, Inc.
Appliance Park AP5-2N-65
Louisville, KY 40225 USA

Contact: Maegan Williams

Email: Maegan.Williams@geappliances.com

4 Description of Equipment Under Test

Manufacturer: Haier US Appliance Solutions, Inc.
Appliance Park AP5-2N-65
Louisville, KY 40225 USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
RFID Module	Haier US Appliance Solutions, Inc.	239D8341	11705000551

Receive Date:	11 February 2026
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)

The RFID module is a 13.56MHz transceiver for use in appliances.

Certification Purpose

Original Limited Modular Approval Certification: The RFID radio is based on a chip down design.

Radio/Receiver Characteristics	
Frequency Range	13.56MHz
Field Strength (3m):	67.11dBµV/m (measured)
Antenna Type	Loop

4.1 Justification

For this evaluation, the fundamental field strength measured at 3 meters was used to calculate the resultant power density at a distance of 20cm. Field strength data was obtained from Intertek test report 106491368ATL-003.

5 Maximum Permissible Exposure Criteria

Per 447498 D01 General RF Exposure Guidance v06 Section 4.3.1, for frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$.

Appendix C

SAR Test Exclusion Thresholds for < 100 MHz and < 200 mm

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	< 50	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	237	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	mW
50	308	617	625	634	643	651	660	669	677	686	695	703	712	721	729	738	
10	474	948	961	975	988	1001	1015	1028	1041	1055	1068	1081	1095	1108	1121	1135	
1	711	1422	1442	1462	1482	1502	1522	1542	1562	1582	1602	1622	1642	1662	1682	1702	
0.1	948	1896	1923	1949	1976	2003	2029	2056	2083	2109	2136	2163	2189	2216	2243	2269	
0.05	1019	2039	2067	2096	2125	2153	2182	2211	2239	2268	2297	2325	2354	2383	2411	2440	
0.01	1185	2370	2403	2437	2470	2503	2537	2570	2603	2637	2670	2703	2737	2770	2803	2837	

5.1 Calculations

Using linear interpolation on the table in Appendix C, the SAR exclusion at 13.56MHz at a distance of <50mm = **459mW**

$$F_{\text{SMEA}} = 67.11 \text{ dB}\mu\text{V/m @3 meters} = 2267.25 \mu\text{V/m} = 0.002267 \text{ V/m}$$

$$TP_W = (F_{\text{S}/\text{M}} \times D)^2 / 30$$

$$TP_{\text{mW}} = (0.002267 \times 3)^2 / 30 \times 1000 = \mathbf{0.00154 \text{ mW}}$$

Notes:

- 1) The highest field strength measurement was obtained from Intertek report #106491368ATL-004.

5.2 Results

The maximum output power is less than the SAR exclusion limits for any separation distance, and therefore, no RF exposure evaluation is required.

6 ISED Routine Evaluation Exemption Criteria

RSS-102 Issue 6 § 6.3: SAR exemption limits

Devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 11, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

6.1 Calculations

Limit at a distance of <5mm for any frequency <300MHz = **45mW**

$FS_{MEA} = 67.11 \text{ dB}\mu\text{V/m @3 meters} = 2267.25 \mu\text{V/m} = 0.002267 \text{ V/m}$

$TP_W = (FS_{V/M} \times D)^2 / 30$

$TP_{mW} = (0.002267 \times 3)^2 / 30 \times 1000 = \mathbf{0.00154mW}$

Notes:

- 1) The highest field strength measurement was obtained from Intertek report #106491368ATL-004.

6.2 Results

The maximum output power is less than the SAR exclusion limits for any separation distance, and therefore, no RF exposure evaluation is required.

7 Revision History

Revision Level	Date	Prepared By	Reviewed By	Notes
0	06 March 2026	JOP	US	Original Issue

END OF REPORT