

RF EXPOSURE EVALUATION REPORT

Product Name: RFID Reader

Trade Mark: iretailer

Model No.: IRD8066

IRD80a** (a=00-99, the symbol "*" can be A-Z or blank),

Add. Model No.: IRD85a** (a=00-99, the symbol "*" can be A-Z or blank),

IRD28a** (a=0-9, the symbol "*" can be A-Z or blank)

Report Number: 24073012956RFC-2

Test Standards: FCC 47 CFR Part 1 Subpart I

FCC ID: 2BH38IRD8066

Test Result: PASS

Date of Issue: September 26, 2024

Prepared for:

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Version

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V1.0	September 26, 2024	Original



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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Shanghai Lianbai Electronics Co., Ltd.
Address of Applicant:	2/F, Block 16, MCG, 379 Suide Road, Putuo District, Shanghai
Manufacturer:	Shanghai Lianbai Electronics Co., Ltd.
Address of Manufacturer:	2/F, Block 16, MCG, 379 Suide Road, Putuo District, Shanghai

1.2 EUT INFORMATION

Product Name:	RFID Reader
Model No.:	IRD8066
Add. Model No.:	IRD80a** (a=00-99, the symbol "*" can be A-Z or blank), IRD85a** (a=00-99, the symbol "*" can be A-Z or blank), IRD28a** (a=0-9, the symbol "*" can be A-Z or blank)
Trade Mark:	iretailer
DUT Stage:	Identical Prototype
EUT Supports Function: (Provided by the customer)	902 - 928 MHz
Software Version:	V4.1 (Provided by the customer)
Hardware Version:	V1.8 (Provided by the customer)
Sample Received Date:	August 7, 2024
Note: The additional model is identical with the test model IRD8066 except the model number for marketing purpose.	

Remark: The above EUT's information was provided by customer. Please refer to the specifications or user's manual for more detailed description.

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Frequency Band:	902 MHz to 928 MHz
Frequency Range:	902.5 MHz to 927.5 MHz
Type of Modulation:	ASK
Number of Channels:	51
Channel Separation:	500 KHz
Antenna Type: (Provided by the customer)	Internal Antenna
Antenna Gain: (Provided by the customer)	8 dBi
Maximum Peak Power:	25.35 dBm

1.4 OTHER INFORMATION

Channel List for 125kHz Bandwidth in 902.5 MHz to 927.5 MHz							
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	902.5	17	910.5	33	918.5	49	926.5
2	903	18	911	34	919	50	927
3	903.5	19	911.5	35	919.5	51	927.5
4	904	20	912	36	920	--	---
5	904.5	21	912.5	37	920.5	--	---
6	905	22	913	38	921	--	---
7	905.5	23	913.5	39	921.5	--	---
8	906	24	914	40	922	--	---
9	906.5	25	914.5	41	922.5	--	---
10	907	26	915	42	923	--	---
11	907.5	27	915.5	43	923.5	--	---
12	908	28	916	44	924	--	---
13	908.5	29	916.5	45	924.5	--	---
14	909	30	917	46	925	--	---
15	909.5	31	917.5	47	925.5	--	---
16	910	32	918	48	926	--	---

1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 1 Subpart I

All test items have been performed and recorded as per the above standards

1.6 DEVIATION FROM STANDARDS

None.

1.7 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

2. EQUIPMENT LIST

Please refer to the RF test report.

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3. MPE EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

No.	Identity	Document Title
1	FCC 47 CFR Part 1 Subpart I	PROCEDURES IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969
2	KDB 447498 D01 General RF Exposure Guidance v06	RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2 MPE COMPLIANCE REQUIREMENT

3.2.1 Limits

3.2.1.1 FCC 47 CFR Part 1 Subpart I

According to §1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density.

3.2.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.3 MPE CALCULATION METHOD

FCC 47 CFR Part 1 Subpart I

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

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = 20cm, distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

3.4 MPE CALCULATION RESULTS

Note: For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

3.4.1.1 Antenna Type:

Internal Antenna

3.4.1.2 Antenna Gain:

8 dBi

3.4.1.3 Results

Operating Mode	Freq.	Declared maximum conducted output power	Max. positive tolerance according manufacturer	Antenna Gain	Calculated maximum EIRP	Declared maximum EIRP	MPE Limit	MPE Value
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(mW)	(mW /cm ²)	
ASK	902.5-927.5	23	2.5	8	33.5	2238.7211	0.602	0.4454

APPENDIX 1 PHOTOS OF TEST SETUP

N/A

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal Photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.
