RF TEST REPORT

Product Name: Integrated RFID Reader

Model Name: UR1A

FCC ID: 2AC6AUR1A

Issued For	:	Shenzhen Chainway Information Technology Co., Ltd 9F Building 2, Daqian Industrial Park, District 67, XingDong Community, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Issued By	:	Shenzhen LGT Test Service Co., Ltd. Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China

Report Number:	LGT24H095HA02
Sample Received Date:	Aug. 22, 2024
Date of Tested:	Aug. 22, 2024 ~ Nov. 27, 2024
Date of Issue:	Nov. 27, 2024

TEST REPORT CERTIFICATION

Applicant	Shenzhen Chainway Information Technology Co., Ltd
Address	9F Building 2, Daqian Industrial Park, District 67, XingDong Community, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	Shenzhen Chainway Information Technology Co., Ltd
Address	9F Building 2, Daqian Industrial Park, District 67, XingDong Community, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Product Name	Integrated RFID Reader
Trademark	CHAINWAY
Model Name	UR1A
Sample Status:	Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR §2.1091 KDB 447498 D01 General RF Exposure Guidance v06	PASS

Prepared by:

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Approved by:

Vita Li
Technical Director

TABLE OF CONTENTS

Revision History

Rev.	Issue Date	Contents
00	Nov. 29, 2024	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name</td><td>Integrated RFID Reader</td></tr>
<tr><td>Brand Name</td><td>CHAINWAY</td></tr>
<tr><td>Model Name</td><td>UR1A</td></tr>
<tr><td>Series Model</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is Integrated RFID Reader
<table>
<tr><td>Operation Frequency:</td><td>902.75~927.25 MHz</td></tr>
<tr><td>Modulation Type:</td><td>FSK</td></tr>
<tr><td>Antenna gain:</td><td>9dBi</td></tr>
<tr><td>Antenna Designation:</td><td>Circular polarization</td></tr>
</table></td></tr>
<tr><td>Power input</td><td>DC12V/2A</td></tr>
<tr><td>Hardware Version</td><td>UR1A _Hardware_version</td></tr>
<tr><td>Software Version</td><td>UR1A _Software_version</td></tr>
</table>

1.2 TEST FACTORY

<table>
<tr><td>Company Name:</td><td>Shenzhen LGT Test Service Co., Ltd.</td></tr>
<tr><td>Address:</td><td>Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China</td></tr>
<tr><td rowspan="3">Accreditation Certificate</td><td>A2LA Certificate No.: 6727.01</td></tr>
<tr><td>FCC Registration No.: 746540</td></tr>
<tr><td>CAB ID: CN0136</td></tr>
</table>

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.
Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $Pd = (Pout * G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.

2.5 TEST RESULT

Turn up

Frequency (MHz)	Detector	Turn up Power (dBm)
902.75-927.25	Peak	26±1

Antenna Gain (dBi)		
Mode	Log scale	Numeric scale
902.75-927.25	9	7.94

Mode	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain (numeric scale)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio	Result
902.75-927.25	27.00	501.19	7.94	0.352	0.610	0.577	Pass

※※※※※END OF THE REPORT※※※※※