



Maximum Permissible Exposure Evaluation

FCC ID:2AHCR-ACRCID12

Report No.	:	TBR-C-202504-0143-6
Applicant	:	AKUVOX (XIAMEN) NETWORKS CO., LTD.
Equipment Under Test (EUT)		
EUT Name	:	Card Issuing Device
Model No.	:	ACR-CID12
Series Model No.	:	----
Brand Name	:	Akuvox
Sample ID	:	HC-C-202504-0143-03-1# & HC-C-202504-0143-03-2#
Receipt Date	:	2025-06-17
Test Date	:	2025-06-17 to 2025-07-18
Issue Date	:	2025-07-18
Standards	:	FCC Part 2.1093
Test Method	:	KDB 447498 D04 General RF Exposure Guidance v01
Conclusions	:	PASS
In the configuration tested, the EUT complied with the standards specified above.		
Test By	:	<i>Rick Chen</i> Rick Chen
Reviewed By	:	<i>Camille Li</i> Camille Li
Approved By	:	<i>IVAN SU</i> Ivan Su
<p>This report details the results of the testing carried out on one sample. The results contained in this test 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 the report.</p>		

CONTENTS

CONTENTS.....	2
1. GENERAL INFORMATION ABOUT EUT.....	4
1.1 Client Information.....	4
1.2 General Description of EUT (Equipment Under Test)	4
2. MEASUREMENT UNCERTAINTY.....	5
3. TEST FACILITY.....	6
4. SAR TEST EXCLUSION CALCULATIONS.....	7



Revision History

Report No.	Version	Description	Issued Date
TBR-C-202504-0143-6	Rev.01	Initial issue of report	2025-07-18



1. General Information about EUT

1.1 Client Information

Applicant	:	AKUVOX (XIAMEN) NETWORKS CO., LTD.
Address	:	10/F, No.56 Guanri Road, Software Park II, Xiamen 361009, China
Manufacturer	:	AKUVOX (XIAMEN) NETWORKS CO., LTD.
Address	:	10/F, No.56 Guanri Road, Software Park II, Xiamen 361009, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Card Issuing Device	
Models No.	:	ACR-CID12	
Model Different	:	----	
Product Description	:	Operation Frequency:	902.25MHz~927.75MHz
		Modulation Type:	FSK
		Antenna Gain:	2dBi PCB Antenna
Power Rating	:	Input: DC 5V	
Software Version	:	V1.01	
Hardware Version	:	V2.00	
Remark: The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.			



2. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	± 3.50 dB ± 3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	± 4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	± 4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	± 4.20 dB
RF Power-Conducted	Level Accuracy: Above 1000MHz	± 0.95 dB
Power Spectral Density-Conducted	Level Accuracy: Above 1000MHz	± 3 dB
Occupied Bandwidth	Level Accuracy: 30MHz to 1000 MHz Above 1000MHz	$\pm 3.8\%$
Unwanted Emission-Conducted	Level Accuracy: 30MHz to 1000 MHz Above 1000MHz	± 2.72 dB
Temperature	/	$\pm 0.6^{\circ}\text{C}$
Humidity	/	$\pm 4\%$
Supply voltages	/	$\pm 2\%$
Time	/	$\pm 4\%$



3. Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.



4. SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

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).

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

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



Calculation:

Frequency (MHz)	Max. Output Power (dBuV/m)	Max. Output Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dBm)	Output power (Max. Turn-up Procedure) (mW)	Limit P _{th} (mW)
902.25	74.87	-25.09	-25 ± 1	-24	0.004	9
915.25	75.12	-24.84	-25 ± 1	-24	0.004	9
927.75	75.36	-24.60	-25 ± 1	-24	0.004	9

Note: For conducted measurements below 1000 MHz, the field strength shall be computed as specified in item d), and then an additional 4.7 dB shall be added as an upper bound on the field strength that would be observed on a test range with a ground plane for frequencies between 30 MHz and 1000 MHz, or an additional 6dB shall be added for frequencies below 30MHz.

$$E = \text{EIRP} - 20 \log d + 104.8$$

where

E is the electric field strength in dBuV/m
 EIRP is the equivalent isotropically radiated power in dBm
 d is the specified measurement distance in m

So: $\text{EIRP} = E + 20 \log 3 - 104.8 - (4.7 \text{ or } 6)$

Note: At separation distance of ≤ 5 mm

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D01 v06.

-----END OF THE REPORT-----

