

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant: AKUVOX (XIAMEN) NETWORKS CO., LTD.

Address: 10/F, No.56 Guanri Road, Software Park II, Xiamen 361009,
China

Product Name: Door Phone

FCC ID: 2AHCR-S535

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091
447498 D01 General RF Exposure Guidance v06

Report Number: 2502W73799E-RF-00E

Report Date: 2025/12/25

The above device has been tested and found compliant with the requirement of the relevant standards by Bay Area Compliance Laboratories Corp. (Dongguan).

Ivy Tang

Rocky Xiao

Reviewed By: Ivy Tang

Title: Project Engineer

Approved By: Rocky Xiao

Title: RF Supervisor

Bay Area Compliance Laboratories Corp. (Dongguan)
No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China

Tel: +86-769-86858888

Fax: +86-769-86858891

www.baclcorp.com.cn

Note: The information marked ▲ is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report cannot be reproduced except in full, without prior written approval of the Company. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0. This report may contain data that are not covered by the accreditation scope and shall be marked with ★. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government. Each test item follows the test standard(s) without deviation.

CONTENTS

DOCUMENT REVISION HISTORY	3
1. GENERAL INFORMATION	4
1.1 GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST.....	4
2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)	5
2.1 APPLICABLE STANDARD.....	5
2.2 CALCULATION FOR TEST EXCLUSION:	5
2.3 MPE TEST PROCEDURE	6
2.4 SUPPORT EQUIPMENT LIST AND DETAILS	6
2.5 SUPPORT CABLE LIST AND DETAILS	6
2.6 BLOCK DIAGRAM OF TEST SETUP	6
2.7 TEST DATA:	7
EXHIBIT A - EUT PHOTOGRAPHS.....	9
EXHIBIT B - TEST SETUP PHOTOGRAPHS	10

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2502W73799E-RF-00E	Original Report	2025/12/25

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	Door Phone
EUT Model:	S535
Rated Input Voltage:	DC 12V From LPS or DC 44-57V From POE
Serial Number:	38JV-1
EUT Received Date:	2025/8/15
EUT Received Status:	Good
Note 1: Per 15B report, Powered by POE was the worst, so only performed it.	

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 Applicable Standard

According to 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz;

* = Plane-wave equivalent power density;

According with KDB 680106 D01 Wireless Power Transfer v04 clause 3.2

The RF exposure limits, as set forth in § 1.1310, do not cover the frequency range below 100 kHz for Specific Absorption Rate (SAR) and below 300 kHz for Maximum Permitted Exposure (MPE). In addition, present limitations of RF exposure evaluation systems prevent an accurate evaluation of SAR below 4 MHz. For these reasons, a specific MPE-based RF Exposure compliance procedure for devices operating in the aforementioned low-frequency ranges has been set in place. This procedure is applicable to Equipment Authorization of all RF devices, thus including, but not limited to, Part 18 and WPT devices.

Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-Portable devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

2.2 Calculation For Test Exclusion:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = 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 = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.3 MPE Test Procedure

1. Place the EUT's antenna was vertical polarization on the table.
2. The EUT was set to transmit at the frequency at maximum RF power.
3. The Distance between the test probe and the investigated EUT's antenna equal to the distance be specified as safety distance in the user manual.
4. Power density measurements were taken at different heights of the probe from the ground (0.8 to 2.8 meters) while rotating versus azimuth (from 0° to 360°) the antenna.
5. adjusted the distance between the test probe and the tested antenna to the real safe distance, R_{real} , such that the measured highest power density in the "worst case" position was the same or slightly less than the test limit.
6. The measurement results of final measurements conducted at the chosen azimuth and different heights of the probe above the ground.

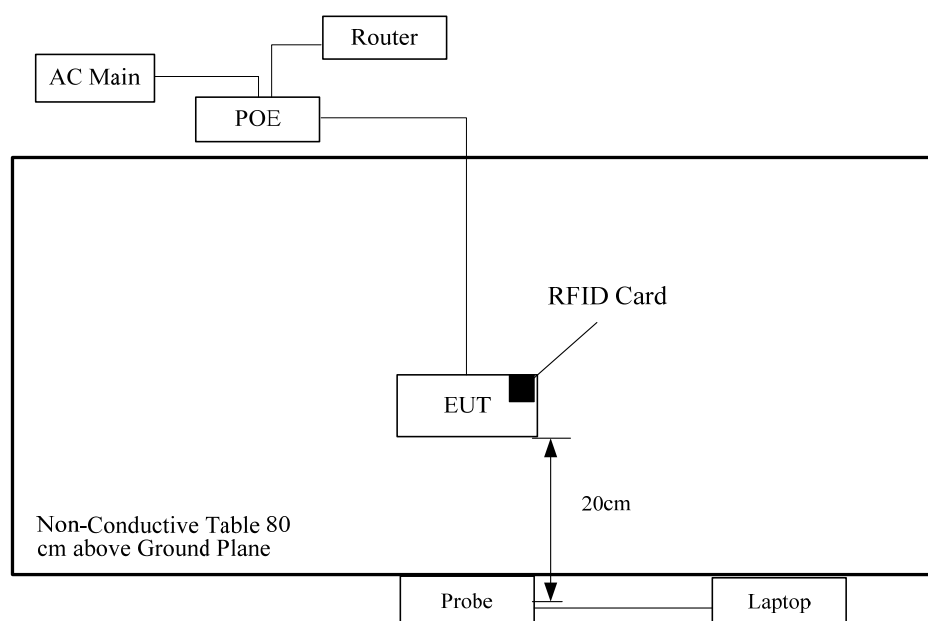
2.4 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
MAIPU	POE	POE40-1PSE-A	B626-184681105414V00
Lenovo	Laptop	G510	CB30920865
ZIONCOM	Router	MB-R210-00	EMZBWR21103001
Unknown	RFID Card	Unknown	Unknown

2.5 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	no	no	1.2	POE	EUT
RJ45 Cable	no	no	2	Router	EUT
Signal Cable	No	No	3	Probe	Laptop

2.6 Block Diagram of Test Setup



2.7 Test Data:

Test Information:

Serial No.:	38JV-1	Test Date:	2025/12/24
Test Site:	Chamber 10m	Test Mode:	Transmitting
Tester:	Zoo Zou	Test Result:	Pass

Environmental Conditions:

Temperature: (°C):	24.4	Relative Humidity: (%)	47	ATM Pressure: (kPa)	101.3
-------------------------------	------	---------------------------------------	----	--------------------------------	-------

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Narda	Electric and Magnetic Field Probe-Analyzer	EHP-200AC	180ZX10204	2023/9/1	2026/8/31

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

H-Field Strength

Frequency (kHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	Limit (A/m)
124	0.196	0.181	0.161	0.174	0.209	1.63

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

E-Field Strength

Frequency (kHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	Limit (V/m)
124	0.700	0.598	0.553	0.606	0.780	614

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

For BLE, 24G Radar and NFC(13.56MHz):

Operation Modes	Frequency (MHz)	Antenna Gain [▲]		Conducted output power including Tune-up Tolerance [▲]		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BLE	2402-2480	3.8	2.40	4.0	2.51	20.00	0.0012	1.0
24G Radar	24027.929-24232.009	3.9	2.45	-2.2	0.60	20.00	0.0003	1.0
NFC(13.56MHz)	13.56	/	/	-37.24	0.0002	20.00	<<0.0001	0.98

Note:
 1.For NFC, field strength is 57.96dBμV/m @ 3m = -37.24 dBm(0.0002mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.
 2.For 24G Radar, field strength is 96.9dBμV/m @ 3m = 1.7 dBm(1.48mW) EIRP,
 Conducted output power=1.7 dBm -3.9dBi =-2.2 dBm, Conducted output power= EIRP- Antenna Gain.

Note:

The Antenna Gain and Conducted output power including Tune-up Tolerance provided by manufacturer.

For Simultaneous transmission:

BLE, 24G Radar, NFC can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$$= S_{BLE}/S_{limit-BLE} + S_{24G Radar}/S_{limit-24G Radar} + S_{NFC}/S_{limit-NFC}$$

$$= 0.0012/1.0 + 0.0003/1.0 + 0.0001/0.98$$

$$= 0.002$$

$$< 1.0$$

The result of BLE, 24G Radar, NFC and 124kHz too low to calculated the Simultaneous transmission result.

Result: The device meet FCC MPE at 20 cm distance.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2502W73799E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2502W73799E-RF-INP EUT INTERNAL PHOTOGRAPHS

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2502W73799E-RF-00E-TSP test setup photographs.

******* END OF REPORT *******