NVLAP LAB CODE 600341-0

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant:	**Chengdu Meross Technology Co., Ltd.**
Address:	**Floor 3, Building A5, Shijicheng Road No 1129, Gaoxin, Free Trade Trial Zone, Chengdu, Sichuan, China**
Product Name:	**Smart Presence Sensor**
FCC ID:	**2AMUU-MS600**
Standard(s):	**47 CFR §1.1310, 47 CFR §2.1091, 47 CFR §15.247(i)**
Report Number:	**2402S31882-RF-00E**
Report Date:	**2024/6/27**

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

Reviewed By: Gavin Xu	**Approved By:** Ivan Cao
Title: RF Engineer	Title: EMC Manager

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CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402S31882-RF-00E	Original Report	2024/6/27

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	Smart Presence Sensor
Trade Name:	meross, Refoss, Flysocks
EUT Model:	MS600
Multiple Models:	PS300, MS650
Rated Input Voltage:	DC 5V from Adapter
EUT Received Date:	2024/4/11
EUT Received Status:	Good

Note:
The Multiple models are electrically identical with the test model. The deference is only the model name. Please refer to the declaration letter for more detail, which was provided by manufacturer.

2. RF EXPOSURE EVALUATION (MPE)

2.1 RF Exposure Evaluation

2.1.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(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/f²)	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 to §1.1310 and §2.1091 RF exposure is calculated.

2.1.2 Calculation formula:

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/cm^2);
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:

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

2.1.3 Calculated Data:

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	1.62	1.45	6.0	3.98	20.00	0.001	1.0
2.4G Wifi	2412-2462	1.62	1.45	26.0	398.11	20.00	0.115	1.0
Radar	24000-24250	9.7	9.33	-3.45	0.45	20.00	0.001	1.0

Note:
The Conducted output power including Tune-up Tolerance provided by manufacturer.
For Radar,
Fundamental field strength is 101.45BμV/m @ 3m = 6.25 dBm(4.22mW) EIRP.
EIRP(dBm)=Field Strength of Fundamental(dBuV/m)-95.2 (dB)
Conducted output power= EIRP(dBm)- Antenna Gain(dBi)

For Simultaneous transmission:

BLE/2.4G Wifi can`t transmit simultaneously,
But BLE or 2.4G Wifi can transmit simultaneously with Radar:

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

$= S_{2.4G\ Wifi} / S_{limit\text{-}2.4G\ Wifi} + S_{Radar} / S_{limit\text{-}Radar}$

=0.115/1.0+0.001/1.0

=0.116

<1

Result: Compliant. The device compliant Simultaneous transmission at 20cm distances.

APPENDIX A - EUT PHOTOGRAPHS

Please refer to the attachment 2402S31882-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402S31882-RF-INP EUT INTERNAL PHOTOGRAPHS.

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