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RF Exposure Evaluation Report

Report No. :	CQASZ20180700089E-02
Applicant:	FUZHOU EMAX ELECTRONIC CO., LTD
Address of Applicant:	Building #12-#16, CangShan Industrial Area, JuYuanZhou JinShan District, FuZhou, China.
Manufacturer:	FUZHOU EMAX ELECTRONIC CO., LTD
Address of Manufacturer:	Building #12-#16, CangShan Industrial Area, JuYuanZhou JinShan District, FuZhou, China.
Equipment Under Test (EUT):	
Product:	Smart Cooking Thermometer
Model No.:	EM2255, SM55
Test Model No.:	EM2255
Brand Name:	N/A
FCC ID:	WEC-EM2255
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-07-30 to 2018-08-02
Date of Issue:	2018-08-02
Test Result :	**PASS***

Tested By: Martin Lee

(Martin Lee)

Reviewed By:

(Jack Ai)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD
华夏准测
APPROVED

* In the configuration tested, the EUT complied with the standards specified above.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180700089E-02	Rev.01	Initial report	2018-08-02

2 Contents

3 General Information

3.1 Client Information

Applicant:	FUZHOU EMAX ELECTRONIC CO., LTD
Address of Applicant:	Building #12-#16, CangShan Industrial Area, JuYuanZhou JinShan District, FuZhou, China.
Manufacturer:	FUZHOU EMAX ELECTRONIC CO., LTD
Address of Manufacturer:	Building #12-#16, CangShan Industrial Area, JuYuanZhou JinShan District, FuZhou, China.

3.2 General Description of EUT

Product Name:	Smart Cooking Thermometer
Model No.:	EM2255, SM55
Test Model No.:	EM2255
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	Portable production
Test Software of EUT:	CC2541_BLE-Device Control Panel (manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	2.0dBi
EUT Power Supply:	2*AA DC3V

Note:

All model: EM2255, SM55

Only the model EM2255 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

For BLE:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-8.44
Middle	-8.07
Highest	-7.53

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-8.44	-8.0±1	-7.0	0.200	0.06	3.0
Middle (2440MHz)	-8.07	-8.0±1	-7.0	0.200	0.06	
Highest (2480MHz)	-7.53	-8.0±1	-7.0	0.200	0.06	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20180700089E-01