Anova Applied Electronics, Inc.

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

Model:

REPORT NUMBER:
AN600-10

ISSUE DATE:
May 29, 2018

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 180502361SHA-001

Applicant:	Anova Applied Electronics, Inc. 667 Howard St, San Francisco, CA94
Manufacturer:	Anova Applied Electronics, Inc. 667 Howard St, San Francisco, CA94
Manufacturing site:	Flextronics Manufacturing (Zhuhai) Co., Ltd. Xin Qing Science & Technology Industrial Park, Jing An, Doumen, Zhuhai, Guangdong, 519180 Peoples Republic of China
FCC ID:	2APB0AN600

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Eric Li	Reviewer Daniel Zhao

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Revision History

Report No.	Version	Description	Issued Date
180502361SHA-001	Rev. 01	Initial issue of report	August 16, 2018

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1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Precision Cooker
Type/Model:	AN600-10
Description of EUT:	The EUT is a Precision Cooker, it supports WIFI and Bluetooth, there is only one model, we test it and listed the WIFI 2.4G band MPE results in this report.
Rating:	AC 120V / 60Hz, 1200W
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	August 1, 2018
Date of test:	August 1, 2018 - August 10, 2018

1.2 Technical Specification

Frequency Range:	2400MHz ~2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7
Channel Separation:	5 MHz
Antenna Information:	2.45dBi, PCB antenna

Frequency Range:	2402-2480MHz
Support Standards:	Bluetooth LE 4.2
Type of Modulation:	GFSK
Channel Number:	40
Data Rate:	1Mbps
Channel Separation:	2MHz
Antenna Information:	2.21dBi, PCB antenna

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m^2)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

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2.2 Assessment Results

Power density (S) is calculated according to the formula:
$S = P / (4\pi R^2)$
Where S = power density in mW/cm^2
P = Radiated transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

As we can see from the test report 180502361SHA-001:
The WIFI maximum radiated power = 17.56dBm = 57.02 mW;
As we can see from the test report 180502361SHA-002:
The Bluetooth maximum radiated power = 7.68dBm = 5.86mW

Here R is chosen to be 20cm,

WIFI RF Exposure value $S = P / (4\pi R^2) = 57.02 / (4 * 3.14 * 20 * 20) = 0.0113\ mW/cm^2 < 1\ mW/cm^2$

Bluetooth RF Exposure value $S = P / (4\pi R^2) = 5.86 / (4 * 3.14 * 20 * 20) = 0.0012\ mW/cm^2 < 1\ mW/cm^2$

Total RF Exposure ratios = 0.0113/1+0.0012/1=0.0125<1.

Therefore, the MPE requirement is deemed to be satisfied without test.

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

********** END **********