



RF EXPOSURE EVALUATION REPORT

APPLICANT : Anker Innovations Limited
PRODUCT NAME : HomeBase E
MODEL NAME : T8002
BRAND NAME : eufy Security
FCC ID : 2AOKB-T8002
STANDARD(S) : 47CFR 2.1091
KDB 447498
ISSUE DATE : 2018-10-16

Reviewed by: *Gan Yueming*
Gan yueming (Reviewer)

Approved by: *Peng Huarui*
Peng Huarui (Supervisor)

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Version No.	Date	Description
1.0	2018-10-16	Original

Tested By	
Test engineer:	Liang Yumei



1. Technical Information

Note: Provide by manufacturer.

1.1 Applicant and Manufacturer Information

Applicant:	Anker Innovations Limited
Applicant Address:	Room 1318-19,Hollywood Plaza,610 Nathan Road,Mongkok, Kowloon,Hong Kong
Manufacturer:	Anker Innovations Limited
Manufacturer Address:	Room 1318-19,Hollywood Plaza,610 Nathan Road,Mongkok, Kowloon,Hong Kong

1.2 Equipment Under Test (EUT) Description

EUT Type:	HomeBase E
Hardware Version:	V02
Software Version:	V1.0.2.2
Operating Frequency Range:	920.0MHz ~ 920.8MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz
Modulation Mode:	GFSK 802.11b: DSSS 802.g/n HT20/HT40: OFDM
Antenna Type:	Sub-1G: Monopole metal antenna WLAN 2.4GHz: PCB Antenna
Antenna Gain:	0dBi

1.3 Photographs of the EUT

1. EUT front view



2. EUT rear view





1.3.1 Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	V02	V1.0.2.2

1.4 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1091	Radio frequency Radiation Exposure Evaluation: mobile devices
2	KDB 447498 D01v06	General RF Exposure Guidance



2. Device Category and RF Exposure Limit

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
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



3. Measurement of RF Output Power

RF Output Power

920.0MHz – 920.8MHz	Frequency (MHz)	Max. Emission E (dB μ V/m)
	920.0	84.85
	920.4	86.76
	920.8	86.79

WLAN 2.4G:

Mode	Channel	Frequency (MHz)	Peak Power(dBm)		Total Power (dBm)	Power Setting	Duty Cycle %
			Ant 0	Ant 1			
802.11b 1Mbps	CH 1	2412	24.23	23.61	26.94	2F	100.00
	CH 6	2437	25.76	25.93	28.86	2F	
	CH 11	2462	24.32	24.73	27.54	2F	
802.11g 6Mbps	CH 1	2412	23.51	23.67	26.60	18.00	100.00
	CH 6	2437	25.45	25.80	28.64	18.00	
	CH 11	2462	23.72	23.74	26.74	18.00	
802.11n-HT20 MCS0	CH 1	2412	23.54	23.05	26.31	1C	100.00
	CH 6	2437	25.34	25.63	28.50	1C	
	CH 11	2462	24.31	23.52	26.94	1C	
802.11n-HT40 MCS0	CH 3	2422	23.25	23.07	26.17	18.00	100.00
	CH 6	2437	25.26	25.47	28.38	18.00	
	CH 9	2452	24.70	25.18	27.96	18.00	

Note: According to KDB 447498, maximum source-based time-average power will be used for calculating MPE.

4. RF Exposure Evaluation

Standalone transmission MPE evaluation

Bands	Frequency (MHz)	Max. Emission E (dBμV/m)	Antenna Gain (dBi)	EIRP (mW)	Power density 1 (mW/cm ²)	Limit 1 for MPE (mW/cm ²)
920.0MHz – 920.8MHz	920.8	86.79	0	1.034	0.002	0.614

Bands	Antenna Type	Frequency (MHz)	Maximum Tune-up Limit (dBm)	Antenna Gain (dBi)	EIRP (mW)	Power density 2 (mW/cm ²)	Limit 2 for MPE (mW/cm ²)
WLAN 2.4G	Total	2437	28.86	0	769	0.153	1.0

MPE transmit simultaneously evaluation:

Transmit Condition	Power density 1 (mW/cm ²)	Power density 2 (mW/cm ²)	Result	Limit
Sub-1G+ WLAN Ant.0+ WLAN Ant.1	0.002	0.153	0.156	1.0

Note:

- MPE calculation method

$$\text{Power Density} = \text{EIRP}/4\pi R^2$$

Where: EIRP = P+G

P = Average Output Power (dBm)

G = Antenna Gain (dBi)

R = Separation Distance (20cm)

- Only the worst condition for Sub-1G+WLAN 2.4GHz was calculated for transmit simultaneously in this report.

Formula: Result=Power density 1/ limit 1 + Power density 2/ limit 2 ≤ 1

- This device does not support MIMO mode, therefore simultaneous transmission of MPE is not required.



Annex A General Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
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2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

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