FCC RF Exposure Evaluation

1. Product Information

Product Name:	ELECTRIC TOWEL WARMER
Trademark	SAILAINUO
Model No.:	FD-008, FK-015, FK-035, FK-001, FK002, FK-007, FK-008, FK-004
Model Difference	PCB board, structure and internal of these model(s) are the same, So no additional models were tested.
BT Version:	4.2
Operation Frequency:	2402~2480MHz
Channel numbers:	40 Channels
Channel separation:	2M
Modulation technology:	GFSK
Operation Frequency:	2412MHz~2462MHz
Channel numbers:	11 Channels for 20MHz bandwidth 7 Channels for 20MHz bandwidth
Channel separation:	5M
Modulation technology:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK); IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK); IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Type:	Internal Antenna
Antenna gain:	0dBi
Power supply:	Input 100V~250V~, 50/60Hz

2. Evaluation Method and Limit

Systems operating under the provisions of FCC 47 CFR 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.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is neous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numericallio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Refer Evaluation Method

ANSI C95.1–2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz

FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

4. Conducted Power Results

<BLE>

Mode	Test Channel	Peak Output Power (dBm)	LIMIT (dBm)
GFSK	CH00	-0.38	30.00
	CH19	0.88	30.00
	CH39	0.18	30.00

<2.4GWIFI>

Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)
IEEE 802.11b	1	2412	15.29	30
	6	2437	15.39	30
	11	2462	15.93	30
IEEE 802.11g	1	2412	14.93	30
	6	2437	14.80	30
	11	2462	14.42	30
IEEE 802.11n HT20	1	2412	14.37	30
	6	2437	13.00	30
	11	2462	13.97	30
IEEE 802.11n HT40	3	2422	12.72	30
	6	2437	13.14	30
	9	2452	12.74	30

5. Manufacturing Tolerance

GFSK			
Channel	Channel 0	Channel 19	Channel 39
Target (dBm)	0	0	0
Tolerance ±(dB)	1.0	1.0	1.0
IEEE 802.11b			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	15.0	15.0	15.0
Tolerance ±(dB)	1.0	1.0	1.0
IEEE 802.11g			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance ±(dB)	1.0	1.0	1.0
IEEE 802.11g			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance ±(dB)	1.0	1.0	1.0
IEEE 802.11n HT20			
Channel	Channel 1	Channel 6	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance ±(dB)	1.0	1.0	1.0
IEEE 802.11n HT4			
Channel	Channel 3	Channel 6	Channel 9
Target (dBm)	13.0	13.0	13.0
Tolerance ±(dB)	1.0	1.0	1.0

6. Evaluation Results

6.1 Standalone Evaluation

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	dBm	mW				
GFSK	1.00	1.2589	0	1.0000	0.0003	1.0000
IEEE 802.11b	16.00	39.8107	0	1.0000	0.0079	1.0000
IEEE 802.11g	15.00	31.6228	0	1.0000	0.0063	1.0000
IEEE 802.11n HT20	15.00	31.6228	0	1.0000	0.0063	1.0000
IEEE 802.11n HT40	14.00	25.1189	0	1.0000	0.0050	1.0000

Remark:

1. Output power including tune up tolerance;

2. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to f) in section 4.1 is applied to determine SAR test exclusion.

6.2 Simultaneous Transmission for MPE Exclusion

The sample support one BLE/2.4GWIFI modular. No need consider simultaneous transmission.

7. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure MPE Threshold per KDB 447498 v06.

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