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RF Exposure Evaluation Report

Report No. : CQASZ20190600025EX-02

Applicant: Okaylight Technology Co.,LTD

Address of Applicant: 1st Floor,Building 3, LiKe Science and Technology Park, Changsheng North Road, Dalang Town, Dongguan 523000, Guangdong Province, China

Manufacturer: Okaylight Technology Co.,LTD

Address of Manufacturer: 1st Floor,Building 3, LiKe Science and Technology Park, Changsheng North Road, Dalang Town, Dongguan 523000, Guangdong Province, China

Equipment Under Test (EUT):

Product: smart thermostat

Test Model No.: MTS700B

Brand Name: OKAYLIGHT / WEBER / NASHONE

FCC ID: 2ARTQ-MTS700B

Standards: 47 CFR Part 1.1307

47 CFR Part 2.1093

KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2019-06-10 to 2019-07-24

Date of Issue: 2019-07-24

Test Result : **PASS***

Tested By:

Tom Chen.

(Tom Chen)

Reviewed By:

Sheek Luo

(Sheek Luo)

Approved By:

Jack Ai

(Jack Ai)



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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190600025EX-02	Rev.01	Initial report	2019-07-24

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3 General Information

3.1 Client Information

Applicant:	Okaylight Technology Co.,LTD
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Manufacturer:	Okaylight Technology Co.,LTD
Address of Manufacturer:	1st Floor,Building 3, LiKe Science and Technology Park, Changsheng North Road, Dalang Town, Dongguan 523000, Guangdong Province, China

3.2 General Description of EUT

Product Name:	smart thermostat
Test Model No.:	MTS700B
Trade Mark:	OKAYLIGHT / WEBER / NASHONE
Hardware Version:	V2.2.3
Software Version:	V3.6.4
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps, 2Mbps, 3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
EUT Power Supply:	AC 120V 50/60Hz

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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

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

1) For BT

Measurement Data

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)	1.502	1±1	2	1.585	0.491	3.0
Middle (2441MHz)	0.223	1±1	2	1.585	0.495	
Highest (2480MHz)	1.219	1±1	2	1.585	0.499	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Worst case: π/4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.849	0±1	1	1.259	0.390	3.0
Middle (2441MHz)	-0.197	0±1	1	1.259	0.393	
Highest (2480MHz)	0.561	0±1	1	1.259	0.397	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Worst case: 8DPSK

Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.964	0±1	1	1.259	0.390	3.0
Middle (2441MHz)	-0.051	0±1	1	1.259	0.393	
Highest (2480MHz)	0.730	0±1	1	1.259	0.397	

Conclusion: the calculated value ≤3.0, SAR is exempted.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190600025EX-01