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RF Exposure Evaluation Report

Report No. : CQASZ20210500032EX-02

Applicant: Shenzhen ThreeNH Technology Co.,Ltd

Address of Applicant: Floor 6, Building 5B, Skyworth Innovation Valley, Tangtou No.1 Road, Shiyan Street, Bao an District, Shenzhen, Guangdong, China

Manufacturer: Shenzhen ThreeNH Technology Co.,Ltd

Address of Manufacturer: Floor 6, Building 5B, Skyworth Innovation Valley, Tangtou No.1 Road, Shiyan Street, Bao an District, Shenzhen, Guangdong, China

Equipment Under Test (EUT):

Product: Portable desktop spectrophotometer

All Model: TS8260, TS8210, TS8216, TS8262, TS8280, TS8290, TS8296, TS8450, TS9450

Test Model No.: TS8260

Brand Name: 3nh

FCC ID: 2AMRM-TS8260

47 CFR Part 1.1307

Standards: 47 CFR Part 1.1310

KDB447498D01 General RF Exposure Guidance v06

Date of Test: Apr. 28, 2021 to Jul. 19, 2021

Date of Issue: Jul. 19, 2021

Test Result : PASS

Tested By:

Lewis Zhou

(Lewis Zhou)

Reviewed By:

Timo Lei

(Timo Lei)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210500032EX-02	Rev.01	Initial report	Jul. 19, 2021

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3 General Information

3.1 Client Information

Applicant:	Shenzhen ThreeNH Technology Co.,Ltd
Address of Applicant:	Floor 6, Building 5B, Skyworth Innovation Valley, Tangtou No.1 Road, Shiyan Street, Bao an District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen ThreeNH Technology Co.,Ltd
Address of Manufacturer:	Floor 6, Building 5B, Skyworth Innovation Valley, Tangtou No.1 Road, Shiyan Street, Bao an District, Shenzhen, Guangdong, China

3.2 General Description of EUT

Product Name:	Portable desktop spectrophotometer
Test Model No.:	TS8260
Trade Mark:	3nh
Hardware Version:	V1.6
Software Version:	V1.0
Operation Frequency:	2402-2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps(Test software see page 6)
Number of Channel:	40
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Antenna Type:	Ceramic antenna
Antenna Gain:	2dBi
EUT Power Supply:	AC ADAPTER
Adapter	MODEL: B06240300 INPUT:110-240 50/60Hz 1.3A max OUTPUT: 24V 3A

Note:

All model: TS8260, TS8210, TS8216, TS8262, TS8280, TS8290, TS8296, TS8450, TS9450

Only the model TS8260 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model name.

4 RF Exposure 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:

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

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 BLE

Measurement Data

GFSK mode						
Test Channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	LIMIT
			(dBm)	(mW)		3
Lowest(2402MHz)	2.570	3±1	4	2.512	0.779	
Middle(2440MHz)	2.711	3±1	4	2.512	0.785	
Highest(2480MHz)	3.002	3±1	4	2.512	0.791	

Conclusion: the calculated value< 3.0 ,SAR is exempted

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210500032EX-01