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RF Exposure Evaluation Report

Report No.:	CQASZ20231001865E-04
Applicant:	Dynanic (Shenzhen) Technology Limited
Address of Applicant:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China

Equipment Under Test (EUT):

EUT Name:	Nova S80 5.1.2 Channel Dolby Atmos Soundbar
Model No.:	U4120
Test Model No.:	U4120
Brand Name:	ULTIMEA
FCC ID:	2A9OO-U4120S
Standards:	47 CFR Part 1.1307
	47 CFR Part 2.1093
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2023-10-16
Date of Test:	2023-10-16 to 2023-11-30
Date of Issue:	2023-12-01
Test Result:	**PASS***

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

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By:

(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20231001865E-04	Rev.01	Initial report	2023-12-01

2 Contents

3 General Information

3.1 Client Information

Applicant:	Dynanic (Shenzhen) Technology Limited
Address of Applicant:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Manufacturer:	Dynanic (Shenzhen) Technology Limited
Address of Manufacturer:	20th Floor, Building 4, Tianan Cloud Park, Bantian St., Longgang District, Shenzhen, China
Factory:	SOUNDLAB TECHNOLOGY CO., LTD.
Address of Factory:	Microlab Industrial Zone, No. 2, Baozi South Road, Kengzi Sub-district, Pingshan District, Shenzhen City, Guangdong Province, P. R. China

3.2 General Description of EUT

Product Name:	Nova S80 5.1.2 Channel Dolby Atmos Soundbar
Model No.:	U4120
Test Model No.:	U4120
Trade Mark:	ULTIMEA
Hardware Version:	U4120
Software Version:	U4120
Sample Type:	☒ Mobile ☐ Portable
Operation Frequency:	5732MHz~5848MHz
Channel Numbers:	59
Modulation Type:	GFSK
Antenna Type:	PCB antenna
Antenna Gain:	0.48dBi
Power Supply:	Model:SMS-00240250-S38 Input:100-240V~50/60Hz 1.5A Output:24V 2.5A 60W
	Model:FX48U-240250C Input:100-240V~50/60Hz 1.0A Output:24V 2.5A

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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
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

eirp = pt x gt = $(E \times d)^2/30$
where:
pt = transmitter output power in watts,
gt = numeric gain of the transmitting antenna (unitless),
E = electric field strength in V/m, ---$10^{((dB\mu V/m)/20)}/10^6$,
d = measurement distance in meters (m)---3m,
So pt = $(E \times d)^2/30$ / gt

The worst case (refer to report CQASZ20231001865E-03) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
5732	91.93	Peak
5732	88.71	Average

Antenna polarization: Vertical		
Frequency (MHz)	Level (dBuV/m)	Polarization
5788	87.67	Peak
5788	83.77	Average

For 5788MHz wireless:
Field strength = 91.93 dBμV/m @3m
Ant. gain 0.48dBi; so Ant numeric gain=1.117
So pt={[$10^{(91.93/20)}/10^6$x3]^2/30 /1.117}x1000mW =0.0419mW
So (0.0419mW/5mm)x √0.3142GHz = 0.0047,

0.0047<3.0 for 1-g SAR

So the SAR report is not required.