

RF Exposure Evaluation Report

Product : Smart Helmet
Trade mark : N/A
Model/Type reference : N901
Serial Number : N/A
Report Number : EED32M00160904
FCC ID : 2AVZ7N901
Date of Issue : Jun. 23, 2020
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Test result : PASS

Prepared for:

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2 Version

Version No.	Date	Description
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4 General Information

4.1 Client Information

Applicant:	Shenzhen Kuang-Chi Space Technology Co., Ltd
Address of Applicant:	301-B077, Building 2, No.1, Mawu Road, Baoan Community, Longgang District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Kuang-Chi Space Technology Co., Ltd
Address of Manufacturer:	301-B077, Building 2, No.1, Mawu Road, Baoan Community, Longgang District, Shenzhen, Guangdong, China
Factory:	Shenzhen Kuang-Chi Space Technology Co., Ltd
Address of Factory:	301-B077, Building 2, No.1, Mawu Road, Baoan Community, Longgang District, Shenzhen, Guangdong, China

4.2 General Description of EUT

Product Name:	Smart Helmet
Model No.(EUT):	N901
Trade Mark:	N/A
EUT Supports Radios application:	4.0 BT Dual mode, 2402MHz to 2480MHz Wi-Fi :IEEE 802.11 b/g/n(HT20)(HT40), 2412MHz to 2462MHz

4.3 Product Specification subjective to this standard

Frequency Range:	BT:2402MHz~2480MHz Wi-Fi:2412MHz to 2462MHz		
Modulation Type:	BT:GFSK, $\pi/4$ DQPSK, 8DPSK Wi-Fi:DSSS,OFDM		
Test Power Grade:	Reference report EED32M00160901, EED32M00160902, EED32M00160903		
Test Software of EUT:	Engineering Order *##9646633##*(manufacturer declare)		
Antenna Type:	monopole antenna		
Antenna Gain:	3 dBi		
Power Supply:	LI-ION BATTERY	RATED CAPACITY 5000mAh（19Wh） TYPICAL CAPACITY5100mAh（19.38Wh） NOMINAL VOLTAGE:3.8V--- LIMITED CHARGE VOLTAGE:4.35--- MODEL:GQ-V496594P	
Max Conducted Peak Output Power:	BT: 4.148dBm; 2.4GHz: 8.73 dBm		
	The Max Conducted Peak Output Power data refer to the report EED32M00160901, EED32M00160902, EED32M00160903		
Sample Received Date:	Jun. 08, 2020		
Sample tested Date:	Jun. 08, 2020 to Jun. 17, 2020		
The tested sample(s) and the sample information are provided by the client.			

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
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.

5.1.2 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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 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

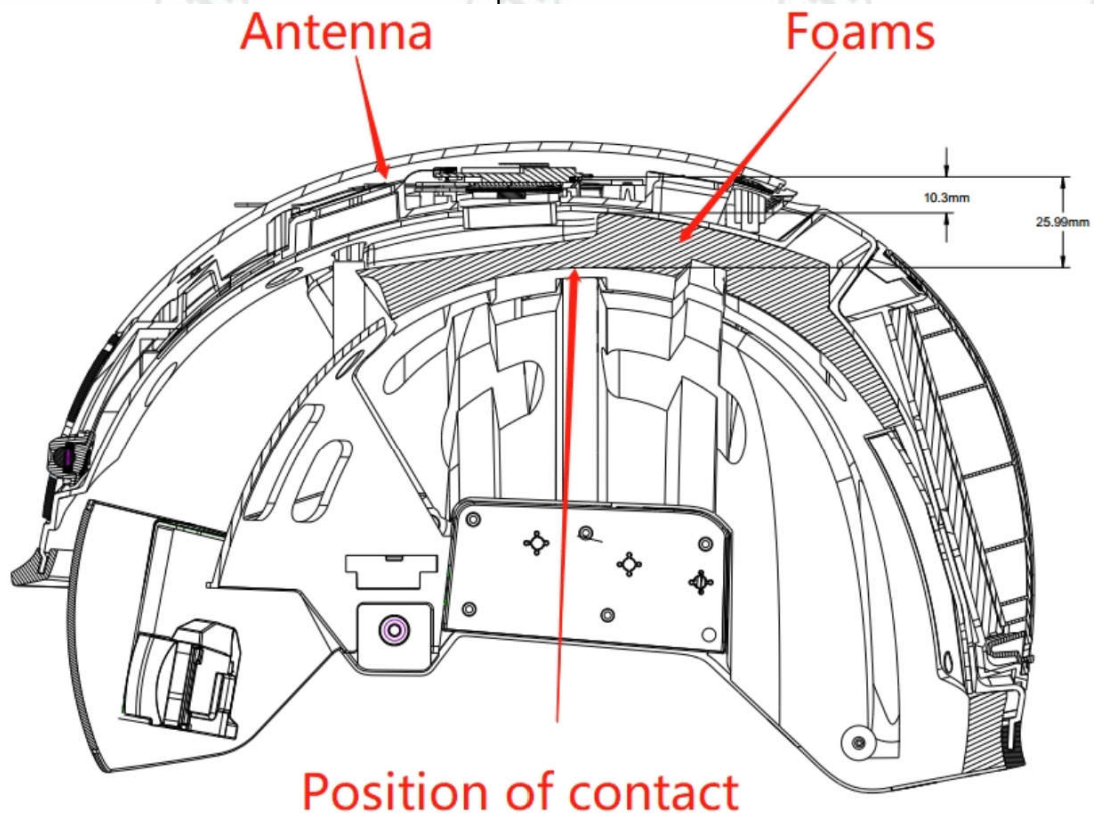
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

5.1.3 EUT RF Exposure

The tune-up power is 7.0 dBm +/- 2dB, therefore the highest tune-up power is

9.0 dBm (7.94 mW) @ 2437 MHz

The location of the antennas are shown as below picture:



The helmet lining comes in three sizes, 3mm, 5mm and 7mm thick. The helmet lining in the picture uses a size of 3mm. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion. So,

$$\left(\frac{7.94\text{mW}}{19\text{mm}} \right) * \left(2.437\text{GHz}^{\wedge 0.5} \right) = 0.7$$

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] * \left[\sqrt{f(\text{GHz})} \right] = 0.7 < 3.0$$

Therefore, standalone SAR measurements are not required for both head and body

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32M00160901 for EUT external and internal photos.

*** End of Report ***

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