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Report Template Version: V05

Report Template Revision Date: 2021-11-03

RF Exposure Evaluation Report

Report No. : CQASZ20211101913E-02
Applicant: SHENZHEN HYSNOX TECHNOLOGY CO., LTD
Address of Applicant: 205, Floor 2, Xingyue Building, Shichang Road, Taoyuan Community, Dalang Street, LongHua Dist., Shenzhen, Guangdong
Equipment Under Test (EUT):
Product: HYSNOX Helmet Bluetooth Intercom Headset
Model No.: HY-01, HY-01S, HY-02, HY-02A, HY-06, HY-08, HY-10S, HY-10A, HY-10B, HY-1006, HY-1008, HY-1009, SN-01, SN-02, SN-02A, SN-03, SN-05, SN-06A, SN-08, SN-08A
Test Model No.: HY-01
Brand Name: HYSNOX
FCC ID: 2AZ3F-HY01S
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-11-03
Date of Test: 2021-11-03 to 2021-11-26
Date of Issue: 2021-12-03
Test Result : **PASS***

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

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Rock Huang
(Rock Huang)

Approved By: Jack ai
(Jack ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20211101913E-02	Rev.01	Initial report	2021-12-03

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3 General Information

3.1 Client Information

Applicant:	SHENZHEN HYSNOX TECHNOLOGY CO., LTD
Address of Applicant:	205, Floor 2, Xingyue Building, Shichang Road, Taoyuan Community, Dalang Street, LongHua Dist., Shenzhen, Guangdong
Manufacturer:	SHENZHEN HYSNOX TECHNOLOGY CO., LTD
Address of Manufacturer:	205, Floor 2, Xingyue Building, Shichang Road, Taoyuan Community, Dalang Street, LongHua Dist., Shenzhen, Guangdong
Factory:	SHENZHEN HYSNOX TECHNOLOGY CO., LTD
Address of Factory:	205, Floor 2, Xingyue Building, Shichang Road, Taoyuan Community, Dalang Street, LongHua Dist., Shenzhen, Guangdong

3.2 General Description of EUT

Product Name:	HYSNOX Helmet Bluetooth Intercom Headset
Model No.:	HY-01, HY-01S, HY-02, HY-02A, HY-06, HY-08, HY-10S, HY-10A, HY-10B, HY-1006, HY-1008, HY-1009, SN-01, SN-02, SN-02A, SN-03, SN-05, SN-06A, SN-08, SN-08A
Test Model No.:	HY-01
Trade Mark:	HYSNOX
Software Version:	A2.0
Hardware Version:	A1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth v5.0
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:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Blue Test3
Antenna Type:	Chip antenna
Antenna Gain:	4.97dBi
Power Supply:	lithium battery:DC3.7V, 900mAh, 3.33Wh, Charge by DC5.0V

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:

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

$f(\text{GHz})$ 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

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-4.120	-4.0±1	-3.0	0.501
Middle(2441MHz)	-3.350	-3.0±1	-2.0	0.631
Highest(2480MHz)	-2.770	-2.5±1	-1.5	0.708
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-3.330	-3.0±1	-2.0	0.631
Middle(2441MHz)	-2.590	-2.5±1	-1.5	0.708
Highest(2480MHz)	-2.020	-2.0±1	-1.0	0.794
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.960	-2.5±1	-1.5	0.708
Middle(2441MHz)	-2.190	-2.0±1	-1.0	0.794
Highest(2480MHz)	-1.620	-1.5±1	-0.5	0.891

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)	-2.960	-2.5±1	-1.5	0.078	0.219	3.0
Middle (2441MHz)	-2.190	-2.0±1	-1.0	0.794	0.248	
Highest (2480MHz)	-1.620	-1.5±1	-0.5	0.891	0.281	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20211001913E-01

*** End of Report ***