



TÜVRheinland®
Precisely Right.

RF Exposure Exhibit

EUT Name: Wireless Audio Headset

EUT Models: Stealth 700X Gen 2 (TB300-2780-01)

PMN: Stealth 700X Gen 2

HVIN: 700X Gen 2

CFR47 Part 2.1093, RSS-102 Iss. 5 March 2015

Prepared for:

Voyetra Turtle Beach Inc.
100 Summit Lake Drive, Suite 100
Valhalla, New York 10959, USA

Prepared by:

TUV Rheinland of North America
1279 Quarry Lane, Ste. A
Pleasanton, CA 94566
Tel: (929) 249-9123
Fax: (925) 249-9124
<http://www.tuv.com/>

Report/Issue Date: October 12, 2020

Report Number: 32063007.002

1.1 Maximum Permissible Exposure

1.1.1 Test Methodology

In this section, we try to prove the safety of radiation harmfulness to the human body for our product. The KDB 447498 D01v06 General RF Exposure Guidance is followed. The Gain of the antenna used in this calculation is declared by the manufacturer, and the maximum average power input to the antenna is measured. Using the general SAR test exclusion guidance in Section 4.3 of KDB 447498, we show the device meeting the SAR exclusion threshold found in Appendix A of KDB 447498 D01v06 and SAR exemption limits found in Table 1 of RSS-102 Issue 5.

ISED accepts the KDB 447498 D01 Procedure.

1.1.2 FCC KDB 447498 D01 – General SAR Test Exclusion Guidance

The SAR exclusion threshold conditions are listed:

- 1) 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:

$$\text{Exclusion Threshold} = [P / d] * [\sqrt{f}]$$

Where

P = max power of channel (including tune-up tolerance) in mW

d = min. test separation distance in mm

f = the RF channel transmit frequency in GHz

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

The result is rounded to one decimal place for comparison

Limit: ≤ 3.0 of 1-g SAR ≤ 7.5 of 10-g extremity SAR

The test exclusions are applicable only when the minimum test separation distance is < 50 mm 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 exclusion.

1.1.3 EUT Operating Condition

The software provided by Manufacturer enabled the EUT to transmit data at lowest, middle and highest channel individually.

1.1.4 Classification

The antenna of the product, under normal use condition, is 2 cm away from the body of the user; per manufacturer's declaration. This device is classified as a **Portable Device**.

1.1.5 Antenna Gain

Number	Antenna Type	Description	Max Gain (dBi)
Wi-Fi Antenna	Chip	Max. peak gain at 2.4 GHz	+3.3
		Max. peak gain at 5 GHz	+3.7
BT Antenna	PCB Trace	Max. peak gain at 2.4 GHz	+3.1

1.1.6 SAR Test Exclusion Threshold

FCC SAR Exclusion Threshold Calculation

Mode	Frequency (GHz)	Max. Power (dBm)	Max. Power (mW)	Ant. Gain (dbi)	Min. Distance (mm)	Max. EIRP (mW)	SAR Excl. Threshold (mW)	Ratio (Pwr-Limit)	Result
Bluetooth (2.4 GHz)	2.4	4.10	2.57	3.10	20	5.25	≤ 38.0	0.14	Exempted *
Wi-Fi (2.4 GHz)	2.4	5.26	3.36	3.3	20	7.18	≤ 38.0	0.19	Exempted *
Wi-Fi (5 GHz)	5	5.44	3.50	3.7	20	8.20	≤ 38.0	0.22	Exempted *

Note:

- Since EUT can operate at a distance of 20 mm, the SAR Test Exclusion Threshold was taken from KDB 447498 D01 General RF Exposure Guidance v06 Appendix A.
- The maximum output powers were taken from Table 2 of "Turtle Beach Stealth 700X Gen 2 - FCC 15.407 Report", "Turtle Beach Stealth 700X Gen 2 - FCC 15.247 Report", and Turtle Beach Stealth 700X Gen 2 - BLE Report".
- The Wi-Fi chipset can only transmit on one operating channel in either the 2.4 GHz or 5 GHz bands.
- Bluetooth and Wi-Fi chipsets can transmit simultaneously. The sum of the ratio of the Wi-Fi and Bluetooth is less than a factor of 1; therefore, the simultaneous transmission mode exposure is exempted.
- (*) The maximum eirp power is less than the SAR exclusion thresholds; therefore, EUT is SAR exempted for routine evaluation.

RSS-102 SAR Exclusion Threshold Calculation

Mode	Frequency (GHz)	Max. Power (dBm)	Max. Power (mW)	Ant. Gain (dbi)	Min. Distance (mm)	Max. EIRP (mW)	SAR Exemption Limit (mW)	Ratio (Pwr-Limit)	Result
Bluetooth (2.4 GHz)	2.4	4.10	2.57	3.10	20	5.25	≤ 30.0	0.18	Exempted *
Wi-Fi (2.4 GHz)	2.4	5.26	3.36	3.3	20	7.18	≤ 30.0	0.24	Exempted *
Wi-Fi (5 GHz)	5	5.44	3.50	3.7	20	8.20	≤ 30.0	0.27	Exempted *

Note:

- The SAR Exemption Limit was taken from RSS-102 Iss. 5, Sect. 2.5.1 Table 1 for a device operating at a 20 mm distance.
- The maximum output powers were taken from Table 2 of "Turtle Beach Stealth 700X Gen 2 - FCC 15.407 Report", "Turtle Beach Stealth 700X Gen 2 - FCC 15.247 Report", and Turtle Beach Stealth 700X Gen 2 - BLE Report".
- The Wi-Fi chipset can only transmit on one operating channel in either the 2.4 GHz or 5 GHz bands.
- Bluetooth and Wi-Fi chipsets can transmit simultaneously. The sum of the ratio of Wi-Fi and Bluetooth is less than a factor of 1; therefore, the simultaneous transmission mode exposure is exempted.
- (*) The maximum eirp power is less than the SAR exemption limit; therefore, EUT is SAR exempted for routine SAR evaluation.
- RSS-102 Nerve Stimulation Exposure does not apply since EUT operates in the 2.4 GHz band.