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RF Exposure Exhibit

EUT Name: Wireless Audio Headset

EUT Models: Stealth700X-MAX-RX

PMN: Stealth700X-MAX-RX

HVIN: 700X-MAX-RX

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

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Report/Issue Date: April 12, 2022
Report Number: US22IAB2.001

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 conditions, is 2 cm away from the body of the user. This device is classified as a **Portable Device**.

1.1.5 Antenna Gain

Number	Antenna Type	Description	Max Gain (dBi)
Bluetooth Antenna	Chip	Max. peak gain at 2.4 GHz	+1.8
DTS Antenna	PCB Antenna	Max. peak gain at 2.4 GHz	+4.0

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	2.60	1.82	1.8	20	2.75	≤ 38.0	0.07	Exempted *
DTS	2.4	3.45	2.21	4.0	20	5.56	≤ 38.0	0.15	Exempted *

Note:

1. Since the 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.
2. The maximum output powers were taken from Table 2 of "Turtle Beach Stealth700X-MAX-RX - FCC 15.247 Report" and Turtle Beach Stealth700X-MAX-RX - BLE Report".
3. The Bluetooth and DTS chipsets can transmit simultaneously. The sum of the ratio of DTS and Bluetooth is less than a factor of 1. Therefore, the simultaneous transmission mode exposure is exempted.
4. (*) The maximum eirp power is less than the SAR exclusion thresholds. Therefore, the 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	2.60	1.82	1.8	20	2.75	≤ 30.0	0.09	Exempted *
DTS	2.4	3.45	2.21	4.0	20	5.56	≤ 30.0	0.19	Exempted *

Note:

1. 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.
2. The maximum output powers were taken from Table 2 of "Turtle Beach Stealth700X-MAX-RX - FCC 15.247 Report" and Turtle Beach Stealth700X-MAX-RX - BLE Report".
3. The Bluetooth and DTS chipsets can transmit simultaneously. The sum of the ratio of any DTS and Bluetooth is always less than a factor of 1. Therefore, the simultaneous transmission mode exposure is exempted.
4. (*) The maximum eirp power is less than the SAR exemption limit. Therefore, the EUT is SAR exempted for routine SAR evaluation.
5. RSS-102 Nerve Stimulation Exposure does not apply since the EUT only operates in the 2.4 GHz band.