



TÜVRheinland®
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RF Exposure Exhibit

EUT Name: Wireless Audio Headset

EUT Models: ROCCAT SYN Pro Air RX (ROC-14-150-01)

PMN: ROCCAT SYN Pro Air RX

HVIN: SYN Pro Air RX

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

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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 \leq 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: \leq 3.0 of 1-g SAR \leq 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.

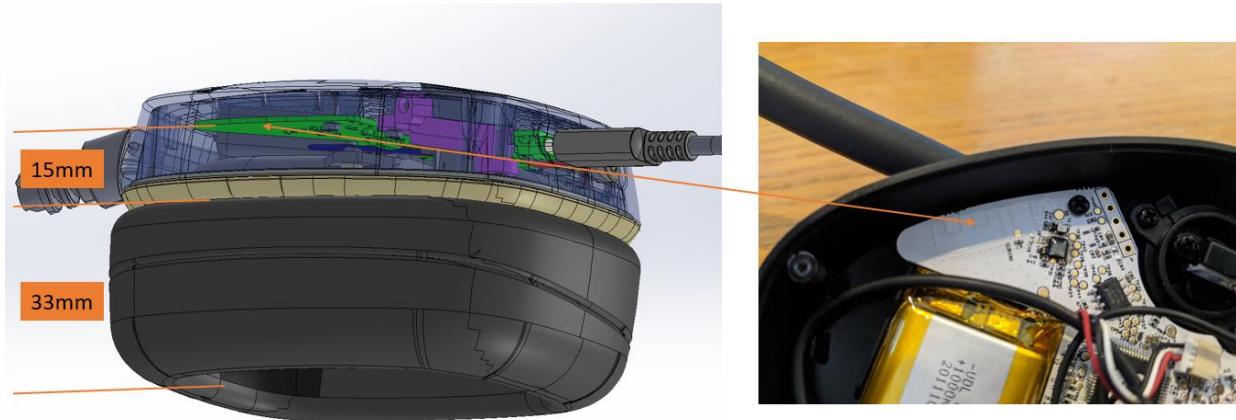
1.1.3 EUT Operating Condition

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 at 48.0 mm away from the body of the user. This device is classified as a **Portable Device**.

Performance (SYN PRO AIR) Left Earcup



1.1.5 Antenna Gain

The antenna used is 3.87 dBi / 2.44 (numeric).

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)	Cal. Excl. Threshold	1-g SAR Limit	10-g extremity SAR Limit	Result
Modulated	2.480	3.71	2.35	3.87	5	1.18	≤ 3.0	≤ 7.5	Exempted *

Note:

1. Since EUT can operate at a distance of less than 20 mm, the minimum distance, 5 mm, was used for calculation per condition #1 of SAR Exclusion Threshold.
2. The maximum output power was taken from Table 2 of "Turtle Beach ROCCAT SYN Pro Air RX - FCC 15.247 Report US2119Y9.001".
3. (*) The calculated threshold is less than 3.0; therefore, EUT is SAR exempted for head usage.

RSS-102 SAR Exclusion Threshold Calculation

Mode	Frequency (GHz)	Min. Distance (mm)	Max. Power (dBm)	Ant. Gain (dbi)	EIRP (mW)	SAR Exemption Limit (mW)	Result
Modulated	2.480	≤ 5	3.71	3.87	5.73	≤ 235	Exempted *

Note:

1. The maximum output power was taken from Table 2 of "Turtle Beach ROCCAT SYN Pro Air RX - FCC 15.247 Report US2119Y9.001".
2. (*) The eirp power in mW is less than the limit of 235mW at distance ≤ 48 mm distance per RSS 102 Table 1; therefore, EUT is SAR exempted for head and body usage.
3. Nerve stimulation exposure does not apply since EUT operates at 2.4 GHz band.