

RF Exposure Report

Report No.: SA170728C17

FCC ID: A6RHPHW300A

Test Model: HPH-W300

Received Date: Jul. 28, 2017

Test Date: Jul. 31 ~ Aug. 16, 2017

Issued Date: Aug. 28, 2017

Applicant: Yamaha Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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Release Control Record

Issue No.	Description	Date Issued
SA170728C17	Original release.	Aug. 28, 2017

1 Certificate of Conformity

Product: Bluetooth Headphones

Brand: YAMAHA

Test Model: HPH-W300

Sample Status: Engineering sample

Applicant: Yamaha Corporation

Test Date: Jul. 31 ~ Aug. 16, 2017

Standards: FCC Part 2 (Section 2.1091)

KDB Publication 447498 D01 General RF Exposure Guidance v06

IEEE C95.1

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :



Date:

Aug. 28, 2017

Pettie Chen / Senior Specialist

Approved by :



Date:

Aug. 28, 2017

Ken Liu / Senior Manager

2 Evaluation Result

Following FCC KDB 447498 D01 “General SAR test exclusion guidance”

The corresponding SAR Exclusion Threshold condition, listed below:

- 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:
$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}]$$
$$\leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
 - $f(\text{GHz})$ is the RF channel transmit frequency in GHz.
 - Power and distance are rounded to the nearest mW and mm before calculation.
 - 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.
- 2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
 - a) [Threshold at 50 mm in step 1) + (test separation distance - 50mm) · (f(MHz)/150)] mW, at 100MHz to 1500 MHz
 - b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz
- 3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
 - a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by $[1 + \log(100/f(\text{MHz}))]$ for test separation distances > 50 mm and < 200 mm.
 - b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$ for test separation distances ≤ 50 mm.
 - c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

3 SAR Test Exclusion Thresholds

Maximum measured transmitter power:

Mode	Max. Power (dBm)	*Time Avg. Power (dBm)	*Time Avg. Power (mW)	Min. Test Separation Distance (mm)	SAR test exclusion calculation value ^(NOTE 2)	1-g baby SAR test exclusion thresholds	Result
BT EDR	10.05	-7.9	0.162	5	0.050	3	Pass

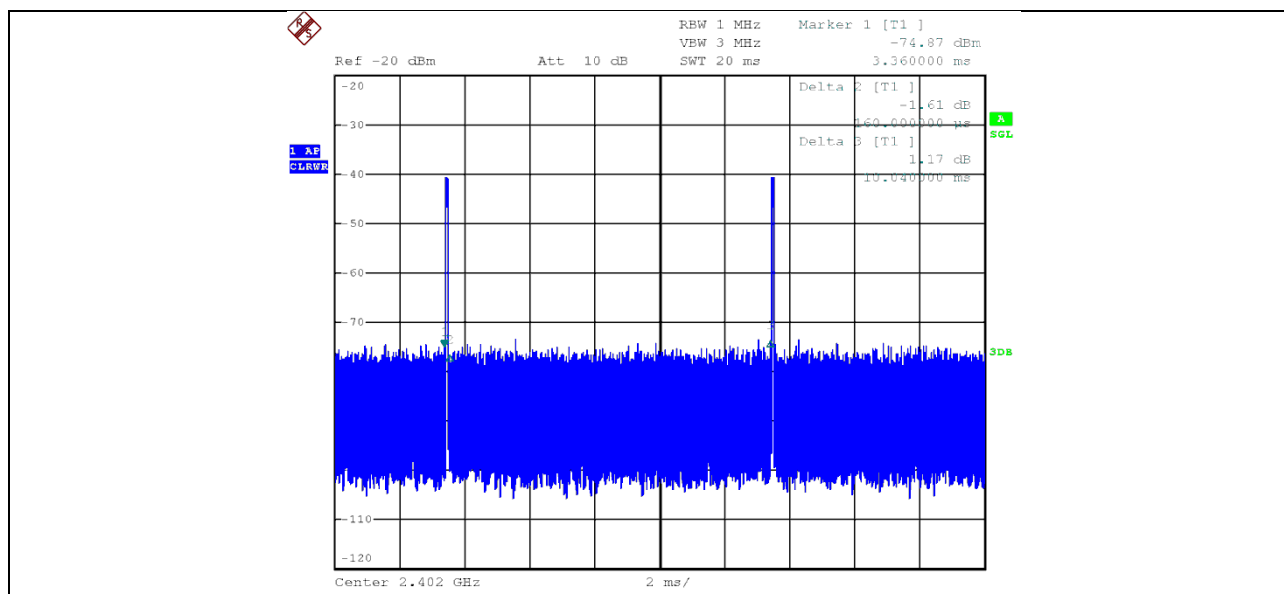
Note:

1. The antenna type is Chip antenna with 0.85dBi gain.
2. The limits for routine evaluation in Table 1.
3. *Time Avg. Power = Max. Power + Duty Factor

BT EDR Duty Cycle of Test Signal

Duty Cycle	Tx pulse (ms)	Pulse count per 100ms (times)	Tx on per 100 (ms)	Duty Factor (dB)
	0.16	10	1.60	-17.95

Note: The duty cycle correlation factor be equal to: $10\log(\text{Tx on}/100\text{ms}) = -17.95$



Mode	Max. Power (dBm)	*Time Avg. Power (dBm)	*Time Avg. Power (mW)	Min. Test Separation Distance (mm)	SAR test exclusion calculation value ^(NOTE 2)	1-g baby SAR test exclusion thresholds	Result
BT LE	6.04	3.91	2.46	5	0.762	3	Pass

Note:

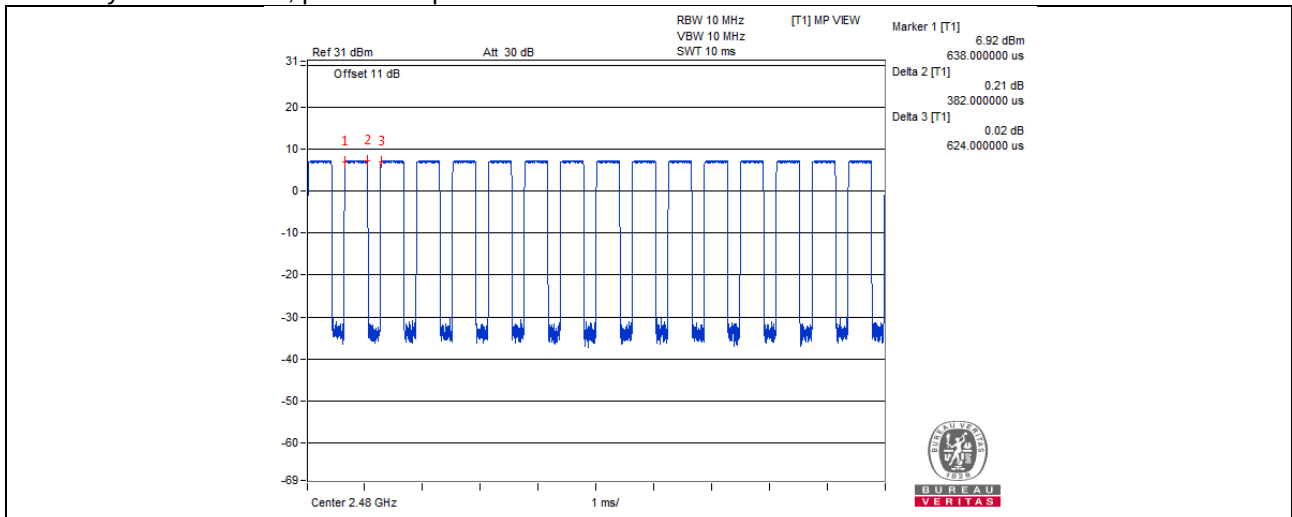
1. The antenna type is Chip antenna with 0.85dBi gain.
2. The limits for routine evaluation in Table 1.
3. *Time Avg. Power = Max. Power + Duty Factor

BT LE Duty cycle of test signal

Duty Cycle	Tx pulse (ms)	Pulse count per 100ms (times)	Tx on per 100 (ms)	Duty Factor (dB)
	0.382	160.26	61.22	-2.13

Note:

1. The duty cycle correlation factor be equal to: $10\log(\text{Tx on}/100\text{ms}) = -2.13$
2. One cycle = 0.624ms, pulse count per 100ms = $100\text{ms}/0.624\text{ms} = 160.26$



*BT EDR and BT LE cannot transmit and receive simultaneously.

4 Conclusion

Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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