

Date: July 4, 2017

FCC ID : AK8WF1000X  
Applicant: Sony Corporation

## SAR Evaluation Exemption

To whom it may concern,

We, Sony Global Manufacturing & Operations Corporation EMC/RF Test Laboratory, Main Lab., hereby declare that Wireless Noise Canceling Stereo Headset, models: WF-1000XL, and WF-1000XR (FCC ID: AK8WF1000X) of Sony Corporation are exempt from RF exposure SAR evaluation, as their output power meet the exclusion limits, stated in FCC Part 2 §2.1093.

According to KDB 447498 D01 (v06), section 4.3.1:

... These test exclusion conditions are based on source-based time-averaged (i.e. frame averaged) maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.  
... 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:

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

- $f(\text{GHz})$  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  $\leq 50$  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.

For above device:

Regarding **Bluetooth BR/EDR**:

$f = 2.48$  GHz, distance = 5mm (the min. separation distance is  $< 5$  mm),

the max. possible duty cycle = 83.3% = -0.79 dB,

(\* xDH5: 83.3% = (On time; 625  $\mu$ s \* 5 slots) / (On time + Off time; 625  $\mu$ s \* 6 slots) )

the max. possible burst averaged power incl. tune-up tolerance = 6.00 dBm, and

the max. possible frame averaged power incl. tune-up tolerance = 6.00 + (-0.79) = 5.21 dBm  $\approx 3$  mW.

Therefore,

$$3 \text{ mW} / 5 \text{ mm} * (\sqrt{2.48 \text{ GHz}}) = 1.0 < 3.0$$

and no SAR evaluation is required.

Regarding **Bluetooth Low Energy**:

$f = 2.48$  GHz, distance = 5mm (the min. separation distance is  $< 5$  mm),

the max. possible duty cycle = 100% = 0.00 dB,

the max. possible burst averaged power incl. tune-up tolerance = 1.50 dBm, and

the max. possible frame averaged power incl. tune-up tolerance = 1.50 + (0.00) = 1.50 dBm  $\approx 1$  mW.

Therefore,

$$1 \text{ mW} / 5 \text{ mm} * (\sqrt{2.48 \text{ GHz}}) = 0.3 < 3.0$$

and no SAR evaluation is required.

# SONY

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Thank you for your attention to this matter.

Sincerely,

A handwritten signature in cursive script, reading "T. Kurihara". The signature is written in black ink on a white background. The first letter "T" is large and stylized, followed by a period and the name "Kurihara".

Teruki Kurihara

Technical Manager

EMC/ RF Test Laboratory Main Lab.

Design Technology Division

Sony Global Manufacturing & Operations Corporation