



Sony Global Manufacturing & Operations Corporation EMC/RF Test Laboratory, Main Lab.

8-4 Shiomi Kisarazu-shi Chiba-ken, 292-0834, Japan

Date: October 17, 2024

FCC ID : AK8QM-PR1

Applicant : Sony Group Corporation

## RF Exposure / MPE Calculation

To whom it may concern,

We, Sony Global Manufacturing & Operations Corporation EMC/RF Test Laboratory, Main Lab., hereby declare that Sensor data receiver, model: QM-PR1 (FCC ID: AK8QM-PR1) of Sony Corporation complies with FCC radiation exposure requirements, stated in the FCC Part 2 §2.1091.

### 1. Limits for Maximum Permissible Exposure (MPE):

According to FCC Part 1 §1.1310, Table 1:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(ii) Limits for General Population/Uncontrolled Exposure				
30-300	27.5	0.073	0.2	<30
300-1,500	---	---	f/1500	<30
1,500-100,000	---	---	1.0	<30

(f = frequency in MHz)

### 2. MPE Calculation:

The calculation is based on the Friis formula:

$$S \text{ (power density)} = \frac{P \text{ (maximum averaged power)} \times G \text{ (antenna gain)}}{4 \times \pi \times r^2 \text{ (separation distance)}}$$

For above device,

Regarding **Bluetooth Low Energy**;

the frequency range = 2402 to 2480 MHz,

P = 9.50 dBm = 8.91 mW  $\approx$  9 mW,

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

the max. possible burst averaged power incl. tune-up tolerance = 9.50 dBm, and

the max. possible frame averaged power incl. tune-up tolerance = 9.50 + (0.00) = 9.50 dBm,

G = 1.1 dBi = 1.288 Numerical,

r = 20 cm.

Therefore,

$$S = \frac{P \times G}{4 \times \pi \times r^2} = \frac{9 \times 1.288}{4 \times \pi \times 20^2} = 0.00231 \text{ mW/cm}^2$$

and this device complies with the limits.

Thank you for your attention to this matter.

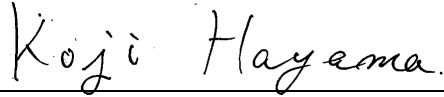
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Sincerely,

A handwritten signature in black ink that reads "Koji Hayama". The signature is written in a cursive, flowing style. Below the signature is a solid black horizontal line.

Koji Hayama

Technical Manager

EMC/ RF Test Laboratory Main Lab.

Design Technology Division

Sony Global Manufacturing & Operations Corporation