FCC ID: PZWSE1BUBC

To whom it may concern,

We, UL Japan, Inc, hereby declare that RF Tag Handy Scanner, model: SE1-BUB-C (FCC ID: PZWSE1BUBC) of Denso Wave Incorporated is exempt from RF exposure SAR evaluation because the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula according to the Code of Federal Regulation title 47 section 1.1307(b)(3)(i)(B). This method is used at separation distances d (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive) for single RF sources. P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20\text{ cm}} \, (d \, / \, 20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20\text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\text{ cm}}\sqrt{f}}\right) \text{ and } f \text{ is in GHz}$$

$$ERP_{20\text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

When the minimum separation distance is shorter than 0.5 cm, 0.5 cm is applied.

The SAR evaluation exemption threshold is calculated as below.

[RFID part]

Pth (mW) *1)	19.94
f (GHz)	0.9275
$ERP_{20\text{ cm}}$ (mW)	1892.1
d (cm)	0.5

Conducted Power	(dBm)	10.00
	(mW)	10.00
Antenna Gain (dBi)		-3.15
EIRP (dBm)		6.85
ERP	(dBm)	4.71
	(mW)	2.96

*1) The Pth was multiplied 2.5 times, conditional on the limbs.
The Maximum time-averaged power or ERP whichever greater is 10 mW.
(Rounded up to two decimals place)

[Bluetooth (BR / EDR) part]

Pth (mW) *1)	6.79
f (GHz)	2.48
ERP$_{20\ cm}$ (mW)	3060
d (cm)	0.5

Conducted Power	(dBm)	3.98
	(mW)	2.50
Antenna Gain (dBi)		1.70
EIRP (dBm)		5.68
ERP	(dBm)	3.54
	(mW)	2.26

*1) The Pth was multiplied 2.5 times, conditional on the limbs.
The Maximum time-averaged power or ERP whichever greater is 2.5 mW.
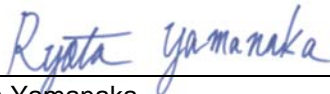(Rounded up to two decimals place)

Transmitters used in mobile exposure conditions for simultaneous transmission operations according to KDB447498 D04.
Value is calculated using the following formula according to the Code of Federal Regulation title 47 section 1.1307(b)(3)(ii)(B).

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{a} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

[RFID part and Bluetooth (BR/EDR) part
   10.0 / 19.94   +   2.5 / 6.79   =   0.5015 +   0.3682 = **0.8697** <1

Thank you for your attention to this matter.

Ryota Yamanaka

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