

### Statement for RF Exposure

JOB No. : 32JE0171-HO-02  
 Applicant : DENSO CORPORATION  
 Type of Equipment : Millimeter Wave Radar Sensor  
 Model No. : DNMWR007  
 Test standard : FCC Part 15 Subpart C: 2012  
 Section 15.253(f)

RSS-Gen Issue 3: 2010 +A1: January 2012  
 RSS-210 Issue 8: December 2010

Test result : Complied

#### [FCC rule]

##### **§1.1310 Radiofrequency radiation exposure limits.**

The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

**Table 1—Limits for Maximum Permissible Exposure (MPE)**

| Frequency range (MHz)  | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3–3.0  | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0–30   | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30–300   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300–1500   |                               |                               | f/300                               | 6                        |
| 1500–100,000   |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3–1.34   | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34–30  | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | 30                       |
| 30–300   | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300–1500   |                               |                               | f/1500                              | 30                       |
| 1500–100,000   |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz

\* = Plane-wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

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[IC rule]

RSS-102

#### §4 Exposure Limits

For the purpose of this standard, Industry Canada has adopted the SAR and RF field strength limits established in Health Canada's RF exposure guideline, Safety Code 6.

#### §4.2 RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

| Frequency Range (MHz) | Electric Field (V/m rms) | Magnetic Field (A/m rms)     | Power Density (W/m <sup>2</sup> ) | Averaging Time (minutes) |
|-----------------------|--------------------------|------------------------------|-----------------------------------|--------------------------|
| 0.003-1               | 280                      | 2.19                         | -                                 | 6                        |
| 1-10                  | $280/f$                  | $2.19/f$                     | -                                 | 6                        |
| 10-30                 | 28                       | $2.19/f$                     | -                                 | 6                        |
| 30-300                | 28                       | 0.073                        | $2^*$                             | 6                        |
| 300-1500              | $1.585f^{0.5}$           | $0.0042f^{0.5}$              | $f/150$                           | 6                        |
| 1500-15000            | 61.4                     | 0.163                        | 10                                | 6                        |
| 15000-150000          | 61.4                     | 0.163                        | 10                                | $616000/f^{4.2}$         |
| 150000-300000         | $0.158f^{0.5}$           | $4.21 \times 10^{-4}f^{0.5}$ | $6.67 \times 10^{-5}f$            | $616000/f^{4.2}$         |

Note:  $f$  is frequency in MHz.

\* Power density limit is applicable at frequencies greater than 100 MHz.

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**[Results]**

| Mode          | Peak EIRP |        | Duty Factor<br>[dB] | Average EIRP<br>(Peak with Duty Factor) |       |
|---------------|-----------|--------|---------------------|---|-------|
|               | [dBm]     | [mW]   |                     | [dBm]                                   | [mW]  |
| In motion     | 30.44     | 1106.6 | -2.34               | 28.10                                   | 645.1 |
| Not in motion | 24.33     | 270.8  | -2.34               | 21.98                                   | 157.9 |

| Separation<br>Distance<br>[cm] | FCC                                    |                                | IC                                   |                              |
|--------------------------------|--|--------------------------------|--------------------------------------|------------------------------|
|                                | Power Density<br>[mW/cm <sup>2</sup> ] | Limit<br>[mW/cm <sup>2</sup> ] | Power Density<br>[W/m <sup>2</sup> ] | Limit<br>[W/m <sup>2</sup> ] |
| 20                             | 0.128                                  | 1                              | 1.283                                | 10                           |
| 20                             | 0.031                                  | 1                              | 0.314                                | 10                           |

Calculating formula:

$$\text{Average EIRP} = \text{Peak EIRP} + \text{Duty Factor}$$

$$\text{Power Density} = \text{Average EIRP} / (4 * \pi * \text{Separation Distance}^2)$$