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1.0 Maximum Permissible Exposure Evaluation (Supplements the test report.)

The results of power measurement and intended use/proximity are compared against the requirements for safety of RF exposure.

1.2 Criteria

Section Reference	Date
KDB 447498 D01 Mobile Portable RF Exposure v05r01 // RSS-102 Issue 5 March 2015, Notice 2013 DRS0911	25 Oct 2019

1.3 Procedure

Using measurement of peak power and intended application, determine the permissible exposure level or whether additional exposure tests (SAR) are indicated. Justify conclusion for selected exposure area and separation distance.

1.4 Calculation

This device is operated attached to a surface in a vehicle. The operating band is 902-928 MHz. The uncontrolled public separation distance is 1 cm (10 mm) to the users fingers when pressing the channel select button. Therefore limb exposure factor (x2.5) could be applied. Channel selection will be an initial setup activity primarily when the device is freshly powered up. This is estimated to take less than 60 seconds. So averaged over a six minute window yields a 1 min / 6 min factor of 10 log (1/6) = -7.8 dB. In actual use this is further mitigated by the antenna being tilted upright in the usual wall-mount configuration though no factor for this is considered herein.

Table 1.4.1 Power Calculation

Measured Power Conducted Antenna Port dBm*	Antenna Gain dBi	Calculated EIRP Power dBm	Measured Source Duty Cycle Factor dB	Calculated Usage Time Weighting Factor dB	Calculated Average Power dBm	Calculated Average Power mW
30.2	1.2	31.4	9.11% -10.65	-7.8	13	20

*This is the peak measurement.

1.5 FCC

Applicable requirement: KDB 447498 Clause 4.3.1 Section 1

Calculation (max power including tune up tolerance = 20 mW):

$[(20\ mW)/(10\ mm)] \cdot [\sqrt{0.926_{GHz}}] = 1.9$

$1.9 \leq 3.0$

1.6 ISED

Applicable requirement: RSS-102 Table 1 […] Exemption Limits […]

Table 1, Exemption Limit (Rows 835 & 1900 MHz for 10 mm distance) = 30 mW and 10 mW respectively.

Limit calculated from above for 903 MHz = 28.7 mW

20 mW ≤ 28.7 mW

Therefore, the device meets the applicable FCC and ISED permissible exposure exemption requirements.

Signed:

Eric Lifsey

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