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

The measured power is considered for the intended use of the device and resulting RF exposure to the user.

1.2 Criteria

Section Reference	Date
KDB 447498 D01 Mobile Portable RF Exposure v05r01 // RSS-102 Issue 5 March 2015, Notice 2013 DRS0911	5 Jul 2017

1.3 Procedure

Using measurement of peak power and considering the intended application, determine the permissible exposure level, applicability of exclusion, or whether additional exposure tests (SAR) are indicated. When applicable justify conclusion for selected exposure level and separation distance.

1.4 Power to Exposure Calculation

Radio power is determined by radiated field measurement. SAR exemption method was applied for 5 mm spacing; this was based on wearing the device as part of a protective headgear/helmet.

Table 1.4.1 Power Calculation for Exposure, 902-928 MHz Radio (Highest frequency 927 MHz)

Measured Peak Power dBm	Antenna Gain dBi	Maximum Peak Power as EIRP dBm	Source Duty Cycle Factor dB	Power for Exposure dBm	Power Restated In Linear Terms mW
9.12	3	12.12	-10.3	1.82	1.52

1.5 SAR Exemption Calculation – FCC

Applicable requirement: KDB 447498 Clause 4.3.1 Section 1

Calculation (max power including tune up tolerance = 1.52 mW):

$$[(1.52\ \text{mW})/(5\ \text{mm})] \cdot [\sqrt{0.927\ (\text{GHz})}] = 0.3$$

$$0.3 \leq 3.0$$

Therefore, the device meets the applicable FCC SAR exemption requirements.

1.6 SAR Exemption Calculation – IC

This device meets the clause **2.5 Exemption Limits for Routine Evaluation – SAR Evaluation** criteria in RSS-102 Clause 2.5.1, Table 1. This is based on the output power of 1.52 mW being under the smallest exposure Exemption Limit power (7 mW), for either adjacent rows 835 to 1900 MHz, and when applying the column for the smallest separation distance of ≤5 mm.

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance[4,5]

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Signed:

Eric Lifsey

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