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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	2 Nov 2018

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 rider helmet. The operating band is 902-928 MHz. The uncontrolled public separation distance is 5 cm (50 mm) to the users head.

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 Average Power dBm	Calculated Average Power mW
25.2	2.0	27.2	7.76% -11.1 dB	16.1	40.7

*This is the peak measurement.

1.5 SAR Exemption and Field Density Calculation – FCC

Applicable requirement: KDB 447498 Clause 4.3.1 Section 1

Calculation (max power including tune up tolerance = 40.7 mW):

$$[(40.7 \text{ mW})/(50 \text{ mm})] \cdot [\sqrt{0.926_{GHz}}] = 0.8$$

$$0.8 \leq 3.0$$

1.6   SAR Exemption and Field Density Calculation – ISED

Applicable requirement: RSS-102 Table 4 [...] General Public [...] Uncontrolled

Power Density Limit (Row 300-6000 MHz) = $0.02619 f_{MHz}^{0.6834}$

$Limit_{902\ MHz} = 0.02619 * (902^{0.6834}) = 2.7\ W/m^2$

Field density is determined at 5 cm then compared to field density limit:

$S = EIRP / (4\ \pi\ 5^2)$
$S = 40.7\ mW / 5026.55\ cm^2 = 0.13\ mW/cm^2 = 1.3\ W/\ m^2$

$1.3\ W/\ m^2 < 2.7\ W/\ m^2$

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

Signed:

Eric Lifsey

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