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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, Notice 2013 DRS0911	22 Aug 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 Exemption Calculation

This device is normally wall mounted and the antenna is a monopole hidden within the plastic enclosure. There is a single user interface button presented and its nearest edge is 30 mm from the antenna.

Initially, there is a recorded audible message (assumed zero length) and a 5 second delay to monitor for a clear channel before initiating transmission. Transmission may be up to 20 seconds long maximum. The device then waits 45 seconds before attempting the 2nd and last transmission. So a calculation puts transmit time as 20*2 seconds per a (5+20+45)*2 second period. The duty cycle is 28.6% yielding a source duty cycle factor of $10\log_{10}(0.286) = -5.4$ dB.

It's worth noting that this would assume the user is maintaining contact with the button during all of the transmission events. This would not be expected as the device confirms the button press by lighting up the button itself, then making a random length recorded announcement on the speaker, and waits 5 seconds, before starting the transmission. So this calculation will be highly conservative compared to normal use.

Table 1.4.1 Power Calculation for Exposure; Highest frequency 0.470 GHz

Measured Peak Power dBm	Source Duty Cycle Factor dB	Antenna Gain dBi	Calculated EIRP dBm	EIRP Restated In Linear Terms mW
25.1	-5.4	0	20.4	93.3

1.5 FCC, SAR Exemption – Appendix A Criteria

Calculation (max power including tune up tolerance = 93.3 mW):

$$[(93.3\ \text{mW})/(30\ \text{mm})] \cdot [\sqrt{0.470(\text{GHz})}] = 2.13$$

$$2.13 \leq 3.0$$

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

Signed:

Eric Lifsey

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