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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
FCC KDB 447478 D01 // RSS-102 Issue 5	24 Feb 2020

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 Source Duty Cycle Measurement

Duty cycle was measured with the EUT in normal operating mode with 4 fastest possible successive paging entries each 1 digit long. Four 1.7 second transmissions were recorded in 13.9 second period. Duty cycle is therefore (4*1.7s)/13.9s = 48.9 %; yielding a factor of -3.1 dB. This yields a very conservative result as compared to typical single-patron paging events.

1.5 Spacing Measurement

Spacing was determined by direct measurement from the nearest antenna surface to the nearest edge of the [Enter] key that triggers the transmitter. The result was 195 mm. For FCC a conservative distance of 190 mm is applied. For ISED it is rounded to 20 cm. Note that the nearest row of function keys [F1 to F4] is reserved for configuration or service diagnostics.

1.6 Power to Exposure Calculation

Radio transmit power was determined by conducted measurement as cited in the test report.

Table 1.6.1 Power Calculation for Exposure; Highest frequency 0.450575 GHz*					
Measured Conducted Power mW	Calculated Peak EIRP dBm	Source Duty Cycle Factor dB	Antenna Gain dBi	Calculated EIRP dBm	EIRP In Linear Terms mW
1479	31.7	-3.1	0**	28.6	724

*Highest recorded power was at this frequency. **Shortened helical monopole 'duck' style antenna.

1.7 SAR Exemption Calculation – FCC 3.0 Criteria

Applicable requirement: KDB 447498 Clause 4.3.1

Professional Testing (EMI) Inc.

$[(724 \text{ mW})/(190 \text{ mm})] \cdot [\sqrt{0.450575}_{(GHz)}] = 2.6$ Step 1 (Rounded to nearest tenth.)
$[2.6] + [(190 \text{ mm} - 50 \text{ mm}) \cdot (450.575_{MHz}/150)] \text{ mW} = 423 \text{ mW}$ Step 2 "

Appendix B SAR Exclusion Level
(column 190 mm, row 450 MHz): 644 mW
Apply Limb Exposure Factor (2.5), 644 mW * 2.5 = 1610 mW Adjust for Limb Exposure

423.0 mW < 1610 mW

1.8   SAR Exemption Calculation – ISED Exposure Calculation

Per clause 2.5.2:
"• at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 x 10-2 f0.6834 W (adjusted for tune-up tolerance), where f is in MHz;"

$S = 0.0131 f^{0.6834} = 0.0131 (450.575)^{0.6834}$
$= 0.853 \text{ W}$ Ref. RSS-102 clause 2.5.2

0.724 W < 0.853 W

1.9   Conclusion

The device meets the exemption requirements for the respective agencies.

Signed:

Eric Lifsey

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