

MARKING

ELECTROMAGNETIC COMPATIBILITY ELECTRICAL SAFETY LASER SPECTROSCOPY Environmental Physic

G.S.D. S.r.l.

Certified in accordance with **UNI EN ISO 9001:2008** by

TÜV Rheinland Italia S.r.l. Certificate N. 39 00 1850509

ENVIRONMENTAL I HYSIC		10 11. 29 00 1020209
G.S.D. S.r.l PISA - Italy	Test Report n. 16721mpe	Rev. 01
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Test Family Name		
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SENIOR EMOTEST MANAGER

Dr. Glan Luca Genovesi

QUALITY MANAGER

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1. MAXIMUM PERMISSIBLE EXPOSURE

Prediction of RF Exposure were calculated accordingly to KDB 447498 D01v06

Result

Per KDB 447498 D01 v06

For 100 MHz to 6 GHz and test separation distances \leq 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,30 where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is \leq 15 mm, a distance of 15 mm according to 4.1 f) is applied to determine SAR test exclusion.

d (distance) = 30mm F = 0.9 GHz $\sqrt{f(GHz)} = 237.5 \text{mW} (10\text{-g SAR test exclusion thresholds})$ P=207 mW

When the device transmits for RFID operation it shall be hold in the operator hand so the 10-g Extremity SAR Test Exclusion Power Thresholds can be applied. In addition the distance between fingers and antenna shall be greater than 30mm distance from buttons and antenna.

The average time of occupancy of each RF channel is 165ms, so within 20s period the device transmits for 8.5s time duration (duty cycle = 41.3%). Since the maximum peak RF conducted power transmitted by RFID section of the device is 500mW, the time averaged transmitted power is 206.5mW. This value does not exceed the 10-g Extremity SAR Exclusion Threshold for 30mm separation distance (237.5mW @ 900MHz according to Appendix A of KDB 447498 D01)

Conclusion: accordingly to KDB 447498 D01v06 exclusion threshold is 7.5, RF exposure evaluation is not required.