

RF EXPOSURE ANALYSIS

EQUIPMENT

Type of equipment: Defibrillator Traing System with Bluetooth
Low Energy communication
Brand name: Laerdal Medical
Type / Model: 185-20050
Manufacturer: Laerdal Medical
By request of: Laerdal Medical

Operating range: 2402 – 2480 MHz

REQUIREMENT

EN 62479:2010
CFR 47 §1.1310
RSS-102 issue 5 (2014)
Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014
NZS 2772.1:1999

CALCULATIONS

Highest output power to antenna is -5.14 dBm
With +0.5 dBi antenna gain EIRP is -4.64 dBm or 0.344 mW

A test separation distance of 5 mm is used.

A worst case calculation is as follows:

$$S = \frac{EIRP}{4 \times \pi \times r^2}$$

Maximum power density is

$$S = 0.000344 / (4 \times \pi \times 0.005^2) = 1.095 \text{ W/m}^2 = 0.1095 \text{ mW/cm}^2$$

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LIMITS & EVALUATIONS:

Standard	Reference for limit	Limit	Unit	Values	Result
EN 62479	EN 62479 ¹	40	mW	0.344	PASS
CFR 47 §1.1310	KDB 447498 D01 ²	3	N/A	0.108	PASS
RSS-102 issue 5 (2014)	RSS-102 issue 5 (2014) ³	3.95	mW	0.344	PASS
Radiocommunications (Electromagnetic Radiation — Human Exposure) Standard 2014	EN 62479 ¹	40	mW	0.344	PASS
NZS 2772.1	NZS 2772.1 ⁴	20	mW	0.344	PASS

¹From Table A.1 for general public and limbs exposure.

²1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by: $[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3$. Test separation distance is taken as 5 mm and maximum power is 0.344 mW.

³SAR test exclusion threshold based on linear interpolation of values in Table 1 at separation distance of 5 mm.

⁴Section 8.6.3.2 says: The evaluation of mobile or portable transmitting equipment for compliance with this standard is not required where the nominal mean power output delivered to the antenna does not exceed 20 mW.

Summary:

All requirements are fulfilled

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