

Manufacturer Planmeca Oy
Device RFID reader unit, model: PlanID
FCC ID: YIIPID001, **IC ID**: 9050A-PID001
Test Specification EN 62479:2010, section 4, route D
Report No. 287492-1

REFERENCE DOCUMENTS

1999/519/EC, European Council Recommendation, 1999-07-30
286927-1-4, FCC Part 15.209 Test Report, 2017-01-20
FCC Parts 1.1310 and 2.1093
FCC KDB 447498 D01 General RF Exposure Guidance v06
RSS-102, Issue 5

RF EXPOSURE ASSESSMENT

RF characteristics of the assessed radio:

Operating Frequency Range (OFR)	13.56 MHz
Channels	1
Channel separation	-
Channel bandwidth	-
Effective isotropic radiated power (e.i.r.p.)	-49.83 dBm
Modulation	ASK
Integral PCB loop antenna gain	-

$$S = E^2/Z_0 = P_{eirp}/(4\pi r^2) \Rightarrow P_{eirp} = (E^2 \cdot r^2)/30$$

$E = 45.4 \text{ dB}\mu\text{V/m}$, $r = 3\text{m}$, $P_{eirp} = -49.83 \text{ dBm}$

Evaluation against 1999/518/EC

Low power exclusion level, P_{max} , given in EN 62479:2010: 20 mW (13 dBm)
Environment: Uncontrolled, General Public

Assessment result:

Channel	Frequency	Peak Power	Duty cycle	Duty cycle correction [dB]	Average Power	Limit P_{max}	Margin
	[MHz]	[dBm]	[%]		[dBm]	[dBm]	[dB]
Mid	13.56	-49.83	100	0	-49.83	13.0	62.83

Evaluation against FCC Parts 1.1310 and 2.1093 and FCC KDB 447498 D01 General RF Exposure Guidance v06

SAR test exclusion threshold:

FCC KDB 447498 D01 General RF Exposure Guidance v06 chapter 4.3.1 c) 2)

- a) $P_{max}/d_{min} \cdot \sqrt{f_{GHz}} = 3.0 \Rightarrow P_{max} = 1288 \text{ mW}$ ($d_{min} = 50 \text{ mm}$, $f = 13.56 \text{ MHz}$)
- b) $1288 \text{ mW} \cdot (d_{min} - 50 \text{ mm}) = 1288 \text{ mW}$
- c) $1288 \text{ mW} \cdot (1 + \log(100/f_{MHz})) \cdot 0.5 = 2406 \text{ mW} \cdot 0.5 = 1203 \text{ mW}$

SAR test exclusion threshold is 1203 mW

The power of EUT is -49.83 dBm = 0.0000104 mW

Evaluation against RSS-102, Issue 5

SAR test exclusion threshold:

RSS-102, Issue 5, chapter 2.5.1, Table 1: SAR test exclusion threshold is 71 mW

The power of EUT is -49.83 dBm = 0.0000104 mW

RF EXPOSURE STATEMENT

Based on the assessment above PlanID RFID reader unit in portable use complies with the basic restriction and requirements according to 1999/519/EC, FCC Parts 1.1310 and 2.1093 and RSS-102 Issue 5.

Date: February 10, 2017

SGS Fimko Oy



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