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COMMERCIAL-IN-CONFIDENCE

SAR EXCLUSION DOCUMENT

Document 75949856-09 Issue 01

2401- 2485 MHz Transmitter:

Product standard: EN 50663:2017 Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)

Basic standard: EN 62479:2010 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

EN 62479 Section 4.1 Route B and 4.2 Low-power exclusion level P_{max}

EN 62479 Section 4.1 states: If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions.

Four routes A, B, C or D can be used to demonstrate compliance. The route selected is B;

B The input power level to electrical or electronic components that are capable of radiating electromagnetic energy in the relevant frequency range is so low that the available antenna power and/or the average total radiated power cannot exceed the low-power exclusion level defined below.

The applicable low power exclusion level P_{max} from EN 62479 Table A.1 is 20 mW corresponding to;

- ICNIRP (guideline in accordance with Council Recommendation 1999/519/EC),
- General Public (exposure tier)
- Head and trunk (region of body)

Low Power Exclusion Result:

Frequency (MHz)	Power Output mW	Antenna Gain Ratio	Duty Cycle %	Maximum Power (EIRP) * (mW)	Separation Distance mm	P_{max} Exemption Limit ** (mW)	SAR Test Exclusion (Yes/No)
2401	6.31	1	100	6.31	0	20	Yes
2485	6.31	1	100	6.31	0	20	Yes

* Maximum declared output power (EIRP) of the device including tolerance.

** Select power from EN 62479 Table A.1 for the applicable exposure.

The Low Power exclusion threshold has been evaluated using the method described above from information supplied by the manufacturer. Based on the evaluation above, the EUT is categorically excluded from SAR/RF exposure testing.

Approved by

Jon Kenny
 Authorised Signatory

Date 16 June 2021



Manufacturer's Declaration of Product information (extract):

Equipment Description

Technical Description: <i>(Please provide a brief description of the intended use of the equipment)</i>	BLE tag used for tagging both assets and personnel
Manufacturer:	Omni Id
Model:	Sense Shield
Part Number:	CP14791

If more than one frequency band is supported, please confirm which combinations of bands are capable of Simultaneous Transmit.	
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Frequency Band 1: Please detail (one entry for each band). e.g GSM 900 / WCDMA FDD I etc .

Antenna Model:	PCB Etch	
Antenna length:	NA	cm
Bottom frequency:	2401	MHz
Middle frequency:	2485	MHz
Top frequency:	2485	MHz

Maximum power (input to the antenna including a tolerance):	8	dBm
Antenna gain (or maximum gain allowed):	0	dBi

I hereby declare that the information supplied is correct and complete.

Name: Charles Vilner
 Position held: Omni-ID Engineering Director
 Date: 4th February 2021



Note: the maximum radiated power output EIRP shown in the low power exclusion result is given by:

$$\text{PEIRP} = P_o \times G_i \times \text{Duty Factor}$$

$$\text{PEIRP} = 6.31 \text{ mW} \times 1 \times 1 = 6.31 \text{ mW}$$

Where:

$$P_o = 10^{(8 \text{ dBm}/10)} = 6.31 \text{ mW}$$

$$G_i = 10^{(0 \text{ dBi}/10)} = 1$$

$$\text{Duty factor} = 100\%/100 = 1$$