RF Exposure

EUT Name: VERASENSE for Zimmer Biomet Persona

EUT Model: CR C-D/3-9 Left, ZBH-PSNCRCD39-L, CR G-H/7-12 Left, ZBH-PSNCRGH712-L

FCC ID: XNL-ORTHOSNSR7

FCC Title 47, Part 15C and KDB # 447498 D01

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Report/Issue Date: 13 June 2018
Report Number: Supplement to 31753637.001 - RF Exposure

1 RF Exposure

1.1 Exposure Requirements – FCC KDB # 447498 D01.

FCC KDB # 447498 D01 v6 Clause 4.2.4 – "Transmitters implanted in the body of a user" shows that the SAR Text Exclusion Threshold for a such a device is 1.0 mW

1.1.1 Test Procedure

If the antenna is located > 20cm from the user, then an MPE calculation is acceptable.

If the antenna is located < 20cm (portable / mobile / hand-held device) from the user, then SAR evaluation is required.

1.1.2 Evaluation

The EUT will be used as a portable device where the antenna will be located less than 20cm from the user, therefore SAR evaluation is required.

1.1.2.1 Evaluation for FCC

FCC 447498 D01 v6 Clause 4.2.4 , Appendix A shows that the SAR Exclusion Threshold for a device intended to be implanted in the body is ≤ 1.0 mW.

The maximum EiRP peak power output of the EUT is: -22.22 dBm or 0.006 mW. (See calculation on the next page).

The stated maximum gain of the antenna used is 1.1 dBi This will give an output power of -23.32 dBm (0.0046mW) to the antenna.

The EUT is well below the 1.0 mW exemption power level limit.

1.1.3 Conclusion

SAR testing is not required for FCC.

Note: The use of the measured peak field strength (transposed into mW) is considered worst case.

1.1.4 Calculated EiRP Level

The Maximum field measured is 73.01 dBµV/m at 3m, using the Peak detector.

See page 13 of EMC test report number 31753637.001 presented within this FCC filing..

Using the Friis Eaquation of $P = (E*d)^2 / (30*G)$, where:

P is the transmitter Power in Watts;

G is the numerical gain of the transmitting antenna, relative to an isotropic source.

D is the Distance of the measuring point from the electrical center of the measuring antenna.

E is the Field strength in Volts/meter.

The calculated EiRP output of the EUT is 0.006 mW or -22.22 dBm.

1.1.5 Antenna Gain:

The antenna is a Flexible PCB Antenna.

The stated Peak Gain of the antenna by the Manufacturer is 1.1 dBi (numeric gain = 1.29).

Note: the calculation factors in the gain of the antenna.