

ORTHOFIX US LLC

RF Exposure Exhibit

SCOPE OF WORK

EMC TESTING – PEMF Device, Model: 5505, 5212 & 5314R

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**RF Exposure Exhibit
(Portable Devices)**

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Product Designation: PEMF Device

Model Tested: 5505, 5212 & 5314R

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to

47CFR 2.1093

RSS-102 Issue 6

for

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Report No. 106061900DAL-002	
Equipment Under Test:	PEMF Device
Model(s) Tested:	5505, 5212 & 5314R
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Applicable Regulation:	47CFR 2.1093 RSS-102 Issue 6



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1.0 RF Exposure Summary

Model 5505, 5212 & 5314R

Test	Reference FCC	Reference Industry Canada	Result
Radio frequency Radiation Exposure Evaluation	47 CFR§2.1093	RSS-102 Issue 6	Complies

2.0 RF Exposure Limits

2.1 FCC Limits

According to FCC KDB 447498 D01 v06, at frequency 2450 MHz and separation distance of ≤ 5 mm the equation and threshold in section 4.3.1 must be applied to determine the SAR exclusion.

The SAR exclusion threshold is determined by the following formula (KDB 447498 D01 Section 4.3.1(a))

$$\left[\frac{\text{Max. tune up Power (mW)}}{\text{Min. Test Separation Distance (mm)}} \right] * \sqrt{F(\text{GHz})} \leq 3$$

2.2 Industry Canada Limits

According to RSS-102 sec. 2.5.1, at frequency 2450 MHz and separation distance of ≤ 5 mm SAR Exemption limit is ≤ 4 mW.

3.0 Test Results (Portable Configuration)

3.1 Classification

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 5 centimeters of the body of the user.

3.2 EIRP calculations

The PEMF Device, Model: 5505, 5212 & 5314R consists of one BLE 2.4GHz radio.

3.3 Maximum RF Power

Model 5505

Frequency Range (MHz)	RF Output (dBm)	Antenna Gain (dBi)	Note
2402-2480	-9.57	-3.86	Conducted power measurements were taken from FCC Test Report 106061900DAL-001

Model 5314R

Frequency Range (MHz)	RF Output (dBm)	Antenna Gain (dBi)	Note
2402-2480	-7.19	-3.86	Conducted power measurements were taken from FCC Test Report 106061900DAL-001

Model 5212

Frequency Range (MHz)	RF Output (dBm)	Antenna Gain (dBi)	Note
2402-2480	-8.83	-3.86	Conducted power measurements were taken from FCC Test Report 106061900DAL-001

Note: Antenna gains below 0 are considered as 0dBi.

3.4 RF Exposure Calculation

3.4.1 RF Exposure calculation for FCC KDB 447498 D01 v06

Model 5505

Max Peak Conducted Power measured = -9.57 dBm or 0.110 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -9.57 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -9.57 dBm or 0.110 mW.

According to KDB 447498 D01 Section 4.3.1 the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula (KDB 447498 D01 Section 4.3.1(a))

$$\left[\frac{\text{Max. tune up Power (mW)}}{\text{Min. Test Separation Distance (mm)}} \right] * \sqrt{F(\text{GHz})} \leq 3$$

$$\left[\frac{0.1 \text{ (mW)}}{5 \text{ (mm)}} \right] * \sqrt{2.45} = 0.03$$

Which is less than 3

Results: The Measurement result comply with the FCC limit per 47 CFR 2.1093 for the RF Exposure and SAR Exclusion per KDB 447498 D01 v06 so the SAR evaluation is not required for this device.

Note: Antenna gains below 0 are considered as 0dBi.

Model 5314R

Max Peak Conducted Power measured = -7.19 dBm or 0.191 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -7.19 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -7.19 dBm or 0.191 mW.

According to KDB 447498 D01 Section 4.3.1 the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula (KDB 447498 D01 Section 4.3.1(a))

$$\left[\frac{\text{Max. tune up Power (mW)}}{\text{Min. Test Separation Distance (mm)}} \right] * \sqrt{F(\text{GHz})} \leq 3$$

$$\left[\frac{0.2 \text{ (mW)}}{5 \text{ (mm)}} \right] * \sqrt{2.45} = 0.05$$

Which is less than 3

Results: The Measurement result comply with the FCC limit per 47 CFR 2.1093 for the RF Exposure and SAR Exclusion per KDB 447498 D01 v06 so the SAR evaluation is not required for this device.

Note: Antenna gains below 0 are considered as 0dBi.

Model 5212

Max Peak Conducted Power measured = -8.83 dBm or 0.131 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -8.83 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -8.83 dBm or 0.131 mW.

According to KDB 447498 D01 Section 4.3.1 the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula (KDB 447498 D01 Section 4.3.1(a))

$$\left[\frac{\text{Max. tune up Power (mW)}}{\text{Min. Test Separation Distance (mm)}} \right] * \sqrt{F(\text{GHz})} \leq 3$$

$$\left[\frac{0.1 \text{ (mW)}}{5 \text{ (mm)}} \right] * \sqrt{2.45} = 0.03$$

Which is less than 3

Results: The Measurement result comply with the FCC limit per 47 CFR 2.1093 for the RF Exposure and SAR Exclusion per KDB 447498 D01 v06 so the SAR evaluation is not required for this device.

Note: Antenna gains below 0 are considered as 0dBi.

3.4.2 RF Exposure calculation for RSS-102 Issue 6

According to RSS-102 sec. 2.5.1, at frequency 2450 MHz and separation distance of ≤ 5 mm SAR Exemption limit is ≤ 3 mW.

Model 5505

Max Peak Conducted Power measured = -9.57 dBm or 0.110 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -9.57 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -9.57 dBm or 0.110 mW.

Results: SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (EIRP) source-based, time averaged output power is below the exemption limit.

Note: Antenna gains below 0 are considered as 0dBi.

Model 5314R

Max Peak Conducted Power measured = -7.19 dBm or 0.191 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -7.19 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -7.19 dBm or 0.191 mW.

Results: SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (EIRP) source-based, time averaged output power is below the exemption limit.

Note: Antenna gains below 0 are considered as 0dBi.

Model 5212

Max Peak Conducted Power measured = -8.83 dBm or 0.131 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is -8.83 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = -8.83 dBm or 0.131 mW.

Results: SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (EIRP) source-based, time averaged output power is below the exemption limit.

Note: Antenna gains below 0 are considered as 0dBi.

4.0 Document History

Revision/ Job Number	Writer Initials	Reviewers Initials	Date	Change
1.0/ G106061900	EC	AS	February 27, 2025	Original document
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