

# Mizuho Orthopedic Systems Inc.

## RF Exposure Exhibit

**SCOPE OF WORK**

EMC TESTING – Adante Orthopedic Surgical Platform, Model: 6895AX-00

**REPORT NUMBER**

105874658MPK-019

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**RF Exposure Exhibit  
(Portable Devices)****Report Number: 105874658MPK-019  
Project Number: G105874658****Report Date: May 29, 2025****Product Designation: Adante Orthopedic Surgical Platform  
Model Tested: 6895AX-00****to****47CFR 2.1093  
RSS-102 Issue 6****for****Mizuho Orthopedic Systems Inc.****Tested by:**

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Report Date: May 29, 2025

<b>Report No. 105874658MPK-019</b>	
<b>Equipment Under Test:</b>	Adante Orthopedic Surgical Platform
<b>Model(s) Tested:</b>	6895AX-00 / SN:101
<b>Applicant:</b>	Mizuho Orthopedic Systems Inc.
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<b>Applicable Regulation:</b>	47CFR 2.1093 RSS-102 Issue 6
<b>Date of Evaluation</b>	November 15, 2024

## TABLE OF CONTENTS

<i>Mizuho Orthopedic Systems Inc.</i> .....	1
<b>1.0 RF Exposure Summary</b> .....	<b>5</b>
<b>2.0 RF Exposure Limits</b> .....	<b>5</b>
<b>3.0 Test Results (Portable Configuration)</b> .....	<b>6</b>
<b>4.0 Document History</b> .....	<b>9</b>



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## 1.0 RF Exposure Summary

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 Appendix B, at frequency 2450 MHz and separation distance of  $\leq$  5 mm SAR Exemption limit is  $\leq$  3 .

### 2.2 Industry Canada Limits

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

### 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 Adante Orthopedic Surgical Platform, Model: 6895AX-00 has the following portable radios:

- Hand Pendant: Zigbee 2.4 GHz radio
- Foot pedal: BLE 2.4GHz radio

#### 3.3 Maximum RF Power

Specification of Radios on the 6895AX-00		
<b>Location</b>	Foot pedal	Hand pendant
<b>Type</b>	Bluetooth Low Energy (BLE)	Zigbee
<b>Frequency Range</b>	2.402 - 2.480 GHz, ISM band	2405 – 2580 MHz
<b>Rated RF Output Power</b>	2 dBm	4.81 dBm
<b>External Antenna Gain</b>	0.9dB	1.26 dBi
<b>Operating voltage</b>	2x AAA Battery	+3.3VDC

Note: The EUT information is provided by Mizuho Orthopedic Systems Inc. Intertek takes no responsibility for the accuracy of the specifications provided by Mizuho Orthopedic Systems Inc.

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

According to FCC KDB 447498 D01 v06 Appendix B, at frequency 2450 MHz and separation distance of  $\leq$  5 mm SAR Exemption limit is  $\leq$  3 mW.

a) For 100 MHz to 6 GHz and test separation distances  $\leq$  50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:  $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [V_f(\text{GHz})] \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, 30 where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

Hand Pendant

Frequency Range (MHz)	EIRP <sup>1</sup>	EIRP	Distance	Exclusion Threshold	Exclusion Threshold Limit
	(dBm)	(mW)	(mm)	(mW)	(mW)
2405 - 2580	6.07	4.05	5	1.3	3

No duty cycle was considered.

**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.**

Foot Switch:

Frequency Range (MHz)	EIRP <sup>1</sup>	EIRP	Distance	Exclusion Threshold	Exclusion Threshold Limit
	(dBm)	(mW)	(mm)	(mW)	(mW)
2402 - 2580	2.9	1.9498	5	0.6	3

No duty cycle was considered.

**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.**

### 3.4.2 RF Exposure calculation for RSS-102 Issue 6

According to RSS-102 sec 6.3, at frequency 2450 MHz and separation distance of  $\leq 5$  mm SAR Exemption limit is  $\leq 3$  mW.

RSS-102 Issue 6 Section 7.1.8 SAR estimation for exempted transmitters:

$$SAR_{estimated} = \frac{P_{max}}{P_{max,exemption}} \times 0.25 \times SAR_{limit} \text{ W/kg}$$

Hand Pendant:

Frequency Range (MHz)	EIRP <sup>1</sup>	P <sub>max</sub>	Distance	SAR <sub>limit</sub>	SAR estimated	P <sub>max, exemption</sub>
	(dBm)	(mW)	(mm)	(W/kg)	(W/kg)	(W/kg)
2405 - 2580	6.07	4.05	5	1.6	0.540	3

No duty cycle was considered.

SARestimated is less than Pmax,exemption, therefore EUT is exempt from routine evaluation.

Foot Switch:

Frequency Range (MHz)	EIRP <sup>1</sup>	P <sub>max</sub>	Distance	SAR <sub>limit</sub>	SAR estimated	P <sub>max, exemption</sub>
	(dBm)	(mW)	(mm)	(W/kg)	(W/kg)	(W/kg)
2405 - 2580	2.9	1.9498	5	1.6	0.260	3

No duty cycle was considered.

SARestimated is less than Pmax,exemption, therefore EUT is exempt from routine evaluation.

#### 4.0 Document History

Revision/ Job Number	Writer Initials	Reviewers Initials	Date	Change
1.0/G105874658	EC	AS	November 15, 2024	Original document
1.0/G105874658	EC	AS	May 29. 2025	Recalculated hand pendant values with correct rated power of 4.81dBm.