

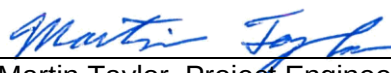
RF Exposure Report

Project Number: 5184712**Offer Number: SUW-202404006260****Report Number: 5184712EMC03****Revision Level: 1****Client: Ergotron Inc.****Equipment Under Test: Medical Cart****Product Name: Mod Cart****Model Number: MC20****FCC ID: 2AVU2-917542****Applicable Standards: 47 CFR §§ 2.1093 (Portable)****FCC KDB 447498 D01 General RF Exposure Guidance v06****Report issued on: 15 October 2024****Result: Exempt from SAR evaluation**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01

This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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1 General Information

1.1 Client Information

Company Name: Ergotron Inc.
Address: 1181 Trapp Road
City, State, Zip, Country: Saint Paul, MN 55121, USA

1.2 Test Laboratory

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01
FCC Designation Number: US1126

1.3 General Information of EUT

Equipment Under Test: Medical Cart
Product Name: Mod Cart
Model Number: MC20
Serial Numbers: Radiated Sample: 311076142412345 (Cart)
Conducted Sample: P/N: 917-542-00, S/N: ADV2418000012 (PCB Assembly)
FCC ID: 2AVU2-917542

Frequency Range: 2402 – 2480 MHz
Data Modes: Bluetooth Low Energy (BLE) – GFSK (1Mbps & 2Mbps)
Antenna: FPC Antenna – Ethertronics 1003893FT (3.3dBi peak gain*)
Maximum Conducted Power: 2.44 dBm

Rated Voltage: 120V_{AC}, 60Hz
Test Voltage: 120V_{AC}, 60Hz

Sample Received Date: 16 May 2024
Dates of testing: 16 May to 09 July 2024

* Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous filing or other.

1.4 Separation Distance

The shortest separation distance from the BLE antenna to the closest touchpoint on the housing of the cart is 8.5mm.

2 SAR Exclusion Calculations

The highest output power in conjunction with the upper and lower frequency boundaries have been used to demonstrate compliance.

The EUT could be considered either a body or extremity application.

2.1 Standalone Transmission RF Exposure Levels

Low Channel

447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance / Section 4.3.1: Standalone SAR test exclusion considerations

	Input	Select Units
Max Power:	2.21	dBm
Duty Cycle:	100.0%	
Min separation distance:	8.5	mm
Frequency, f:	2402	MHz

<== Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	2.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	9 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	1.550	[f(GHz)]

- a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,

Exclusion Calculation(1g):	0.3444	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	0.3444	number	<== [v2 / v3] must be less than 7.5

Conclusions (Body):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Body applications
Conclusions (Extremity):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Extremity applications

High Channel

447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance / Section 4.3.1: Standalone SAR test exclusion considerations

	Input	Select Units
Max Power:	2.44	dBm
Duty Cycle:	100.0%	
Min separation distance:	8.5	mm
Frequency, f:	2480	MHz

<== Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	2.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	9 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	1.575	[f(GHz)]

- a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,

Exclusion Calculation(1g):	0.3500	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	0.3500	number	<== [v2 / v3] must be less than 7.5

Conclusions (Body):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Body applications
Conclusions (Extremity):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Extremity applications

2.2 Simultaneous Transmission RF Exposure Levels

Low Channel

447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance / Section 4.3.2: Simultaneous transmission SAR test exclusion considerations

	Input	Select Units
Max Power:	20.05	dBm
Min separation distance:	8.5	mm
Frequency, f:	2402	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	101 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	8.5 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.550	[f(GHz)]

- b) When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria

1) [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] $\cdot \sqrt{f(\text{GHz})/x}$ W/kg, for test separation distances ≤ 50 mm; where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distance is > 50 mm.

1-g Estimated SAR:	2.5	W/kg	$\leq [v1 / v2] \cdot [v3 / 7.5]$
10-g Estimated SAR:	1.0	W/kg	$\leq [v1 / v2] \cdot [v3 / 18.75]$

High Channel

447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance / Section 4.3.2: Simultaneous transmission SAR test exclusion considerations

	Input	Select Units
Max Power:	20.05	dBm
Min separation distance:	8.5	mm
Frequency, f:	2480	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	101 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	8.5 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.575	[f(GHz)]

- b) When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria

1) [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] $\cdot \sqrt{f(\text{GHz})/x}$ W/kg, for test separation distances ≤ 50 mm; where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distance is > 50 mm.

1-g Estimated SAR:	2.5	W/kg	$\leq [v1 / v2] \cdot [v3 / 7.5]$
10-g Estimated SAR:	1.0	W/kg	$\leq [v1 / v2] \cdot [v3 / 18.75]$

Table with Calculated Power Density based on Max Conducted Output Power:

Band of Operation		Conducted Power w/tolerance	Antenna Gain	Cable Loss	Average EIRP		Distance (R)	Power Density EIRP _{avg} /(4 π R ²)	IC	% of Limit	Verdict
Type	MHz	dBm			dBm	mW	cm	mW/cm ²	mW/cm ²		
WLAN 2.4	2400-2483.5	14.0	0.0	0.0	14.0	25.12	20.0	0.005	0.53	0.9%	Pass
Bluetooth	2400-2483.5	4.9	0.0	0.0	4.9	3.10	20.0	0.001	0.53	0.1%	Pass
AN 5 GHz (UNII-1)	5150-5250	14.4	0.0	0.0	14.4	27.48	20.0	0.005	0.90	0.6%	Pass
AN 5 GHz (UNII-2a)	5250-5350	14.5	0.0	0.0	14.5	28.18	20.0	0.006	0.91	0.6%	Pass
AN 5 GHz (UNII-2c)	5350-5725	13.2	0.0	0.0	13.2	20.89	20.0	0.004	0.91	0.5%	Pass
AN 5.8 GHz (UNII-3)	5725-5850	13.2	0.0	0.0	13.2	20.89	20.0	0.004	0.97	0.4%	Pass
Bluetooth LE	2400-2483.5	2.31	0	0	2.31	1.70	20.0	0.000	0.534776	0.1%	Pass
Ext BLE	2400-2483.5	2.44	0	0	2.44	1.75	0.85	0.193	0.534776	36.1%	Pass
Total:								1.011			

Simultaneous Max Power Density was 1.011 mW/cm² = 101.1mw = 20.05 dBm

3 Revision History

Revision Level	Description of changes	Revision Date
-	Draft	31 July 2024
0	Initial Release	27 September 2024
1	Section 2.1 was added	15 October 2024