

RF Exposure Report

Project Number: 5239587**Offer Number: SUW-202409007165****Report Number: 5239587EMC05****Revision Level: 1****Client: Ergotron, Inc.****Equipment Under Test: Encore 2.0 Medical Cart****Host Model: ENC2****Module FCC ID: 2AVU2-A0003419****IC ID: 25915-A0003419****Applicable Standards: 47 CFR §§ 2.1093 (Portable)****FCC KDB 447498 D01 General RF Exposure Guidance v06****Report issued on: 24 March 2025****Report issued on: 11 April 2025****Test Result: Exempt from SAR evaluation**

FOR THE SCOPE OF ACCREDITATION UNDER 17025 CERTIFICATE NUMBER: 3212.01

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1 General Information

1.1 Client Information

Name: Ergotron Inc.
Address: 1181 Trapp Road
City, State, Zip, Country: Eagan 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: US1126

1.3 General Information of EUT

Equipment Under Test: Medical Cart
Model Number: ENC2
Serial Number: EMC 3

Frequency Range: 2402 – 2480 MHz (BLE: nrf board)
Antenna Gain: *RFA-25-C2M2-U-M70, Linear monopole, 2400-2500MHz, 2.0dBi
Max Output Power: BLE: -0.81dBm

Sample Received Date: 16 January 2025
Dates of testing: 07 March 2025 to 17 March 2025

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

1.4 Operating Modes and Conditions

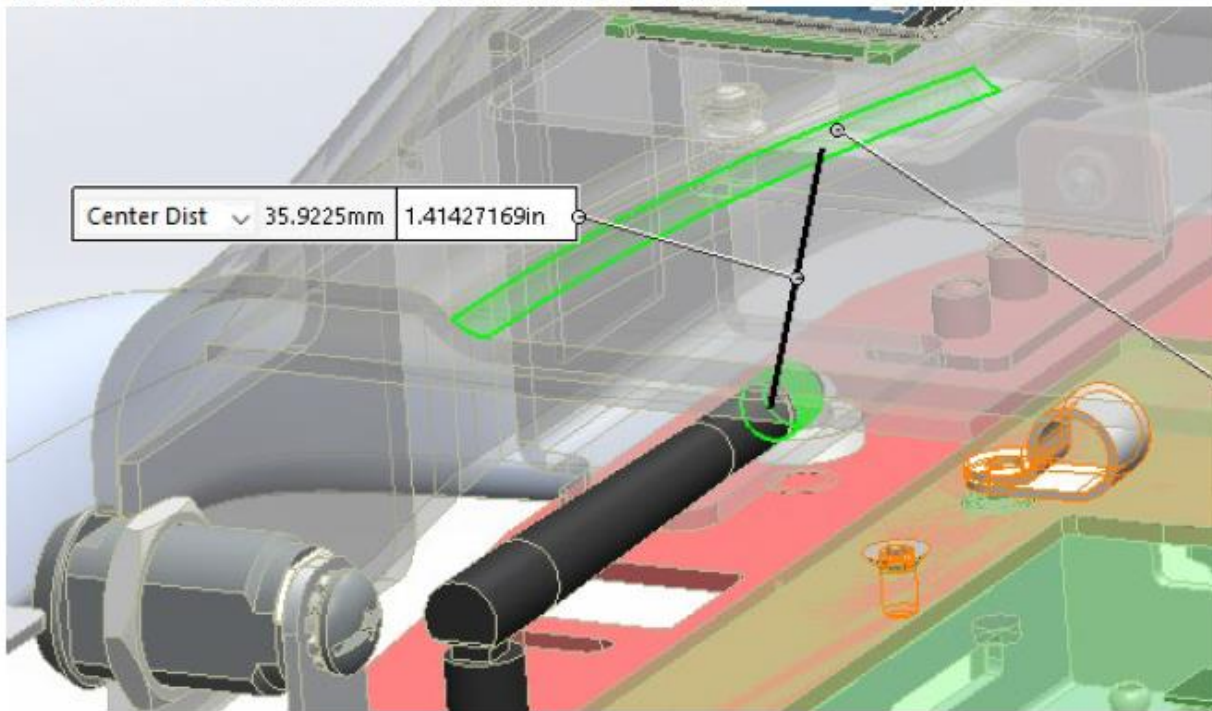
Maximum power levels were used for all calculations. The separation distance from antenna and/or radiating structure are illustrated in section 1.5. Simultaneous transmission is possible with the following use cases:

Case 1: Transmitters operating: NRF BLE + 2.4GHz WLAN (ENV2 SOM) + BTC (ENV2 SOM) + 2.4 GHZ WLAN (W311MI USB Dongle)

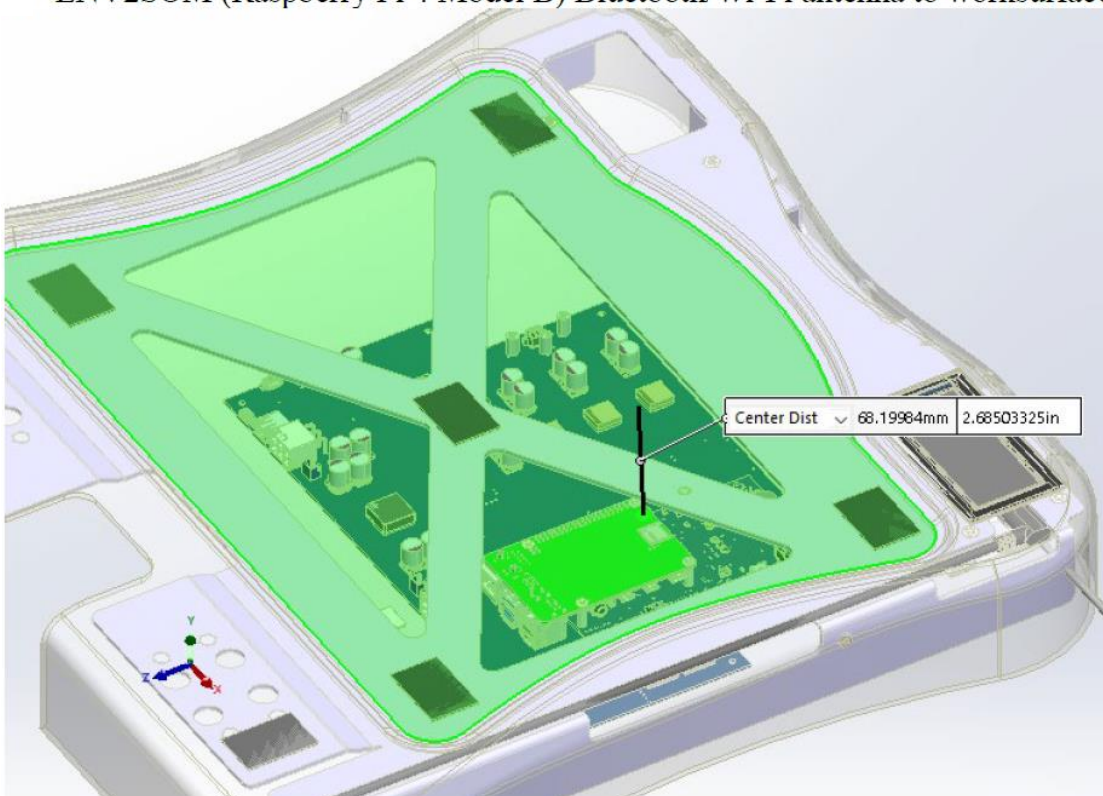
Case 2: Transmitters operating: NRF BLE + 5 GHz WLAN (ENV2 SOM) +BTC (ENV2 SOM) + 2.4 GHZ WLAN (W311MI USB Dongle)

1.5 Separation Distances

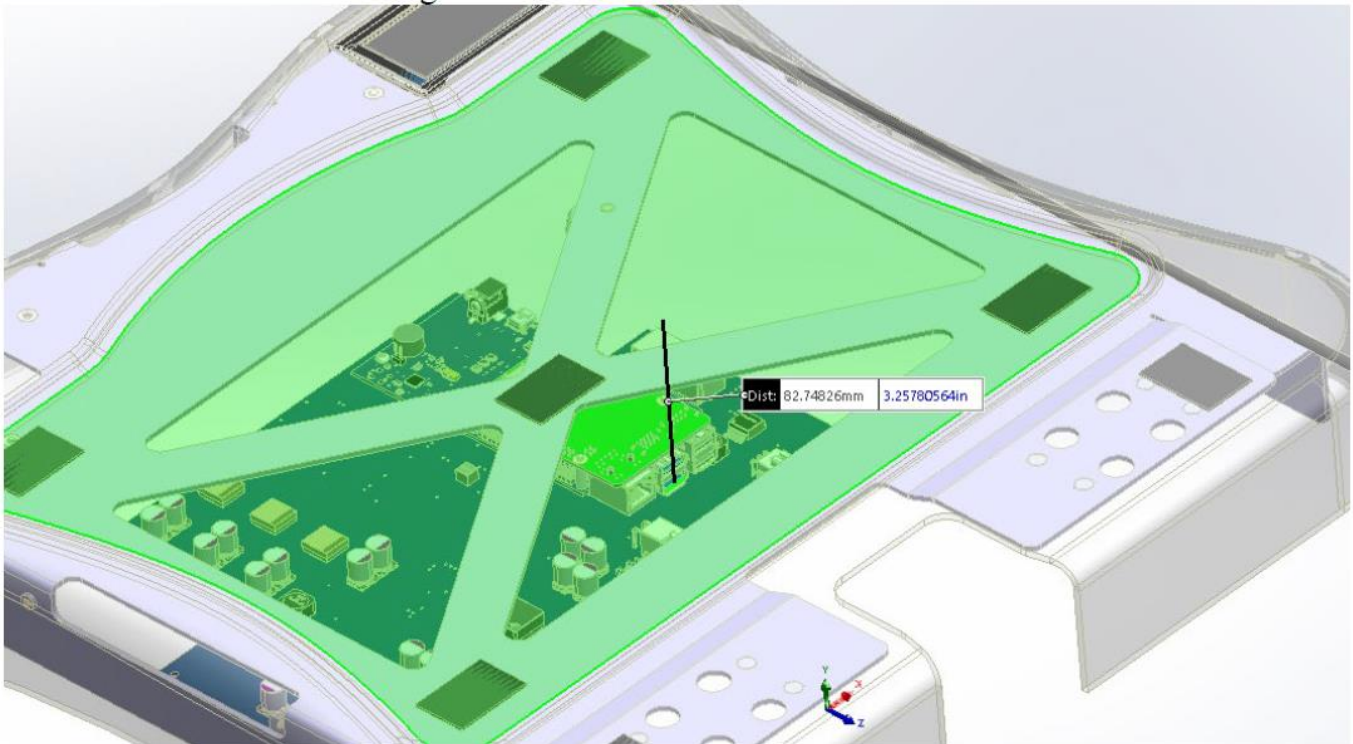
External BLE Circuit Antenna to worksurface: 23.1mm



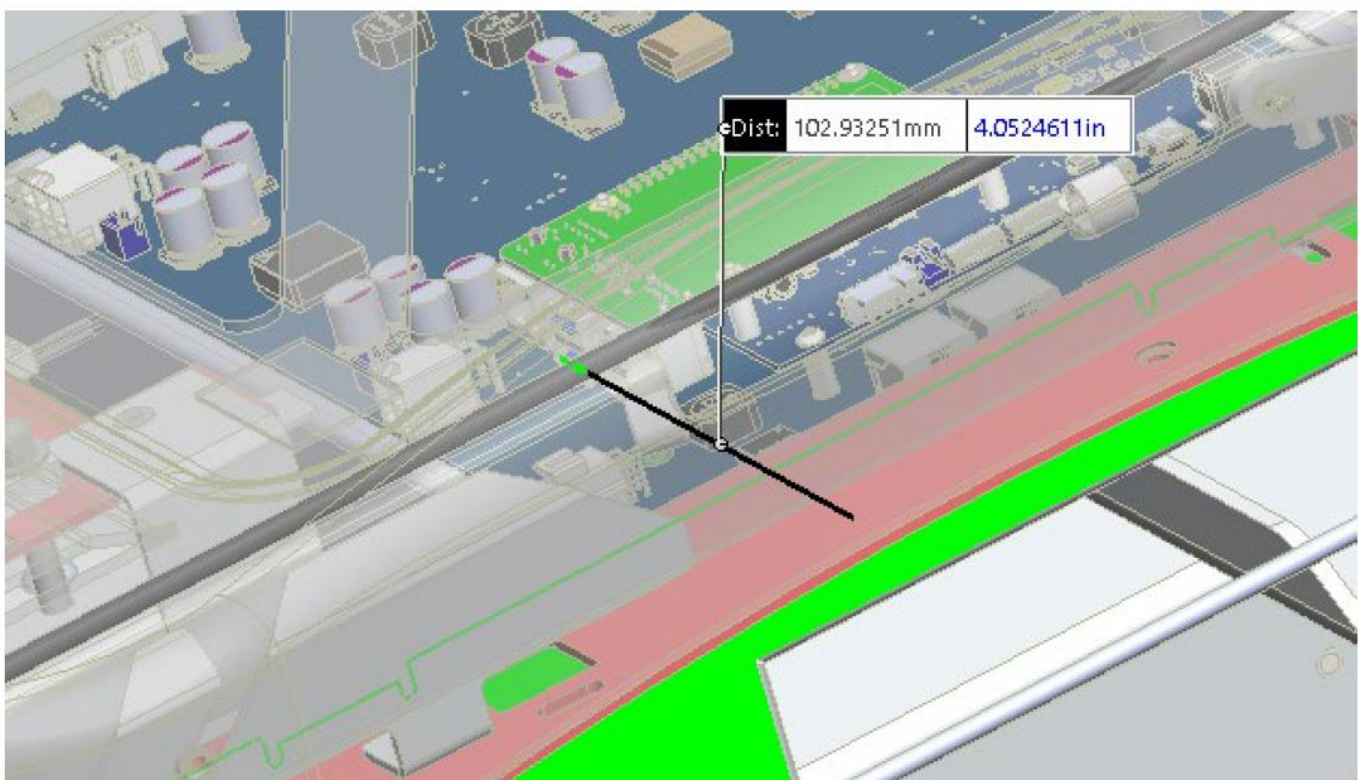
ENV2SOM (Raspberry Pi 4 Model B) Bluetooth/Wi-Fi antenna to worksurface: 68.2mm



BrosTrend USB-WiFi dongle antenna to worksurface: 82.75mm



BrosTrend USB-WiFi dongle antenna to nearest left touchpoint: 102.93mm



2 SAR Exclusion Calculations

The highest output power in conjunction with the Upper and Lower frequency boundaries have been used to demonstrate compliance for BLE transmission mode. Simultaneous transmission is not applicable.

The EUT is considered an extremity or body application.

2.1 Standalone Condition

BLE (nrf board)

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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:	-1.68	dBm	
Duty Cycle:	100.0%		<== Source based time average duty cycle
Min separation distance:	23.11	mm	
Frequency, f:	2402	MHz	

Value reference Number	Values used for Calculation	Reference number definition
v1	1.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	23 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):	0.0674	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	0.0674	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

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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:	-0.81	dBm	
Duty Cycle:	100.0%		<== Source based time average duty cycle
Min separation distance:	23.11	mm	
Frequency, f:	2480	MHz	

Value reference Number	Values used for Calculation	Reference number definition
v1	1.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	23 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):	0.0685	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	0.0685	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 Conditions

Simultaneous transmissions are evaluated using the equation and highest results from each technology.

Example

BLE (nrf) + 2.4 GHz WLAN + BTC (ENV2 SOM) = Max power at min separation distance < 3.0mw (body exclusion limit)

Total simultaneous transmission maximum output percentage < 100% of limit.

Low Channel:

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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:	16.18	dBm
Duty Cycle:	100.0%	
Min separation distance:	23.11	mm
Frequency, f:	2402	MHz

<== Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	41.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	23 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):	2.7628	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	2.7628	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:	16.18	dBm
Duty Cycle:	100.0%	
Min separation distance:	23.11	mm
Frequency, f:	2480	MHz

<== Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	41.000 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	23 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):	2.8073	number	<== [v2 / v3] must be less than 3
Exclusion Calculation(10g):	2.8073	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

ENV2 SOM:

Frequency Ranges: 2402 – 2480 MHz (Bluetooth/BLE)
2412 – 2462 MHz (WLAN 2.4GHz)
5180 – 5240 MHz (WLAN 5GHz U-NII-1)
5260 – 5320 MHz (WLAN 5GHz U-NII-2A)
5500 – 5720 MHz (WLAN 5GHz U-NII-2C)
5745 – 5825 MHz (WLAN 5GHz U-NII-3)

Antenna: Trace, 2402-2462MHz, 3.5dBi*
Trace, 5180 – 5825MHz, 2.3dBi*

Max Conducted Bluetooth BDR: 4.91 dBm*

Output Power: Bluetooth LE: 2.3 dBm*
WLAN 2.4GHz: 13.4 dBm*
WLAN 5GHz U-NII-1: 14.39 dBm*
WLAN 5GHz U-NII-2A: 14.5 dBm*
WLAN 5GHz U-NII-2C: 13.3 dBm*
WLAN 5GHz U-NII-3: 13.3 dBm*

FCC ID: V7TW311MI2 (W311MI USB Dongle)

Frequency Range: 2412~2462 MHz

Antenna: PCB

Max Avg Conducted Output Power: 802.11n(40MHz): 9.71dBm

Case 2 (Worst Case): (5GWLAN)14.5 dBm + (BTC)4.91 dBm + (W311MI)9.71 dBm + (nrf BLE)-0.81 dBm = **0.0282 watts + 0.0031 watts + 0.0094 watts + 0.0008 watts = 0.0415 watts** = 16.18 dBm

92% of the limit (body) = Exempt from SAR Testing

3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial Release	24 March 2025
1	Updated Model number	11 April 2025