

RF Exposure Report

Project Number: 4790371**Proposal Number: SUW-202106001174****Report Number: 4790371EMC04****Report Revision: 0****Client: Enovate Medical, LLC****Equipment Under Test: Medical Cart****Host Model Name: Envoy****Host Model Number: ENV0-XXXXX****Module Models: P0000457 (External BLE), SIP007AFS00****Module FCC IDs: 2AQ9D-P0000457, A3LSIP007AFS00****Applicable Standards: 47 CFR §§ 2.1091;****FCC KDB 447498 D01 General RF Exposure Guidance v06****Report issued on: 9 December 2021****Result: Exempt from SAR evaluation**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01

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Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 General Information

1.1 Client Information

Name: Enovate Medical, LLC
Address: 1152 Park Avenue
City, State, Zip, Country: Murfreesboro, TN 37129, 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

1.3 General Information of EUT

Type of Product: Medical Cart
Host Model Name: Envoy
Host Model Number: ENV0-XXXXX
Host Serial Number: 12345678
Module Models: P0000457 (External BLE), SIP007AFS00
Module FCC IDs: 2AQ9D-P0000457, A3LSIP007AFS00

Frequency Ranges: 2402 – 2480 MHz (Bluetooth/BLE)
2405 – 2475 MHz (Zigbee)
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)

Max Conducted Output Power: External Bluetooth LE: 3.43 dBm (FCC ID: 2AQ9D-P0000457)
All transmitters listed below are in FCC ID: A3LSIP007AFS00
Bluetooth BDR: 6.5 dBm
Bluetooth LE: 3.0dBm
Zigbee: 7.0 dBm
WLAN 2.4GHz: 16.0 dBm
WLAN 5GHz U-NII-1: 13.0 dBm
WLAN 5GHz U-NII-2A: 14.0 dBm
WLAN 5GHz U-NII-2C: 12.5 dBm
WLAN 5GHz U-NII-3: 11.5 dBm

Rated Voltage: 100-240Vac, 50-60Hz
Test Voltage: 120Vac, 60Hz

Sample Received Date: 10 June 2021
Dates of testing: 28-29 November 2021

2 SAR Exclusion Calculations

The highest conducted output power in each frequency band has been used to demonstrate compliance.

For the transmitters in the Samsung radio module with FCC ID: A3LSIP007AFS00, this evaluation is based on the Class II Permissive Change dated 15 November 2018 which (among other things) reduced the output power levels to support higher antenna gains.

The EUT is considered an extremity application.

External Bluetooth LE (FCC ID: 2AQ9D-P0000457)

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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:	3.43	dBm
Duty Cycle:	100.0%	
Min separation distance:	60	mm
Frequency, f:	2480	MHz

<== Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	2.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	1.575	[f(GHz)]

b) 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 (also illustrated in Appendix B)

1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · (f(MHz)/150)] mW, for 100 MHz to 1500 MHz

2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · 10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	95 mW	<== 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	238 mW	<== 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	195 mW	<== v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	338 mW	<== v4 _{10g} + (v5 * v6)

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

Bluetooth BDR (FCC ID: A3LSIP007AFS00)

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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:	6.5	dBm
Duty Cycle:	100.0%	<== Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	2441	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	4.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.562	[Nf(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · (f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · 10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	96 mW	<== 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	240 mW	<== 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	196	mW	<== v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	340	mW	<== v4 _{10g} + (v5 * v6)

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

Bluetooth LE (FCC ID: A3LSIP007AFS00)

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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:	3	dBm
Duty Cycle:	100.0%	<== Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	2402	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	2.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.550	[Nf(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · (f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · 10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	97 mW	<== 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	242 mW	<== 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	197	mW	<== v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	342	mW	<== v4 _{10g} + (v5 * v6)

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

Zigbee (FCC ID: A3LSIP007AFS00)

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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:	7	dBm
Duty Cycle:	100.0%	
Min separation distance:	60	mm
Frequency, f:	2475	MHz

<= Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	5.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.573	[f(GHz)]

b) 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 (also illustrated in Appendix B)

1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz

2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	95 mW	<= 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	238 mW	<= 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for > 1500 MHz and <6 GHz

1g Exclusion Threshold:	195	mW	<= v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	338	mW	<= v4 _{10g} + (v5 * v6)

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

WLAN 2.4GHz (FCC ID: A3LSIP007AFS00)

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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	dBm
Duty Cycle:	100.0%	
Min separation distance:	60	mm
Frequency, f:	2437	MHz

<= Source based time average duty cycle

Value reference Number	Values used for Calculation	Reference number definition
v1	40.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW'
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm'
v3	1.561	[f(GHz)]

b) 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 (also illustrated in Appendix B)

1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz

2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	96 mW	<= 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	240 mW	<= 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for > 1500 MHz and <6 GHz

1g Exclusion Threshold:	196	mW	<= v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	340	mW	<= v4 _{10g} + (v5 * v6)

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

WLAN 5GHz U-NII-1 (FCC ID: A3LSIP007AFS00)

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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:	13	dBm
Duty Cycle:	100.0%	<= Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	5180	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	20.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	2.276	[f(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	66 mW	<= 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	165 mW	<= 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	166	mW	<= v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	265	mW	<= v4 _{10g} + (v5 * v6)

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

WLAN 5GHz U-NII-2A (FCC ID: A3LSIP007AFS00)

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:	14	dBm
Duty Cycle:	100.0%	<= Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	5320	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	25.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	2.307	[f(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	65 mW	<= 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	163 mW	<= 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	165	mW	<= v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	263	mW	<= v4 _{10g} + (v5 * v6)

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

WLAN 5GHz U-NII-2C (FCC ID: A3LSIP007AFS00)

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:	12.5	dBm
Duty Cycle:	100.0%	<== Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	5500	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	18.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	2.345	[f(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	64 mW	<== 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	160 mW	<== 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	164	mW	<== v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	260	mW	<== v4 _{10g} + (v5 * v6)

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

WLAN 5GHz U-NII-3 (FCC ID: A3LSIP007AFS00)

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:	11.5	dBm
Duty Cycle:	100.0%	<== Source based time average duty cycle
Min separation distance:	60	mm
Frequency, f:	5825	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	14.00 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	60 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	2.414	[f(GHz)]

- b) 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 (also illustrated in Appendix B)
- 1) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)] mW, for 100 MHz to 1500 MHz
 - 2) [(Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10] mW, for > 1500 MHz and ≤ 6 GHz

Value reference Number	Values used for Calculation	Reference number definition
v4 _{1g}	62 mW	<== 3 * 50 / V3 [Power allowed at numeric threshold of 3.0 for 50 mm in step a)]
v4 _{10g}	155 mW	<== 7.5 * 50 / V3 [Power allowed at numeric threshold of 7.5 for 50 mm in step a)]
v5	10 mm	[(test separation distance – 50 mm)]
v6	10.00	10 for >1500 MHz and <6 GHz

1g Exclusion Threshold:	162	mW	<== v4 _{1g} + (v5 * v6)
10g Exclusion Threshold:	255	mW	<== v4 _{10g} + (v5 * v6)

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

3 Revision History

Revision Level	Description of changes	Revision Date
0	Initial Release	21 December 2021