



BEC INCORPORATED

SAR REPORT

TEST STANDARDS:
FCC Part 15 Subpart C Intentional Radiator
KDB 447498 D01

**Woodstream Corporation Model V400M LoRa Radio Module
With Models V450 and V460 Connected Control Rodent Traps (DSS)**

**FCC ID: SNA-V400MR1
ISED ID: 9458A-V400M**

REPORT BEC-2065-05

CUSTOMER:
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Revision History

Revision #	Description of Changes	Date of Changes	Date Released
0	Test Report Initial Release	N/A	03/05/2020



1.0 Administrative Information

1.1 General Information Table

Project Number	BEC-2065
Manufacturer	Woodstream Corporation
Chassis Model Numbers	Connected Control Rodent Traps V450 (Small) and V460 (Large)
Chassis Model Serial Numbers	None
LoRa Radio Module Model Number	V400M
LoRa Radio Module Type	Modified with SMA connector on transmitter output port
LoRa Radio Module Serial #	None
LoRa Radio Module Sample Number	2065-01
FCC ID	SNA-V400M
Radio Chip Manufacturer	Semtech Corporation
Radio Chip Model Number	SX1272
Frequency of Operation	902 – 915 MHz
FCC Classification	DSS
Date Samples Received	02/04/2020
Condition Samples Received	Suitable for test
Sample Type	Production unit
EUT Description	Connected Control Rodent Traps with LoRa Radio Communication
Applicable FCC Rules	47 CFR Part 2.1093, KDB 447498 D01



2.0 SAR Test Exclusion Parameters and Justification

From KDB 447498 D01:

4.3. General SAR test exclusion guidance

4.3.1. Standalone SAR test exclusion considerations

The Maximum Antenna Power used for the RF Exposure Threshold calculation is the highest measured output power shown in the following table. The table comes from the FCC Part 15C test report for this product.

Channel	Modulation	Frequency (MHz)	Measured Level (dBm)	Cable # 814 Loss (dB)	Total		Limit		Margin	
					dBm	Watts	dBm	Watts	dBm	Watts
0	Unmodulated	902.3	17.85	0.37	18.22	0.066	30.00	1.000	-11.78	-0.934
32		908.7	17.81	0.38	18.19	0.066	30.00	1.000	-11.81	-0.934
63		914.9	17.80	0.38	18.18	0.066	30.00	1.000	-11.82	-0.934
0	LoRa 125 kHz BW SF=7	902.3	18.52	0.37	18.89	0.077	30.00	1.000	-11.11	-0.923
32		908.7	18.35	0.38	18.73	0.075	30.00	1.000	-11.27	-0.925
63		914.9	18.31	0.38	18.69	0.074	30.00	1.000	-11.31	-0.926
0	LoRa 125 kHz BW SF=12	902.3	18.39	0.37	18.76	0.075	30.00	1.000	-11.24	-0.925
32		908.7	18.32	0.38	18.70	0.074	30.00	1.000	-11.30	-0.926
63		914.9	18.32	0.38	18.70	0.074	30.00	1.000	-11.30	-0.926

The separation distance used in the calculation is 20 centimeters. This distance is derived from the usage of the product. The rodent trap would normally be placed on the floor of a dwelling where rodents travel. People will not dwell within 20 cm of the device except to perform maintenance. The device would be powered off during maintenance because of shocking hazard.

The frequency of the highest emission is also taken from the above table.



3.0 SAR Test Exclusion Calculation

The table in Appendix B, SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≥ 50 mm does not include the frequency or separation distance. Therefore, the following calculation, from paragraph 4.3.1 (b), was used to determine the SAR Test Exclusion Threshold:

$$\{[\text{Power allowed at numeric threshold for } 50 \text{ mm in step a})] + [(\text{test separation distance} - 50 \text{ mm}) \times (f(\text{MHz}) / 150)]\} \text{ mW}$$

Channel	Modulation	1 g SAR numeric threshold	Separation Distance	Frequency	SAR Test Exclusion Threshold	EUT Power Output	Margin	
		(mw)	(mm)	(MHz)	(mW)	(mW)	(mW)	
0	None	3	200	902.3	905.3	66	-839.3	
32				908.7	911.7	66	-845.7	
63				914.9	917.9	66	-851.9	
0		LoRa 125 kHz BW SF=7		902.3	905.3	77	-828.3	
32				908.7	911.7	75	-836.7	
63				914.9	917.9	74	-843.9	
0		LoRa 125 kHz BW SF=12		902.3	905.3	75	-830.3	
32				908.7	911.7	75	-836.7	
63				914.9	917.9	74	-843.9	

Channel	Modulation	10 g SAR numeric threshold	Separation Distance	Frequency	SAR Test Exclusion Threshold	EUT Power Output	Margin	
		(mw)	(mm)	(MHz)	(mW)	(mW)	(mW)	
0	None	8	200	902.3	910.3	66	-844.3	
32				908.7	916.7	66	-850.7	
63				914.2	922.2	66	-856.2	
0		LoRa 125 kHz BW SF=7		902.3	910.3	77	-833.3	
32				908.7	916.7	75	-841.7	
63				914.9	922.9	74	-848.9	
0		LoRa 125 kHz BW SF=12		902.3	910.3	75	-835.3	
32				908.7	916.7	75	-841.7	
63				914.9	922.9	74	-848.9	

Results: The Woodstream Model V400M, using DSS transmission, complies with SAR Test Exclusion Thresholds shown in the table. Therefore, SAR evaluation is not required.