BEC INCORPORATED

SAR REPORT

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

EUT:
Legrand WNRLX3 Radiant Battery Devices with Netatmo

FCC ID: 2AU5D-WNZED

REPORT#: BEC-2108-03

CUSTOMER:
Pass & Seymour/Legrand
50 Boyd Avenue
Syracuse, NY 13209

PREPARED BY: _____
Paul Banker**,** Test Engineer

REVIEWED and APPROVED BY: _____
Steve Fanella**,** Quality Manager

A2LA ACCREDITED
Testing Cert #2557.01

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Revision History

Revision #	Description of Changes	Date of Changes	Date Released
0	Test Report Initial Release	N/A	03/11/2021

1.0 Administrative Information

1.1 General Information Table

Project Number	BEC-2108
Manufacturer	Legrand
Model Number	WNRL63
EUT Radios	Zigbee
EUT Serial Number	None
EUT Sample Number	2108-02
Frequency of Operation	2405 – 2480 MHz
Antenna Gain	1.0 dBi
Radio Chip Manufacturer	Atmel
Radio Chip Model Number	SAMR21E
Software/Firmware Version	certifications_nlg_zb permanent stm32_boot0_app-jtag and TestRadio_v1
FCC ID	2AU5D-WNZED
FCC Classification	DTS
Date Samples Received	01/11/2021
Condition of Samples Received	Suitable for test
Sample Type	Production unit
EUT Description	Legrand WNRLX3 Radiant Battery Devices with Netatmo
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

4.3.2. 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.

Zigbee Radio

Channel	Modulation	Frequency (MHz)	Transmitter Output Total		Antenna Gain		EIRP			
							Total		Limit	Margin
			dBm	Watts	Isotropic	Numeric	dBm	Watts	Watts	Watts
11	O-QPSK	2405.0	3.71	0.0023	1.00	1.2590	4.71	0.0030	4.00	-3.9970
18		2440.0	3.69	0.0023	1.00	1.2590	4.69	0.0029	4.00	-3.9971
26		2480.0	4.01	0.0025	1.00	1.2590	5.01	0.0032	4.00	-3.9968
11	None	2405.0	4.36	0.0027	1.00	1.2590	5.36	0.0034	4.00	-3.9966
18		2440.0	4.48	0.0028	1.00	1.2590	5.48	0.0035	4.00	-3.9965
26		2480.0	4.32	0.0027	1.00	1.2590	5.32	0.0034	4.00	-3.9966

The separation distance used in the calculation is 90 millimeters. This distance is derived from the usage of the product. The Legrand WNRLX3 is wall-mounted, adjacent to other electrical switches and controls used in homes and businesses. Users will not dwell within 90 mm of the device.

3.0 SAR Test Exclusion Calculation (03/11/2021)

The following calculation, from paragraph 4.3.1 (b)(2) was used to determine the SAR Test Exclusion Threshold for 1-g body and 10-g extremity SAR Test Exclusion Threshold.

{[Power allowed at numeric threshold for 50 mm in step a)] +
[(test separation distance – 50 mm)*10] mW

Zigbee Radio

Channel	Modulation	1 g SAR numeric threshold	Separation Distance	Frequency	SAR Test Exclusion Threshold	EUT Power Output	Margin
		(mw)	(mm)	(MHz)	(mW)	(mW)	(mW)
11	O-QPSK	3	90	2405.0	403.0	3.0	-400.0
18				2440.0		3.0	-400.0
26				2480.0		3.0	-400.0
11	None			2405.0		3.0	-400.0
18				2440.0		4.0	-399.0
26				2480.0		3.0	-400.0

Channel	Modulation	10 g SAR numeric threshold	Separation Distance	Frequency	SAR Test Exclusion Threshold	EUT Power Output	Margin
		(mw)	(mm)	(MHz)	(mW)	(mW)	(mW)
11	O-QPSK	8	90	2405.0	408.0	3.0	-405.0
18				2440.0		3.0	-405.0
26				2480.0		3.0	-405.0
11	None			2405.0		3.0	-405.0
18				2440.0		4.0	-404.0
26				2480.0		3.0	-405.0

Results: The Legrand Model Series WNRLX3 with Zigbee radio complies with SAR Test Exclusion Thresholds shown in the tables for 1-g Body and 10-g Extremity, at a separation distance of 90 mm. Therefore, SAR evaluation is not required.