RF EXPOSURE EVALUATION REPORT

Product Name:	iotty Smart Switch
Trade Mark:	iotty
Model No.:	U3, U2
Report Number:	171208002RFC-2
Test Standards:	FCC 47 CFR Part 1 Subpart I
FCC ID:	2AOKTLSWU3
Test Result:	PASS
Date of Issue:	June 5, 2018

Prepared for:

IOTTY SRL
VIA DEL LAGHETTO 18/20 33080 PORCIA (PN) ITALY

Prepared by:

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Date: June 5, 2018

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Version

Version No.	Date	Description
V1.0	June 5, 2018	Original

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	IOTTY SRL
Address of Applicant:	VIA DEL LAGHETTO 18/20 33080 PORCIA (PN) ITALY
Manufacturer:	IOTTY SRL
Address of Manufacturer:	VIA DEL LAGHETTO 18/20 33080 PORCIA (PN) ITALY

1.2 EUT INFORMATION

Product Name:	iotty Smart Switch	
Model No.:	U3	
Add. Model No.:	U2	
Trade Mark:	iotty	
DUT Stage:	Identical Prototype	
EUT Supports Function:	2.4 GHz ISM Band:	IEEE 802.11b/g/n

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

For 2.4 GHz ISM Band of Wi-Fi	
Frequency Range:	2400 MHz to 2483.5 MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7(64 Mbps)
Number of Channels:	IEEE 802.11b: 11 IEEE 802.11g: 11 IEEE 802.11n-HT20: 11
Channel Separation:	5 MHz
Antenna Type:	PCB Antenna
Antenna Gain:	3 dBi

1.4 OTHER INFORMATION

Test channels for 2.4 GHz ISM Band of Wi-Fi				
Mode	**Tx/Rx Frequency**	**Test RF Channel Lists**		
		Lowest(L)	**Middle(M)**	**Highest(H)**
IEEE 802.11b	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz
IEEE 802.11g	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n-HT20	2412 MHz to 2462 MHz	Channel 1	Channel 6	Channel 11
		2412 MHz	2437 MHz	2462 MHz

1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR Part 1 Subpart I

All test items have been performed and recorded as per the above standards

1.6 DEVIATION FROM STANDARDS

None.

1.7 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

2. EQUIPMENT LIST

Please refer to the RF test report.

3. SAR TEST EXCLUSION EVALUATION

3.1 REFERENCE DOCUMENTS FOR EVALUATION

No.	Identity	Document Title
1	FCC 47 CFR Part 1 Subpart I	PROCEDURES IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969
3	KDB 447498 D01 General RF Exposure Guidance v06	RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2 SAR TEST EXCLUSION COMPLIANCE REQUIREMENT

3.2.1 Limits

According to KDB 447498 D01 Appendix, SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm: Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

MHz	30	35	40	45	50	mm
150	232	271	310	349	387	*SAR Test Exclusion Threshold* (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g *SAR Test Exclusion Thresholds* indicated above. These thresholds do not apply, by extrapolation or other means, to occupational exposure limits.

3.2.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.3 SAR TEST EXCLUSION CALCULATION RESULTS

Note: *For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.*

3.4.1 For WLAN

For Wi-Fi function, operating at 2412MHz to 2462 MHz for IEEE802.11b/g/n

Antenna Type: PCB Antenna

Antenna Gain: 2412MHz to 2462 MHz: 3 dBi

Evaluate distance: 50mm

Results

Operating Mode	Freq.	Maximum conducted average output power	Distance	Declared maximum average output power	Limit	Result
	(MHz)	(dBm)	(mm)	(mW)	(mW)	
IEEE 802.11b	2412-2462	18.75	50	74.99	96	**Pass**
IEEE 802.11g	2412-2462	17.35	50	54.33	96	**Pass**
IEEE 802.11n	2412-2462	17.36	50	54.45	96	**Pass**

The manufacturer should add the following statement in their user manual or documents accompany product:
FCC RF Radiation Exposure Statement Caution: to maintain compliance with the FCC's RF exposure guidelines, place the product at least 5cm from nearby persons.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

N/A

APPENDIX 2 PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photographs.

*** End of Report ***

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