RF Exposure Evaluation Report

APPLICANT	:	**Country Wireless, LLC**
EQUIPMENT	:	**Outdoor LTE CPE**
BRAND NAME	:	**country wireless**
MODEL NAME	:	**CW5100**
FCC ID	:	**2AICPCW5100**
STANDARD	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Mark Qu

Prepared by: Mark Qu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (SHENZHEN) INC.

1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA652611	Rev. 01	Initial issue of report	Aug. 01, 2016

1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.
Test Site Location	1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595

Applicant	
Company Name	Country Wireless, LLC
Address	1403 South Maple Avenue, Marshfield, WI, 54449, USA

Manufacturer	
Company Name	Jaton technology Limited
Address	Rm1505, Kuangu Building, 68#, Langrong Rd., Shi'ao Village, Dalang Sub-district, New Longhua District, Shenzhen City China

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Outdoor LTE CPE
Brand Name	country wireless
Model Name	CW5100
FCC ID	2AICPCW5100
IMEI Code	860524030016982
Wireless Technology and Frequency Range	LTE Band 43: 3652.5 MHz ~ 3697.5 MHz
Mode	LTE: QPSK, 16QAM
Antenna Type/Gain	WWAN: Planar antenna with gain 12.5dBi
HW Version	CW5100-V2.0
SW Version	MT-23425-1.2.3-R2-Standard
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Maximum RF average output power among production units

LTE Band 43				
average power(dBm)				
Modulation	BW (MHz)	RB size	Target MPR	Target Power
QPSK	20	≤ 18	0	17.5
QPSK	20	> 18	0	17.5
16QAM	20	≤ 18	0	17.5
16QAM	20	> 18	0	17.5
QPSK	15	≤ 16	0	17.5
QPSK	15	> 16	0	17.5
16QAM	15	≤ 16	0	17.5
16QAM	15	> 16	0	17.5
QPSK	10	≤ 12	0	17.5
QPSK	10	> 12	0	17.5
16QAM	10	≤ 12	0	17.5
16QAM	10	> 12	0	17.5
QPSK	5	≤ 8	0	17.5
QPSK	5	> 8	0	17.5
16QAM	5	≤ 8	0	17.5
16QAM	5	> 8	0	17.5

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm2)	Limit (mW/cm2)
LTE Band 43	3652.5	12.50	17.50	30.00	1.00	1000.00	0.199	1.00

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.