RF Exposure Evaluation Report

APPLICANT	:	**Maestro Wireless Holdings Limited**
EQUIPMENT	:	**3G WiFi Router**
BRAND NAME	:	**Maestro**
MODEL NAME	:	**E206XT**
MARKETING NAME	:	**E206XT**
FCC ID	:	**WN6-E206XT**
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.

Reviewed by: Eric Huang / Deputy Manager

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
FA531712	Rev. 01	Initial issue of report	Apr. 23, 2015

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	Maestro Wireless Holdings Limited
Address	FLAT A & B, 9/F, WING CHEONG FACTORY BUILDING, 121 KING LAM STREET, CHEUNG SHA WAN, HONG KONG

Manufacturer	
Company Name	Maestro Wireless Holdings Limited
Address	FLAT A & B, 9/F, WING CHEONG FACTORY BUILDING, 121 KING LAM STREET, CHEUNG SHA WAN, HONG KONG

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	3G WiFi Router
Brand Name	Maestro
Model Name	E206XT
Marketing Name	E206XT
FCC ID	WN6-E206XT
IMEI Code	013165000063780
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz
Mode	• GPRS/EGPRS • RMC 12.2Kbps Rel 99 • HSDPA Rel 6 • HSUPA Rel 6 • 802.11b/g/n HT20/HT40
Integrated WWAN Module	Brand Name: AirPrime Model Name: SL9090
Antenna Type	WWAN: Dipole Antenna WLAN: Dipole Antenna GPS: Ceramic Patch Antenna
HW Version	V06
SW Version	V2.0
EUT Stage	Pre-Production

Remark:

1. This device supports GRPS mode up to multi-slot class10 and EGPRS multi-slot class12.
2. 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

Mode	GSM 850	GSM 1900
	Average power(dBm)	
GPRS (GMSK, 1 Tx slot)	32.50	29.50
GPRS (GMSK, 2 Tx slots)	32.50	29.50
EDGE (8PSK, 1 Tx slot)	27.00	25.50
EDGE (8PSK, 2 Tx slots)	27.00	25.50
EDGE (8PSK, 3 Tx slots)	27.00	25.50
EDGE (8PSK, 4 Tx slots)	27.00	25.50

Mode	WCDMA Band V	WCDMA Band II
	average power(dBm)	
RMC 12.2Kbps	23.50	23.00
HSDPA Subtest-1	23.00	22.00
HSDPA Subtest-2	23.00	22.00
HSDPA Subtest-3	22.50	21.50
HSDPA Subtest-4	22.50	21.50
HSUPA Subtest-1	22.50	21.50
HSUPA Subtest-2	21.00	20.50
HSUPA Subtest-3	21.50	20.50
HSUPA Subtest-4	21.50	21.00
HSUPA Subtest-5	23.00	22.00

Mode		Maximum Average Power (dBm)
2.4GHz	802.11b	14.50
	802.11g	14.00
	802.11n-HT20	13.00
	802.11n-HT40	10.50

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 ERP/EIRP (W)	Maximum output power Limit (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm2)	Limit (mW/cm2)	Power Density / Limit
GPRS 850 (1 Tx slot)	824.2	2.16	32.50	34.66	2.92	368.13	0.07	0.55	0.13
GPRS 850 (2 Tx slots)	824.2	2.16	32.50	34.66	2.92	734.51	0.15	0.55	0.27
EGPRS 850 (1 Tx slot)	824.2	2.16	27.00	29.16	0.82	103.75	0.02	0.55	0.04
EGPRS 850 (2 Tx slots)	824.2	2.16	27.00	29.16	0.82	207.01	0.04	0.55	0.07
EGPRS 850 (3 Tx slots)	824.2	2.16	27.00	29.16	0.82	309.03	0.06	0.55	0.11
EGPRS 850 (4 Tx slots)	824.2	2.16	27.00	29.16	0.82	413.05	0.08	0.55	0.15
GPRS 1900 (1 Tx slot)	1850.2	0.42	29.50	29.92	0.98	123.59	0.02	1.00	0.02
GPRS 1900 (2 Tx slots)	1850.2	0.42	29.50	29.92	0.98	246.60	0.05	1.00	0.05
EGPRS 1900 (1 Tx slot)	1850.2	0.42	25.50	25.92	0.39	49.20	0.01	1.00	0.01
EGPRS 1900 (2 Tx slots)	1850.2	0.42	25.50	25.92	0.39	98.17	0.02	1.00	0.02
EGPRS 1900 (3 Tx slots)	1850.2	0.42	25.50	25.92	0.39	146.55	0.03	1.00	0.03
EGPRS 1900 (4 Tx slots)	1850.2	0.42	25.50	25.92	0.39	195.88	0.04	1.00	0.04
WCDMA Band V	826.4	2.16	23.50	25.66	0.37	368.13	0.07	0.55	0.13
WCDMA Band II	1852.4	0.42	23.00	23.42	0.22	219.79	0.04	1.00	0.04
WLAN2.4GHz	2412.0	3.80	14.50	18.30	0.07	67.61	0.01	1.00	0.01

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

5.2. Collocated Power Density Calculation

Mode	Frequency	WLAN Power Density / Limit	GPRS850 (2 TX slots) Power Density / Limit	Σ(Power Density / Limit) of WWAN+WLAN
WLAN2.4GHz	2412MHz ~ 2462MHz	0.01	0.27	0.28

Note:

1. For colocation analysis, GPRS850 (2TX slot) is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
2. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN.
3. Considering the WWAN collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

Conclusion:

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