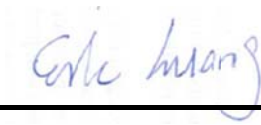
RF Exposure Evaluation Report

APPLICANT	**:**	**ZTE CORPORATION**
EQUIPMENT	**:**	**Outdoor Wireless AP**
BRAND NAME	**:**	**ZTE**
MODEL NAME	**:**	**ZXV10 W615 V3**
FCC ID	**:**	**Q78-ZXW3614B**
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.

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA472505	Rev. 01	Initial issue of report	Mar. 05, 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	ZTE CORPORATION
Address	NO.55.Hi-tec Road South, Shenzhen, P.R.China Postcode:518057

Manufacturer	
Company Name	ZTE CORPORATION
Address	NO.55.Hi-tec Road South, Shenzhen, P.R.China Postcode:518057

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Outdoor Wireless AP
Brand Name	ZTE
Model Name	ZXV10 W615 V3
FCC ID	Q78-ZXW3614B
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz
Mode	・802.11a/b/g/n HT20/HT40
Antenna Type	N-type Dipole Antenna
HW Version	V3.0
SW Version	V2.0
EUT Stage	Production Unit

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

Mode			Average Power (dBm)
2.4GHz	Chain Port 0	802.11b	20.5
		802.11g	17.5
		802.11n HT20	15.0
		802.11n HT40	9.5
	Chain Port 1	802.11b	20.0
		802.11g	16.5
		802.11n HT20	14.0
		802.11n HT40	9.0
	Chain Port 0+1	802.11b	23.5
		802.11g	20.0
		802.11n HT20	17.5
		802.11n HT40	12.5
5.2GHz	Chain Port 0	802.11a	14.5
		802.11n HT20	15.0
		802.11n HT40	14.0
	Chain Port 1	802.11a	15.0
		802.11n HT20	15.0
		802.11n HT40	15.0
	Chain Port 0+1	802.11a	17.95
		802.11n HT20	17.95
		802.11n HT40	17.95
5.8GHz	Chain Port 0	802.11a	21.5
		802.11n HT20	23.0
		802.11n HT40	15.5
	Chain Port 1	802.11a	21.0
		802.11n HT20	23.5
		802.11n HT40	16.5
	Chain Port 0+1	802.11a	24.5
		802.11n HT20	27.0
		802.11n HT40	19.0

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)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
WLAN2.4GHz 802.11b Chain Port 0	2412.0	1.20	20.50	21.700	147.911	0.029	1.000	0.029
WLAN2.4GHz 802.11g Chain Port 0	2412.0	1.20	17.50	18.700	74.131	0.015	1.000	0.015
WLAN2.4GHz 802.11n-HT20 Chain Port 0	2412.0	1.20	15.00	16.200	41.687	0.008	1.000	0.008
WLAN2.4GHz 802.11n-HT40 Chain Port 0	2422.0	1.20	9.50	10.700	11.749	0.002	1.000	0.002
WLAN2.4GHz 802.11b Chain Port 1	2412.0	1.20	20.00	21.200	131.826	0.026	1.000	0.026
WLAN2.4GHz 802.11g Chain Port 1	2412.0	1.20	16.50	17.700	58.884	0.012	1.000	0.012
WLAN2.4GHz 802.11n-HT20 Chain Port 1	2412.0	1.20	14.00	15.200	33.113	0.007	1.000	0.007
WLAN2.4GHz 802.11n-HT40 Chain Port 1	2422.0	1.20	9.00	10.200	10.471	0.002	1.000	0.002
WLAN2.4GHz 802.11b Chain Port 0+1	2412.0	1.20	23.50	24.700	295.121	0.059	1.000	0.059
WLAN2.4GHz 802.11g Chain Port 0+1	2412.0	1.20	20.00	21.200	131.826	0.026	1.000	0.026
WLAN2.4GHz 802.11n-HT20 Chain Port 0+1	2412.0	1.20	17.50	18.700	74.131	0.015	1.000	0.015
WLAN2.4GHz 802.11n-HT40 Chain Port 0+1	2422.0	1.20	12.50	13.700	23.442	0.005	1.000	0.005
WLAN5.2GHz 802.11a Chain Port 0	5180.0	2.98	14.5	17.480	55.976	0.011	1.000	0.011
WLAN5.2GHz 802.11n-HT20 Chain Port 0	5180.0	2.98	15.0	17.980	62.806	0.013	1.000	0.013
WLAN5.2GHz 802.11n-HT40 Chain Port 0	5190.0	2.98	14.0	16.980	49.888	0.010	1.000	0.010
WLAN5.2GHz 802.11a Chain Port 1	5180.0	2.98	15.0	17.980	62.806	0.013	1.000	0.013
WLAN5.2GHz 802.11n-HT20 Chain Port 1	5180.0	2.98	15.0	17.980	62.806	0.013	1.000	0.013
WLAN5.2GHz 802.11n-HT40 Chain Port 1	5190.0	2.98	15.0	17.980	62.806	0.013	1.000	0.013
WLAN5.2GHz 802.11a Chain Port 0+1	5180.0	2.98	17.95	20.930	123.880	0.025	1.000	0.025
WLAN5.2GHz 802.11n-HT20 Chain Port 0+1	5180.0	2.98	17.95	20.930	123.880	0.025	1.000	0.025
WLAN5.2GHz 802.11n-HT40 Chain Port 0+1	5190.0	2.98	17.95	20.930	123.880	0.025	1.000	0.025
WLAN5.8GHz 802.11a Chain Port 0	5745.0	3.43	21.50	24.930	311.172	0.062	1.000	0.062
WLAN5.8GHz 802.11n-HT20 Chain Port 0	5745.0	3.43	23.00	26.430	439.542	0.087	1.000	0.087
WLAN5.8GHz 802.11n-HT40 Chain Port 0	5755.0	3.43	15.50	18.930	78.163	0.016	1.000	0.016
WLAN5.8GHz 802.11a Chain Port 1	5745.0	3.43	21.00	24.430	277.332	0.055	1.000	0.055
WLAN5.8GHz 802.11n-HT20 Chain Port 1	5745.0	3.43	23.50	26.930	493.174	0.098	1.000	0.098
WLAN5.8GHz 802.11n-HT40 Chain Port 1	5755.0	3.43	16.50	19.930	98.401	0.020	1.000	0.020
WLAN5.8GHz 802.11a Chain Port 0+1	5745.0	3.43	24.50	27.930	620.869	0.124	1.000	0.124
WLAN5.8GHz 802.11n-HT20 Chain Port 0+1	5745.0	3.43	27.00	30.430	1104.079	0.220	1.000	0.220
WLAN5.8GHz 802.11n-HT40 Chain Port 0+1	5755.0	3.43	19.00	22.430	174.985	0.035	1.000	0.035

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	Maximum EIRP (dBm)	Calculated Power Density (mW/cm^2)	Limit (mW/cm^2)	WLAN Power Density / Limit	WLAN 5GHz Power Density / Limit	Σ(Power Density / Limit) of WLAN 2.4GHz + WLAN 5GHz
WLAN2.4GHz	2412MHz ~ 2462MHz	24.700	0.059	1.000	0.059	0.220	0.279
WLAN5GHz	5180MHz ~ 5240MHz	28.980	0.025	1.000	0.025		
	5745MHz ~ 5825MHz	30.430	0.220	1.000	0.220		

Note:

1. This MPE analysis is applicable to any collocated transmitters with transmit power for WLAN 2.4GHz and WLAN 5GHz.
2. For colocation analysis, WLAN 5.8GH is chosen for summation due to the highest (power density/limit) among all 5G WLAN wireless modes.
3. Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WLAN 2.4GHz + WLAN 5Hz.

Conclusion:

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