

FCC RF EXPOSURE REPORT

FCC ID: Q78-ZXHNH268A

Project No. : 1511C243
Equipment : Home Gateway
Model : ZXHN H268A
Applicant : ZTE Corporation
**Address : ZTE Plaza, Hi-Tech Park, Nanshan District,
Shenzhen, Guangdong, P.R.China**
According: : FCC Guidelines for Human Exposure IEEE C95.1

B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

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

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Table for Filed Antenna

2.4G

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Note
1	N/A	W2G4-S01-Z	Internal	N/A	2	TX/RX
2	N/A	W2G4-S01-Z	Internal	N/A	2	TX/RX

Note:

- (1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).
- (2) ANT 1 was the worst case for 1TX.

Operating Mode	1TX	2TX
TX Mode		
802.11b	V (ANT 1)	-
802.11g	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)

5G

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Note
1	N/A	W5G-C04-L	Internal	N/A	2	TX/RX
2	N/A	W5G-C04-L	Internal	N/A	2	TX/RX
3	N/A	W5G-C04-L	Internal	N/A	2	TX/RX

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and receivers (3T3R).

(2) ANT 1 was the worst case for 1TX.

Operating Mode TX Mode	1TX	2TX
802.11a	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2+ ANT 3)
802.11n(40MHz)	-	V (ANT 1 + ANT 2+ ANT 3)
802.11ac(20MHz)	-	V (ANT 1 + ANT 2+ ANT 3)
802.11ac(40MHz)	-	V (ANT 1 + ANT 2+ ANT 3)
802.11ac(80MHz)	-	V (ANT 1 + ANT 2+ ANT 3)

TEST RESULTS

2.4G

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature :	24 °C	Relative Humidity:	60 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B MODE /CH01, CH06, CH11-Ant 1		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	17.52	56.4937	0.01782175	1	Complies
2	1.5849	21.76	149.9685	0.04730972	1	Complies
2	1.5849	22.34	171.3957	0.05406925	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature :	24 °C	Relative Humidity:	60 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G MODE /CH01, CH06, CH11-Ant 1		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	17.02	50.3501	0.01588365	1	Complies
2	1.5849	16.49	44.5656	0.01405887	1	Complies
2	1.5849	16.66	46.3447	0.01462010	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	60 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE /CH01, CH06, CH11-Ant 1+Ant 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	16.53	44.9780	0.01418895	1	Complies
2	1.5849	16.86	48.5289	0.01530913	1	Complies
2	1.5849	16.66	46.3447	0.01462010	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	60 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE /CH03, CH06, CH09-Ant 1+Ant 2		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	15.22	33.2660	0.01049422	1	Complies
2	1.5849	17.11	51.4044	0.01621625	1	Complies
2	1.5849	17.32	53.9511	0.01701964	1	Complies

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EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE_Total / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.74	94.1890	0.02971326	1	Complies
2	1.5849	19.12	81.6582	0.02576027	1	Complies
2	1.5849	20.93	123.8797	0.03907962	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE_Total / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	18.98	79.0679	0.02494310	1	Complies
2	1.5849	19.74	94.1890	0.02971326	1	Complies
2	1.5849	21.91	155.2387	0.04897229	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE_Total / CH38, CH46		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.20	104.7129	0.03303318	1	Complies
2	1.5849	23.76	237.6840	0.07498085	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-20M MODE_ Total / CH36, CH40, CH48		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	18.30	67.6083	0.02132801	1	Complies
2	1.5849	19.04	80.1678	0.02529009	1	Complies
2	1.5849	26.24	420.7266	0.13272428	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-40M MODE_ Total / CH38, CH46		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.85	96.6051	0.03047547	1	Complies
2	1.5849	23.12	205.1162	0.06470687	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-80M MODE_ Total /CH42		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.08	101.8591	0.03213293	1	Complies

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EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE_Total / CH52, CH60, CH64		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.45	88.1049	0.02779396	1	Complies
2	1.5849	20.32	107.6465	0.03395865	1	Complies
2	1.5849	19.55	90.1571	0.02844136	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE_Total / CH52, CH60, CH64		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.37	108.8930	0.03435187	1	Complies
2	1.5849	20.83	121.0598	0.03819006	1	Complies
2	1.5849	20.93	123.8797	0.03907962	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE_Total / CH54, CH62		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.67	116.6810	0.03680869	1	Complies
2	1.5849	20.58	114.2878	0.03605374	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-20M MODE_Total / CH52, CH60, CH64		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.51	89.3305	0.02818061	1	Complies
2	1.5849	19.70	93.3254	0.02944085	1	Complies
2	1.5849	19.77	94.8418	0.02991923	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-40M MODE_Total / CH54, CH62		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.41	109.9006	0.03466972	1	Complies
2	1.5849	19.58	90.7821	0.02863851	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-80M MODE_Total / CH58		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.64	115.8777	0.03655530	1	Complies

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EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE_Total / CH100, CH116, CH140		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.53	89.7429	0.02831068	1	Complies
2	1.5849	20.56	113.7627	0.03588809	1	Complies
2	1.5849	19.54	89.9498	0.02837595	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE_Total / CH100, CH116, CH140		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.77	94.8418	0.02991923	1	Complies
2	1.5849	20.18	104.2317	0.03288141	1	Complies
2	1.5849	20.12	102.8016	0.03243026	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE_Total / CH102, CH110, CH134		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.67	116.6810	0.03680869	1	Complies
2	1.5849	23.13	205.5891	0.06485603	1	Complies
2	1.5849	23.79	239.3316	0.07550059	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-20M MODE_ Total / CH100, CH116, CH140		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.15	82.2243	0.02593883	1	Complies
2	1.5849	19.54	89.9498	0.02837595	1	Complies
2	1.5849	19.78	95.0605	0.02998820	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-40M MODE_ Total / CH102, CH110, CH134		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.67	92.6830	0.02923818	1	Complies
2	1.5849	22.14	163.6817	0.05163574	1	Complies
2	1.5849	23.50	223.8721	0.07062368	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-80M MODE_ Total / CH106, CH122		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	21.16	130.6171	0.04120504	1	Complies
2	1.5849	23.51	224.3882	0.07078649	1	Complies

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EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A MODE_Total / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	19.98	99.5405	0.03140150	1	Complies
2	1.5849	25.66	368.1290	0.11613159	1	Complies
2	1.5849	16.88	48.7528	0.01537979	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE_Total / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	22.83	191.8669	0.06052717	1	Complies
2	1.5849	28.76	751.6229	0.23711027	1	Complies
2	1.5849	22.22	166.7247	0.05259572	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-40M MODE_Total / CH151, CH159		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.89	122.7439	0.03872134	1	Complies
2	1.5849	25.59	362.2430	0.11427477	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-20M MODE_Total / CH149, CH157, CH165		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	21.70	147.9108	0.04666061	1	Complies
2	1.5849	27.28	534.5644	0.16863603	1	Complies
2	1.5849	21.24	133.0454	0.04197110	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-40M MODE_Total / CH151, CH159		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	20.21	104.9542	0.03310933	1	Complies
2	1.5849	24.35	272.2701	0.08589154	1	Complies

EUT :	Home Gateway	Model Name :	ZXHN H268A
Temperature:	24 °C	Relative Humidity:	56 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC-80M MODE_Total / CH155		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2	1.5849	22.05	160.3245	0.05057669	1	Complies

For 2.4G+5G simultaneous transmission MPE:

$$0.0541/1+0.2371/1=0.2912<1$$

Note: the calculated distance is 20 cm.