



Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: QIS-HG658D

Project No. : 1307C124
Equipment : Home Gateway
Model Name : HG658d
Applicant : Huawei Technologies Co., Ltd.
Address : Bantian, Longgang District, Shenzhen China
Manufacturer : Huawei Technologies Co., Ltd.
**Address : Administration Building, Huawei Base, Bantian,
Longgang District ,Shenzhen 518129, P.R.China**

According: : FCC Guidelines for Human Exposure IEEE C92.76

Neutron Engineering Inc.

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

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

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

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
0	Huawei Technologies Co.,Ltd	N/A	PCB onboard	N/A	1.79	
1	Huawei Technologies Co.,Ltd	N/A	PCB onboard	N/A	1.98	

Note:

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

Operating Mode TX Mode	1TX	2TX
	802.11b	V (ANT0 or ANT1)
802.11g	V (ANT0 or ANT1)	-
802.11n(20MHz)	-	V (ANT0 & ANT1)
802.11n(40MHz)	-	V (ANT0 & ANT1)



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TEST RESULTS

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
20.61	115.0800	0.03147389	1	Complies
20.14	103.2761	0.02824557	1	Complies
20.75	118.8502	0.03250501	1	Complies

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
21.25	133.3521	0.03647123	1	Complies
21.16	130.6171	0.03572320	1	Complies
21.05	127.3503	0.03482975	1	Complies

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 - ANT 0		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
18.62	72.7780	0.01990446	1	Complies
19.35	86.0994	0.02354780	1	Complies
19.24	83.9460	0.02295886	1	Complies



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EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 - ANT 1		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
15.19	33.0370	0.00903546	1	Complies
15.20	33.1131	0.00905629	1	Complies
15.40	34.6737	0.00948310	1	Complies

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 – ANT0+ ANT 1		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
20.25	105.9254	0.02897013	1	Complies
20.76	119.1242	0.03257995	1	Complies
20.74	118.5769	0.03243026	1	Complies

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT 0		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
16.12	40.9261	0.01119310	1	Complies
16.08	40.5509	0.01109048	1	Complies
16.20	41.6869	0.01140119	1	Complies



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EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT 1		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
10.35	10.8393	0.00296449	1	Complies
10.24	10.5682	0.00289035	1	Complies
10.42	11.0154	0.00301266	1	Complies

EUT:	Home Gateway	Model Name :	HG658d
Temperature:	25 °C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT 1+ANT 2		

Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
17.14	51.7607	0.01415632	1	Complies
17.09	51.1682	0.01399427	1	Complies
17.22	52.7230	0.01441951	1	Complies

The calculated distance is 20cm