

FCC RF EXPOSURE REPORT

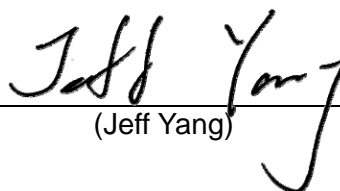
FCC ID: YHI-NW121

Project No. : 1603135A
Equipment : 3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module
Model : NW-121
Applicant : NEXCOM International Co., Ltd
**Address : 9F., No.920, Chung-Cheng Rd., Zhonghe Dist.,
New Taipei City 235, Taiwan**

According: : FCC Guidelines for Human Exposure IEEE C95.1

Technical Manager

:



(Jeff Yang)

B T L I N C .

B1, No. 37, Lane 365, Yang-Guang St.,
Nei-Hu District, Taipei City 114, Taiwan.
TEL: +886-2-2657-3299 FAX: +886-2-2657-3331

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
Band 2-3

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	WIESON	GY121L049S-010	Dipole	SMA Male	1.99	TX/RX
2	WIESON	GY121L049S-010	Dipole	SMA Male	1.99	TX/RX
3	WIESON	GY121L049S-010	Dipole	SMA Male	1.99	TX/RX

Note: The EUT incorporates a MIMO function. Physically, the EUT provides three completed three transmitters and receivers (3T3R) the EUT with CDD function, then, Direction gain = $G_{ANT} + \text{Array Gain}$, the Array gain = $10\log(N_{ANT}/N_{SS})$. that is Array gain = $10\log(3/1) = 4.77$, Directional gain = $1.99 + 4.77 = 6.76$. So the PSD of a mode Limit = $11 - 6.76 + 6 = 10.24$.

Operating Mode	3TX
TX Mode	
802.11a	V (ANT 1 + ANT 2 + ANT 3)
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)

Calculation:

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/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
1.99	1.5812	15.23	33.3426	0.01049422	1	Complies
1.99	1.5812	15.49	35.3997	0.01114167	1	Complies
1.99	1.5812	16.22	41.8794	0.01318106	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/TX N20 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
1.99	1.5812	15.57	36.0579	0.01134881	1	Complies
1.99	1.5812	15.58	36.1410	0.01137497	1	Complies
1.99	1.5812	16.20	41.6869	0.01312050	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/TX N40 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
1.99	1.5812	12.19	16.5577	0.00521135	1	Complies
1.99	1.5812	12.67	18.4927	0.00582037	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX A Mode_Total /CH110, 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
1.99	1.5812	16.75	47.3151	0.01489191	1	Complies
1.99	1.5812	16.65	46.2381	0.01455293	1	Complies
1.99	1.5812	14.05	25.4097	0.00799743	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX N20 Mode_Total /CH110, 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
1.99	1.5812	16.78	47.6431	0.01499513	1	Complies
1.99	1.5812	16.59	45.6037	0.01435325	1	Complies
1.99	1.5812	13.93	24.7172	0.00777948	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX N40 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
1.99	1.5812	16.10	40.7380	0.01282184	1	Complies
1.99	1.5812	16.02	39.9945	0.01258782	1	Complies
1.99	1.5812	13.90	24.5471	0.00772592	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/TX AC20 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
1.99	1.5812	14.90	30.9030	0.00972636	1	Complies
1.99	1.5812	14.97	31.4051	0.00988440	1	Complies
1.99	1.5812	15.56	35.9749	0.01132271	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/TX AC40 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
1.99	1.5812	12.46	17.6198	0.00554562	1	Complies
1.99	1.5812	12.80	19.0546	0.00599723	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2A/TX AC80 Mode_Total /CH55		

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
1.99	1.5812	5.29	3.3806	0.00106402	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX AC20 Mode_Total /CH110, 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
1.99	1.5812	16.33	42.9536	0.01351918	1	Complies
1.99	1.5812	16.12	40.9261	0.01288102	1	Complies
1.99	1.5812	14.36	27.2898	0.00858915	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX AC40 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
1.99	1.5812	16.27	42.3643	0.01333369	1	Complies
1.99	1.5812	16.30	42.6580	0.01342612	1	Complies
1.99	1.5812	14.20	26.3027	0.00827848	1	Complies

EUT:	3x3 11ac/n/g/b/a 2.4/5GHz WiFi Module	Model Name :	NW-121
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-2C/TX AC80 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
1.99	1.5812	9.85	9.6605	0.00304054	1	Complies
1.99	1.5812	9.50	8.9125	0.00280511	1	Complies

Note: the calculated distance is 20 cm.