FCC RF EXPOSURE REPORT

FCC ID: X4YNBL12AC

Project No. : 1702C045
Equipment : Dual-Band AC1200 Wireless Router
Model : ARN04904U2
Applicant : NEXXT SOLUTIONS
Address : 3505 N.W 107TH AVE. MIAMI FLORIDA 33178 U.S.A

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

BTL 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 radia
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)
1	Tenda	N/A	Dipole	N/A	5
2	Tenda	N/A	Dipole	N/A	5

Note:

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.

Operating Mode / TX Mode	1TX	2TX
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)

ANT 1 for 1TX was found to be the worst case and recorded.

5G

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	Tenda	N/A	Dipole	N/A	5
2	Tenda	N/A	Dipole	N/A	5

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.

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

ANT 1 for 1TX was found to be the worst case and recorded.

TEST RESULTS

2.4G

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature :	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B Mode_CH01/06/11		

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
5	3.1623	24.17	261.2161	0.10523	1	Complies
5	3.1623	22.74	187.9317	0.07571	1	Complies
5	3.1623	21.64	145.8814	0.05877	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature :	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G Mode_CH01/06/11		

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
5	3.1623	28.28	672.9767	0.27110	1	Complies
5	3.1623	28.41	693.4258	0.27934	1	Complies
5	3.1623	26.71	468.8134	0.18886	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature :	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 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
5	3.1623	29.78	950.6048	0.38294	1	Complies
5	3.1623	28.89	774.4618	0.31198	1	Complies
5	3.1623	28.85	767.3615	0.30912	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature :	25 ℃	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode_CH03/06/09_ 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
5	3.1623	26.24	420.7266	0.16948	1	Complies
5	3.1623	29.14	820.3515	0.33047	1	Complies
5	3.1623	29.83	961.6123	0.38737	1	Complies

UNII-1

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A Mode / 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
5	3.1623	20.73	118.3042	0.04766	1	Complies
5	3.1623	23.37	217.2701	0.08752	1	Complies
5	3.1623	23.9	245.4709	0.09888	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode / CH36, CH40, CH48_ 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
5	3.1623	23.38	217.7710	0.08773	1	Complies
5	3.1623	25.75	375.8374	0.15140	1	Complies
5	3.1623	25.51	355.6313	0.14326	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode / CH38, CH46 _ 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
5	3.1623	22.63	183.2314	0.07381	1	Complies
5	3.1623	29.56	903.6495	0.36402	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 Mode / CH36, CH40, CH48 _ 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
5	3.1623	23.50	223.8721	0.09018	1	Complies
5	3.1623	25.87	386.3670	0.15564	1	Complies
5	3.1623	25.85	384.5918	0.15493	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 Mode / CH38, CH46 _ 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
5	3.1623	21.80	151.3561	0.06097	1	Complies
5	3.1623	25.18	329.6097	0.13278	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 Mode / CH42 _ 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
5	3.1623	20.42	110.1539	0.04437	1	Complies

UNII-3

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX A Mode / 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
5	3.1623	19.73	93.9723	0.03786	1	Complies
5	3.1623	25.70	371.5352	0.14967	1	Complies
5	3.1623	25.62	364.7539	0.14694	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode / CH149, CH157, CH165_ 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
5	3.1623	22.84	192.3092	0.07747	1	Complies
5	3.1623	22.75	188.3649	0.07588	1	Complies
5	3.1623	22.08	161.4359	0.06503	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode / CH151, CH159 _ 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
5	3.1623	25.4	346.7369	0.13968	1	Complies
5	3.1623	29.17	826.0379	0.33276	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC20 Mode / CH149, CH157, CH165_ 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
5	3.1623	21.79	151.0080	0.06083	1	Complies
5	3.1623	22.04	159.9558	0.06444	1	Complies
5	3.1623	22.21	166.3413	0.06701	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC40 Mode / CH151, CH159 _ 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
5	3.1623	28.81	760.3263	0.30629	1	Complies
5	3.1623	28.99	792.5013	0.31925	1	Complies

EUT :	Dual-Band AC1200 Wireless Router	Model Name :	ARN04904U2
Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX AC80 Mode / CH155 _ 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
5	3.1623	24.80	301.9952	0.12166	1	Complies

For 2.4G+5G simultaneous transmission MPE:

$$0.38737/1+0.36402/1=0.75139<1$$

Note: the calculation distance is 25cm.