

FCC RF EXPOSURE REPORT

FCC ID: 2A29YPM4204454

Project No. : 2108C034A
Equipment : Premium ONU
Brand Name : 
Test Model : PM4254
Series Model : N/A
Applicant : Radisys Corporation
Address : 8900 NE Walker Road, Suite 130 Hillsboro, OR 97006, USA
Manufacturer : Radisys Corporation
Address : 8900 NE Walker Road, Suite 130 Hillsboro, OR 97006, USA
Factory : Shenzhen Xinfu Electronics Co., Ltd.
Address : 3rd Floor, No.57, Baoli Road, Buji Street, Longgang District, Shenzhen, China
Date of Receipt : Sep. 02, 2021
Date of Test : Sep. 03, 2021 ~ Sep. 25, 2021
Issued Date : Oct. 25, 2021
Report Version : R02
Test Sample : Engineering Sample No.: DG2021090228
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



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TESTING CERT #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue	Sep. 30, 2021
R01	Removed a series model.	Oct. 19, 2021
R02	Removed a series model.	Oct. 25, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. 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

Antenna Specification:

For 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		NB180-D220BX	Internal	Mini Connector	2.92
2		NB180-D220BX	Internal	Mini Connector	2.92

Note:

- This EUT supports CDD, and all antennas have the same gain, Directional gain = $G_{ANT} + \text{Array Gain}$. For power measurements, Array Gain=0dB ($N_{ANT} \leq 4$), so the Directional gain=2.92. For power spectral density measurements, $N_{ANT}=2$, $N_{SS} = 1$. So the Directional gain= $G_{ANT} + \text{Array Gain} = G_{ANT} + 10\log(N_{ANT}/N_{SS})\text{dBi} = 2.92 + 10\log(2/1)\text{dBi} = 5.93$.
- The antenna gain is provided by the manufacturer.

For 5GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		NB280-D120GX	Internal	Mini Connector	4.36
2		NB280-D180GX	Internal	Mini Connector	3.05

Note:

- This EUT supports CDD, and all antenna gains are not equal, so Directional gain= $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]\text{dBi}$, that is Directional gain= $10\log[(10^{4.36/20} + 10^{3.05/20})^2/2]\text{dBi} = 6.74$. So, the UNII-1, UNII-3 output power limit is $30 - (6.74 - 6) = 29.26$. The UNII-1 power spectral density limit is $17 - (6.74 - 6) = 16.26$, the UNII-3 power spectral density limit is $30 - (6.74 - 6) = 29.26$.
- The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:

For 2.4 GHz:

Operating Mode	TX Mode	2TX
IEEE 802.11b		V (Ant. 1 + Ant. 2)
IEEE 802.11g		V (Ant. 1 + Ant. 2)
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2)

For 5GHz:

Operating Mode	TX Mode	2TX
IEEE 802.11a		V (Ant. 1 + Ant. 2)
IEEE 802.11n(HT20)		V (Ant. 1 + Ant. 2)
IEEE 802.11n(HT40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT20)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT40)		V (Ant. 1 + Ant. 2)
IEEE 802.11ac(VHT80)		V (Ant. 1 + Ant. 2)

3. TEST RESULTS

For 2.4GHz:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.92	1.9588	28.68	737.9042	0.28771	1	Complies

For 5GHz:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
6.74	4.7206	19.19	82.9851	0.07797	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4GHz	5GHz			
0.28771	0.07797	0.36568	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report