




Maximum Permissible Exposure

FCC ID: 2AP48CT1800
APPLICANT: Centron Design Co., Ltd.
Application Type: Certification
Product: Wireless Streaming Station
Model No.: CT1800, HS770, NM240, NJ340
Trademark: 
FCC Rule Part(s): Part 2.1091
Received Date: December 23, 2019
Test Date: April 10, 2020

Tested By : Fran Chen

(Fran Chen)

Reviewed By : Paddy Chen

(Paddy Chen)

Approved By : Chenz Ker

(Chenz Ker)



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date
1912TW1201-U6	1.0	Original Report	2020-05-15

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Wireless Streaming Station
Model No.	CT1800, HS770, NM240, NJ340
Brand Name	CENTRON DESIGN
Supports Radios Spec.	2.4G: 802.11b/g/n-20/n-40 5G: 802.11a/n-20/ac-20n/n-40/ac-40/ac-80, Band 1, 4 Bluetooth Dual Mode: V2.1+EDR/ V4.0 LE

Note:

1. Model Difference: The difference of models only for marketing different, the other RF hardware was the same. (declared by the manufacturer)
2. The test was performed base on CT1800.

1.2. Antenna Description

2.4GHz	
Antenna Type	FPCB
Antenna M/N	RF11C00762S
Antenna Gain	4.16dBi
5.0GHz	
Antenna Type	FPCB
Antenna M/N	RF11C00762S
Antenna Gain	4.0dBi

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.4	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

Note : (1) f= Frequency in MHz , (2) * = Plane-wave equivalent power density

Calculation Formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

Under normal use condition, is at least 20cm away from the body of the user .

So, this device is classified as **Mobile Device**.

2.2. Test Result

Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
BT	2402~2480	5.24	4.16	0.0017	1
BLE	2402~2480	7.97	4.16	0.0033	1
WiFi 2.4G	2412~2462	23.93	4.16	0.1282	1
WiFi 5G (Band1)	5150~5250	16.24	4.0	0.0210	1
WiFi 5G (Band4)	5725~5850	16.28	4.0	0.0212	1

Conclusion :

$$CPD1/LPD1 + CPD2/LPD2 + \dots + CPDN/LPDN \leq 1$$

CPD : Calculation Power Density

LPD : Limit of Power Density

Mode	Power Density	Limit	Conclusion	Result (≤ 1)
WiFi 2.4G	0.1282	1	0.1494	Pass
WiFi 5G (Band4)	0.0212	1		

Therefore, the Max Power Density at R (20 cm) = 0.1494mW/cm².

So, device can comply with FCC radiation exposure requirement specified in the FCC Rule 2.1091.

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