

AP-900NA RF Exposure Exhibit

HVIN/PMN: AP-900NA
47CFR 1.1307, RSS-102 Issue 6

Measurements & Calculations

HVIN: AP-900NA		Test Number: 240115					
Max Average Transmitter Output (dBuV/m)		92.9					
Transmitter Output power (mW)		0.585					
Transmitter Output power (W)		0.0006					
Output Power for % duty Cycle operation (Watts)		100			Antenna Gain (dBi)	0	
Output Power for 100% duty Cycle operation (Watts)		0.0006			Antenna Gain (Numeric)	1.00	
Tx Frequency (MHz)	915	Calculation power (Watts)	0.0006	dBd + 2.17 = dBi	dBi to dBd	2.17	
Cable Loss (dB)	0.0	Adjusted Power (dBm)	-2.33		Antenna Gain (dBd)	-2.17	
Calculated ERP (mw) 0.355					Antenna minus cable (dBi)	0.00	
Calculated EIRP (mw) 0.585					Antenna Gain (Numeric)	1.00	
Power density (S) mW/cm² = ----- 4 π r² r (cm) EIRP (mW)					EIRP = Po(dBm) + Gain (dB)		
					Radiated (EIRP) dBm	-2.328	
					ERP = EIRP - 2.17 dB		
					Radiated (ERP) dBm	-4.498	
Occupational Limit		FCC radio frequency radiation exposure limits per 1.1310					
3.05	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)			
30.5	W/m ²	30-300	1	0.2			
General Public Limit		300-1,500	0.300	0.1500			
0.61	mW/cm ²	1,500-10,000	5	1			
6.1	W/m ²						
Occupational Limit		IC radio frequency radiation exposure limits per RSS-102, Issue 6					
4.49 f ^{0.3}	W/m ²	Frequency (MHz)	No Occupational limits in RSS-102 Issue 6	Mobile Limit (W/m ²)			
135.8	W/m ²	100-6,000	0.6455 f ^{0.3}				
General Public Limit		6,000-15,000	0.0131 f ^{0.6834}				
0.0131 f ^{0.6834}	W/m ²	20-48		4.49 f ^{0.5}			
1.38	W/m ²	300-6,000		0.0131 f ^{0.6834}			
		6,000-15,000					
f = Transmit Frequency (MHz)					General Public	Occupational	
P _T = Power Input to Antenna (mW)					915	915	MHz
Duty cycle (percentage of operation)					0.5850	0.5850	mW
P _A = Adjusted Power due to Duty cycle or Cable Loss (mW)					100	100	%
G _N = Numeric Gain of the Antenna					0.59	0.59	mW
S ₂₀ = Power Density of device at 20cm (mW/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²			1.00	1.00	numeric
S ₂₀ = Power Density of device at 20cm (W/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²			0.0001	0.0001	mW/m ²
S _L = Power Density Limit (W/m ²) FCC					0.0012	0.0012	W/m ²
S _L = Power Density Limit (W/m ²) Canada					6.100	30.500	W/m ²
R _C = Minimum distance to the Radiating Element for Compliance (cm) FCC		R _C =√(P _A G _N /4πS _L)			1.384	135.818	W/m ²
R _C = Minimum distance to the Radiating Element for Compliance (cm) Canada		R _C =√(P _A G _N /4πS _L)			0.3	0.1	cm
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) FCC		S _C =(P _A G _N)/(4πR _C) ²			0.6	0.1	cm
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) Canada		S _C =(P _A G _N)/(4πR _C) ²			6.10	30.50	W/m ²
R ₂₀ = 20cm					1.38	135.82	W/m ²
					R20=	20	cm
For Compliance with Canada General Population Limits, User Manual must indicate a minimum separation distance of					0.6 cm		
Or in Meters for Compliance with Canada General Population Limits, a minimum separation distance of					0.01 Meters		
Summary: Standalone MPE Calculations and Summary					Public Limit		Public
	Tx Duty Cycle (%)	Tx Frequency (MHz)	Power Total (mW)	Antenna Gain (numeric)	S _L (W/m ²)	S ₂₀ (W/m ²)	R _C (cm)
FCC	100	915	0.6	1.00	6.100	0.0012	0.3
Canada	100	915	0.6	1.00	1.384	0.0012	0.6
							1.38

The Compatibility Center LLC

Applied Digital, Inc.

SN's: N/A

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Test to: 47CFR 2.1307, RSS-102 Iss.6

Date: February 6, 2025

Revision 2

File: AP-900NA RFExp

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Conclusion

The AP-900NA meets RF exposure requirements for both FCC and Industry Canada.

FCC:

This device is exempt from RF exposure testing as described in KDB 447498 D04 v01, paragraph 2.1.2 (1-mW Test Exemption). As described in 47 CFR 1.1307(b)(3)(i)(A), the AP-900NA testing has shown that the maximum time-averaged power is less than 1mW thereby making it exempt.

The maximum time-averaged power of the AP-900NA was found to be 0.585 mW at 915 MHz (the channel with the highest output power the device produced).

Industry Canada:

In addition, per RSS-102 Issue 6, section 6.3, this device is exempt from SAR evaluation based upon its maximum time-averaged power output of 0.585 mW at 915 MHz (the channel with the highest output power the device produced).