

RF EXPOSURE EVALUATION

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)

FCC ID: WUI-CD5PRO

EUT Specification

EUT	ROADCAM PRO 4K
Model Number	BT532966
Rating	DC 5V 0.8A
Frequency band (Operating)	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Max. output power (peak power)	IEEE 802.11b: 15.4dBm IEEE 802.11g: 15.12dBm IEEE 802.11n-HT20: 15.28dBm IEEE 802.11n-HT40: 13.96dBm
Antenna gain (Max)	3.02dBi
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

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
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$

Where

P_d = Power density in mW/cm², P_{out} =output power to antenna in Mw

G = gain of antenna in linear scale, $\pi=3.1416$

R = distance between observation point and center of the radiator in cm=20cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

2.4GHz WIFI:

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Level (dBm)	Limit (dBm)	Verdict
802.11b	1	2412	14.72	30	PASS
	6	2437	15.28	30	PASS
	11	2462	15.4	30	PASS
802.11g	1	2412	14.21	30	PASS
	6	2437	14.89	30	PASS
	11	2462	15.12	30	PASS
802.11n (HT20)	1	2412	14.33	30	PASS
	6	2437	15.04	30	PASS
	11	2462	15.28	30	PASS
802.11n (HT40)	3	2422	13.62	30	PASS
	6	2437	13.87	30	PASS
	9	2452	13.96	30	PASS

Operating Mode	Test Channel	Tune up tolerance (dBm)	Max tune up conducted power(dBm)	Output Peak power (mW)	Ant. Gain (dBi)	Ant. Gain (numeric)	Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)
802.11b	1	15 ± 1	16	39.811	3.02	2.004	0.015875	1
	6	15 ± 1	16	39.811	3.02	2.004	0.015875	1
	11	15 ± 1	16	39.811	3.02	2.004	0.015875	1
802.11g	1	14 ± 1	15	31.623	3.02	2.004	0.012610	1
	6	15 ± 1	16	39.811	3.02	2.004	0.015875	1
	11	15 ± 1	16	39.811	3.02	2.004	0.015875	1
802.11n (HT20)	1	14 ± 1	15	31.623	3.02	2.004	0.012610	1
	6	15 ± 1	16	39.811	3.02	2.004	0.015875	1
	11	15 ± 1	16	39.811	3.02	2.004	0.015875	1
802.11n (HT40)	3	14 ± 1	15	31.623	3.02	2.004	0.012610	1
	6	14 ± 1	15	31.623	3.02	2.004	0.012610	1
	9	14 ± 1	15	31.623	3.02	2.004	0.012610	1

The Product unsupported at the same time to Transmitting. According to KDB 447498, and no simultaneous SAR measurement is required.

Signature:



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Date: 2023-08-24