

RF Exposure Evaluation

FCC ID: 2AFRF-RCCM

1. Client Information

Applicant : CamFi Limited
Address : Room A1002-1, Venture Building, TsingHua Science Park, No.101 College Road, Tangjiawan, Zhuhai, PRC.
Manufacturer : CamFi Limited
Address : Room A1002-1, Venture Building, TsingHua Science Park, No.101 College Road, Tangjiawan, Zhuhai, PRC.

2. General Description of EUT

EUT Name	: CamFi Remote Camera Controller	
Models No.	: CF-102, CF101, CF103, CF201, LW-100	
Model Difference	: All these models are identical in the same PCB layout and electrical circuit, the only difference is model name for commercial.	
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels <i>see note(3)</i> 802.11n(HT40):9 channels <i>see note(3)</i>
	RF Output Power:	802.11b: 9.21 dBm 802.11g: 9.09 dBm 802.11n (HT20): 8.98 dBm 802.11n (HT40): 8.96 dBm
	Antenna Gain:	0.9 dBi PIFA Antenna
	Modulation Type:	802.11b: CCK, QPSK, BPSK 802.11g: OFDM 802.11n: OFDM
	Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps
Power Supply	: DC power by USB cable form Host System. DC power by Li-ion battery.	
Power Rating	: DC 5V by USB Cable from PC system. DC 3.7V 1800mAh by Li-ion Battery.	
Connecting I/O Port(S)	: Please refer to the User's Manual	

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

- (1) Clause 4.3: General SAR test reduction and exclusion guidance

- Sub clause 4.31: Standalone SAR test exclusion considerations

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR}$$
$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}] \leq 7.5.0 \text{ for 10-g SAR}$$

2. Calculation:

Test separation: 5mm					
WiFi Mode(802.11b)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.21	± 0.5	9.354	2.905	3.0
2.437	9.16	± 0.5	9.247	2.887	3.0
2.462	9.20	± 0.5	9.333	2.929	3.0
WiFi Mode(802.11b)					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.09	± 0.5	9.099	2.826	3.0
2.437	9.07	± 0.5	9.057	2.828	3.0
2.462	9.05	± 0.5	9.016	2.829	3.0
WiFi Mode(802.11n(HT20))					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	8.95	± 0.5	8.810	2.737	3.0
2.437	8.98	± 0.5	8.872	2.770	3.0
2.462	8.89	± 0.5	8.690	2.727	3.0
WiFi Mode(802.11n(HT40))					
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.422	8.93	± 0.5	8.770	2.730	3.0
2.437	8.92	± 0.5	8.750	2.732	3.0
2.452	8.96	± 0.5	8.831	2.766	3.0

So standalone SAR measurements are not required.

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