

Manufacturer: Silicon Laboratories Finland Oy
Device: Wi-Fi 802.11b/g/n SiP transceiver radio module
Model: WFM200SA, WFM200SN
FCC ID: QOQWFM200
ISED ID: 5123A-WFM200

REFERENCE DOCUMENTS

RSS-102 Issue 5, 2015
 297217-1-1, FCC IC RF Test Report, 23 September 2019

EUT SPECIFICATION

RF characteristics of the assessed radio:

Operating Frequency Range:	2412-2462 MHz
Channels:	11
Nominal channel bandwidth:	20 MHz
Channel separation:	5 MHz
Maximum conducted power:	16.4 dBm
Modulation:	CCK, QPSK, OFDM
Integral Antenna gain:	4.7 dBi
External Antenna gain:	4.7 dBi
Antenna type:	internal and external
Antenna count:	1-2 (Not transmit simultaneously)
Device category:	Mobile and portable

RF EXPOSURE ASSESSMENT

Exemption limits for routine evaluation – SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1 (RSS-102 Issue 5, c. 2.5.1).

Output power level shall be higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

Exemption limits for routine evaluation – RF exposure evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device’s radiating element is greater than 20cm, except when the device operates as follows:

- at or above 300 MHz and below 6 GHz and source-based, time-averaged e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz

Assessment results:

Device maximum power (e.i.r.p) is 21.1 dBm = 129 mW

Device fulfil exemption of SAR evaluation at ≥40mm separation distance according to table 1. in clause 5.2.1.

Exemption for RF exposure evaluation at 20cm separation distance:

$$0.129 \text{ W} \leq 1.31 \cdot 10^{-2} \cdot 2437 \text{ MHz}^{0.6834} \text{ W} \leq 2.70 \text{ W}$$

CONCLUSION

The analysis shows that the device qualifies for exemption from the routine evaluation limits in section 2.5 of RSS-102 Issue 5.

Date: September 23, 2019



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