RF EXPOSURE EVALUATION

Product Name	:	**qBiq**
Model Name	:	**Q19XV010, Q19XV011**
FCC ID	:	**2ASNQ-Q19**
Specification	:	**802.11b/g/n HT20**
Operation Frequency	:	**2412-2462MHz**
Number of Channel	:	**11 channels**
Antenna Type	:	**Internal Antenna**
Antenna Gain	:	**0 dBi**
Type of Modulation	:	**DSSS with DBPSK/DQPSK/CCK for 802.11b;** **OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;**
Power supply	:	**DC 3.7V, 400mAh Battery**
Hardware Version	:	**V:0**
Software Version	:	**QMCU_A2.Y0.60**
Device category	:	**Portable (<20cm separation)**

Standard Requirement

According to § 1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance v06, section 4. 3. 1.

According to § 1.1310 and § 2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
0.3-1.34	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

F=Frequency in MHz

*=Plane-wave equivalent power density

Evaluation Method

The 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]*[√f(GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g SAR extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison.

The test exclusions are applicable only when the minimum test separation distance is ≤ 50mm and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is <5mm, a distance of 5mm is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to quality for TCB approval.

Test Result

Conducted Power Results

Test Mode	Channel	Frequency (MHz)	Power (dBm)	Power Tune Up (dBm)
802.11b	Low	2412	8.69	8.0±1
	Middle	2437	8.44	8.0±1
	High	2462	8.05	8.0±1
802.11g	Low	2412	7.44	7.0±1
	Middle	2437	7.26	7.0±1
	High	2462	7.19	7.0±1
802.11n HT20	Low	2412	6.38	6.0±1
	Middle	2437	6.51	6.0±1
	High	2462	6.45	6.0±1

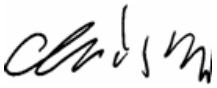
Evaluation Results

Test Mode	Frequency (MHz)	Antenna Distance (mm)	RF output power (including tune-up tolerance)		SAR Test Exclusion Threshold	Limits	SAR Test Exclusion
			dBm	mW			
802.11b	2412	Low	9.0	7.94	2.49272	3.0	Yes
	2437	Middle	9.0	7.94	2.49272	3.0	Yes
	2462	High	9.0	7.94	2.49272	3.0	Yes
802.11g	2412	Low	8.0	6.31	1.95983	3.0	Yes
	2437	Middle	8.0	6.31	1.95983	3.0	Yes
	2462	High	8.0	6.31	1.95983	3.0	Yes
802.11n HT20	2412	Low	7.0	5.01	0.77860	3.0	Yes
	2437	Middle	7.0	5.01	1.56480	3.0	Yes
	2462	High	7.0	5.01	1.25388	3.0	Yes

Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

Signature



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EMC Manager

Date: 2019-04-12