

RF Exposure Report

Report No.: SA190408C21

FCC ID: QOQGM210P

Test Model: MGM210P32A, MGM210P22A

Series Model: BGM210P32A, BGM210P22A

Received Date: Apr. 08, 2019

Test Date: Apr. 13 ~ Jun. 12, 2019

Issued Date: Jun. 21, 2019

Applicant: Silicon Laboratories Finland Oy

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ESPOO, FINLAND

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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R.O.C.

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA190408C21	Original release	Jun. 21, 2019

1 Certificate of Conformity

Product: Bluetooth Low Energy and ZigBee wireless radio modules

Brand: Silicon Labs

Test Model: MGM210P32A, MGM210P22A

Series Model: BGM210P32A, BGM210P22A

Sample Status: Engineering sample

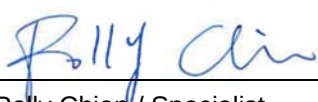
Applicant: Silicon Laboratories Finland Oy

Test Date: Apr. 13 ~ Jun. 12, 2019

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Jun. 21, 2019
Polly Chien / Specialist

Approved by :  , **Date:** Jun. 21, 2019
Bruce Chen / Project Engineer

2 RF Exposure

2.1 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 (minutes)
Limits For General Population / Uncontrolled Exposure				
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

2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as Mobile Device.

3 Calculation Result of Maximum Conducted Power

Mode	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BT LE						
EUT (FHSS) / Dipole antenna						
A1	2402~2480	19.56	2.14	20	0.029	1
A2		10.80	2.14	20	0.004	1
A3		19.41	2.14	20	0.028	1
A4		10.83	2.14	20	0.004	1
EUT (FHSS) / Chip antenna						
B1	2402~2480	19.77	1.86	20	0.029	1
B2		10.81	1.86	20	0.004	1
B3		19.96	1.86	20	0.030	1
B4		10.81	1.86	20	0.004	1
EUT (DTS) / Dipole antenna						
C1	2402~2480	19.56	2.14	20	0.029	1
C2		10.80	2.14	20	0.004	1
C3		19.41	2.14	20	0.028	1
B4		10.83	2.14	20	0.004	1
EUT (DTS) / Chip antenna						
D1	2402~2480	19.77	1.86	20	0.029	1
D2		10.81	1.86	20	0.004	1
D3		19.96	1.86	20	0.030	1
D4		10.81	1.86	20	0.004	1
Zigbee						
EUT / Dipole antenna						
A1	2405 ~ 2480	20.18	2.14	20	0.034	1
A2		10.89	2.14	20	0.004	1
EUT / Chip antenna						
B1	2405 ~ 2480	20.09	1.86	20	0.031	1
B2		10.69	1.86	20	0.004	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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