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
Address:	Alberga Business Park - Bldg D/Floor 5, Bertel Jungin aukio 3, 02600 ESPOO, FINLAND
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

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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 modulesy
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 : Polly Chien , **Date:** Jun. 21, 2019

Polly Chien / Specialist

Approved by : Bruce Chen , **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

$Pd = (Pout*G) / (4*pi*r^2)$
where
Pd = power density in mW/cm^2
Pout = 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

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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