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Report Template Version: V04
Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No.:	CQASZ20210801408E-02
Applicant:	Dongguan Hele Electronics Co., Ltd
Address of Applicant:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China
Equipment Under Test (EUT):	
Product:	QCY-G1
Model No.:	BH21G1A
Test Model No.:	BH21G1A
Brand Name:	N/A
FCC ID:	RDR-BH21G1AR
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2021-08-19
Date of Test:	2021-08-19 to 2021-09-24
Date of Issue:	2021-09-30
Test Result:	**PASS***

***In the configuration tested, the EUT complied with the standards specified above**

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Rock Huang

(Rock Huang)

Approved By:

(Jack ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210801408E-02	Rev.01	Initial report	2021-09-30

2 Contents

3 General Information

3.1 Client Information

Applicant:	Dongguan Hele Electronics Co., Ltd
Address of Applicant:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China
Manufacturer:	Dongguan Hele Electronics Co., Ltd
Address of Manufacturer:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China
Factory:	Dongguan Hele Electronics Co., Ltd
Address of Factory:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China

3.2 General Description of EUT

Product Name:	QCY-G1
All Model No.:	BH21G1A
Test Model No.:	BH21G1A
Trade Mark:	N/A
EUT Supports Radios application:	Bluetooth dual mode: 2402-2480MHz
Hardware Version:	V5.2
Software Version:	V5.2
EUT Power Supply:	lithium battery: DC 3.7V, 0.166Wh, Charge by DC 3.7V

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	AWBTRDLAB 1.0.9.7
Antenna Type:	FPC antenna
Antenna Gain:	-1.73 dBi

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm 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 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[17]
The result is rounded to one decimal place for comparison

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

4.1.3 EUT RF Exposure

1) For BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.140	0±1	1.0	1.259
Middle(2441MHz)	-0.590	-0.5±1	0.5	1.122
Highest(2480MHz)	-0.820	-0.5±1	0.5	1.122
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.900	1.0±1	2.0	1.585
Middle(2441MHz)	0.430	0.5±1	1.5	1.413
Highest(2480MHz)	0.190	0±1	1.0	1.259
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.880	1.0±1	2.0	1.585
Middle(2441MHz)	0.410	0.5±1	1.5	1.413
Highest(2480MHz)	0.180	0±1	1.0	1.259

Worst case: π/4DQPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.900	1.0±1	2.0	1.585	0.491	3.0
Middle (2441MHz)	0.430	0.5±1	1.5	1.413	0.441	
Highest (2480MHz)	0.190	0±1	1.0	1.259	0.397	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210801408E-01