

RF Exposure Evaluation Report

Product : Desktop PC
Trade mark : COMPAQ
Model/Type reference : QD15I5GW8512, QD15I3GW8512
Serial Number : N/A
Report Number : EED32R80383905
FCC ID : 2BLU9-QD15GW
Date of Issue : Apr. 24, 2025
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
47 CFR Part 2.1093
KDB 447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

M&M Electronics, S.A.
Cocosolito, Colon Free Zone, Main Entrance Warehouse
10D and 11D, Panama

Prepared by:

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1 Version

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00	Apr. 24, 2025	Original

2 Contents

	Page
1 VERSION	2
2 CONTENTS	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION	4
3.2 GENERAL DESCRIPTION OF EUT	4
3.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	4
3.4 TEST LOCATION	6
3.5 DEVIATION FROM STANDARDS	6
3.6 ABNORMALITIES FROM STANDARD CONDITIONS	6
3.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER	6
4 SAR EVALUATION	7
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT	7
4.1.1 Limits	7
4.1.2 Test Procedure	7
4.1.3 EUT RF Exposure Evaluation	8

3 General Information

3.1 Client Information

Applicant:	M&M Electronics, S.A.
Address of Applicant:	Cocosolito, Colon Free Zone, Main Entrance Warehouse 10D and 11D, Panama
Manufacturer:	M&M Electronics, S.A.
Address of Manufacturer:	Cocosolito, Colon Free Zone, Main Entrance Warehouse 10D and 11D, Panama
Factory:	Hunan Greatwall Computer System Co.,Ltd
Address of Factory:	Hunan Greatwall Industrial Park, Tianyi Science and Technology City, Xiangyun Middle Road, Tianyuan District, Zhuzhou, Hunan Province

3.2 General Description of EUT

Product Name:	Desktop PC
Model No.:	QD15I5GW8512, QD15I3GW8512
Test Model No.:	QD15I5GW8512
Trade mark:	COMPAQ

3.3 Product Specification subjective to this standard

Frequency Range:	BLE/BT: 2402MHz~2480MHz 2.4G Wi-Fi: IEEE 802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz IEEE 802.11n(HT40)/ax(HE40): 2422MHz to 2452MHz 5G Wi-Fi: U-NII-1: 5150-5250MHz U-NII-3: 5745-5825MHz	
Modulation Type:	BLE: GFSK BT: GFSK, $\pi/4$ DQPSK, 8DPSK 2.4G Wi-Fi: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM,QPSK, BPSK) IEEE for 802.11ax(HE20 and HE40) : OFDM (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) 5G Wi-Fi: IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) IEEE 802.11ax(HE20/HE40/HE80): OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM,1024QAM)	
Test Power Grade:	Default	
Test Software of EUT:	DRTU.exe	
Antenna Type:	PIFA Antenna	
Antenna Gain:	BLE/BT: 1.65dBi 2.4G Wi-Fi: ANT0: 1.65 dBi, ANT1: 1.35 dBi 5G Wi-Fi U-NII-1: ANT0: 2.82dBi, ANT1: 1.62dBi 5G Wi-Fi U-NII-3: ANT0: 0.13dBi, ANT1: 2.49dBi	
Power Supply:	Adapter:	AC 100~240V
Sample Received Date:	Apr. 09, 2025	
Sample tested Date:	Apr. 09, 2025 to Apr. 22, 2025	

Remark:

Model No.: QD15I5GW8512, QD15I3GW8512

Only the model QD15I5GW8512 was tested. They have same electrical, PCB and layout, only the model name, QD15I5GW8512 and QD15I3GW8512 are different for marketing requirements.

3.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

BLE:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	7.12	1.65	6.62	4.592	3060	0.0015	Pass

BT:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	10.05	1.65	9.55	9.016	3060	0.0029	Pass

2.4G Wi-Fi SISO:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	29.94	1.65	29.44	879.023	3060	0.2873	Pass

5G Wi-Fi SISO:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@5GHz	20	21.24	2.82	21.91	155.239	3060	0.0507	Pass

2.4G Wi-Fi MIMO:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	29.47	1.65	28.97	788.860	3060	0.2578	Pass

5G Wi-Fi MIMO:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@5GHz	20	21.27	2.49	21.61	144.877	3060	0.0473	Pass

Note:

- ① EIRP=conducted power+antenna gain;
- ② $ERP=EIRP-2.15$;
- ③ $EIRP(dBm) = \text{Field strength of the fundamental signal}(dBuV/m@3m) - 95.23$;
- ④ $ERP(mW) = 10^{(ERP(dBm)/10)}$;
- ⑤ The estimation distance is 20cm;
- ⑥ The test data please refer to the report (FCC ID: PD9AX201NG) of 180717-02.TR05, 180717-02.TR04, 180717-02.TR01, 180717-02.TR03 and only the worst case data was recorded in the report.

For Simultaneous Transmission:

As MPE ratio (BT+2.4G Wi-Fi+5G Wi-Fi)= $0.029^2+0.2873^2+0.0507^2=0.08595 < 1$, it's deemed to fulfil the RF exposure requirement.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
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*** End of Report ***