

# FCC MPE Evaluation Report

**Report No:** WD-RF-R-200241-C0

**Product Name** : BT Dual mode Module  
**Model Name** : BTA-QC3034-3M  
**FCC ID** : 2AABGQ3034-3M  
**Applicant** : EnzyTek Technology Inc.  
**Received Date** : Aug. 11, 2020  
**Tested Date** : Aug. 12, 2020 ~ Aug. 21, 2020  
**Applicable Standard** : 47 CFR FCC Part 2.1091  
47 CFR FCC Part 1.1310  
KDB 447498 D01  
OET Bulletin 65 Supplement C



**Wendell Industrial Co., Ltd**  
**Wendell EMC & RF Laboratory**

**Caution:**

This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment.

Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

This report must not be used to claim product endorsement by TAF or any agency of the government.

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# Test Report

Issued Date: September 2, 2020

Project No.: 20Q081103

|                                        |                                                                                                    |
|----------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Product Name</b>                    | BT Dual mode Module                                                                                |
| <b>Trade Name</b>                      | Enzytek                                                                                            |
| <b>Model Name</b>                      | BTA-QC3034-3M                                                                                      |
| <b>FCC ID</b>                          | 2AABGQ3034-3M                                                                                      |
| <b>Applicant</b>                       | EnzyTek Technology Inc.                                                                            |
| <b>Manufacturer</b>                    | EnzyTek Technology Inc.                                                                            |
| <b>EUT Rated Voltage</b>               | DC 3.3V~4.2V                                                                                       |
| <b>EUT Test Voltage</b>                | USB 5V                                                                                             |
| <b>EUT Supports Radios Application</b> | Bluetooth BR/EDR/LE                                                                                |
| <b>Applicable Standard</b>             | 47 CFR FCC Part 2.1091<br>47 CFR FCC Part 1.1310<br>KDB 447498 D01<br>OET Bulletin 65 Supplement C |
| <b>RF Evaluation</b>                   | 0.00307 mW/cm <sup>2</sup>                                                                         |
| <b>Test Result</b>                     | Complied                                                                                           |

Documented :



( Specialist / Emma Lu )

Technical Engineer :



( Deputy Section Manager / Jack Chang )

Approved :



( Project Manager / Gary Wu )

## Table of Contents

|                                                     |           |
|-----------------------------------------------------|-----------|
| <b>Document Revision History .....</b>              | <b>4</b>  |
| <b>Reference Testing Standard.....</b>              | <b>5</b>  |
| <b>1    Generation Information .....</b>            | <b>6</b>  |
| 1.1   Applicant.....                                | 6         |
| 1.2   Manufacturer.....                             | 6         |
| 1.3   Description of Equipment under Test.....      | 6         |
| 1.4   Test Facility .....                           | 7         |
| <b>2    Mobile device Assessment Procedure.....</b> | <b>8</b>  |
| <b>3    RF Exposure Assessment.....</b>             | <b>8</b>  |
| <b>4    Limit Requirement .....</b>                 | <b>9</b>  |
| <b>5    Test Results.....</b>                       | <b>10</b> |

## Document Revision History

| Report No.        | Issue date        | Description    |
|-------------------|-------------------|----------------|
| WD-RF-R-200241-C0 | September 2, 2020 | Initial report |

### Reference Testing Standard

| Standard                     | Description                                                                                            | Version          |
|------------------------------|--------------------------------------------------------------------------------------------------------|------------------|
| 47 CFR FCC Part 2.1091       | Radiofrequency radiation exposure evaluation: mobile devices.                                          | --               |
| 47 CFR FCC Part 1.1310       | Radiofrequency radiation exposure limits.                                                              | --               |
| KDB 447498 D01               | RF Exposure procedures and equipment authorization policies for mobile and portable devices.           | V06              |
| OET Bulletin 65 Supplement C | Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. | Edition<br>01-01 |

## 1 Generation Information

### 1.1 Applicant

EnzyTek Technology Inc.  
7F, No. 35, Hsueh Fu Rd., Hsinchu 300, Taiwan, R.O.C.

### 1.2 Manufacturer

EnzyTek Technology Inc.  
7F, No. 35, Hsueh Fu Rd., Hsinchu 300, Taiwan, R.O.C.

### 1.3 Description of Equipment under Test

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>Product Name</b>        | BT Dual mode Module               |
| <b>Model No.</b>           | BTA-QC3034-3M                     |
| <b>FCC ID</b>              | 2AABGQ3034-3M                     |
| <b>Frequency Range</b>     | 2402 ~ 2480 MHz                   |
| <b>Number of Channels</b>  | BLE : 40CH<br>BT : 79 CH          |
| <b>Antenna Information</b> | Refer to the table "Antenna List" |

The above equipment was tested by Wendell EMC & RF Laboratory For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

#### Antenna List

| No. | Manufacturer | Model No. | Antenna Type | Peak Gain            |
|-----|--------------|-----------|--------------|----------------------|
| 1   | Enzytek      | QC-AN24-1 | PCB Antenna  | -0.46 dBi for 2.4GHz |

## 1.4 Test Facility

| Items                      | Required (IEC 60068-1) | Actual |
|----------------------------|------------------------|--------|
| Temperature (°C)           | 15-35                  | 25     |
| Humidity (% RH)            | 25-75                  | 65     |
| Barometric pressure (mbar) | 860-1060               | 1001   |

**Description:** Accredited by TAF

Accredited Number: 2965

**Issued by:** Wendell Industrial Co., Ltd

**Lab Address:** 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,  
New Taipei City 23145, Taiwan R.O.C

**Test Lab:** Wendell EMC & RF Laboratory

**Test Location:** 1F., No. 119, Wugong 3rd Rd., Wugu Dist.,  
New Taipei City 248, Taiwan (R.O.C.)

**Designation Number:** TW0025

**Test Firm Registration Number:** 665221

## 2 Mobile device Assessment Procedure

In 47 CFR § 2.1091, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term “fixed location” means that the device is physically secured at one location and is not able to be easily moved to another location.

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

## 3 RF Exposure Assessment

Estimation of the expected exposure in power density can be made with the following equation:

$$S = \frac{P \times G}{4\pi \times R^2} = \frac{\text{EIRP}}{4\pi \times R^2}$$

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.

EIRP: Effective Isotropic Radiated Power

## 4 Limit Requirement

In 47 CFR § 1.1310, use of the device as based upon the user's awareness and ability to exercise control over human exposure. The two categories defined are Occupational/Controlled Exposure and General Population/Uncontrolled. These two categories are defined as follow:

### Occupational/Controlled Exposure:

Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

### General Population/Uncontrolled:

General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

| Limits for Occupational / Controlled Exposure |                                   |                                   |                                          |                                                                 |
|-----------------------------------------------|-----------------------------------|-----------------------------------|------------------------------------------|-----------------------------------------------------------------|
| Frequency Range (MHz)                         | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-3.0                                       | 614                               | 1.63                              | (100)*                                   | 6                                                               |
| 3.0-30                                        | 1,842 / f                         | 4.89 / f                          | (900 / f <sup>2</sup> )*                 | 6                                                               |
| 30-300                                        | 61.4                              | 0.163                             | 1.0                                      | 6                                                               |
| 300-1,500                                     | --                                | --                                | f / 300                                  | 6                                                               |
| 1,500-100,000                                 | --                                | --                                | 5                                        | 6                                                               |

Note :

(1) f = frequency in MHz

(2) \* = Plane-wave equivalent power density

| Limits for General Population / Uncontrolled Exposure |                                   |                                   |                                          |                                                                 |
|-------------------------------------------------------|-----------------------------------|-----------------------------------|------------------------------------------|-----------------------------------------------------------------|
| Frequency Range (MHz)                                 | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-1.34                                              | 614                               | 1.63                              | (100)*                                   | 30                                                              |
| 1.34-30                                               | 824 / f                           | 2.19 / f                          | (180 / f <sup>2</sup> )*                 | 30                                                              |
| 30-300                                                | 27.5                              | 0.073                             | 0.2                                      | 30                                                              |
| 300-1500                                              | --                                | --                                | f / 1,500                                | 30                                                              |
| 1,500-100,000                                         | --                                | --                                | 1.0                                      | 30                                                              |

Note :

(1) f = frequency in MHz

(2) \* = Plane-wave equivalent power density

## 5 Test Results

| Mode | Max. Power<br>(E.I.R.P) |       | Distance<br>(cm) | Power Density<br>(mW/cm <sup>2</sup> ) | Limit<br>(mW/cm <sup>2</sup> ) | Result |
|------|-------------------------|-------|------------------|----------------------------------------|--------------------------------|--------|
|      | dBm                     | mW    |                  |                                        |                                |        |
| BT   | 11.89                   | 15.45 | 20               | 0.00307                                | 1                              | Pass   |
| LE   | 7.96                    | 6.25  | 20               | 0.00124                                | 1                              | Pass   |

Note :

- \* The Numeric Gain calculated by  $10^{(dBi/10)}$ .
- \* Each Function of the max power which perform MPE of any configurations.
- \* BT and LE can not be transmitted simultaneously.
- \* The allowed Frequency (Range) of the BT function is 2400~2483.5MHz, and the exemption limit is e.i.r.p. less than or equal to 1mW.
- \* The limit is equal to the minimum value.
- \* The Max total MPE = BT = 0.00307 (mW/cm<sup>2</sup>)

--- END ---