

# RF Exposure Evaluation Report

<b>Product</b>	: AI Backbone Protection Mattress
<b>Trade mark</b>	: N/A
<b>Model/Type reference</b>	: M1, M1 PRO, M1 Advanced, M1 Premium, M1 signature, MT1, MT1 PRO, MT1 Advanced, MT1 Premium, MT1 signature
<b>Serial Number</b>	: N/A
<b>Report Number</b>	: EED32P81803302
<b>FCC ID</b>	: 2ATZRM1SER
<b>Date of Issue</b>	: Jan. 18, 2023
<b>Test Standards</b>	: 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
<b>Test result</b>	: PASS

Prepared for:

**QuantMed LifeTech (Shenzhen) Co., Ltd.**  
**1F, Huigu, Meisheng Chuanggu Science and Technology Park,**  
**Longchang Road, Baoan District, Shenzhen**

Prepared by:

**Centre Testing International Group Co., Ltd.**  
**Hongwei Industrial Zone, Bao'an 70 District,**  
**Shenzhen, Guangdong, China**  
**TEL: +86-755-3368 3668**  
**FAX: +86-755-3368 3385**



Compiled by:

**CTI**

Approved by:

Report Seal

Frazer. Li

Frazer Li

Aaron Ma

Aaron ma

Reviewed by:

Tom Chen

Tom Chen

Jan. 18, 2023

Check No.: 4648311023

Report No. : EED32P81803302

Page 2 of 7

**2 Version**

Version No.	Date	Description
00	Jan. 18, 2023	Original

### 3 Contents

	Page
<b>1 COVER PAGE</b>	1
<b>2 VERSION</b>	2
<b>3 CONTENTS</b>	3
<b>4 GENERAL INFORMATION</b>	4
4.1 CLIENT INFORMATION	4
4.2 GENERAL DESCRIPTION OF EUT	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	4
4.4 TEST LOCATION	5
4.5 DEVIATION FROM STANDARDS	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER	5
<b>5 SAR EVALUATION</b>	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT	6
5.1.1 <i>Limits</i>	6
5.1.2 <i>Test Procedure</i>	6
5.1.3 <i>EUT RF Exposure Evaluation</i>	7

## 4 General Information

### 4.1 Client Information

Applicant:	QuantMed LifeTech (Shenzhen) Co., Ltd.
Address of Applicant:	1F, Huigu, Meisheng Chuanggu Science and Technology Park, Longchang Road, Baoan District, Shenzhen
Manufacturer:	QuantMed LifeTech (Shenzhen) Co., Ltd.
Address of Manufacturer:	1F, Huigu, Meisheng Chuanggu Science and Technology Park, Longchang Road, Baoan District, Shenzhen

### 4.2 General Description of EUT

Product Name:	AI Backbone Protection Mattress
Model No.(EUT):	M1, M1 PRO, M1 Advanced, M1 Premium, M1 signature, MT1, MT1 PRO, MT1 Advanced, MT1 Premium, MT1 signature
Test Model No.:	M1
Trade Mark:	N/A

### 4.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz	
Modulation Type:	GFSK	
Test Power Grade:	Default	
Test Software of EUT:	nRF_DTM.exe	
Antenna Type:	PCB Antenna	
Antenna Gain:	2dBi	
Power Supply:	Switching Adapter:	Input:100-240V~50/60Hz,1.5A Output:12.0V,5.0A,60.0W
Sample Received Date:	Nov. 10, 2023	
Sample tested Date:	Nov. 10, 2023 to Nov. 21, 2023	

#### Remark:

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Model No.: M1, M1 PRO, M1 Advanced, M1 Premium, M1 signature, MT1, MT1 PRO, MT1 Advanced, MT1 Premium, MT1 signature

Only the model M1 was tested. Their electrical circuit design, layout, components used and internal wiring are identical. Only the Mattress size and color, software data are different:

M1: Full-Cal size white mattress, Basic software program for one person.

M1 PRO: Full-Cal King size blue mattress, Advanced software program for one person.

M1 Advanced: Queen-Cal King size white mattress, Basic software program for two people.

M1 Premium: Queen-Cal King size blue mattress, Advanced software program for two people.

M1 signature: Queen-Cal King size black mattress, Customized software program for two people.

MT1: Small Single-Twin XL size white mattress, Basic software program for children.

MT1 PRO: Small Single-Twin XL size blue mattress, Advanced software program for children.

MT1 Advanced: Twin-Queen size white mattress, Basic software program for teenagers.

M1 Premium: Twin-Queen size blue mattress, Advanced spine program for teenagers.

MT1 signature: Twin-Queen size black mattress, Customized software program for teenagers.

#### 4.4 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

#### 4.5 Deviation from Standards

None.

#### 4.6 Abnormalities from Standard Conditions

None.

#### 4.7 Other Information Requested by the Customer

None.

## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 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  $P_{th}$  (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).  $P_{th}$  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  $ERP_{20\text{cm}}$  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.

#### 5.1.2 Test Procedure

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

**5.1.3 EUT RF Exposure Evaluation****For Stand alone:****For BLE**

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
2402	-0.85	2	1.15	-1	0.794	2.788	PASS

**Note:**

①EIRP=conducted power+antenna gain;

②ERP=EIRP-2.15

③The test data refer to the report of No. EED32P81803301 and only the worst case data was recorded in the report.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

\*\*\* End of Report \*\*\*