


TEST REPORT

Verified Code:438078

Report No.:	E202008101990-14	Application No.:	E202008101990
Client:	BY TECHDESIGN S.L.		
Address:	Calle Thomas Edison 5, Arganda del Rey Madrid, 28500, Spain		
Sample Description:	Access Control System - RF readers		
Model:	42520		
Test Specification:	KDB 447498 D01(v06)		
Receipt Date:	2020-08-12		
Test Date:	2020-09-08 to 2020-09-08		
Issue Date:	2020-12-21		
Test Result:	Pass		
Prepared By: Test Engineer Xie Jany	Reviewed By: Technical Manager Wu Huotiny	Approved By: Manager Wu Chengrong	
Other Aspects:			
Note: Note			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable;			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			

DIRECTIONS OF TEST

- 1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.**
- 2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

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1. GENERAL DESCRIPTION OF EUT

1.1. APPLICANT

Name: BY TECHDESIGN S.L.
Address: Calle Thomas Edison 5, Arganda del Rey Madrid, 28500, Spain

1.2. MANUFACTURER

Name: BY TECHDESIGN S.L.
Address: Calle Thomas Edison 5, Arganda del Rey Madrid, 28500, Spain

1.3. FACTORY

Name: BY TECHDESIGN S.L.
Address: Calle Thomas Edison 5, Arganda del Rey Madrid, 28500, Spain

1.4. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Access Control System - RF readers
Model No.: 42520

Adding Model: 42491, 42537, 42538, 42539, 42490

Model Difference:	Type	Power supply and input /output	Difference
	Golf	SDU or SDU+ for NÜO Golf: Input: 24VDC, 2.0W	All models are same included the hardware and software, except of the exterior's color and the model name.

Trade Name:



FCC ID: 2ARQ3-MTA42520

Power supply: SDU or SDU+ for NÜO Golf: Input: 24VDC, 2.0W

Frequency Range: 2402 ~ 2480MHz

Transmit Power: 1.09dBm

Modulation type: GFSK for 1Mbps

Channel space: 2MHz

Antenna Specification: Internal antenna 2.5dBi gain (Max.)

Temperature Range: -0 °C ~ +50 °C

Hardware Version: SWM0505_BYV3_boot_01_00_05_00_app_02_00_05_00_release_115.byfw

Software Version: SWM0505_BYV3_boot_01_00_05_00_app_02_00_05_00_release_115.byfw

Sample No: 0001, 0002

Note: /

2. LABORATORY AND ACCREDITATIONS

2.1. LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

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2.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate #:2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada Industry Canada
USA FCC

3. INTRODUCTION

42520 (FCC ID: 2ARQ3-MTA42520) is a Access Control System - RF readers with Bluetooth Low Energy.

4. LIMIT AND GUIDELINES ON EXPOSURE TO ELECTROMAGNETIC FIELDS

§1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 Mobile Portable RF Exposure, no SAR required if power is lower than the flowing threshold:

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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

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 according to 5) in section 4.1 is applied to determine SAR test exclusion.

5. CALCULATION METHOD

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$

Conducted Power + tune up tolerance = 1.09dBm = 1.29mW

Distance = 5 mm

$f = 2.402$

$[1.29/5] * \text{SQRT}(2.402) = 0.054$

$0.4 \leq 3.0$

Therefore, excluded from SAR testing.

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