

## RF Exposure Evaluation Report

**Product** : Wireless Sensor T3  
**Trade mark** : Testo  
**Model/Type reference** : 0572 2204 02  
**Serial Number** : N/A  
**Report Number** : EED32O80116902  
**FCC ID** : WAF-0572220402  
**Date of Issue** : Jul. 14, 2022  
**Test Standards** : 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB447498D01 General RF  
Exposure Guidance v06  
**Test result** : PASS

Prepared for:

**Testo SE & Co. KGaA**  
**Celsiusstr. 2, 79822 Titisee-Neustadt, Germany**

Prepared by:

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## 1 Version

Version No.	Date	Description
00	Jul. 14, 2022	Original

## 2 Contents

	Page
<b>1 VERSION</b> .....	<b>2</b>
<b>2 CONTENTS</b> .....	<b>3</b>
<b>3 GENERAL INFORMATION</b> .....	<b>4</b>
3.1 CLIENT INFORMATION.....	4
3.2 GENERAL DESCRIPTION OF EUT.....	4
3.3 TEST LOCATION.....	5
3.4 DEVIATION FROM STANDARDS.....	5
3.5 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
3.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
<b>4 SAR EVALUATION</b> .....	<b>6</b>
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
4.1.1 <i>Limits</i> .....	6
4.1.2 <i>Test Procedure</i> .....	6
4.1.3 <i>EUT RF Exposure</i> .....	7
<b>PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS</b> .....	<b>8</b>

### 3 General Information

#### 3.1 Client Information

Applicant:	Testo SE & Co. KGaA
Address of Applicant:	Celsiusstr. 2, 79822 Titisee-Neustadt, Germany
Manufacturer:	Testo SE & Co. KGaA
Address of Manufacturer:	Celsiusstr. 2, 79822 Titisee-Neustadt, Germany
Factory:	Testo Instruments (Shenzhen) Co., Ltd
Address of Factory:	Block A, B4 Building, China Merchants Guangming Sci&Tech Park, No.3009 Guan Guang Road, Guangming New District, Shenzhen, Guangdong, China

#### 3.2 General Description of EUT

Product Name:	Wireless Sensor T3
Mode No.:	0572 2204 02
Trade mark:	Testo
Hardware Version:	Main board 2.3 + probe 2.1
Software Version:	V1.12.20
Power Supply:	Lithium battery: DC 3.6V (SL-860), DC 3.7V (HLC-1020L). Note: Battery SL-860 and HLC-1020L are used in parallel, with SL-860 as the power supply and HLC-1020L as the auxiliary.
Operation Frequency:	915MHz to 928MHz
Modulation Technique:	GFSK
Number of Channels:	64
Product Type:	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	PIFA Antenna
Antenna Gain:	-1.13dBi
Test Voltage:	DC 3.6V
Sample Received Date:	Jan. 25, 2022
Sample tested Date:	Apr. 20, 2022 to Jun. 20, 2022
Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.	

### 3.3 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

### 3.4 Deviation from Standards

None.

### 3.5 Abnormalities from Standard Conditions

None.

### 3.6 Other Information Requested by the Customer

None.

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
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/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

#### 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

Antenna Gain: -1.13dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 0.77 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

#### Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(915.2MHz)	12.46	11.5±1	12.5	17.783
Middle(921.4MHz)	12.39	11.5±1	12.5	17.783
Highest(927.8MHz)	12.31	11.5±1	12.5	17.783

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
17.783	-1.13	0.0027273	1.0	PASS

Note: 1) Refer to report No. EED32O80116901 for EUT test Max Conducted Peak Output Power value.

2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (17.783 * 0.77) / (4 * 3.1416 * 20^2) = 0.0027273$

## **PHOTOGRAPHS OF EUT Constructional Details**

Refer to Report No. EED32O80116901 for EUT external and internal photos.

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 \*\*\*