



Ontploffingvoorkomingstechnologie  
Explosion Prevention Technologies

# MTEEx Laboratories

Centurion  
Unit 1 Wierda Place  
17 Hilda Ave  
Hennospark  
0157

Cape Town  
Unit 3 Marcian Park  
Cincaut Cres.  
Saxenburg Park  
7580

## ACCREDITED TEST LABORATORY

IN TERMS OF THE ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

## INSPECTION AUTHORITY CERTIFICATE

**i.SAFE MOBILE GMBH**  
**i\_PARK TAUBERFRANKEN 10**  
**97922 LAUDA-KOENIGSHOFEN**  
**GERMANY**

**Issued:** 2021/08/04  
**Expire:** 2024/08/04  
**Revision:** 1  
**Job File:** 0436

**Equipment:** HMT-1Z1, intrinsically safe Head-Mounted-Tablet  
**Manufacturer:** i.safe MOBILE GmbH  
**Address:** i\_Park Tauberfranken 10, 97922 Lauda-Koenigshofen, Germany  
**Model/Type:** T1100S  
**Serial No.:** Units imported between Issued and Expiry dates.

Applicant:  
**i.SAFE MOBILE GMBH**

Inspection Authority Number: **MTEEx-S/18.0365 X**

**Ex Rating:** Ex ib IIC T4 Gb  
Ex ib IIIC T135°C Db IP65


### Standards used:

<b>SANS 60079-0: 2019 Ed.6</b> <b>IEC 60079-0: 2017 Ed.7</b>	<b>Explosive atmospheres – Part 0: General requirements.</b>
<b>SANS 60079-11: 2012 Ed.4</b> <b>IEC 60079-11: 2011 Ed.6</b>	<b>Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i".</b>

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 8(1) of the Occupational Health and Safety Act, provided that the apparatus is used as prescribed in accordance with:

- 1) Any conditions set out in this Certificate;

Reviewed by + Signature (ExTL):	H. de Wet	
Approved by + Signature (ExCB): (MTEEx Laboratories Technical Signatory)	D. Young	



Megaton Systems (Pty) Ltd.  
1/A MTEEx Laboratories



Website: [www.mtexlab.co.za](http://www.mtexlab.co.za)  
Reg No: 2012/055110/07  
VAT/BTW No: 4830273027

Tel : +27 12 030 1034 (Offices)  
E- mail: [info@mtexlab.co.za](mailto:info@mtexlab.co.za)

Template Ref: MTEExDOC 101 Rev 7  
(2021/07/12)



Print Date: 2021-08-04  
Page 1 of 4

- 2) This certificate only covers equipment imported between the "Issued" and "Expiry" dates;
- 3) When the supporting Q.A.N. (Quality Assurance Notification) of the equipment manufacturer expires, it is the responsibility of the applicant (as mentioned above) to submit a valid Q.A.N to MTEEx Laboratories.
- 4) The test results presented in this Ex Test Report relate only to the item or product tested.

## 1. OVERVIEW

The intrinsically safe, rugged industrial Head-Mounted Tablet has been designed for use in explosion hazardous areas of zone 1 and 21. The device provides numerous technologies like Wi-Fi, Bluetooth, GPS, 3-axis accelerometer, magnetometer and gyroscope. Equipped with a 16MP camera, display with 20° field-of-view, internal 91 dB loudspeaker, 4 digital microphones with active noise cancellation which allows accurate voice recognition even in 95 dBA of typical industrial noise.

With exception of accessories connecting to the audio jack, only RealWear accessories approved by i.safe MOBILE GmbH are allowed to be used with the HMT-1Z1 inside explosion hazardous areas, and they are only approved when used with the HMT-1Z1. For a list of approved accessories, see:

<https://www.realwear.com/...>

<http://www.isafe-mobile.com/...>

## 2. REASON FOR REVIEW

Rev. 0: ARP 0108 requirement.

Rev. 1: Renewal of IA Certificate.

## 3. DOCUMENTATION PROVIDED

- IECEx Certificate of conformity (IECEx EPS 17.0004X).
- Quality Assessment Report (DE/EPS/QAR12.0003/12).

## 4. ELECTRICAL / SAFETY PARAMETERS

Power Supply: The device has a fixed installed rechargeable battery.  
Li-Ion battery  $U_0 = 3.8V$  ( $U_{0\_max} = 4.2V$ ) / 3.48Ah / 12.528Wh

USB Interface: The device has an USB interface for charging and data transfer. The opening of the USB interface cover in explosive atmospheres is not permitted. Wired data connection and charging is only allowed outside explosion hazardous areas and only with the i.safe PROTECTOR cable from i.safe MOBILE GmbH.

Audio Jack: The device has a 3.5 mm audio jack. The Ear Bud Hearing Protection Headphone Model H1100G or other accessory fulfilling the entity parameters are allowed to use inside explosion hazardous areas. The audio jack interface is not mandatory to cover.

Entity parameters for the audio jack (AJ):

Output voltage (spark):  $U_{AJ\_spark} = U_{o\_max} = 4.2 \text{ V}$   
 Output voltage (thermal):  $U_{AJ} = U_o = 3.8 \text{ V}$   
 Output current (spark):  $I_{o\_max} = 249 \text{ mA}$  (linear characteristic)  
 Output power (thermal):  $P_o = 214 \text{ mW}$

Effective internal capacitance:  $C_i = 0 \text{ }\mu\text{F}$   
 Effective internal inductance:  $L_i = 0 \text{ }\mu\text{H}$   
 Internal resistance:  $R_{AJ\_res} = 16.841 \text{ Ohm}$

It is also allowed to connect an approved headset with high resistance.

Permissible input voltage:  $U_i = 4.2 \text{ V}$   
 Permissible input power:  $P_i = 10 \text{ mW}$

Gas group: IIC

Lo [mH]	1	0.5	0.2	0.1	0.05	0.02	0.01	0.005	0.002	0.001
Co [ $\mu\text{F}$ ]	2.9	4.6	6.8	8.9	12	17	25	40	130	420

Gas group: IIB

Lo [mH]	4.1	2	1	0.5	0.2	0.1	0.05	0.02	0.01	0.005
Co [ $\mu\text{F}$ ]	12	19	25	32	45	59	83	150	310	1000

By using gas group IIB parameters for accessory, the gas group of the combination (HMT-1Z1 with approved accessory) is reduced to gas group IIB.

## 5. INSTALLATION INSTRUCTIONS

The instructions provided with the product shall be followed in detail to assure safe operation.

## 6. CONDITIONS OF CERTIFICATE (X)

- The battery shall be charged outside explosion hazardous areas only.
- The device must be protected from impacts with high impact energy, against excessive UV light emission and high electrostatic charge processes.
- The permitted ambient temperature range is  $-20^\circ\text{C}$  to  $+60^\circ\text{C}$ .

## 7. MARKING

**For validity purposes, the following marking must be added to all equipment covered by this certificate:**

**Manufacturer:** i.Safe Mobile GmbH  
**Supplier:** i.Safe Mobile GmbH  
**Equipment:** HMT-1Z1 Intrinsically Safe Head-Mounted-Tablet  
**Model/Type:** T1100S  
**IA Number:** MTEEx-S/18.0365 X  
**Ex Rating:** Ex ib IIC T4 Gb  
Ex ib IIIC T135°C Db IP65  
**Serial No.:** -----

**Note: It is the responsibility of the supplier to ensure that the marking label complies with the ARP 0108.**

### MTEEx Laboratories

Note: This document may not be reproduced except in full.

MTEEx Laboratories takes no responsibility for any non-conforming tests / assessments / results which is not in compliance with the relative Standards. By marking the equipment as mentioned in the documentation, the manufacturer takes full responsibility that the equipment has indeed complied with the original type assessment and has been subjected to any routine verification(s) / test(s) respectively.

### End of Certificate