MTEx Laboratories

Ontploffingvoorkomingstegnologie
Explosion Prevention Technologies

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INSPECTION AUTHORITY (IA) CERTIFICATE

i.safe MOBILE GmbH.
i_Park Tauberfranken 10
97922 Lauda-Königshofen
Germany

Issued: 2024/08/12
Expire: 2027/08/12
Revision: 1
Job File: 2687

Applicant:
I.SAFE MOBILE (PTY) LTD.

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

IA Number:	MTEx-S/24.0347 X
Manufacturer:	i.safe MOBILE GmbH
Supplier:	i.safe MOBILE GmbH
Equipment:	5G Radio
Model/Type:	IS440.1
Ex Rating:	Ex ib IIC T4 Gb Ex ib IIIC T135°C Db
Serial No:	All units imported between the issue and expiry dates of this Certificate.

Standards used:

SANS 60079-0: 2019 Ed.6 **IEC 60079-0: 2017 Ed.7**	**Explosive atmospheres – Part 0: General requirements.**
SANS 60079-11: Draft Ed.5 **IEC 60079-11: 2023 Ed.7**	**Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i".**
SANS 60079-11: 2012 Ed.4 **IEC 60079-11: 2011 Ed.6**	**Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i".**

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 9(3) of the Occupational Health and Safety Act, provided that the apparatus is used as prescribed in accordance with the following **Notes**:

1) Compliance with any conditions set out in this Certificate.
2) This certificate only covers equipment imported between the "Issued" and "Expiry" dates of this certificate.
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 MTEx Laboratories.
4) It is the responsibility of the supplier to ensure that the marking label complies with the requirements of the relevant regulator.
5) Once issued, the certificate remains valid for the serviceable lifecycle of the device. The state of the device is validated by visual or close inspections, by the end user, at intervals not exceeding two years.

Reviewed By + Signature (TL):	A. van Niekerk	
Approved By + Signature (CB): (MTEx Laboratories Technical Signatory)	D. Young	

1. OVERVIEW

The intrinsically safe IS440.1 5G Radio for Zone 1/21 is equipped with a 2.4-inch display, supports multiple frequency bands and also NFC, Bluetooth 5.2 and Wi-Fi 6. The high-end Qualcomm chipset ensures fast data processing for the most demanding industrial applications such as predictive maintenance.

The 8-pin ISM interface provides a secure connection for audio accessories, barcode scanner or other add-ons. Other advantages include the 8 MP camera, an amplified loudspeaker, a replaceable battery (2400 mAh or 4800 mAh) and programmable buttons (for PoC / PTT / lone worker protection / SOS).

2. REASON FOR REVIEW

Revision 0: ARP 0108 requirement (Initial IA Certificate).
Revision 1: Editorial Corrections.

3. DOCUMENTATION PROVIDED

- IECEx Certificate of Conformity (IECEx EPS 23.0069 X, Issue 0).
- IEC Quality Assessment Report (DE/EPS/QAR12.0003/15).

4. ELECTRICAL / SAFETY PARAMETERS

Electrical data:

Power supply: Li-Ion Polymer Battery

Interfaces:

The device has two charging contacts that allow the device to be charged outside hazardous areas via an approved charging adapter. The contacts are intrinsically safe for gas and dust. Furthermore, the device has an USB-C interface for charging and data transmission outside hazardous areas. It is covered by an IP plugger and is not allowed to be opened in hazardous areas.

The ISM interface of the IS440.1 can be used within hazardous areas with approved headsets and add-ons, making the smartphone a multifunctional equipment for industrial applications. For ISM interface use, the i.safe MOBILE Headsets IS-HS3A.1, PTT Button IS-PTTB2A.1 and IS-HDHS1x.1, IS-HDHS2x.1 or approved, intrinsically safe accessories may be used, which comply with the connection parameters of the ISM interface according to document 1064AD04.

Headset variants IS-HDHSxx.1:

Name:	Variants
IS-HDHSxA.1	Headband (stereo)
IS-HDHSxB.1	Neckband (stereo)
IS-HDHSxC.1	Helm Mounted (stereo)

For charging and wired data transmission only i.safe MOBILE approved accessories may be used. This ensures U_m = 5.88 V.
Nano-SIM cards which comply with the following intrinsic safety entity parameters, may be used in the corresponding slots in the hazardous area:

U_o = 5.88 V
C_o = 40 µF
L_o = 1 µH

A commercially available nano-SIM card may be used in the corresponding slot in potentially explosive atmospheres. The internal electrical capacitance and inductance are negligible, respectively correspond to the intrinsically safe connection parameters.

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 may be charged and replaced 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 cover for the USB-C interface must be securely closed inside explosion hazardous areas.
- The permitted ambient temperature range is -20 °C to +55 °C.

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End of Report