



Ontploffingvoorkomingstechnologie
Explosion Prevention Technologies

MTEEx Laboratories

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INSPECTION AUTHORITY (IA) CERTIFICATE

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

Issued: 2024/08/27
Expire: 2027/08/27
Revision: 0
Job File: 2719

Applicant:

I.SAFE MOBILE (PTY) LTD.

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

IA Number: MTEEx-S/24.0386 X
Manufacturer: i.safe MOBILE GmbH
Supplier: i.safe MOBILE GmbH
Equipment: Intrinsically Safe Smartphone
Model/Type: IS540.2
Ex Rating: Ex ic IIC T4 Gc
Ex ic IIIC T135°C Dc
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: 2012 Ed.4 IEC 60079-11: 2023 Ed.7	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 MTEEx 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): (MTEEx Laboratories Technical Signatory)	D. Young	



MTEEx Laboratories is an Accredited Test Laboratory (ATL) in terms of the ARP 0108: "Regulatory Requirements for Explosion-Protected Apparatus".

1. OVERVIEW

The intrinsically safe 5G smartphone IS540.2 for Zone 2/22 is equipped with a 6-inch full HD 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 16-pin ISM interface provides a secure connection for audio accessories, barcode scanner or other add-ons. Other advantages include the 48 MP main camera, an amplified loudspeaker, a replaceable 4400 mAh battery and programmable buttons (for PoC/PTT/lone worker protection/SOS).

2. REASON FOR REVIEW

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

3. DOCUMENTATION PROVIDED

- IECEx Certificate of Conformity (IECEx EPS 23.0003X, Issue 0).
- IEC Quality Assessment Report (DE/EPS/QAR12.0003/15).

4. ELECTRICAL / SAFETY PARAMETERS

Electrical data:

Power supply: changeable 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 IS540.2 can be used within hazardous areas with approved headsets, Remote Speaker Microphones (RSM) and add-ons, making the smartphone a multifunctional equipment for industrial applications. For ISM interface use, the i.safe MOBILE Headsets IS-HS2A.1, IS-HDHS1x.1 and the PTT Button IS-PTTB1A.1 or approved, intrinsically safe accessories may be used, which comply with the connection parameters of the ISM interface according to document 1058AD04. If the ISM interface is not used, it must be securely closed by the cover provided for this purpose.

Headset variants IS-HDHS1x.1:

Name:	Variant:
IS-HDHS1A.1	Headband
IS-HDHS1B.1	Neckband

For charging and wired data transmission only i.safe MOBILE approved accessories may be used. This ensures $U_m = 5.88 \text{ V}$.

The microSD cards IS-SD164.1 and IS-SD1128.1 may be used in the corresponding slot in

the hazardous area. Alternatively, the SD card port has the following intrinsic safety entity parameters

$$\begin{aligned}U_o &= 4.35 \text{ V} \\C_o &= 80 \mu\text{F} \\L_o &= 1 \mu\text{H}\end{aligned}$$

A commercially available microSD 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.

Nano-SIM cards which comply with the following intrinsic safety entity parameters, may be used in the corresponding slots in the hazardous area:

$$\begin{aligned}U_o &= 4.35 \text{ V} \\C_o &= 80 \mu\text{F} \\L_o &= 1 \mu\text{H}\end{aligned}$$

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

MTEEx Laboratories

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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 Report