

CERTIFICATE OF ACCREDITATION

In terms of section 22(2) (b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-

REPAIR AND METROLOGY SERVICES (PTY) LTD

Co. Reg. No.: 2004/021865/07

Accreditation Number: **529**

is a South African National Accreditation System accredited Calibration laboratory provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying scope of accreditation Annexure "A", bearing the above accreditation number for

TIME AND FREQUENCY METROLOGY

The facility is accredited in accordance with the recognised International Standard

ISO/IEC 17025:2017

The accreditation demonstrates technical competency for a defined scope and the operation of a laboratory quality management system

While this certificate remains valid, the Accredited Facility named above is authorised to use the relevant SANAS accreditation symbol to issue facility reports and/or certificates

Mr T Baleni
Acting Chief Executive Officer

Effective Date: 01 August 2021
Certificate Expires: 31 July 2026

ANNEXURE A

SCOPE OF ACCREDITATION
TIME AND FREQUENCY METROLOGY

Accreditation Number: 529

| | |
|---|---|
| <p>Permanent Address of Laboratory: Repair and Metrology Services (Pty) Ltd No 10 Enterprise Close Linbro Business Park Sandton 2065</p> <p>Postal Address: PO Box 10917 Vorna Valley 1686</p> <p>Tel: (011) 608- 8550 Fax: (011) 608-0406 E-mail: lesw@repmet.co.za</p> | <p>Technical Signatories: Mr LR Wesson Mr RJ Van Pletzen</p> <p>Nominated Representative: Mr LR Wesson</p> <p>Issue No.: 15 Date of Issue: 01 August 2021 Expiry Date: 31 July 2026</p> |
|---|---|

| ITEM | MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT | RANGE OF MEASURED QUANTITY | CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm) | METHOD / PROCEDURE |
|-------|--|--|--|--|
| 2 | Frequency | | | |
| 2.1 | Standard Frequency Source | | | |
| 2.1.1 | Local | Specific Values 1 MHz to 10 MHz in 1 MHz steps | $1 \cdot 10^{-10} \cdot f$ | Calibration by phase difference measurement against a reference standard or GPS |
| 2.2 | General Frequency source | 100 kHz Other Values 5 MHz to 2 GHz | $1 \cdot 10^{-9} \cdot f$ $1 \cdot 10^{-8} \cdot f + 50 \mu\text{Hz}$ | Calibration by direct measurement against a reference standard or GPS disciplined oscillator |
| 3 | Time Interval | | | |
| 3.4 | Time Interval Meters | | | |
| 3.4.1 | Rise/Fall time meter | 20 ns to 1 s 1 s to 86 400 s | $1 \cdot 10^{-9} \cdot t + 2 \text{ ns}$ 30 ms | Direct measurement of the time interval using a reference standard |
| 3.4.2 | Pulse width meter | | | |
| 3.4.3 | Time difference meter | | | |
| 3.4.4 | Delay meter | | | |

Original Date of Accreditation: 26 January 2009

Page 1 of 2

The CMC, expressed as an expanded uncertainty of measurement, is stated as the standard uncertainty of measurement multiplied by a coverage factor $k = 2$, corresponding to a confidence level of approximately 95%

Executive Accreditation

ANNEXURE A

Accreditation No.: 329
Date of Issue: 01 August 2021
Expiry Date: 31 July 2026

| ITEM | MEASURED QUANTITY OR TYPE OF GAUGE OR INSTRUMENT | RANGE OF MEASURED QUANTITY | CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm) | METHOD / PROCEDURE |
|------|--|---|--|---|
| 5 | Rotational Speed | | | |
| 5.2 | Contact Tachometer | 400 rpm to 999 rpm 999 rpm to 3000 rpm | $\pm (1\% + 0,1 \text{ rpm})$ $\pm (1\% + 1 \text{ rpm})$ | Comparison with a reference Tachometer or frequency counter using a rotational speed generator. |
| 5.3 | Non-Contact Tachometer | 6 rpm to 999 rpm 999 rpm to 90 000 rpm | $\pm 1 \text{ rpm}$ $\pm 3 \text{ rpm}$ | Comparison with a reference Tachometer or frequency counter using a rotational generator or optical simulator |
| 7 | On-Site Calibration for items 2 and 3 above | | | |

Original Date of Accreditation: 26 January 2009

Page 2 of 2

The CMC, expressed as an expanded uncertainty of measurement, is stated as the standard uncertainty of measurement multiplied by a coverage factor $k = 2$, corresponding to a confidence level of approximately 95%

ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

Executive Accreditation