Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

0607

Accredited to ISO/IEC 17025:2017

MTS Calibration Ltd

Issue No: 021 **Issue date:** 20 August 2021

17 Elvington Close
Billingham
Cleveland
TS23 3YS

Contact: Mr R A Sherris
Tel: +44 (0)1642 876410
Fax: +44 (0)1642 876411
E-Mail: dmarsh@slmcal.co.uk
tsherris@slmcal.co.uk
Website: http://www.slmcal.co.uk

Calibration performed by the Organisations at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address 17 Elvington Close Billingham Cleveland TS23 3YS	**Local contact** Mr R A Sherris Tel: +44 (0)1642 876410 Fax: +44 (0)1642 876411	Calibration of sound calibrators, sound level meters and their filters, measurement microphones	A
Address The Grange Business Centre Belasis Avenue Billingham Cleveland TS23 1LG	**Local contact** Mr R A Sherris Tel: +44 (0)1642 876410 Fax: +44 (0)1642 876411	Calibration of sound calibrators, sound level meters and their filters	B

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k=2)	Remarks	Location Code
SOUND CALIBRATORS				
Sound pressure level	80 to 140 dB	0.14 dB	For use with WS2 microphones:	A & B
Frequency	250 Hz 1000Hz	0.05 Hz 0.11 Hz	Brüel & Kjær type 4133 GRAS 40AG	
Distortion		2.2 % of reading	Using Procedure WP01 Issue U2, October 2020	
MEASUREMENT MICROPHONE (INCLUDING COMBINATION OF MICROPHONES AND PREAMPLIFIERS)				
Free-field sensitivity level in third-octave band Larson Davis Model 2541	250 Hz (excluding microphone and preamplifier combinations) 50 Hz to 20 kHz (excl. 250 Hz)	0.6 dB 0.7 dB	Using substitution method within In-house Procedure WP02 Issue I-3, October 2020	A
Free-field sensitivity level in third-octave band Other working standard microphone satisfying the WS2 geometry specified in BS EN 61094 Part 4: 1995	250 Hz (excluding microphone and preamplifier combinations) 50 Hz to 80 Hz 100 Hz to 10 kHz (excl. 250 Hz) 12.5 kHz to 20 kHz	0.7 dB 0.8 dB 0.7 dB 0.8 dB	Using substitution method within In-house Procedure WP02 Issue I-3, October 2020	A
All WS2 microphone and preamplifier combinations	250 Hz	0.2 dB	Using reference calibrator method within In-house Procedure WP02 Issue I-3, October 2020	A
SOUND LEVEL METERS				
Verification of sound level meters	BS 7580:Part 1:1997 (Withdrawn)	See remarks	Verification of Type 0, 1 & 2 SLMs originally manufactured in accordance with BS EN 60651:1994 (Withdrawn) BS EN 60804:1994 (Withdrawn) and for which appropriate correction factors are known and agreed. BS 7580:Part 1 :1997 (Withdrdawn)	A & B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k=2)	Remarks	Location Code
SOUND LEVEL METERS (cont'd)				
Verification of sound level meters	BS EN 61672-3:2006 (Withdrawn)	See remarks	Verification of Class 1 & 2 SLMs originally manufactured in accordance with BS EN 61672-1:2003 (Withdrawn) and for which appropriate correction factors are known and agreed. BS EN 61672-3:2006 (Withdrawn)	A & B
Verification of sound level meters	BS EN 61672-3:2013	See remarks	Verification of Class 1 & 2 SLMs originally manufactured in accordance with BS EN 61672-1:2013 and for which appropriate correction factors are known and agreed. BS EN 61672-3:2013	A & B
SOUND LEVEL METER FILTERS				
Octave and one-third octave band, sound level meter based Relative attenuation (filter shape), re. 1 kHz on the 1 kHz band filter.		0.3 dB for frequencies within the pass-band 0.6 dB for frequencies outside the pass-band	Filters originally manufactured in accordance with BS EN 61260:1996 (withdrawn) or in accordance with ANSI S1.11-1986 in combination with a sound level meter will be tested against BS EN 61260:1996 (Withdrawn)	A & B
END				

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$