Appendix 9.1

Noise Meter Calibration

Certificates

Certificate of Calibration

Issued by University of Salford (Acoustic Calibration Laboratory)
UKAS ACCREDITED CALIBRATION LABORATORY NO. 0801

Page 1 of 2

APPROVED SIGNATORIES

Claire Lomax [] Andy Moorhouse []
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acoustic calibration laboratory

The University of Salford, Salford, Greater Manchester, M5 4WT, UK http://www.acoustics.salford.ac.uk

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Certificate Number: 05261/1 Date of Issue: 2 July 2021

CALIBRATION OF A SOUND CALIBRATOR

FOR: Enfonic Ltd

Unit 2A

Century Business Park

Dublin D11 T0HV

FOR THE ATTENTION OF: Bruna Barros

DESCRIPTION: Calibrator with housing for one-inch microphones

and adaptor type UC 0210 for half-inch

microphones.

MANUFACTURER: B&K

TYPE: 4231

SERIAL NUMBER: 2022652

DATE RECEIVED: 13 May 2021

DATE OF CALIBRATION: 18 June 2021

LOCATION OF CALIBRATION: Acoustic Calibration Laboratory,

Newton G31, University of Salford.

TEST PROCEDURE: CTP06 (Laboratory Manual)

Test Engineer (initial): CL Name: Claire Lomax

Results in this certificate relate only to instruments tested.

Certificate of Calibration

Issued by University of Salford (Acoustic Calibration Laboratory) UKAS ACCREDITED CALIBRATION LABORATORY NO. 0801

Page 2 of 2

Certificate Number: 05261/1 Date of Issue: 7/2/2021

MEASUREMENTS

The sound pressure level generated by the calibrator was measured using a calibrated, WS2P condenser microphone as specified in this certificate. The calibration was carried out with the calibrator in the half-inch configuration.

Five determinations of the sound pressure level, frequency and total distortion were made.

The results have been corrected to the reference pressure of 101.325 kPa using manufacturer's data.

RESULTS

Coupler configuration: Half-inch

Microphone type: B&K 4192

Output level (dB re 20μ Pa): $94.11 \text{ dB} \pm 0.09 \text{ dB}$

Frequency (Hz): $999.82 \text{ Hz} \pm 0.12 \text{ Hz}$

Total Distortion (%): $0.52 \% \pm 0.22 \%$

Average environmental conditions at the time of measurement were:

Pressure: $101.088 \text{ kPa} \pm 0.015 \text{ kPa}$

Temperature: $21.5 \text{ °C} \pm 0.4 \text{ °C}$ Relative humidity: $51.8 \text{ %} \pm 2.1 \text{ %}$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

All measurement results are retained at the acoustic calibration laboratory for at least four years.

----END OF CERTIFICATE----







CERTIFICATE OF CALIBRATION No: CDK2101022 Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 No: 3006559 Id: - 3006559

Microphone: Brüel & Kjær Type 4189 No: 3005134
Preamplifier: Brüel & Kjær Type ZC-0032 No: 05085

Supplied Calibrator: None

Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-

Instruction manual: BE1712-22 4078502

CUSTOMER

Enfonic Ltd

Unit 2A, Century Business Park

Dublin D11 T0HV Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at $23^{\circ}C \pm 3^{\circ}C$

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Proceedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2021-08-31 Date of issue: 2021-08-31

Mikail Önder

Calibration Technician

Susanne Jørgensen







CERTIFICATE OF CALIBRATION No: CDK2101110 Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 - Light No: 2602763 Id: -

Microphone: Brüel & Kjær Type 4950 No: 2697054
Preamplifier: Brüel & Kjær Type ZC-0032 No: 12941

Supplied Calibrator: None

Software version: BZ7130 Version 4.7.2 Pattern Approval: PTB1.63-40478500 / 1.63-

Instruction manual: BE1712-22 4078502

CUSTOMER

Enfonic Ltd

Unit 2A, Century Business Park

Dublin D11 T0HV Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at $23^{\circ}C \pm 3^{\circ}C$

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Proceedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2021-06-24 Date of issue: 2021-06-24

Mikail Önder

Calibration Technician

Susanne Jørgensen







CERTIFICATE OF CALIBRATION No: CDK2106397 Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250-Light No: 2620746 Id:

Microphone: Brüel & Kjær Type 4950 No: 2606534
Preamplifier: Brüel & Kjær Type ZC-0032 No: 8767

Supplied Calibrator: None

Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-

Instruction manual: BE1712-22 4078502

CUSTOMER

Enfonic Ltd

Unit 2A, Century Business Park

Dublin D11 T0HV Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at $23^{\circ}C \pm 3^{\circ}C$

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Proceedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2021-06-10 Date of issue: 2021-06-10

Mikail Önder

Calibration Technician

Susanne Jørgensen







CERTIFICATE OF CALIBRATION No: CDK2000408 Page 1 of 10

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 No: 2654662 Id: - 2654662

Microphone:Brüel & Kjær Type 4950No: 2626990Preamplifier:Brüel & Kjær Type ZC-0032No: 6822Supplied Calibrator:Brüel & Kjær Type 4231No: 2460008

Software version: BZ7222 Version 2.1 Pattern Approval: PTB1.63-4046158

Instruction manual: BE1712-18

CUSTOMER

Enfonic Ltd Unit 2A

Century Business Park

Dublin D11 T0HV Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at $23^{\circ}C \pm 3^{\circ}C$

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC61672-1:2002 class 1. Procedures from IEC 61672-3:2006 were used to perform the periodic tests. The accreditation assures the traceability to the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 4.9 - DB: 4.90) by using procedure 2250-4189.

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2020-02-13 Date of issue: 2020-02-13

Mikail Önder

Calibration Technician

Susanne Jørgensen







CERTIFICATE OF CALIBRATION No: CDK2104736

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CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250 No: 3001350

Microphone: Brüel & Kjær Type 4189 No: 3022867 Preamplifier: Brüel & Kjær Type ZC-0032 No: 23775

Supplied Calibrator: None

Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-

4078502 Instruction manual: BE1712-22

CUSTOMER

Enfonic Ltd

Unit 2A, Century Business Park

Dublin **D11 T0HV** Ireland

CALIBRATION CONDITIONS

4 hours at $23^{\circ}C \pm 3^{\circ}C$ Preconditioning:

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Proceedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2021-08-21 Date of issue: 2021-08-21

Mikail Önder

Calibration Technician

Susanne Jørgensen

Approved Signatory

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CERTIFICATE OF CALIBRATION No: CDK2101007 Page 1 of 12

CALIBRATION OF

Sound Level Meter: Brüel & Kjær Type 2250-Light No: 3008590 Id: - 3008590

Microphone: Brüel & Kjær Type 4952 No: 2788845

Supplied Calibrator: None

Software version: BZ7222 Version 4.5.2 Pattern Approval: PTB1.63-40478500 / 1.63-

Instruction manual: BE1712-22 4078502

CUSTOMER

Enfonic Ltd

Unit 2A, Century Business Park

Dublin D11 T0HV Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at $23^{\circ}C \pm 3^{\circ}C$

Environment conditions: See actual values in Environmental conditions sections.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2250 has been calibrated in accordance with the requirements as specified in IEC6162-1:2013 class 1. Proceedures from IEC 61672-3:2013 were used perform the periodic tests. The accreditation assures the traceability of the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 7.3 - DB: 7.30) by using procedure B&K proc 2250, 4189 (IEC61672:2013)

RESULTS

Calibration Mode: Calibration as received.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2021-06-24

Date of issue: 2021-06-24

Mikail Önder

Calibration Technician

Susanne Jørgensen