CERTIFICATE OF CALIBRATION

Issued by

ABSOLUTE CALIBRATION LIMITED

DATE OF ISSUE 10 November 2020 CERTIFICATE NUMBER 0482037

UKAS CALIBRATION 0078

Absolute Calibration Limited
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Approved Signatory

- M Funnell ☐
- A Watson ☐
- D Kingswell ☑
- G Mills ☐
- A Francis ☐
- S Patabendi ☐

Description	Oscilloscope Calibrator
Manufacturer.	Time Electronics Ltd.
Type Number.	5045
Serial Number.	1146J20
Calibration Procedure	ABCAL 5045
Customer:	TIME ELECTRONICS LTD. UNIT 5, TON BUSINESS PARK 2-8 MORLEY ROAD TONBRIDGE, KENT TN9 1RA
Instrument Receipt Date:	6 November 2020
Order Number:	25177
Customer Reference:	---

The calibrator was switched on and allowed to stabilise for at least one hour in the Standards Laboratory ambient conditions of 20.0 °C ± 1.0 °C. and 50 % rh ± 10 % rh prior to calibration.
The instrument was calibrated using Time EASYCAL 6.8 version 2.0 against laboratory standards and the results are recorded on the following pages.
The following calibration results only relate to the items defined above or uniquely identified in the following pages.

Date of Calibration 10 November 2020 Calibration Engineer L Watson

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Supplementary Information

Calibration Equipment Used:

Seaward	C2892	Cal Due:	Mar 2021
HP	C1272	Cal Due:	Oct 2021
HP	C2415	Cal Due:	Feb 2021
Symmetricom	C1398	NCR	

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Parameter Tested	Set Value	Measured Value	Uncertainty ± of Measured Value
Amplitude			
6mV	6.0000mV	6.0057mV	2.5µV
10mV	10.00000mV	10.00478mV	2.5µV
20mV	20.0000mV	20.0042mV	2.5µV
50mV	50.00000mV	50.00403mV	2.5µV
100mV	100.00000mV	100.00454mV	50 ppm
200mV	200.00000mV	200.00473mV	50 ppm
500mV	500.00000mV	500.01620mV	50 ppm
1V	1.00000V	1.00004V	50 ppm
2V	2.0000V	2.0001V	50 ppm
4V	4.0000V	4.0002V	50 ppm
6V	6.0000V	6.0002V	50 ppm
8V	8.0000V	8.0003V	50 ppm
10V	10.0000V	10.0004V	50 ppm
20V	20.0000V	20.0005V	50 ppm
50V	50.0000V	50.0047V	50 ppm
200V	200.0000V	200.0194V	50 ppm
50 ohm Amplitude Tests			
6mV	6.0000mV	6.0130mV	5µV
20mV	20.000mV	20.026mV	5µV
50mV	50.000mV	50.053mV	5µV
100mV	100.00mV	100.10mV	100 ppm
500mV	500.00mV	500.40mV	100 ppm
1V	1.00000V	1.00079V	100 ppm
2V	2.00000V	2.00177V	100 ppm
Frequency 0.1ppm			
100MHz	100.000000MHz	100.000009MHz	0.01 ppm
10MHz	10.0000000MHz	10.0000000MHz	0.01 ppm
1MHz	1.00000000MHz	1.00000000MHz	0.01 ppm
500kHz	500.000000kHz	500.000000kHz	0.01 ppm
100kHz	100.000000kHz	100.000000kHz	0.01 ppm
10kHz	10.0000000kHz	10.0000000kHz	0.01 ppm
1 kHz	1.00000000kHz	1.00000000kHz	0.01 ppm
200 Hz	200.000000Hz	200.000000Hz	0.01 ppm
50 Hz	50.0000000Hz	50.0000000Hz	0.01 ppm
20 Hz	20.0000000Hz	20.0000000Hz	0.01 ppm
Period 0.1ppm			
10ns	0.0100000us	0.0099999us	0.01%
100ns	0.1000000us	0.1000000us	10 ppm
1us	1.000000us	0.999999us	1 ppm
10us	10.000000us	9.999998us	0.1 ppm
100us	100.000000us	100.000000us	0.01 ppm
1ms	1000.00000us	1000.00000us	0.01 ppm
100ms	100.000000ms	100.000000ms	0.01 ppm
1s	1000.00000ms	1000.00000ms	0.01 ppm

The uncertainties reported refer to the applied and measured values only with no account being taken of the instruments ability to maintain its calibration.

----END---

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.

Certificate of Calibration

CUSTOMER:	TIME ELECTRONICS LIMITED	CERT No:	0482037
ORDER NO:	25177	CUST. REF:	NO CUST REF
MAKE:	TIME	TYPE:	5045
DESCRIPTION:	OSCILLOSCOPE CALIBRATOR	SERIAL No:	1146J20

AMBIENT TEMPERATURE*: 20 ± 1 °C HUMIDITY: 50 ± 10 %RH

This is to certify the above instrument has been calibrated in accordance with a relevant specification and at those points tested the result(s) were*:

Found to meet that specification on receipt [/]	Found to meet that specification after adjustment/repair [ ]	Measurements recorded in absence of relevant specification [ ]	Found NOT to meet that specification – Calibration restrictions apply [ ]
Pre-Calibration repair performed [ ]	Optimising adjustment performed [ ]	Calibration performed away from laboratory* [ ]	Calibration performed by subcontractor* [ ]

Absolute Calibration Complies with BS EN ISO 17025 and BS EN ISO 9001

*For calibration performed away from our laboratory or by a subcontractor please see the attached certificate for environmental conditions and calibration/measurement details.

The above statement of conformity (e.g. Pass/Fail) to specification is made without taking measurement uncertainty into account unless stated otherwise in the report.

In order to comply with the above standards Absolute Calibration has to ensure that all measurements carried out in its laboratories are traceable to national standards.

Approved Signatory

DATE: 10 - 11 - 26

Absolute Calibration Limited
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