

CERTIFICATE OF CALIBRATION

Issued by

ABSOLUTE CALIBRATION LIMITED

DATE OF ISSUE 30 March 2023

CERTIFICATE NUMBER 0520941



0078



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Approved Signatory

A Watson
D Kingswell
A Francis
G Mills
S Patabendi

Manufacturer: TTI
Type Number: PFM3000
Description: High Res Frequency Counter
Serial Number: 539276
Customer Reference: 498726-1
Customer Code: PUL001
Customer: Pullman Instruments (UK) Limited
ESG House
Chatsworth Road
Harrogate
North Yorkshire

Order Number: 253945
Instrument Receipt Date: 29 March 2023
Laboratory Temperature: 20.0 °C ± 3.0 °C
Laboratory Humidity: 50 %rh ± 25 %rh
Unit Stabilisation Time: One Hour
Calibration Procedure: CP146
Calibration Engineer: W. Smith
Calibration Date: 30 March 2023
This report contains: Recorded results with no adjustments
Pre and post adjustment results
Post repair results
Results recorded at Customer site

The following calibration results relate to the items defined above or uniquely identified in the following pages.

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Parameter Tested

'X' Tal Accuracy at 10 MHz

<u>Applied</u>	<u>Uncertainty ± of</u>	<u>Deviation from</u>
<u>Frequency</u>	<u>Applied Value</u>	<u>Applied Frequency</u>
10.000 000 000 MHz	± 2 in 10 ⁸	<3 in 10 ⁷

The internal crystal oscillator was checked by applying a standard 10 MHz signal to the input of the counter and evaluating the resultant reading.

Time Base Accuracy

<u>Gate</u>	<u>Applied</u>	<u>Uncertainty ± of</u>	<u>PFM3000</u>
<u>Time</u>	<u>Frequency</u>	<u>Applied Value</u>	<u>Display</u>
0.3 s	10.00000 MHz	2 in 10 ⁸	10.00000 MHz
1 s	10.000000		9.999997
10 s	100.0000000		9.9999982

Frequency Response – Channel A

<u>PFM3000</u>	<u>Applied</u>	<u>Uncertainty ± of</u>	<u>PFM3000</u>
<u>Setting</u>	<u>Input</u>	<u>Applied Value</u>	<u>Display</u>
1 s	3.000 000 Hz	2 in 10 ⁸	2.999924 Hz
0.3 s	10.000 00 Hz	2 in 10 ⁸	10.00001 Hz
	50.000 0		50.0000
	100.000 0		100.0000
	300.000		300.000
	500.000		500.000
	700.000		700.000
	1.000 000 MHz		1.000000 MHz
	5.000 00		5.00000
	100.000 0		100.0000
	125.000 0		125.0000

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.

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Parameter Tested

Frequency Response – Channel B

<u>PFM3000</u> <u>Setting</u>	<u>Applied</u> <u>Input</u>	<u>Uncertainty ± of</u> <u>Applied Value</u>	<u>PFM3000</u> <u>Display</u>
0.3 s	80.000 00 MHz	2 in 10 ⁸	80.0001 MHz
0.3 s	3000.00 MHz	2 in 10 ⁸	3000.00 MHz

An additional uncertainty of 1 lsd for the resolution of the display should be calculated using summation in quadrature.

The uncertainty reported refers to the applied 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.

