



# 5051 Calibration System

Time Electronics  
Calibration, Test & Measurement

- 0 - 1050 V AC/DC voltage
- 0 - 22 A AC/DC current
- Internal 6.5 Digit DMM
- 0 - 1G $\Omega$  resistance
- Thermocouple simulation
- Digital Frequency
- Oscilloscope Calibration
- Capacitance & Inductance
- Clamp Meter Calibration



The 5051 is a high performance calibrator combining both source and measure functions. It's outstanding performance is based on Time Electronics own 22 bit Digital to Analogue converter which provides 0.25ppm resolution. The linearity and temperature coefficients are compensated by patented software techniques to provide better than 0.05ppm/ $^{\circ}$ C. The control software allows a wide range of functions to be selected using mouse, keyboard, or touch screen.

Precise calibration is possible using the deviation function - this provides a direct error readout for the instrument being calibrated.

The standard 5051 can calibrate, bench and handheld multi-meters, frequency meters, ohm meters, ac/dc millivoltmeters, thermocouple indicators etc. With 5051 options added, resistance boxes, clamp meters, temperature indicators/sensors, RTDs, power supplies, signal generators, ac/dc signal sources, timer counters, oscilloscopes.

The **5051Plus** includes a comprehensive package of options and provides a lab ready solution. It comes equipped with every item required for a complete calibration station:

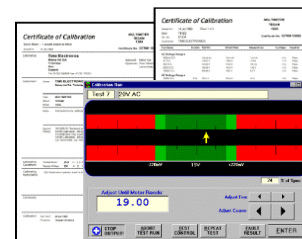
DMM; Scope Calibration; Capacitance and Inductance;  
Simulated Resistance; Clamp Meter Adaptor; Touch Screen; Test Lead Set; EasyCal; Crystal Reports; NPL Certificate; Carry Case; Printer and Connectivity Kit (As Shown).



## EasyCal

A suite of calibration programs that simplify and speed up calibration. If you have an instrument that needs calibrating against specification and the results stored and printed, **EasyCal** is the answer.

**CalMan** provides the overall administration function for a modern cal lab. Providing calibration reminders, job control, site and pre-cal documentation



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Technical Specifications		
Voltage DC	Range: Best 1 Year Specification:	0 to $\pm 1050V$ $\pm 15\text{ppm}$ of setting
Current DC	Range: Best 1 Year Specification:	0 to $\pm 22A$ $\pm 80\text{ppm}$ of setting
Voltage AC	Range: Best 1 Year Specification:	1mV to 1050V (10Hz to 20kHz, Sine-wave) $\pm 300\text{ppm}$ of setting
Current AC	Range: Best 1 Year Specification:	10uA to 22A (20Hz to 1kHz, Sine-wave) $\pm 0.05\%$ of setting
Resistance	Range: Best 1 Year Specification:	0 to 1G ohms (Fixed Values, decade steps) $\pm 20\text{ppm}$ of setting
Conductance	Range: Best 1 Year Specification:	1 S to 1n S (Fixed Values, decade steps) $\pm 20\text{ppm}$ of setting
Thermocouple Simulation	Range: Best 1 Year Specification:	-270 to 1800°C (Type J,K,R,T,S,B,E,N) $\pm 0.3^\circ\text{C}$
10MHz Digital Frequency/Period	Range: Best 1 Year Specification:	0.1Hz to 10MHz / 100nS to 10S $\pm 20\text{ppm}$ of setting

Options		
Hi Frequency AC V	Range/Max Freq: Best 1 Year Specification:	20 to 200mV/300kHz. 0.2 to 2V/1MHz. 2 to 20V/100kHz 0.05% + 0.1mV
Capacitance	Values: Best 1 Year Specification:	1nF, 10nF, 100nF, 1uF, 10uF & 100uF (100V Max) $\pm 0.25\%$
Inductance	Values: Best 1 Year Specification:	1, 1.9, 5, 10, 19, 50, 100, 190, 500mH - 1H & 10H $\pm 0.1\%$
Simulated Resistance	Range: Best 1 Year Specification:	0 to 40M ohms (Variable) $\pm 200\text{ppm}$ of setting
PT100	Range: Best 1 Year Specification:	-100 to 400°C $\pm 0.2^\circ\text{C}$
Oscilloscope Frequency/Period	Range: Best 1 Year Specification:	0.1Hz to 100MHz / 100ns to 10s $\pm 0.1\text{ppm}$ of setting
Oscilloscope Duty Cycle	Values:	3 frequencies, 100Hz, 1kHz, 10kHz. Settable from 0 to 100%
Oscilloscope Amplitude	Range: Best 1 Year Specification:	0mV to 200V & 0mV to 2V 50 ohms (Square-wave) $\pm 0.05\%$
Oscilloscope Fast-Rise	Values:	< 300ps. Bandwidth Checking up to 600 MHz
2.2 GHz Sweep	Range: Best 1 Year Specification:	10MHz - 2.2GHz levelled sine-wave (1Vpk-pk). Amplitude $\pm 1\%$ , Frequency $\pm 0.1\text{ppm}$ .
DMM 6.5 Digit	AC Volts: 0 - 750V DC Volts: 0 - 1kV AC Current: 0 - 3A DC Current: 0 - 3A. Resistance: 0 - 100M $\Omega$ Frequency: 3Hz to 300kHz	Best 1 year spec: 0.06% of rdg + 0.04% of rng Best 1 year spec: 35ppm of rdg + 6ppm of rng Best 1 year spec: 0.1% of rdg + 0.04% of rng Best 1 year spec: 500ppm of rdg + 50ppm of rng Best 1 year spec: 100ppm of rdg + 50ppm of rng Best 1 year spec: 0.01% of rdg

General Specification	
Warm up: 1 Hour to full accuracy. Settling Time: Less than 5 seconds. Interfaces: 4 x USB. Display: 10.5" Colour LCD.	
Operating Temperature: 15 - 25 °C, Full Spec: 22 °C +/- 3°C, Storage: -10 °C to 50 °C Operating Humidity: < 80% non condensing. Altitude 0 - 3km. Non Operating 3Km - 12km	
Line Power: 100 - 230V AC 50/60 Hz. 200W max. Dimensions: W 430mm, D 538mm, H 202mm, Weight: 23Kg	

Ordering Information			
Code	Description	Code	Description
9798	Capacitance and Inductance	9791	DMM 6.5 digit
9774	Simulated Resistance & PT100	9794	USB to GPIB Interface
9770	Oscilloscope Calibration	9795	Printer and Connectivity Kit
9769	2.2 GHz Sweep	9747	EasyCal Software
9790	100A Current Option	9749	Cal Manager Software
9780	Clamp Meter Adaptor 1 and 50 Turns	9796	Test Lead Set
9773	Optical Tachometer Calibration Adaptor	9165	NPL Traceable Calibration Certificate
9767	External Low Noise Attenuator	9134	UKAS Calibration Certificate
9771	High Frequency AC Voltage	9082	Carry Case

Full specifications are available on request.

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.