



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 Ω 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.

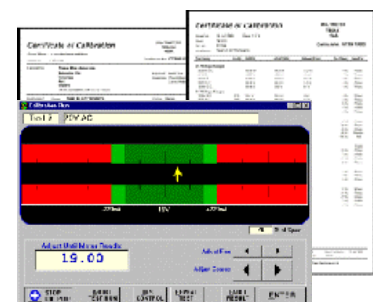
The **5051Plus** includes a comprehensive package of options and provides a lab ready solution. It comes equipped with every item required for a complete calibration station: DMM; Scope Calibration; Capacitance and Inductance; Simulated Resistance; Clamp Meter Adaptor; Touch Screen; Test Lead Set; EasyCal; 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



5051 Technical Specifications

| | | |
|--------------------------------|--------------------------------------|---|
| Voltage DC | Range: Best 1 Year Specification: | 0 to \pm 1050V \pm 15ppm of setting |
| Current DC | Range: Best 1 Year Specification: | 0 to \pm 22A \pm 80ppm of setting |
| Voltage AC | Range: Best 1 Year Specification: | 1mV to 1050V (10Hz to 20kHz, Sine-wave) \pm 300ppm 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: | 1 ohm to 1G ohms (Fixed Values, decade steps) \pm 20ppm of setting |
| Conductance | Range: Best 1 Year Specification: | 1 S to 1n S (Fixed Values, decade steps) \pm 20ppm of setting |
| Thermocouple Simulation | Range: Best 1 Year Specification: | -270 to 1800°C (Type J,K,R,T,S,B,E,N) \pm 0.15 °C |
| 10MHz Digital Frequency/Period | Range: Best 1 Year Specification: | 0.1Hz to 10MHz / 100nS to 10S \pm 20ppm 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% |
| Full Range Resistance | Range: Best 1 Year Specification: | 1 to 120M ohms (Variable) \pm 100ppm of setting |
| PT100 | Range: Best 1 Year Specification: | -200 to 850°C \pm 0.2 °C |
| Oscilloscope Frequency/Period | Range: Best 1 Year Specification: | 0.1Hz to 100MHz / 100ns to 10s \pm 0.1ppm 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 0.1ppm. |
| DMM 6.5 Digit | AC Volts: 0 - 750V DC Volts: 0 - 1kV AC Current: 0 - 3A DC Current: 0 - 3A. Resistance: 0 - 100MΩ 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 | Full Range 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.