**Integral Calibrator, DMM, and PC**

- Source up to 1050V AC/DC voltage
- Source up to 22A AC/DC current
- Source up to 1GΩ resistance
- Thermocouple simulate and measure
- PT100 simulate and measure
- Source capacitance and inductance
- Oscilloscope calibration
- Clamp meter adaptor included
- EasyCal calibration software included

**DESCRIPTION**

The 5051Plus combines a precision multifunction calibrator, 6½ digit multimeter, and industrial touch screen PC. Offering high performance calibration and maximum functionality, it provides the foundation for an efficient calibration program. By integrating the calibrator, DMM and PC in one unit minimal bench space is used in the laboratory. This is also beneficial for field calibration work as the 5051Plus replaces the need for transporting several instruments.

**Calibrator**

The standard unit is fitted with AC/DC voltage to 1050V, AC/DC current to 22A, variable resistance to 120MΩ, decade resistance to 1GΩ, capacitance and inductance, conductance, thermocouple simulation and oscilloscope calibration. Also supplied is a clamp meter adaptor for clamp calibration up to 1100A, and test lead set to provide the necessary connections for nearly all applications. Further enhancements can be made by adaptors, and accompanying benchtop instruments. Both manual control and EasyCal software control is available.

**Digital Multimeter**

The internal 6½ digit multimeter measures DC voltages to 1000V, AC voltages to 750V, resistance to 100MΩ, and frequency to 300kHz. Operation can be performed using the manual control programs or EasyCal software.

**Touch Screen PC**

The 5051+ features an integral control centre that is a PC with a 64 bit dual core processor, running Windows 8.1. The calibrator and DMM control programs allows the wide range of functions to be easily selected using mouse, keyboard, or touch screen. As a complete workstation the 5051Plus is supplied with printer and connectivity kit for producing certificates and reports, as well as a label printer and barcode reader.

**MULTI INSTRUMENT CALIBRATION**

The 5051Plus can calibrate multimeters, frequency meters, ohm meters, AC/DC millivoltmeters, decade boxes, thermocouple indicators and sensors, clamp meters, tacho meters, oscilloscopes, timer counters, RTDs and much more. Accompanying instruments and adaptors can be added for power supplies, pressure devices, and more.

**EASYCAL CALIBRATION SOFTWARE**

The 5051Plus comes pre-loaded with Time Electronics’ EasyCal software. Automate the calibration process and increase speed of calibration and consistency of results. Easily produce calibration certificates and reports to ISO 9001, ISO 17025, and other international quality standards. Data can be transferred to desktop PCs/servers using USB memory or connected to a LAN via the ethernet connection located on the rear of the unit.
## Technical Specifications

<table>
<thead>
<tr>
<th>Function</th>
<th>Range / Values</th>
<th>Best 1 year Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calibrator (source)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage DC</td>
<td>0 to ± 1050V</td>
<td>± 15ppm of setting</td>
</tr>
<tr>
<td>Current DC</td>
<td>0 to ± 22A</td>
<td>± 80ppm of setting</td>
</tr>
<tr>
<td>Voltage AC</td>
<td>1mV to 1050V (10Hz to 1MHz, sine-wave)</td>
<td>± 300ppm of setting</td>
</tr>
<tr>
<td>Current AC</td>
<td>10μA to 22A (20Hz to 1kHz, sine-wave)</td>
<td>± 0.05%</td>
</tr>
<tr>
<td>Clamp Meter Adaptor x50 turn</td>
<td>AC/DC Current up to 1100A (DC, 45 to 90Hz)</td>
<td>± 0.5%</td>
</tr>
<tr>
<td>Capacitance</td>
<td>1nF, 10nF, 100nF, 1μF, 10μF, 100μF (100V Max)</td>
<td>± 0.25%</td>
</tr>
<tr>
<td>Inductance</td>
<td>1mH, 1.9mH, 5mH, 10mH, 18mH, 50mH, 100mH, 190mH, 500mH, 1H, 10H</td>
<td>± 0.1%</td>
</tr>
<tr>
<td>Decade Resistance</td>
<td>1Ω to 1GΩ (decade values)</td>
<td>± 20ppm of setting</td>
</tr>
<tr>
<td>Full Range Resistance</td>
<td>1Ω to 120MΩ (variable)</td>
<td>± 100ppm of setting</td>
</tr>
<tr>
<td>Conductance</td>
<td>1s to 1ns (fixed values, decade steps)</td>
<td>± 20ppm of setting</td>
</tr>
<tr>
<td>Thermocouple Simulation</td>
<td>-270 to 1820°C (type J, K, R, T, S, B, E, N)</td>
<td>± 0.15°C</td>
</tr>
<tr>
<td>PT100 Simulation</td>
<td>-180 to 850°C</td>
<td>± 0.07°C</td>
</tr>
</tbody>
</table>

### Oscilloscope Calibration

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>± 0.05%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplitude</td>
<td>6mV to 2000V and 6mV to 2V 50Ω (Square-wave or DC)</td>
<td>± 0.1ppm (0.1Hz to 10MHz / 100ns to 10s)</td>
</tr>
<tr>
<td>Frequency/Period</td>
<td>0.1Hz to 100MHz / 10ns to 10s (fixed values 1, 2, 5 sequence)</td>
<td>± 20ppm (20, 50, 100MHz / 50, 20, 10ns)</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>3 frequencies: 100Hz, 1kHz, 10kHz, settable from 0 to 100%</td>
<td>–</td>
</tr>
<tr>
<td>Fast-Rise</td>
<td>&lt; 400ps. Bandwidth checking up to 400MHz</td>
<td>–</td>
</tr>
<tr>
<td>Option 9769: Scope 2.2GHz Sweep</td>
<td>100MHz to 2.2GHz levelled sine-wave (0.5, 1, 1.5V pk-pk)</td>
<td>Amplitude ± 1%, Frequency ± 20ppm</td>
</tr>
</tbody>
</table>

### 6.5 Digit DMM (measure)

<table>
<thead>
<tr>
<th>Function</th>
<th>Range / Values</th>
<th>± 0.05%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage DC</td>
<td>0 to 1000V</td>
<td>35ppm of rdg + 6ppm of mg</td>
</tr>
<tr>
<td>Current DC</td>
<td>0 to 3A</td>
<td>500ppm of rdg + 50ppm of mg</td>
</tr>
<tr>
<td>Voltage AC</td>
<td>0 to 750V</td>
<td>0.06% of rdg + 0.4% of mg</td>
</tr>
<tr>
<td>Current AC</td>
<td>0 to 3A</td>
<td>0.1% of rdg + 0.04% of mg</td>
</tr>
<tr>
<td>Resistance</td>
<td>0 to 100Ω2</td>
<td>100ppm of rdg + 50ppm of mg</td>
</tr>
<tr>
<td>Frequency</td>
<td>3Hz to 300kHz</td>
<td>0.01% of rdg</td>
</tr>
<tr>
<td>Thermocouple</td>
<td>-270 to 1800°C (Type J, K, R, T, S, B, E, N)</td>
<td>± 0.5°C</td>
</tr>
<tr>
<td>PT100</td>
<td>-180 to 850°C</td>
<td>± 0.08°C</td>
</tr>
</tbody>
</table>

### PC Specifications/Details

- Processor: 64 bit, dual core (or equivalent)
- RAM: 4GB (or higher)
- Hard Drive: 60GB solid state
- Ports: 4 x USB, 1 x Fast Ethernet
- Display: 10.4" Touch Screen LCD
- Operating System: Windows 8.1
- Included Software Programs: Calibrator and DMM control programs, EasyCal calibration software suite
- Supplied Hardware/Accessories: USB keyboard, Inkjet Printer, Cal and ID Label Printer, DVD-RW, 4 port USB hub, Numeric key pad, USB memory stick

### Options

**Oscilloscope Calibration Options**
- 9769: Internal Scope 2.2GHz Levelled Sine Generator
- 9762: External Rubidium Frequency Reference
- 9764: Current Probe Adaptor

**External Adaptors/Instruments**
- 9790: 100 Amp AC Current Transformer
- 9760: Power Amplifier (60V AC, 90V DC - 100mA)
- TEG Digital Pressure Gauges
- 5077: Power Calibrator
- 7074: Black Body Calibrator
- 8029: Electronic Load

**EasyCal Software Accessories and Calibration Certificates**
- 9779: Job and Address Label Printer
- EC2FL/EC2WL: Additional User Licenses for separate PCs
- EAD: EasyAdmin Add-On
- EWC: WebCerts Add-On
- CREP: Crystal Reports Software
- C134: UKAS Calibration Certificate

### General Specifications

**Supplied Items**
- 5051PLUS Calibration System
- Clamp Meter Adaptor
- Optical Tacho Adaptor
- Premium Test lead Set
- Soft Carry Case
- Printer and Connectivity Kit
- Cal and ID Label Printer
- Bar Code Reader
- 5051 Manual Control Software
- EasyCal Calibration Software
- Factory Calibration Certificate (NPL)

**Warm up**
- 30 minutes to full accuracy

**Setting Time**
- Less than 5 seconds

**Temperature Performance**
- Operating: 5 to 45°C. Calibration: 15 to 28°C. Storage: -10 to 50°C
- Operating Humidity / Altitude: < 80% non condensing. Altitude: 0 to 3km. Non operating: 3km to 12km
- Line Power: 100 to 230V AC 50/60Hz. 200W maximum
- Dimensions / Weight: w430mm, d202mm, h538mm. Weight: 23kg
- Supplied Test Lead Set: High voltage (pair), High current (pair), Low thermal (pair), Shielded 4 wire. BNC test lead. BNC/thermocouple/spade adaptors. Test clips/couplers (pair). Wall mount lead holder. Carry case.

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*Full specifications are available on request. Due to continuous development Time Electronics reserves the right to change specifications without prior notice.*