



## Intepro 9000 Series

### Intepro 9000

- **Fast and effective test of Power Supplies and Converters**
- **Modular system for ease of configuration and expansion, addressing the most complex testing needs of today**
- **PowerStar 5 Test Executive for quick, easy and comprehensive test generation**
- **Parallel measurement for ultra fast test times**



Intepro 9000 Benchtop System

Intepro 9000 is the next generation power supply test system from Intepro. It is fast, accurate and will cut your test times dramatically. The modular system has a high degree of flexibility and is capable of being configured into highly economic systems for advanced power electronic test. Fully pre-configured bench-top and free-standing rack formats provide economic solutions for manufacturers of AC/DC and DC/DC power supplies and converters. Its exceptional configuration addresses a wide range of complex test applications in the broader field of Power Electronics.

#### Key features of Intepro 9000 include:

- PowerStar 5, new flexible test executive
- 50W or 200W Load options
- IEEE 488 and CANbus for speed and flexibility
- Microsoft Access™ datalogging
- ActiveX OLE automation ensures easy access to other applications

#### PowerStar 5

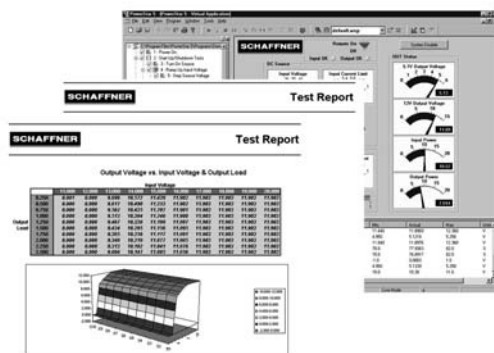
The PowerStar 5 Test Executive empowers engineers and production management with full control of the test process.

#### Key features of PowerStar 5 include:

- Optimised state-sensitive test libraries
- Database-driven family testing
- Variables and expressions
- Comprehensive flow control for structuring test sequences
- Integrated Visual Basic for custom test development
- Easy to develop graphical user interfaces
- Network-based results logging

#### Configurations

For testing AC/DC power supplies and DC/DC converters, Intepro 9000's standard cabinet system is a high-performance, cost-effective solution. Housed in a 30U high cabinet, this fully integrated system can include AC and/or DC sources. Flexible fixturing for high product mix environments is available via the system's built-in Virginia Panel interface, providing high current-carrying capacity with minimal noise and signal loss. In its most basic format - just 6U high - the Intepro 9000 compact system can consist of an integral 100W DC source including precision measurement, up to six 200W Loads, high-speed Measurement module and IEEE controller, making it suitable for testing a wide range of low power DC/DC converters.



PowerStar 5 Test Executive

The system runs under complete control of PowerStar 5's optimised test routines to ensure that test times are minimised. The standard library already includes driver support for over 100 commonly used test instruments. Standard modules include the Universal DC Driver and Relay Scanner for system Selftest, allowing significant programming and fixturing freedom. Standard configurations are not designed to meet every power electronics requirement, but system modularity enables systems to be specially configured and extended to address the most complex of testing needs.

### Measurement Module

The newly developed Measurement module combines many of the instruments commonly required for PSU functional testing. The DVM measures DC and low frequency AC voltages, while the Interval Timer measures rise/fall times, inter-rail timing, programmable thresholds and slopes on two channels. Also included is a ripple/noise meter which measures RMS and peak to peak ripple/noise on the outputs of the UUT. The Measurement Module is fully equipped with a 10 channel internal-scanning feature and can now achieve higher speeds with increased measurement accuracy.



Measurement Module

### Universal Drivers

The Intepro 9000 Universal Drivers are a cost-effective means of driving multiple DC sources and high power OEM loads. The modular structure consists of a motherboard and plug-on daughter cards. System calibration times are significantly reduced as the calibration constants for the module are stored in the EEPROM, and travel with each circuit. This is beneficial for multiple DC sources or Loads in Intepro 9000 systems.



Universal Driver Module

### Relay Scanner/Selftest

Beside its capabilities as a Scanner and Relay Module, the card is also part of the Selftest subsystem. Capable of system diagnosis down to module level and in some cases component level, system Selftest is essential for down-time minimisation in any high volume manufacturing facility. The Selftest Solution comprises the Scanner Relay Module, modular software and passive fixture, this package also verifies all modules and interconnection cabling.



Relay Scanner Module

### Digital I/O Module

For situations that require a variety of control functions the Digital I/O Module offers the ideal solution. In addition, the Digital I/O Module can also be used to control special "Black Boxes" which are developed for customer specific Intepro 9000 solutions. User connection to the module is via two 50 way D type connectors. Each module contains sixteen TTL digital inputs, sixteen TTL digital outputs and four SPST power relays.



Digital I/O Module

**Current Measurement Card**

Facilitating test of high voltages up to 500VDC, the Current Measurement Card's accurate measurement system, converts current and voltages provided by system power supplies into voltages measurable by Intepro 9000. Yielding high accuracy for DC measurement, the card can be designed to meet customer specific requirements for special applications.



Current Measurement Card

**Power Sources**

These efficient and lightweight sources all conform to US and European EMC emissions and immunity standards. Our cost effective single-phase AC source's programmable start angle facilitates inrush current measurement and its 4.2 crest factor makes it ideal for switch-mode power supplies.



AC Power Source

**DC Loads**

Developed for high slew-rate performance, Intepro 9000 Loads have built-in intelligence for more efficient operation. Constant current, voltage, power and resistance modes – with arbitrary waveform generation – allow multiple Load profiles to be programmed. Up to five Loads may be paralleled for higher powers.



DC Loads

**Digital Controller**

Acting as the main control centre for Intepro 9000, this high performance module has unprecedented capabilities, communicating with up to 100 loads via CANbus. Functions of the Controller Module are carried out by two main cards: the H8 card and the TGA interface card. The H8 card is the central control for the Intepro 9000 system and the TGA Interface card is capable of addressing up to 255 TGA cards via its built-in output address lines (8 in total).



Digital Controller Module

## Intepro 9000 System Architecture

### Loads

*DC Load* 0 to 1500A / 0 to 500V

### Sources

*DC Source* 0 to 500A / 5V to 500V / 10W to 30kW

*AC Source* Up to 400VAC / 250VA to 30kVA, 1 and 3-phase

### Specialist Modules

*Measurement* DC Voltage (0.02 to 0.05%), AC Voltage (0.1%), Ripple Noise to 20MHz, frequency (DC to 1 MHz) module including: rise/fall-times, turn-on and hold-up times

*Digital I/O* 16 independently programmable bits/module

*Relay Scanner/Selftest* Self test software using standard library and customer fixture

*Universal DC Driver* Drives analog programmable DC sources or OEM loads

*Current Measurement* Provides high accuracy current and voltage measurements from DC sources

### OEM Items

*Oscilloscopes* IEEE

*Spectrum Analysers* IEEE

*Power Meters* IEEE

*Function Generators* VXI/IEEE

*DVM's* VXI/IEEE

*Specials* A wide range of OEM's can be integrated on request

### Environmental

*Operating Temperature* 5-40°C

*Storage Temperature* 5-70°C

*Humidity* 10% to 85% relative



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