

# AEROFLEX

A passion for performance.

In-Circuit

Functional

Combinational

PXI

Test Solutions

Service and Support



# ATE

## Manufacturing Test Products

# ATE - Automatic Test Equipment

## History

Inheriting Marconi Instruments' and IFR's reputation for quality, reliability and innovation, Aeroflex has maintained a cutting edge position in ATE manufacturing test solutions. With well-established electrical test systems and more recently a multi-strategy test platform, Aeroflex continues to be well placed to test the complete range of circuit board technology. Aeroflex's support infrastructure is designed to provide the support required by today's printed circuit board manufacturers and their global operations.



## ATE Definitions

### **ANALOG IN-CIRCUIT**

This capability addresses testing for shorts, opens and analog components in the unit under test (UUT). This includes passive and active devices such as resistors, capacitors, diodes and transistors. This type of testing is conducted without applying power to the UUT. However, by applying power to the UUT, testing of analog devices such as op-amps and voltage regulators can also be made.

### **DIGITAL IN-CIRCUIT**

This facility allows the user to test individual digital devices and mixed signal devices like ADC's and DAC's, in addition to devices with multiple logic thresholds.

### **ANALOG FUNCTIONAL**

An electrical check of the entire assembly by application of a power supply and generating and measuring real DC and AC signals to simulate its intended functionality.

### **DIGITAL FUNCTIONAL**

An electrical check of the entire assembly stimulated by digital drive levels to simulate its intended operating environment.

### **POWER-ON**

This function provides power to the board under test by way of power supplies integrated or external to the ATE system.

### **VECTORLESS TEST**

This technique allows integrated circuit devices (analog or digital) and connectors to be tested without detailed information being available (Q-Test II). The same approach can also be used to determine the orientation of electrolytic capacitors (CODA).

### **BOUNDARY SCAN**

A method for testing interconnects on printed circuit boards or sub-blocks inside an integrated circuit without having complete test access to the device or UUT.

### **DEVICE PROGRAMMING**

System is capable of programming devices such as Flash memory, E<sup>2</sup>proms and ISP (e.g. Lattice, XiLINX, Altera etc.)

### **19" RACK MOUNTABLE**

The ATE system can be integrated into a 19" cabinet or rack with other test instrumentation by way of modification or model option.

### **IN-LINE**

Provide the capability of the system to be integrated into automated production line using SMEMA compatible hardware.

### **CAPG - Computer Assisted Program Generation**

Enables the user to generate test programs and fixture wiring information from a '.cb' file. The '.cb' file is derived from CAD data using third party software.

# ATE Solutions

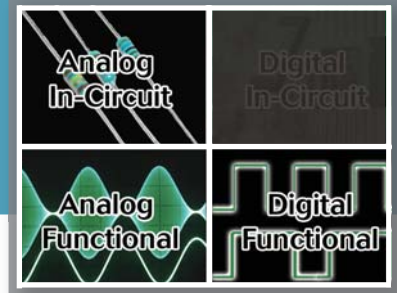
## Capabilities

Analog In-Circuit  
 Digital In-Circuit  
 Analog Functional  
 Digital Functional  
 Power-On  
 Vectorless Test  
 Boundary Scan  
 Device Programming  
 19" Rack Mountable  
 In-Line  
 CAPG

Capability	Analog In-Circuit	Digital In-Circuit	Analog Functional	Digital Functional	Power-On	Vectorless Test	Boundary Scan	Device Programming	19" Rack Mountable	In-Line	CAPG	Image	Series
	●		●	●	●	●	●	●	●	●	●		5800 Series
	●	●	●		●	●	●	●	●	●	●		4200 Series
	●			●	●	●		●	●	●			5200 Series
	●	●	●	●	●	●	●	●	●	●	●		Test Solutions
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# 5800 Series

## Multi-Strategy Test System



### Up to 3456 Analog or 1152 Digital Test Pins

The truly affordable common core, multi-functional test system combining Aeroflex mixed signal, functional and analog in-circuit cards with the added functionality of any 3U PXI cards.

### SYSTEM CORE



21 Slot Common Core Backplane

#### System Controller

- Microsoft "Windows™" operating system

#### Slot No. 1 MXI-4™ Card - Measurement Extension for Instrumentation

- PC and 5800 system interface card

#### Slot No. 2 PUC - Power and Utility Card

- Fixture and UUT actuation
- Fixture signal switching
- Controls timing and triggering

#### Features:

- All Models are Hardware and Software Compatible
  - 5820 through to the 5850
  - Interchangeable card sets and software
- Test Language - Any "Microsoft.net" Compliant Language
  - LabVIEW, Visual Basic, C#, AIDE, etc.
- GPIB, RS232, USB and Ethernet Ready



### CARD OPTIONS

#### Analog In-Circuit and Analog Functional Testing

- MFC - Multi-Function Card
  - User defined stimulation source, one card required for use with:
    - TPR cards for Analog In-circuit testing
    - DTC & DTP cards for Mixed Signal testing
- TPR - Test Point Relay Card - 192 Test Pins
  - 18 cards can be fitted to one system providing up to 3456 Analog test points

#### Digital Functional Testing

- DTC - Digital Test Controller
  - Control card for digital sequencing, one required for use with DTP cards
    - Responsive 10 MHz Test step rate
    - Four pattern generators
- DTP - Digital Test Point – 64 Test Pins
  - 64 channel Bi-directional test point card
  - 64 k RAM of memory behind each test pin
  - 18 cards can be fitted to one system allowing up to 1152 Digital test points

#### Analog and Digital Functional Testing

- PXI - PCI Extension for Instrumentation
  - Any Aeroflex or third party 3U PXI cards can be integrated into the 5800 system for added functionality.



# Model Types



## 5820 – Benchtop

- Cost Effective Scalable Test
- DIN Connector Test Interface
  - Allows a choice of flexible fixturing and interface options e.g. Cabling and VG Range™ etc.
- Small Footprint
  - Highest pin count to size ratio

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## 5830 – 19" Rack Mounted

- DIN Connector Test Interface
  - Allows a choice of flexible fixturing and interface options e.g. Virginia™ Panel and MAC™ Panel etc.
- Ideal for In-line Integration
- Stackable System
  - Using MXI-4™ card, allows multiple systems to be linked together in parallel

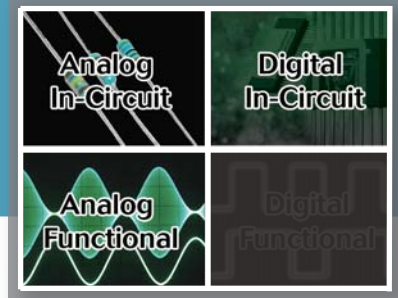
## 5850 – Floor Standing

- Dedicated Test Pin Interface
  - Up to 3456 test pins
- Single Box Solution
  - System controller and user power supplies fully integrated
- Easy Access for Maintenance
- Power-On
  - 3 integrated user power supplies



FOR FURTHER INFORMATION REQUEST A COPY OF THE 5800 SERIES BROCHURE

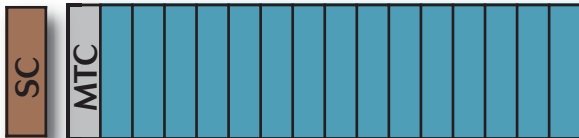
# 4200 Series In-Circuit Test System



## Up to 2048 Analog or Analog and Digital Test Pins

The advanced manufacturing test system that provides a wide ranging capability for all your In-circuit test requirements.

### SYSTEM CORE



16 Slot Common Core Backplane

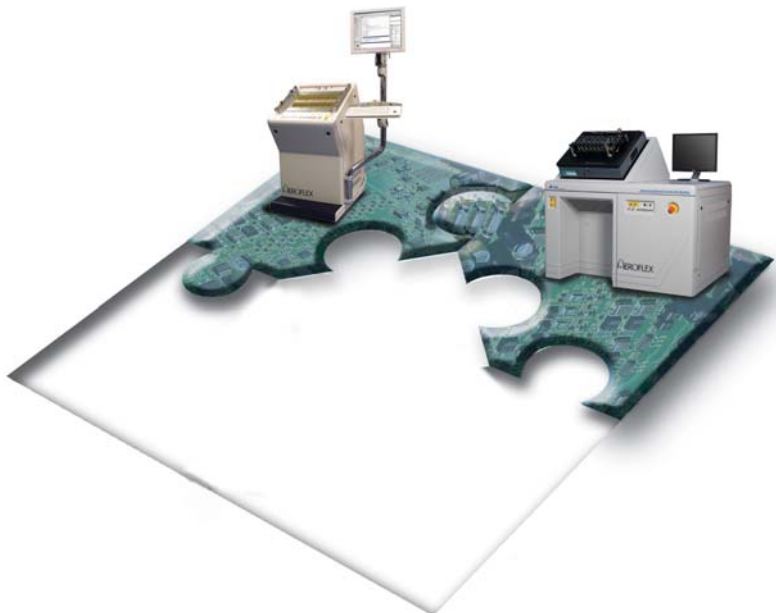
#### System Controller

- Microsoft "Windows™" Operating System

#### Slot No. 1 MTC - Master Test Controller

#### Features:

- Single Box Solution
  - System controller and user power supplies fully integrated
- All Models are Hardware and Software Compatible
  - 4200 through to the latest 4250
- Test Language - MTL
  - Auto debug
  - Graphical and ASCII program debugging tools
- Power-On: Up to 6 Integrated User Power Supplies Available, 3 Included as Standard.
- Easily Integrated to In-line Handlers



### CARD OPTIONS

#### Analog In-Circuit Testing

- Analog In-Circuit Card (FA13) - 128 Test Pins
  - Cost-effective analog only test pin card

#### Analog and Digital In-Circuit Testing

- "Multiplexed" Analog and Digital In-Circuit Card (FA03) – 128 Test Pins
  - High Performance features such as negative drive voltages for ECL testing
  - Low multiplex ratio of 4:1
- "Pure-Pin" Analog and Digital In-Circuit Card (FA23) – 128 Test Pins
  - Each pin has Analog & Digital capability
  - Non-multiplexed, up to four times as many digital test pins available compared to FA03

#### Interface and Signal Routing Cards

- Analog Functional Card (AFC)
  - 4 Channel Arbitrary Waveform Generator
  - 2 Channel 40 MHz Digital Sampler
- General Purpose Input/Output Card (GPIO)
  - Allows extra hardware facilities to be added to the standard system

#### System Controller Options

- Third Party Boundary Scan Kit
  - Allows third party boundary scan hardware and software to be fully integrated as one test solution
- CAN Bus Interface
  - Allows communication using CAN bus protocols for automotive applications

# Model Types



## 4230 – 19" Rack Mounted Tower

- DIN Connector Test Interface
  - Allows flexible fixturing options
- Small Footprint
- Easy Access for Maintenance



## 4250 – Floor Standing

- Dedicated Test Pin Interface
  - 0 or 35 degree interface option
- In-Line Handler Compatible
- System Foot Well
  - Operator friendly
  - Useful for stand alone operation
- Compact Ergonomic Design



FOR FURTHER INFORMATION REQUEST A COPY OF THE 4200 SERIES DATA SHEET

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# 5200 Series

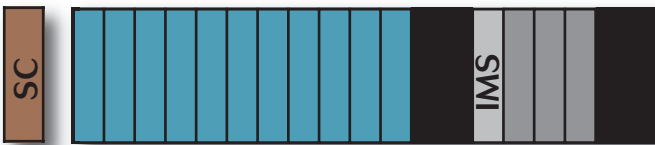
## Analog In-Circuit Test System



### Up to 2112 Analog Test Pins

The cost-effective test system that provides high speed, high accuracy analog in-circuit testing.

### SYSTEM CORE



11 + 3 Slot Backplane

#### System Controller

- Microsoft "Windows™" Operating System

Slot No.14 IMS - In-Circuit Measurement and Stimulus

#### Features:

- High Speed Analog Testing
  - Up to 1200 tests per second
- Dedicated Test Language (TPG)
  - Auto debug
  - Graphical and ASCII program debugging tools
- Power-On: 3 Integrated User Power Supplies

### Card Options

#### Analog In-Circuit Testing

- Analog In-Circuit Relay Card (ICR192) - 192 Test Pins
  - Cost-effective analog test pin card
  - Allows up to 2112 analog test channels



#### Interface and Signal Routing Cards

- GPIO Card - General Purpose Input/Output Card
  - Allows extra hardware facilities to be added to the standard system
- GPR Card - General Purpose Relay Card
  - Provides basic signal and power routing
- GPSR Card - General Purpose Signal Routing Card
  - A more comprehensive switching matrix than the GPR card, providing signal paths to any ICR192 test pin and external instrumentation.

#### System Controller Options

- Boundary Scan Kit - For Third Party Solutions
  - Allows third party boundary scan hardware and software to be fully integrated as one test solution
- GPIB Card - General Purpose Instrument Bus Card
  - Allows GPIB controlled instruments to be controlled by the 5200

### MODEL TYPE



#### 5220 - Benchtop

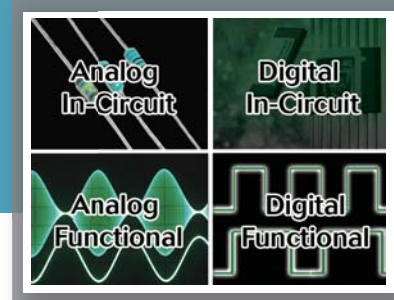
- DIN Connector Test Interface
  - Allows a choice of flexible fixturing interface options
- Ideal for In-line Integration
- 19" Rack Mountable
- Dual Vacuum Control Option



FOR FURTHER INFORMATION  
REQUEST A COPY OF THE  
5200 SERIES DATA SHEET

# Test Solutions

## In-Circuit, Functional and Custom



### SYSTEM CAPABILITY

Aeroflex has considerable experience in building a large number of test systems covering a wide market sector including full system design, test definition, build to print, from DC to Microwave. In addition Aeroflex can provide anything from module development to full turnkey test solutions for all ATE platforms.

### OPEN HARDWARE STANDARDS

Aeroflex has experience in providing test solutions based on the following technologies:

- PXI
- VXI
- VME
- PCI
- Rack & Stack
- Aeroflex ATE Platforms

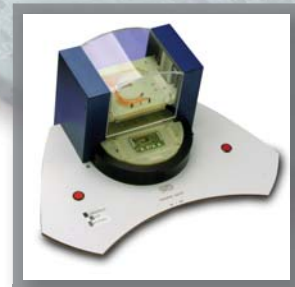
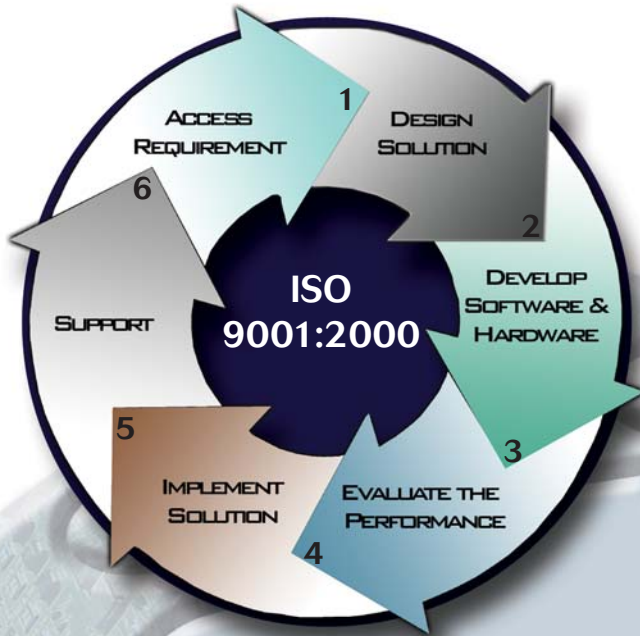
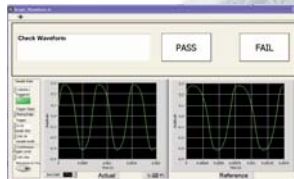


Aeroflex will not limit you in your choice of hardware. Aeroflex believes in a multi-vendor approach to instrumentation and are open to include third party instrumentation to provide the best solution.

### OPEN SOFTWARE STANDARD

Aeroflex can provide test solutions using any of the leading tools available today and are happy to offer guidance on the best software architecture to suit your particular application.

- LabWindows CVI
- LabView
- Boundary Scan
- Test Stand
- C++
- HP VEE
- Visual Basic
- Computer Aided Program Generation (CAPG)
- AIDE (5800 Series)
- MTL (4200 Series)
- TPG (5200 Series)

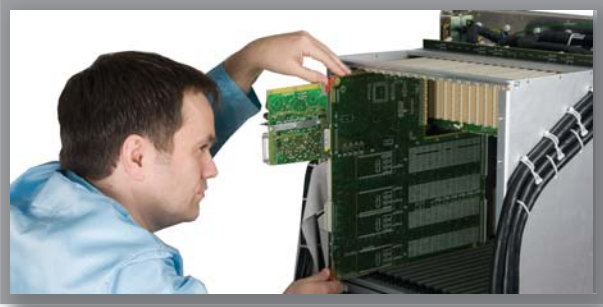


FOR FURTHER INFORMATION REQUEST A COPY OF THE TEST SOLUTIONS AND SYSTEMS BROCHURE

Test Solutions

# Service and Support

## Multi-level Support



One of the most important factors in any purchase of capital equipment is the availability and level of support that is provided. With over 40 years of proven quality support, Aeroflex provides a multi-level support strategy to all its customers. Support options range from all-inclusive unlimited options to pay-as-you-go. You can choose the support configuration that best suits you.



### Support Options

- **A dedicated Helpdesk**  
Manned with experienced technical engineers provides the direct point of contact for all your hardware and software questions.
- **Experienced field and workshop engineers**  
Provide both telephone and on site support for all your requirements.
- **Quick dispatch of required parts**  
Email progress notification for peace of mind.
- **Training**  
Available to allow customers to become more self sufficient.



*Aeroflex ATE offering global test solutions.*

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.