

5830+

In-line Multi-Combinational Tester

AEROFLEX
A passion for performance.



**ROHWEDDER TCIL
TEST CELL IN-LINE**

+

**AEROFLEX 5830
MULTI-FUNCTIONAL TEST SYSTEM**

Key features

- User configurable tester
 - Up to 3060 in-circuit test points, or
 - Up to 1024 functional test points, or
 - Up to 19, 3U PXI cards
 - or any combination of the above...
- Vectorless testing – Q-Test II
- TCIL-P: pneumatic cylinder, or
- TCIL-TS: Toggle lever mechanism, spindle drive, AC servo motor
- Small foot print (1m (39.37") x 0.9m (34.43"))
- 6 sided test access
- COTS fixture interface
- Short set-up times
- Optional boundary scan test

Test capability

- ICT: In-Circuit Test
- FCT: Functional Circuit Test
- FUT: Functional Unit Test
- EOLT: End of Line Test
- Climatic test -40/+120

System functionality

- Aeroflex 5800 Card Suite
 - PUC
 - MFC, TPR
 - DTC, DTP
- PXI
- GPIB
- USB
- RF
- Ethernet

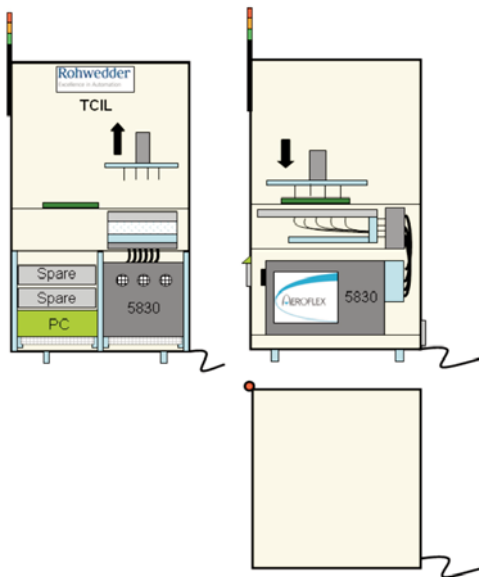
P r e i m i n a r y

For the very latest specifications visit www.aeroflex.com

In-line testing

Today, in-line testing can be just as cost effective for large volume manufactures as it is for medium volume, high mix ones. This is largely due to many in-line handling companies now standardizing on common interfaces such as the COTS Pylon Blocks solution to allow the system to be customizable. This type of solution provides the benefit of comparable pricing to stand-alone fixturing as the mechanism to compress and support the UUT is built in to the handler. In comparison, a stand alone solution requires a dedicated interface, individual hold gates and a re-enforced fixturing to engage the UUT.

Secondly, test systems have started to reduce the size of their overall foot print due to the need to minimize the largest investment in manufacturing for any company, the cost of floor space. This has been achieved by test system manufactures utilizing the latest technology such surface mount devices and common card formats, making in-line solutions smaller and more cost effective than ever before through lower fixturing costs and returning higher yields.



Aeroflex 5830+ In-line multi-combinational tester

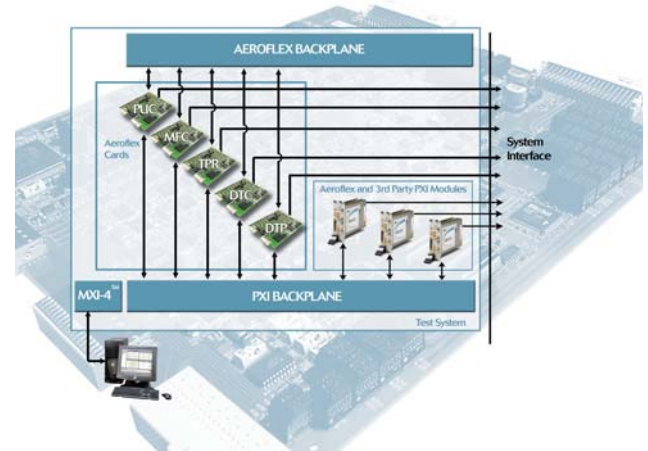
At the core of this solution is the 5830 19" rack mounted Multi-functional test system which encompasses a suite of dedicated cards with the capability of performing in-circuit and functional testing.

The Aeroflex 5800 Series card suite is designed to interface with the Aeroflex dedicated backplane and the PXI backplane simultaneously to allow any PXI cards that are fitted to synchronize seamlessly together. With the addition of GPIB, USB and Ethernet ports the system can interface with many different communications protocols to allow existing hardware to be re-used. By partnering with Rohwedder AG the Test Cell In-Line (TCIL-TS) handler can support 3060 test points with it's toggle lever mechanism using an AC motor to drive the spindle. Alternatively, if the test pin count is under 340 points, a lower cost pneumatic cylinder TCIL-P system can be used. The small foot print of 1m x 0.9m on both models can easily accommodate the 19" rack mounted 5830 and the system controller with space to spare for rack mounted power supplies or other GPIB, Ethernet or USB based instrumentation.

Standardizing on the COTS Pylon block interface format allows the fixturing to be configured to meet the demands of any test requirements from ICT to RF PXI.

Fixture interface – COTS Pylon block

The system uses a 'Commercial Off The Shelf' Pylon Block arrangement allowing the interface to be cost effective, easily supported and adaptable



PUIC – Power Utility Card

The power and utility card is an essential part of any 5830 test system, it contains all fixture utilities such as fixture identification, control, sense, type, relays, power, actuation, UUT PSU isolation control and user interface.

MFC – Multi-Function Card

The MFC provides the stimulus and measurement circuitry to enable analog in-circuit tests to be carried out in conjunction with the TPR cards. The card can also act as a general purpose DC and AC signal source and signal measurement facility for functional testing.

TPR – Test Point Relay Card

The TPR is the primary analog switching interface to the UUT. It routes from 4 global and/or 8 local analog busses to 192 test points via a matrix of fast switching relays.

DTC – Digital Card Controller

The DTC contains a sequencer, which controls execution of the programming independent of the system computer. Configuration data and the test sequence are set up on the DTC card then the test is started. From this point, the DTC controls the activity of the DTP cards via the system backplane until the programming is complete.

DTP – Digital Test Point Card

The DTP has 64 non-multiplexed functional drive/sense channels that are relay-isolated to the fixture interface providing a maximum of 320 programming channels to the PCB.

POWER – Board Power-Up

Board power-up provides up to three variable power supplies to the UUT with added function of measuring voltage and current in board power-up.

UTILITIES – Rohwedder TCIL

This block is dedicated to the Rohwedder in-line handler, pneumatics, fixture actuation, board loader/un-loader and the board bypass function.

RF PXI – radio frequency PCI extension interface cards (Aeroflex)

The Aeroflex 3000 Series is a modular RF test system based on PXI technology, a robust modular open standard for high performance low cost instrumentation. Aeroflex has applied its vast experience in RF testing combined with the flexibility and speed benefits of PXI to produce a powerful solution to accelerate throughput in manufacturing and time to market in R&D while catering for current and future RF test needs.

PXI - 3U - PCI extension interface cards (third party)

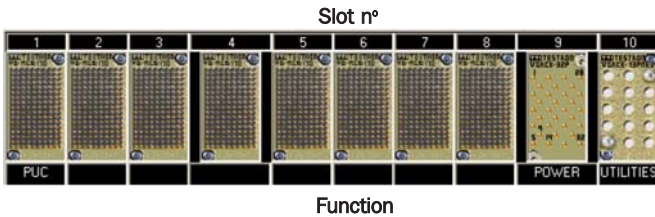
Any third party 3U PXI cards can be used in the 5830 test system to provide the additional functionality required for testing the product. Adding in further cards is straight forward to keep up with developing technologies.

In-line fixturing

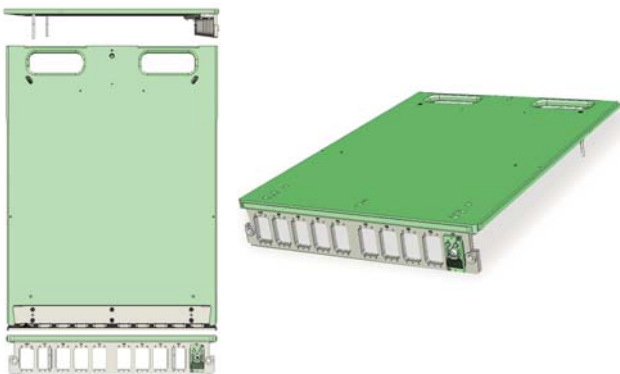
Building on the COTS Pylon block interface the fixture adaptors for the Rohwedder TCIL allow for a cost effective solution for top and bottom side test access, providing a product specific solution. The quick change interface allows change over in seconds with no specialist tools required, providing minimal downtime in product change over.

Single height Interface – TCIL-P

The TCIL-P version of the Rohwedder handler is a reduced cost version using a pneumatic cylinder which is able to apply over 1000N or 340 test points of pressure to the cassette fixture. The single height fixture interface provides all the necessary connections to the UUT allowing various types of interface blocks or card types to be used depending on the test requirement.

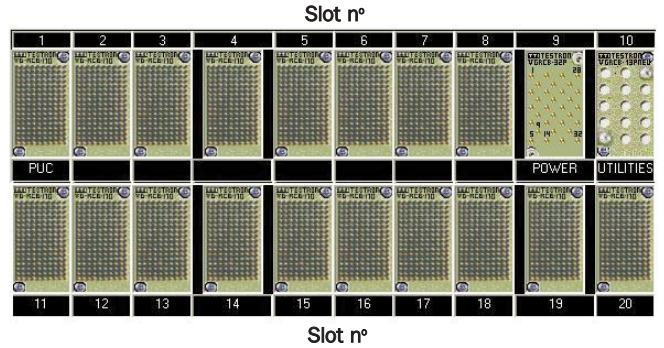


Example of a single height Interface/fixture – TCIL-P



Dual height Interface – TCIL-TS

The TCIL-TS allows the full functionality of the 5830 test system to be utilized. Up to 10000N or 3060 test pins of pressure can be applied to UUT using a combination of the dual height fixtures interface and the AC motor driven toggle lever system. Any combination of the Aeroflex's suite of test cards or 3U PXI cards can be used with the corresponding interface block to provide the appropriate electrical connections.



Limited test access - optional

If programming test access is limited, Aeroflex has a solution by partnering with a number of different Boundary Scan companies. Utilizing their PXI Boundary Scan cards, the system can provide programming to the UUT via the JTAG TAP port. No further connections for the PXI card are required as this is linked directly to the DTP card which provides the test functionality directly to the UUT.

Added functionality - optional

The 5830 system is based on a 21-slot PXI chassis with a secondary Aeroflex backplane to accommodate the Aeroflex high speed Analog & Digital card set. This allows further test hardware to be added, ranging from using the Aeroflex 3000 Series PXI RF Modules for wireless products to any third party 3U PXI card that provides the functionality required.

Data collection

The 5830+ also offers enhanced data collection capability to allow recording of programming and verification test data for traceability and verification.

Worldwide support

With over 25 years of proven quality support, Aeroflex and Rohwedder provides a multi-level support strategy to all its customers. Aeroflex's and Rohwedder worldwide and regional support centers provide software, service and application support for all products. Dedicated and experienced engineers provide both telephone and on-site support for all of your requirements. A dedicated help-desk manned with experienced technical engineers provides the point of contact for all your hardware and software questions.

SPECIFICATION

SYSTEM DIMENSIONS

Width

900 mm (35.43")

Depth

1000 mm (39.37")

Height

1850 mm (72.83") with beacon

Weight

TCIL-P approx. 400 kg (880 lbs.)

TCIL-TS approx. 480 kg (1056 lbs.)

BOARD HANDLING WITH TRANSPORT CONVEYOR (STANDARD)

Min PCB size (width/length)

50 x 80 mm (1.97" x 3.15")

Max PCB size (width/length)

400 x 400 mm (15.75" x 15.75")

PCB thickness

min 1.5 mm (0.06")

Width

50 – 400 mm (1.97" – 15.75")

PCB transfer time

TCIL-P – 6s

TCIL-TS – 5s

Transfer protocol

SMEMA

Transfer height

950 mm \pm 25 mm (37.4" \pm 0.98")

Bottom clearance

18 mm (0.71")

Top clearance

TCIL-P - 90 mm (3.54")

TCIL-TS - 120 mm (4.72")

Edge clearance

3 mm (0.12")

BOARD HANDLING WITH 3 FINGER PUSHER FOR FAST TRANSPORT

Min PCB size (width/length)

50 x 145 mm (1.97" x 5.71")

Max PCB size (width/length)

275 x 390 mm (10.83" x 15.35")

PCB Transfer Time

TCIL-P - 4s

TCIL-TS - 3s

ELECTRICAL SERVICE REQUIREMENTS

TCIL-P (PNEUMATIC CYLINDER)

Voltage

1 x 230 V/AC

Frequency

50/60 Hz

TCIL-TS (TOGGLE LEVER SERVO)

Voltage

3 x 400 V/AC

Frequency

50/60 Hz

PNEUMATIC SERVICE REQUIREMENTS

Pressure

6.5-8 bar (94-116 PSI) \pm 10% clean, dry air

ENVIRONMENTAL REQUIREMENTS

Operating temperature

10 to 40 °C (50 to 200°F)

Operating humidity (r.h.)

30% to 85%

Please see the 5800 data sheet (46891/258) for further information.

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

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