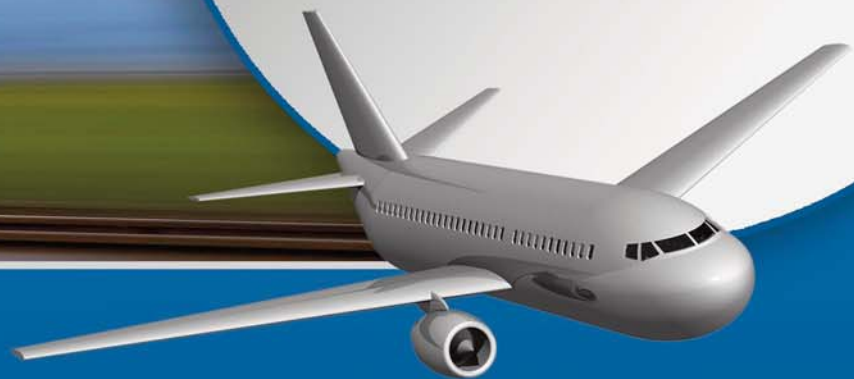


PTE-100

powerful, flexible, transportable

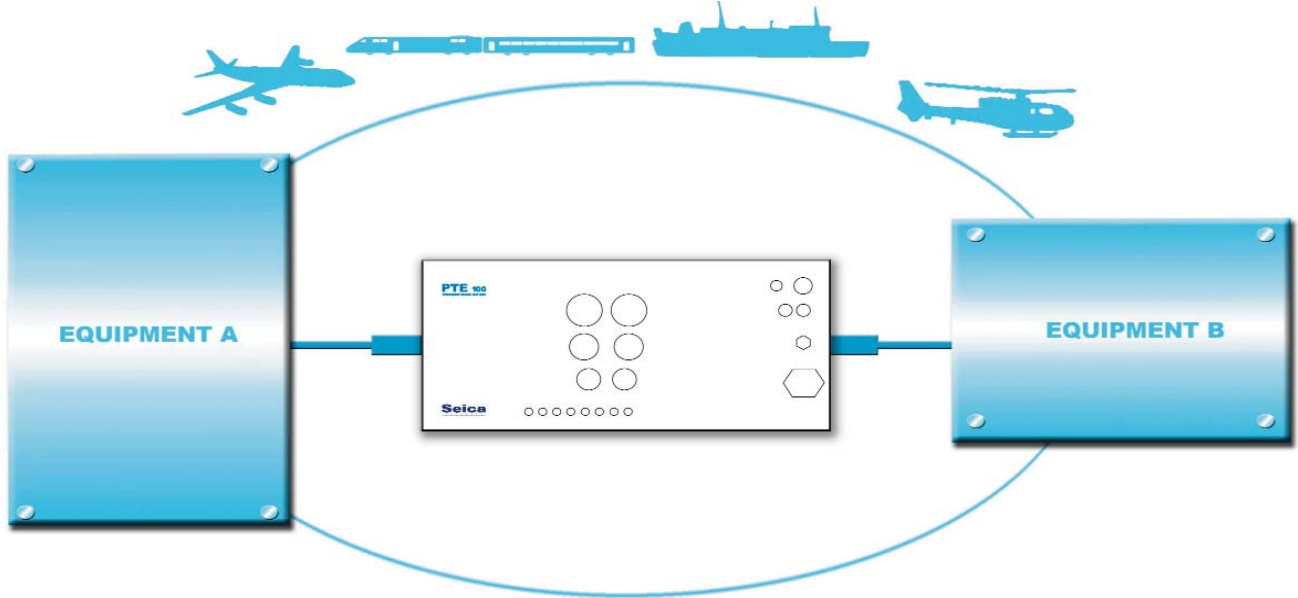
INTELLIGENT BREAK OUT BOX



**Designed to provide checkout,
test and troubleshooting
on critical parts of electronic systems**

INTELLIGENT BREAK OUT BOX

The PTE-100 is a powerful, flexible and transportable Intelligent Break Out Box designed to provide checkout, test and troubleshooting in critical parts of electronic systems.



THE ADVANTAGES OF A BREAK OUT BOX

The PTE-100 gives test personnel access to electrical signals for probing, voltage injection, isolation checks, voltage/current and time/frequency measurements. It offers the ability to analyze HOT and LOADED circuits, verifying missing, corrupted or present valid signals. The PTE-100 offers the ability to make electrical verification activities more efficient, repeatable and safe, by introducing software controlled test sequences to reduce human errors and guide diagnostic resolution. Break Out Boxes are commonly made in-house and are often specific to a particular project.

They are simply designed to multiplex connections between two units and use external instrumentation for signal injection or measurement. The end result is a product with a multitude of tools, which is difficult to maintain, and has limited transportability, providing costly and inefficient operations at the factory or in the field. Targeting both industrial and military applications for avionics, ships and transportation, either at intermediate shop level or at operating level in the field, the PTE-100 places a fully integrated test and diagnostic unit in the hands of the maintenance engineer.



PTE-100 ARCHITECTURE

The unit is housed in a 590 x 285 x 430 mm chassis, weighing approximately 20 kg and easily transportable in a carrying case. The front panel, which can be customized to the specific application, offers two lines of connectors (A and B) where the (normally connected) units under test can be split and routed. At that point **the PTE-100 is inserted between the two units and allows hot connection and disconnection, signal measurements and signal injections**. Line A and Line B of connectors can have each pin connected or disconnected by the user or under program control. Each pin of the A or B line has access to a 4 - line bus (8 lines when connected together) going to the stimulus/measurement unit of the system (the ACL unit). The system is modular and can be configured with up to 256 I/O channels featuring up to 500V/2A carrying voltage/current and 30VDC/200VAC/2A hot switching. Designed with DSP technology, the ACL unit provides on each channel the ability to connect three separate voltage/current generators, floating voltage/current measurement, time/frequency measurements and even four integrated dynamic digital resources. If necessary, **additional external instrumentation can be routed from the front panel to any channel via the 8 lines bus**. The PTE-100 is driven by an external notebook connected via LAN cable to an internal control unit where operating system, software and (optionally installed) programs are stored. In factory environments the unit operates at $25^{\circ} \pm 10^{\circ}\text{C}$, with 20% to 80% humidity. **Optional thermal regulation is available within the unit (PELTIER module) to operate in harsh environments between -30° and $+50^{\circ}\text{C}$ and 20% to 100% humidity**. The unit can be powered directly by the system in the field (22VDC to 30VDC) or at shop level via 115VAC to 230VAC supply.



SAFETY OF OPERATIONS

Flexibility has risks and **the system includes robust, customisable rules-driven procedures to avoid damaging the units under test or the PTE-100 itself**.

Critical test scenarios, including for example hot switching, are verified before execution. The system provides two levels of control. On the first level, the operator is warned about a potential risk of an action and requests confirmation. On the second level, action is negated as it can definitively damage the unit being tested or the PTE-100.

MATCHING YOUR REQUIREMENTS

With the PTE-100 the power is in the box. Matching your application, and making **the universal solution to your requirements for "level 1" test** could be as simple as customising the mechanical front panel with the right I/O connectors.

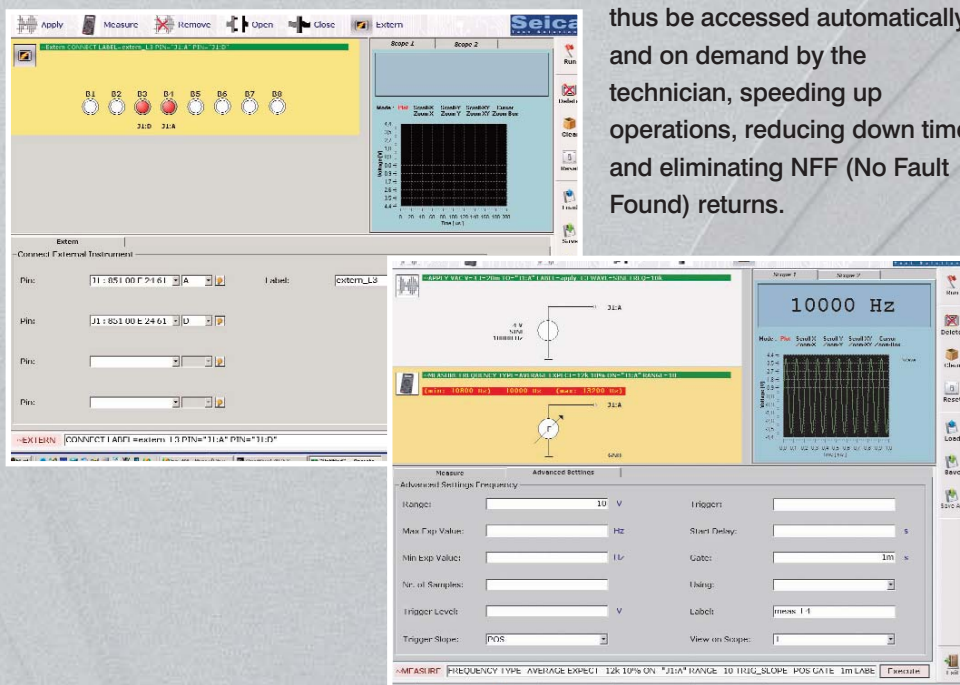
For more complex situations, Seica offers more than twenty years of experience in testing to study your project and to deliver the most cost effective solution.



PTE-100 OPERATIONS

PTE-100 operations are controlled by the Quick Test Seica software environment which allows **two main modes of operation: as an instrument or as an automatic tester**. The PTE-100 operating in instrument mode interfaces to the expert operator via a graphical front panel. This provides an interactive display of the stimulus/measurement and connection scenario, a table for menu-driven programming of each operation and some oscilloscope functions to look separately at stimulus and measurement. To refine trouble-shooting the operator can *open or close connections, apply, measure or remove* signals and, if needed, connect *external* instrumentation. Selecting the appropriate source, setting the range of measurements, signal routing is fully automated by the system leaving the user only to think about the action he wishes to perform. A sequence of operations can be stored in memory thus offering the advantages of the automatic test mode. Test sequences can be saved from operations, prepared graphically or written in the corresponding high level language, to be executed automatically according to the symptoms of malfunctions of the units under test. Test and diagnostic routines can

thus be accessed automatically and on demand by the technician, speeding up operations, reducing down time and eliminating NFF (No Fault Found) returns.



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