Is Railcar and Locomotive PCB Repair One of Your Biggest Headaches?

Read on - this could save your engineers hours of work!

What equipment do you use for transportation PCB repair and test? What happens when you don’t have the manufacturer’s documentation? How do you repair boards quickly so rolling-stock can return to service fast?

You need to find out about the efficient and affordable products that are employed in transportation repair by transit services in the USA, UK, France, Brazil, Turkey, Indonesia, New Zealand, etc. for all aspects of transport electronics, including communications, navigation, monitoring, speed & brake control and simulators, and management systems.

Transport repair centers around the world are equipped with the **System 8 Diagnostic Solution Plus** from UK-based ABI Electronics – which provides optimal fault coverage and maintenance capabilities to a wide range of customers. The **System 8 Diagnostic Solution Plus** is frequently the test instrument of choice in the areas of telecommunications, transportation, and automotive manufacturing. Many land forces, air force, and navy organizations around the globe use **System 8 Diagnostic Solution Plus** to provide on-site test and repair, avoiding time-consuming returns to distant repair sites. UK-based ABI Electronics BoardMaster 8000 PLUS is in use by the French railway system SNCF to test electronics assemblies on freight trains. ABI products are also in use with the underground system *Metro Sao Paulo*, in Brazil. Interestingly, MSP are also using ABI’s RevEng (schematic learning) systems to generate missing schematics in order to support their repair processes on obsolete equipment. Eurodisney in Paris uses ABI’s modules for their ride and park transport maintenance needs. A large Californian transport company is about to use ABI products as their test equipment of choice for new locomotives that will not be provided with the manufacturer’s repair equipment.

**System 8 Diagnostic Solution Plus** is a unique, versatile, easy-to-use PCB test system that uses a selection of CD-drive-size modules to create a PC-driven PCB test station. The **System 8 Diagnostic Solution Plus**, which can be built in a PC case or 19” rack-mounted, is based on a comprehensive set of test instruments for complete testing and fault-finding needs on almost any kind of PCB. Equally at home with analog or digital PCBs, the **System 8 Diagnostic Solution Plus** incorporates a full range of test instruments in one compact box, with a variety of available test methods, to create a cost-effective solution for electronics fault finding across a wide range of industries, including aircraft and transportation maintenance, PCB production houses, manufacturing, etc.

The **System 8 Diagnostic Solution Plus** offers 64 digital and 24 analog test channels to provide a variety of test and measurement techniques to track down the most elusive faults, even on unpowered boards. Comparing results with a known good board with automated-sequence fault-finding procedures, fault diagnosis becomes possible by minimally-trained staff. System 8 Software can be configured to guide users step-by-step through a test procedure, with custom-annotated picture images, instructions, and attached datasheets to give quick Pass/Fail results. This
is much faster and more economical than using traditional oscilloscopes, meters and other bench test methods, and allows it to be used by less qualified technicians.

A simple starter system can be built with one or two test modules, but this can be expanded as future needs arise. A typical **System 8 Diagnostic Solution Plus** configuration can use a combination of any of the following modules:

- **Board Fault Locator**: 64 test channels for multiple test methods for fault diagnosis and functional testing of digital ICs (in-circuit / out-of-circuit), IC connections status, and voltage acquisition, V-I Curve testing of components on unpowered boards.
- **Analog IC Tester**: for in-circuit functional testing of analog ICs and discrete components (no programming or circuit diagrams needed). Fully configurable V-I Tester for detection of faults on unpowered boards.
- **Multiple Instrument Station**: includes 8 high specification test and measurement instruments in one module (Frequency Counter, Digital Storage Oscilloscope, Function Generator, Digital Floating Multimeter, Auxiliary PSU, and Universal I/O).
- **Advanced Test Module**: offers powerful test combinations for flexible, comprehensive fault diagnosis, including **functional, connections, voltage, thermal and V-I signature tests**.
- **Advanced Matrix Scanner**: 64 channels for fast data acquisition to test high pin count devices as well as complete PCBs; sweep signal frequency to observe device under test response over a frequency range.
- **Triple Output Variable Power Supply**: provides required supply voltages to the unit under test.

**Applications include**: PCB testing and troubleshooting, digital/analog IC test, digital/analog V-I test, visual short identification with audible/visual indication of probe distance to short, live board comparison, manufacturing defects analysis, power-on/power-off testing, QA reporting, embedded real-time control, calculation and logging, component and board testing, digital and analog functional tests, automated test sequences, etc.

When it comes to circuit boards, it is more cost effective to repair than replace, and transport systems have begun to realize this trend and have started incorporating ATEs into their support and development infrastructure. Factors to consider when selecting a suitable product include:

- how costly is a complete system?
- how steep is the learning curve?
- is training included?
- is the system expandable for future needs?
- can the system cope with obsolete and state-of-the-art electronics?
- is full documentation supplied?
- is the system usable with little training?
- is the system intuitive or is it hard to reuse intermittently?
- is the system interactive with videos, photos, Office documents, to reduce risk of errors and repair time required?

If you have a working board but no documentation, we have an amazing product called **RevEng Schematic Learning System** that can achieve a point-to-point PCB schematic capture on undocumented or obsolete PCBs to create documentation needed – or even feed the netlist into a PCB layout package and reproduce more of these boards – even obsolete ones!

Known worldwide and made in Europe by ABI Electronics Ltd., a leading embedded test equipment manufacturer, the these PCB test products are available now from ABI’s USA distributor Saelig Company Inc. Fairport, NY.

Want to see System 8 in action? **Call us for an online interactive web demo!** For detailed specifications, free technical assistance, additional information, or a web demonstration, please contact Saelig 1-888-7SAELIG, via email: info@saelig.com, or visit [www.saelig.com](http://www.saelig.com).

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