

## Successfully PCB panel testing

**Today, panelization has become the new standard in production assemblies, because multiple panels save time and money. What about the in-circuit test or functional test of the finished circuit boards? Many electronics manufacturers still hesitate when it comes to panel testing. The advantages are obvious: even miniature PCBs can be tested, the PCB is twist-proof thanks to its dual use, and higher quantities can be tested in a shorter time with less use of resources. So why do the majority separate the panel into single boards before the in-circuit test?**

As convincing as the advantages are, a panel test also poses challenges for the test team. The test system manufacturer Digitaltest has been working on solutions for successful panel testing for many years now.

### **Minimize additional effort in data preparation**

Panel definitions are more time-consuming and sometimes very complex. Here, the CAD/CAM software C-LINK, with its various functions, provides assistance for all common test systems. It is possible, for example, to import a panel file from the CAD data of a single board, to define the PCB numbering or to summarize the panel as a single board with a one-click operation.

Fixture design also presents the developer with greater challenges than with a single panel. C-LINK facilitates automation: The software independently transfers the pin position, selection of the pin properties, pin numbering and documentation to all PCBs in the panel.

### **Software overcomes difficulties in test program development**

Neither the creation nor the debugging require more time with the system software CITE - there is a test program for all single boards. The Digitaltest software also supports mixed panels; only one test program is required for each single board. If a single unit is to be excluded from the test - for example because it is obviously defective or simply does not exist - this can be done automatically via the interface to the upstream process or manually, using a simple graphical selection.

### **Panel test as bottleneck in the production line**

If, for example, the test system is to test an eight-fold panel instead of a single unit, this requires more time within the production line - a jam could occur. Here, a parallel test can reduce the test time to such an extent that the user test fits into the cycle time of the line. With the parallel technology of Digitaltest, the Lambda edition, the single boards are tested simultaneously on the multiple panel and thus the tests are carried out in the fastest way. This works by performing an in-circuit test, or functional test, on two or more independent test heads, thereby reducing the test time by the corresponding factor.

### **Lack of traceability: Where is the fault?**

If the modules are very low-priced, the production costs change little if a faulty multi panel is disposed of, instead of a single PCB. As soon as it pays to repair the defective module, this poses a challenge during the panel test: Where is the fault located? The paperless repair software QMAN for all common test systems finds the fault. The integrated repair station displays the panel number via the fault import of the panel log file. In addition, the exact fault location on the single board and the defective component are displayed in detail. In this way, the repairer knows exactly which component on which single board is faulty within which panel. Anyone who has now included a test area for field returns in the fixture design can easily test the repaired single PCB again.

### **About Digitaltest**

As a leading partner in the electronics industry, Digitaltest develops and produces automated test equipment (ATE) for electronic circuit boards, software for automating production, and quality management systems. Digitaltest is known for innovative solutions for optimizing the entire manufacturing process – as an interface between CAD, the testing process and production itself. We also offer comprehensive service and support, including complete outsourcing of PCB testing at locations worldwide.

Rely on our over 35 years of cutting-edge technology, reliability and long-term value in automated testing systems.

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