

New Generation of Backplane Test Requirements

Over the past year we have seen an increase in backplane testing that goes beyond the three level characterizations used in the industry.

Level I - Bare board

Level II - Connectors installed

Level III - Components installed

The test requirements for Level III typically included resistors and capacitors along with the normal opens and shorts. This caused some difficulty when typical continuity testers were used, but limitations were overcome through good solid application work by the user. However, level III test requirements are now starting to resemble traditional In-Circuit Test. Resistors and capacitors are one thing, but when ASICS, PROMs, and other I/Cs and active components are placed on the backplane, a completely different test methodology is required. The backplane is now resembling a loaded board in both appearance and test requirements. We could actually call this test requirement Level IV.

Level IV - In-Circuit test of components

Verifying the correct I/C, powering up the backplane to measure voltages, reading back the digital information of a PROM, throwing relays, or just making a continuity test with an I/C present, are all examples of Level IV testing. Traditional continuity testers worked well for level I & II, and OK for level III. However, the level IV test is beyond the capabilities of the standard continuity tester. You are now into the In-Circuit testing arena. Typical equipment vendors for these types of testers are GenRad, Teradyne, and HP. Unfortunately, they do not make 10,000 - 20,000 point systems that are often required for backplanes.

Enter the Testronics model 405 MDA test system with full Analog In-Circuit testing and unlimited pin count. The 405 MDA uses a Non-Multiplexed, true 6 wire guarded matrix to provide advanced fault coverage on the most complex backplane assemblies with high point counts.

We have many customers *upgrading their technology* with the 405 MDA. Some are installing complete systems, while others are installing only our electronics and software into their existing fixture systems. Either way, they are now able to eliminate the potential for product damage as well as dramatically increase their overall fault coverage.