Counterfeit Mitigation Testing on FPGAs using Advanced Electrical Testing Algorithms

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Integra has done significant work on Programmable Logic Devices that demonstrates the ability of electrical test, especially very granular testing of AC and DC parameters, to discriminate between the authentic and suspect counterfeit devices. Up until this point, most counterfeit detection has been performed using purely physical analysis techniques (marking permanency, x-ray, etc.). The methodology developed by Integra implemented complex test algorithms, custom configurations and the ability to fully measure every datasheet parameter on every individual pin of the device. Detailed statistical analysis of this test data derived from this testing methodology has the ability to show essentially any statistically variance between the authentic and suspect device groups. The study demonstrates that this type of electrical testing can be successfully be used to discriminate between authentic and counterfeit devices when traditional physical test methods are not adequate.