A Highly Time Sensitive XOR Gate for Probe Attempt Detectors

Probe attempt detectors are sensors designed to protect buses of secure chips against the physical contact of probes. The operation principle of these detectors relies on the comparison of the delay propagation times between lines. CMOS XOR gates are very well suited for this comparison since they are small, fast, and compatible with the technology used in secure chips. However, the lack of activity while comparing matched lines and the limited reaction time pose a risk for tampering and decrease the sensitivity of the sensor, respectively. In this brief, a modification of a CMOS XOR gate is presented, which solves both the aforementioned problems.