Defense contractors and government agencies must address increasingly secure and complex specifications to produce solutions with Information Assurance (IA) and Anti-Tamper (AT) support. In commercial markets, solution providers put high priority on safeguarding their business-critical on-device intellectual property.

Xilinx® Security Monitor (SecMon) IP is an agency-evaluated and exportable solution that meets the security needs of both defense-related and commercial projects. The fully autonomous soft core continuously monitors for signs of post-configuration tampering and can carry out penalties that render designs inaccessible. The mature, proven technology is now in its 4th generation development.

SECURITY MONITOR IP CORE: UNPRECEDENTED EASE OF INTEGRATION FOR INDUSTRY-LEADING PROGRAMMABLE DEVICE SECURITY
Post-Configuration Security

The SecMon IP core operates fully independently within an FPGA design to augment existing silicon security features with post-configuration Anti-Tamper protection. The power draw (approximately 60mW, worst case) and resource impact (approximately 1% to 8% on the largest to smallest supported FPGA) are minimal.

Autonomous Monitoring
- Configuration memory integrity
- JTAG activity
- Temperature and voltage
- User clocks
- Partial reconfiguration
- Self-monitoring

System Extensibility
- Penalties can be asserted due to off-chip events at the system level
- Programmable alarm responses, with delays for accommodating related “housecleaning” events
- Custom tamper conditions (monitor system loops, voltage, etc. via analog input pins)

Configurable Penalties
- Zeroization of FPGA configuration memory
- Zeroization of AES bitstream key
- Global 3-State
- Global Set/Reset

Revolutionary Delivery Innovations

SecMon IP is delivered as a fully placed-and-routed design file, which allows developers to import Anti-Tamper capabilities into designs with much shorter customer verification and certification times. Xilinx also offers an industry-first automated bitstream comparison capability for customers that require maximum verification of the IP. The Xilinx Qualified Bitstream Flow speeds time to market, and potentially saves customers thousands of hours of engineering design and verification effort while upholding strict quality standards.

Take the NEXT STEP

For more information about Xilinx SecMon IP supported devices and availability, please contact a local Xilinx office.