GateMate FPGA Technology

Are you experiencing challenges due to the End of Life (EOL) of your legacy FPGAs?

designed and manufactured in Germany

Overview

Don't get stuck with your equipment using EOL FPGAs. Cologne Chip offers a secure and powerful path forward with GateMate FPGAs. Here's why GateMate FPGAs are the Perfect EOL Solution:

- **Future-proof Design:** Manufactured on a stable 28nm process from Globalfoundries with a long-term roadmap, GateMate FPGAs guarantee availability and support for 15 years to come.
- **Unmatched Security:** Our PUF-based bitstream encryption safeguards your intellectual property, unlike legacy solutions.
- **Seamless Transition:** Our expert team guides you through every step, from assessing your existing FPGA infrastructure to seamless integration of GateMate solutions. Minimize downtime and maximize efficiency.

	GateMate A1	GateMate A2	GateMate A4	Spartan II	Spartan 3
Process	GF 28nm	GF 28nm	GF 28nm	180nm	90nm
LUT Type	8-input LUT tree	8-input LUT tree	8-input LUT tree	LUT4	LUT4
LE	20k	40k	80k	432 - 5.3k	1.7k - 74k
FlipFlops	40k	80k	160k	6k - 75k	1.5k - 66k
Block RAM	1.3Mbit	2.6Mbit	5.2Mbit	16kbit - 56kbit	75kbit - 1.8Mbit
PLLs/DLLs	4	8	16	4	2 - 8
SerDes	1x 5 Gbit/s	2x 5 Gbit/s	4x 5 Gbit/s	No	No
IPs	No	No	No	No	Yes
Core Voltage	0.9V/1.0V/1.1V	0.9V/1.0V/1.1V	0.9V/1.0V/1.1V	2.5V	1.2V
User-IOs single ended/lvds	162/81	162/81	154/77	86 - 284	124 - 633/56 - 300
Package	324BGA	324BGA	324BGA	VQ100, TQ144, CS144, PQ208, FG256, FG456	VQFP, TQ, PQ, FT, FG, FC

GateMate™ FPGA and recently AMD/Xilinx EOL devices (2024)

Beyond EOL Benefits

- **Performance Boost:** Experience a significant performance leap of up to 50% compared to previous generation FPGAs. GateMate empowers you to achieve more with your designs.
- **Open-Source Advantage:** Our open-source design flow simplifies development and streamlines the transition process. Leverage the power of a collaborative ecosystem.
- **Cost-Effectiveness:** Reduced time-to-market and the lowest total cost of ownership translate to real savings for your business. Invest in a future-proof solution without breaking the bank.
- **Long-Term Investment:** Count on our decades-long track record for reliable hardware solutions, supported by a future-proof product roadmap, ensuring sustained availability and compatibility throughout your product's lifecycle.

Don't Let EOL Stifle Your Innovation. Revitalize Your Designs with GateMate!
Contact us today and breathe new life into your projects.

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Cologne Chip
GateMate FPGA

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GateMate uniqueID™: Design copy protection

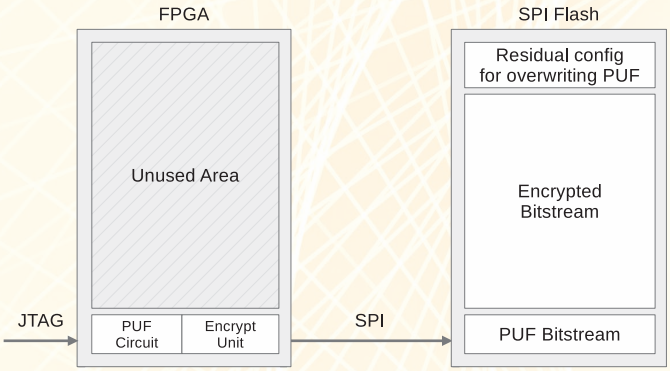
designed and manufactured in Germany

Unbreakable Identity: The Power of PUFs

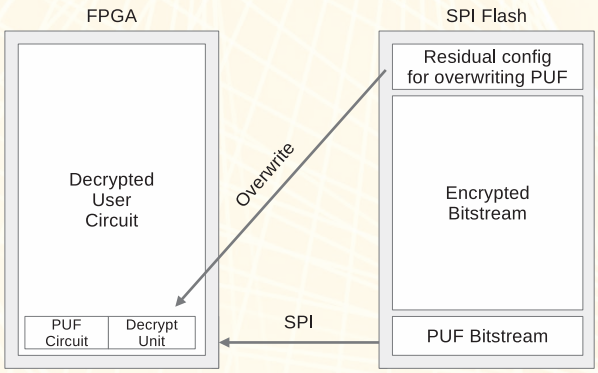
Microscopic, chip-specific variations that arise naturally during manufacturing can be used as a unique fingerprint, generating an unclonable digital identity for each FPGA. This fingerprint is used as a PUF (Physically unclonable Function) harnessed to create robust cryptographic keys for secure operations like bitstream encryption and decryption.

Cologne Chip's GateMate Advantage: Rigorous Testing, Unparalleled Security

Cologne Chip has conducted extensive testing of PUF behavior on GateMate FPGAs under various conditions which ensures stable and unique key generation utilizing built-in SRAM cells. The encryption and decryption process offers flexibility, allowing users to select from a variety of industry-standard encryption algorithms (e.g. AES) for enhanced security.



Streamlined encryption workflow generates a SPI-Flash image using fingerprint information of the FPGA used



Seamless decryption process reads SPI-Flash and internal FPGA fingerprint to decrypt configuration information and configs user circuitry in the FPGA

Secure Your Designs with GateMate FPGA. Our GateMate FPGA solution utilizes PUF technology for robust bitstream encryption and anti-cloning, providing unparalleled security and IP protection.

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