



ACCELERATING DEVELOPMENT OF  
ADVANCED MISSILES AND MUNITIONS

## XILINX MISSILES AND MUNITIONS SOLUTIONS: DRIVING INTEGRATION WHILE OPTIMIZING SWAP-C WITH HIGH RELIABILITY

### ➤ Xilinx Solution Highlights

- Commercial-off-the-shelf (COTS) devices, for fast low-cost development, and pin-compatible migration to defense-grade devices
- Full temperature range tested, ruggedized, pure tin-free, defense-grade devices
- Industry-leading size, weight, power, and cost (SWaP-C) optimization, and highest-capacity logic and processing power
- Unique anti-counterfeiting features with multiple levels of security
- Government-approved Information Assurance (IA) and Anti-Tamper (AT) features
- Commitment to long-term product life cycle

Defense contractors and agencies need the power of programmability to develop state-of-the-art capabilities while leveraging design resources across platforms in the global missiles and munitions (M&M) market. For more than two decades, Xilinx has helped M&M project teams meet—and exceed—mission requirements with the flexibility and integration capabilities of FPGAs.

The broad Xilinx portfolio of commercial and defense-grade devices makes it easy to match the right product to each project. Clear migration paths let developers get started today with the latest 7 series devices including the Xilinx Zynq™-7000 Extensible Processing Platform (EPP). With industry-leading levels of integration, Xilinx programmable devices enable the rapid delivery of complex capabilities with reduced risk.

### THE XILINX DIFFERENCE IN MISSILES AND MUNITIONS

REQUIREMENT	XILINX DEVICE FEATURE HIGHLIGHTS
Differing Design Sizes	▪ Package compatibility in logic density of up to 2M logic cells/FPGAs
Multi-Channel A/D Interfacing	▪ MGTs used for JESD204A standard interfacing ▪ ChipSync for serial LVDA convertors ▪ Internal agile mixed signal (AMS), with 1 Msps 12-bit internal ADCs (7 series)
External Memory Interfaces	▪ RDRAM/DDR2/DDR3 ▪ QDRII/QDRII+ SRAM
Low-Power Requirements	▪ Power efficient 7 series devices (can be <5W per device)
Extended Temperature Ranges	▪ Military temperature range: -55°C to 125°C ▪ Industrial temperature range: -40°C to 100°C ▪ Q temperature range: -40°C to 125°C
DSP Parallel Filtering/Processing	▪ DSP throughput of up to 5112 GMACS (symmetric FIR)
Security	▪ Configuration bitstream encryption AES ▪ Government approved IA ▪ DoD 5200 series Anti-Tamper compliant
CPU Interface	▪ Supports PCIe® Gen1, Gen2, Gen3 protocols
Miniaturization	▪ Bare die available for most products

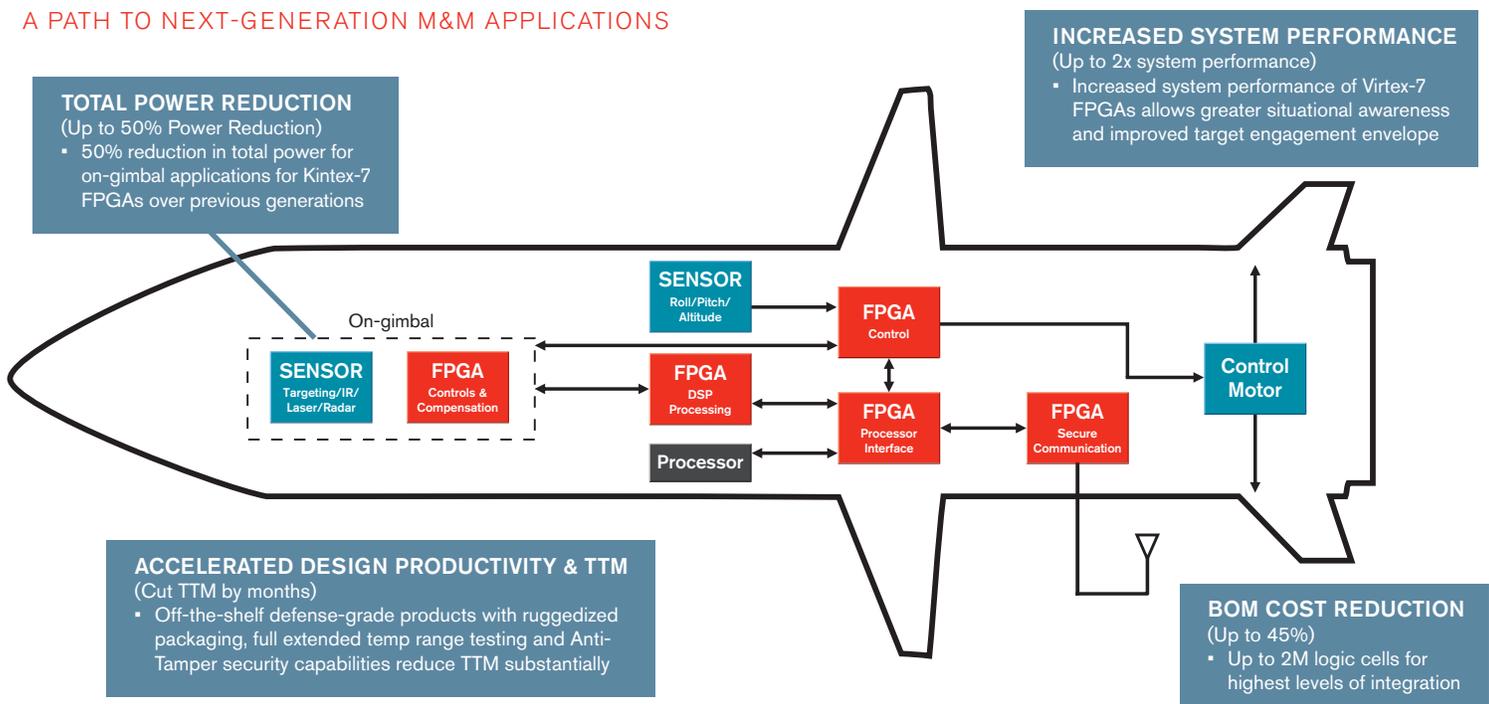
## High-Performance, Ultra-Low-Power Signal Processing

Xilinx defense-grade devices meet the connectivity and power requirements for most M&M applications including guidance, control, targeting, and communications applications. Spartan-6Q defense-grade FPGAs deliver up to eight 3.125 Gbps GTP transceivers for low-cost serial connectivity, and the Virtex-6Q defense-grade family maximizes bandwidth with 12 to 36 6.6 Gbps GTX transceivers, built-in PCI Express and tri-mode Ethernet MAC blocks. The high-performance DSPs and 2X system performance (compared to previous generations) of the 7 series devices allow greater situational awareness and an improved target engagement envelope. With 50% power reduction, the 7 series also significantly benefits on-gimbal applications and other power-sensitive M&M insertions.

## Defense-Grade with Full-Range Temperature Testing

For demanding applications, designers have a choice of Xilinx defense-grade devices with ruggedized packaging for protection against caustic cleaning processes and 'tin-whiskering'. These devices are full-range temperature tested and qualified with anti-counterfeiting features.

### A PATH TO NEXT-GENERATION M&M APPLICATIONS



Xilinx FPGAs provide reprogrammability and high performance for motor control, sensor inputs, signal processing, gimbal functions, and more. The latest Xilinx device families, with a 4X improvement in bandwidth, provide advanced signal processing power for the most sophisticated systems.

## Take the NEXT STEP

For more information about Xilinx defense-grade solutions, please visit: [www.xilinx.com/applications/aerospace-and-defense](http://www.xilinx.com/applications/aerospace-and-defense)

### Corporate Headquarters

Xilinx, Inc.  
2100 Logic Drive  
San Jose, CA 95124  
USA  
Tel: 408-559-7778  
[www.xilinx.com](http://www.xilinx.com)

### Europe

Xilinx Europe  
One Logic Drive  
Citywest Business Campus  
Saggart, County Dublin  
Ireland  
Tel: +353-1-464-0311  
[www.xilinx.com](http://www.xilinx.com)

### Japan

Xilinx K.K.  
Art Village Osaki Central Tower 4F  
1-2-2 Osaki, Shinagawa-ku  
Tokyo 141-0032 Japan  
Tel: +81-3-6744-7777  
[japan.xilinx.com](http://japan.xilinx.com)

### Asia Pacific Pte. Ltd.

Xilinx, Asia Pacific  
5 Changi Business Park  
Singapore 486040  
Tel: +65-6407-3000  
[www.xilinx.com](http://www.xilinx.com)



© Copyright 2012 Xilinx, Inc. XILINX, the Xilinx logo, Virtex, Spartan, ISE and other designated brands included herein are trademarks of Xilinx in the United States and other countries. All other trademarks are the property of their respective owners.

Printed in the U.S.A. PN 2519