



ALL PROGRAMMABLE  
DEFENSE-GRADE DEVICES WITH  
HIGH PERFORMANCE, LOW POWER,  
AND 4TH GENERATION SECURITY

## DEFENSE-GRADE 7 SERIES FPGAS: RUGGEDIZED ALL PROGRAMMABLE DEVICES

### ➤ Xilinx Solution Highlights

- Industry's first 28nm defense-grade portfolio, with high performance, low power and maximum integration
- Off-the-shelf availability, and pin compatibility with commercial-grade devices
- 4th-generation Information Assurance and Anti-Tamper technology with fail-safe heritage
- Ruggedized, fully-leaded (Pb) packaging and anti-counterfeiting features
- Full range extended temperature tested
- Long-term availability

### ➤ Xilinx 7 Series Defense-Grade FPGAs

- Artix-7Q
- Kintex-7Q
- Virtex-7Q

Increasingly complex defense systems must meet stringent, secure design requirements without exceeding budgets, and developers must design systems with life-spans of many years or even decades. Instead of restricting designers' choices, Xilinx defense-grade 7 series FPGAs provide a uniquely broad portfolio of ruggedized, off-the-shelf devices that reduce risk and deployment time with high levels of integration, high performance and capacity, and built-in fail-safe Information Assurance (IA) and Anti-Tamper (AT) technology. Built on the industry's first 28nm HPL process technology, 7 series FPGAs enable design consolidation into fewer chips or a single device.

Besides reducing BOM cost, the Xilinx defense-grade portfolio saves time. All Programmable FPGAs help project teams stay on schedule, with programmable logic and an IP portfolio that minimizes design work and programmable systems integration that eliminates cycles. The flexible platforms and on-chip logic are especially critical for addressing security mandates and other integration-sensitive requirements that present moving targets for system designers.

Pin-compatible with their commercial counterparts, the Artix™-7Q, Kintex™-7Q, and Virtex®-7Q families let defense designers get started today and easily migrate to the best-suited defense-grade device when extended temperature range or harsh environmental operation is required.

### Meeting Military Standards: Reliability & Security

A long history of partnering with military agencies and the defense industry has resulted in Xilinx pioneering numerous advancements for defense-grade reliability and security. Key defense-grade features include:

- Full range extended temperature testing
- Mask set control
- Fully-leaded (Pb) content
- Ruggedized packaging
- Long-term availability
- Anti-counterfeiting features
- DO-254 and DO-178 certifiable

Industry-leading security capabilities tailor Xilinx 7 series defense-grade devices for the rigorous demands of the most sensitive defense-related designs. Having evolved over four generations of devices, Xilinx's fail-safe heritage in IA methodology and AT technology are backed by support from a dedicated team of secure application experts.

## Xilinx Alliance Program and Industry Leadership

Developers can take advantage of decades of knowledge acquired by Xilinx defense teams, and integrated innovations such as Security Monitor and Single-chip cryptography, which have influenced numerous government security guidelines. The Xilinx Alliance Program expands the All Programmable ecosystem, and offers the assurance of best quality of services and IP from experts with proven FPGA design experience in the defense industry. Xilinx participation and leadership in industry workshops and consortia illustrate the ongoing commitment to defense, and promote the continued advancement of defense-appropriate all-programmable solutions.

## 7 SERIES DEFENSE-GRADE OFF-THE-SHELF DEVICES

		Artix-7Q FPGAs					
		Part Number	XQ7A100T	XQ7A200T			
Speed Grades	Industrial Temp (–40° to +100°C)		-1, -2	-1, -2			
	Military Temp (–55° to +125°C)		-1	-1			
	Package	Dimensions (mm)	Available User I/O: 3.3V SelectIO™ Pins (GTP Transceivers)				
	CS324	15 x 15	210 (0)				
	FG484	23 x 23	285 (4)				
	RB484	23 x 23			285 (4)		
	RB676	27 x 27			400 (8)		
	RS484	19 x 19			285 (4)		
XMP089 (v1.0)							
		Kintex-7Q FPGAs					
		Part Number	XQ7K325T	XQ7K410T			
Speed Grades	Extended Temp (0° to +100°C)		-2L	-2L			
	Industrial Temp (–40° to +100°C)		-1, -2	-1, -2			
	Military Temp (–55° to +125°C)		-1	-1			
	Package	Dimensions (mm)	Available User I/O: 3.3V SelectIO™ Pins, 1.8V SelectIO Pins (GTX Transceivers)				
	RF676	27 x 27	250, 150 (8)		250, 150 (8)		
	RF900	31 x 31	350, 150 (16)		350, 150 (16)		
XMP090 (v1.0)							
		Virtex-7Q FPGAs					
		Part Number	XQ7V585T	XQ7VX330T	XQ7VX485T	XQ7VX690T	XQ7VX980T
Speed Grades	Extended Temp (0° to +100°C)		-2L	-2L	-2L	–	-2L
	Industrial Temp (–40° to +100°C)		-1, -2	-1, -2	-1, -2	-1, -2	-1
	Military Temp (–55° to +125°C)		-1	-1	-1	–	–
	Package	Dimensions (mm)	Available User I/O: 3.3V SelectIO™ Pins, 1.8V SelectIO Pins (GTX, GTH Transceivers)				
	RF1157	35 x 35	0, 600 (20, 0)	0, 600 (0, 20)		0, 600 (0, 20)	
	RF1761	42.5 x 42.5	100, 750 (36, 0)	50, 650 (0,28)	0, 700 (28,0)	0, 850 (0,36)	
	RF1930	45 x 45			0, 700 (24,0)	0, 1000(0,24)	0,900 (0,24)
XMP091 (v1.0)							

## Take the NEXT STEP

For more information about defense-grade 7 series FPGAs and other All Programmable solutions from Xilinx, please visit [www.xilinx.com/aerospace](http://www.xilinx.com/aerospace).

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