

Ordering Information

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Altera Devices

Figure 1 explains the ordering codes for Altera devices. Devices that have multiple pin counts for the same package include the pin count in their ordering codes. Some codes use relative numbers (e.g., -1, -2) to designate speed grades; others use actual propagation delay times (e.g., -15, -20). For information on specific package, speed grade, and operating temperature combinations, refer to the device family data sheets in this data book, or contact Altera Customer Marketing at (408) 544-7104.

Figure 1. Device Package Ordering Codes EPM 7032 L C 44 -7 xxxx Family Signature: **Option Designator:** EPF: FLEX 10K. FLEX 8000. or Indicates specific device options or shipment method. FLEX 6000 device C: MAX 9000 devices shipped in QFP carriers EPM: MAX 9000, MAX 7000, MAX 7000A, DX: FLEX 10K devices with ClockLock feature or MAX 5000 device P: PCI compliant devices EP: Classic device F: Fixed programming algorithm EPC: Configuration EPROM device Speed Grade: Device Type: For speed/product relationships (e.g., -2, -10P, -15T, EPF: 10K10, 10K10A, 10K20, 10K30, 10K30A, or blank), refer to the device data sheets in this data 10K30B, 10K40, 10K50, 10K50B, 10K50V, book. 10K70, 10K100, 10K100A, 10K100B, Pin Count: 10K130V, 10K130B, 10K250A, 10K250B, Number of pins for devices with different pin-count 8282A, 8282AV, 8452A, 8636A, 8820A, options (FLEX 10K, FLEX 8000, FLEX 6000, 81188A, 81500A, 6016, 6016A, 6024A MAX 9000, MAX 7000, MAX 7000A, and EPM: 9320, 9320A, 9400, 9480, 9480A, 9560, Configuration EPROM devices only). 9560A, 7032, 7032V, 7032A, 7064, 7064S, **Operating Temperature:** 7064A. 7096. 7128E. 7128S. 7128SV. C: Commercial temperature (See the device family 7128A, 7160E, 7160S, 7192E, 7192S, data sheets for operating conditions.) 7256E, 7256S, 7256A, 7384A, 7512A, I: Industrial temperature (See the device family 71024A, 5032, 5064, 5128, 5130, 5192 data sheets for operating conditions.) EP: 6001, 610, 6101, 9001, 910, 9101, 18001, 1810 Examples: EPC: 1064, 1064V, 1213, 1441, 1 EPF81188A in a ceramic EPF81188AGC232-2 Package Type: 232-pin PGA package, commercial temperature D: Ceramic dual in-line package (CerDIP) range, -2 speed grade P٠ Plastic dual in-line package (PDIP) S: Plastic small-outline integrated circuit (SOIC) J: Ceramic J-lead chip carrier (JLCC) EPM9560ARC240-12C EPM9560A in a power quad 1. Plastic J-lead chip carrier (PLCC) flat pack package, T: Thin plastic quad flat pack (TQFP) commercial temperature Q: Plastic guad flat pack (PQFP), Note (1) range, -12 speed grade, R: Power guad flat pack (RQFP), Note (1) shipped in a QFP carrier W: Ceramic guad flat pack (CQFP), Note (1) G٠ Ceramic pin-grid array (PGA)

B: Ball-grid array (BGA)

Note:

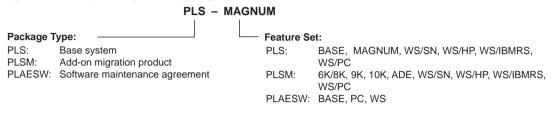
(1) MAX 9000 and MAX 7000 devices in QFP packages with 100 or more pins can be ordered in QFP carriers. For more information on QFP carriers, see the *QFP Carrier & Development Socket Data Sheet* in this data book.

Altera Corporation

Development Tools

Figure 2 explains the ordering codes for Altera software development systems. For information on specific packages, refer to the *MAX+PLUS II Programmable Logic Development System Data Sheet* in this data book, or contact Altera Customer Marketing at (408) 544-7104.

Figure 2. Development System Ordering Codes



MegaCore Offerings

Table 1 outlines the MegaCore[™] functions available from Altera.

Product Name	Description	Target Device	Ordering Code
RGB2YCrCb and	Color space converters	FLEX 10K	PLSM-CSC
YCrCb2RGB		FLEX 8000	
		FLEX 6000	
crc	Cyclic redundancy code generator and checker	FLEX 10K	PLSM-CRC
		FLEX 8000	
		FLEX 6000	
fft	Fully parameterizable fast Fourier transform (FFT)	FLEX 10K	PLSM-FFT
	function		
pci_a	Peripheral component interconnect (PCI) with direct	EPF10K20	PLSM-PCI/A
	memory access (DMA) controller	EPF10K30	
Microperipheral	Library of universal asynchronous receiver/transmitter	FLEX 10K	PLSM-MICROLIB
MegaCore Library	(UART), DMA controller, interrupt controller, and	FLEX 8000	
	parallel port controller functions. Includes the a8237,	FLEX 6000	
	a8251, a8255, a6402, a16450, a6850, and a8259	MAX 9000	
	functions.	MAX 7000	
a8237	Programmable DMA controller	FLEX 10K	PLSM-8237
		FLEX 8000	
		FLEX 6000	
a8251	Programmable communications interface	FLEX 10K	PLSM-8251
		FLEX 8000	
		FLEX 6000	

Table 1. Altera MegaCore Functions (Part 2 of 2)				
Product Name	Description	Target Device	Ordering Code	
a8255	Programmable peripheral interface adapter	FLEX 10K	PLSM-8255	
		FLEX 8000		
		FLEX 6000		
		MAX 9000		
		MAX 7000		
a6402	Universal asynchronous receiver/transmitter	FLEX 10K	PLSM-6402	
		FLEX 8000		
		FLEX 6000		
		MAX 9000		
		MAX 7000		
a16450	Universal asynchronous receiver/transmitter	FLEX 10K	PLSM-16450	
		FLEX 8000		
		FLEX 6000		
		MAX 9000		
		MAX 7000		
a6850	Asynchronous communications interface adapter	FLEX 10K	PLSM-6850	
		FLEX 8000		
		FLEX 6000		
		MAX 9000		
		MAX 7000		
a8259	Programmable interrupt controller	FLEX 10K	PLSM-8259	
		FLEX 8000		
		FLEX 6000		
		MAX 9000		
		MAX 7000		



For more information on these MegaCore functions, go to one of the following documents:

- Introduction to Megafunctions
- RGB2YCrCb & YCrCb2RGB Color Space Converters Data Sheet
- crc MegaCore Function Parameterized CRC Generator/Checker Data Sheet
- fft Fast Fourier Transform Data Sheet
- PCI Master/Target MegaCore Function with DMA Data Sheet
- Microperipheral MegaCore Function Data Book

Programming Hardware

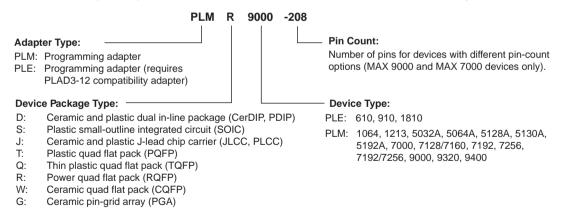
This section provides the ordering codes for Altera programming hardware and adapters. Table 2 lists the ordering codes for the programming cards, cables, and programming units.

Table 2. Programming Hardware					
Product	Ordering Code	Description			
Altera Stand-Alone Programmer	PL-ASAP2	Includes programming software, a Logic Programmer card, and the MPU.			
LP6 Logic Programmer Card	PLP6	Interfaces with PCs.			
Master Programming Unit (MPU)	PL-MPU	With the appropriate adapters, programs all Altera devices.			
Compatibility Adapter	PLAD3-12	Interfaces PLE-prefix adapters to the MPU. Together with the MPU, directly programs 20-pin Classic devices.			
BitBlaster [™] Serial Download Cable	PL-BITBLASTER	Interfaces with PCs and UNIX workstations. RS-232 serial-port programming cable for MAX 9000, MAX 7000S, and all FLEX devices.			
ByteBlaster [™] Parallel Port Download Cable	PL-BYTEBLASTER	Interfaces with PCs. PC parallel-port programming cable for MAX 9000, MAX 7000S, and all FLEX devices.			

Figure 3 explains the ordering codes for Altera programming adapters. Two types of adapters plug directly into the MPU: PLMprefix and PLAD3-12 adapters. Multiple pin-compatible devices use the same device type code shown in Figure 3.

Figure 3. Programming Adapter Ordering Codes

See the Altera Programming Hardware Data Sheet for specific information on each device and package combination.



QFP Carrier & Development Sockets

Table 3 shows the ordering codes for QFP device sockets. All MAX[®] 9000 QFP devices may be ordered in QFP carriers. All MAX 7000 and MAX 5000 QFP devices with 100 or more pins are shipped with QFP carriers. QFP carriers and development sockets are rated from -65° C to 155° C and are qualified to handle commercial (C) and industrial (I) operating temperatures.

Table 3. QFP Device Sockets			
Product	Ordering Code		
100-pin development socket (includes removal tool)	PL-SKT/Q100		
160-pin development socket (includes removal tool)	PL-SKT/Q160		
208-pin development socket (includes removal tool)	PL-SKT/Q208		
240-pin development socket (includes removal tool)	PL-SKT/Q240		
304-pin development socket (includes removal tool)	PL-SKT/Q304		

Table 4 shows the ordering codes for QFP carrier extraction tools.

Table 4. QFP Carrier Extraction Tools			
Product	Ordering Code		
100-pin QFP carrier extraction tool	PL-EXT1		
160- and 208-pin QFP carrier extraction tool	PL-EXT2		
240-pin QFP carrier extraction tool	PL-EXT4		
304-pin QFP carrier extraction tool	PL-EXT5		

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