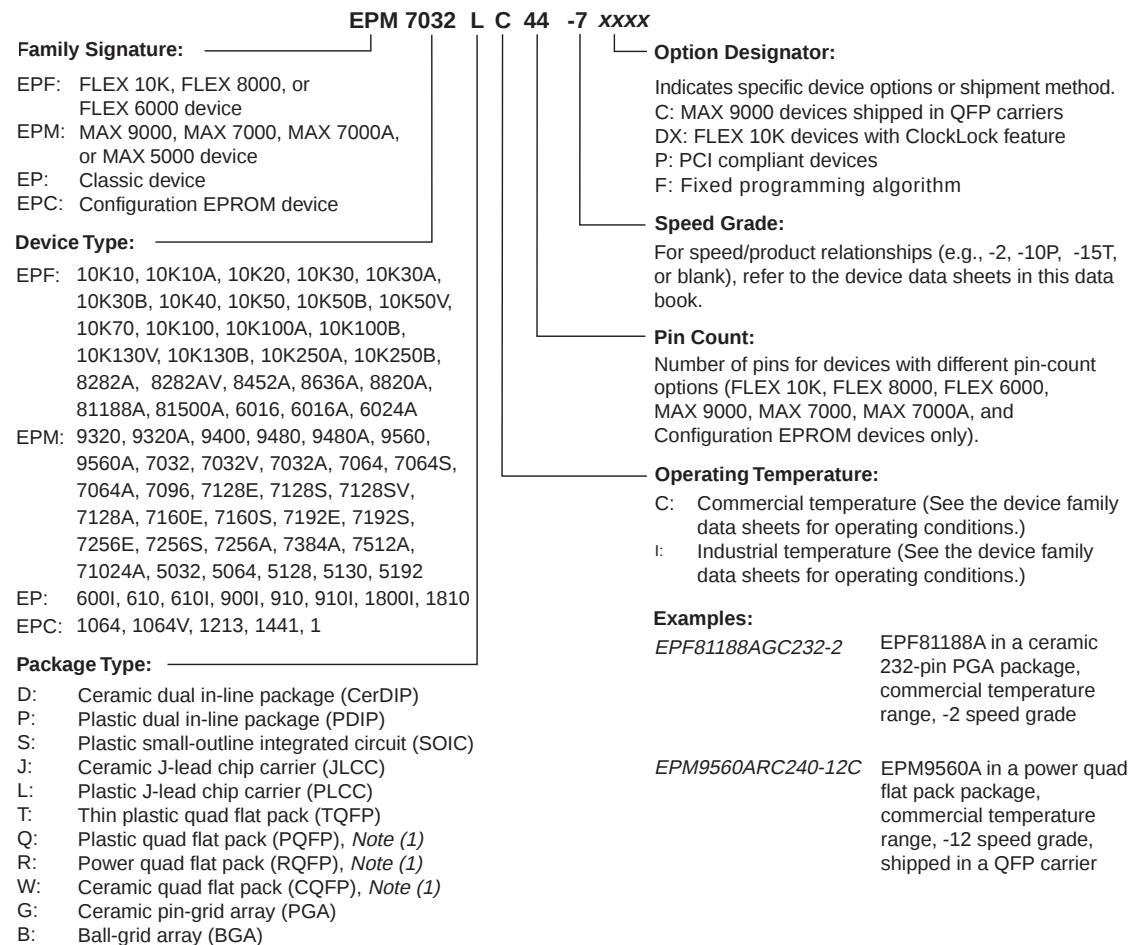


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Altera Devices

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



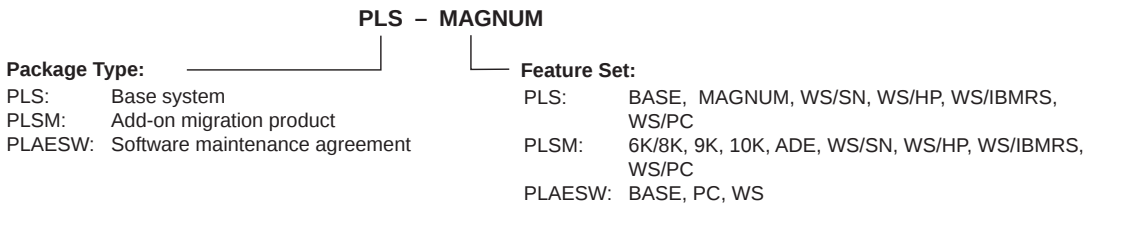
Note:

- (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.

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.

Table 1. Altera MegaCore Functions (Part 1 of 2)			
Product Name	Description	Target Device	Ordering Code
RGB2YCrCb and YCrCb2RGB	Color space converters	FLEX 10K FLEX 8000 FLEX 6000	PLSM-CSC
crc	Cyclic redundancy code generator and checker	FLEX 10K FLEX 8000 FLEX 6000	PLSM-CRC
fft	Fully parameterizable fast Fourier transform (FFT) function	FLEX 10K	PLSM-FFT
pci_a	Peripheral component interconnect (PCI) with direct memory access (DMA) controller	EPF10K20 EPF10K30	PLSM-PCI/A
Microperipheral MegaCore Library	Library of universal asynchronous receiver/transmitter (UART), DMA controller, interrupt controller, and parallel port controller functions. Includes the a8237, a8251, a8255, a6402, a16450, a6850, and a8259 functions.	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-MICROLIB
a8237	Programmable DMA controller	FLEX 10K FLEX 8000 FLEX 6000	PLSM-8237
a8251	Programmable communications interface	FLEX 10K FLEX 8000 FLEX 6000	PLSM-8251

Table 1. Altera MegaCore Functions (Part 2 of 2)

Product Name	Description	Target Device	Ordering Code
a8255	Programmable peripheral interface adapter	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-8255
a6402	Universal asynchronous receiver/transmitter	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-6402
a16450	Universal asynchronous receiver/transmitter	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-16450
a6850	Asynchronous communications interface adapter	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-6850
a8259	Programmable interrupt controller	FLEX 10K FLEX 8000 FLEX 6000 MAX 9000 MAX 7000	PLSM-8259



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: PLM-prefix 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.

PLM R 9000 -208

Adapter Type: _____

PLM: Programming adapter
PLE: Programming adapter (requires PLAD3-12 compatibility adapter)

Pin Count: _____

Number of pins for devices with different pin-count options (MAX 9000 and MAX 7000 devices only).

Device Package Type: _____

D: Ceramic and plastic dual in-line package (CerDIP, PDIP)
S: Plastic small-outline integrated circuit (SOIC)
J: Ceramic and plastic J-lead chip carrier (JLCC, PLCC)
T: Plastic quad flat pack (PQFP)
Q: Thin plastic quad flat pack (TQFP)
R: Power quad flat pack (RQFP)
W: Ceramic quad flat pack (CQFP)
G: Ceramic pin-grid array (PGA)

Device Type: _____

PLE: 610, 910, 1810
PLM: 1064, 1213, 5032A, 5064A, 5128A, 5130A, 5192A, 7000, 7128/7160, 7192, 7256, 7192/7256, 9000, 9320, 9400

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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