



Lowest cost, lowest power, integrated transceivers

Cyclone IV FPGAs

Cyclone IV FPGAs are ideal in:

- Broadcast
- Communications
- Consumer
- Industrial
- Wireless
- Wireline

Altera's Cyclone® IV FPGA family provides an ideal platform for your high-volume, cost-sensitive applications, helping you meet your increasing system bandwidth requirements while lowering system costs. Cyclone IV FPGAs extend the Cyclone FPGA series leadership in providing the market's lowest cost, lowest power FPGAs, now with a transceiver variant.

Built on an optimized low-power process and utilizing more on-chip hard intellectual property (IP) blocks, Cyclone IV FPGAs consume less total power while lowering system cost compared to the preceding Cyclone III FPGA family. The family has two variants:

- Cyclone IV GX FPGAs with integrated 3.125-Gbps transceiver I/Os for high-bandwidth applications
- Cyclone IV E FPGAs for a wide spectrum of general logic, control plane, and other embedded control applications

Integration lowers cost and power

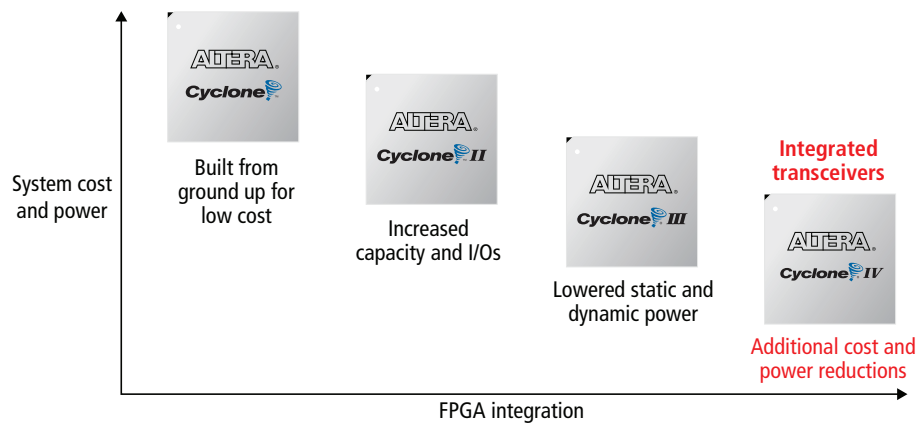


Table 1. Cyclone IV FPGA features

Device	Logic elements	Total memory (Kbits)	18x18 multipliers	Transceiver I/Os	PCI Express hard IP block	User I/Os
Cyclone IV E FPGAs (1.0V)	6,272-114,480	270-3,888	15-266	N/A	N/A	94-535
Cyclone IV GX FPGAs (1.2V)	14,400-149,760	50-6,480	0-360	2-8	1	72-475

For more information on Cyclone IV FPGA features, see the Altera Product Catalog at www.altera.com/literature/sg/product-catalog.pdf

Table 2. Transceiver protocols supported by Cyclone IV GX FPGA

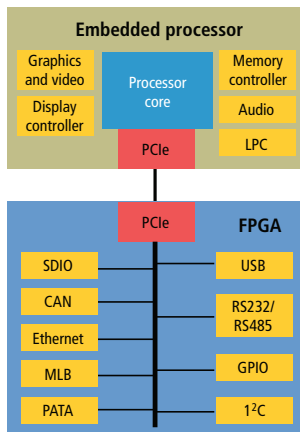
Protocol	Data rate (Gbps)
Basic (proprietary)	2.5 – 3.125
CPRI	3.072
DisplayPort	2.7
Gigabit Ethernet	1.25
PCI Express Gen1.1	2.5
SATA	3.0
Serial RapidIO®	3.125
V-by-One	3.0
XAUI	3.125
3G SDI	2.97

Designed to lower your system cost

Cyclone IV FPGAs are architected to lower your system costs.

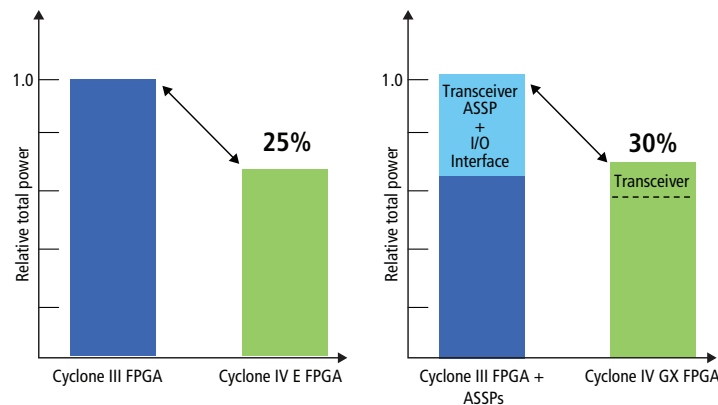
- With only two power supplies, you can further extend your cost savings by substantially simplifying your power distribution network and reducing PCB area and costs
- Low power consumption combined with efficient thermal management reduce or even eliminate active cooling solution expenses.
- Hard IP blocks save FPGA logic, allowing you to use smaller, lower cost FPGAs
- The Cyclone IV GX FPGA provides the industry’s only hard IP block for PCI Express x1, x2, and x4 in both rootport and endpoint configurations

Processor I/O expansion



Cyclone IV FPGAs offer processor expansion via PCI Express.

Cyclone IV FPGAs deliver lower power



Want to dig deeper?

For more technical information about Cyclone IV FPGAs, contact your local Altera® sales representative or FAE. For other general information, go to www.altera.com/connect to:

- Download
 - Literature (handbook, white papers, and more)
 - FREE Quartus® II Web Edition design software
- View webcast: “Reduce Total System Costs with Market’s Lowest Cost, Lowest Power FPGAs”
- Sign up for a limited-time development kit discount through your Altera sales representative

Altera Corporation
 101 Innovation Drive
 San Jose, CA 95134
 USA
www.altera.com

Altera European Headquarters
 Holmers Farm Way
 High Wycombe
 Buckinghamshire
 HP12 4XF
 United Kingdom
 Telephone: (44) 1 94 602 000

Altera Japan Ltd.
 Shinjuku i-Land Tower 32F
 6-5-1, Nishi-Shinjuku
 Shinjuku-ku, Tokyo 163-1332
 Japan
 Telephone: (81) 3 3340 9480
www.altera.co.jp

Altera International Ltd.
 Unit 11-18, 9/F
 Millennium City 1, Tower 1
 388 Kwun Tong Road
 Kwun Tong
 Kowloon, Hong Kong
 Telephone: (852) 2945 7000

