

Stratix IV GT FPGA design resources for 100G applications

Altera offers two design resources to help you evaluate Stratix® IV GT FPGAs: a signal integrity development kit and a 100G demo board. Ideal for high-bandwidth 40G and 100G applications, Stratix IV GT FPGAs are the market's lowest power high-density, high-performance FPGAs with integrated 11.3-Gbps transceivers. This FPGA family can directly connect with optical cages which require 10-Gbps transceivers, and enable you to implement your 100G designs based on emerging IEEE 802.3ba standards.

Transceiver Signal Integrity Kit, Stratix IV GT Edition

While microcontrollers and digital signal processing (DSP) devices may be well suited to certain aspects of motor control systems, they lack flexibility to support motor control intellectual property (IP) and interfaces in hard logic.

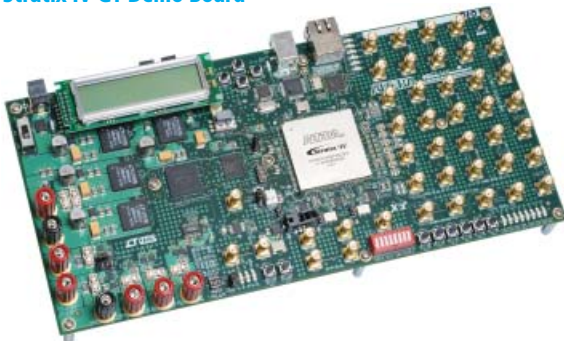
With our Cyclone® III FPGAs, you can integrate processors, digital logic interfaces, DSP functions, motor control IP, and multiple industrial Ethernet protocols into one device, reducing board size and complexity. Operating across industrial communication networks, motion control solutions with drive-controlled motors can be very energy efficient. Aside from saving power, this can also lead a to net cost savings in the long run.

For designs requiring high levels of security, Altera also offers the Cyclone III LS variant. These 60-nm FPGAs provide up to 200K logic elements (LEs) for less than 0.25 Watt of static power, as well as security features that protect against tampering and reverse engineering.

Available through Altera's eStore, the kit will help you:

- Evaluate transceiver signal integrity
- Generate/check PRBS patterns through the user channel
- Dynamically change physical medium attachment (PMA) settings
- Evaluate serializer/deserializer (SERDES) interoperability to optical modules and other devices

Stratix IV GT Demo Board



As with all of our development kits, you'll also get a standard board test system with a PC-based GUI, documentation, reference designs, and demonstrations.

Specific applications that you can use this kit for include:

- 40G/100G MAC and framer applications
- 40G/100G packet processing and traffic management
- 40G/100G bridging applications
- 40G/100G optical interfacing
- 40G/100G optical transport node (OTN) solutions
- 100G optical module testing, Interlaken, and data aggregation

Stratix IV GT 100G demo board

Another resource for evaluating device and transceiver capabilities is the Stratix IV GT 100G demo board. Featuring a Stratix IV GT EP4S100G5 FPGA with 530,000 logic elements, the board showcases the FPGA's advantages, including:

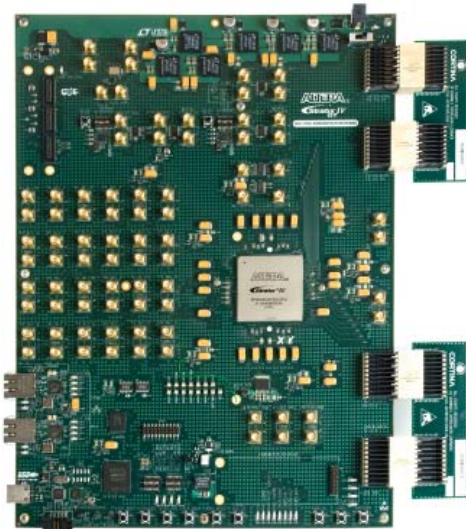
- Multiple 10G transceiver performance
- Density to support multiple IP cores for 100G designs
- Support for greater than 300-MHz fabric/core performance to close timing on critical paths
- 24 lanes of Interlaken
- Support for CAUI interface for 100G optical module (CFP)

With the demo board, you can assess the cost and time savings as well as integration and interoperability advantages of designing with Stratix IV GT FPGAs. There will also be an optical variation of the 100G demo board, which will replace SMAs with optical cages for optical and test equipment. (This will include CFP, XFP, and SFP+ optical cages.)

This demo board includes:

- 12 full duplex 10G transceiver channels routed to SMA, which supports a 10G/40G/100G optical connection through SMA
- 20 channels of Interlaken (Altera® internally developed IP core) routed to a pair of AirMax connectors
- Two on-board low jitter phase-locked loops (PLLs)
- 644-MHz, on-board clock oscillators
- Four SMA clock inputs

Stratix IV GT 100G Board



Want to dig deeper?

For more information or to purchase a Transceiver Signal Integrity Kit, Stratix IV GT Edition or Stratix IV GT 100G demo board, contact your local Altera FAE or sales representative, or visit www.altera.com/devkits.

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