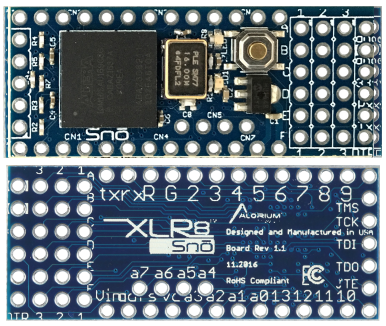
Snō

ARDUINO-COMPATIBLE FPGA DEVELOPMENT BOARD



Introducing Snō

Bring your projects from prototype to production with Snō; an Arduino-compatible FPGA development board in a compact footprint.

The FPGA provides a reconfigurable hardware platform that hosts an ATmega328 instruction set compatible microcontroller. The FPGA also provides the ability to implement custom logic that accelerates specific functionality that is slow, problematic or even impossible for an 8-bit microcontroller.

A compact footprint and Arduino compatibility make it perfect for fitting into final projects!

Snō Advantages

Programmable with Arduino

Rapidly develop your software code and even upload custom FPGA functionality using the free and flexible Arduino IDE.

FPGA Performance

Boost the speed and performance of your project through FPGA powered acceleration and offload.

Compact Footprint

Integrate Snō as a compact yet powerful embedded System on Module (SoM) for your development project or final product.

Xcelerator Blocks

An Xcelerator Block (XB) is an optimized hardware implementation of a unique processor-intensive function. Basically, an XB is a custom piece of hardware, implemented on the same FPGA fabric and tightly integrated with the microcontroller. XBs can access the same register space and even integrate with the instructions of the microcontroller.

Available XBs

Snō ships with pre-installed XBs that target application-specific behavior, and the board can be field-updated to change the XBs implemented on the FPGA.

The default Snō configuration will include XBs for:

- Floating Point Math
- Servo Control
- NeoPixel Control
- Enhanced Analog-to-Digital Functionality

XB Roadmap

Future XBs will be implemented based on feedback from early adopters and new potential customers.

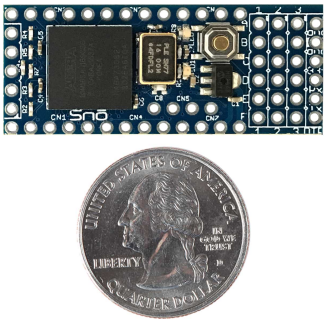
Additional XBs on our roadmap:

- Proportional-Integral-Derivative (PID) control
- Event Counters and Timers
- Quadrature Encoders/Decoders
- Pulse Width Modulation (PWM)
- Multiple UARTS

User-Created Xcelerator Blocks

To use the USB port you will need a high power external 3.3V FTDI board connected to these pins on the Sno: TX/RX/DTR/3.3V/GND. For advanced users, there is a JTAG footprint on the board allowing a JTAG programmer to talk to the FPGA directly.

The microcontroller core that we have developed has been designed to be easily extendable, and Alorium Technology has developed a support model for users who want to create their own XBs and interface to the on-chip microcontroller.



Snō Top View

OpenXLR8 has been created to allow Snō users to develop their own custom XBs and integrate them into the FPGA. This allows developers proficient with Verilog or VHDL and Intel's Quartus Prime software to create their own XBs. The sky's the limit on what can be done, and the XBs created this way can be shared with the rest of the XLR8 and Snō community.

Technical Specs

Physical Dimensions

- .7 inches x 1.7 inches

Digital I/O

- 3.3V inputs
- 3.3V outputs

Analog Inputs

- 3.3V tolerant
- Performance: 1 MHz
- Resolution: 12-bit sustained
- Sample Rate: 1 million/second

Specification Table

FPGA	Intel MAX 10*
Embedded Microcontroller	ATmega328-Compatible
Operating Voltage	3.3V
Input Voltage	4-16V
Digital I/O Pins	42
PWM Digital I/O	16
Analog Input Pins	6
Program Storage	32 KB
SRAM	2 KB
Clock Speed	16/32 MHz

*Product Number: 10M16SAU169C8G

Contact

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