

AnalogMAX Series: Flexible Development Platforms

Include High-Performance Sensing and Signal-Chain Components from Analog Devices and the Intel® MAX® 10 FPGA

Arrow and Analog Devices in partnership with Trenz Electronic are introducing the AnalogMAX portfolio of boards to simplify the evaluation and design process for products needing robust sensing and analog signal conditioning. All AnalogMAX boards have high performing sensor, analog signal chain and power technologies from Analog Devices and are based on the Intel® MAX® 10 FPGA to provide flexibility in data processing and formatting. The combination of technologies and demo examples provide an effective starting point for designs in a variety of end markets including industrial, medical, instrumentation, and IoT.

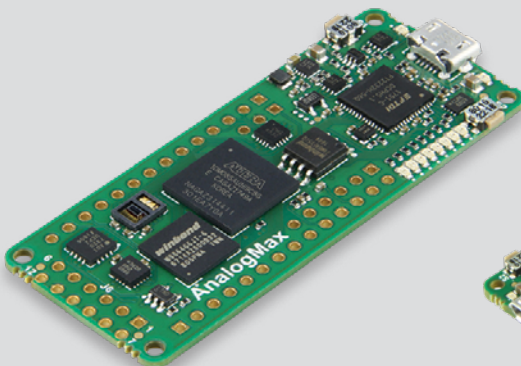
Benefits of the AnalogMAX Series of Boards

- > **Flexible platform:** Featuring the programmable Intel® MAX® 10 FPGA, easily adjusts to a wide range of use cases and production needs
- > **Rapid prototyping and product development:** An out-of-the-box experience that includes Jupyter notebook demos and software tools
- > **Small form-factor:** Formatted for Arduino expansion
- > **Quick customization services:** The AnalogMAX boards can be customized for specific application requirements - add new features, optimize BOM cost or make them production-ready

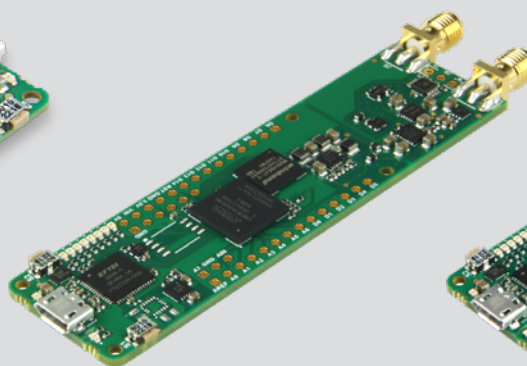
The AnalogMAX portfolio includes:

- > **AnalogMAX-01:** Sensor fusion board including optical smoke and aerosol detection with ADPD188BI and a 3-axis accelerometer based on ADXL362
- > **AnalogMAX-DAQ1:** Data acquisition system based on an 18-bit, 2 MSPS, Easy Drive, Differential SAR ADC for instrumentation applications
- > **AnalogMAX-DAQ2:** Data acquisition system featuring the ADAQ7980 ADC μ Module®, ideal for small-form-factor applications

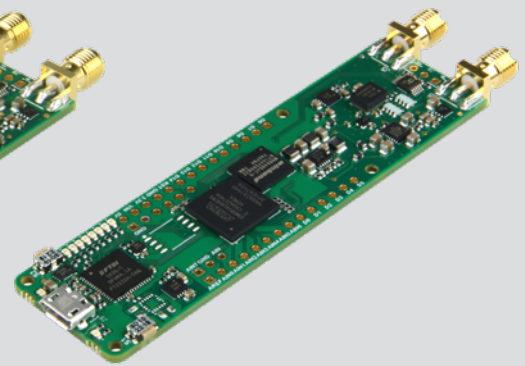
AnalogMAX Series Boards



AnalogMAX-01
(2.5 × 6.15 cm)



AnalogMAX-DAQ1
(2.5 × 8.65 cm)



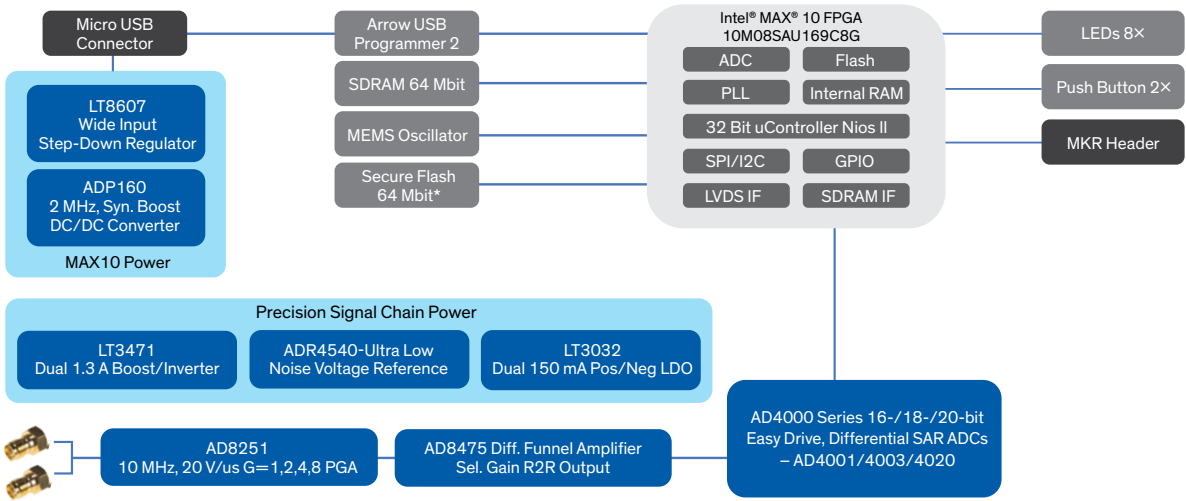
AnalogMAX-DAQ2
(2.5 × 8.65 cm)

AnalogMAX-DAQ1: A High-Accuracy Programmable Data Acquisition Platform

Featuring Analog Devices' AD4000 Series 16-/18-/20-Bit Easy Drive, Differential SAR ADCs

AnalogMAX-DAQ1 is a high-performance, high-accuracy data acquisition platform that meets power, footprint, and reliability requirements of measurement instruments in industrial, medical, and scientific applications. The platform is a reference design for using the Analog Devices' AD4003 Easy Drive, Differential SAR ADC with a high-impedance, programmable ADC driver.

The high throughput allows accurate capture of both high-frequency signals and decimation to achieve higher SNR (Signal-to-Noise-Ratio), while also reducing anti-aliasing filter challenges. The reduced non-linear input current in high input-impedance mode coupled with a long signal acquisition phase broadens the range of low power precision amplifiers that can drive the AD4003 directly, reducing the signal-chain power demands.



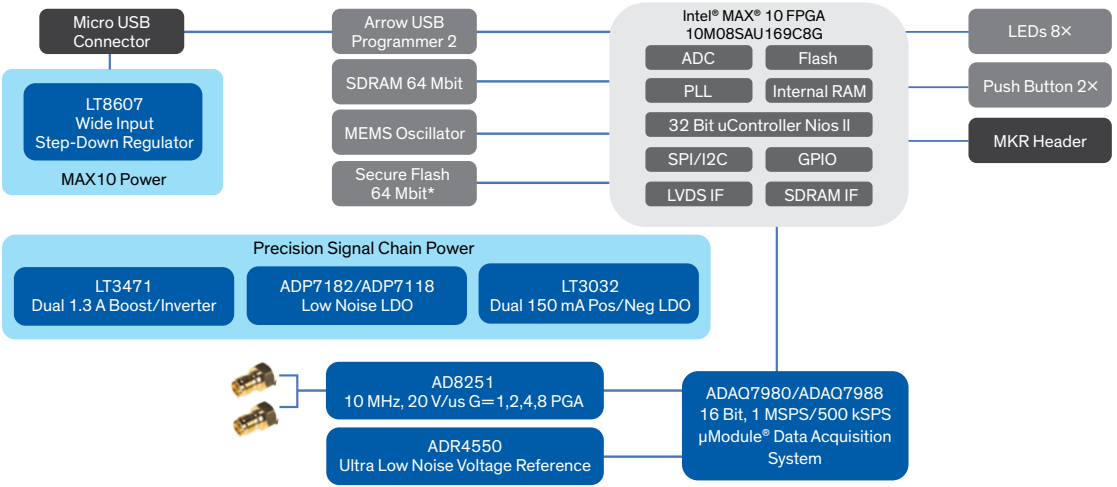
AnalogMAX-DAQ1 Block Diagram Features the AD4000 Series 16-/18-/20-Bit Easy Drive, Differential SAR ADCs

AnalogMAX-DAQ2: A Programmable 16-Bit µModule®-Based Data Acquisition Platform

Featuring Analog Devices' ADAQ7980/ADAQ7988 16-Bit, 1 MSPS/500 kSPS, µModule® Data Acquisition System

AnalogMAX-DAQ2 is a high-accuracy data acquisition platform that meets the footprint, power, and reliability requirements of measurement instruments in industrial, medical, and scientific applications. The data acquisition platform is a reference design for using the high-impedance, programmable ADC driver stage with AD8251 driving the ADAQ7988, a 16-bit µModule® that integrates several signal chain components into a tiny LGA 4 mm x 5 mm package.

The ADAQ7988 µModule® solution contains a high accuracy, low power 16-bit SAR ADC; a low power, high bandwidth, high input impedance ADC driver; a low power, stable reference buffer, and an efficient power management block. This platform is ideal for small form factor systems that require accurate and reliable operation over long periods of time.



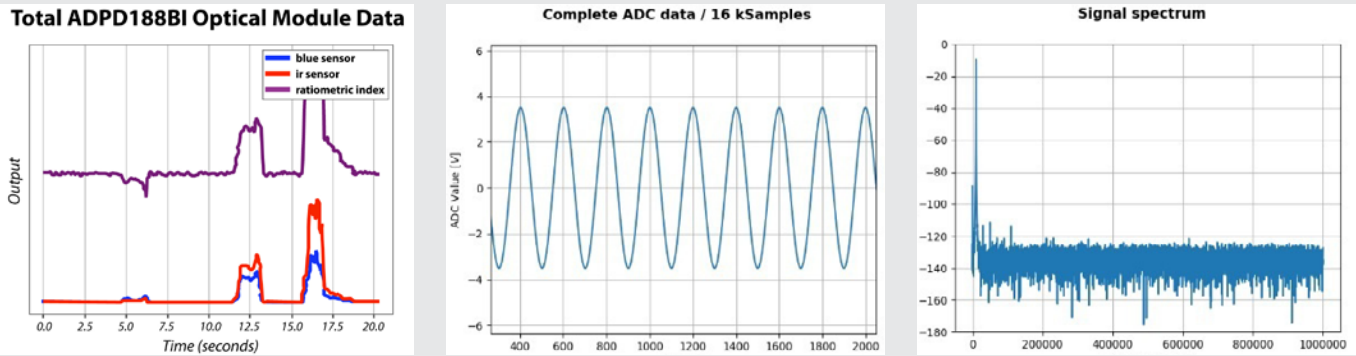
AnalogMAX-DAQ2 Block Diagram Features of the ADAQ7980/ ADAQ7988 16-Bit 1 MSPS/500 kSPS, µModule® Data Acquisition System

AnalogMAX Series User Experience

Getting started is easy!

User experience includes intuitive demos featuring the Jupyter Notebook software tools

- > Works out-of-the-box with the latest code and documentation all available on [Wiki](#) and [Github](#)
- > Python code is executed within a Jupyter notebook file allowing easy customizations and an intuitive graphical interface

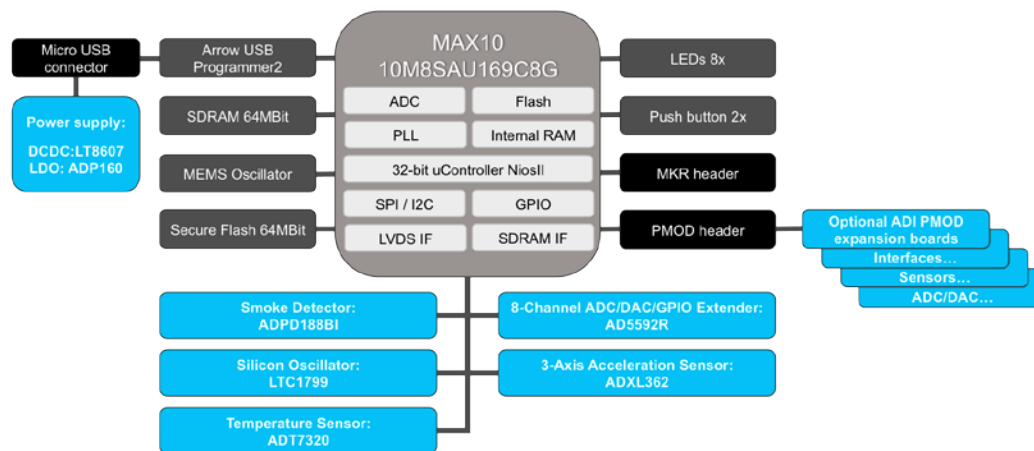


Jupyter Notebook based demo using Python code allows for easy visualization

AnalogMAX-01: Full-featured Sensor Fusion FPGA Board with Smoke and Aerosol Detection and a 3-Axis Accelerometer

Featuring Analog Devices' ADPD188BI Integrated Optical Module with Dual-Wavelength Technology

The AnalogMAX-01 platform is a full-featured sensor fusion FPGA board featuring Analog Devices' ADPD188BI integrated optical module for smoke and aerosol detection and the Intel® MAX® 10 FPGA. The ADPD188BI is a complete photometric system for smoke detection using optical dual-wavelength technology. The module integrates a highly efficient photometric front end, two Light Emitting Diodes (LEDs), and two PhotoDiodes (PDs). These items are housed in a custom package that prevents light from going directly from the LED to the photodiode without first entering the smoke detection chamber. AnalogMAX-01 also features a fully calibrated, single-chip temperature sensor (0.25°C, 16-bit), MEMs accelerometer (3-axis), and an 8 channel, 12-bit, configurable ADC/DAC/GPIO with on-chip reference.



AnalogMAX-01 Block Diagram Features the ADPD188BI Integrated Optical Module for Smoke and Aerosol Detection and ADXL362 3-Axis Accelerometer

Ordering Information

Part #: [AnalogMAX-DAQ1](#)

Part #: [AnalogMAX-DAQ2](#)

Part #: [AnalogMAX-01](#)

Online

www.arrow.com/analogMAX

Github

github.com/ArrowElectronics/AnalogMAX

Wiki

github.com/ArrowElectronics/AnalogMAX/wiki

ARROW
Five Years Out