# Safari Evaluation Kit: Built for Intelligent Embedded and Edge Applications

## Based on Analog Devices AD7124-8, a 16-Channel, Low Noise, Low Power, 24-Bit, Sigma-Delta ADC and NXP i.MX 7Dual SoC

The Safari evaluation kit is a high-precision data acquisition platform based on the 96Boards standard. The kit includes Novtech's Meerkat96™ Boards Single Board Computer (SBC) with the NXP i.MX 7Dual SoC, a multi-input multi-channel sensor interface 96Boards mezzanine card based on Analog Devices' AD7124-8 19.2kSPS 24-bit Delta-Sigma ADC, and Analog Devices and Adafruit sensors. Users can connect up to 8 differential or 15 single-ended output analog sensors, and amplify, bias, digitize and filter the signals and forward to the Meerkat96™ processor board, where signals can be processed and sent to the cloud via Wi-Fi. This evaluation kit has been designed to accommodate analog sensors such as vibration, noise, temperature, pressure, humidity, and more.

## Benefits of the Safari Evaluation Kit

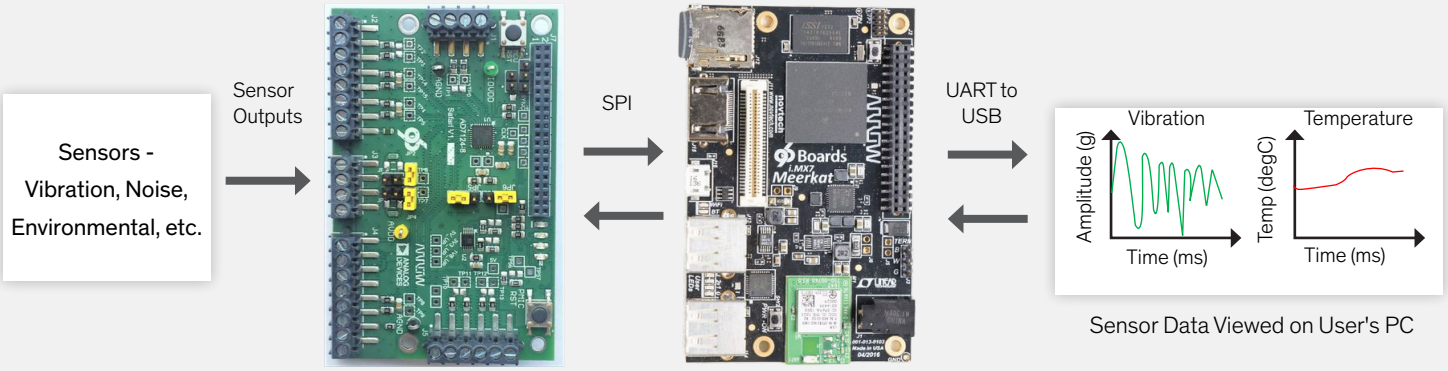
- **High-precision analog front-end:** Ideal for applications requiring accurate data capture from several sensor outputs (8 differential inputs or 15 pseudo-differential inputs)
- **High processing capability:** The NXP i.MX 7Dual SoC is based on Arm® Cortex®-A7 at up to 1.2 GHz per core, enabling applications requiring high-performing data compute capabilities
- **Flexible platform:** The Safari 96board mezzanine can be used in combination with any other 96Boards to allow access to other microprocessors and FPGA options to create a combination that meets end-application requirements
- **Compact design:** The highly integrated analog and digital circuitry enables small form-factor devices
- **Low-power:** The combination of a low-power processor and a low-power analog-to-digital converter makes this kit a good target for battery-operated devices

## Applications

This kit is ideal for high-precision measurement use cases in:

- Industrial automation and monitoring
- Process control
- Instrumentation and measurement
- Healthcare

## Safari Evaluation Kit is Ideal for Intelligent Embedded and Edge Applications

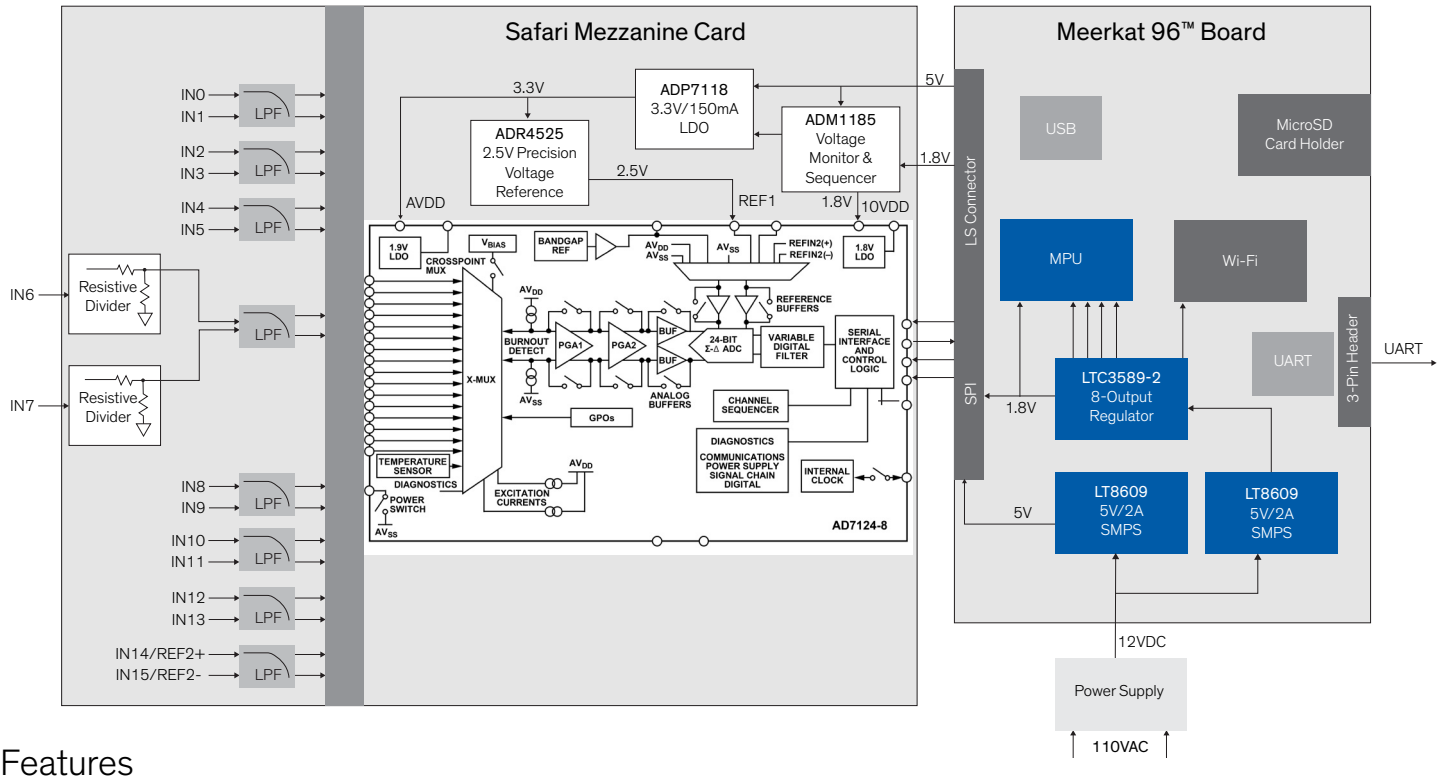



Arrow 'Safari' Mezzanine Card

Novtech Meerkat96™ Board (baseboard)

Sensor Data Viewed on User's PC

## Safari Evaluation Kit Block Diagram




## Features

- Very low noise- 24 nV rms at 1.17 SPS (Low Power), 20 nV rms at 2.34 SPS (Mid Power), 23 nV rms at 9.4 SPS (High Power), for gain=128
- Resolution: 19.2 ENOB (Gain=1), 17.6 ENOB (Gain=16), 15.7 ENOB (Gain=128) at Mid Power Mode (Data Rate 25 sps)
- 96Boards Consumer Edition form-factor mezzanine card and motherboard
- Multiple input multi-channel sensor interface board using Analog Devices AD7124-8, a 15-Channel 24-Bit Sigma-Delta ADC with programmable gain and digital filtering
- NXP i.MX7 SoC based on dual-core Arm® Cortex®-A7 core at up to 1.2 GHz per core
- 15 single-ended sensor inputs, or up to 8 differential inputs
- Auto channel sequencing & on-board precision voltage reference
- Demo software displays the output of the two included sensors on a PC*

## Safari Evaluation Kit Components

- Arrow Safari Mezzanine card based on AD7124-8 (24-bit sigma-delta ADC)
- Novtech Meerkat96™ SBC (based on NXP i.MX 7Dual SoC)
- Analog Devices ADXL203EB evaluation board: Precision ±1.7 g Dual-Axis iMEMS® Accelerometer
- Adafruit 3290 PT100 RTD temperature probe
- USB to UART cable
- Precision resistor

* Demo software needs to be modified to visualize additional sensor outputs

## Key Components

- Analog Front-End - AD7124-8: Low-power, low-noise 24-bit, sigma-delta ADC with PGA and reference
- Processor - NXP i.MX 7Dual SoC: Dual-core Arm® Cortex®-A7 core at up to 1.2 GHz per core

## Contact Information

Contact your local Arrow FAE for a demonstration.

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