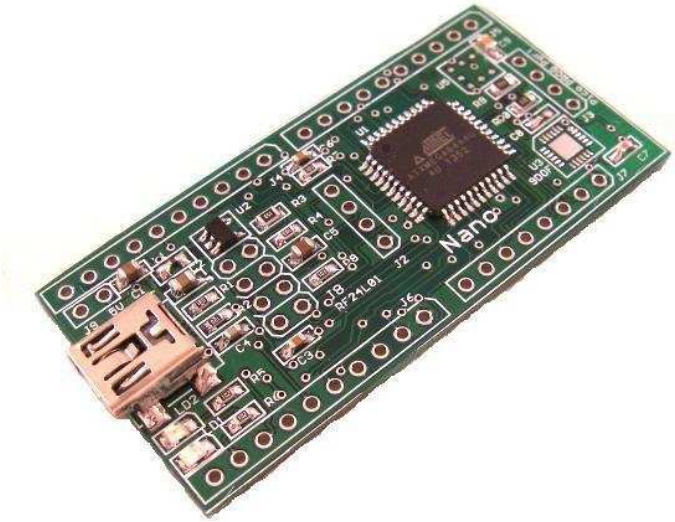
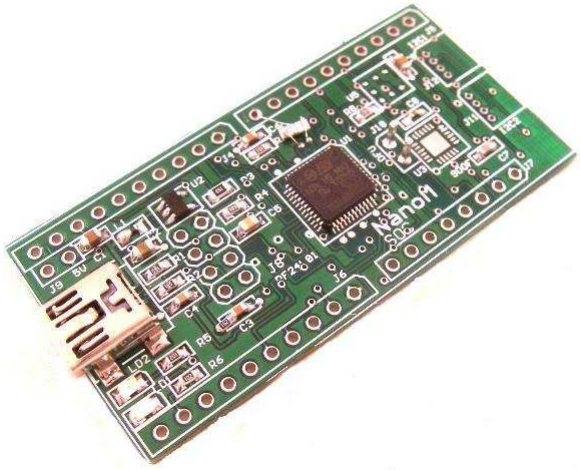
Overview

Nanos are general purpose interface boards that support popular wireless module integration wit the desktop, enable 10DOF sensor application development and provide a communication link with Pico IMU sensor nodes. The Nano and NanoM both have 10DOF sensor capability while the NanoMP is primarily a wireless sensor node hub communications platform.



Features:

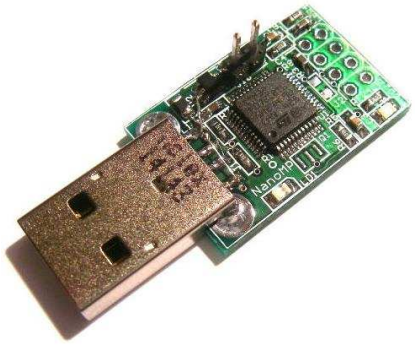
- Choice of processor:
  Nano: ATxmega128A4U
  NanoM,MP: STM32F042, STM32F072 or STM32F303
- 12bit DAC running at 1Msps
- 12-16bit A/D running at 2Msps
- USARTS (one connected to PI)
- Two SPI interface to PI
- On chip DFU boot loader for software field upgrades
- SPI interface connector for RF2401 Wireless module
- Digital IO and Analog brought to connectors
- Expansion connectors on 0.1" centers for proto board
- Real time data acquisition application communicating wirelessly with Pico sensors using RF24L01 module
- Nano, NanoM - optional MPU-9150 9DOF sensor
- Nano, NanoM - optional BMP180 barometric
- Open source application software:
  Nano: AVR Studio 6.2
  NanoM, MP: CooCox IDE



The Nano and NanoM is a 10DOF sensor platform for prototype development and wireless base station use. Nano comes with a real time wireless communications application that communicates with other members of the SOC Sense sensor family. Source code for the application is available for download. An onboard bootloader allows new software to be uploaded without the need for specialized programming hardware.

RF24L01 Wireless Connector

Nano has a connector that allows direct connection of a low cost RF2401 wireless communication module allowing the Nano to be a wireless base station for low cost wireless data acquisition modules.



RF Modules

MPU9150 9DOF Inertial Sensor

An optional 9 Degree of Freedom Inertial sensor can be mounted. The sensor measures acceleration, rotation and magnetic heading on three axis.

RF24L01

ESP8266 WiFi

BMP180 Barometer Sensor

An optional barometer can be mounted. The barometer resolution is 75 cm.

Nano Configurations

Nanos are available in three different configurations with and without sensors. Nano has a single processor option – the ATxmega128A4U. NanoM and NanoMP are available in three different processor configurations – STM32F042, STM32F072 and STM32F303. provides analog input, analog output, digital IO, SPI, USARTs and I2C interfaces. All three have a dedicated wireless connector compatible with the popular RF24L01 wireless communication module. An optional 9 DOF Inertial sensor (MPU-9150) and barometer (BMP180) are available as well. The Nano and NanoM bring all processor signal pins to expansion ports enabling prototype development and the attachment of other sensors. All three have a dedicated connector allowing direct connection of a low cost OLED 128x64 pixel display. Nano can program Pico IMUs using the PDI programming port. Nanos also support the ESP8266 Serial WiFi module (with an adapter).

Nano	NanoM	NanoMP
		
- 10DOF (A,G,M,B) - ATxmega128A4U - Wireless Connector - USB - AVR Studio 6.2 - Project source	- 10DOF (A,G,M,B) - STM32F303,72MHz, FPU (or STM32F072, 48MHz) - Wireless Connector - USB - CooCox IDE - Project source	- STM32F303,72MHz, FPU (or STM32F072, 48MHz) - Wireless Connector - USB - CooCox IDE - Project source

Nanos are members of the SOC Sense wireless sensor node family of products consisting of Nano, Pico and Femto sensor nodes.

Nano/NanoMP	Pico	Femto