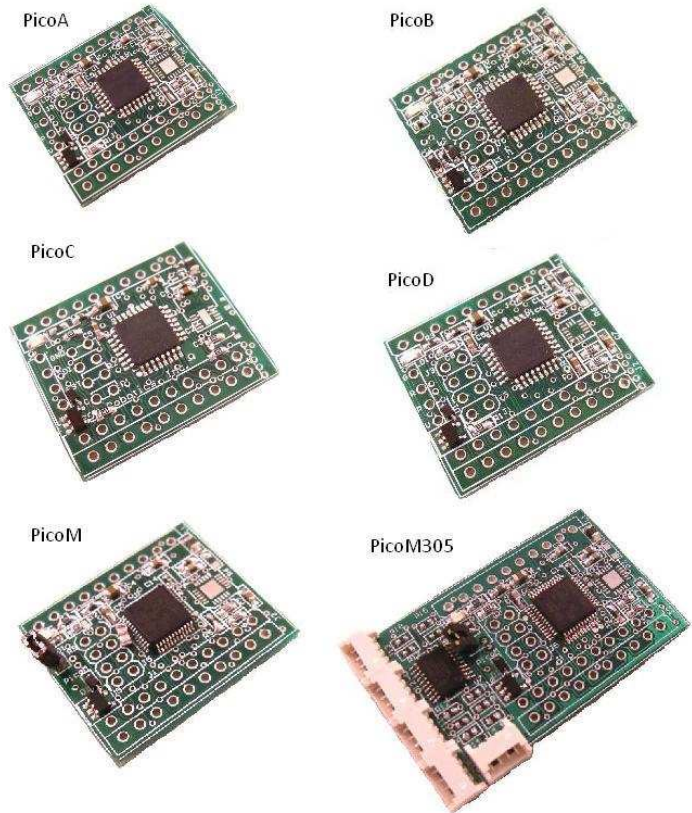


Overview

Picos are general purpose wireless sensor nodes with several processor and sensor options. PicoA,B,M and M305 are 10DOF sensor capable while the PicoC is 7DOF, PicoD is a humidity/temperature/light level sensor and PicoM305 is 50DOF sensor node. All Picos have USB, LiPo battery and wireless capability.

Features:

- Choice of processor:
 - PicoA,C,D: ATxmega32E5, PIC14F45
 - PicoM: STM32F042, STM32F072 or STM32F303
 - PicoM305: 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
- OLED and Color TFT display support
- Real time data acquisition application communicating wirelessly with Pico sensors using RF24L01 module
- PicoA,B,M - Optional MPU-9150 9DOF sensor
- PicoA,B,C,D,M - optional BMP180 barometric
- Open source application software:
 - PicoA,C,D: AVR Studio 6.2
 - PicoB: AVR Studio 6.2, Arduino
 - PicoM, PicoM305: CooCox IDE

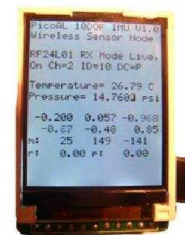


The PicoA,B,M and M305 are 10DOF sensor nodes. All Picos come with a real time wireless communications application that communicates with other members of the SOC Sense sensor family. Source code for the application is available for download. An onboard bootloader allows new software to be uploaded without the need for specialized programming hardware.

OLED 128x64



Color TFT 128x160



RF24L01 Wireless Connector

Each Pico has a connector that allows direct connection of a low cost RF2401 wireless communication module allowing completely mobile wireless operation.

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.

BMP180 Barometer Sensor

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

RF Modules









RF24L01



ESP8266 WiFi

Pico Configurations

Picos are available in six different configurations with and without sensors. Pico processor options are summarized below. PicoM are available in three different processor configurations – STM32F042, STM32F072 and STM32F303. provides analog input, analog output, digital IO, SPI, USARTs and I2C interfaces. All tPicos 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. Each Pico brings most of the processors signals to connectors enabling prototype development and the attachment of other sensors. All Picos allow the direct connection of a low cost OLED 128x64 pixel display or color 128x160 TFT display (TFT needs adapter). All Picos can be programmed through the USB interface. Picos also support the ESP8266 Serial WiFi module (with an adapter).

<p>PicoA</p>  <ul style="list-style-type: none"> - 10DOF (A,G,M,B) - ATxmega32E5 - Wireless Connector - LiPo Charger - USB - AVR Studio 6.2 - Project source 	<p>PicoB</p>  <ul style="list-style-type: none"> - 10DOF (A,G,M,B) - ATmega328 - Wireless Connector - LiPo Charger - USB - Arduino/AVR Studio 6.2 - Project source 	<p>PicoC</p>  <ul style="list-style-type: none"> - 7DOF (A,M,B) - ATxmega32E5 - Wireless Connector - LiPo Charger - USB - AVR Studio 6.2 - Project source 	<p>PicoD</p>  <ul style="list-style-type: none"> - Humidity/Term/Light - ATxmega32E5 - Wireless Connector - LiPo Charger - USB - AVR Studio 6.2 - Project source
<p>PicoM</p>  <ul style="list-style-type: none"> - 10DOF (A,G,M,B) - STM32F303, 72MHz, FPU (or STM32F072, 48MHz) - Wireless Connector - LiPo Charger - USB - CooCox IDE - Project source 	<p>PicoM305</p>  <ul style="list-style-type: none"> - 10DOF (A,G,M,B) - 45DOF (5-3DOF (A,M)) - Wireless Connector - LiPo Charger - USB - CooCox IDE - Project source by request 	<p>All picos support the following peripheral modules:</p> <p>Wireless:</p> <ul style="list-style-type: none"> - RF24L01 - ESP8266 WiFi (Adapter needed) <p>Display:</p> <ul style="list-style-type: none"> - OLED 128x64 - Color TFT 128x160 (Adapter needed) 	

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

