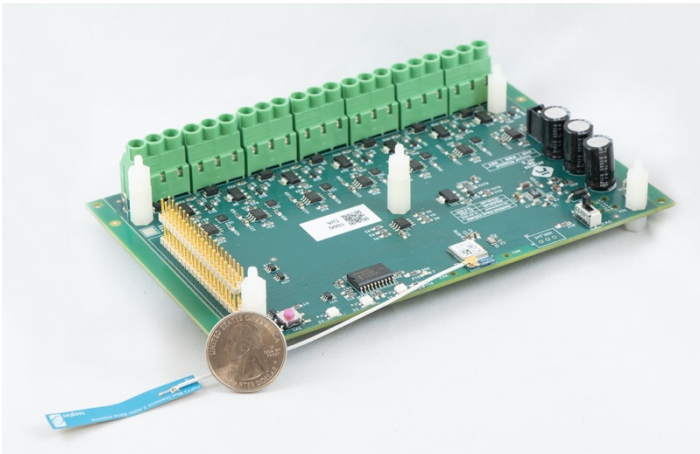


# AVIMESA 1000 DATASHEET

7 June 2018 – Avimesa 1000 HW Rev D



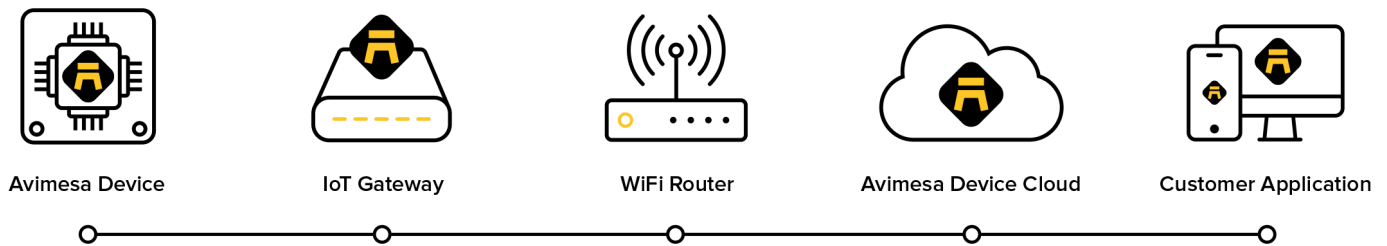
Avimesa 1000 board

## Features

- Built around an FCC certified module with the multi-protocol 2.4GHz, ultra low-power Nordic NRF52832 SOC with a 32-bit ARM® Cortex™-M4F CPU with 512kB + 64kB RAM. Supports external antennas.
- Bluetooth 4.2 upgradable to 5.0 radio - Avimesa gateway/cloud services
- Capable of both cloud-based and field firmware updates
- 12v/24v Industrial power input.
- Support for battery power with voltage monitoring
- Seven 12/24V [based on supply voltage] analog sensor channels supporting all standard 4-20 mA industrial sensors with individual power control for power savings.
- Three pairs of user-definable dual-color (Red/Blue) LEDs on board. Each LED in the pair can be controlled individually.
- A 40-pin expansion header containing 7-user programmable 3.3V Digital I/Os, I2C interface, and Vbatt.
- Header to support future addition of NFC antenna
- 128Kbytes of I2C based Flash memory for data storage

## Introduction

Avimesa 1000 is an intelligent I/O device which provides connectivity between industrial sensors and the Avimesa Cloud Architecture. The diagram below shows an overview of the Avimesa system architecture. The Avimesa 1000 is designed for simple field installation via cloud-based provisioning as well as field firmware updates both via the cloud and through in-field provisioning via an application (under development). The system has a highly power-efficient and capable Cortex M4F processor that manages communication, measurement scheduling, sensor interface power control, and filtering of sensor data. The firmware is power-optimized, allowing for the use of battery power where needed.

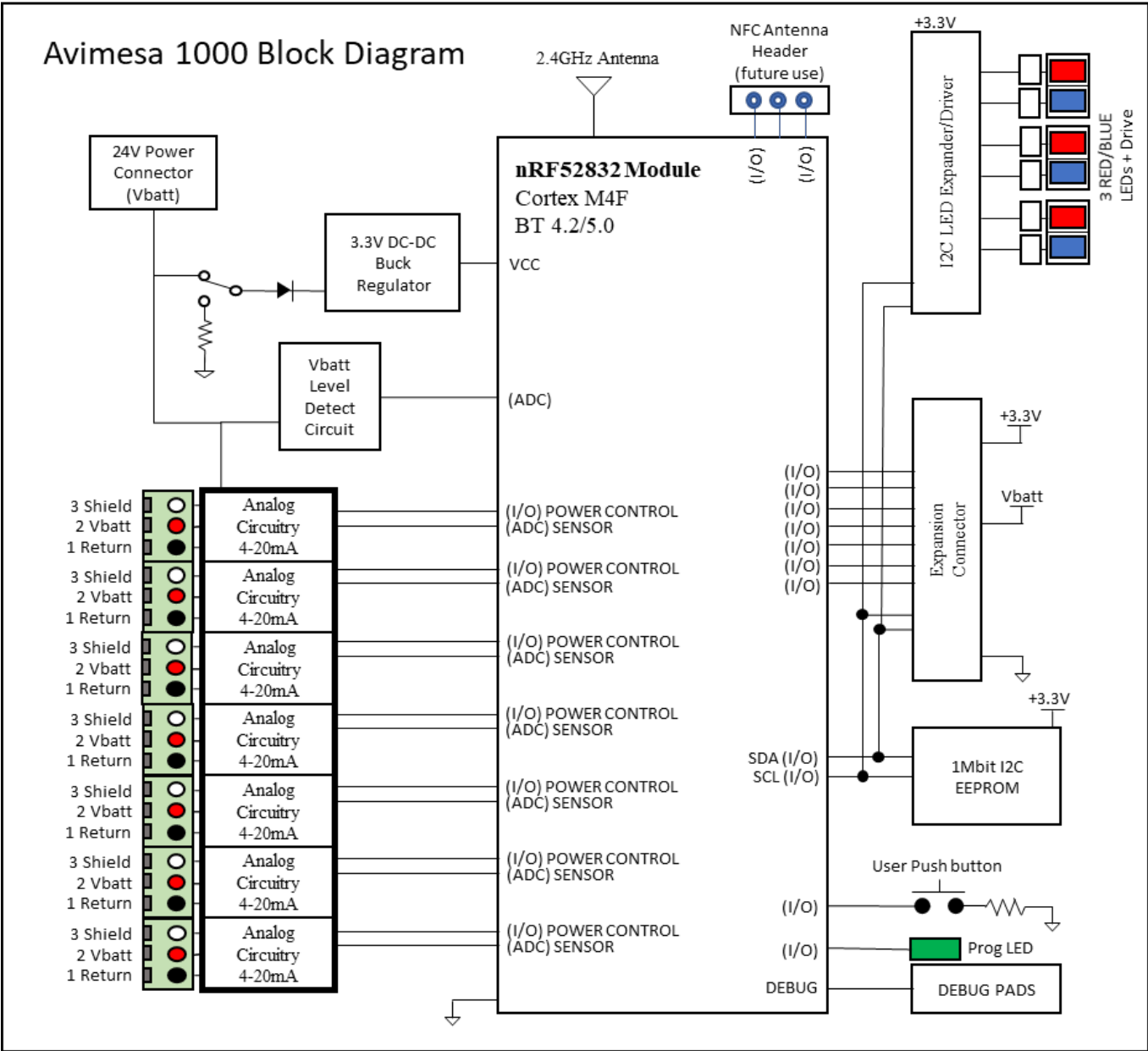


Avimesa System Block Diagram

**Licensing:** All hardware designs and firmware for the Avimesa 1000 are licensed to qualified OEM's and developers. Some restrictions apply.

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Avimesa 1000 Block Diagram

# AVIMESA 1000 DATASHEET

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## Specifications

### Power Supply Specification

Minimum	10.5V
Typical	12V or 24V
Absolute Maximum	27V

### Current Consumption (@24V)

Modes	
Sleep	186uA *
Client connected in Resting State	200uA *
Radio Transmission	2.5mA *

### CURRENT ADDERS

Red LED (Current Add Per LED)	4.5mA
Blue LED (Current Add Per LED)	2.8mA
Battery Sense Enabled (Additional)	0.9mA
Analog Channel Enabled (no sensor)	1.4mA/channel
Analog Sensor (max) per sensor	23mA
EEPROM Memory Access	750uA (low duty cycle)

### Digital I/O

Vdd	3.3V
VOHmin	Vdd-0.4
VOLmax	Vss+0.4
VIHmin	0.7*Vdd
VILmax	0.3*Vdd

### I2C Interface

I2C Bus Speed Supported	100kHz
I2C pull up Resistor value on board	1.2KOhms
I2C pull up Voltage	3.3V

### Analog Interface Specs

Channels	7
ADC Bits	14
Current	4-20mA

### Dimensions

4"x6"x1.05"

### Environment

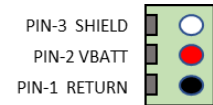
Operating Temperature Range	-30C to +85C
Relative Humidity	TBD % non-condensing

Components and assembly designed for RoHS compliance

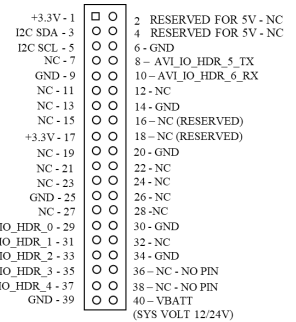
\* Values subject to change. Currently being optimized

## Connector Pin Assignments

J2	Channel 6
J3	Channel 5
J4	Channel 4
J5	Channel 3
J6	Channel 2
J7	Channel 1
J8	Channel 0

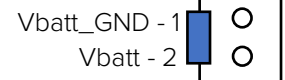


J1	Expansion Connector
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\* Note NFC pins not connected to 40 pin header. Must install 00hm resistors. NFC pins go to 3 pin header by default

P2	12/24V Power In
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For more information please contact Avimesa  
[www.avimesa.com](http://www.avimesa.com)