Arduino Sensor Network Documentation

Brent Seidel
Phoenix, AZ

August 31, 2018

1 Synopsis

This document will contain descriptions of the various components of the Arduino Sensor Network. First is a brief overview of the various components and then a discussion of the communication protocol used between them.

2 Components

The network consists of two required components plus optional components. The required components are a single controller and one or more responders. Listeners may optionally be added as they simply monitor the bus traffic and do not transmit. A BeagleBone Black listener is used to present the data from the network on web pages.

2.1 Controller

2.2 Responder

2.3 Listener

3 Protocol

3.1 Physical Layer

The physical layer is RS-485 twisted pair. CAT-5 cable is used because I happen to have a bunch of CAT-5 available and it works. One pair is used leaving the other pairs available for other uses such as power distribution.

3.2 Messages