Description

This product, as known as AIRdongle, has a piece of carefully designed RF circuit on board, which provides a *"transparent"* RF serial port function. *Transparent* means that the RF serial port works just as the normal serial port and user does not need to set any RF parameters to get it work. All the RF stuffs and RF to serial port converting works are done by the onboard circuit, which contanins a STM32 MCU, a NRF24L01+ RF transceiver, and a RF frontend chip(as the power amplifier and LNA). It is fully compatible with Arduino IDE and you can use AIRduino just like you use the official Arduino UNO.

Features

- Zero effort, transparent wireless serial port, fully compatible with Arduino IDE
- Ongoing development and user can use the latest firmware
- 2.4GHz, 0.1W transmission. 1000m line of sight transceiving ability
- Loaded with latest bootloader designed for Arduino UNO
- Machine Assembled

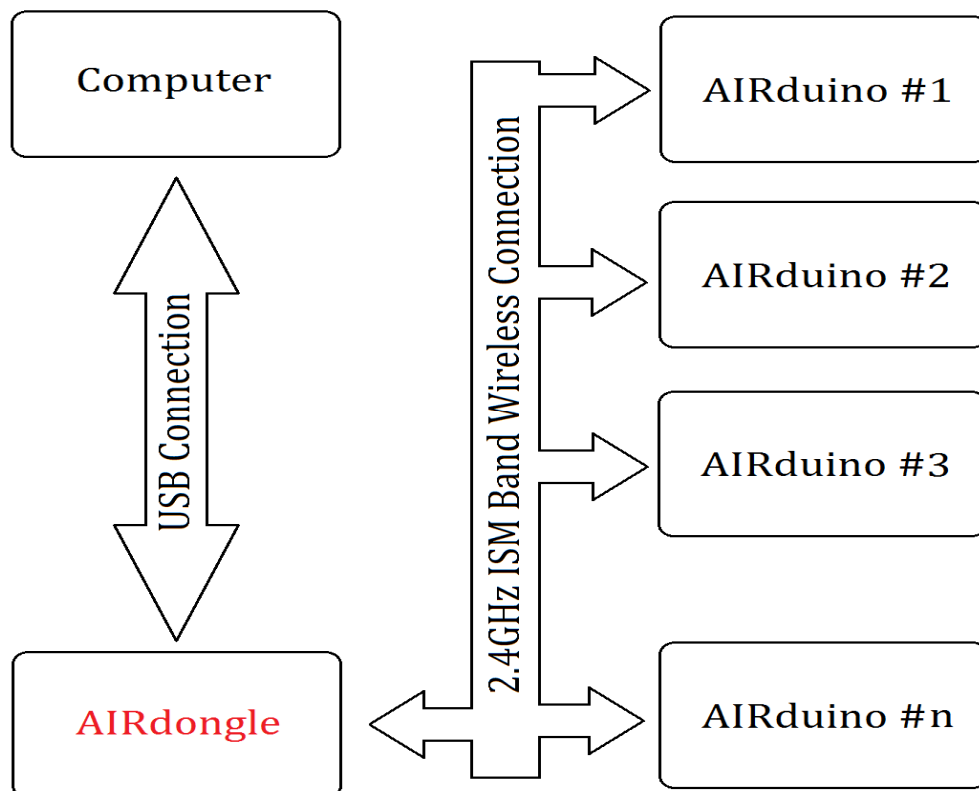## Typical Application Diagram

Figure 1-1, Typical Application Diagram

Operation

After the AIRdongle is connected to the host computer, it will be treated as a USB compound device which contains two Virtual COM Ports. On Windows 7, OS will automatically load drivers for these two ports. After the drivers are loaded successfully, the two VCP will show up in Device Manager as below:
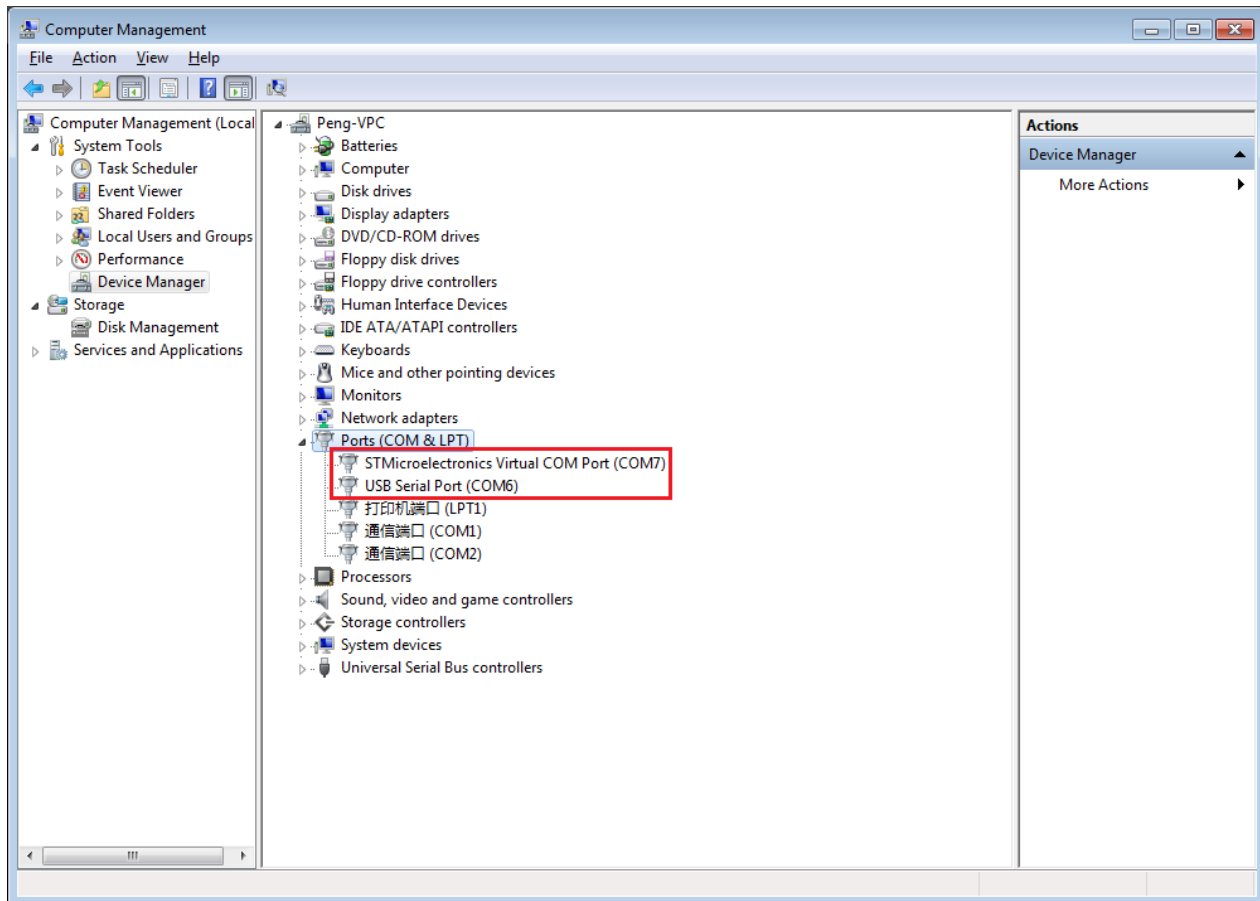

Figure 1-2, AIRdongle on a Windows OS

The VCP named *"STMicroelectronics Virtual COM Port"* should be used in the Arduino IDE to downl ad or debug sketches, or as the *"Serial Monitor".* In one sentence, you can use this COM port exactly the same way when you use an official Arduino UNO's COM port.

The VCP named *"USB Serial Port",* is designed to use with a terminal software, you SHOULD NOT use it to download or debug your sketches. Experienced user could use this COM port to config the RF parameters of the AIRdongle or AIRduino. The detailed usage of this port is in the appendix.

After the drivers are loaded successfully, user could power on his/her AIRduino now, after power on, the blue LEDs on AIRduino and AIRdongle should be ON, which indicates that the RF connection has been established.

To download the sketches, just open the Arduino IDE, in Tools -> Boards select Arduino UNO, and in Tools->Serial Port select the correct port (COM7 as shown in Figure 1-2). Composite your

sketch, and then click the Upload icon. You sketch will be uploaded to AIRduino board just as you use an offical Arduino UNO, however, the upload is done via 2.4GHz RF at this time.

In this example, we upload the Standard Firmata sketch, as shown in the picture below.
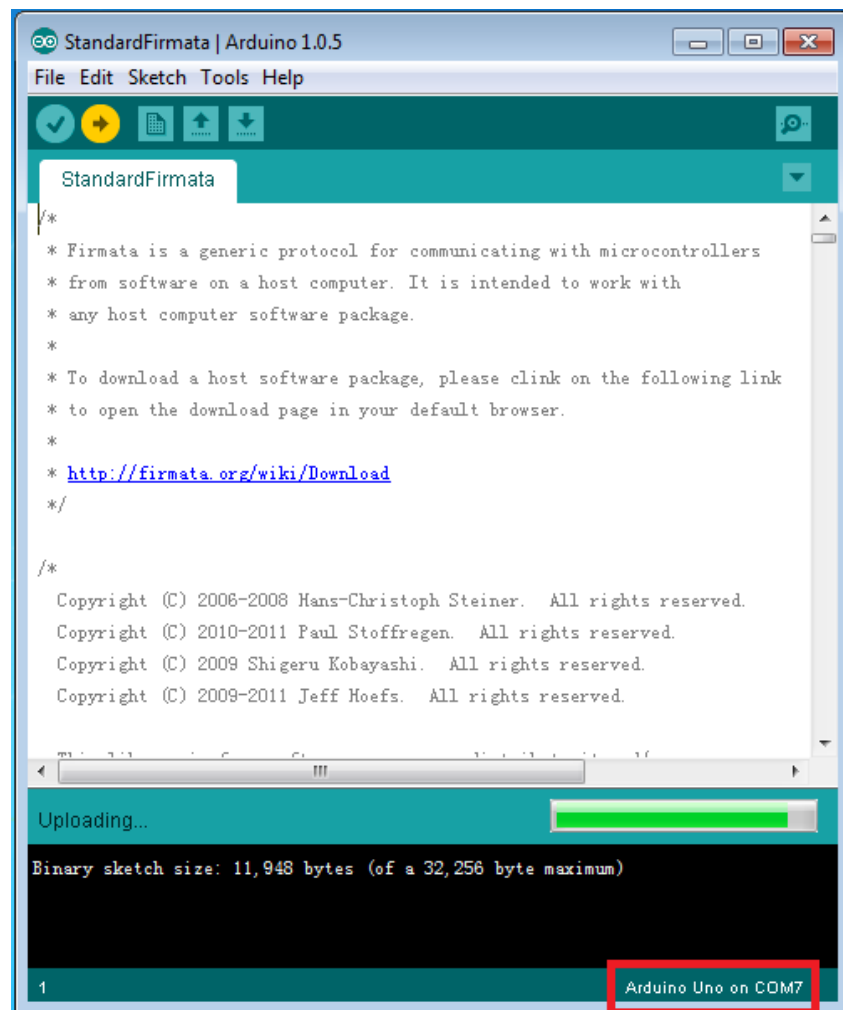

Figure 1-3 Sketch Uploading

With the help of AIRdongle, user's PC could communicate with the AIRduino via 2.4G RF signal. The AIRdongle's transmission power is 0.1W, which is the maximum allowable transmission power for 2.4GHz ISM band, and this offers a communication range of 1000m clear line of sight. The most important thing is that you can just treat the RF link as an ordinary COM port!!!

After the upload is done, we can use the Firmata Test Program to WIRELESSLY control the pin states of your AIRduino. Just as shown in the picture as shown in Figure 1-4.
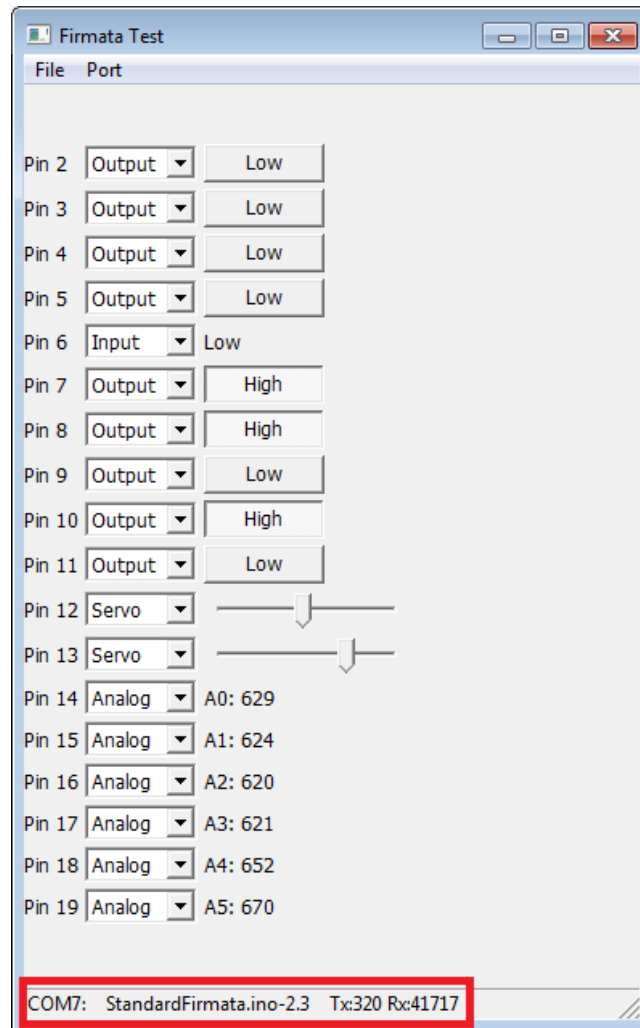
Figure 1-4 Wirelessly control your AIRduino via Firmata Test Program

APPENDIX.

The Usage of the AIRdongle Command Line Console

To be continued...