Arxterra Software Instruction v.001

Contents

Quick Thank You

Getting the Arxterra software will one day be as easy as going to google play and downloading it. Sadly, that is not today. As we are updating and adding new features and testing phone models, it will take a bit of effort to get your telepresent rover up and running. Of course that's the fun in being a beta tester. Letting us know what works, what doesn't work, and what should work.

So thank you for becoming and Arxterra Tester!

Arxterra Software Instructions Overview

1. Download Test Programs
2. Test our android smart phone for compatibility
3. Report information to us for submission into correct google group for your specifications
4. Download Apps and other programs

5. Connect to Arxterra Telerobotic Communities

Downloading Test Programs

General

For each setup below we have a basis for what should work. That being said, hardware limitations may affect system functionality. For this reason, we have developed a few simple programs to run before you do any heavy lifting. Hopefully as tester report their findings to arxterra@gmail.com so we can generate a list of mobile devices which have been proven to work with our system, and then work on integrating the rest.

Arduino Uno

Requirements

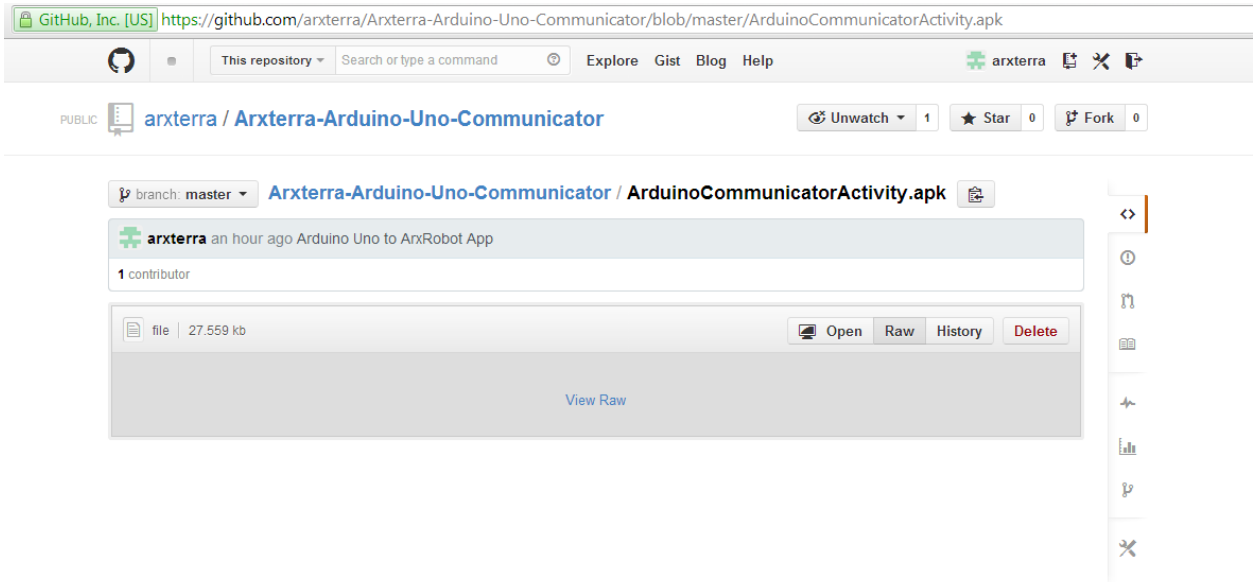
Hardware: Android phone version 3.1 or higher with USB hosting capabilities, Arduino Uno R3, OTG Cable (available from arxterra.com or amazon)

Software: Arduino IDE

Files: ArduinoCommunicator.apk, UnoSerialTest.ino

Procedure

1. Go to https://github.com/arxterra. This is where you will find all test and open sourced code.



2. Download UnoSerialTest.ino in the Test repository and ArduinoComunicatorActivity.apk in the Arxterra Arduino Uno Communicator repository. You can download these files directly by pressing the raw tab or download zip if available.
3. Upload the SerialTest.ino to your Arduino UNO R3. If you need help go to http://arduino.cc/

4. Side-load the ArduinoComunicatorActivity.apk by connecting your phone to the computer which has the file (.apk) downloaded. Make sure you have set your device for USB debugging and to allow 3rd party apps. This is usually found under developer options on your android. Set the phone for storage and load apk into download folder. Disconnect phone and find file. When you try to open file you should get a package installer message. This will install app. **Note:** if you are uncomfortable with this method you can download Arduino Communicator from google play for testing purposes only. This app crashes when used in conjunction with the ArxRobot app and you will eventually need the Arxterra version to connect to our servers.
5. Connect phone to Arduino UNO R3 with OTG cable. If the app does not open by itself, go to apps and open.
6. If your phone works you should see a message that the Arduino Uno has been found and be able to read a message. Note: if you are reading jibberish, tap the phone screen to change from hexadecimal to string format.
7. If this works, your phone is receiving serial communication and will be compatible with the Arduino Uno R3 and Arxterra Software. Please send us phone model and android version to arxterra@gmail.com
8. If this does not work and you receive a message that no device is folund, please send us phone model and android version to arxterra@gmail.com for other options

Arduino Mega ADK

Requirements

Hardware: Android phone version 2.3 or higher, Arduino Mega ADK

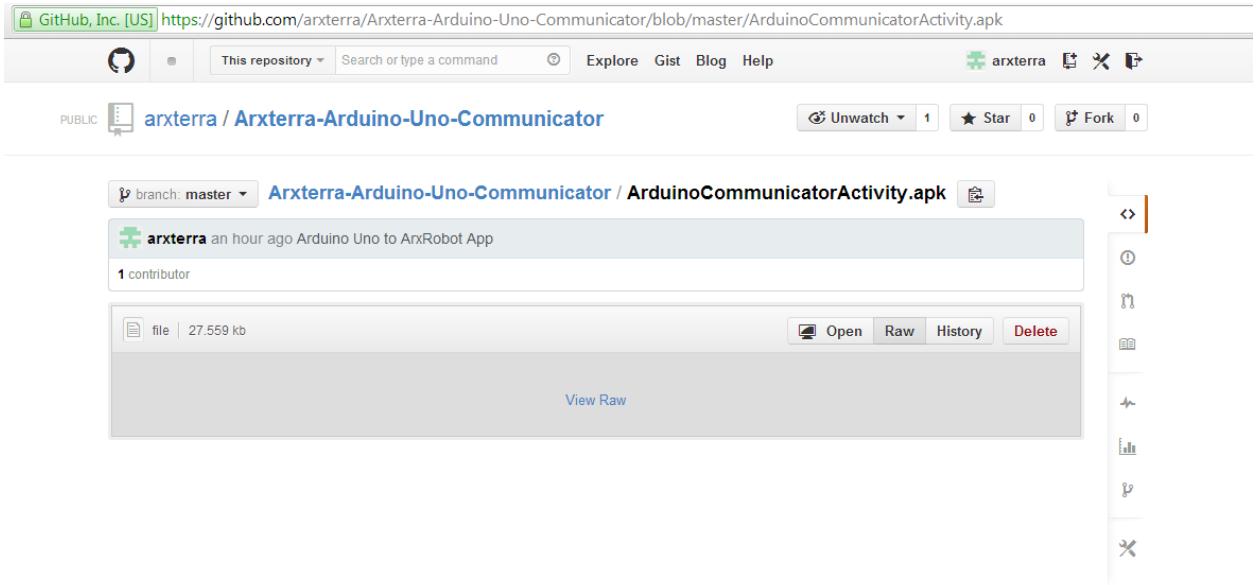
Software: Arduino IDE

Files: Arxterra Rover v0 091, ArxRobot App

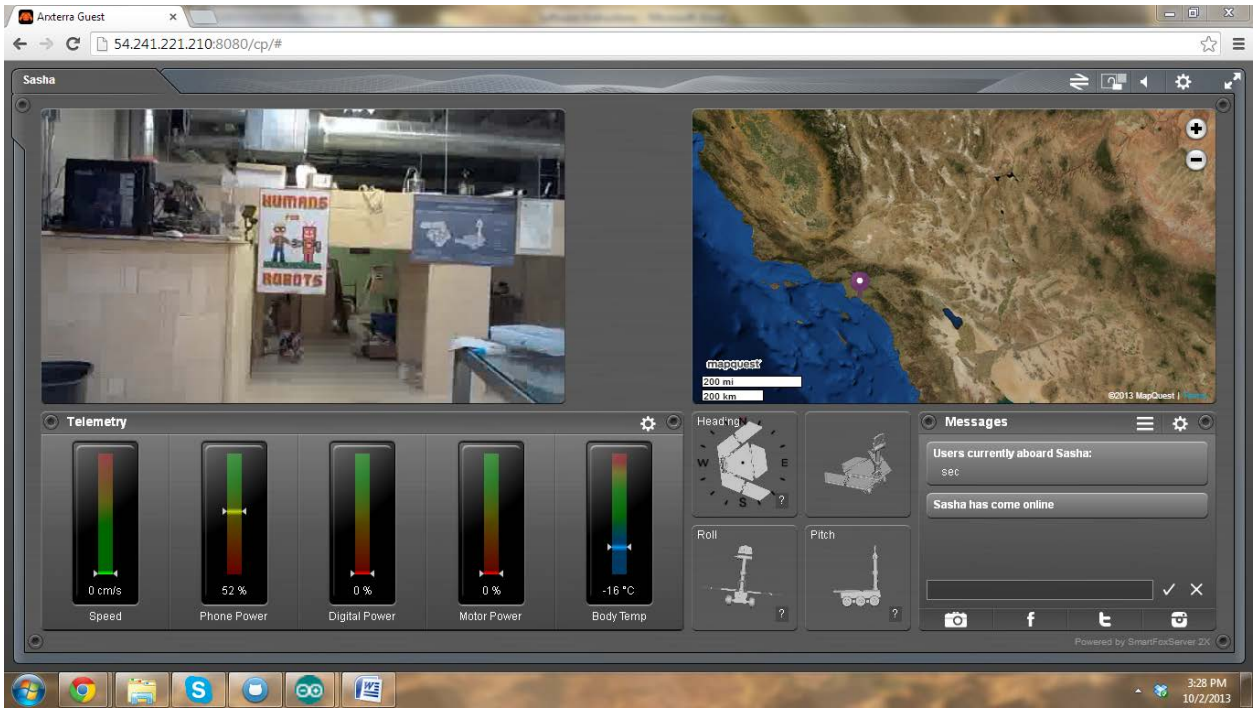
Procedure

A test app will be developed for use, but until then here's an easy way to check for compatibility.

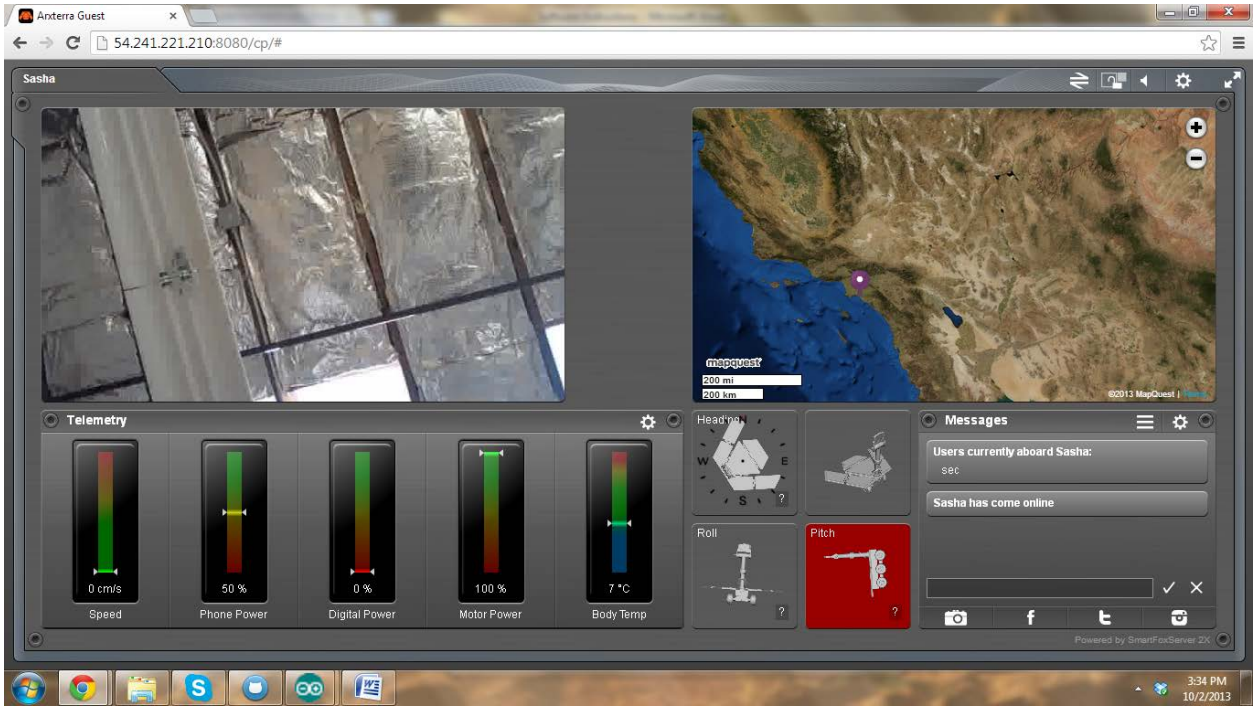
1. Go to https://github.com/arxterra. This is where you will find all test and open sourced code



2. Download arxterra_rover_v0_091.ino in the Pathfinder_Rover repository. You can download these files directly by pressing the raw tab or download zip if available.
3. Upload the arxtera_rover-v0_091.ino to your Arduino Mega ADK board. Make sure you have selected the correct board in the Tools menu or the sketch will fail to compile.
4. Download the ArxRobot App by emailing arxterra.com and requesting to becoming a tester and following instructions in email.
5. Install ArxRobot app.
6. Connect your Android device to the Arduino Mega ADK via the standard usb port. Note: The Arduino will need external power from either the 9mm barrel jack or your computer.
7. Open the ArxRobot App
8. Select the following options
   Arduino Connection Protocol: Microbridge
   Camera for Streaming Video: Whatever camera your phone has
9. Click Done. When you see eeprom settings, click done again. These are not important for this test.
10. You should see data streaming in the background behind the login window.
11. Login as Sasha
12. Go to www.arxterra.com and go to the control panel. Click “Launch” button and follow instructions, selecting sasha as your rover.
13. You should see something like this:



14. The next step is to make sure the Arduino is reading values and reporting them to the server. We will do this by simulating battery levels.
15. Using a jumper cable connect the 3.3v pin on the arduino to A12 pin. You should see the Motor Power Gauge reflect it is receiving data.



Don't worry if you see any values fluctuating, this can happen with floating inputs. The important part is that you are seeing the connection from Arduino to Android to Server.

16. Report test results to arxterra@gmail.com with your android device and version.

Report Information to Arxterra Command Center

Reporting information to us will help determine and resolve any issues with phone hardware or operating system compatibility. Please email arxterra@gmail.com with the results of the test your phone model and version. Depending on your results we will add you to the correct group to allow you to test the app. Thank you for your time.

Downloading Apps

1. Report results of test to arxterra@gmail.com with your phone model and android version.
2. Depending on your results, we will send you an invitation to join the correct group for your mobile device.
3. Follow instructions that come with the invitation.

Connecting to Arxterra Telerobotic Communities

Coming soon……