

BOAT PHONE HOME INSTRUCTIONS:

READ THIS:

The following instructions are provided free of charge. No warranty or guarantee is expressed or implied. It is up to the user to determine if he/she has the technical skills for this project. It is up to the user to determine if the applied system is useful and beneficial for intended use. No technical support for this project is provided. Before attempting this project the user should review all instructions.

Addendum Feb. 2012

Since the BoatCall software was written and published, Arduino has changed to version V10 of their OS. This is not backward compatible with V0023 that BoatCall software was written with. However, v0023 can still be down loaded from Arduino's website (see below) You must use V0023 for BoatCall.

Previous IDE Versions

These packages are not supported any longer by the development team:

Arduino 0023 ([release notes](#)): [Windows](#), [Mac OS X](#), [Linux \(32 bit\)](#) [64 bit](#) - hosted by [Google Code](#)

← **Download this version for either
Windows, or MacOSx**

PART ONE, ARDUINO SOFTWARE.

Before purchasing any parts, start with downloading Arduino software. This is all free so you will only be expending some of your time.

There are two downloads. First is the Arduino software that allows the Arduino Pro microprocessor to be programmed. This can be found at[www.arduino.cc/en/main/software]. The following instructions are for Windows operating system. Make a folder called ARDUINO. Down load the zipped arduino software into a temporary fold.

Unzip the files into your created ARDUINO folder.

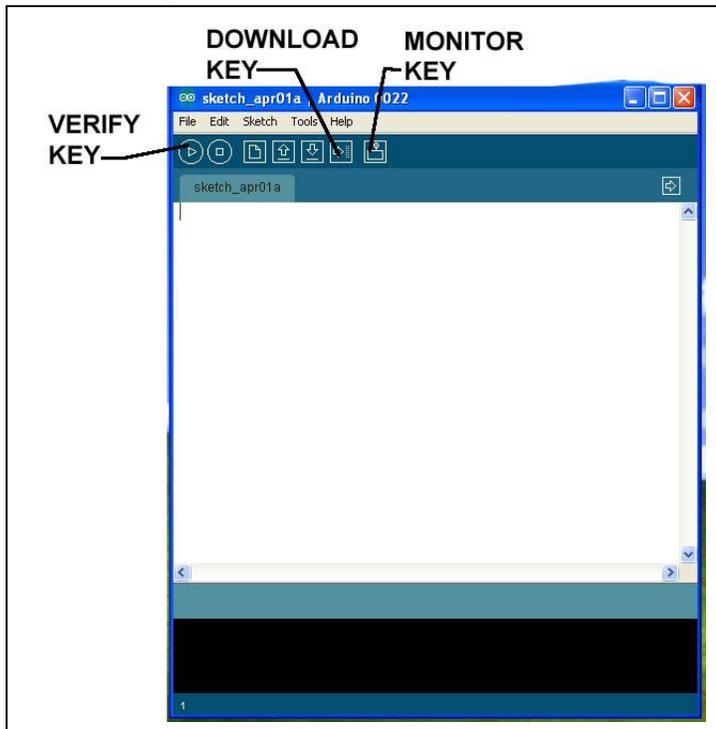
Note, the software does not need to run in a typical Program folder as most other software programs do.

In the Arduino folder, Click on :



Logo and program should start. You should see

the following:



Click on the TOOLS, then BOARD. Select: Arduino Duemilanova or Nano w/ATmeg 328.

Click on Files, Example, Basic and open folder Blink. Open file blink. Click on Verify Key. The software will say: compiling. This will take several seconds. If all is working well, message at bottom (black area) will say: **Binary sketch size: 1018 bytes (of a 30720 byte maximum)**
The software is now loaded and operating correctly.

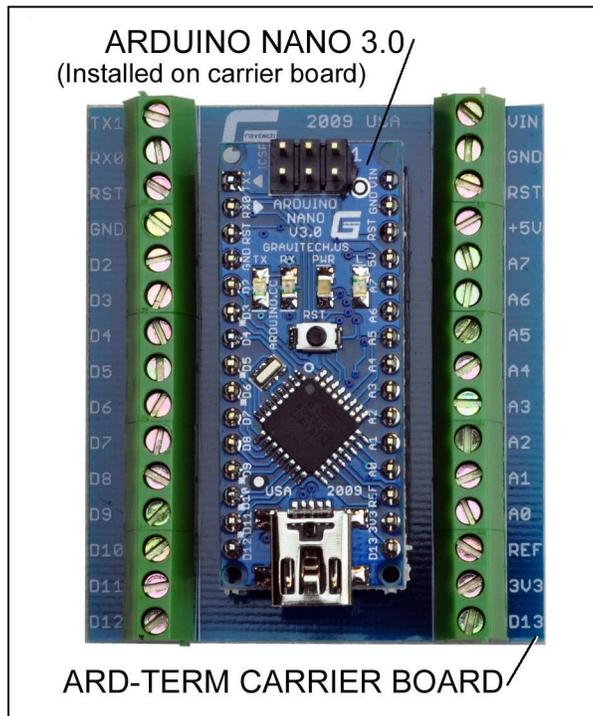
PART TWO Program for Arduino.

The program consists of three folders. One is **sketch_BoatCall3** , **NewSoftSerial** and **Cell**. Download and save all three from the Good Old Boat website. Cut/Paste the sketch_BoatCall3 folder under the Arduino main folder. Cut/Paste the Cell and NewSoftSerial folders under Arduino-Libraries folder. **THIS IS IMPORTANT: The CELL and NewSoftSerial folders must be in the Libraries folder**, otherwise the program will not work.

Start Arduino program and open the file: Sketch_BoatCall3 program. Click on Verify Key. The program should compile with no errors. Message at bottom should look something like this:

Binary sketch size: 5914 bytes (of a 30720 byte maximum)

Congratulations. You now have all the software needed.

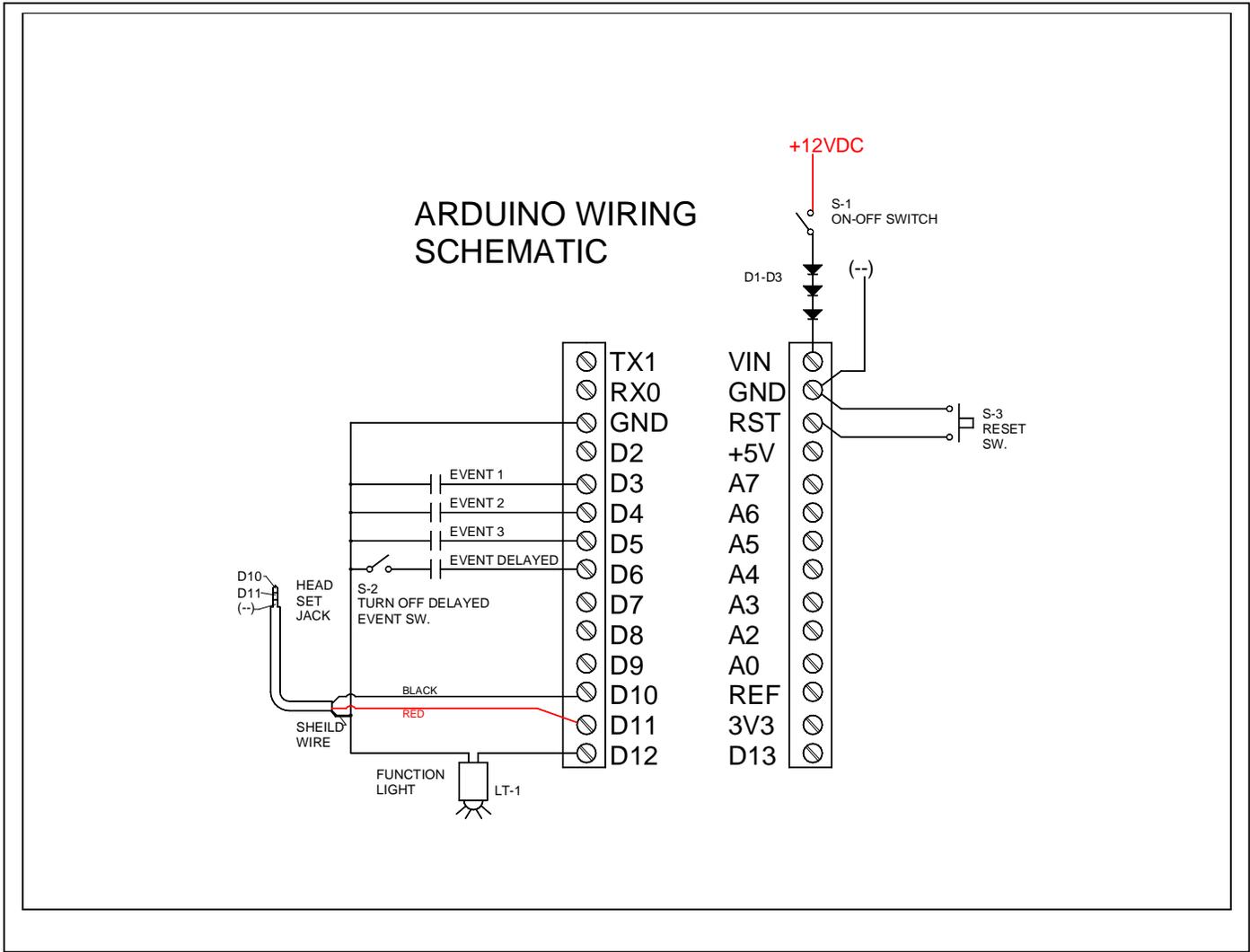


The Motorola phone can be purchased on line. Search for Motorola C-168i. Several hits will be found for both used and new phones. Cost range for \$25-\$45. When purchasing, selection one that us UNLOCKED. This simply means the phone can be used by any carrier. You may want to purchase a Car Charger for the phone. This way the phone will be powered by boat's battery and can be left on all the time. Phone draws very little power.

You must also select a carrier for phone service. At time of this writing, T-Mobile is the best option and was selected for this project. In soft ware, the code is set up to use T-mobile as the carrier.

You must purchase a SIM card to install in the phone and some air time. Minimal air time is \$10 for 30 min. Note the air time expires in 90 days. You must refill (\$10) before 90days are up. T-mobile provides all instructions for installing SIM card and air time refill.

WIRING



Below is a parts list with suggested vendors. Above is the wiring schematic. Switch S-3 is for reset of the microprocessor. This is optional. Switch S-2 is turn off delayed event. This is a special event (EVENT 4) that can be used for a magnetic switch on hatch boards. Think of it as an intruder alarm. If the contact close, you have 30 seconds to turn switch S-2 off before the Arduino activates the phone and sends out a message. Events 1-3 are any contact closure. This could be a high bilge alarm, fire detector or any other event you would like to monitor. D-1-3 are diodes. The Arduino board is rated for 9-12VDC. Typical boat battery voltage can be as high as 14V when charging. The three diodes are a simple way of dropping the voltage by 2.1 V. All event wiring should be 2 conductor wire with shield. Note run all grounds back to board. Do not ground (neg --) at other points within the boat. It is best to use 2 conductor, 22Ga wire with shield for all remote wiring.

Parts list:

Supplier www.digikey.com

Call out	Description	Qt.	Part #	~COST
D-1-3	Diodes	3	1N4001FSCCT	\$0.30 EA
Sw1&2	Power and Evt 3 switchs	2	EG2351	\$3.00 EA
Sw 3	Reset switch	1	GH1368	\$2.00
LT-1	Function light	1	350-2126-ND	\$2.00
Jack	Jack to ph conn	1	CP-2204	\$3.00

Bench Test.

Down load BoatCall3 software to Arduino board as described above. Connect Arduino Nano to Phone using jack (part number CP-2204). The jack will plug into the phones head set jack found on the top of the phone. It is assumed that the phone number to be called and message has all ready been modified as described above. No power supply will be needed, USB port will power the Arduion Nano. Open the Monitor window in Arduino main software (see picture above). Make sure the phone is on and service connection has been made to T-mobile. With a short section of wire, short from terminal D3 to GND. One monitor window, the message should appear. With in a short time the message should arrive at phone that was called.