

1. Preparation

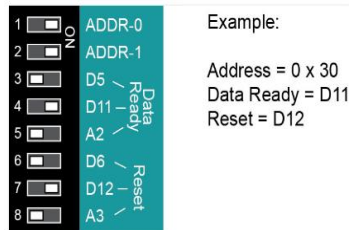
You will need:

- 1 or more wireless sensors
- 1 or more Tarts Gateway Shields for Arduino
- 1 Arduino Platform (Uno, Leonardo, Yun, Ethernet, Duo, MEGA-ADK, MEGA2560)
- Computer
- Communication cable
- Arduino IDE 1.0.6 or later

2. Setup Procedure

Setup the Hardware

- Attach the Tarts shield to your platform.
(Tarts shield is unpowered)
- Attach the antenna.
- Assign the gateway communication address.
 - Set GATEWAY_ADDRESS.
Options are: 0x30, 0x31, 0x32, 0x33 (see image).
- Select your preferences for pin options.
 - Set GATEWAY_PINDATAREADY.
Options are: D5, D11, A2. (see image) .
 - Set GATEWAY_PINRESET.
Options are: D6, D12, A3 (see image).



Example:

Address = 0 x 30
Data Ready = D11
Reset = D12

- Follow the setup instructions if this is the first time using the Arduino:
 - <http://arduino.cc/en/Guide/HomePage>
- Make note of the Gateway Serial ID number (alpha-numeric) on the shield.
- Straighten the antennas on your sensors. (No batteries yet!)
- Connect the communication cable to the Arduino platform and the PC.

Setup the Software:

- Download and install latest Arduino IDE.
<http://arduino.cc/en/Main/Software>
- Download and install Tarts libraries.
<http://www.tartssensors.com/libraries/arduino>
- Add the library to your Sketch.
<http://arduino.cc/en/Guide/Libraries>

Modify and Compile Sketches:

- Open and Modify one of example Sketches included with the library.
- Modify the gateway and sensor information (see table) to match your hardware.
- If using IDE version earlier than 1.5.3, then modify *TartsPlatform.h* to use the correct platform (Uno, Leonardo, etc ...)
- Verify and Compile the Sketch.
- Verify the Arduino platform.
- Verify the COM port.
- Upload the Sketch to your Arduino.
- Open the viewing console (Serial Monitor).

Set up the wireless sensor network

- Wait for the gateway to indicate that it is Active (via viewing console or when activity light is steady green).
- Put the batteries in the sensors.

3. Tips

If you are experiencing issues getting your Arduino to run, see:

<http://arduino.cc/en/Guide/HomePage>

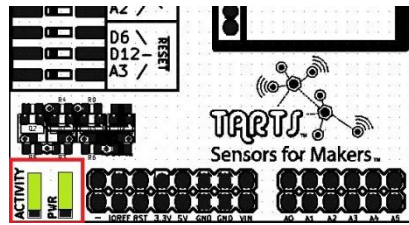
DO NOT insert the batteries until the very last step. Everything else must be operating first, before batteries are inserted into the wireless sensors.

DO NOT hot plug the shield onto the Arduino. Make sure everything is unpowered when attaching and removing the shield.

Allow at least 3 feet between each wireless device for proper RF operation.

4. Light Indicators

The Tarts Gateway Shield has two lights that indicate it is functioning properly. Upon power up, the power light will turn green. When the gateway goes ACTIVE, the activity light will turn green. Sensor communication will cause the activity light to turn off and then back on.



5. Community Forum

Tartssensor.com provides access to the Tarts community with set up tips, support issues, and user applications. Please visit the forum at:

www.tartssensors.com/community

When creating a sensor, register your sensor object by the class it belongs to.

Sensor Object Type	Sensor Type	Data
TartsTemperature	Temperature Sensor	Degrees Celsius
TartsWaterTemperature	Water Temperature Sensor	Degrees Celsius
TartsHumidity	Humidity Sensor	Percent RH Humidity, Degrees Celsius
TartsDryContact	Dry Contact Sensor	Closed (1); Open (0)
TartsWaterDetect	Water Detection Sensor	Present (1); Not Present (0)
TartsWaterRope	Water Rope Sensor	Present (1); Not Present (0)
TartsOpenClose	Open/Closed Sensor	Closed (1); Open(0)
TartsButton	Button Sensor	Not Pressed (0); Pressed(1)
TartsAsset	Asset Sensor	" ", Present
TartsPassiveIR	Passive IR Motion Sensor	No Motion (0); Motion (1)
TartsActivity	Activity Detection Sensor	No Motion (0); Motion (1)
TartsVACDetect	VAC Detection Sensor	Present (1); Not Present (0)
TartsVDCDetect	VDC Detection Sensor	Present (1); Not Present (0)
TartsMeasure20mA	Measure 0-20mA Sensor	Current in mA
TartsMeasure1VDC	Measure 0-1 VDC Sensor	Voltage in volts
TartsMeasure5VDC	Measure 0-5 VDC Sensor	Voltage in volts
TartsMeasure10VDC	Measure 0-10 VDC Sensor	Voltage in volts
TartsMeasure50VDC	Measure 0-50 VDC Sensor	Voltage in volts
TartsMeasure500VAC	Measure 0-500 VAC Sensor	Voltage in volts
TartsResistance	Resistance Sensor	Resistance in Ohms
TartsTilt	Tilt Sensor	Angle in Degrees
TartsCompass	Compass Sensor	Direction in Degrees
TartsBasicControl	Single Control Device	State of Switch (open or closed)

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info@tartssensors.com

www.tartssensors.com