Pin mapping

The table below shows all the pin connections for ecotron hardware. It's possible to reconfigure the connections in multiple ways, but some pitfalls regarding the SoftwareSerial interface exist. Also, since hardware serial is being used for debugging, digital pins 0 and 1 are not useable. The only free pin on Arduino is thus analog pin 5.

There is a comprehensive list of pin connections within the firmware itself - one can refer to it to make sure the code runs as intended. Prototype pins are laid out as follows:

sim808	
TX RX only use PWM enabled pins for serial	8 10
DTR RI PWR RST avoid using pin 13 as input	11 12 13 not used!
VIO GND	any Vcc any GND
temperature sensor	
Vcc GND	any Vcc any GND
Signal	A0
HC-SR04 sensors	
Vcc GND required for each sensor positions refer to the actual container with 5 separate bins left and right as seen by device from within the container (not outside viewer!) from the outside, cans are conveniently ordered 1-5 from left to right	any Vcc any GND
far right (can 1) Trigger Echo	 2 1
far left (can 5) Trigger Echo	 5 4
middle left (can 4) Trigger Echo	 7 6
close right (can 2) Trigger Echo	 A2 A1
close left (can 3) Trigger Echo	 A4 A3
boost converter (power)	
Out +	Vin

Out - In + In -	any GND VBAT of sim808 any GND
manual trigger (dumb switch)	
Pin 1 Pin 2 pin 9 is configured as pullup input - works in reverse logic	9 any GND

Not mentioned in the table are solar panel, battery, GSM and GPS antennae connected to sim808 breakout via their reserved connections.

Manual trigger is not likely to make it into the final design (think of all the grade school kids giggling and pressing the button repeatedly on their way back from school) but it makes testing a lot easier.