Communication Protocol

The following commands will be sent from the computer to all daughter boards via ASCII over the serial UART port. While this may not be the most efficient way to communicate serial, it very user friendly and the plain text nature makes debugging very simple.

A standard command would look like this:

```
SEND        "Noise", Command Type, Data 0, Data 1, Data 2.
RECIEVE     Return Value
```

With each of the parameters defined as follows.

Noise	Command Type	Data 0 [int]	Data 1 [float]	Data 2 [int]
Value (Input) — First segment doesn't contain any useful information, it eats up any garbage from starting the serial connection	0 – Sample Sensors	0 – MST_0 (%) 1 – MST_1 (%) 2 – LDR (%) 3 – A_TMP (Deg F) 4 – P_TMP (Deg F)	Number of Samples to be taken	
	1 – Manipulate Lights	Red intensity [0:255]	Blue intensity [0:255]	Green intensity [0:255]
	2 – Pumps Liquid	[0:Number of Pumps] – Chooses which solenoid to open	Volume to Pump (L)	

All commands by the prime node MUST have their completion confirmed by the top or sub node which received them. Note, only full commands yield outputs, only send full commands.

Noise	Command Type	Data 0	Data 1	Data 2
Value (output) — First segment doesn't contain any useful information, it eats up any garbage from starting the serial connection	0 – Sample Sensors from Subs	[Returns] the requested value		
	1 – Manipulate Lights	[Returns] a 1 when complete		
	2 – Pumps Liquid	[0:Number of Pumps] – Chooses which solenoid to open	[Returns] the amount of time in seconds the pump was on	