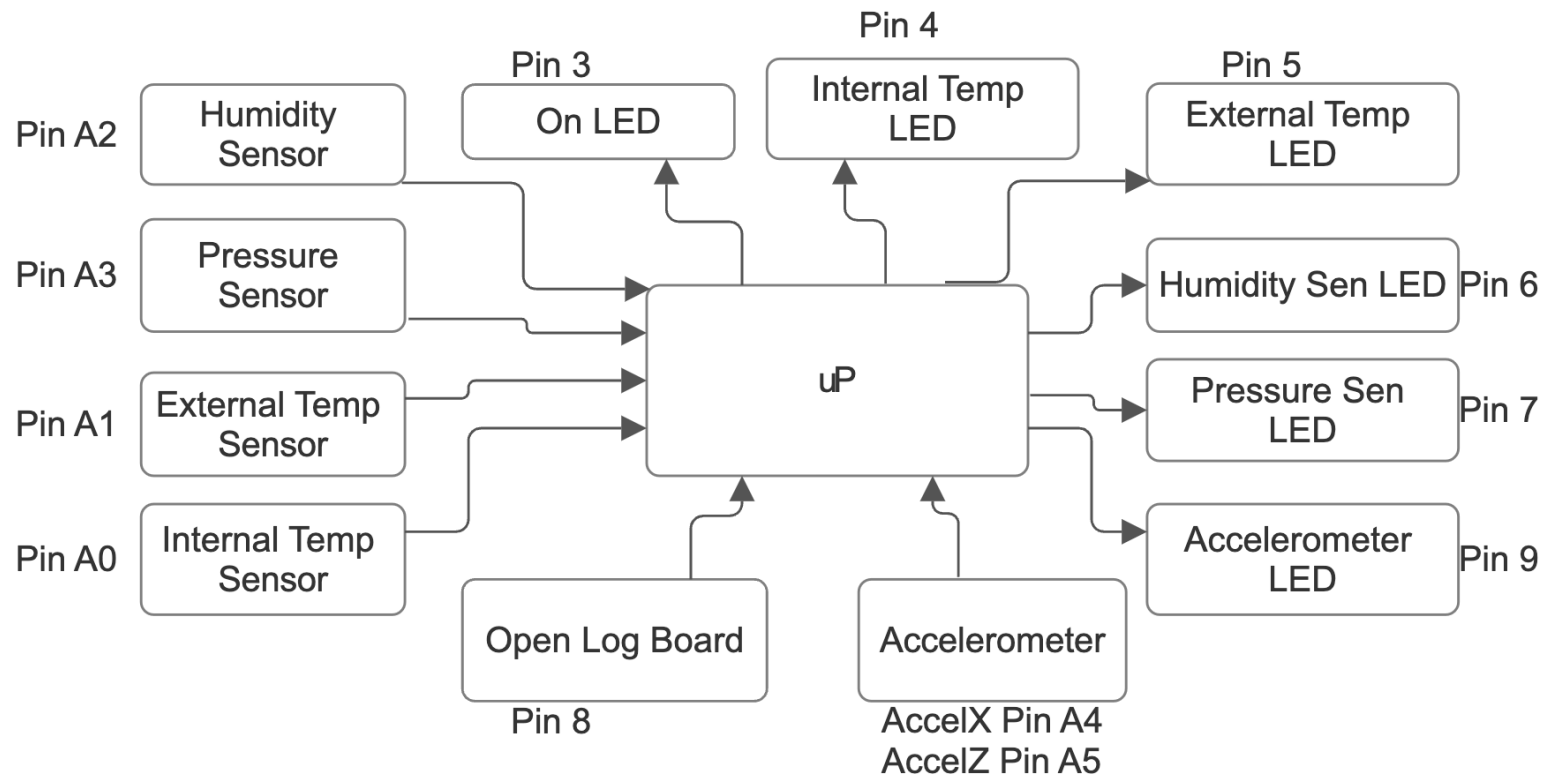


Weather Balloon

By Kevin Granillo

Original Design-Block Diagram



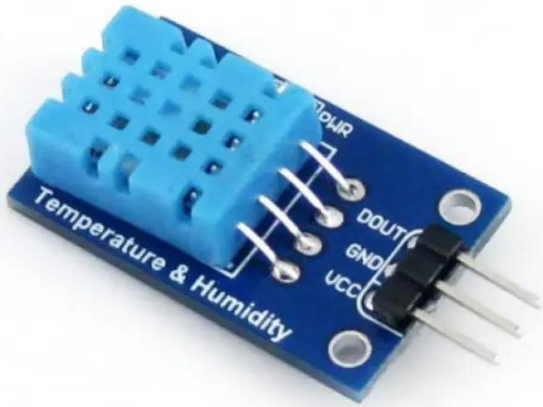
Price Breakdown

Part Description	QTY	Cost per Unit	Total Cost
330 Ohm Resistors	6	\$0.10	\$0.60
PCB (Arduino Uno Shield wout/ components)	1	\$1.00	\$1.00
LED - Yellow	1	\$0.28	\$0.28
LED - Orange	1	\$0.35	\$0.35
LED - Blue	2	\$0.24	\$0.48
LED - Green	1	\$0.24	\$0.24
LED - Red	1	\$0.15	\$0.15
Arduino UNO	1	\$27.60	
Jumper Wires	1	\$1.95	\$1.95
8-pin Stackable Plug Headers	2	\$0.75	\$1.50
6-pin Stackable Plug Headers	2	\$0.75	\$1.50
DIP Socket Halves	2		\$0.00
Header (6 Pin Socket - Short Pins)	2	\$0.26	\$0.52
Header (3 Pin Socket)	1	\$0.21	\$0.21
Header (2 Pin Plug Breakaway)	2	\$0.47	\$0.94
Header (3-Pin Locking)	1	\$0.67	\$0.67
Humidity Sensor	1	\$20.50	\$20.50
OpenLog Board	1	\$17.50	\$17.50
Temperature Sensor	1	\$1.65	\$1.65
Pressure Sensor	1	\$48.67	\$48.67
Accelerometer (IC: ADXL335)	1	\$16.95	\$16.95
Rocker Switch	1	\$0.45	\$0.45
9V Barrel Connector	1	\$1.09	\$1.09
Stranded Wire (8" - 22 AWG) - Red	1	\$0.57	\$0.57
Stranded Wire (8" - 22 AWG) - Black	1	\$0.57	\$0.57
		Total cost =	\$118.34

Power Consumption

Part Description	QTY	Power Consumption (W)
330 Ohm Resistors	6	0.25
PCB (Arduino Uno Shield wout/ components)	1	0
LED - Yellow	1	0.03
LED - Orange	1	0.03
LED - Blue	2	0.05
LED - Green	1	0.06
LED - Red	1	0.03
Arduino UNO	1	1.04
Jumper Wires	1	0
8-pin Stackable Plug Headers	2	0
6-pin Stackable Plug Headers	2	0
DIP Socket Halves	2	0
Header (6 Pin Socket - Short Pins)	2	0
Header (3 Pin Socket)	1	0
Header (2 Pin Plug Breakaway)	2	0
Header (3-Pin Locking)	1	0
Humidity Sensor	1	1
OpenLog Board	1	0.03
Temperature Sensor	1	0.00025
Pressure Sensor	1	0.0135
Accelerometer (IC: ADXL335)	1	0.001155
Rocker Switch	1	0
9V Barrel Connector	1	0
Stranded Wire (8" - 22 AWG) - Red	1	0
Stranded Wire (8" - 22 AWG) - Black	1	0
Total		2.534905

Feasibility



DHT 11

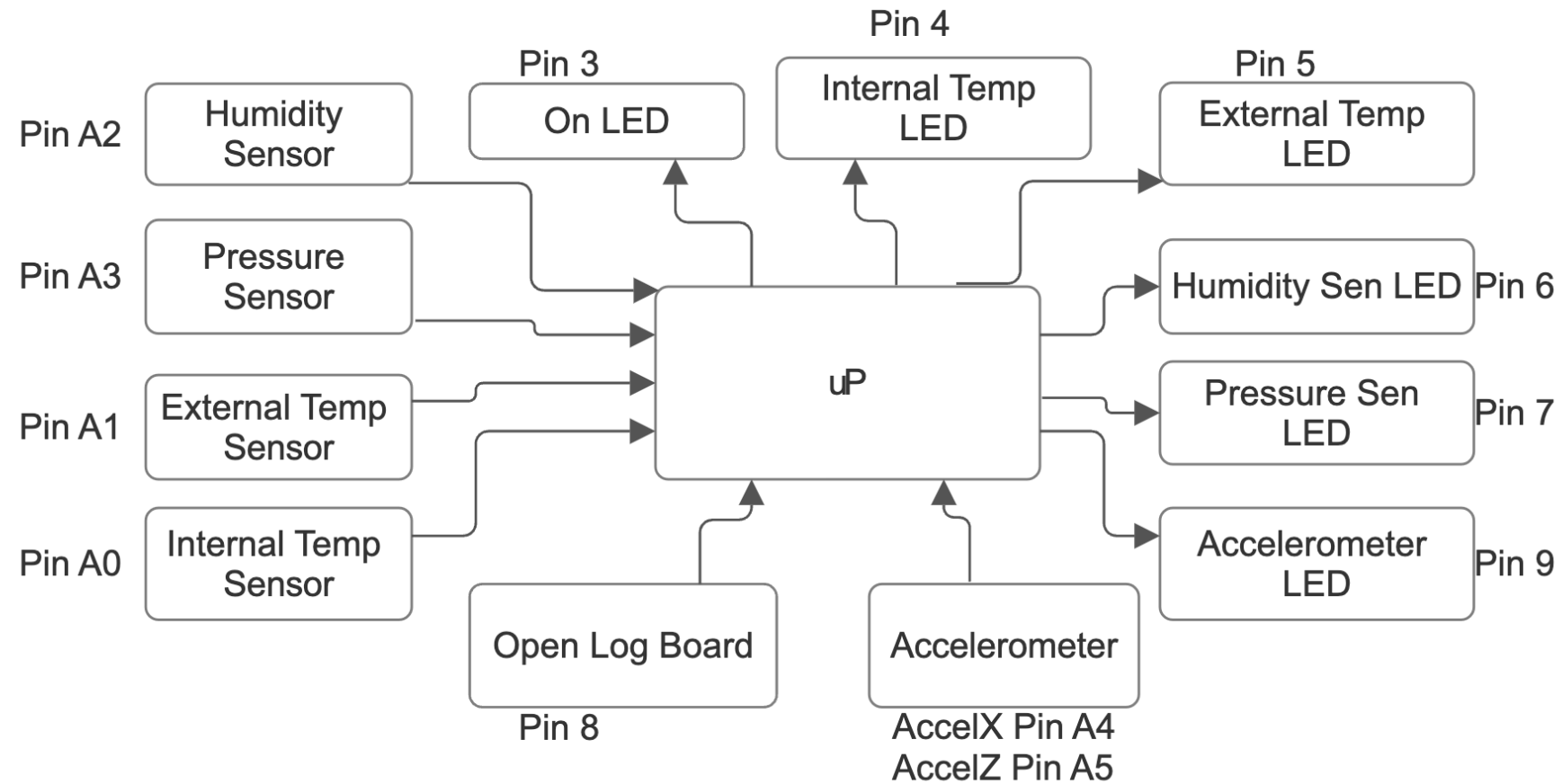
- Humidity and Temp Sensor
- Low Cost
- Low Power Consumption



SEN-09569

- Humidity Sensor Unavailable
- Consumes 1 Watt of Power

New Design



Power Consumption

Part Description	QTY	Power Consumption (W)
330 Ohm Resistors	6	0.25
PCB (Arduino Uno Shield wout/ components)	1	0
LED - Yellow	1	0.03
LED - Orange	1	0.03
LED - Blue	2	0.05
LED - Green	1	0.06
LED - Red	1	0.03
Arduino UNO	1	1.04
Jumper Wires	1	0
8-pin Stackable Plug Headers	2	0
6-pin Stackable Plug Headers	2	0
DIP Socket Halves	2	0
Header (6 Pin Socket - Short Pins)	2	0
Header (3 Pin Socket)	1	0
Header (2 Pin Plug Breakaway)	2	0
Header (3-Pin Locking)	1	0
Humidity Sensor	1	0.0015
OpenLog Board	1	0.03
Temperature Sensor	1	0.00025
Pressure Sensor	1	0.0135
Accelerometer (IC: ADXL335)	1	0.001155
Rocker Switch	1	0
9V Barrel Connector	1	0
Stranded Wire (8" - 22 AWG) - Red	1	0
Stranded Wire (8" - 22 AWG) - Black	1	0
Total Power		1.536405

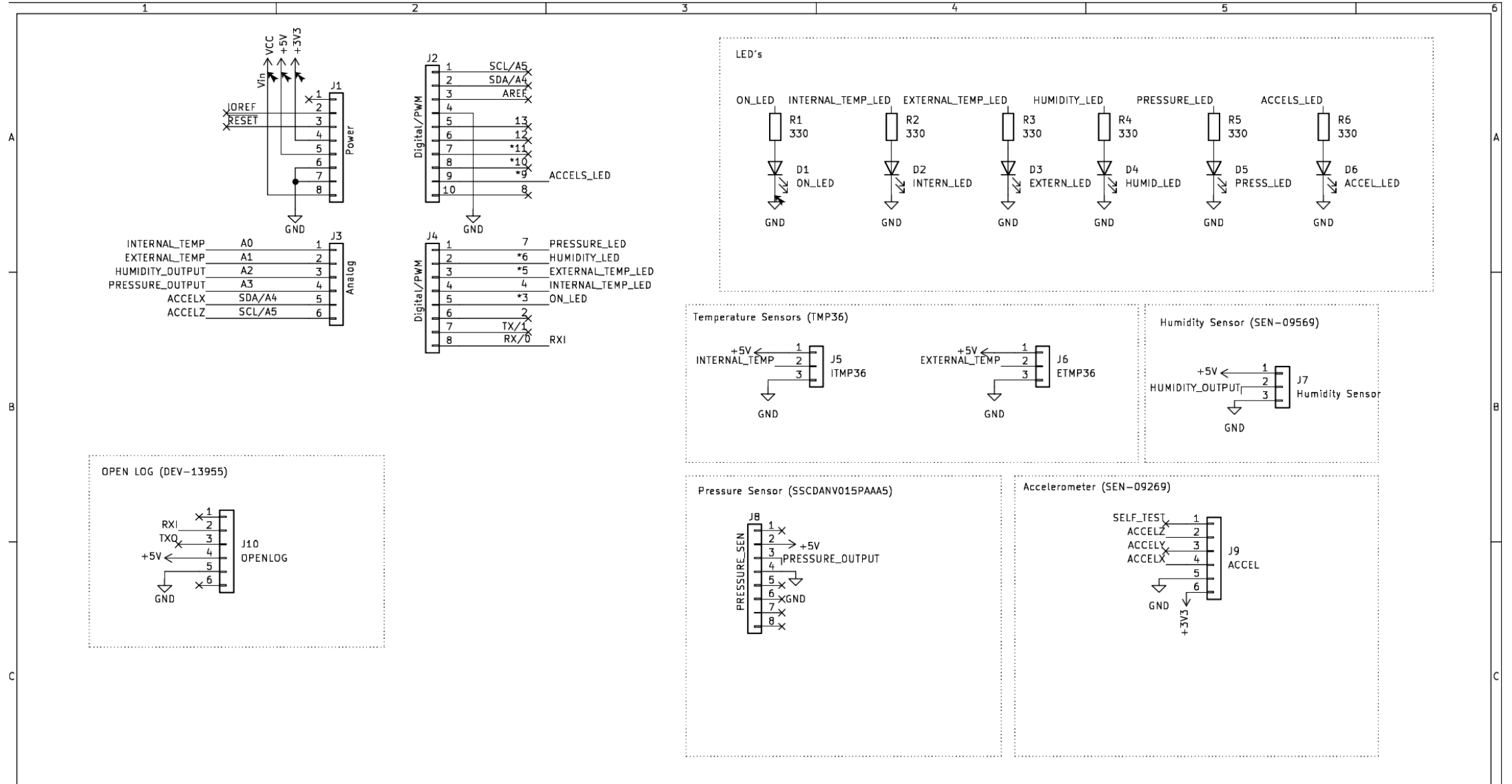
Price Breakdown

Part Description	QTY	Cost per Unit	Total Cost
330 Ohm Resistors	6	\$0.10	\$0.60
PCB (Arduino Uno Shield wout/ components)	1	\$1.00	\$1.00
LED - Yellow	1	\$0.28	\$0.28
LED - Orange	1	\$0.35	\$0.35
LED - Blue	2	\$0.24	\$0.48
LED - Green	1	\$0.24	\$0.24
LED - Red	1	\$0.15	\$0.15
Arduino UNO	1	\$27.60	
Jumper Wires	1	\$1.95	\$1.95
8-pin Stackable Plug Headers	2	\$0.75	\$1.50
6-pin Stackable Plug Headers	2	\$0.75	\$1.50
DIP Socket Halves	2		\$0.00
Header (6 Pin Socket - Short Pins)	2	\$0.26	\$0.52
Header (3 Pin Socket)	1	\$0.21	\$0.21
Header (2 Pin Plug Breakaway)	2	\$0.47	\$0.94
Header (3-Pin Locking)	1	\$0.67	\$0.67
Humidity Sensor	1	\$4.79	\$4.79
OpenLog Board	1	\$17.50	\$17.50
Temperature Sensor	1	\$1.65	\$1.65
Pressure Sensor	1	\$48.67	\$48.67
Accelerometer (IC: ADXL335)	1	\$16.95	\$16.95
Rocker Switch	1	\$0.45	\$0.45
9V Barrel Connector	1	\$1.09	\$1.09
Stranded Wire (8" - 22 AWG) - Red	1	\$0.57	\$0.57
Stranded Wire (8" - 22 AWG) - Black	1	\$0.57	\$0.57
		Total cost =	\$102.63

Weight Breakdown

Part Description	QTY	Weight per Unit	Total Weight
330 Ohm Resistors	6	5	30
PCB (Arduino Uno Shield w/out/ components)	1	15	15
LED - Yellow	1	0.27	0.27
LED - Orange	1	0.26	0.26
LED - Blue	2	0.26	0.52
LED - Green	1	0.26	0.26
LED - Red	1	0.26	0.26
Arduino UNO	1	25	25
Jumper Wires	10	0.7	7
8-pin Stackable Plug Headers	2	0.8	1.6
6-pin Stackable Plug Headers	2	0.65	1.3
DIP Socket Halves	2		0
Header (6 Pin Socket - Short Pins)	2	0.6	1.2
Header (3 Pin Socket)	1	0.4	0.4
Header (2 Pin Plug Breakaway)	2	0.3	0.6
Header (3-Pin Locking)	1	1.5	1.5
Humidity Sensor	1	2.5	2.5
OpenLog Board	1	2.5	2.5
Temperature Sensor	1	0.208	0.208
Pressure Sensor	1	1	1
Accelerometer (IC: ADXL335)	1	1.45	1.45
Rocker Switch	1	8.3	8.3
9V Barrel Connector	1	4	4
Stranded Wire (8" - 22 AWG) - Red	1	0.93	0.93
Stranded Wire (8" - 22 AWG) - Black	1	0.93	0.93
		Total Weight =	106.988

Schematic



PCB

