

## COTS: AHP SELECTION MATRIX

Last updated: October 7, 2016

### Selection Criteria

1. *Onoard Wi-fi*
2. *Runs Linux*
3. *Has Db9 Serial Comm Port*
4. *2x USB Port*
5. *More then 10 GPIO Pins*
6. *Cost*
7. *RAM > 500mB*

### Pairwise Comparison

<b>Criteria</b>	<b>Onoard Wi-fi</b>	<b>Runs Linux</b>	<b>Has Db9 Serial Comm Port</b>	<b>2x USB Port</b>	<b>More then 10 GPIO Pins</b>	<b>Cost</b>	<b>RAM &gt; 500mB</b>	<b>Total Usb Current Supply is at least 800mA</b>
<b>Onoard Wi-fi</b>	1.00	1.00	9.00	5.00	7.00	3.00	1.00	5.00
<b>Runs Linux</b>	1.00	1.00	9.00	9.00	9.00	5.00	5.00	5.00
<b>Has Db9 Serial Comm</b>	0.11	0.11	1.00	0.20	0.20	0.20	0.20	0.33
<b>2x USB Port</b>	0.20	0.11	5.00	1.00	0.33	3.00	0.20	0.33
<b>More then 10 GPIO</b>	0.14	1.00	5.00	3.00	1.00	3.00	0.33	0.20
<b>Cost</b>	0.33	0.33	5.00	0.33	0.33	1.00	0.20	0.33
<b>RAM &gt; 500mB</b>	1.00	0.20	5.00	5.00	3.00	5.00	1.00	3.00
<b>Current Supply Draw</b>	0.20	0.20	3.00	3.00	5.00	3.00	0.33	1.00

Summary of important specs					
	Raspberry Pi 2	Raspberry Pi 3	Arduino Yun	Beaglebone Black	Ts7250
<b>Number of RAM</b>	<b>4.00</b> 1GB	<b>4.00</b> 1GB	<b>1.00</b> 32KB	<b>1.00</b> 512mB	<b>2.00</b> 32mB
<b>Current</b>	100mA	300mA	300mA	500mA	400mA
<b>GPIO Pins</b>	17	40	20	65	20

Determining Scores for the categories					
	Raspberry Pi 2	Raspberry Pi 3	Arduino Yun	Beaglebone Black	Ts7250
<b>Number of RAM</b>	1.00	1.00	0.25	0.25	0.50
<b>Current</b>	1.00	0.33	0.33	0.20	0.25
<b>GPIO Pins</b>	0.26	0.62	0.31	1.00	0.31

Scores assigned to each model						
	Weights	Raspberry Pi 2	Raspberry Pi 3	Arduino Yun	Beaglebone Black	Ts7250
<b>Onoard Wi-fi</b>	0.24	0.00	1.00	1.00	0.00	0.00
<b>Runs Linux</b>	0.37	1.00	1.00	1.00	1.00	1.00
<b>Has Db9 Serial Comm</b>	0.01	0.00	0.00	0.00	0.00	1.00
<b>2x USB Port</b>	0.03	1.00	1.00	0.50	0.50	1.00
<b>More than 10 GPIO Pins</b>	0.08	0.26	0.62	0.31	1.00	0.31
<b>Cost</b>	0.03	1.00	1.00	0.10	1.00	1.00
<b>RAM &gt; 500mB</b>	0.15	1.00	1.00	0.03	0.51	0.03
<b>Current Supply Draw</b>	0.09	1.00	0.33	0.33	0.20	0.25

Final scores multiplied by weights						
	Weights	Raspberry Pi 2	Raspberry Pi 3	Arduino Yun	Beaglebone Black	Ts7250
<b>Onoard Wi-fi</b>	0.24	0.00	0.24	0.24	0.00	0.00
<b>Runs Linux</b>	0.37	0.37	0.37	0.37	0.37	0.37
<b>Has Db9 Serial Comm</b>	0.01	0.00	0.00	0.00	0.00	0.01
<b>2x USB Port</b>	0.03	0.03	0.03	0.02	0.02	0.03
<b>More than 10 GPIO Pins</b>	0.08	0.02	0.05	0.02	0.08	0.02
<b>Cost</b>	0.03	0.03	0.03	0.00	0.03	0.03
<b>RAM &gt; 500mB</b>	0.15	0.15	0.15	0.00	0.08	0.00
<b>Current Supply Draw</b>	0.09	0.09	0.03	0.03	0.02	0.02
<b>Total Final Score</b>		<b>0.6909231</b>	<b>0.89923077</b>	<b>0.687415385</b>	<b>0.5898</b>	<b>0.49192</b>

