BeagleBone™ Blue is based on the extremely successful open-source hardware design of BeagleBone™ Black, a high-expansion, maker-focused, community-supported open hardware computer, created by the BeagleBoard.Org Foundation. BeagleBone™ Blue combines the high-performance flexible WiFi/Bluetooth WiLink™ interface of the BeagleBone™ Black Wireless and the robotics capabilities of the Robotics Cape from Strawson Design. BeagleBone™ Blue has onboard 2 cell (2S) LiPo battery management with charger and battery level LEDs, 8 servo motor outputs, 4 DC motor drivers, 4 quadrature encoder inputs, a wide array of GPIO and serial protocol connectors including CAN, a 9 axis IMU and barometer, 4 ADC inputs, a PC USB interface, an USB 2.0 host port, a reset button, a power button, two user configurable buttons and six indicating LEDs. Built on Octavo Systems’ System-In-Package that integrates a high-performance TI ARM processor and 512MB of DDR3, BeagleBone™ Blue boots Linux in around 10 seconds and gets you started developing through your web browser in less than 5 minutes with just a single USB cable.

Specifications:

* 1. Processor (Integrated in the OSD3358):
     1. AM335x 1GHz ARM® Cortex-A8
     2. SGX530 graphics accelerator
     3. NEON floating-point accelerator
     4. 2x PRU 32-bit 200MHz microcontrollers
  2. Memory:
     1. 512MB DDR3 800MHZ RAM (Integrated in the OSD3358)
     2. 4GB 8-bit eMMC on-board flash storage
     3. SD/MMC Connector for microSD
  3. Software Compatibility
     1. Debian
     2. Android
     3. Ubuntu
     4. Cloud9 IDE on Node.js w/ BoneScript library
  4. Connectivity
     1. High speed USB 2.0 Client port: Access to USB0, Client mode via microUSB
     2. High speed USB 2.0 Host port: Access to USB1, Type A Socket, 500mA LS/FS/HS
     3. WiLink 1835 WiFi 802.11 b/g/n 2.4GHz. Supports the following modes
        1. 2x2 MIMO
        2. AP
        3. SmartConfig
        4. STA
        5. Wi-Fi Direct
        6. Mesh over Wi-Fi based on 802.11s
     4. WiLink 1835 Bluetooth 4.1 with BLE
     5. Serial port:
        1. UART0, UART1, UART5 available via 4 pin JST connectors
        2. UART2 available via 6 pin JST connector (EM-506 GPS style connector)
        3. UART4 RX available via 3 pin DSM2 connector
     6. I2C1 available via 4 pin JST connector
     7. SPI1 CS0 (S1.1) and SPI1 CS1 (S1.2) available via 6 pin JST connectors
     8. CAN available via 4 pin JST connector (includes TCAN1051 CAN transceiver)
     9. 8 GPIOs (GP0 and GPI1) available via 6 pin JST connectors
     10. ADC inputs 0 to 3 available via 6 pin JST connector
     11. 3.3VDC and 5VDC power output via 4 pin JST connector
  5. Power management:
     1. TPS65217C PMIC is used along with a separate LDO to provide power to the system (Integrated in the OSD3358)
     2. 2 cell (2S) LiPo battery charger (powered by 9 – 18VDC DC Jack)
        1. 4 battery level LEDs
        2. 1 charger LED
     3. 6VDC 4A regulator to drive servo motor outputs
  6. Debug Support: JTAG test points
  7. Power Source
     1. microUSB USB
     2. 2 cell (2S) LiPo battery connector
     3. 9 - 18VDC DC Jack
  8. User Input / Output
     1. Power Button
     2. Reset Button
     3. Boot Button
     4. 2 user configurable buttons
     5. 6 user configurable LEDs; Power LED
  9. Motor Control (requires power from either DC Jack or 2S battery):
     1. 4 DC motor drivers
     2. 4 Quadrature encoder inputs
     3. 8 Servo motor outputs
  10. Sensors
      1. 9 axis IMU
      2. Barometer