

## Specifications:

- a. Texas Instruments® Stara™AM3358 Processor (Integrated in the OSD3358-SM):
  - i. 1GHz ARM® Cortex-A8 with NEON floating-point accelerator
  - ii. SGX530 graphics accelerator
  - iii. 2x programmable real-time unit (PRU) 32-bit 200MHz microcontrollers with single-cycle I/ O latency
  - iv. ARM® Cortex-M3 for power and security management functions
- b. Memory:
  - i. 512MB DDR3 800MHZ RAM (Integrated in the OSD3358-SM)
  - ii. 4kB I2C EEPROM (Integrated in the OSD3358-SM)
  - iii. SD/ MMC Connector for microSD
- c. Software Compatibility
  - i. Debian GNU/ Linux images customized for BeagleBone
  - ii. Cloud9 IDE on Node.js w/ BoneScript library
  - iii. Any BeagleBone Black software not needing access to unavailable expansion pins
- d. Connectivity
  - i. High speed USB 2.0 OTG (host/ client) micro-B connector (USB0)
  - ii. Bootable microSD card slot (MMC0)
- e. Expansion header
  - i. High speed USB 2.0 OTG (host/ client) control signals (USB1)
  - ii. 8 analog inputs with 6 at 1.8V and 2 at 3.3V along with 1.8V voltage references
  - iii. 44 digital GPIOs accessible with 18 enabled by default including 2 shared with the 3.3V analog input pins
  - iv. 3 UARTs accessible with 2 enabled by default (UART0, UART4)
  - v. 2 I2C busses enabled by default (I2C1, I2C2)
  - vi. 2 SPI busses with single chip selects enabled by default (SPI0, SPI1)
  - vii. 4 PWM outputs accessible with 2 enabled by default (PWM0A, PWM1A)
  - viii. 2 quadrature encoder inputs accessible
  - ix. 2 CAN bus controllers accessible
  - x. 23 programmable real-time unit (PRU) 32-bit microcontroller I/ O pins including options for the PRU UART and eCAP accessible with 7 I/ O pins enabled by default for PRU0 and 1 enabled by default for PRU1

- xi. 3 voltage inputs with 1 for battery, 1 shared with the USB connector and 1 for power-line input and a battery temperature sense input
  - xii. 2 voltage outputs, 1 with a 3.3V LDO and 1 with switch from voltage input
  - xiii. Power and reset button I/ Os
- f. Power management:
    - i. TPS65217C PMIC is used along with a separate LDO to provide power to the system (Integrated in the OSD3358) with integrated 1-cell LiPo battery support
  - g. Debug Support:
    - i. JTAG test points
    - ii. gdb and other monitor-mode debug possible
  - h. Power Source
    - i. microUSB connector
    - ii. expansion header (3 options: battery, VIN or USB-VIN)
  - i. User Input / Output
    - i. Power Button with press detection interrupt via TPS65217C PMIC (hold for 10s to initiate hardware power cycle)

