



Specifications:

- a. Processor (Integrated in the OSD3358):
  - i. AM335x 1GHz ARM® Cortex-A8
  - ii. SGX530 graphics accelerator
  - iii. NEON floating-point accelerator
  - iv. 2x PRU 32-bit 200MHz microcontrollers
- b. Memory:
  - i. 512MB DDR3 800MHZ RAM (Integrated in the OSD3358)
  - ii. 4GB 8-bit eMMC on-board flash storage
  - iii. SD/MMC Connector for microSD
- c. Software Compatibility
  - i. Debian
  - ii. Ardupilot

- iii. ROS
- iv. Cloud9 IDE on Node.js w/ BoneScript library
- d. Connectivity
  - i. High speed USB 2.0 Client port: Access to USB0, Client mode via microUSB
  - ii. High speed USB 2.0 Host port: Access to USB1, Type A Socket, 500mA LS/FS/HS
  - iii. 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
  - iv. WiLink 1835 Bluetooth 4.1 with BLE
  - v. Serial port:
    - 1. UART0, UART1, UART5 available via 4 pin JST-SH connectors
    - 2. UART2 available via 6 pin JST-SH connector (EM-506 GPS style connector)
    - 3. UART4 RX available via 3 pin DSM2 (JST-ZH) connector
  - vi. I2C1 available via 4 pin JST-SH connector
  - vii. SPI1 CS0 (S1.1) and SPI1 CS1 (S1.2) available via 6 pin JST-SH connectors
  - viii. CAN available via 4 pin JST-SH connector (includes TCAN1051 CAN transceiver)
  - ix. 8 GPIOs (GP0 and GPI1) available via 6 pin JST-SH connectors
  - x. ADC inputs 0 to 3 available via 6 pin JST-SH connector
  - xi. 3.3VDC and 5VDC power output via 4 pin JST-SH connector
- e. Power management:
  - i. TPS65217C PMIC is used along with a separate LDO to provide power to the system (Integrated in the OSD3358)
  - ii. 2 cell (2S) LiPo battery charger (powered by 9 - 18VDC DC Jack)
  - iii. 6VDC 4A regulator to drive servo motor outputs
- f. Debug Support: JTAG test points
- g. Power Source
  - i. microUSB USB

- ii. 2 cell (2S) LiPo battery JST-XH connector
  - iii. 9 - 18VDC DC Jack
- h. User Input / Output
  - i. Power Button
  - ii. Reset Button
  - iii. Boot Button
  - iv. 2 user configurable buttons (MOD, PAU)
  - v. 11 user configurable LEDs (USR0-3, Red, Green, WIFI, Battery 0-3); Charger LED; Power LED
- i. Motor Control (requires power from either DC Jack or 2S battery):
  - i. 4 DC motor drivers
  - ii. 4 Quadrature encoder inputs
  - iii. 8 Servo motor outputs
- j. Sensors
  - i. 9 axis IMU
  - ii. Barometer

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