

## Specifications:

- a. Texas Instruments® Sitara™ 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)

PocketBeagle Expansion Headers

P1										P2																												
SYS			VIN	1	2	87	6			AIN 3.3V	9	PRU1	PWM1					A	50	1	2	59	50					1	2	59								
USB1_V_EN			GPIO	109	3	4	89	CS			TX	PRU	PWM2					B	23	3	4	58	GPIO															
V_BUS			VIN	5	6	5	CLK			RX	PRU	UART4					RX	30	5	6	57	GPIO																
V_IN			VIN	7	8	2	MISO			TX	UART2						SCL	31	7	8	60																	
D_N			DN	9	10	3	MOSI			RX	PRU						SDA	15	9	10	52																	
D_P			DP	11	12	4	MOSI			RX	PRU						CAN1			RX	14	11	12	PWR_BTN			SYS											
ID			ID	13	14	3.3V												VOUT			13	14	VIN	BAT														
GND			GND	15	16	GND												GND			15	16	TEMP															
REF-			REF-	17	18	REF+	AIN 1.8V											GND			17	18	47	STRB					QEP2 15i					PRU0				
				19	20	20	GPIO			16(i/n)			PRU0								GPIO			27	19	20	64											
AIN 1.8V				21	22	GND												SYS			21	22	46															
				23	24	VOUT	SYS														23	24	48															
				25	26	12	SDA			TX	CAN0									25	26	NRST	SYS															
				27	28	13	SCL			RX	CAN0									27	28	124																
STRB			STRB	7	29	30	TX			TX	PRU1									29	30	113																
QEP0			QEP0	4	31	32	RX			RX	PRU1									31	32	112																
GPIO			GPIO	114	31	32	UART0			TX	PRU1									31	32	112																
PWM0			PWM0	1	33	34	RX			RX	PRU1									33	34	115																
PRU0			PRU0	110	33	34	PRU1			PRU1	PRU1									33	34	115																
PRU1			PRU1	10	35	36	PRU0			PRU0	PRU0									35	36	115	AIN 1.8V															