

Functional Spec					
A Marburg	4/27/2016				
	First	Second	Third		Notes
Companion board to Jetson which breaks out supplemental signals, provides OOB communications, a home for supplemental sensors, and auto-poweron	Manage Jetson Power/state	Enable auto power-on	Power on (ACOK or POWER_BTN_R?) on delay after startup		"the CHARGER_PRESENT# is active low w/ internal pull-up and needs 300ms low delay after VDD_IN reaches 5.5V." [Sheet1!F5]
		Provide an OOB way to reset the Jetson	Toggle reset pin		
		Deadman timer	Reset if no communications (I2C?) after period of time		
	Provide OOB communications		Manual disable/override on deadman?		
		Reset the Jetson remotely	OOB connection to microcontroller? Maybe magic pattern (break) to serial port? Reset or power on.		
		Access serial console	Wireless or IR?		Connection speed is 115200, with 8 bits, no parity, and 1 stop bit (115200 8N1). Flow control will be RTS/CTS. 3v3. Apparently it's on J21 pins 8,10 (Jetson pins UART0_*), board siganls UART1_*_HDR_3V3. J17 hosts TX1 signals UART1_* [Sheet1!F10]
	Host supplemental sensors	Pressure / temp sensor	Bosch BMP280		Adafruit (https://www.adafruit.com/products/2651) includes vreg and level shifters Don't need?
		Headers for supplemental temp sensors?	4 pin headers for VDD/Gnd/SDA/SCL		
	Break out supplemental signals	GPIO Header (J26)	Pin headers		
		Expansion Header (J21)			
		Serial port (J17)			Jetson TX1 USART1_* at 3V3
	Support for MSP430		Programming header		
	Indicators	LEDs for ?	Deadman?		
			Communications received?		
	Standalone debug version of board	LEDs for status/debug?			
		Supplemental power in	1v8 Regulator		
	Power to board from Jetson?				1v8 on all the time...
	Control BlueRobotics lights	Generate PWM			
		Turn off lights			

[Sheet1!F5] "When using the reference devkit, you'll likely need to stick with the POWER_BTN press. I believe if the CHARGER_PRSENT pin A49 is grounded, the PMIC will initiate a power on when it gets powered. However there's been an issue recently which is pointing towards the CHARGER_PRSENT/ACOK power on method not being consistent. Delaying a toggle on POWER_BTN or delaying the pull down of CHARGER_PRSENT/ACOK up to 1 second after applying AC/DC power should be more reliable and consistent.

More realistic would be to use a voltage supervisor IC to insure a valid input voltage and produce a delayed output, that output could trigger a 555 one-shot with its output connected to the gate of an NFET with the NFET drain connected to the POWER_BTN signal (source grounded). However this approach would likely require modifications to the reference carrier design.

[Sheet1!F10] Digi claims 250 kbps + for Zigbee modules