RedBoard Turbo - SAMD21 Dev (DEV-14812)

Arduino Zero compatible

Name	Interupts	A
Power	Serial	
GND	Serial Com	C/D
Control	Timer	E/F
Arduino	PTC	B
Port	Misc	G/H
DAC	ADC	B

8-bit PWM pins maked with ~

TC - Timer Counter
TCC - Timer Counter - Controller
PTC - Peripheral Touch Controller
NMI - External Non-Maskable Interupt
Pin can only be A,B,C,D,E,F,G or H at any time
Selecting B disables digital control

LEDs

Power: Red
D13 (PIN_LED_13): Blue
TX (PIN_LED_TXL): Green
RX (PIN_LED_RXL): Yellow
Charge:Yellow
RGB_LED(D44):WS2812

RX LED	PIN_LED_RXL	PA31	AIN11	EXTINT11	SER1:3	TCC0:1/1:3	
TX LED	PIN_LED_TXL	PA27	EXTINT15				
13 LED	D13 ~	PA17	EXTINT1	SCK	SER1:1/3:1	TCC2:1/0:7	PTC:X5
RGB_LED	D44~	PA30	SWCLK				

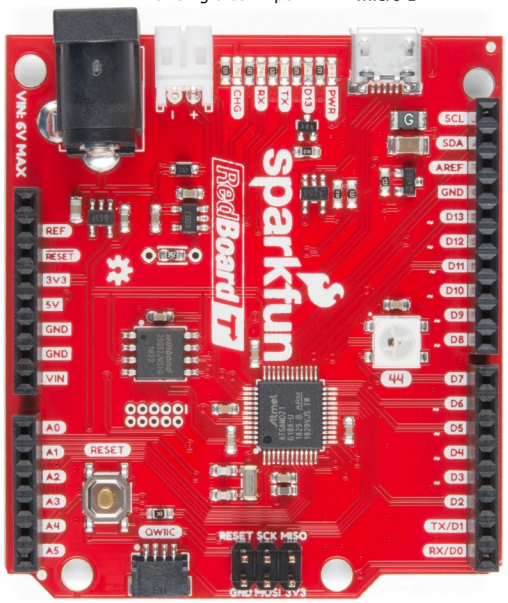
Programming Header

1. VCC 3.3V
2. SWEDIO/TMS
3. GND
4. SWDCLK/TCK
5. GND
6. SWO/TDO
7. Key
8. NC/TDI
9. GNDDTCT
10. Nreset

SJ1
remove to disconnect power LED

PTH Resistor
used to change the charge rate for the LiPo Battery

VIN 5V
JST for single cell Lipo
USB OTG micro B



								3.3V REF
								RESET /RESET
								3.3V 3V3
								5V 5V
								GND GND
								GND GND
								VIN VIN
	DAC	PTC:Y0	EXTINT2	AIN0	PA02	A0	A0	
	PTC:Y14	TC4:0	SER4:0	EXTINT8	AIN2	PB08	A1	A1
	PTC:Y15	TC4:1	SER4:1	EXTINT9	AIN3	PB09	A2	A2
PTC:Y2	TCC0:0	SER0:0	EXTINT4	AIN4	PA04	A3	REFB	A3
	PTC:Y3	TCC0:1	SER0:1	EXTIN5	AIN5	PA05	A4	A4
	PTC:Y8	TC6:0	SER5:0	EXTINT2	AIN10	PB02	A5	A5

SCL	D21	PA23	EXTINT7	SCL	SER3:1/5:1	TC4:1/TCC0:5	USB/SOF 1KhZ	
SDA	D20	PA22	EXTINT6	SDA	SER3:0/5:0	TC4:0/TCC0:4	PCT:X10	
AREF	REFA	PA03	AIN1	EXTINT3	PTC:Y1			
GND	GND							
D13	D13 ~	PA17	EXTINT1	SCK	SER1:1/ 3	:TCC2:1/0:7	PTC:X5	
D12	D12 ~	PA19	EXTINT3	MISO	SER1:3/3:3	TC3:1/TCC0:3	PTC:X7	I2S/SD[0]
D11	D11 ~	PA16	EXTINT0	MOSI	SER1:0/3:0	TCC2:0/0:6	PTC:X4	
D10	D10 ~	PA18	EXTINT2	SS	SER1:2/3:2	TC3:0/TCC0:2		
D9	D9 ~	PA07	AIN7	EXTINT7	SER0:3	TCC1:1	PTC:Y5	I2S/SD[0]
D8	D8 ~	PA06	AIN6	EXTINT6	SER0:2	TCC1:0	PTC:Y4	
D7	D7	PA21	EXINIT5	SER5:3/3:3	TC7:1/TCC0:7	PTC:X9	I2S/FS[0]	
D6	D6 ~	PA20	EXTINT4	SER5:2/3:2	TC7:0/TCC0:6	PTC:X8	I2S/SCK[0]	
D5	D5 ~	PA15	EXTINT15	SER2:3/4:3	TC3:1/TCC0:5	XOUT		
D4	D4 ~	PA08	AIN16	NMI	SER0:0/2:0	TCC0:0/1:2	PTC:X0	I2S/SD[1]
D3	D3 ~	PA09	AIN17	EXTINT9	SER0:1/2:1	TCC0:1/1:3	PTC:X1	I2S/MCK[0]
D2	D2	PA14	EXTINT14	SER2:2/4:2	TC3:0/TCC0:4	XIN		
TX/D1	D1	PA10	AIN18	EXTINT10	TX (Serial1)	SER0:2/2:2	TCC1:0/0:2	PTC:X2 I2S/SCK[0]
RX/D0	D0	PA11	AIN19	EXTINT11	RX (Serial1)	SER0:3/2:3	TCC1:1/0:3	PTC:X3 I2S/FS[0]

Reset Qwiic

SPI headers

RESET	RESET				
SCK	PB11	EXTINT11	SER4:3	TC5:1/0:5	I2S/SCK[1]
MISO	PA12	EXTINT12	SER2:0/4:0	TCC2:0/0:6	
GND	GND				
MOSI	PB10	EXTINT10	SER4:2	TC5:0/0:4	I2S/MCK[1]
3.3V	3.3V				

Power

Vin: 5.0V-5.5V for charger - otherwise 3.5V-6.0V
VBATT: 3.7V Lipo
VCC: 600mA @3.3V
Each pin is 3.3V tolerant and can source/sink no more than 7mA/10mA
Each cluster of I/O pins can source 46mA and sink 65mA. Clusters are defined as Yellow, Pink, Green, Blue, Red, and Orange outlines.

SamD21G18

VCC:1.62-3.63V
Arm Cortex-M0 + (32-bit)
Flash Memory:256K
SRAM: 32KB
ADC: 12-bit
48MHz
RTC
USB 2.1 with USB host capability

Serial

USB: SerialUSB
Hardware Serial (TX/D1 and RX/D0): Serial1
USB host: Set PIN_USB_HOST_ENABLE high

Qwiic

Black=Ground
Red=3.3V
Blue=SDA
Yellow=SDL