

SMD November Workshop Notes 28-Nov-2013 @VHS

The colours in the included photo match the colouring of the component packaging. Note that white on the photo is no colour on the package.

Suggested order of assembly (building in order of decreasing size)

- Large capacitors
- 1206 Resistors
- 1206 Capacitors
- 1206 LEDs (note polarity on photo)
- 0805 Ferrite
- 4066 (SOIC-14)
- PIC (SOIC-28)
- 5V regulators (SOT23-5)
- FT232RL (SSOP28)
- USB connector
- 0.1" headers (these get in the way if done earlier)

Bringup

- Power on with smoke tester (check power LED on your board and power LED on smoke tester)
- Connect pickit and program the PIC
- Connect via USB and check serial port is available
- Update bus pirate firmware (see below)
- Connect to serial port and run self test below

Relevant links

Firmware update

- http://dangerousprototypes.com/docs/Bus_Pirate#Updating_Bus_Pirate_v3
- [http://dangerousprototypes.com/docs/Pirate-Loader_console_upgrade_application_\(Linux,_Mac,_Windows\)](http://dangerousprototypes.com/docs/Pirate-Loader_console_upgrade_application_(Linux,_Mac,_Windows))

Introduction

- http://dangerousprototypes.com/docs/Bus_Pirate

Self test

- Add links to 3.3v & ADC and 5v and Vpu
- <http://dangerousprototypes.com/2009/07/28/bus-pirate-self-test-guide/>

Schematic and Eagle files

- <https://raw.githubusercontent.com/vhs/vhs-pcbs/master/bus-pirate/BusPirate-v3.6a-LTS-placed4-plane2-final.png>
- <https://github.com/vhs/vhs-pcbs/tree/master/bus-pirate>

Parts List

Part	Value	Colour Code	Package
C1	0.1uF	Brown	C1206
C2	0.1uF	Brown	C1206
C3	0.1uF	Brown	C1206
C4	0.1uF	Brown	C1206
C5	0.1uF	Brown	C1206
C6	0.1uF	Brown	C1206
C7	1uF	Blue	C1206
C8	1uF	Blue	C1206
C9	1uF	Blue	C1206
C10	10uF	Yellow Part	CT3528
C11	10uF	Yellow Part	CT3528
IC2	FT232RL		SSOP28
IC3	4066D		SO14
IC4	IC_UC_PIC24FJ64GB002SO		SOIC-28W
ICSP	NONE		1X05
IO	CON_HEADER_2X05-PTH+SHROUDED_B		PINSHRD_PTH_2X05B
J1	CON-USB-MINI-BUSB1		CONN_USB_MINI-B
L1	700mA+ ferrite		WE-KI_0805_B
LOGO1	LOGO_CC-0		LOGO_CC-0
MODE	RED		CHIPLED_1206
PCB1	PCB_DP_RECTANGLE-50X100		DP10050_V1
POWER	RED		CHIPLED_1206
R1	2K	Pink	R1206
R2	1K1	Green	R1206
R3	1K1	Green	R1206
R4	1K1	Green	R1206
R5	2K	Pink	R1206
R6	1K1	Green	R1206
R7	10K	White/NoColour	R1206
R8	10K	White/NoColour	R1206
R9	10K	White/NoColour	R1206
R10	10K	White/NoColour	R1206
R11	10K	White/NoColour	R1206
R12	10K	White/NoColour	R1206
R13	10K	White/NoColour	R1206
R14	10K	White/NoColour	R1206
R15	10K	White/NoColour	R1206
R16	10K	White/NoColour	R1206
R17	10K	White/NoColour	R1206
R18	10K	White/NoColour	R1206
USB	RED		CHIPLED_1206
VR1	MIC5205-3.3YM5		SOT-23-5
VR2	MIC5205-3.3YM5		SOT-23-5
VR3	MIC5205-5.0YM5		SOT-23-5
VREG	RED		CHIPLED_1206