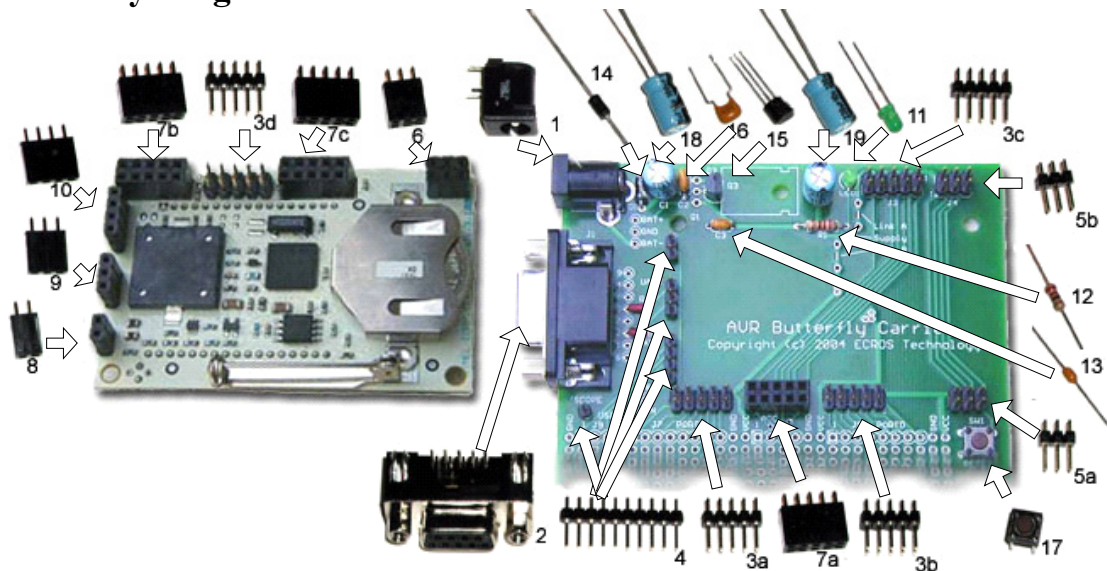


Assembly Diagram:



Parts List:

Num.	Ref*	Description	Comments
1	J2	Power Jack, 2.1 mm center pin	Center pin must be positive supply
2	J1	DB-9 Female Connector, PCB Mount	For AVR Butterfly serial interface
3a,b,c		2 row by 5 pin 0.1" Pin Header	JTAG and Port B headers (see Note 2)
4		1 row by 10 pin 0.1" Pin Header Strip	USI, UART and V+IN headers (see Note 3)
5a,b		2 row by 3 pin 0.1" Pin Header	ISP header
6		2 row by 3 pin Header Socket	ISP header socket
7a,b,c		2 row by 5 pin Header Socket	JTAG and Port B header sockets
8		1 row by 2 pin Header Socket	V+IN header socket
9		1 row by 3 pin Header Socket	UART header socket
10		1 row by 4 pin Header Socket	US header socket
11	LED1	LED, 3 mm, Green	Power indicator, DO NOT OMIT! (see Note 1)
12	R1	220 ohm, 1/4 W, 5% Resistor	Current setting for power indicator LED
13	C3	0.1 μ F Ceramic Capacitor	Required by regulator for stability
14	D1	Rectifier Diode, 1N4006 or similar	Protection against reversed supply voltage
15	Q3	3.3 V, 100 mA Regulator, TO-92	For higher current, use a TO-220 regulator instead
16	C2	0.33 μ F Ceramic Capacitor	Required by regulator for stability
17	SW1	Tactile Push-Button Switch	Reset switch for AVR Butterfly
18	C1	100 μ F, 16V Electrolytic Capacitor	Input smoothing, may be omitted
19	C4	220 μ F, 10V Electrolytic Capacitor	Output smoothing, other values OK

- Ref refers to designators on the Carrier PCB

Note 1 - Voltage regulators typically need some small load current to be drawn in order to function properly. On the Butterfly Carrier, the power indicator LED draws about 6 mA and serves this purpose. If you omit the LED or R1, the AVR Butterfly on its own will not draw enough current for the regulator to operate. This may damage the AVR Butterfly.

Note 2 - Q1 is the AVR Butterfly itself. Two 2 by 5 pin header / socket pairs are for connecting the JTAG port and Port B of the Butterfly down to the Carrier. One 2 by 3 pin header / socket pair is for connecting the ISP port of the Butterfly down to the Carrier. No header / socket is supplied for Port D as on the AVR Butterfly this is connected to the LCD and is therefore not very useful for expansion.

Note 3 - The 1 row pin header strip and socket strip can be cut up to make connections from the USI, UART and V+IN ports of the AVR Butterfly down to the Butterfly Carrier. The header strip just snaps or cuts with a utility knife. To cut the socket strip, remove a contact where you want to make the break and cut through that contact location with a fine-bladed saw or knife. More than 11 pins may be supplied; just discard those you don't need.

You can use a 6 to 9 volt DC wall wart power supply with positive center.

You need to put jumper wires across the RxD and TxD lines next to the DB9 connector.

The CdS light sensor is soldered into either the two vertical or the two horizontal holes on the Butterfly where you see the sensor on the Butterfly shown on our website.