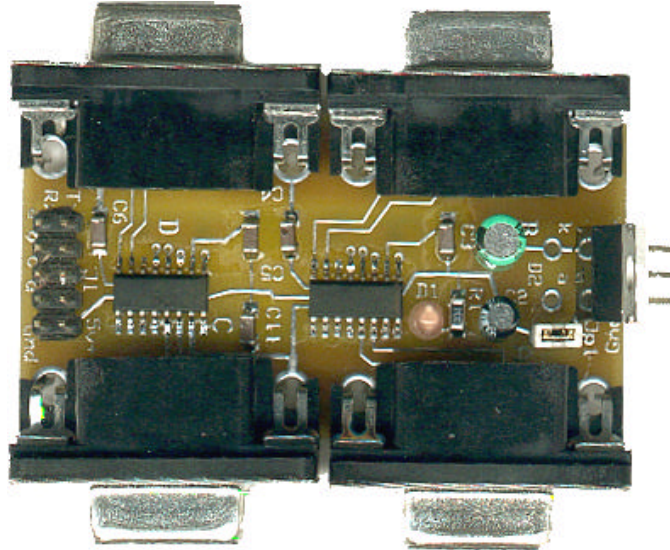


AD232Q Quad RS232 adapter kit - Rev 1



AD232Q four port serial RS232 adapter shown assembled

For those projects that require multiple serial RS232 I/O ports. Features a very small adapter with four independent serial RS232 ports (DB9 female connectors). The adapter can be powered by an on-board 5v regulator or by the host's 5v supply (jumper selectable). All I/O pins, including the power lines, are brought to a 5x2 standard 0.1" spaced header. The kit mainly comprises of surface mount parts, such as the two IC232s, capacitors and resistor.

Kits provided by COMPSys are designed for use by other developers and hobbyists to be incorporated in their own designs. The kits are not intended to be end user plug'n'play devices.

Assembly of this kit requires that the user has the necessary tools and skills to work with SMD (surface mount device) components. If you are not comfortable with soldering miniature parts, then please seek assistance from someone who is capable to do so. **Small mistakes can cause many frustrating hours of grief in trouble shooting!**

Minimum tools required:

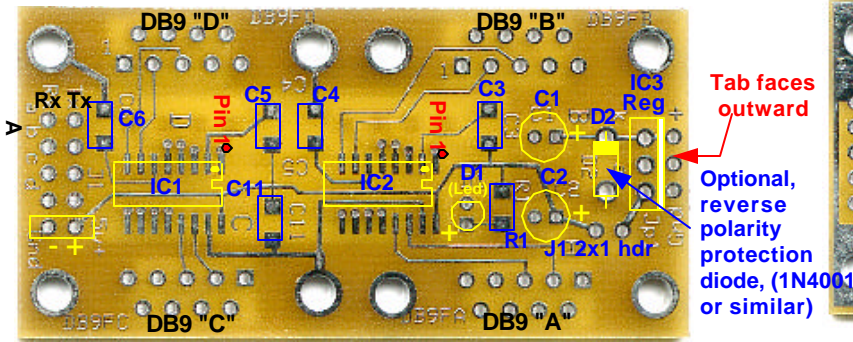
A fine point low power (25w max) soldering iron and thin solder. Ideally, 0.022" diameter (or less) silver-bearing non-corrosive rosin core should be used. In addition, narrow needle nose pliers, diagonal cutting pliers, good quality tweezers, large magnifying glass, volt-ohm meter, and a 7 to 12 vdc power supply.

Make sure that you work in a clean well lighted area and have adequate desk area. If you have carpeting then please be aware of static discharge as well as accidentally losing tiny components in the carpets fiber. SMD capacitors and resistors are very tiny and can quickly become lost in the carpeting.

Disclaimer and Terms of Agreement

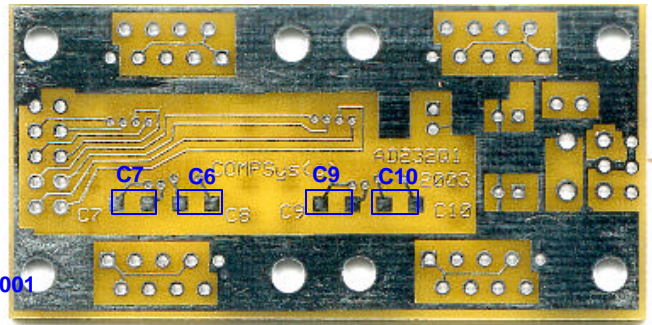
As with any kit, only the individual parts supplied are guaranteed against defects and not the user assembled unit. All kit parts are purchased from reputable sources such as Digikey Inc, Allied Electronics and Mouser Inc, however, should a kit part be ascertained to be defective it will be replaced at no charge within 30 (thirty) days of the purchase date. Beyond that, COMPSys Workbench and / or the COMPSys developer(s) assume no liability and WILL NOT be held liable nor be held responsible wholly or in part for any damages caused by the construction of and / or use of their products sold .

AD232Q Assembly



Parts placement TOP side

NOTE: IC1 & IC2 PIN 1 locations, radial capacitor, LED and optional diode polarity



Parts placement BOTTOM side

PARTS

C2-C11	1uf SMD capacitors	D1	LED
C1	10uf radial cap	4	DB9F female connector
C2	0.1 or 1 uf radial cap		5x2 header
R1	330 ohm SMD resistor		3x1 header
IC1, IC2	Max232 or equiv.		2x1 header w/shunt
IC3	LM7805 5v Regulator		Printed circuit board
			D2 (Optional) 1N4001

Recommended Assembly Steps

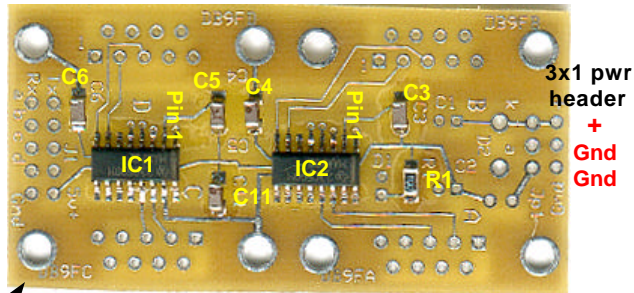
(1) Carefully solder the 9 SMD capacitors (non polarized) and 1 resistor including the four caps on the bottom side of the pcb. See the photos on the left. Hint: Best results are obtained by applying flux and placing a small amount of solder on each pad before mounting the parts. USE SOLDER SPARINGLY!

(2) Carefully mount and solder the two IC's. NOTE: The Pin 1 side has a 'banded' beveled edge. Double check all pins for solder bridges and splashes.

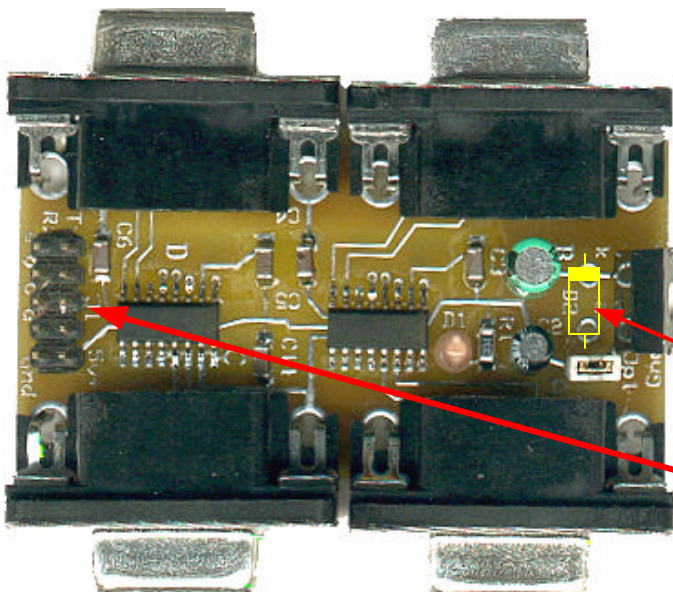
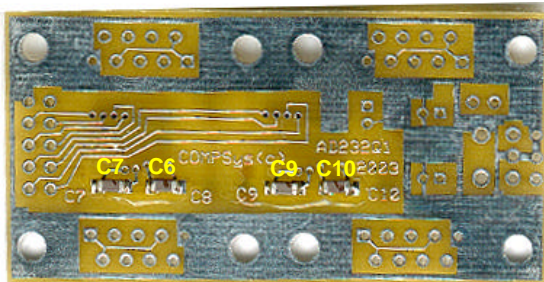
(3) Mount C1, C2, D1(LED), LM7805 regulator. Make sure that the 7805 is oriented so that the TAB is facing outward.

(4) Mount the 5x2 header, the J1 2x1 header and the 3x1 power supply header. Place a shunt over J1 if the on-board power supply is to be used. Otherwise remove the shunt and provide 5v via the 5x2 header pwr pins (pins 9-10). Note: If the on-board 5v supply is used, then the 5x2 header Pin 9 (gnd) and Pin 10 (5v) can be used for powering other devices.

(5) Mount the four DB9F connectors. Hint: If you require holes to mount the pcb, you can cut off the outer mounting lugs of the DB9 connectors and use those holes. Tack solder all the remaining lugs.



Note: Holes can be used for mounting the pcb if the DB9 lug is cut off.



Vin 7-16vdc

DO NOT REVERSE POLARITY!

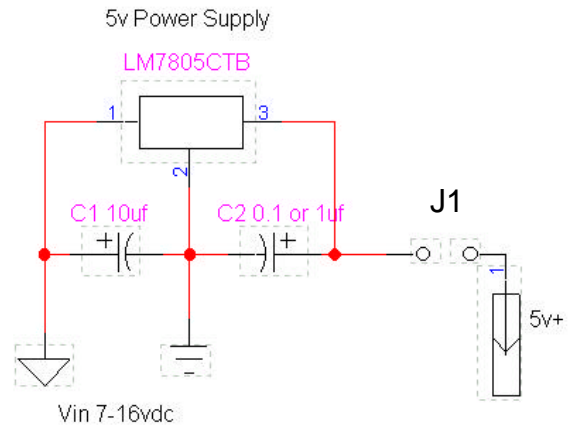
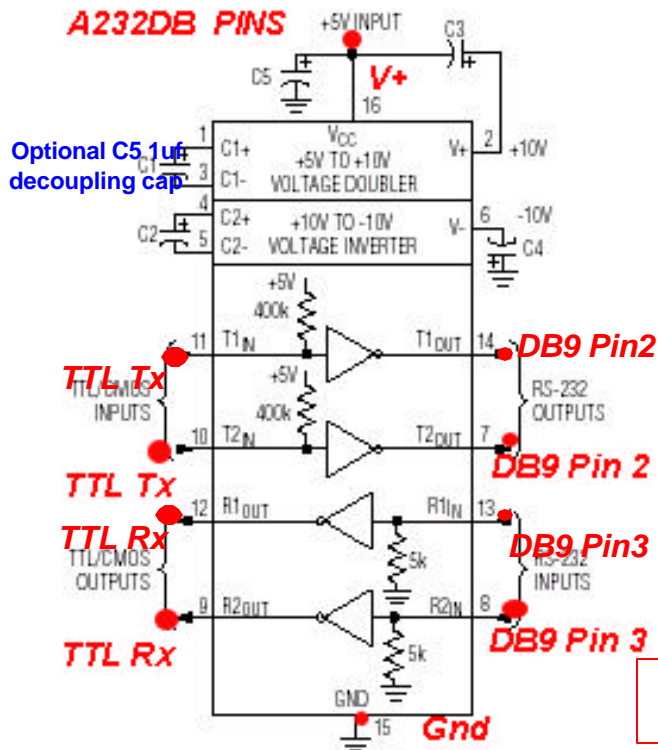
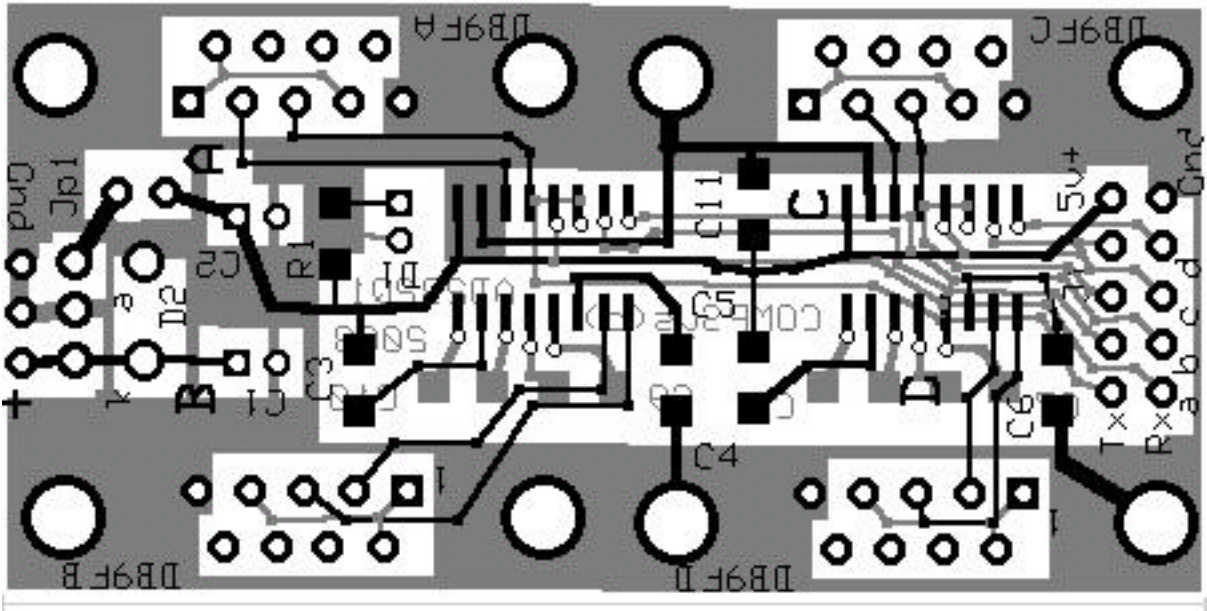
If you want to protect the board from inadvertent reverse polarity, then you may optionally mount a diode (1N4001 or equiv) for D2.

5x2 Header Connections

TTL Rx - Tx

DB9 A	●	●	
DB9 B	●	●	
DB9 C	●	●	
DB9 D	●	●	
Gnd	●	●	5v+ 5v Source with J1 shunt or 5v supply without J1 shunt

AD232Q Layout and schematic



DO NOT REVERSE POLARITY!

Typical IC232 connections X 2 (Total 4 ports)