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Update Notes to Z1203B Assembly and Operation Manual

This updated prepared 28 April 2012

APPLICABILITY:

This document covers changes from the Z1203B Assembly and Operation manual dated 25 December 2010 to reflect changes to the printed circuit board.

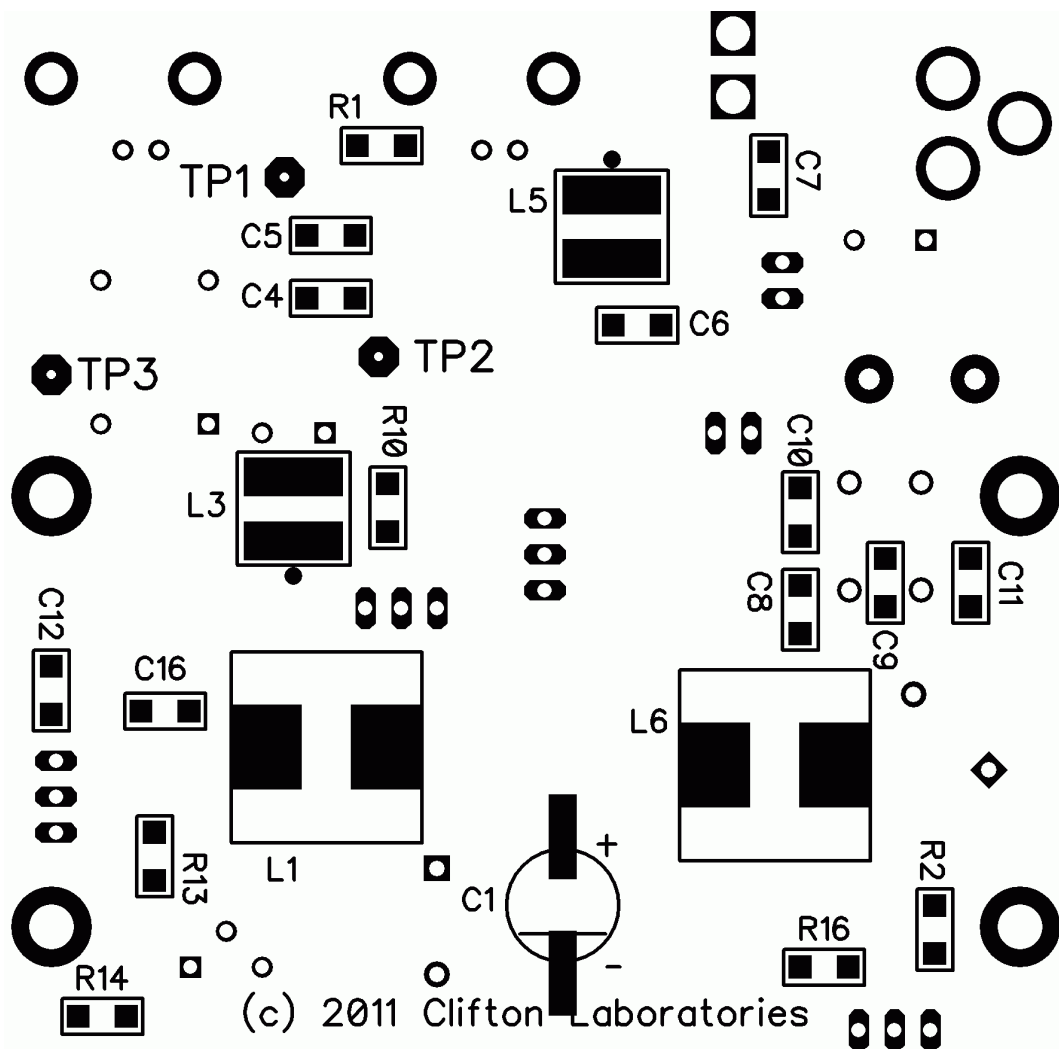
This document is for PCB Z1203B-04. The revision number is on the top PCB surface.

Z1203B-04
DC Coupler

SUMMARY OF CHANGES

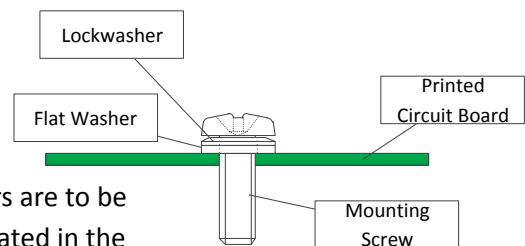
1. There are no changes in performance or specifications.
2. Several components have been changed from through-hole to surface mount parts.
3. Some users have requested the ability to modify their Z1203B couplers to add a power on/off switch. The revision 04 PCB has provisions for a power switch. The matching Z1203B enclosure is punched for a switch and the required switch hardware is supplied with the Z1203B.
4. Heat inking for the LM317 voltage regulator is revised. An "L" bracket heat sink replaces the prior arrangement of direct chassis mounting.
5. There is an error in the checkout table at the top of Page 33.

Replace PCB bottom surface drawing (page 18) with the following drawing:



Parts Changes

1. Change R13 from 121R to 95R3.
2. Change Q4 from 2N7000, TO-92 through-hole to 2N7002 surface mount (marked 7K)
3. U1 may be either a DF02M or DF04M.
4. 4 small diameter flat washers are provided. The washers are to be used when mounting the PCB in the enclosure as illustrated in the drawing. The flat washer bears against the PCB; the lockwasher is used between the screw head and the flat washer.
5. If you do not plan to install the power switch, reserve a length of bare wire from L4 to be used as a jumper at JP4.
6. R2 & R16 may be either 2.2K 5%, ½ watt surface mount parts, ID 222 or 2.2K 1%, ID 2201.



7. RV1 may be either a V39ZA6P or P39Z6.
8. F1 changed from 400mA to 650mA PTC resettable fuse. ID XF065.
9. A single-pole, single-throw switch is included, along with a suitable length of wire and a short length of heat shrink tubing.
10. Delete green, blue and red wires, heat shrink tubing and three-pin socket, along with mounting hardware. Replace with:
 - a. L bracket
 - b. 3 each 4-40 internal tooth lockwashers
 - c. 1 each 4-40 x 1/2" Philips-head machine screw
 - d. 1 each 4-40 flat washer
 - e. 1 each 4-40 hex nut
 - f. 2 each 4-40x 1/4" Philips-head machine screw

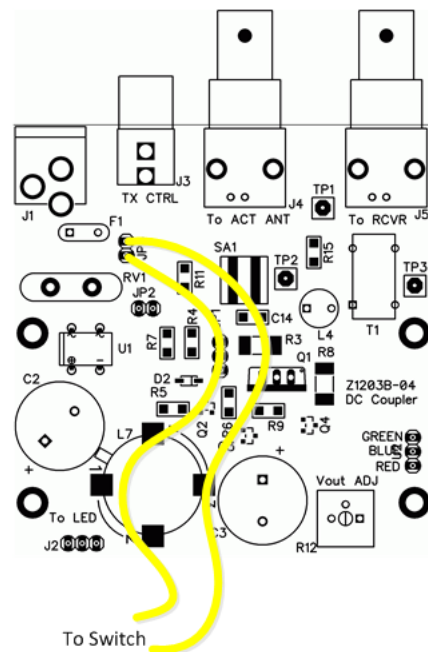
ASSEMBLY NOTES

The Rev 02 PCB assembly instructions should be followed. In a few cases, parts have been relocated, but part designators have not changed. Specific changes (other small changes are not mentioned):

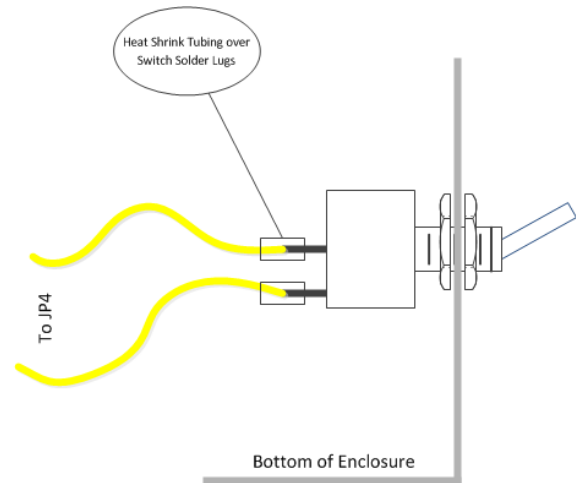
- Correct page 23 - should be Q2 and Q3, not Q1 and Q2

POWER SWITCH

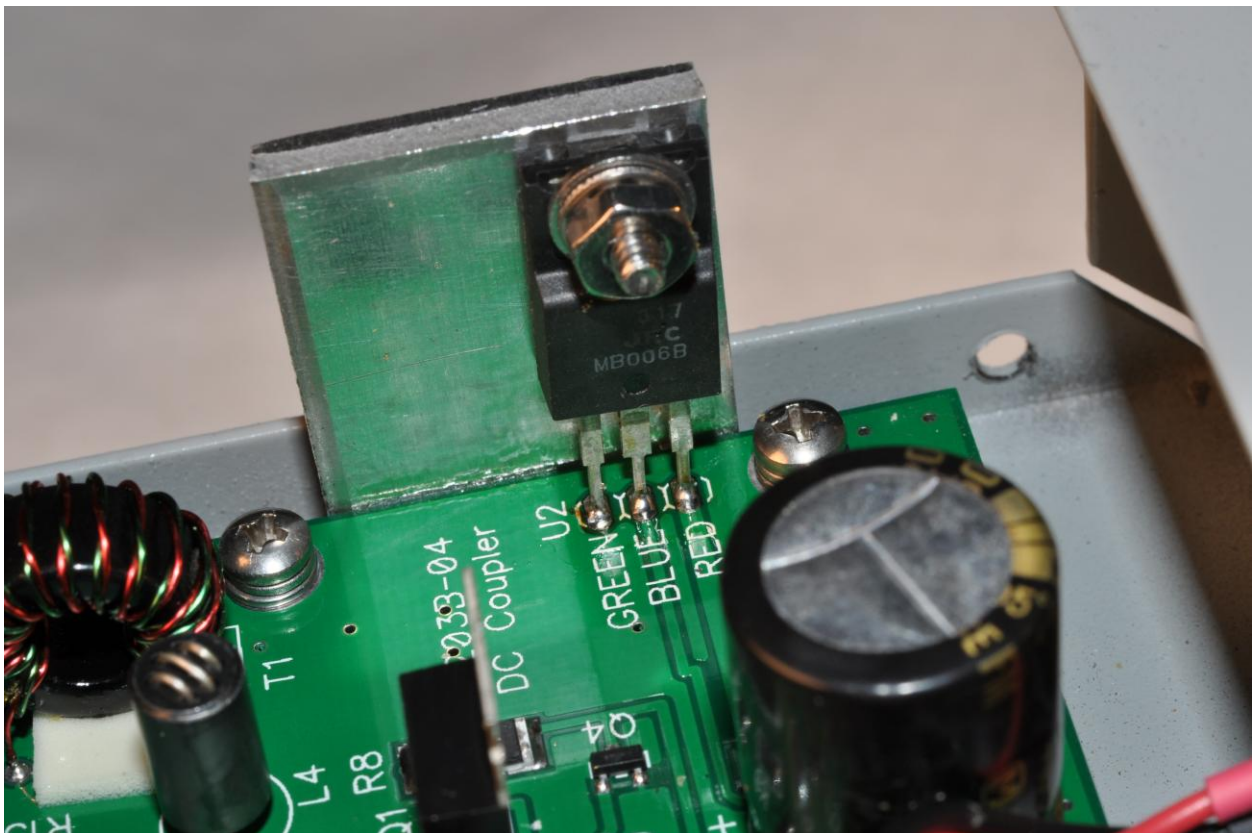
- The switch should be installed after the PCB is assembled.
- Cut two lengths of yellow hookup wire, approximately 4 inches (100mm) long. Remove insulation from the ends of each wire approximately 3/16" (5mm). Tin all ends.
- Insert one end of each wire into JP4 pads as illustrated to the right. Solder.



- Slip a short length of shrink tubing, approximately ¼" (6mm) long over both yellow wires.
- Solder the two yellow wires to the power switch as illustrated at the right. Slide the tubing over the wire-lug junction and apply heat to shrink the tubing.
- Install the switch after the PCB has been installed in the enclosure.

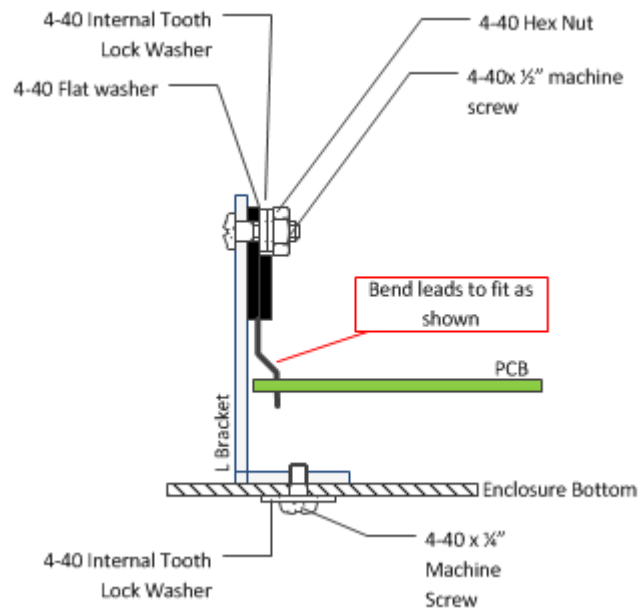


HEAT SINK L BRACKET



- Please carefully review the photograph and assembly drawing showing U2 (LM317F) mounted on the L bracket and installed on the PCB.
- Due to tolerances in home building, it is not feasible to install U2 on the PCB and expect it to match the L bracket. Instead, the process is:
 - Install the L bracket but do not tighten the mounting screws.
 - When the PCB is completed, mount it in the enclosure

- Temporarily slip U2 into the PCB. Tighten the L bracket mounting screws holding the L bracket to the enclosure.
- Align U2's mounting hole with the L bracket hole and observe the spacing between the L bracket and U2. (It may help to slip the 4-40 1/2" screw in place to center U2 on the L bracket mounting hole.)



Remove U2 and bend

its leads to fit as indicated in the drawing.

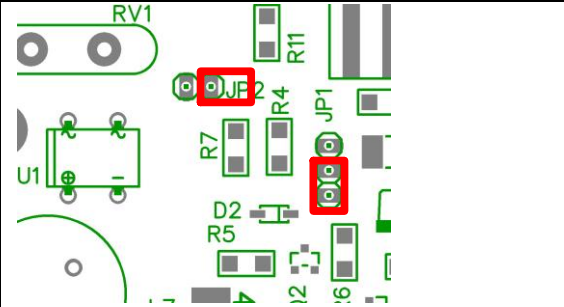
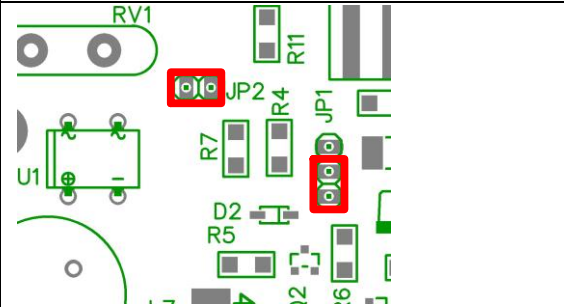
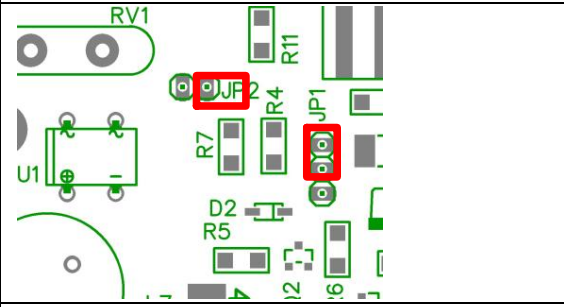
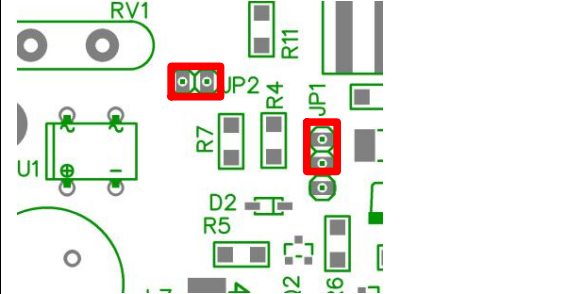
- Temporarily install the 4-40 mounting hardware holding U2 to the L bracket. From the top of the printed circuit board, solder U2 into place.
- Remove the 4-40 mounting hardware holding U2 to the L bracket and remove the PCB from the enclosure. Trim U2's leads flush with the PCB's lower surface.
- Reinstall the PCB into the enclosure and install the 4-40 hardware holding U2 to the L bracket. It may be helpful to loosen the two screws holding the L bracket to the enclosure. After the PCB is mounted, tighten the L bracket hardware and the U2 to L bracket screw.
- Insert the LED mounting clip into the front panel and push the LED into the clip. This process is described in the Z1203B manual.
- Install the power switch in the remaining front panel hole. The correct orientation is as illustrated in the earlier drawing; the solder lugs are as shown.
- Complete the installation as described in the assembly manual.

ERROR AT PAGE 33

- The two voltage readings in the table at the top of Page 33 are reversed. The output voltage at TP1 is shown in the table as +13.8V. It will be, of course, dependent upon the setting of R12, the voltage adjustment potentiometer. This is usually around 18V if the potentiometer has not been altered from the position it is set at during manufacture.

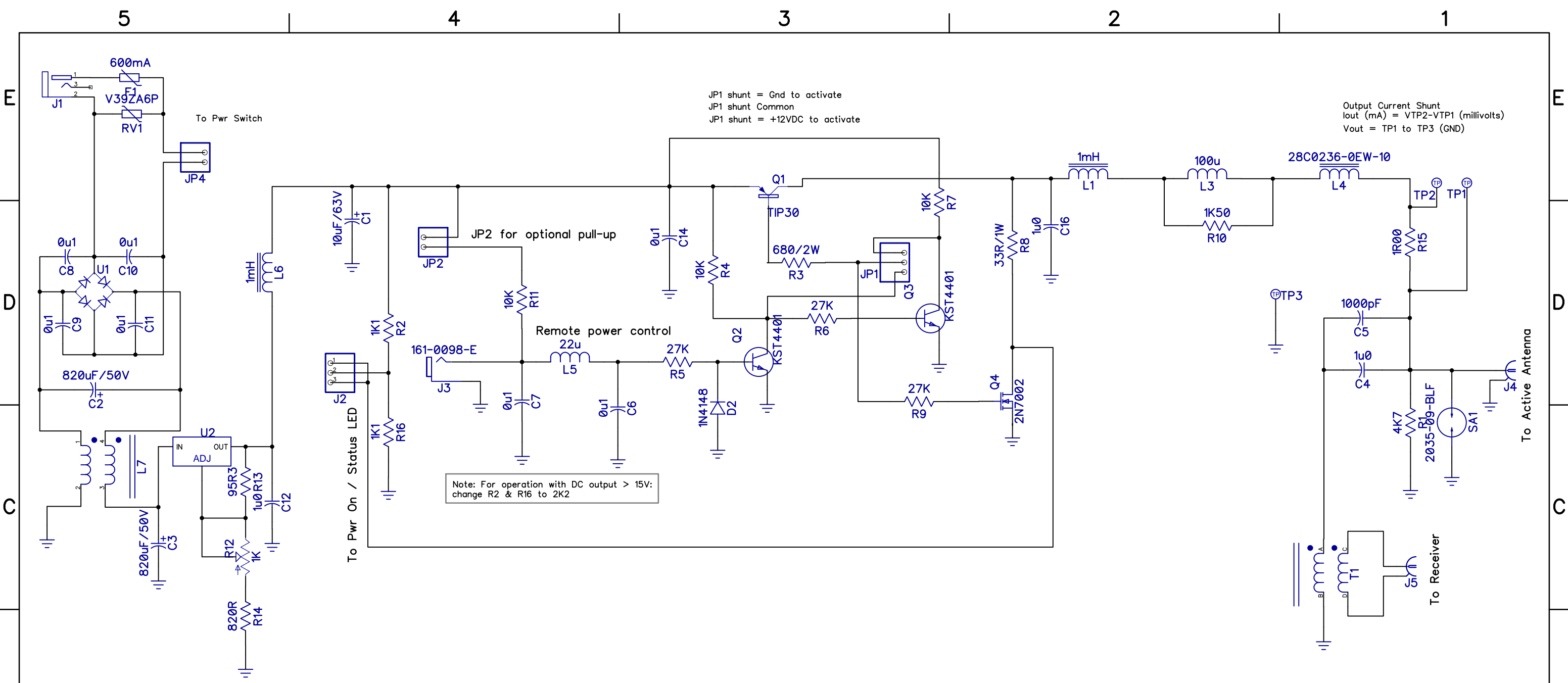
Verify operation of TX CTRL using the internal jumpers. (Power can be left on during these tests.)

JP1	JP2	LED Color	Voltage at TP1	Jumper Diagram
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Mode 1	Open	Green	+13.8V (varies according to R12)	
Mode 1	Closed	Yellow	< 0.25V	
Mode 2	Open	Yellow	< 1.2V	
Mode 2	Closed	Green	+13.8V (varies according to R12)	

MISCELLANEOUS

- If the Z1203B coupler is used with a Z1501E active antenna, the output voltage (measured at TP1 with the active antenna connected) should be set to approximately 20V. R2 and R16 will be 2K2.
- If the Z1203B coupler is used with a Z1501D active antenna, the output voltage (measured at TP1 with the active antenna connected) should be set to 13.8V. R2 and R16 will be 1K1.



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
02 Major revision from prototype 06 Dec 2010				

Z1203A Active Antenna Coupler		
Size	Clifton Laboratories	Rev 02
29 July 2009		Drawn by JRS
Filename Z1203A.DCH		Sheet 1 of 1