

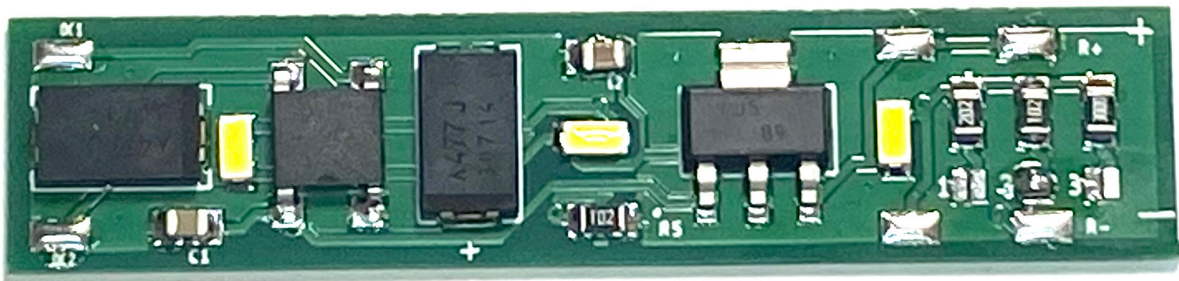


Model TrainTM TECHNOLOGY

CABOOSE LIGHTING for DC OPERATIONS MANUAL (N/HO)

- *SERIES II* -

Version 2.1a



Model Train Technology LLC

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The Caboose LED light board for DC has 3 built-in LEDs and two pads (AUX) to connect two additional LEDs that are typically used for red end-of-car lighting. All LED light boards have capacitors and circuitry to reduce flicker and to maximize keeping the system alive.

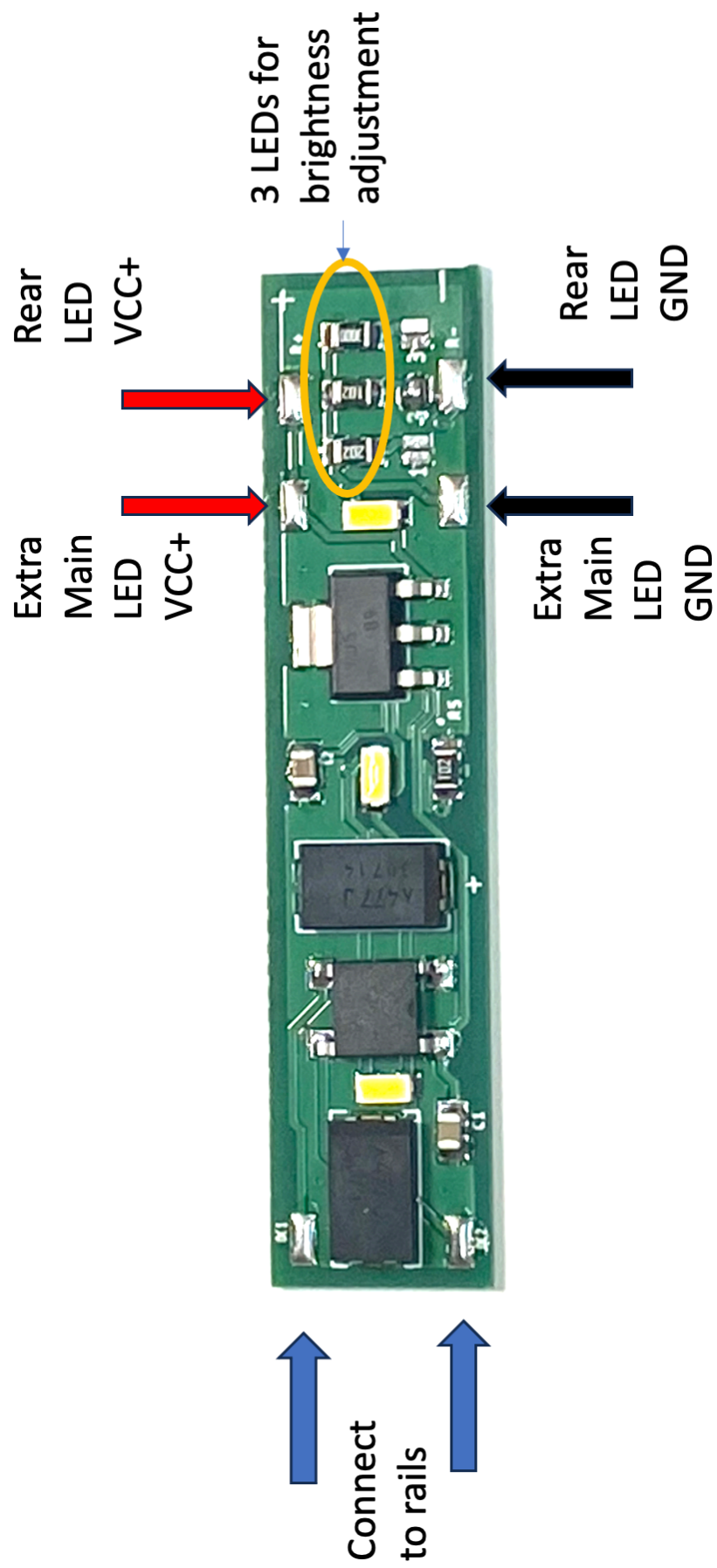
You can adjust the brightness of the main LEDs by soldering or unsoldering the pads just below the three resistors. At least one pad must be soldered for the lights to work. Using a combination of resistors, you can achieve different total resistor values.

The resistor values are 2000, 1000 and 300. The default is 1000. (also known as 1K)

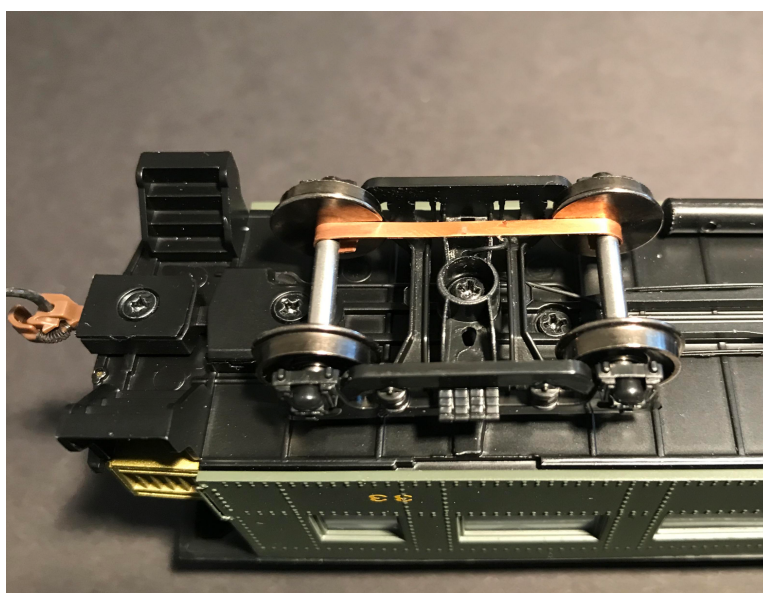
In combinations of two or three resistors you add the values and divide by the number of resistors.

Soldering pads 2 and 3 (1000 and 3000) gives 1300 ohm. Divide that by two to get 650 ohm.

Soldering pad 1 and 3 gives 2300 ohms. Divide by 2 is 1150 ohms.



For all other cars that are not pre-configured with electrical pickups, we recommend our “floating” brass strips. A single 1mm or 2mm piece of brass is wrapped around each axle of the truck at either end of the car. Then, a 36AWG stranded wire (supplied) is soldered to the brass and connects to the DC1 and DC2 on the board. The reason we call this “floating” is that it is NOT fastened to the truck. This allows it to shift with the movement of the axle and doesn’t bind the wheel. ALL the other types we tried required you to fasten their metal contact to the truck with a screw or by glue. This tends to put extra pressure on the wheel or axle and causes it to pinch inside the truck wheel holder. It also adds friction that cause the car not to roll freely.



ONE YEAR MANUFACTURER WARRANTY: We warrants this **product** to be free from defects in workmanship and materials, under normal residential use and conditions, for a period of one (1) year for the original invoice date. Shipping and handling fees are to be paid for by the customer.

LIMITATION OF LIABILITY

UNDER NO CIRCUMSTANCE SHALL COMPANY OR ITS AFFILIATES, PARTNERS, SUPPLIERS OR LICENSORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH YOUR USE, OR INABILITY TO USE THE PRODUCT, WHETHER OR NOT THE DAMAGES WERE FORESEEABLE AND WHETHER OR NOT COMPANY WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, COMPANY'S AGGREGATE LIABILITY TO YOU SHALL NOT EXCEED THE AMOUNT OF THE PRODUCT. THE FOREGOING LIMITATION WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.



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