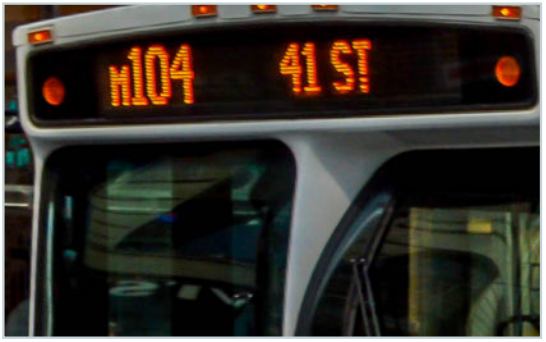
High Efficiency

Passenger Bus LED Display

Same Colors All the Time

The Customer's Challenge

A display manufacturer was developing an upgrade to a passenger information system. Space was limited, and the power supply had to be mounted on the same board as the LEDs. Operating at high ambient temperature, with the sun heating up the display, their current system was experiencing hot spots around the power supplies. This led to color variances of the LED display, which the customer had to address.



The Solution

The voltage from the 24V bus battery had to be converted down to 4V for the LED drivers in the most efficient way. A non-isolated ZVS Buck regulator was able to handle the wide input voltage swings of the battery (ranged from 12V up to over 30V), and provided high efficiency over a wider input range. The ZVS Buck regulators' high efficiency when stepping down high voltages to low output voltages are ideal for these types of requirements.

Link to Whiteboard »

The Results

Using ZVS Buck regulators helped the customer to significantly increase efficiency. As a consequence overall heat generated on the board was reduced. The small size of the ZVS Buck regulators helped optimize the layout to further reduce the risk of hot spots.

Product Family Key Specifications	
Cool-Power® ZVS Buck Regulator Module	
Input Voltages	12V Nominal (8 – 18V_{IN}), 24V Nominal (8 – 36V_{IN}), 48V Nominal (8 – 60V_{IN}),
Output Voltage	Wide output range (1 – 16V)
Output Current	8A, 9A, 10A, and 15A versions
Efficiency	Up to 96.5% Light load and full load High efficiency performance
Dimensions	LGA SiP: 10 x 14 x 2.56mm