



# Tesla how to design 48v





## Overview

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This article will guide you through the essentials of designing a 48-volt Tesla vehicle. My understanding is these 48v mild-hybrids are only using 48v for the small propulsion motor. The other motors (typically >50 motors on a car today) and electronics modules (also usually 20-50 modules per car) are still all 12v. Slightly unrelated, I did motors count on each Tesla model. You might be facing challenges in integrating advanced technology while keeping costs manageable. For additional information about ST trademarks, please refer to [www](http://www). All other product or service names are the property of their respective. The Cybertruck is the first EV from the automaker to use a 48-Volt (48V) electrical system implementation throughout the entire vehicle, as compared to the 12V systems that are used in pretty much every other vehicle on the planet. Today, Tesla shared its 48V implementation documentation with other. Automotive engineers have wanted to switch from a 12-volt electronic architecture to a more powerful one for decades, but Tesla were the first to fully take the plunge with their Cybertruck. Ahead of its debut, Tesla lent out several Cybertrucks to prominent car reviewers, one of whom was Jason.



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### [Ford Confirms Tesla Shared 48V Vehicle Design Document](#)

Tesla CEO Elon Musk has taken an unprecedented step in the automotive industry by sharing a document titled 'How to design a 48-volt vehicle' with other CEOs, including Ford's Jim Farley.

### Tesla How To Design 48 Volt Vehicles ( )

Tesla claims their recently launched Cybertruck utilizes a 48V low-voltage architecture, and has indicated all their future vehicles will utilize a 48 volt system.



### [EV 48V new E/E structure introduction and MPS power solutions](#)

Advantage: Easy to implement Keep 12V Zonal structure, add a 48V bus to power for high power load



### [Tesla shares 48V architecture with other automakers to ...](#)

Today, Tesla shared its 48V implementation documentation with other major automakers -- including competitors like Ford.



### [Tesla did actually send a document on "How to Design a](#)

In his video Camissa said Tesla sent a document to the CEOs of all other automakers outlining how to design a 48-volt vehicle. At the time we weren't sure if it was a joke, or if Elon Musk ...

## 48V vehicle power architecture

Takeaways 48V systems improve affordability and sustainability Integrated GaN solutions maximize GaN's properties with best in class efficiency E-fuses critical for system safety and autonomous driving



### [How to Make the Leap to 48V Electrical Architectures](#)

Electrical architectures based on 48V provide many benefits, but design guidelines must be carefully followed to mitigate any risks associated with the higher voltage.



## Analyzing Tesla's Innovative 48-Volt



## Architecture

As vehicle benchmarking and teardown experts, we have completely mapped out the 48-volt system in the Tesla Cybertruck and used the Tesla Model Y for comparison.



## 48v Design Manual PDF , Tesla Motors Club

I'll summarize it: Make all your parts run off of 48V and make your wires thinner. For parts where you can't source a 48V version use a DC-DC converter.

## [How to Design a 48-Volt Vehicle Tesla: Essential Tips for Efficiency](#)

Discover how to design a 48-volt vehicle like a Tesla, focusing on efficiency, power management, and advanced technology integration. This article offers practical tips for balancing ...





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