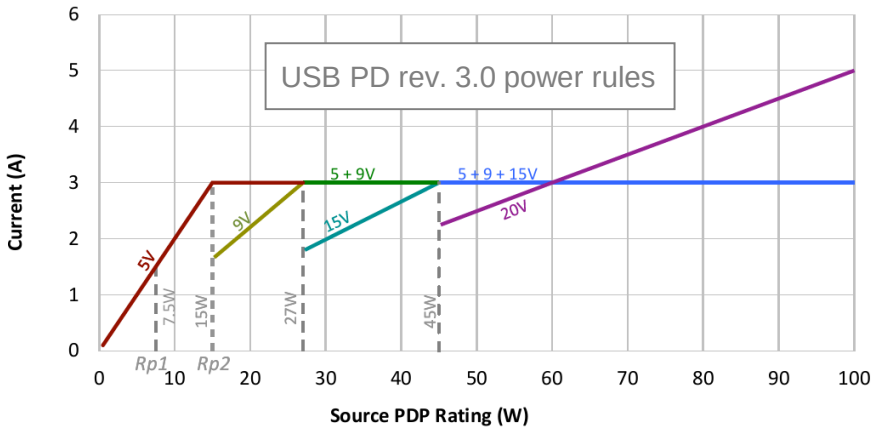
USB Solutions with LITIX™

USB Solutions with LITIX™: Save costs by supplying several USB-C ports by one DC/DC

USB-C enables currents up to 3A (for USB-PD even up to 5A)
→ new solutions for the power supply generating VBUS required!



Higher power levels required
e.g. for rear seat entertainment

- Most power levels for single automotive USB ports: 15-27W
- Cost saving by having one central power source for multiple ports
  → **Power sources** for **40-100W** and more required

Use **TLD5501-2QV**, **TLD5190QV/QU** and **TLD5542-1QV/QU**!

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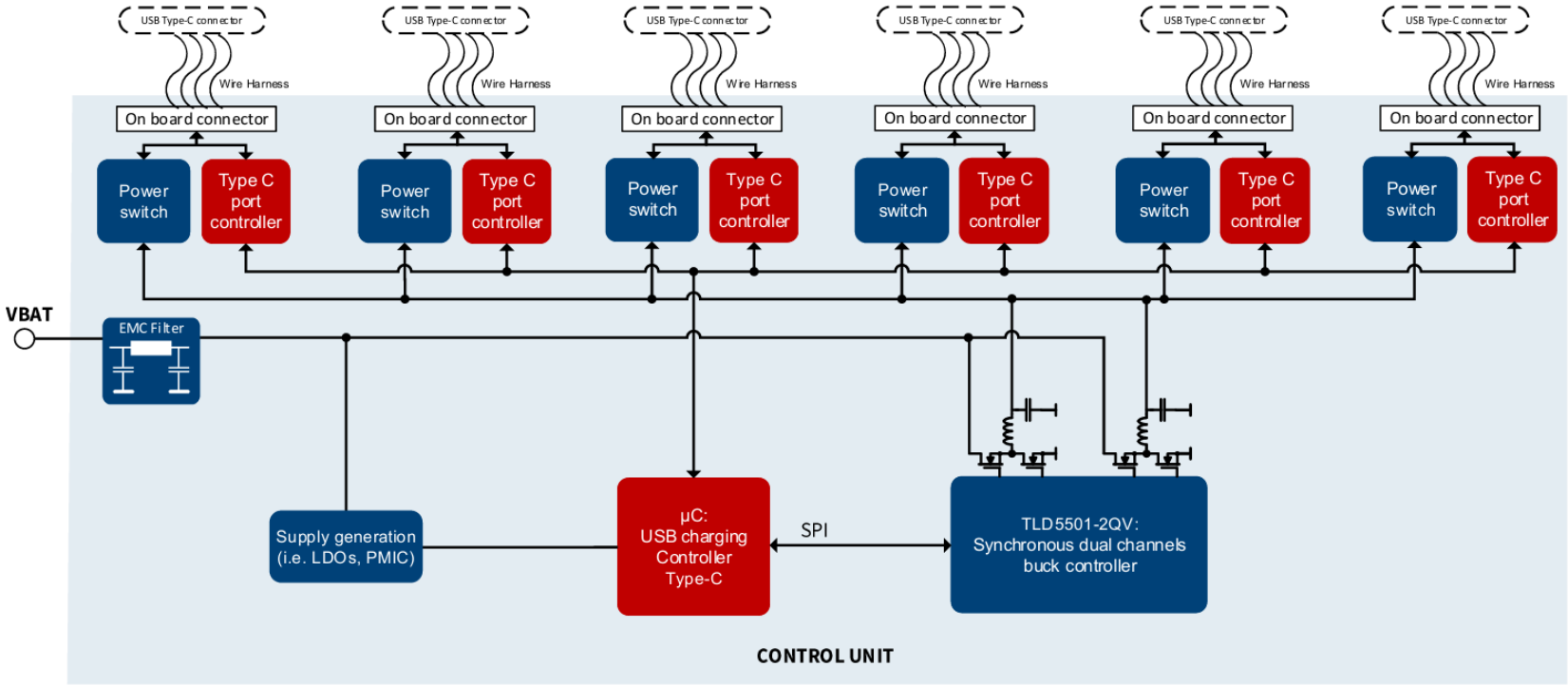
Example for driving up to 6 ports with one DC/DC only: Use TLD5501-2QV

- USB-C ports w/o USB-PD extension have to provide 5V at the connector
- **Save cost** by having only one the DC/DC converter and share the output between different USB ports → **centralized VBUS generation**
- Two phases help to relax requirements on inductor design, output capacitor and EMC filter
  - 18A a required for driving 6 ports!

→ **Use TLD5501-2QV** – a dual SYNC buck controller with SPI interface



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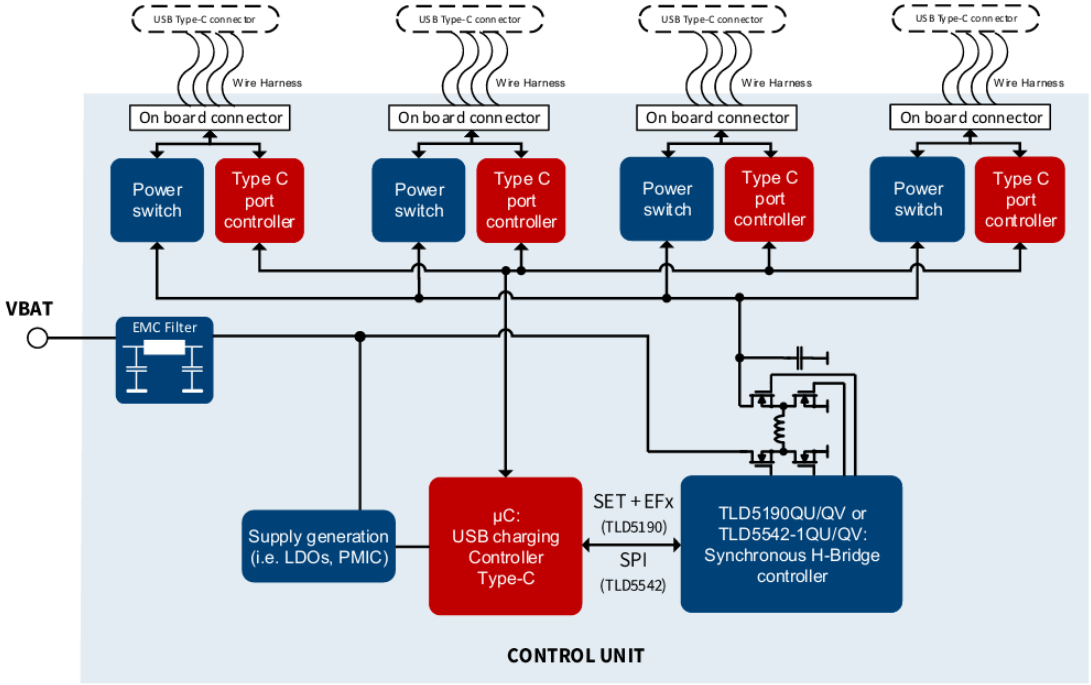
Example for driving up to 4 ports with one DC/DC only: Use TLD5542-1QV/QU or TLD5190QV/QU

- USB-C ports w/o USB-PD extension have to provide 5V at the connector
- **Save cost** by having only one the DC/DC converter and share the output between different USB ports → **centralized VBUS generation**
- One phase is sufficient for currents below 12A (4x 3A)

→ **Use TLD5542-1QV/QU** or T**LD5190QV/QU** – H-bridge DC/DC controller with/without SPI interface



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How to serve cable drop compensation and output overcurrent protection with LITIX™ products

	Cable drop compensation	Overcurrent protection
	Use the analog dimming feature to adjust output voltage	Protect USB-C ports from overcurrents
TLD5501-2QV	Programmable 8-bit SPI register	Sense **output** current
TLD5542-1QV/QU	Programmable 8-bit SPI register	Sense **input** and **output** currents
TLD5190QV/QU	Analog voltage at SET pin e.g. by using a resistive voltage divider	Sense **input** and **output** currents

Flexible set of features and configurations

Optimize power topology

According to application's needs

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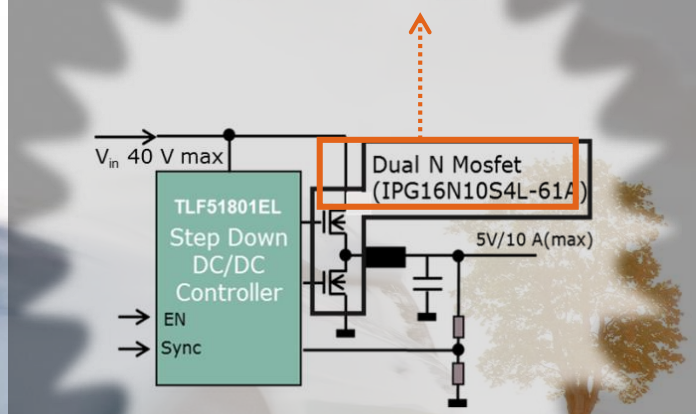
Alternative solution
TLF51801EL Synchronous buck converter



Key features

Controller with synchronous external power stage

Benefits

Flexible solution

High efficiency (>90%)

High current capability (up to 10 A)

Thermally better than integrated ICs

Applications

USB supply | Camera | ADAS | Infotainment | Dashboard

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