




Fast and easy migration from DC barrel to USB-C / PD

EVAL-SCS006V1
STUSB4531 reference design
Fast & easy migration to USB-C up to 100 W (20 V - 5 A)

The board is pre-configured with 4 power profiles (datasheet configuration).

- PDP: 30W
- PDP1 (fixed): 5 V / 3 A
- PDP2 (fixed): 9 V / 3 A
- PDP3 (fixed): 15 V / 2 A
- PDP4 (variable): 9-20 V / 1.5 A

After connection to compatible USB PD source, a LED turns ON according to the USB PD negotiation result with the following colors:

- Blue: PDP1
- Blue + red: PDP2
- Blue + green: PDP3
- Blue + yellow: PDP4

Features

- USB Power Delivery SINK port (up to 100 W)
- Dead battery support
- Short-to-VBUS protection up to 28 V
- Low BOM cost, small footprint
- Status LED
- Certified reference design (board TID: # 13957)

Description

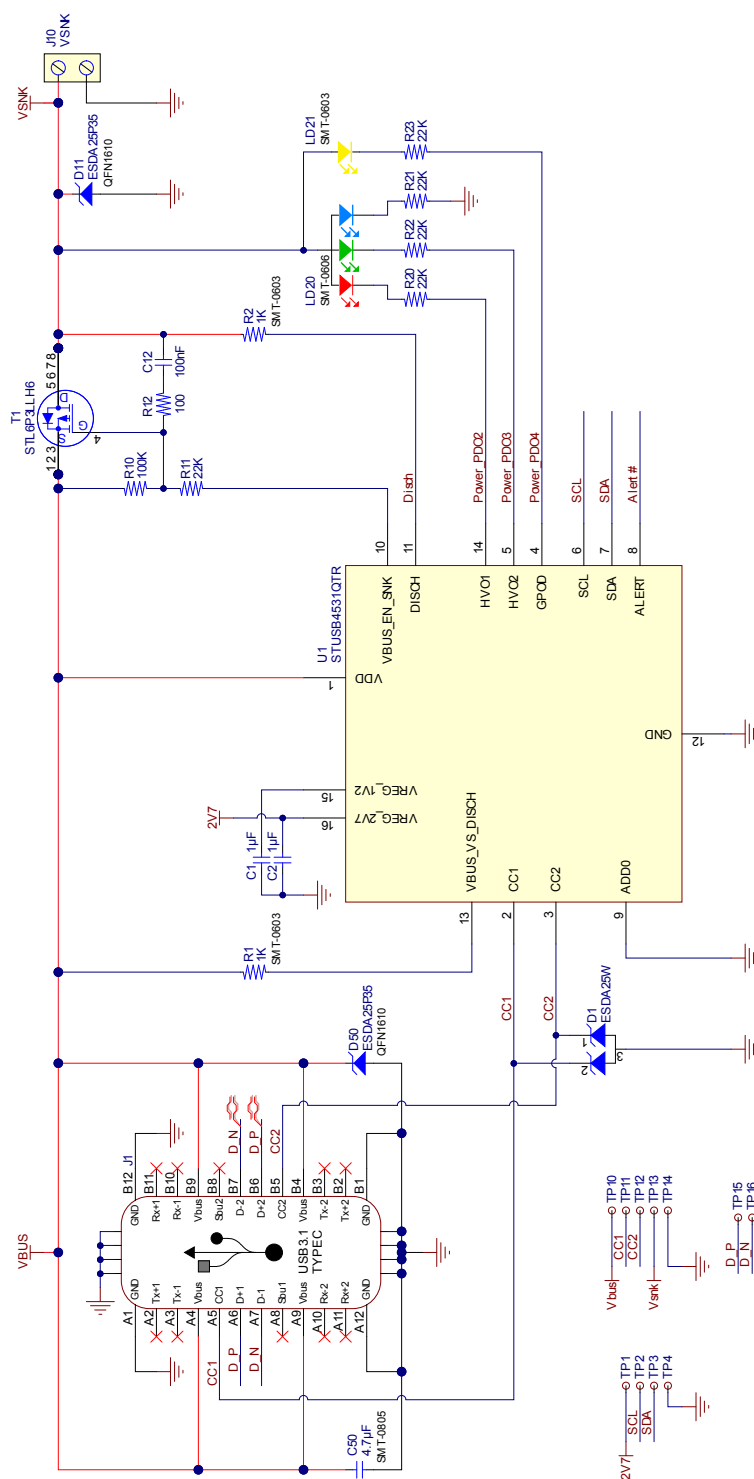
This board illustrates a minimal USB PD SINK implementation. It can be used as a small footprint reference design for fast migration from a custom power plug or DC barrel to a USB Type-C® connector.

It is based on the STUSB4531 USB PD controller IC (USB Type-C® rev 2.4, USB PD rev 3.2) and is certified as a "Power Sinking Device" (TID #13956).

Maturity status link	
STUSB4531QTR	Standalone USB PD SINK controller

1 Application diagram

Figure 1. Application circuit



Revision history

Table 1. Document revision history

Date	Revision	Changes
28-Oct-2024	1	Initial release.
25-Sep-2025	2	Updated feature, description on the cover page, and Figure 1.
12-Nov-2025	3	Updated figure on the cover page.
27-Nov-2025	4	Updated Figure 1. Application circuit .

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice.

In the event of any conflict between the provisions of this document and the provisions of any contractual arrangement in force between the purchasers and ST, the provisions of such contractual arrangement shall prevail.

The purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgment.

The purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of the purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

If the purchasers identify an ST product that meets their functional and performance requirements but that is not designated for the purchasers' market segment, the purchasers shall contact ST for more information.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2025 STMicroelectronics – All rights reserved