
How to make and assemble a shroud for the STEVAL-USBPD27S

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Main components	
STEVAL-USBPD27S	Compact 27W USB Type-C Power Delivery 3.0 with PPS adapter reference design

Purpose and benefits

The STEVAL-USBPD27S is designed for the development of USB PD Type-C wall adapters. Use the list of requirements and the sequence of images below as guidance to help you build and assemble a plastic shroud to facilitate safe operation with the board.

Description

What is needed:

- 27WPPS_Smart_Charger_Plastic_Case.dxf file
- 18 cm X 22 cm plexiglass sheet (3 mm thin)
- Plexiglass cutter tool (cut width 0.15mm)
- IEC connector - Bulgin BZH01/Z0000/02
- 1 CEE 7/7 (E/F) cable, plug angled, IEC C13 female PVC
- 2 hexagonal M3 steel nuts
- 2 screws M3x6 0.5 head: countersunk Phillips PH1 steel DIN: 965
- 3 screwed spacers sleeve, hexagonal polyamide M2,5 L: 5 mm
- 3 screws polyamide M2,5 L: 6 mm
- 1 Screwed spacer sleeve hexagonal polyamide M3 L: 40 mm
- 2 Screws polyamide M3 L: 6 mm
- 1 fuse; 2.5 A; 250 V_{AC} cylindrical, glass; 5 x 20 mm

Figure 1. Cut lines for laser machine (the engrave scan is identified by the black color)

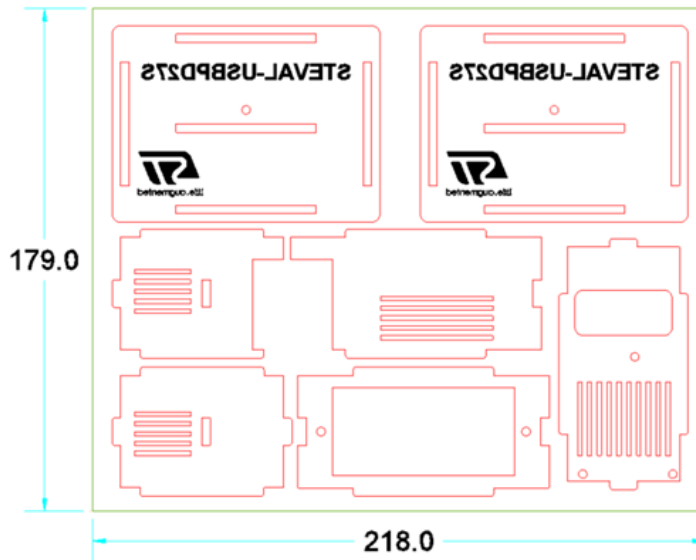


Figure 2. Exploded box with geometrical localization

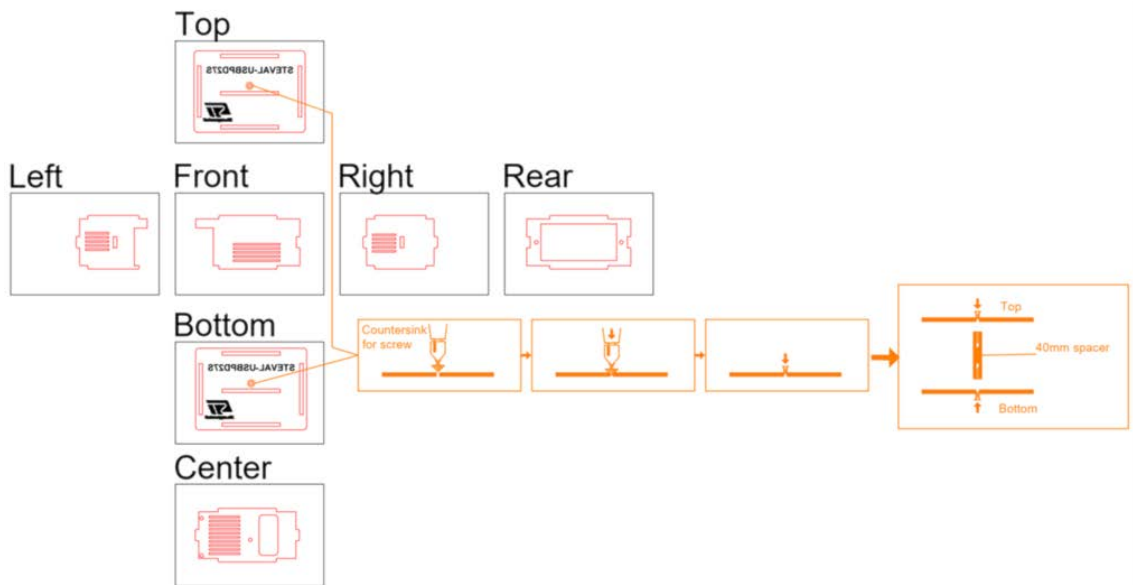


Figure 3. Shroud assembly – screw insertion with spacer

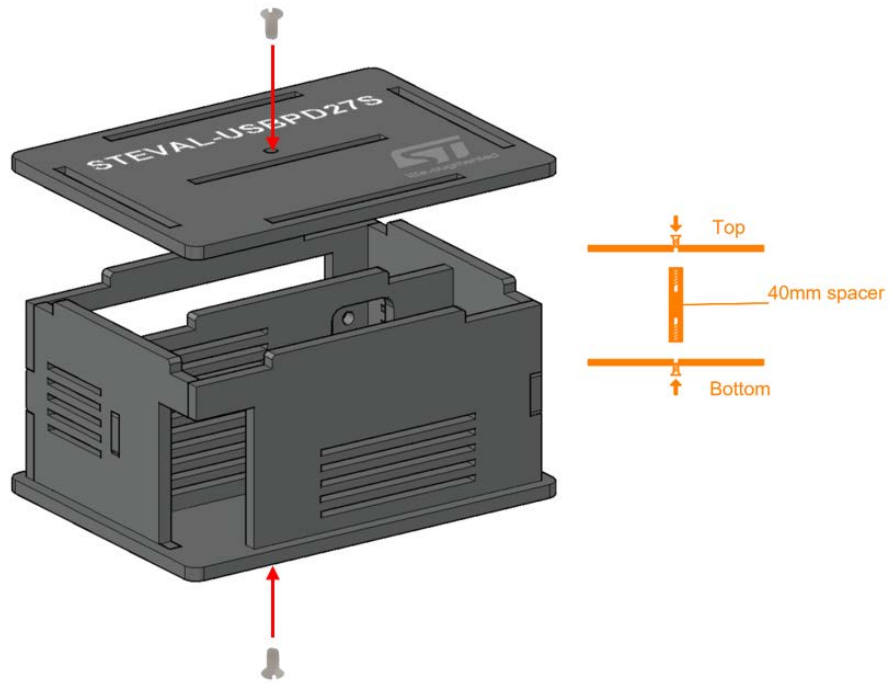


Figure 4. Closed box



Figure 5. Mounting the IEC connector (1 of 2)



Figure 6. Mounting the IEC connector (2 of 2)



Figure 7. Mounting the STEVAL-USBPD27S in the shroud (1 of 5)

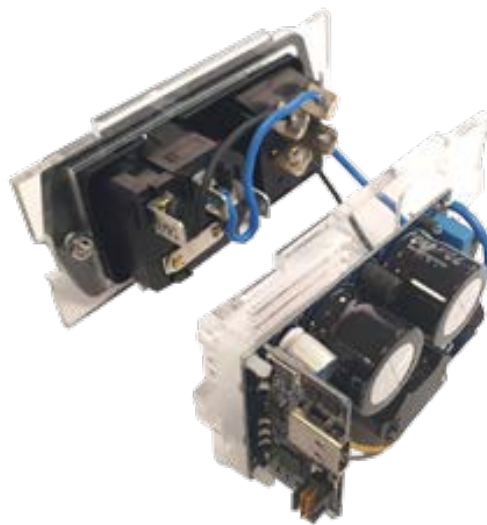


Figure 8. Mounting the STEVAL-USBPD27S in the shroud (2 of 5)

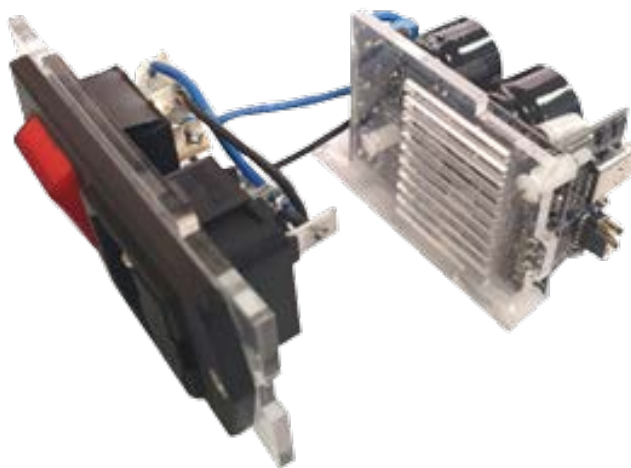


Figure 9. Mounting the STEVAL-USBPD27S in the shroud (3 of 5)



Figure 10. Mounting the STEVAL-USBPD27S in the shroud (4 of 5)



Figure 11. Mounting the STEVAL-USBPD27S in the shroud (5 of 5)



Support material

Related design support material	
System Evaluation board	
STEVAL-USBPD27S	https://www.st.com/content/st_com/en/products/evaluation-tools/solution-evaluation-tools/psu-and-converter-solution-eval-boards/steval-usbpd27s.html
Development software	
STSW-USBPD27SFW	https://www.st.com/content/st_com/en/products/embedded-software/evaluation-tool-software/stsw-usbpd27sfw.html
Gerber files	
STEVAL-USBPD27S GERBER 1.0	https://www.st.com/resource/en/board_manufacturing_specification/steval-usbpd27s_gerber.zip
PCB layout, bill of materials and schematics files	
STEVAL-USBPD27S BOM 1.0	https://www.st.com/resource/en/bill_of_materials/steval-usbpd27s_bom.pdf
STEVAL-USBPD27S SCHEMATIC 1.0	https://www.st.com/resource/en/schematic_pack/steval-usbpd27s_schematic.pdf
Documentation	
Datasheet DB4227 Compact 27W USB Type-C™ Power Delivery 3.0 with PPS adapter reference design 2.0	
User manuals UM2733 Compact 27 W USB Type-C™ Power delivery 3.0 with PPS adapter reference design 1.0 UM2785 Software package for the STEVAL-USBPD27S 1.0	
Application notes AN5499 How to implement adaptive synchronous rectification in flyback converters using STM32 MCUs 1.1 AN5563 STEVAL-USBPD27S performance 3.0 AN5562 VBUS control algorithm compliant with USB Type-C and Power Delivery specifications 1.0	

Revision history

Date	Version	Changes
30-Jun-2021	1	Initial release

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