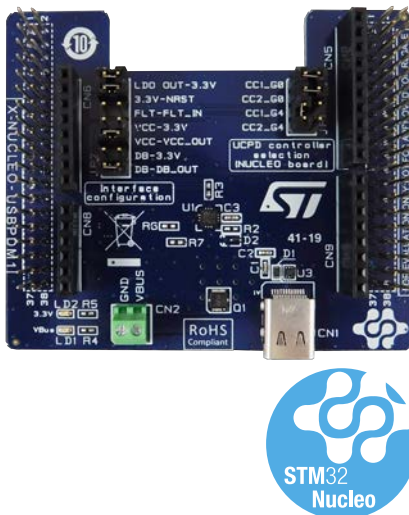


## USB Type-C™ Power Delivery SINK expansion board based on TCPP01-M12 for STM32 Nucleo



### Features

- USB Type-C reversible connector
- 6 V overvoltage protection (OVP) on CC lines against short-to- $V_{BUS}$  when the connector is unplugged
- Up to 22 V adjustable overvoltage protection (OVP) on  $V_{BUS}$  line against charger failure
- Surge protection and system-level ESD protection on  $V_{BUS}$
- Common-mode filter and ESD protection on USB 2.0 High Speed data-lines
- System-level ESD protection on CC lines as per IEC61000-4-2 level 4 ( $\pm 8$  kV contact discharge)
- Low power mode for battery operation allows zero current consumption when no cable is attached
- Integrated dead battery management for fully depleted battery devices
- Overtemperature protection (OTP)
- Compliant with the latest USB Type-C and USB power delivery standards
- Compliant with programmable power supply (PPS)

### Description

The X-NUCLEO-USBPDM1 is an expansion board for the [NUCLEO-G071RB](#) and [NUCLEO-G474RE](#) development boards or any [STM32 Nucleo](#) development board equipped with a USB Type-C™ peripheral.

It provides a straightforward means for evaluating USB Type-C™ Power Delivery in SINK mode based on [TCPP01-M12](#).

The USB Type-C connector can supply the [STM32 Nucleo](#) development board thanks to a 3.3 V LDO.

Product summary	
USB Type-C™ Power Delivery SINK expansion board based on TCPP01-M12 for STM32 Nucleo	<a href="#">X-NUCLEO-USBPDM1</a>
USB type-C port protection	<a href="#">TCPP01-M12</a>
High-power transient voltage suppressor (TVS)	<a href="#">ESDA25P35-1U1M</a>
Common-mode filter and ESD protection for USB 2.0 and MIPI/MDDI interfaces	<a href="#">ECMF02-2AMX6</a>
N-channel, STripFET H6 power MOSFET	<a href="#">STL11N3LLH6</a>
STM32 Nucleo-64 development boards with STM32G071RB/ STM32G474RE MCUs	<a href="#">NUCLEO-G071RB/ NUCLEO-G474RE</a>

Product summary	
Applications	Medical and Healthcare Power Supplies and Converters Smart Home USB Type-C and Power Delivery Wearable

# 1 Schematic diagrams

Figure 1. X-NUCLEO-USBPDM1 circuit schematic (1 of 2)

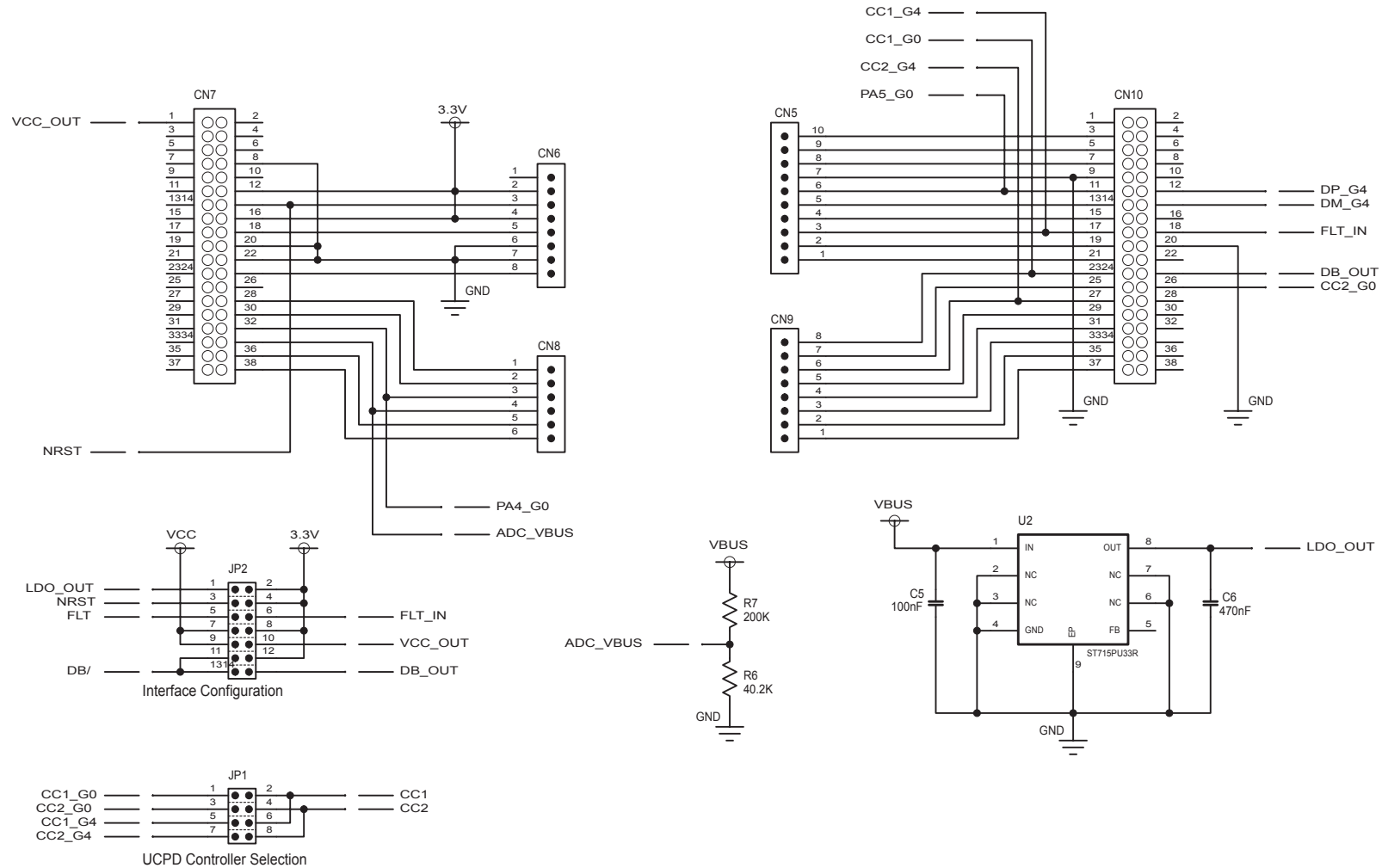
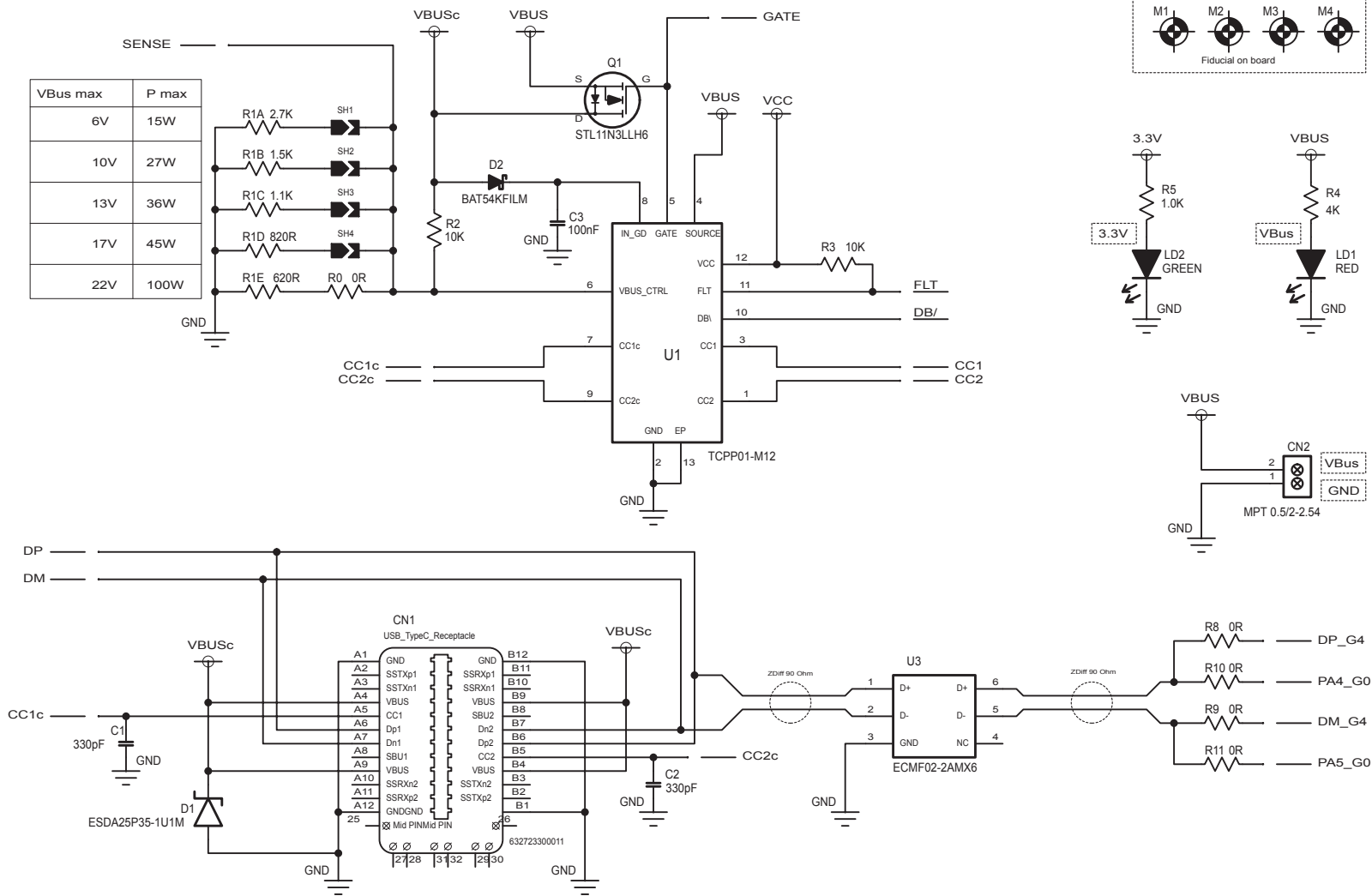


Figure 2. X-NUCLEO-USBPDM1 circuit schematic (2 of 2)



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
06-Dec-2019	1	Initial release.

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