

Overview

The PD charger example is a simple demonstration based on the MCUXpresso SDK PD stack.
The application simulate charger product.
The demo only works as source and is external powered.

System Requirement

Hardware requirements

- One or two Type-C shield board
- One or two 9V DC power suppliers
- Type-C Cable
- One or two hardwares (Tower module/base board, and so on) for a specific device, for example: lpcxpresso54114 board
- Personal Computer

Software requirements

- The project files are in:
<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_pd_source_charger/<rtos>/<toolchain>.

Note

The <rtos> is Bare Metal or FreeRTOS OS.

- Terminal tool.

Getting Started

Hardware Settings

- Remove 0ohm resistor R167, R784 and remap J19-1 to GPIO_EMC_35.
- There is a known limitation that MIMXRT1015 will fail to boot after pressing SW3 button to do power on reset when the shield board is connected and powered. So you must follow these steps below to ensure MIMXRT1015 boot successfully.
 1. Power on the MIMXRT1015 board, then power on the shield board.
 2. Press SW9 button to reset MIMXRT1015 instead of using SW3 button to reset MIMXRT1015.
 3. If you press SW3 button accidentally or want to do power on reset, you need repeat the above steps to bring MIMXRT1015 back to work.

For detailed instructions, see the appropriate board User's Guide.

Note

Set the hardware jumpers (Tower system/base module) to default settings.

Prepare the example

1. Download the program to the target board.
2. Power on Type-C shield board then power on development board.

Run the example

1. Connect the OpenSDA USB port to the PC and open terminal.
2. This charger provide power 5V/2.7A and 9V/1.5A.
3. Connect the sink with Type-C cable to the board, The board will print the sink's request power information.
For example: Download `usb_pd_charger_battery` or `usb_pd_sink_battery` demo to another board and connect to the tested board.