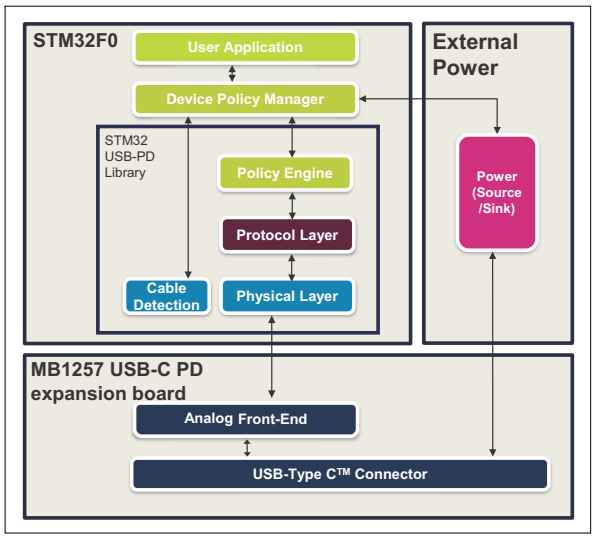
X-CUBE-USB-PD

STM32 USB-PD (Power Delivery) software expansion for STM32Cube

Data brief

Features

- Compliant with USB Type-C™ 1.2 and USB Power Delivery 2.0 Standards
- Provider, Consumer and Dual-Role mode (DRP) support
- Dual-Port support
- PD communication supported for the two sides of the cable
- Cable detection: detection of an USB Type-C™ cable plug/unplug
- Cable orientation: cable orientation detection to allow choosing one communication line CC1/CC2
- USB-PD messages transmission/reception: communication through CC line and message exchanging, coding/decoding using BMC and 5b4b coding
- Drive V_{CONN} switch and Super-Speed switches for flippable connector or Alternate Modes
- BIST test mode support: BIST test mode to enable testing the platform at runtime
- Structured VDM (Vendor Defined Messages) support allowing Alternate Modes and extensions implementation



Description

The USB Type-C™ is the newest USB connector ecosystem, it addresses the evolving needs of platform and devices, while retaining the functional benefits of USB.

STM32 USB-PD package (X-CUBE-USB-PD) consists of libraries (in a binary format) and application examples for STM32F0 devices acting as USB Power Delivery controllers, and it will be extended to other STM32 Series in the future.

This package includes examples covering most of applicative use cases and allowing to develop applications based on USB-PD (Provider, Consumer, DRP, Dual Port and VDM).

The libraries and the associated examples can be used with the STM32F0 devices and a dedicated P-NUCLEO-USB001 shield containing Analog Front-Ends and USB Type-C™ connectors.

For more details on all the components of the USB-PD libraries, refer to the *STM32 USB-PD (Power Delivery) software expansion for STM32Cube* user manual (UM2063).

Ordering Information

X-CUBE-USB-PD is available for free download from the *www.st.com* website.

License

The software components provided within this package come with different license scheme as shown in *Table 1*.

For more details, refer to the license agreement of each component.

Table 1. Software component license agreements

Software component	Owner	License
Cortex®-M CMSIS	ARM®	Open source BSD.
FreeRTOS	FreeRTOS	Modified GNU General Public License (GPL).
HAL STM32 F0 and BSP	ST	Open source BSD.
STM32 USB-PD Library	ST	Ultimate Liberty (Binary release).
Project examples	ST	Ultimate Liberty (Source release).

Revision history

Table 2. Document revision history

Date	Revision	Changes
07-Jun-2016	1	Initial release.
24-Nov-2016	2	Updated figure in the cover page (title of the expansion board). Added *Section : License*.
19-Jan-2017	3	Updated *Description* (new libraries available).
24-Jan-2017	4	Updated *Table 1: Software component license agreements*.