

Si17023/Si17024/Si17033 USB Type-C Port Controllers

High Speed Port Controllers Featuring Simultaneous USB Data and Video Support

The Si17023 and Si17033 ICs are fully integrated USB Type-C communication transceivers that include power delivery (PD) and configuration channel (CC) protocols and port configuration switches. The Si17023 with MHL Alt Mode supports concurrent MHL and USB 2.0, while the Si17033/Si17024 with MHL Alt Mode supports concurrent MHL, USB 2.0 and USB 3.1 (Gen1). The Si17024 is ideally suited for MHL dock applications where both MHL and USB 3.0 for SS receiver Type-C receptacle is needed for Type-C to Type-C cable connection due to its QFN package. The Si17023, Si17024 and Si17033 offer a complete MHL over Type-C solution, enabling device manufacturers to deliver brilliant MHL 4K Ultra HD video, immersive audio, power, and data over the USB Type-C connector. Beyond MHL Alt Mode support, Si17033 also supports DisplayPort Alt Mode with 1 lane/2 lane DP over Type-C connector.

Applications

- Mobile phones
- Tablets
- Laptops
- Dongles
- Docks

Key Features

- Integrated HS switch (USB 3.1 Gen1)
- Complete power profile and CC detection
- Flexible Vendor Defined Message (VDM)
- 1.8 V logic support for control pins
- Dead battery support

Benefits Summary

- Simultaneous MHL/USB 3.1 (Gen1) – (Si17033/Si17024)
- Simultaneous 1 lane DP/USB3.1 (Gen1) – (Si17033)
- 2 lane DP over Type-C – (Si17033)
- Simultaneous MHL/USB 2.0 (Si17023)
- Simple design and low cost

Industry-Standard Compliance

- Type-C 1.1
- PD 2.0
- MHL 1.0, 2.0, 3.0 and superMHL
- DP 1.2

Channel Configuration

- Cable detection
- Establish and manage DFP & UFP connection

Power Delivery

- BMC messaging
- Power swap, role swap
- Vendor Defined Message (VDM)
- DRP/DFP/UFP
- Alternate mode

Integrated Switch

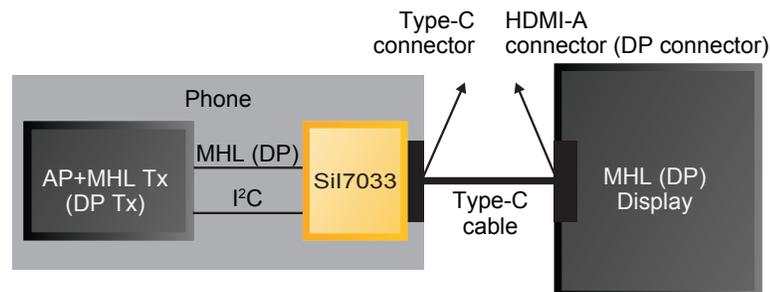
- MHL Switch: 6G bps
- USB3.1 SS Switch: 5G bps
- DP Switch: 5.4G bps

Packaging

- Si17033: 3x3 BGA
- Si17023: 3x3 QFN
- Si17024: 4x4 QFN

Deliverables

- C-code for Policy Manager
- C-code for PD stack
- Reference schematics
- Silicon solution for PD/CC PHY



Applications Support

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