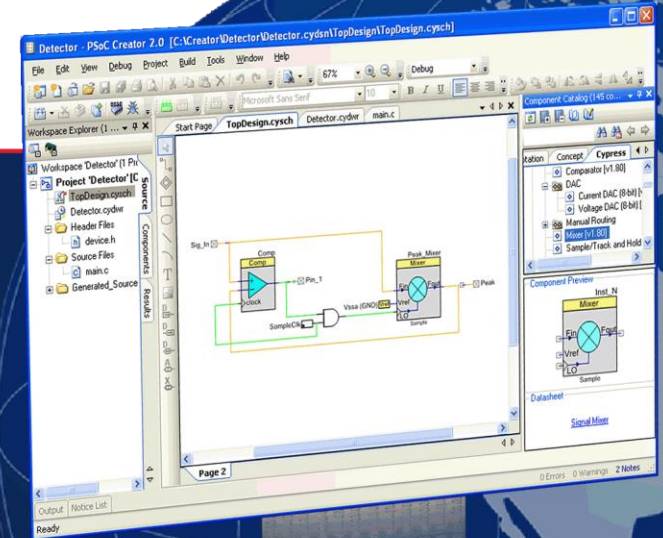




Solution Examples: USB-Serial



USB-Serial Solution Example: USB-I²C PTP¹ Bridge Controller

USB-I²C PTP Bridge Value

Design Challenges

- Many AMD and Intel CPUs lack 400-kHz I²C required by PTP¹ spec
- PTP spec requires minimum report rate of 125 reports per second
- PTP spec has low latency (15-ms) and power (25-mW) requirements
- PTP spec requires 100 ms of report buffering
- Ability to do in-system upgrade of trackpad firmware
- Support Microsoft PTP driver
- Work with trackpads from many vendors

Cypress's USB-I²C PTP Bridge Solution

- Seamlessly bridges 400-kHz I²C to USB
- Supports report rate greater than 250 reports per second
- Has low power consumption (<5 mW) and low latency (<3 ms)
- Provides 100 ms of report buffering
- Enables easy upgrade of trackpad firmware over USB
- Works seamlessly with Windows 8.1 PTP driver
- Works with trackpads from Synaptics, Elan, Alps and other vendors

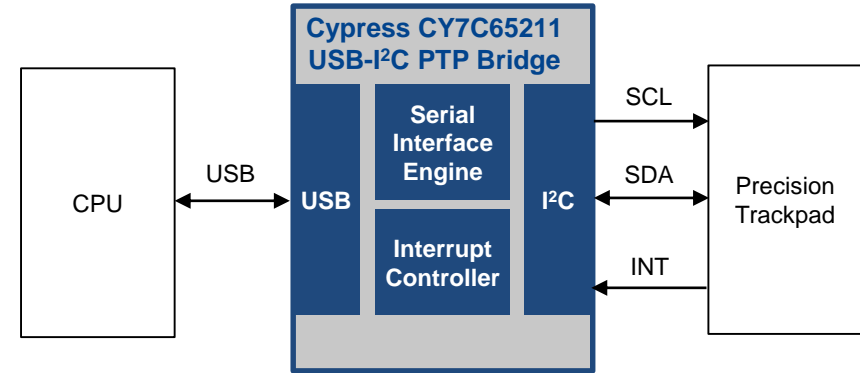
Suggested Collateral

- Datasheet: [USB-Serial CY7C65211 Datasheet](#)
- Product Overview: [USB-Serial Bridge Controller Overview](#)
- Evaluation Kit: [USB-Serial CYUSBS234 Kit](#)
- Software Development Kit: [USB-Serial SDK](#)

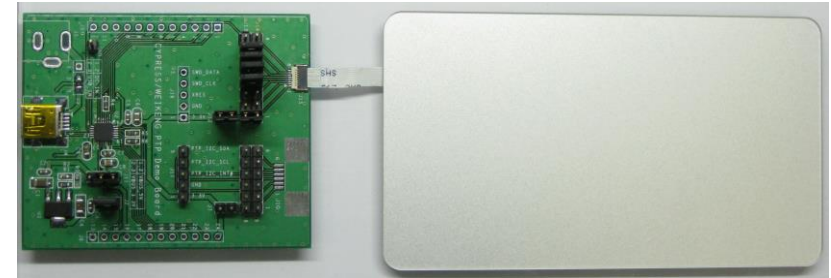
How To Get Started

- Download the above suggested collateral
- Email usbserial@cypress.com to get the USB-I²C PTP Bridge Demo
- Share details of the trackpad model chosen by you
- Request samples of the USB-I²C PTP Bridge

Block Diagram



Cypress's USB-I²C PTP Bridge Demo



Notebook by Acer



¹ Precision Trackpad (PTP) Specification for Windows 8.1 from Microsoft

USB-Serial Solution Example: USB-Serial Bridge Controller for IoT

USB-Serial Bridge Value

Design Challenges

Most of the IoT SoCs do not have additional serial interfaces
Wireless modules (BLE, Zigbee, Zwave) use I²C or SPI interfaces
IoT platforms require low power solutions
F/W for wireless modules should be upgradable
Interfacing bridge solutions should support standard drivers
IoT platforms are based on Linux or Android OS

Cypress's USB-Serial Bridge Solution

Seamlessly bridges 400-kHz I²C or 3-MHz SPI to USB
Low power consumption (<5 mW), V_{BUS} as low as 3.3 V
Enables F/W update to external modules on I²C or SPI interfaces
Standard USB CDC¹ device class support for I²C or SPI interfaces
Configurable serial interfaces, no F/W or S/W development required
Supports Windows, Linux and Android OS

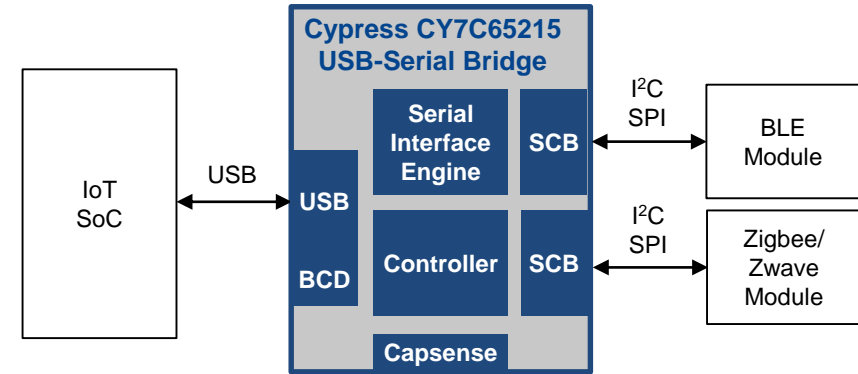
Suggested Collateral

Datasheet: [USB-Serial CY7C65215 Datasheet](#)
Product Overview: [USB-Serial Bridge Controller Overview](#)
Evaluation Kit: [USB-Serial CYUSBS236 Kit](#)
Software Development Kit: [USB-Serial SDK](#)

How To Get Started

Download the above suggested collateral
Email usbserial@cypress.com for support
Buy the [CYUSBS236](#) evaluation kit

Block Diagram



Wireless IoT Gateway



IoT Products from Rainforest Automation and Smartmeters



¹ Communication Device Class

USB-Serial Solution Example: USB-to-UART Generic Solution Example

USB to UART Bridge Value

Design Challenges

Devices with a UART port cannot connect to new PCs
Integrating USB connectivity into these devices is expensive, time-consuming and error-prone
Existing suppliers have problems with unstable software drivers and VID/PID¹ configurability

USB to UART Bridge Controller Solution

Provides seamless PC connectivity for UART devices
Retrofits existing systems with an easy-to-use active cable solution that requires no redesign of any kind
Provides a stable CDC² software driver and a VID/PID configuration utility
Works with standard Microsoft CDC class driver

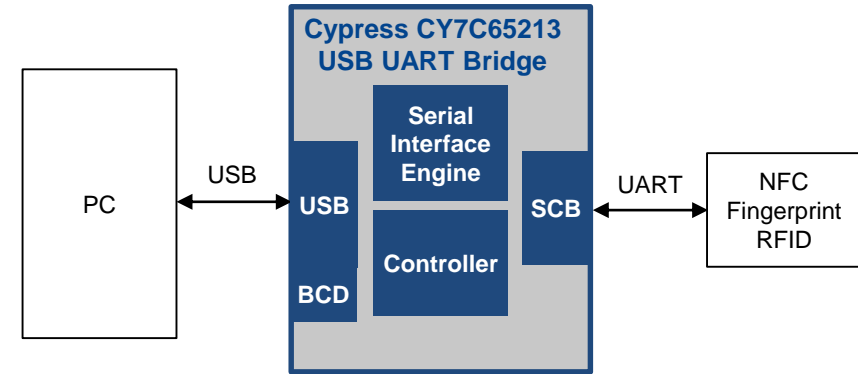
Suggested Collateral

Datasheet: [USB-Serial CY7C65213 Datasheet](#)
Product Overview: [USB-Serial Bridge Controller Overview](#)
Evaluation Kit: [USB-Serial CYUSBS232 Kit](#)
Software Development Kit: [USB-Serial SDK](#)

How To Get Started

Download the above suggested collateral
Email usbserial@cypress.com for support
Buy the [CYUSBS232](#) evaluation kit

Block Diagram



NFC Card Reader



Kiosk Printer
by Zebra Technologies



UART Fingerprint Scanner



Auto Starter
by ADS



¹ Vendor ID (VID) / Product ID (PID)

² Communication Device Class

USB-Serial Solution Example: USB Billboard Controller

USB Billboard Value

Design Challenges

- Low cost and small foot-print USB full-speed controller
- Should be USB-bus powered and low power
- Programmable to customer and standards needs
- Support for Type-C connectivity

Cypress's USB Billboard Solution

- USB full-speed controller in a 24-pin 4 mm x 4 mm QFN package
- Powers from V_{BUS} and lowest power consumption
- Open development platform for custom F/W development
- The SDK provides F/W source code for easy development
- Interacts with Cypress's CCGx¹ for Type-C connectivity

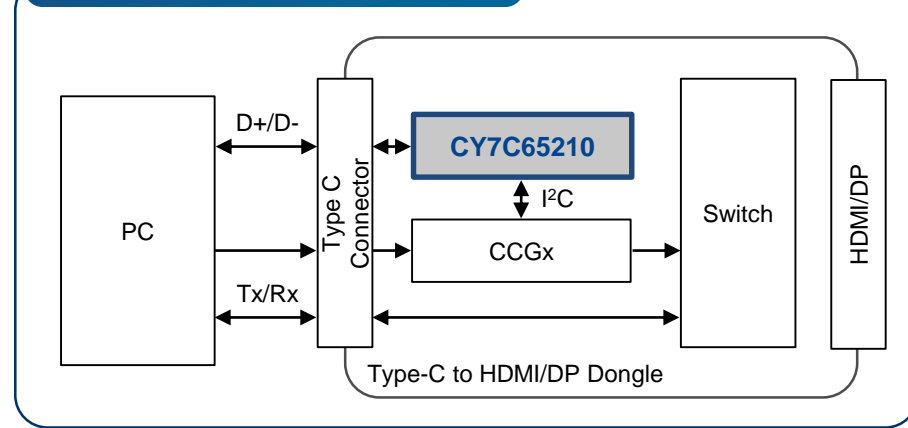
Suggested Collateral

- Datasheet: [USB-Serial CY7C65210 Datasheet](#)
- Product Overview: [USB-Serial Bridge Controller Overview](#)
- Evaluation Kit: [USB-Serial CYUSBS234 Kit](#)
- Software Development Kit: [USB-Serial SDK](#)

How To Get Started

- Download the above suggested collateral
- Email usbserial@cypress.com for support
- Buy the [CYUSBS234](#) evaluation kit

Type-C Dongle Block Diagram



USB Type-C Dongles



USB Type-C Hubs/Docks



USB Type-C Multiport Adapters



¹ Cypress's USB Type-C port controllers with power delivery