

# TetraHub™ USB 2.0 4-Port Hub Reference Design – CY4602

## USB 2.0 4-Port Hub

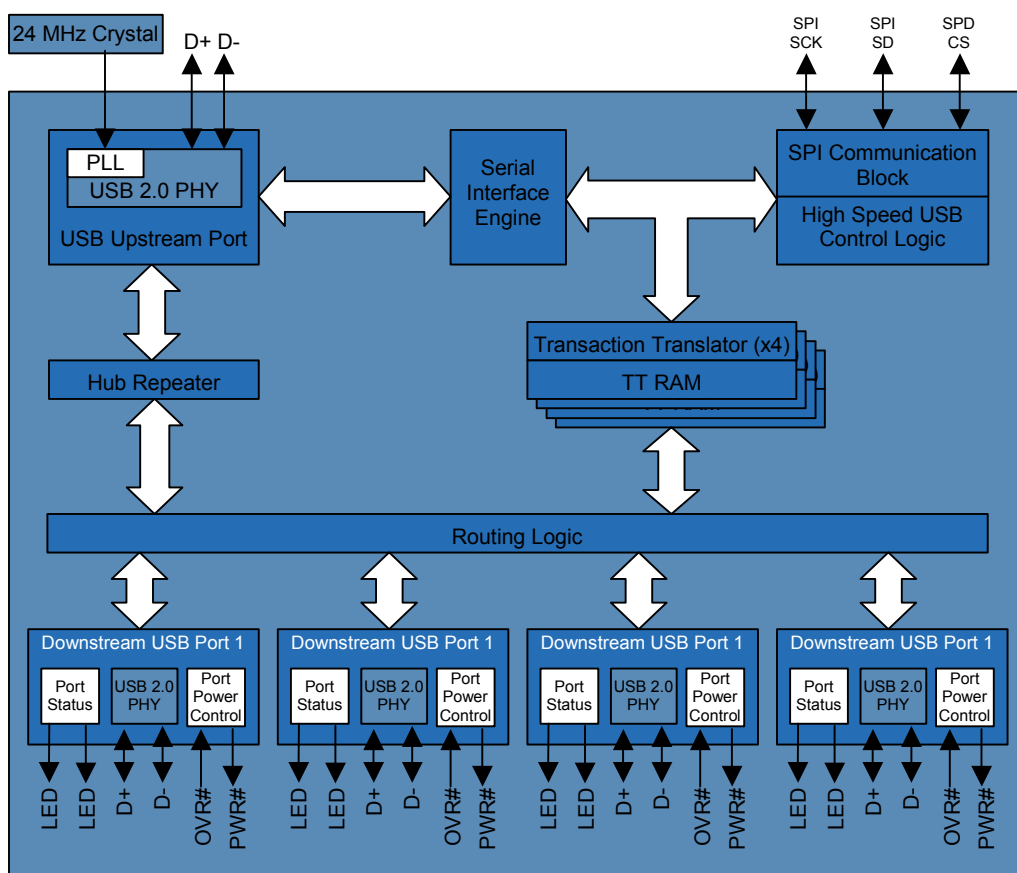
The TetraHub™ is the highest performance USB 2.0 hub solution available. Cypress offers a complete reference design for developing a fixed function 4-port USB 2.0 Hub that is production ready and USB 2.0 compliant.

This single chip design is based on the CY7C65640-LFC, offering a space saving and cost effective package. Because it is USB 2.0 compliant it is fully backward compatible with USB 1.1 systems. It provides for up to four downstream ports, and supports High Speed, Full Speed and Low Speed traffic. No firmware development is required for this design, thereby reducing design risk and time-to-market.

Our Reference Design Kits include a fully functional demonstration board as well as all of the design materials you will need to expedite the development of your custom product. Cypress provides faster time-to-market and the lowest overall system cost with our TetraHub Reference Design.

## Highlights

- **USB 2.0 Compliant**
- **480/12/1.5-Mbps operation**
- **4 transaction translators ('Tetra' Architecture)**
- **56-lead QFN package**
- **Integrated components**
  - 1.5 kΩ pull-up resistor on D+
  - 15 kΩ pull-down resistors on downstream ports
- **Individual or ganged port power switching and over current detection**
- **Integrated phase-locked loop**
- **Dedicated LED ports**



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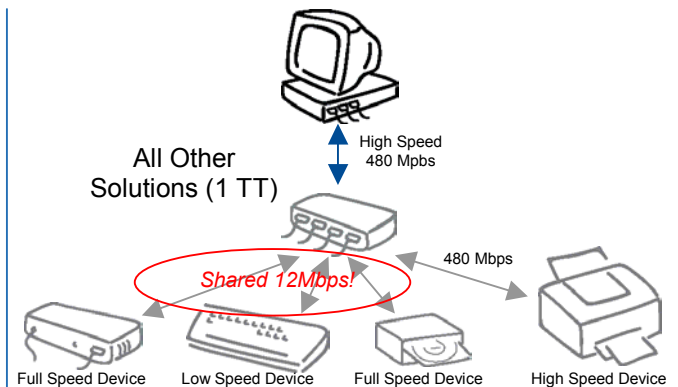
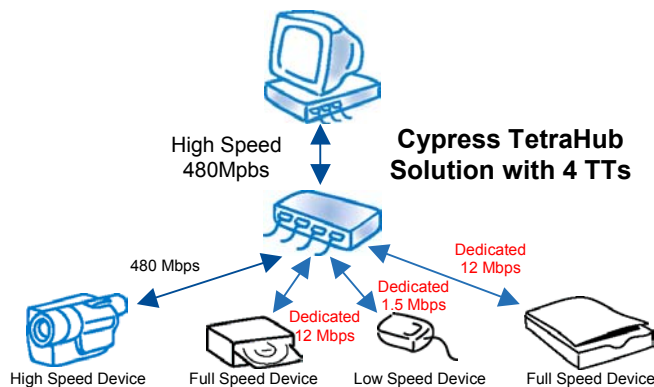
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Press "4" to reach your local sales rep

## TetraHub™ Reference Design

### Transaction Translators

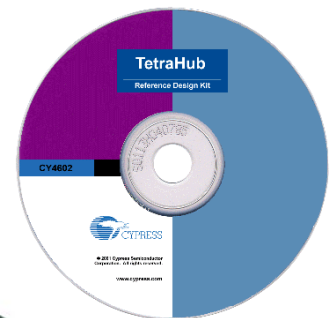
When compared to a USB 1.1 hub, a USB 2.0 hub functions more like a host controller, using "transaction translators" to convert Low and Full Speed traffic to High Speed, instead of just passing it through. With a single transaction translator, bandwidth must be shared among downstream Low and Full Speed devices. Cypress's unique design, integrating four transaction translators, allows us to provide the highest performing hub chip on the market, supporting the full bandwidth for every downstream Low and Full Speed device.



### TetraHub™ Reference Design Kit Contents

The TetraHub™ Reference Design Kit includes:

- CY7C65640 based demonstration unit
- 5VDC, 2.5A wall power supply
- USB cable
- Datasheet and Design Notes
- Hardware files
  - Schematics
  - Bill of Materials
  - Gerber and Orcad Source Files



### Product ordering information

For assistance in ordering, contact your local Cypress Sales Representative. Call toll-free in the U.S. (800)-858-1810 or visit our web site at [www.cypress.com](http://www.cypress.com). Online resources for locating your sales representative, as well as on-line ordering are available under the link [How to Buy Cypress Products](#).

| Reference Design Kit Number | Based on Cypress Part... |
|-----------------------------|--------------------------|
| CY4602                      | CY7C65640-LFC            |