

USB3803

In Production

As mobile devices continue to add more features and the complexity of connectivity increases, it has become necessary to have a flexible hub which can be used in multiple ways as USB port expansion in portable applications like tablets, or as a purely embedded device to seamlessly bridge complex mobile architectures. Microchip's extremely small size USB3803 USB 2.0 hub controller offers three downstream ports with highly integrated portable features specifically designed for mobile embedded applications where more than one USB port is required. The USB3803 can easily attach to an upstream port as a Full-Speed or Full/Hi-Speed USB hub, while supporting Low, Full and Hi-Speed (if operating as a Hi-Speed hub) downstream devices on all enabled downstream ports. Additionally, extremely low current standby and bypass mode features make the device well-suited for mobile, battery-powered embedded systems where power consumption, small package size, minimal BOM and Battery Charger (BC) detection capabilities are critical design requirements.

The USB3803 integrates BC detection circuitry and supports both USB-IF 1.1 and legacy charger specifications, while flexible power regulators facilitate simple design into battery-powered devices. Microchip's complimentary and confidential USBCheck™ online design review service is available for customers who select the USB3803 for their application design-in.*

*The [USBCheck online design review](#) service is subject to Microchip's [Program Terms and Conditions](#) and requires a myMicrochip account.



Features

Highlights










- Integrated USB 2.0-compatible 3-port hub
- Advanced power saving features including 1µA standby current
- Bypass Switch for low power, single port operation
- USB-IF BC 1.1 detection
- Supports Single or Multi-TT configurations for Full and Low-Speed connections
- Enhanced configuration options available through serial I²C slave port
- Internal default configuration option when serial I²C host is not available
- Incorporates proprietary Microchip technologies: MultiTRAK™, PortMap, PortSwap, PHYBoost, VariSense™ and flexPWR®
- External 12, 19.2, 26 or 38.4MHz clock inputs

| Parameter Name | Value |
|------------------|---------|
| Upstream Port | USB 2.0 |
| USB Speed | USB 2.0 |
| Downstream Ports | 3 |
| MGMT I/F | I2C |
| Op Voltage (V) | 3.3 |
| MultiTRAK Tech | Yes |
| PortMap | Yes |
| PortSwap | Yes |
| PHYBoost | Yes |
| Temp. Range Min. | -40 |
| Temp. Range Max. | 85 |

- Internal 3.3V and 1.2V voltage regulators for single supply operation
- USB Port ESD Protection (DP/DM) up to ±15kV (IEC 61000-4-2)
- Commercial (0° to 70°C) and industrial (-40° to 85°C) temperature range options
- 25-ball WLCSP, RoHS-compliant package

Target Applications

- Mobile Phones
- Tablet Computers
- Ultra-mobile PCs
- e-Readers
- Digital Still Cameras
- Digital Video Camcorders
- Gaming Consoles
- Mobile Accessory Docks
- Portable Media Players
- GPS Personal Navigation Devices
- Media Players/Viewers
- Wireless Modem Dongles/Cards

| Documentation | | | | | Download All | |
|---|--|---------------|------------|--------|---|--|
| USB3803 - USB 2.0 High-Speed Hub Controller Data Sheets | | | 03/25/2015 | 940KB |  | |
| Optimized for Portable Applications | | | | | | |
| Application Notes | | | | | Download All | |
| AN 26.2 - Implementation Guidelines for Microchip's USB 2.0 and USB 3.0 Hub Devices | | AppNote | 08/11/2015 | 1203KB |  | |
| AN26.21 - USB Device Design Checklist | | AppNote | 08/10/2015 | 386KB |  | |
| IBIS | | | | | | |
| USB3803 IBIS Model | | IBIS | 02/15/2014 | 93KB |  | |
| BOM | | | | | | |
| EVB-USB3803 Evaluation Board Bill of Materials | | BOM | 02/01/2014 | 18KB |  | |
| aspxCADResources | | | | | | |
| EVB-USB3803 Evaluation Board Schematic, OrCAD | | CAD Resources | 07/28/2011 | 1374KB |  | |
| Gerber Files | | | | | | |
| EVB-USB3803 Evaluation Board Gerber Files | | Gerber Files | 03/08/2011 | 933KB |  | |
| Schematics | | | | | | |
| EVB-USB3803 Evaluation Board Schematic, PDF | | Schematics | 07/28/2011 | 36KB |  | |
| User Guides | | | | | | |
| EVB-USB3803 Evaluation Board User Manual | | User Guides | 12/07/2012 | 2044KB |  | |

Pricing & Samples

All pricing shown in USD only.

| Part Number | Leads | Package Type | Temp Range | Packing | 1+ | 26+ | 100+ | 1000+ | 5000+ | Buy | Sample |
|-------------------|-------|--------------|--------------|---------|------|------|------|-------|-------|-----|---|
| USB3803C-1-GL-TR | 25 | WLCSP | 0C to +70C | T/R | 2.48 | 2.07 | 1.88 | 1.82 | 1.80 | \$ |  |
| USB3803CI-1-GL-TR | 25 | WLCSP | -40C to +85C | T/R | 3.35 | 2.80 | 2.54 | 2.45 | 2.43 | \$ |  |

** Device not available to purchase online. Please contact a [sales office](#) for pricing information.

Demo & Eval Boards









USB3803 USB 2.0 Mobile Hub Evaluation Board (EVB-USB3803)



The USB3803 USB 2.0 hub controller offers three downstream ports with highly integrated portable features specifically designed for mobile embedded applications where more than one USB port is required. The USB3803 can easily attach to an upstream port as Full-Speed or Full/Hi-Speed USB hub, while supporting Low, Full and Hi-Speed downstream devices on all enabled downstream ports. Additionally,...

Similar Devices

| Product | Price5K |
|----------|---------|
| USB2412 | \$1.31 |
| USB2422 | \$1.29 |
| USB2502 | |
| USB2503A | |
| USB2504 | \$2.52 |
| USB2507 | \$4.04 |
| USB2512B | \$1.09 |
| USB2513B | \$1.41 |
| USB2514 | \$1.97 |
| USB2514B | \$1.45 |
| USB2517 | \$3.17 |
| USB2524 | \$3.02 |
| USB2532 | \$1.97 |
| USB2533 | \$2.56 |
| USB2534 | \$2.63 |
| USB3503 | \$1.80 |
| USB3613 | \$2.70 |
| USB3803 | \$1.80 |
| USB3813 | \$2.70 |
| USB4604 | \$2.89 |
| USB4624 | \$2.85 |
| USB5434 | |
| USB5532B | \$3.54 |
| USB5533B | \$3.71 |
| USB5534B | \$4.17 |
| USB5537 | \$4.84 |
| USB5537B | \$4.84 |
| USB5734 | \$4.17 |
| USB5742 | \$3.10 |
| USB5744 | \$3.75 |
| USB5806 | \$5.16 |
| USB5807 | \$5.04 |
| USB5816 | \$5.40 |
| USB5826 | \$5.76 |
| USB5906 | \$5.16 |
| USB5916 | \$5.40 |
| USB5926 | \$5.76 |

| Part Number | Device Weight | Shipping Weight | Lead Count | Package Type | Package Width | Solder Composition | JEDEC Indicator | RoHS | China EFUP |
|-------------------|---------------|-----------------|------------|--------------|----------------|--------------------|-----------------|---|---|
| USB3803C-1-GL-TR | 0.009450 | 0.040000 | 25 | WLCSP | 1.97x1.97x0.57 | SAC | e1 |  RoHS |  |
| USB3803CI-1-GL-TR | 0.009450 | 0.040000 | 25 | WLCSP | 1.97x1.97x0.57 | SAC | e1 |  RoHS |  |
| USB3803BI-1-GL-TR | 0.009450 | 0.040000 | 25 | WLCSP | 1.97x1.97x0.57 | SAC | e1 |  RoHS |  |
| USB3803B-1-GL-TR | 0.009450 | 0.040000 | 25 | WLCSP | 1.97x1.97x0.57 | SAC | e1 |  RoHS |  |

To see a complete listing of RoHS data for this device, please [Click here](#)

Shipping Weight = Device Weight + Packing Material weight. Please contact Sales office if device weight is not available.

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