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 I^2C slave port
- Internal default configuration option when serial I^2C 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 Optimized for Portable Applications	Data Sheets	03/25/2015940KB	
Application Notes			**Download All**
AN 26.2 - Implementation Guidelines for Microchip's USB 2.0 and USB 3.0 Hub Devices	AppNote	08/11/20151203KB	
AN26.21 - USB Device Design Checklist	AppNote	08/10/2015386KB	
IBIS			
USB3803 IBIS Model	IBIS	02/15/201493KB	
BOM			
EVB-USB3803 Evaluation Board Bill of Materials	BOM	02/01/201418KB	
aspxCADResources			
EVB-USB3803 Evaluation Board Schematic, OrCAD	CAD Resources	07/28/20111374KB	
Gerber Files			
EVB-USB3803 Evaluation Board Gerber Files	Gerber Files	03/08/2011933KB	
Schematics			
EVB-USB3803 Evaluation Board Schematic, PDF	Schematics	07/28/201136KB	
User Guides			
EVB-USB3803 Evaluation Board User Manual	User Guides	12/07/20122044KB	

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.

Development Tools

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

RoHS Information

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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Microchip:

USB3803B-1-GL-TR USB3803BI-1-GL-TR