USB5434B

4-Port SS/HS USB Hub Controller

PRODUCT FEATURES

Data Brief

General Description

The SMSC USB5434B hub is a 4-port SuperSpeed/Hi-Speed, low-power, configurable hub controller family fully compliant with the *USB 3.0 Specification*. The USB5434B supports 5 Gbps SuperSpeed (SS), 480 Mbps Hi-Speed (HS), 12 Mbps Full-Speed (FS) and 1.5 Mbps Low-Speed (LS) USB signalling for complete coverage of all defined USB operating speeds.

The USB5434B supports legacy USB speeds through its USB 2.0 hub controller. The new SuperSpeed hub controller operates in parallel with the USB 2.0 controller, so the 5 Gbps SuperSpeed data transfers are not affected by the slower USB 2.0 traffic.

The USB5434B is configured for operation through internal default settings.

Features

- USB 3.0 compliant 5 Gbps, 480 Mbps, 12 Mbps and 1.5 Mbps operation, USB pins are 5 V tolerant
  - Integrated termination and pull-up/pull-down resistors
- Four downstream USB 3.0 ports
- Optimized for low-power operation and low thermal dissipation
- Single 25 MHz XTAL or clock input for all on-chip PLL and clocking requirements
- Supports JTAG boundary scan
- IETF RFC 4122 compliant 128-bit UUID

Software Features

- Compatible with Microsoft Windows 7, Vista, XP, Mac OSX10.4+, and Linux Hub Drivers

PRODUCT PREVIEW

Order Numbers:

ORDER NUMBERS*	DESCRIPTION	LEAD-FREE ROHS COMPLIANT PACKAGE	TEMPERATURE RANGE
USB5434B-JZX	USB 3.0 4-Port Hub	64QFN 9 x 9mm 6.0 mm exposed pad	0ºC to 70ºC

* Add “TR” to the end of any order number to order tape and reel. Reel size is 3000 pieces.

This product meets the halogen maximum concentration values per IEC61249-2-21

For RoHS compliance and environmental information, please visit www.smsc.com/rohs

Please contact your SMSC sales representative for additional documentation related to this product such as application notes, anomaly sheets, and design guidelines.

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Block Diagram

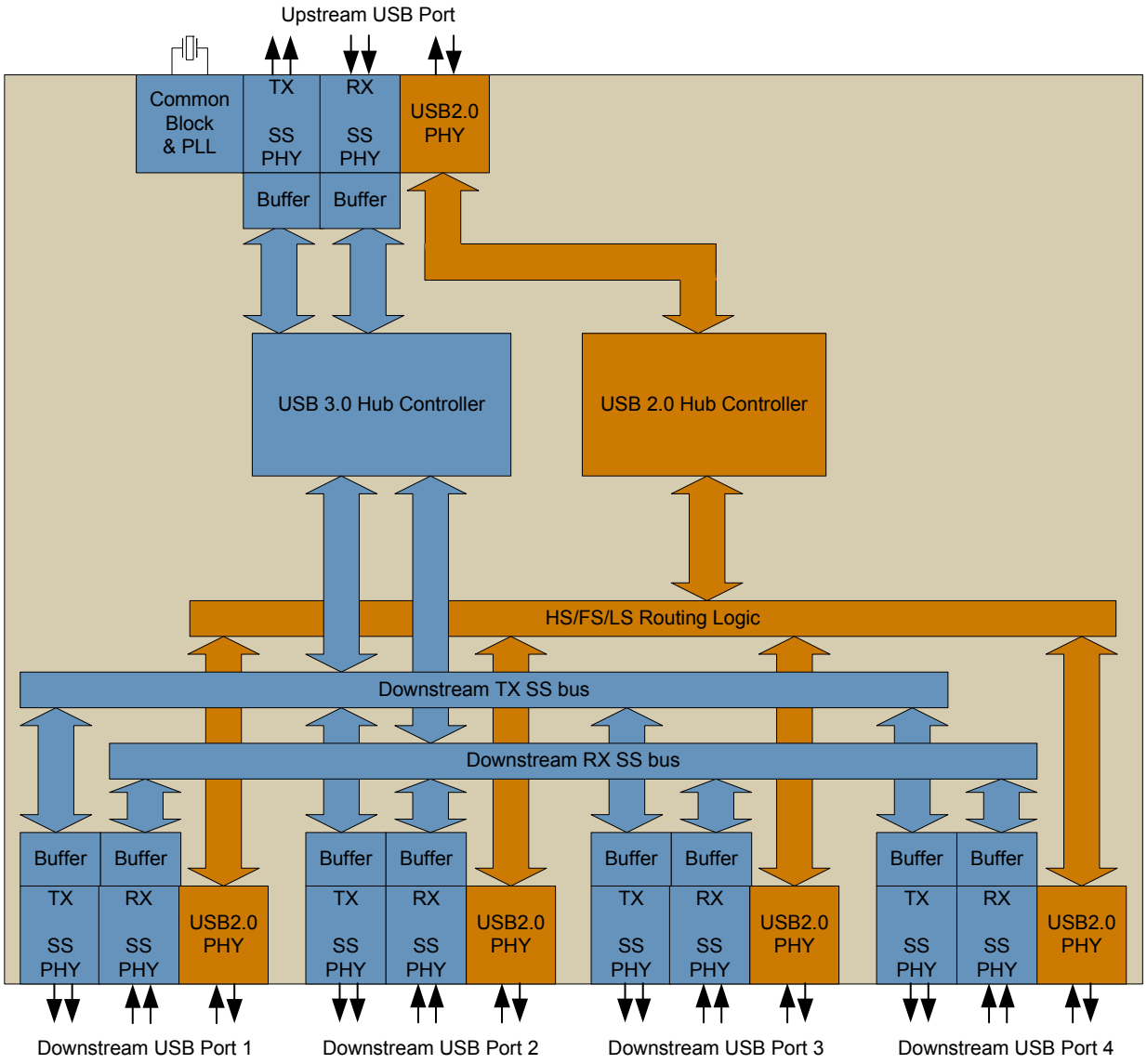


Figure 1 USB5434B Block Diagram

PRODUCT PREVIEW

Overview

The SMSC USB5434B hub is a 4-port, low-power Hub Controller fully compliant with the *USB 3.0 Specification*. The USB5434B supports 5 Gbps SuperSpeed (SS), 480 Mbps Hi-Speed (HS), 12 Mbps Full-Speed (FS) and 1.5 Mbps Low-Speed (LS) USB signalling for complete coverage of all defined USB operating speeds.

All required resistors on the USB ports are integrated into the hub. This includes all series termination resistors and all required pull-down and pull-up resistors on D+ and D- pins. The over-current sense inputs for the downstream facing ports have internal pull-up resistors.

The USB5434B includes MultiTRAK™ technology, which implements a dedicated Transaction Translator (TT) for each port. Dedicated TTs help maintain consistent full-speed data throughput regardless of the number of active downstream connections.

The hub controller provides a default configuration, expediting implementation.

PRODUCT PREVIEW

Package Outline

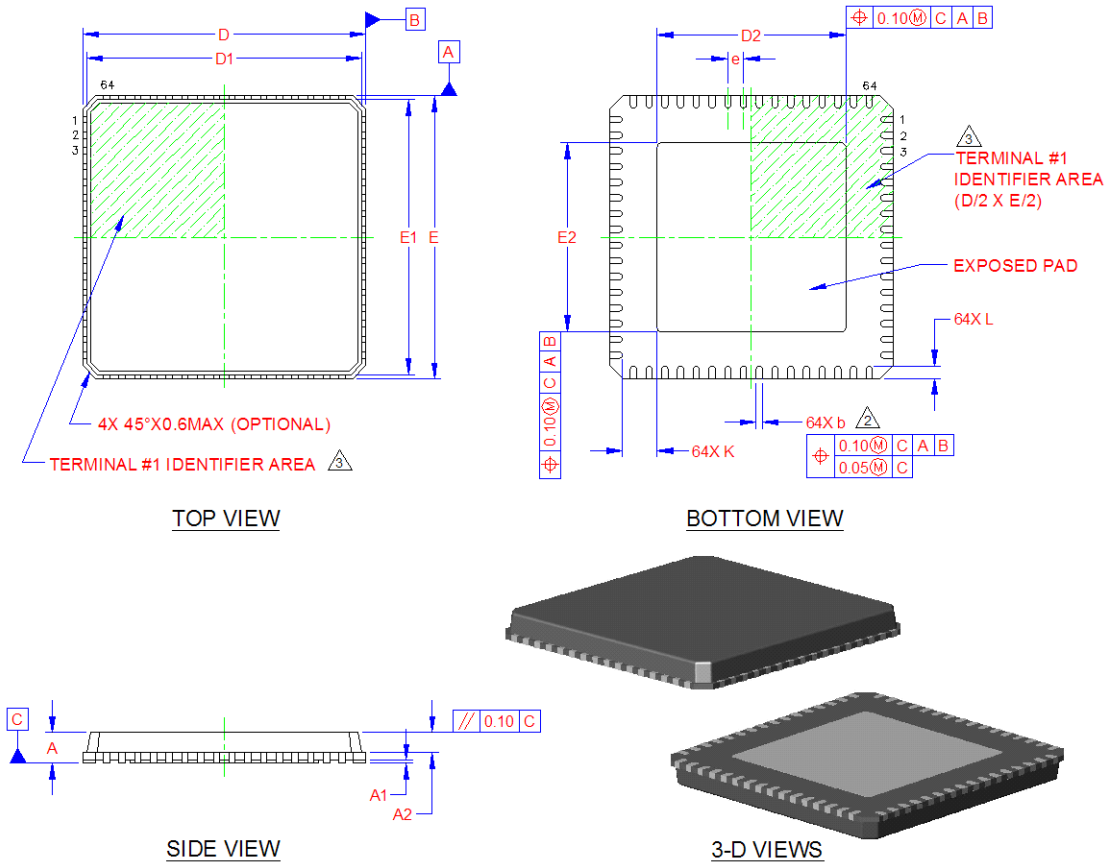


Figure 2 USB5434B 64 Pin QFN Package

Table 1 USB5434B 64-Pin QFN Dimensions

	MIN	NOMINAL	MAX	REMARKS
A	0.80	0.85	1.00	Overall Package Height
A1	0	0.02	0.05	Standoff
A2	-	0.65	0.80	Mold Cap Thickness
D/E	8.90	9.00	9.10	X/Y Body Size
D1/E1	8.65	8.75	8.85	X/Y Mold Cap Size
D2/E2	5.90	6.00	6.10	X/Y Exposed Pad Size
L	0.30	0.40	0.50	Terminal Length
b	0.18	0.25	0.30	Terminal Width
K	0.90	-	-	Center Pad to Pin Clearance
e	0.50 BSC			Terminal Pitch

Notes:

1. All dimensions are in millimeters unless otherwise noted.
2. Dimension “b” applies to plated terminals and is measured between 0.15 and 0.30 mm from the terminal tip.
3. The pin 1 identifier may vary, but is always located within the zone indicated.

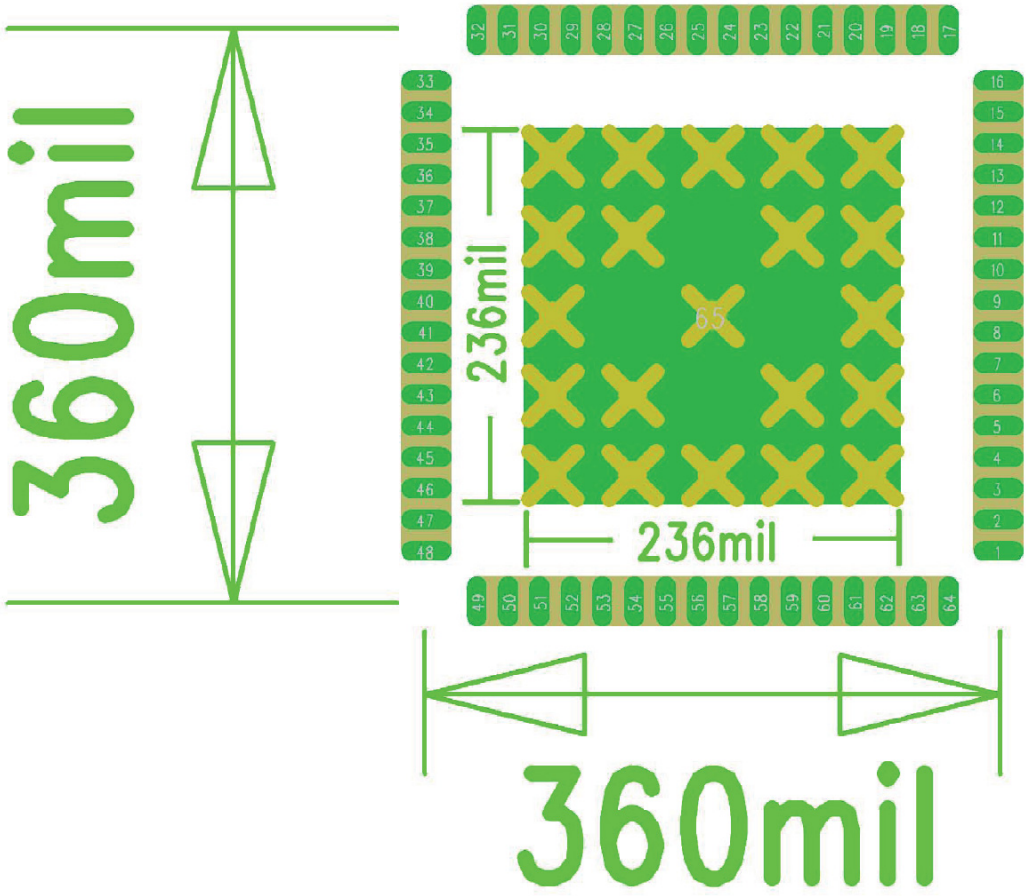


Figure 3 Recommended PCB Land Pattern

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