

# FE8.1

## HIGH SPEED 4-PORT USB HUB CONTROLLER

### Product Brief

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#### INTRODUCTION

The Terminus FE8.1 is an extremely compact High Speed 4-port USB hub controller. It is compliant to USB-IF “*Universal Serial Bus Specification Revision 2.0*” (USB 2.0) specification from every aspects but one – FE8.1 always reports itself as an Self-Powered hub, regardless of the actual system implementation. To achieve the absolutely minimal pin counts, there is no input signal pins left to monitor the local power status.

The FE8.1 is a highly integrated, high quality, and high performance solution for USB 2.0 4-port hub. With its tiny footprint and extremely low power consumption, it is the best choice for embedded application as well as standalone hub.

The high quality of FE8.1 is guaranteed by Design-For-Testing with comprehensive scan chains and Built-In-Self-Test modes which could exercise all High, Full, and Low Speed Analog Front End (AFE) components on the packaging and testing stages.

#### FEATURES

- USB 2.0 fully compliant AFE transceivers:
  - Upstream Facing Port supports High-Speed (480MHz) and Full-Speed

- (12MHz) modes;
- 4 Downstream Facing Ports support High-Speed, Full-Speed, and Low-Speed (1.5MHz) modes;
- Integrated upstream 1.5K $\Omega$  pull-up, downstream 15K $\Omega$  pull-down, and serial resistors;
- Integrated 5V to 3.3V and 1.8V regulators;
- Integrated Power-On-Reset with power failure detection circuit;
- Integrated 12MHz Oscillator with feedback resistor and crystal load capacitors;
- Integrated 12MHz-to-480MHz Phase Lock Loop (PLL);
- *Single Transaction Translator* (Single TT) –
  - One TT for all downstream ports;
  - The TT could handle 64 periodic Start-Split transactions, 32 periodic Complete-Split transactions, and 6 none-periodic transactions;

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