



FE4.1

USB 2.0 HIGH SPEED DUAL-PORT HUB CONTROLLER

Product Brief



INTRODUCTION

The Terminus FE4.1 is an USB 2.0 High-Speed Dual-Port hub with special features to support USB dongle type of applications – which are compound devices with either two embedded devices, or one embedded device plus one open downstream port. It is fully compliant to USB-IF “*Universal Serial Bus Specification Revision 2.0*”.

To fit into such a tight and closed environment as the USB dongle type of applications, the FE4.1 features tiny footprint and extreme low power consumption. And to further reduce the component count, the FE4.1 provides TWO clock outputs – one of 12MHz and one of 24MHz for its downstream devices as clock source.

As all other hub controller series products from Terminus, the high quality of FE4.1 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 during the packaging and testing stages.

FEATURES

- Fully compliant with Universal Serial Bus Specification Revision 2.0 (USB 2.0);
 - Upstream Facing Port supports High-Speed (480MHz) and Full-Speed (12MHz) modes;
 - 2 Downstream Facing Ports support High-Speed, Full-Speed, and Low-Speed (1.5MHz) mode;
- Integrated USB 2.0 Transceivers;
- Integrated upstream 1.5K Ω pull-up, downstream 15K Ω 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* (STT) –
 - One TT for both 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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- Supports Ganged *Power Control* mode;
- Provides two clock output: one 12MHz and one 24MHz; and one Remote-Wake-Up Alert input.

PACKAGE

20-Pin WQFN (Body Size: 4mm x 4mm)

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