USB Transceiver 1TR 32-Pin VQFN EP T/R

Manufacturer:	Microchip Technology, Inc
Package/Case:	QFN32
Product Type:	Interface ICs
RoHS:	RoHS Compliant/Lead free
Lifecycle:	Active
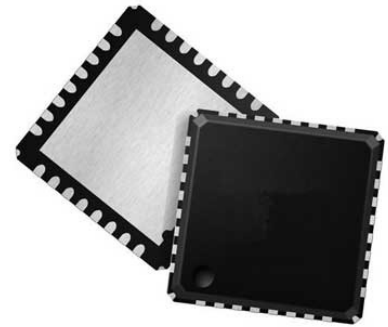
Images are for reference only

Inquiry

General Description

The USB3300 is an industrial temperature Hi-Speed USB Physical Layer Transceiver (PHY). The USB3300 uses a low pin count interface (ULPI) to connect to a ULPI compliant Link layer. The ULPI interface reduces the UTMI+ interface from 54 pins to 12 pins using a method of in-band signaling and status byte transfers between the Link and PHY.

This PHY was designed from the start with the ULPI interface. No UTMI to ULPI wrappers are used in this design which provides a seamless ULPI to Link interface. The result is a PHY with a low latency transmit and receive time. Microchip's low latency high speed and full speed receiver provide the option of re-using existing UTMI Links with a simple wrapper to convert UTMI to ULPI.

The ULPI interface allows the USB3300 PHY to operate as a device, host, or an On-The-Go (OTG) device. Designs using the USB3300 PHY as a device, can add host and OTG capability at a later date with no additional pins.

The ULPI interface, combined with Microchip's proprietary technology, makes the USB3300 the ideal method of adding Hi-Speed USB to new designs. The USB3300 features an industry leading small footprint package (5mm by 5mm) with sub 1mm height. In addition the USB3300 integrates all DP and DM termination resistances and requires a minimal number of external components.

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Key Features

Features

USB-IF Hi-Speed certified to the Universal Serial Bus Specification Rev 2.0

Interface compliant with the ULPI Specification revision 1.1 in 8-bit mode

Industry standard UTMI+ Low Pin Interface (ULPI) Converts 54 UTMI+ signals into a standard 12 pin Link controller interface

54.7mA Unconfigured Current (typical) - ideal for bus powered applications

83uA suspend current (typical) - ideal for battery powered applications

Latch-Up performance exceeds 150 mA per EIA/JESD 78, Class II

ESD protection levels of ±8kV HBM without external protection devices

Integrated protection to withstand IEC61000-4-2 ESD tests (±8kV contact and ±15kV air) per 3rd party test facility

Supports FS pre-amble for FS hubs with a LS device attached (UTMI+ Level 3)

Supports HS SOF and LS keep-alive pulse

Includes full support for the optional On-The-Go (OTG) protocol detailed in the On-The-Go Supplement Revision 1.0a specification

Supports the OTG Host Negotiation Protocol (HNP) and Session Request Protocol (SRP)

Allows host to turn VBUS off to conserve battery power in OTG applications

Supports OTG monitoring of VBUS levels with internal comparators. Includes support for an external VBUS or fault monitor.

Low Latency Hi-Speed Receiver (43 Hi-Speed clocks Max) allows use of legacy UTMI Links with a ULPI wrapper

Integrated Pull-up resistor on STP for interface protection allows a reliable Link/PHY start-up with slow Links (software configured for low power)

Internal 1.8 volt regulators allow operation from a single 3.3 volt supply

Internal short circuit protection of ID, DP and DM lines to VBUS or ground

Integrated 24MHz Crystal Oscillator supports either crystal operation or 24MHz external clock input

Internal PLL for 480MHz Hi-Speed USB operation

Industrial Operating Temperature -40°C to +85°C

32 pin, QFN RoHS Compliant package (5 x 5 x 0.90 mm height)

Application

The USB3300 is the ideal companion to any ASIC, SoC or FPGA solution designed with a ULPI Hi-Speed USB host, peripheral or OTG core.

The USB3300 is well suited for:

Cell Phones

PDAs

MP3 Players

Scanners

External Hard Drives

Digital Still and Video Cameras

Portable Media Players

Printers

Recommended For You

USB3320C-EZK-TR

Microchip Technology, Inc

QFN32

USB3343-CP-TR

Microchip Technology, Inc

QFN24

USB3318-CP-TR

Microchip Technology, Inc

QFN24

USB2513B-I/M2

Microchip Technology, Inc

QFN36

USB3315

Microchip Technology, Inc

QFN

USB2504-JT

Microchip Technology, Inc

QFP64

USB3318

Microchip Technology, Inc

QFN

USB3318C-CP-TR

Microchip Technology, Inc

QFN24

USB3340-EZK-TR

Microchip Technology, Inc

QFN32

USB2422T-I/MJ

Microchip Technology, Inc

SQFN24

USB3503AI-1-GL-TR

Microchip Technology, Inc

WLCSP25

USB2660I-JZX-03

Microchip Technology, Inc

QFN

USB2507-ADT

Microchip Technology, Inc

QFP

USB2641-HZH-02

Microchip Technology, Inc

QFN

USB3317C-CP-TR

Microchip Technology, Inc

QFN24