DIODES
I N C O R P O R A T E D ®

1-Port eUSB2-to-USB 2.0 Repeaters Improve Signal Integrity in Embedded USB Systems

The PI3EUSB1100/1101 are 1-port USB-compliant eUSB2-to-USB 2.0 repeaters that perform interface translation between eUSB2 and USB 2.0 signaling.

They are used in systems that have an eUSB2 interface on one side and a USB 2.0 interface on the other side, supporting host-repeater, device-repeater, or dual-role repeater functions.

The devices are compliant with eUSB2 and USB 2.0 specifications. They support USB 2.0 low-speed (LS), full-speed (FS), and high-speed (HS) signals with adaptive power management to save system power during sleep, detach, and standby mode.

Both devices use an I2C interface for fine-tuning of device equalization and swing, and de-emphasis to pass the USB 2.0 electrical compliance tests and to compensate for channel losses.

The PI3EUSB1100 and PI3EUSB1101 use a 1.8V and 1.2V I2C interface, respectively.

The PI3EUSB1100/1101 use a 3.3V and 1.8V power rail and operate across the -40ºC to +85ºC industrial temperature range. They are available in the tiny 12-ball, chip-scale X1-WLB1712-12 (GH12) package.

The DIODES Advantage

The PI3EUSB1100/1101 are 1-port eUSB2-USB 2.0 repeaters that translate signaling between eUSB2 and USB2 2.0 in consumer electronics systems.

- **Host Device or Dual-Role Repeater Functions**
  Uses a USB device or USB host

- **USB 2.0 Low-Speed (LS), Full-Speed (FS), and High-Speed (HS) Signals**
  Fully compliant with eUSB2 and USB 2.0 specifications

- **Adaptive Power Management Scheme**
  Utilizes system power at sleep, detach, and standby modes

- **Fine-Tuning of Device Equalization, Output Swing, and De-Emphasis Through I2C Interface**
  Ensures USB 2.0 electrical compliance and compensates for any channel loss

- **Very Small Footprint: CSP 1.65mm x 1.22mm with 0.35mm Ball Pitch**
  Excels in space-constrained portable applications

Applications

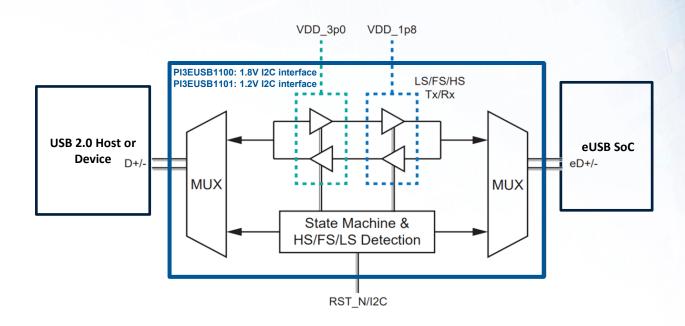Signaling translation between eUSB2 and USB 2.0 in:

- Notebooks
- PCs
- Embedded systems
- USB Type-A ports
- USB Type-C© ports

Typical Application

eUSB2-USB 2.0 Repeater Family

Part Number	Supply Voltage	Ports	eUSB2	USB 2.0 Compatibility	Programming Interface	I2C Signal	Ambient Temperature Range	Package
	V		MHz			V	°C	
PI3EUSB1100	1.8/3.3	1	480	USB 2.0	I2C	1.8	-40 to +85	X1-WLB1712-12 (GH12)
PI3EUSB1101	1.8/3.3	1	480	USB 2.0	I2C	1.2	-40 to +85	X1-WLB1712-12 (GH12)

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
PI3EUSB1100GHEX	Standard	X1-WLB1712-12 (GH12)	MSL-1	3,000	7'' Tape & Reel
PI3EUSB1101GHEX	Standard	X1-WLB1712-12 (GH12)	MSL-1	3,000	7'' Tape & Reel