

Application: PDA Cellular Phone
Pericom Device: PI 74STX2G4245 – 2-Bit Level Shifting Buffer/Transceiver with Dual Supply Voltage

Overview

How many phone calls and emails do you receive and reply to everyday? Instant communication is so important nowadays that it is impossible to work efficiently without constantly maintaining accessibility electronically.

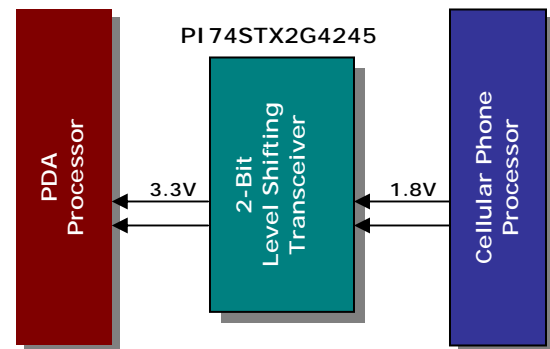
The Personal Digital Assistant (PDA) is a portable device that provides computing, information storage, sending, and retrieval capabilities for consumer and businesses. Today's cellular phone is not limited to transmittal of voice, but also data and pictures. Data might include information like appointments, addresses, pictures, MP3, and web access. Some of the cellular services provide up to 56Kbps of data transfer rate for internet access, video conference, and any high-speed communication. By the end of this year the data rate will be increased to around 1.5Mbps. This is comparable with broadband service at home with the likes of DSL or Cable.

It is very easy to check and reply to your emails, send instant messages, check stock prices, or buy things online if you have a PDA cellular phone. With a PDA cellular phone you will always be connected at all times and in all places.

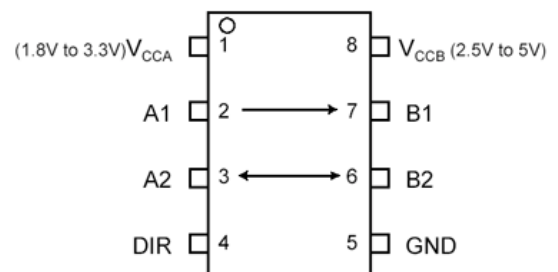


The Pericom Solution

Pericom's SOTiny PI74STX2G4245, 2-bit, level-shifting buffer/transceiver can be used to provide voltage translation on clock signals between two PDA and Cellular Phone processors. The PI74STX2G4245 2-bit level shifting transceiver is used in a PDA cellular phone design to translate two bits of clock signals from 1.8V to 3.3V.



The PI74STX2G4245 offers a wide range of voltage translation from 1.65V to 5.5V. This device is configured one bidirectional bit, and one unidirectional bit. Therefore the bidirectional bit can be used for data signals in both directions. The voltage level of the bidirectional bit can translate from high-to-low or low-to-high. The unidirectional bit can be translated from low voltage level to high voltage level. The device also offers superior performance with typical 3ns propagation delay, 10uA standby current, and a high impedance I/O feature. In support small portable device applications, Pericom offers two tiny packages, 8-pin MSOP and 12-pin TQFN.



Key Features & Specifications

- **Dual Power Supplies:** Separate supply voltages on each port (sides) of the device.
 - $V_{CCA} = 1.65V$ to $3.6V$
 - $V_{CCB} = 2.3V$ to $5.5V$
- **2-Bit level shifting:**
 - 1-bit bidirectional (transceiver)
 - 1-bit unidirectional (buffer)
- **Rail-to-rail Output Swing:** Increased noise margin.
- **High-Impedance I/O:** Prevent bus contention and excess current flow.
- **Speed:** High performance with typical about 3ns
- **Low Power:** 10uA max. at standby
- **Drive Capability:**
 - $\pm 12mA$ at $3.3V$ on V_{CCA} & V_{CCB}
 - $\pm 24mA$ at $5V$ on V_{CCB} .
- **Operating Temperature:** $-40^{\circ}C$ to $+85^{\circ}C$
- **SOTiny Packages:** 8-pin MSOP (U) and 12-pin TDFN (ZE) packages.

Key Benefits

- Enables easy voltage translation from $1.65V$ to $5.5V$ for any LVTTL/LVCMOS interfaces
- Very Small Packaging (SOTiny)
 - MSOP: 3mm by 4.9mm
 - TQFN: 3mm by 3.5mm

Product Status and Pricing

- Samples Now
- Production March 26, 2004
- Pricing
 - PI74STX2G4245UX: \$0.42 in 10K quantities
 - PI74STX2G4245ZEEX: \$0.46 in 10K quantities

Competitive Cross-Reference

Pericom	Competitor	Pericom Advantage
PI74STX2G4245	Analog Device ADG3231	* 2-Bit (1 bidirectional) * Wider Voltage Range * Strong Drive * High Impedance I/O

Other level shifter products

Many other portable appliances also require data transceivers, address buffers and level shifting buffers. Please refer to our website for several examples. [Translator Devices](#) and [Translator Application Notes](#).

Additional Information

- Website
 - Datasheets, Product Presentation, IBIS, App Notes, Quality & Package Data
<http://www.pericom.com/products/logic/psempart.php?productID=PI74STX2G4245>
 - Translator FOCUS Website:
www.pericom.com/translators
- Order Literature Online www.pericom.com/literature

Contact Information

Please contact your local Pericom Sales Representative or franchised distributor: <http://www.pericom.com/contact/>

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