



NTS030x & NTB030x Ultra-Low Voltage Level Translators with "Smart One Shot"

A new family of 1, 2, 4, and 8-channel level translators

OVERVIEW

NXP's Voltage Level Translators offer lower voltage and superior performance in pin-to-pin compatible packages with industry-standard footprints. These bi-directional level translators address the various applications that need a transition of voltage signals through multiple domains. With auto-direction sensing and the ultra-low 0.95 V minimum supply, these families match up well with the latest low-voltage μ Cs and FPGAs.

NTS030x smart one-shot delivers better operation in higher capacitance systems with minimal overshoot compared to previous generations of level translators and are optimized for I²C-bus and other open-drain applications.

NTB030x smart one-shot delivers high speed operation at lower voltage compared to previous generations of level translators and are optimized for SPI, SPMI and other push-pull applications.

APPLICATIONS

- ▶ Laptops
- ▶ Smart phones
- ▶ Communications systems
- ▶ Set-top boxes
- ▶ Low-voltage edge computing
- ▶ Smart cards: debit/credit

KEY FEATURES

- ▶ Easy to Use
 - Dual supply translating transceiver family with auto direction sensing enables bi-directional voltage level translation without need for direction control
- ▶ Highly Robust
 - IEC61000-4-2 class 4, 8 kV contact ESD protection for B-side port (only NTS030xE)
 - "Smart One Shot" with 50ns pulse and EMI rejection (NTS030x only)
- ▶ Wide Voltage Level Translation
 - NTS VCC(A): 0.95 V to 3.6 V and VCC(B): 1.65 V to 5.5 V
 - NTB VCC(A): 0.95 V to 2.7 V and VCC(B): 1.65 V to 3.6 V
 - Voltage nodes 1.2 V, 1.8 V, 2.5 V, 3.3 V, and 5.0 V (5 V NTS only)
- ▶ Complete Family
 - Updated family of 1, 2, 4 and 8-channel level translators
 - Multiple pin-compatible package options



NTS/NTB030X FAMILY FEATURES

- ▶ Dual supplies to pair with low voltage digital IC and higher voltage peripherals
- ▶ Auto-sensing bi-directional – no direction pin required

NTS030X

- ▶ Best for open drain outputs like I²C-bus
- ▶ Integrated pull-up resistors reduce component cost
- ▶ Longer one shot for faster low to high transition in high capacitance applications

NTB030X

- ▶ Best for push-pull outputs like SPI and SPMI
- ▶ Isolates capacitance which helps faster speeds at lower voltages

VOLTAGE LEVEL TRANSLATOR FAMILIES

	1-channel	2-channel	4-channel	8-channel
FET w/ one-shot output(s)	NTS0301 Roadmap 2020	NTS0302 Production	NTS0304E Production	NTS0308E Roadmap 2020
Push-pull output(s)	NTB0301 Roadmap	NTB0302 Roadmap	NTB0304 Roadmap	NTB0308 Roadmap

