



NXP I²C SIM interface and supply voltage LDO in WLCSP

I²C-bus SIM level translation with smallest footprint, highest ESD performance

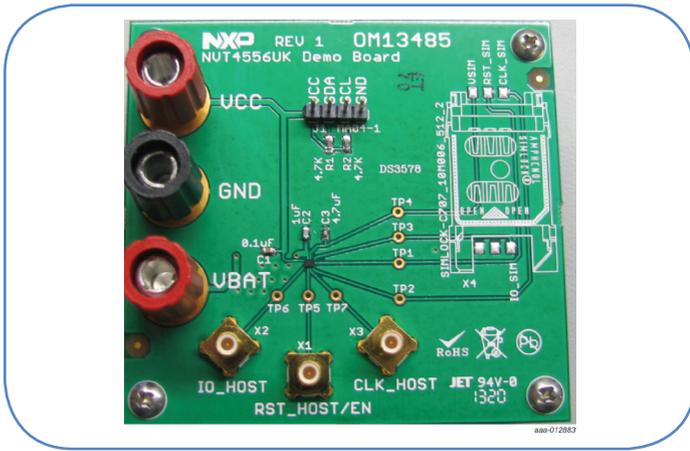
Meeting all the SIM requirements for ETSI, IMT-2000 & ISO 7816, including power supply and shutdown sequence, this level translator is the first to combine I²C-bus control of the SIM card and supply voltage LDO in a tiny WLCSP.

Features	Benefits
12-pin WLCSP package (1.205 x 1.605 x 0.412 mm, 0.4 mm pitch).	Small footprint reduces PCB space and lower costs.
±8 kV IEC61000-4-2 ESD protected on all SIM card contact pins.	Ensures reliable, robust operations under adverse ESD conditions.
I ² C-bus interface for device enable and LDO voltage selection and CLK stop mode.	Enables normal operation and selection of either 1.8 or 3 V for the SIM card power supply. The LDO functionality may be disabled while maintaining the level translator paths so that the user can use a system-controlled regulator to power the SIM card power supply.
Incorporates ISO-7816-3 shutdown feature for the SIM card signals and other ETSI, IMT2000 and ISO-7816 requirements.	Meets all ETSI, IMT2000 and ISO-7816 requirements.
Supports SIM card supply voltages 1.8 and 3 V.	LDO delivers the two different voltages from the typical mobile phone battery voltage.
Input voltage range to LDO: 2.5 to 5.25 V.	Improve battery life with low input voltage level.
Host microcontroller operating voltage range: 1.55 to 3.6 V.	Designed for interfacing a SIM card with a single low-voltage host-side interface.
V _{CC} output provides power to the host side I/Os and doubles as an enable input pin.	Allows GPIO to match the host side voltage. Maximum total current draw from the V _{CC} pin is 100 µA.
Separate orderable part numbers with different slave address.	Enable users to provide second and third SIM card functionality with a low-voltage one host SIM port while at the same time reducing the number of GPIOs used in the system.
Supports clock speed beyond 5 MHz clock.	Three level translators provided to convert the data, RSTn and CLKn signals between a SIM card and a host microcontroller.

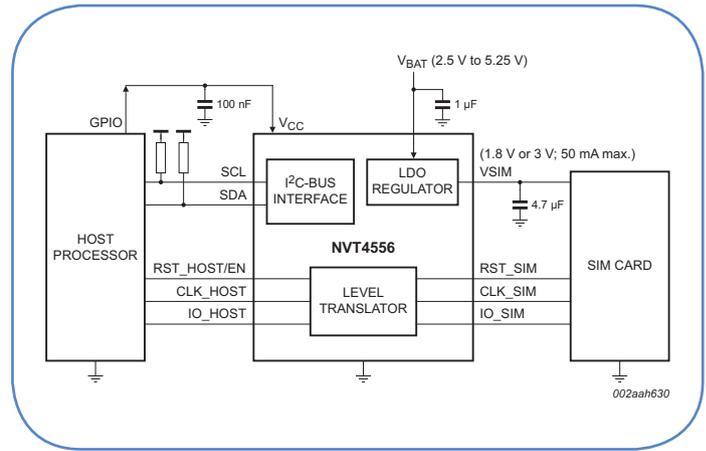
APPLICATIONS

- ▶ Mobile, cellular and personal phones
- ▶ Wireless modems
- ▶ SIM card terminals





OM13485 NVT4556 WLCSP Demo Board



NVT4556 application circuit interfacing with typical SIM card

DEMONSTRATION PLATFORMS

The NVT4556 evaluation board makes it possible to test all device functions, including IEC 61000-4-2 system level ESD requirements. Operating instructions are provided in the user manual UM10801.

Design support for the evaluation boards is available through your local NXP distributor.

ADDITIONAL INFORMATION

For downloadable support tools, visit www.nxp.com/interface

For questions, e-mail interface.support@nxp.com

ORDERING INFORMATION – The devices are identical except for the I²C-bus slave 8-bit slave address. For a Write operation, the LSB is 0 and the slave address is 'C0h' for the NVT4556AUK and 'C2h' for the NVT4556BUK.

Type number	Orderable part number	Package	Packing method	Minimum order quantity	Temperature	Slave address
NVT4556AUK	NVT4556AUKZ	WLCSP12	Reel 7" Q/T1 *Special mark chips dry pack	3000	T _{amb} = -40°C to +85°C	1100 000xb
NVT4556ABUK	NVT4556BUKZ	WLCSP12	Reel 7" Q/T1 *Special mark chips dry pack	3000	T _{amb} = -40°C to +85°C	1100 000xb

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