NXP I²C master bridges SC18IS600/601 and SC18IM700

Low-power bridges for SPI slave or UART to I²C master or GPIO

These compact protocol converters create seamless, low-power, low-voltage interface connections, so they make it quick and easy to add I²C master and GPIO capability to any application that has an SPI bus or UART host interface. The result is increased design flexibility with reduced complexity and software overhead, and faster time-to-market.

SC18IS600/601 features

- 2.4- to 3.6-V operation with 5-V-tolerant I/O pins
- High-speed SPI bus slave up to 3 Mbps
- Fast I²C-bus (up to 400 kbps) with multi-master capability
- Up to four GPIO and two quasi-bidirectional I/O pins
- 96-byte transmit and receive buffers
- Power-down mode with a wake-up pin
- Active-low interrupt output
- Industrial temperature range (-40 to +85 °C)
- 16-pin TSSOP package

SC18IM700 features

- 2.3- to 3.6-V operation with 5-V-tolerant I/O pins
- UART host interface with baud rates up to 460.8 kbps
- Fast I²C-bus (up to 400 kbps) with multi-master capability
- Up to eight GPIO
- 16-byte transmit and receive FIFOs
- 8N1 RS-232 format
- Sleep mode (power-down) with a wake-up pin
- Industrial temperature range (-40 to +85 °C)
- 16-pin TSSOP package

These low-power bridge ICs simplify design and reduce system cost by making it easy to add devices to an application. They provide an I²C master interface control to the I²C bus without a remote host processor. They also provide access to GPIO, so it's easy to expand the host system to support additional functions:

- System monitoring
- Diagnostics
- LCD display control
- Fan control
- LED lighting/blinking
- Button/keypad press detection
- Status information
- EEPROM data storage

SC18IS600/601

The NXP I²C master bridges SC18IS600 and SC18IS601 let a host with a SPI bus communicate transparently with I²C-bus devices like LCD displays, temperature/voltage sensors, and EEPROM data storage. The I²C-bus controller has multi-master capability, so it can share the bus with a microcontroller or another

NXP founded by Philips

I²C master. The high-speed SPI bus slave operates at up to 3 Mbps.

Both devices support 2.4- to 3.6-V operation and offer up to four GPIO and two quasi-bidirectional I/O pins. The I/O pins are tolerant to 5 V.

They have 96-byte on-chip transmit and receive buffers, use a wake-up pin to support power-down mode, and provide active-low interrupt output. It operates in the industrial temperature range and is available in a 16-pin TSSOP package.

SC18IM700

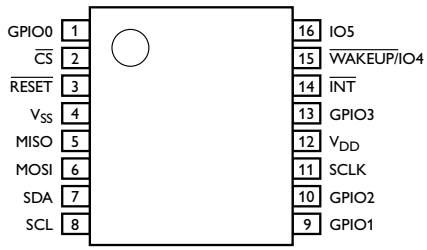
The NXP I²C master bridge SC18IM700 lets a host with an RS-232 connection communicate with remote I²C devices such as temperature sensors, LCD displays, A/D converters, and smart card readers. The same RS-232 connection can also be used to let the host communicate with remote GPIO.

The device supports 2.3- to 3.6-V operation and offers up to eight GPIO. The UART host interface delivers baud rates up to 460.8 kbps and the fast I²C-bus, which supports multi-master capability, operates up to 400 kbps.

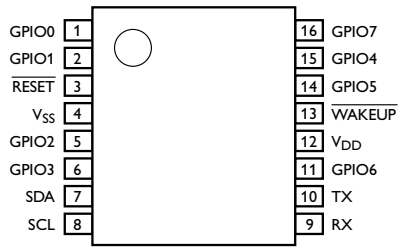
It has 16-byte on-chip transmit and receive FIFOs, supports the 8N1 RS-232 format, and uses a wake-up pin to support sleep mode (power-down). It operates in the industrial temperature range and is available in a 16-pin TSSOP package.

For more information, please visit: www.nxp.com/interface

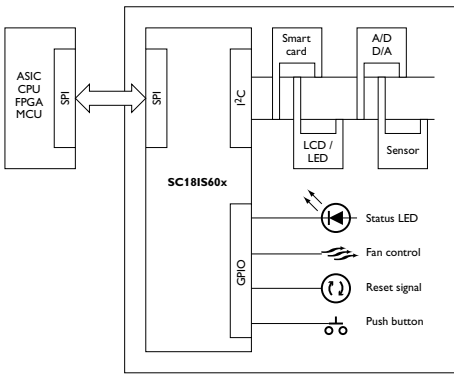
For technical support, please send questions to: interface.support@nxp.com



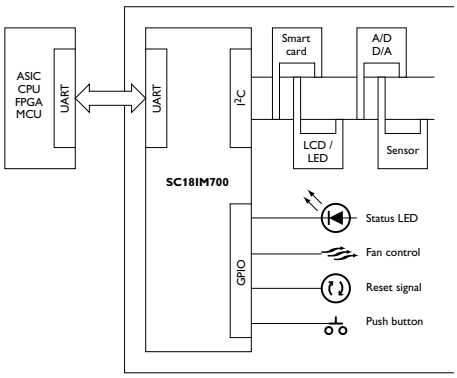
SC18IS600 / 601 pinout diagram



SC18IM700 pinout diagram



SC18IS600/601 usage scenario



SC18IM700 usage scenario

Feature summary

Type number	SC18IS600IPW	SC18IS601IPW	SC18IM700IPW
SPI speed	1 Mbps	3 Mbps	N/A
UART speed	N/A	N/A	460.8 kbps
I²C bus	400 kHz	400 kHz	400 kHz
Number of GPIO	4	3	8
Quasi-bidirectional I/O	2	2	0
Clock	Internal	External	Internal
Package	TSSOP16	TSSOP16	TSSOP16
Dimensions	5.0 x 4.4 x 1.1 mm	5.0 x 4.4 x 1.1 mm	5.0 x 4.4 x 1.1 mm

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