



NXP 2.5/3.3/5-V, 1/2/4-channel 16C UARTs SC16CxxxB

High-speed, low-voltage 16C UARTs with one, two, and four channels

These drop-in replacements for existing 16C devices offer speeds up to 5 Mbps, a wide range of operating voltages (2.5, 3.3, or 5 V), extended temperature range at commercial pricing, and space-saving packaging options.

Key features

- ▶ Single-, dual-, and quad-channel 16C UARTs
- ▶ Pin- and software-compatible with competing 16C devices
- ▶ Baud rates up to 5 Mbps
- ▶ Operating voltages: 2.5, 3.3, or 5 V
- ▶ Extended temperature range at commercial pricing
- ▶ FIFO depth: 16 to 64 bytes
- ▶ Industry's fastest bus cycle times
- ▶ Power-down mode
- ▶ Support for IrDA-specific features
- ▶ Compatible with Windows/Linux serial drivers
- ▶ DMA control
- ▶ Ultra-small and lead-free packages available

Applications

- ▶ Smartphones, cellular handsets, PDA/MP3 players
- ▶ Computing, point-of-sale
- ▶ Automotive, navigation systems
- ▶ Medical equipment
- ▶ Security, industrial equipment
- ▶ Networking, telecommunications
- ▶ HDTV, LCD TV
- ▶ Gaming systems

NXP 2.5/3.3/5-V, 1/2/4-channel 16C UARTs SC16CxxxB are drop-in compatible with industry-standard devices and offer added features without a price premium.

The family includes CMOS-based UARTs with one, two, or four channels. Each device supports the widest supply voltage range (2.5, 3.3, and 5 V), and operates within the industrial temperature range (-45 to 80 °C), so a single UART can be used in multiple operating environments. One UART can replace up to four competitor parts, for a significantly lower overall cost of ownership.

Each UART delivers baud rates up to 5 Mbps, and offers bus cycle times that are up to 20% faster than traditional devices. As a result, NXP 16C UARTs are compatible with high-speed processors and are ideally suited to Bluetooth® applications.

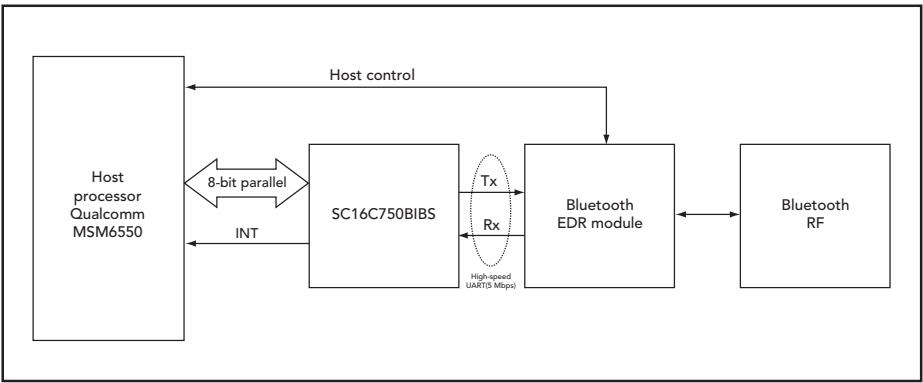
To save power in battery-operated and other small, portable systems, each device has a power-down mode. Also, many of the devices are available in tiny HVQFN packages that reduce PCB space by as much as 70%.

Each UART is fully compatible with Linux and Windows OS drivers, and uses readily available software, so they simplify development.

DMA mode, along with a wide variety of FIFO depths, increases system throughput. Programmable channel modes increase flexibility and make diagnostics easier to run. Multi-drop support (also known as “wake-up” or “9-bit” mode) saves power and improves efficiency.

Hardware handshaking uses modem control signals to control the data stream, preventing FIFO overflow without interrupting the CPU. An infrared (IrDA) interface enables wireless, short-range applications.

Additional information, including data sheets, is available at www.nxp.com/interface. Please email any technical questions to interface.support@nxp.com



NXP 16C UART in a Bluetooth-enabled W-CDMA phone

Ordering information

PLCC	LQFP	DIL	HVQFN
SC16C550BIA44	SC16C550BIB48	SC16C550BIN40	SC16C550BIBS
SC16C650BIA44	SC16C650BIB48	SC16C650BIN40	SC16C650BIBS
SC16C750BIA44	SC16C750BIB64		SC16C750BIBS
SC16C2550BIA44	SC16C2550BIB48	SC16C2550BIN40	SC16C2550BIBS
SC16C2552BIA44			
	SC16C652BIB48		SC16C652BIBS
	SC16C752BIB48		SC16C752BIBS
SC16C554DBIA68	SC16C554BIB80		SC16C554BIBS
	SC16C554BIB64		
	SC16C554DBIB64		
SC16C654BIA68	SC16C654BIB64		SC16C654BIBS
	SC16C654DBIB64		
SC16C754BIA68	SC16C754BIB80		

Note: Four channels in a single package

NXP 16CxxxB features

Part number	Channels	Maximum data rate (Mbps)			FIFO depth Tx/Rx (bytes)	IrDA	I/O pins	FIFO interrupt trigger levels		Flow control	Power-down mode	Intel or Motorola interface
		5 V	3.3 V	2.5 V				Rx	Tx			
SC16C550B	1	3	2	1	16	No	8	4	None	RTS/CTS	No	Intel
SC16C650B	1	3	2	1	32	Yes	8	4	4	RTS/CTS or SW	Yes	Intel
SC16C750B	1	3	2	1	16 or 64	No	8	4	None	RTS/CTS	Yes	Intel
SC16C2550B	2	5	5	3	16	No	14	4	None	No	No	Intel
SC16C2552B	2	5	5	3	16	No	14	4	None	No	No	Intel
SC16C652B	2	5	5	3	32	Yes	14	4	4	RTS/CTS or SW	Yes	Intel
SC16C752B	2	5	5	3	64	No	14	Programmable		RTS/CTS or SW	Yes	Intel
SC16C554B	4	5	5	3	16	No	24	4	None	RTS/CTS	No	Intel or Motorola
SC16C654B	4	5	5	3	64	Yes	24	4	4	RTS/CTS or SW	Yes	Intel or Motorola
SC16C754B	4	5	5	3	64	No	24	Programmable		RTS/CTS or SW	Yes	Intel