Products

Part No: FT232RNL

USB Full Speed to Serial UART IC, Includes Oscillator and EEPROM, SSOP-28

USB 2.0 Slave to UART Converter

- **Data Rates:** 3MBaud
- **USB Speed:** Full Speed (12Mbps)
- **USB Transfer Modes:** Bulk
- **Interfaces:** UART with 4 GPIO pins
- **USB Host:** No
- **Packages:** 28-pin SSOP
- **Channels:** 1
- **I/O Voltage:** 1.8V to 5V
- **USB Class:** Vendor
- **Virtual Com Port:** Yes
- **Operating Temperature:** -40°C to +85°C

Standard Price (Easy checkout)

Order Quantity		Price per Unit
1 - 9	:	**USD4.75**
10 - 49	:	**USD4.30**
50 - 99	:	**USD4.10**
100 - 249	:	**USD3.90**
250 - 499	:	**USD3.50**
500 - 999	:	**USD3.10**
1000 - +	:	Ask for quote

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Device Overview | Documentation | Drivers | Downloads

FT232RNL – USB UART IC

The FT232RNL device is added to FTDI's range of USB UART interface Integrated Circuit Devices. The FT232RNL is a USB to serial UART interface with optional clock generator output, and the new FTDIChip-ID™ security dongle feature. In addition, asynchronous and synchronous bit bang interface modes are available. USB to serial designs using the FT232RNL have been further simplified by fully integrating the external EEPROM, clock circuit and USB resistors onto the device.

The FT232RNL adds two new functions compared with its predecessors, effectively making it a "3-in-1" chip for some application areas. The internally generated clock (6MHz, 12MHz, 24MHz, and 48MHz) can be brought out of the device and used to drive a microcontroller or external logic. A unique number (the FTDIChip-ID™) is burnt into the device during manufacture and is readable over USB, thus forming the basis of a security dongle which can be used to protect customer application software from being copied.

The FT232RNL is available in Pb-free (RoHS compliant) compact 28-Lead SSOP and QFN-32 packages.

Press releases, articles and web links related to the FT232RNL can be found here.

A frequently asked questions page has been created here.

Key Hardware Features

- Single chip USB to asynchronous serial data transfer interface.
- Entire USB protocol handled on the chip – No USB-specific firmware programming required.
- UART interface support for 7 or 8 data bits, 1 or 2 stop bits and odd / even / mark / space / no parity.
- Fully assisted hardware or X-On / X-Off software handshaking.
- Data transfer rates from 300 baud to 3 Megabaud (RS422 / RS485 and at TTL levels) and 300 baud to 1 Megabaud (RS232).
- In-built support for event characters and line break condition.

- New USB FTDIChip-ID™ feature.
- New configurable CBUS I/O pins.
- Auto transmit buffer control for RS485 applications.
- Transmit and receive LED drive signals.
- New 48MHz, 24MHz,12MHz, and 6MHz clock output signal Options for driving external MCU or FPGA.
- FIFO receive and transmit buffers for high data throughput.
- 256 Byte receive buffer and 128 Byte transmit buffer utilizing buffer smoothing technology to allow for high data throughput.
- Adjustable receive buffer timeout.
- Synchronous and asynchronous bit bang mode interface options with RD# and WR# strobes.
- New CBUS bit bang mode option.
- Integrated 1024 bit internal EEPROM for I/O configuration and storing USB VID, PID, serial number and product description strings.
- Device supplied preprogrammed with unique USB serial number.
- Support for USB suspend / resume.
- Support for bus powered, self powered, and high-power bus powered USB configurations.
- Integrated 3.3V level converter for USB I/O.
- Integrated level converter on UART and CBUS for interfacing to 5V – 1.8V Logic.
- True 5V / 3.3V / 2.8V / 1.8V CMOS drive output and TTL input.
- High I/O pin output drive option.
- Integrated USB resistors.
- Integrated power-on-reset circuit.
- Fully integrated clock – no external crystal, oscillator, or resonator required.
- Fully integrated AVCC supply filtering – No separate AVCC pin and no external R-C filter required.
- UART signal inversion option.

- USB bulk transfer mode.
- 3.3V to 5.25V Single Supply Operation.
- Low operating and USB suspend current.
- Low USB bandwidth consumption.
- UHCI / OHCI / EHCI host controller compatible.
- USB 2.0 Full Speed compatible.
- -40°C to 85°C extended operating temperature range.
- Available in compact Pb-free 28 Pin SSOP and QFN-32 packages (both RoHS compliant).

Package

Partial, Tube or Reel

Part No: FT232RNL(qty 1-46)	Package Type: Partial (Cut Tape)
Part No: FT232RNL-TUBE (qty 47-1999)	Package Type: TUBE
Part No: FT232RNL-REEL (qty >=2000)	Package Type: REEL

Application Areas

USB to RS232 / RS422 / RS485 Converters

Upgrading Legacy Peripherals to USB

Cellular and Cordless Phone USB data transfer cables and interfaces

Interfacing MCU / PLD / FPGA based designs to USB

USB Audio and Low Bandwidth Video data transfer

PDA to USB data transfer

USB Smart Card Readers

USB Instrumentation

USB Industrial Control

USB MP3 Player Interface

USB FLASH Card Reader / Writers

Set Top Box PC – USB interface

USB Digital Camera Interface

USB Hardware Modems

USB Wireless Modems

USB Bar Code Readers

USB Software / Hardware Encryption Dongles

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