

USB to Ethernet and USB to UART Bridges

FEATURES

- USB to Ethernet bridge with integrated I²C master, UARTs and GPIOs (XR2280x)
- Integrated 10/100 Ethernet MAC/PHY (XR2280x)
- Compatible with standard CDC and HID drivers in Windows, Linux, Android and Mac
- ±15kV HBM ESD protection on the USB data pins
- Up to 32 configurable GPIOs
- Any UART baud rate > 300 bps
- Auto RS-485 half-duplex control mode
- Wide Mode for UART data status and error checking
- Compact QFN package

BENEFITS

- Versatility in a low cost compact package
- Minimize board real estate
- Simplify hardware design for end applications
- Get to market quickly with no-hassle software development in any environment
- Double the ESD protection offered by any other manufacturer

APPLICATIONS

- Point-of-sale equipment
- Docking stations
- USB to Ethernet dongles
- USB to RS-232/RS-485
- Debug/console ports
- Networking



MaxLinear offers the industry's smallest USB Ethernet and USB UART devices. The **XR22800** and **XR22801** USB Ethernet devices are in a 5mm x 5mm QFN package and the USB UART devices are in 3mm x 3mm QFN package. Even the **XR22804**, which bridges USB to Ethernet along with four UARTs, an I²C master and 32 GPIOs, is designed into a compact 8mm x 8mm footprint. Other devices in similar package sizes only offer USB to Ethernet.

All of MaxLinear's USB Ethernet and USB UART products are designed for reliability in consumer and industrial environments. Error checking is built in with MaxLinear's "Wide Mode" feature. This enables designers to check error and status bits concurrently with data. These bridging devices also offer the industry's highest ESD protection at ±15kV HBM.

Development is simple with MaxLinear's USB bridging products. The devices work with the standard software drivers in Windows, Linux, Android and Mac OS X. For those designers who need to get to market quickly, enhanced features such as RS-485 half-duplex control and 9-bit or multidrop mode, can be enabled in MaxLinear's USB UARTs to simplify software and hardware development. Custom software drivers and applications are also available for those instances where a standard driver is not available or where unique functionality is required. For example, MaxLinear UARTs are easily configured for any non-standard baud rate over 300bps and our GPIOs are readily tailored for enhanced functionality. All of our custom Windows drivers are certified to the Microsoft WHQL/HCK standard to ensure compatibility and reliable performance. MaxLinear's UART technical support team is ready to assist with these or any of your custom driver and application software needs.

USB Bridges

Part Number	USB Speed	ESD Protection on USB Pins	10/100 Ethernet	UARTs	I ² C Master	GPIOs Max	UART Data Rate Max	Operating Voltage	Package (mm)
XR22800	USB 2.0 HS	±15kV HBM	Yes	0	Yes	8	15Mbps	5V	5 x 5 QFN-32
XR22801	USB 2.0 HS	±15kV HBM	Yes	1	Yes	8	15Mbps	5V	5 x 5 QFN-32
XR22802	USB 2.0 HS	±15kV HBM	Yes	2	Yes	32	15Mbps	5V	8 x 8 QFN-56
XR22804	USB 2.0 HS	±15kV HBM	Yes	4	Yes	32	15Mbps	5V	8 x 8 QFN-56
XR21B1411	USB 2.0 FS	±15kV HBM	No	1	No	6	12Mbps	5V	3 x 3 QFN-16
XR21V1410	USB 2.0 FS	±5kV HBM	No	1	No	6	12Mbps	3.3V	3 x 3 QFN-16
XR21V1412	USB 2.0 FS	±5kV HBM	No	2	No	12	12Mbps	3.3V	5 x 5 QFN-32
XR21V1414	USB 2.0 FS	±5kV HBM	No	4	No	24	12Mbps	3.3V	7 x 7 TQFP-48
XR21B1420	USB 2.0 FS	±15kV HBM	No	1	No	10	12Mbps	3.3V or 5V	5 x 5 QFN-28
XR21B1421	USB 2.0 FS	±15kV HBM	No	1	No	10	12Mbps	3.3V or 5V	4 x 4 QFN-24 5 x 5 QFN-28
XR21B1422	USB 2.0 FS	±15kV HBM	No	2	No	20	12Mbps	3.3V or 5V	6 x 6 QFN-40
XR21B1424	USB 2.0 FS	±15kV HBM	No	4	No	40	12Mbps	3.3V or 5V	9 x 9 QFN-64



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