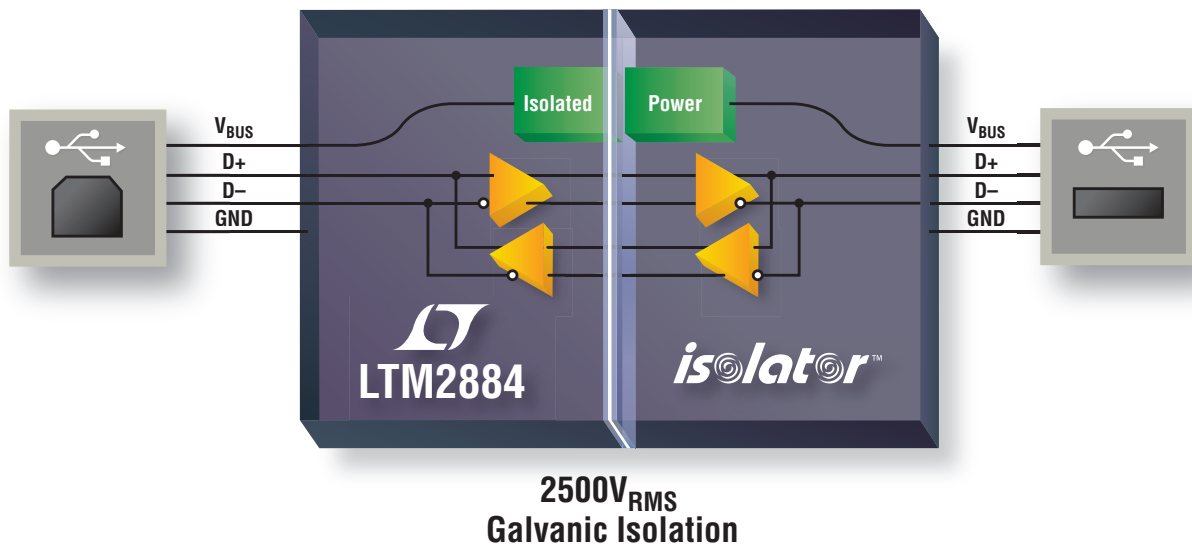


# Isolated USB with Power



## USB 2.0 with Automatic Full Speed/Low Speed Configuration

The LTM<sup>®</sup>2884 isolated USB transceiver breaks ground loops and provides high voltage isolation to provide reliable USB communication across an isolation barrier. An onboard DC/DC converter, complete with decoupling capacitors, provides power to the transceiver and to isolated peripherals, which can harness up to 2.5W if the LTM2884 is connected to an external supply. Otherwise, the LTM2884 can provide peripherals with up to 1W when connected to the USB bus supply, reducing design cost and complexity. Automatic speed selection configures integrated pull-up resistors on the upstream port for 12Mbps (full speed) or 1.5Mbps (low speed) operation. With 2500V<sub>RMS</sub> galvanic isolation, onboard secondary power and a USB 2.0 compatible transceiver, the LTM2884 provides a compact, complete  $\mu$ Module<sup>®</sup> solution for isolated serial data communications with no external components required.

### Features

- Isolated USB Transceiver: 2500V<sub>RMS</sub>
- USB 2.0 Full/Low Speed Compatible
- Integrated Isolated DC/DC Converter, External or Bus Powered
- Auto-Configuration of Bus Speed
- 2.5W (500mA at 5V) Output Power from External Supply, 1W (200mA at 5V) Output Power from USB Bus Supply (V<sub>BUS</sub>)
- 30kV/ $\mu$ s Common Mode Transient Immunity
- $\pm$ 15kV HBM ESD on Interface Pins
- 15mm x 15mm BGA Package

### Inline USB Isolator LTP2884



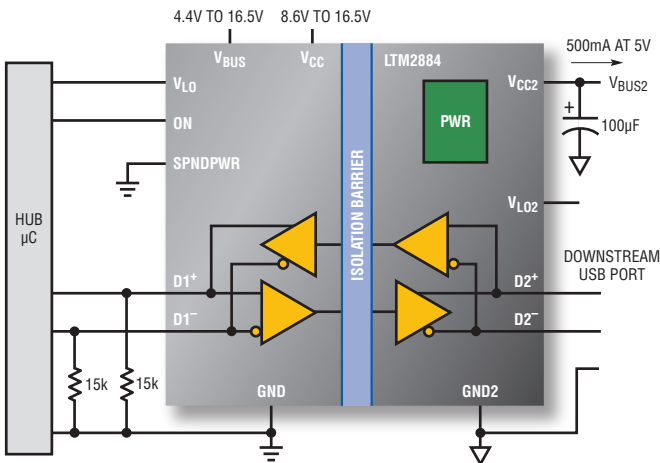
The LTP<sup>™</sup>2884 is a complete 2500V<sub>RMS</sub> inline USB isolator based on the LTM2884 and features a rugged enclosure with high retention USB connectors, hot plug protection, surge/ESD protection and LED status indicators. No drivers or software are required, just plug and play.



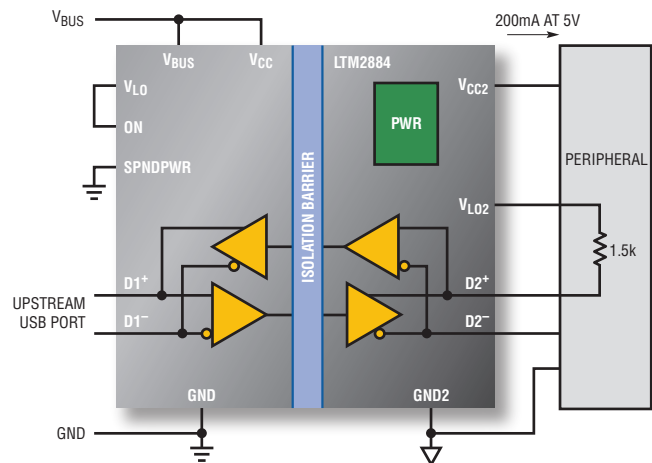
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# Typical Applications

## Powered 2.5W Isolated Hub Port

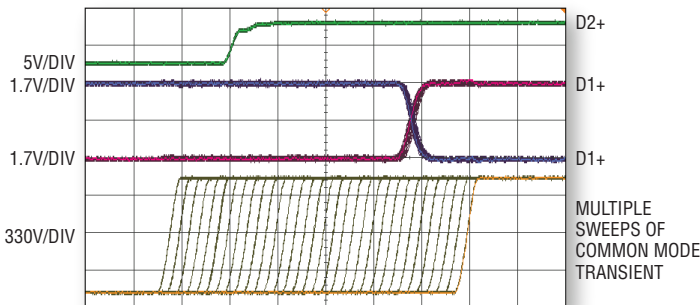
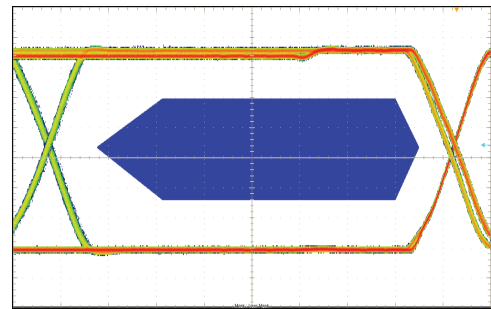


## Bus Powered 1W Isolated Peripheral Device



## USB 2.0 Compliance

The LTM2884 is compliant with the USB 2.0 specification for full and low speed operation, passing rigorous signal integrity and power tests. The eye diagram shown was constructed under full speed (12Mbps) operation, demonstrating the LTM2884's compliance and high signal integrity – low distortion, low jitter and high SNR.



## Common Mode Transient Immunity

Unlike other isolated solutions, the LTM2884 provides continuous, uninterrupted communication through common mode transient events greater than 30kV/μs, without introducing any priority data jitter or data corruption.

## Safety, EMI and RF/Magnetic Field Immunity

All Linear Technology μModule isolators, including the LTM2884, pass accepted safety standards, including United States' UL1577 and Europe's IEC60747-5-2, which test isolation barrier performance under various environmental conditions and require 100% production screening. The EMI chart shows the LTM2884 well below the CISPR 22 Class B limit. The LTM2884 passes the RF and magnetic field immunity testing requirements per European Standard EN 55024.

