

J-Link Debug Probes Isolators USB Isolator

## J-Link USB Isolator

The J-Link USB Isolator can be interconnected between [J-Link](#) and the host PC, J-Link is connected via USB, to provide electrical isolation of the J-Link from the host (PC) side. This is essential when development tools are not connected to the same ground as the application. It is also useful to protect the development tools from electrical spikes, and overvoltage may occur when using low-budget USB hubs. The J-Link USB Isolator is compatible with all [J-Link models](#) and [Production Programmers](#) that use USB.



### Features

- 3kV DC isolation for 1s
- Propagation delay 70 ns max. (to be treated as one additional hub)
- Max. output current 200 mA (meaning that the connected debug probe may not consume more than 200 mA)
- USB Full-Speed
- Short circuit protection
- 2 LEDs to indicate power and overload status

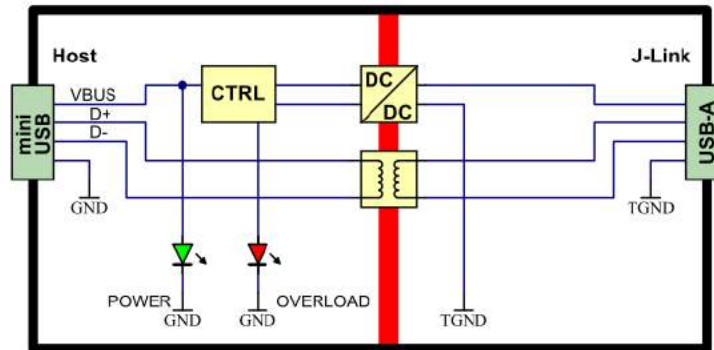
### Connectors and indicators

The J-Link USB Isolator comes with the following connectors and indicators:

- USB type Mini-B connector on the host (PC) side
- USB type A connector on the J-Link side
- Green LED indicating that the USB Isolator is powered and can provide power to the J-Link side
- Red LED indicating that the power consumption of the debug setup (Isolator + J-Link) is too high. The max. current that may be drawn by the debug probe connected to the Isolator is 200 mA.

### Block diagram

The following block diagram illustrates the functional connections between the host PC and J-Link.

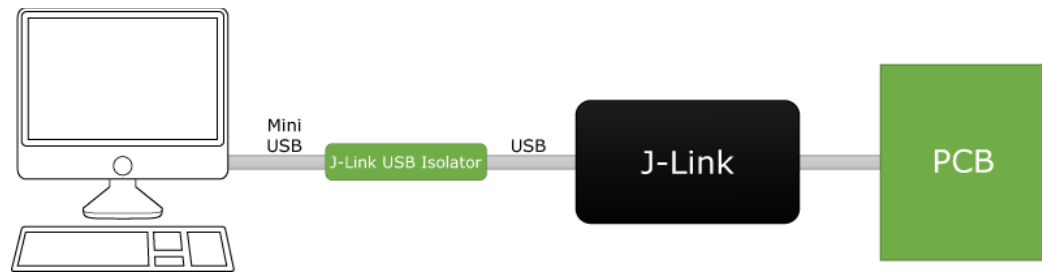


### Using the USB Isolator with J-Link

Using the J-Link USB Isolator with J-Link is pretty simple: Just plug in the USB Isolator between the J-Link USB connector and the host PC. As soon as the PC-side of the USB Isolator is plugged in, the green **PWR** LED of the Isolator is lit.

If the red/orange **OVL** LED is lit, power consumption of the debug probe is too high. The max. current that may be drawn by the debug probe is 200 mA.

The following image demonstrates the connection between the host PC, J-Link USB Isolator, J-Link and a target system:



### Target side isolation vs. Host side isolation

Host side isolation forces the Host to set the USB Link to Full Speed (12MBit) when connecting to J-Link. This is typically fully sufficient and does not or not significantly reduce the debug and flash programming speed. With host side isolation, both J-Link and the target are isolated from the host, whereas target side isolation isolates the target from both Host and J-Link. This can be desirable in metering applications, as it introduces the least amount of noise from the debug probe to potentially sensitive ADC readings. Host side isolation works with all supported types of debug interfaces, JTAG, SWD (with or w/o SWO), FINE, C2, UART, ... Target side isolation allows High-Speed USB connection (480MBit) with all J-Link models supporting it, but typically limits the maximum speed on the debug interface (target side). Target side isolation options for J-Link are:

- [JTAG Isolator](#)
- [SWD Isolator](#)

### Using USB Isolators from other vendors with J-Link

The full J-Link family is designed to work with the J-Link USB Isolator, but may also be used with USB Isolators from other vendors. However; this use is done outside of SEGGER support and **done at your own risk!**

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