



# Wireless RF Test Enclosures

## JRE USB 3-2 Dual USB 3.0 'SuperSpeed' Interface Filter

Easily test all USB 3.0 'SuperSpeed' devices in an RF Shielded test environment! Innovative new Patented design is NOT a low pass filter - which can impact data signals!

- Fully USB compliant with proper USB enumeration!
- Patented design utilizes new approach to filtering high speed data signals
- Unique ability to discern between Data and unwanted RF signals
- Operates at all USB data speeds, USB1, 2, and 3.0
- Does not filter or impact the USB data signals!
- 80 db isolation in test system from 50 MHz to over 6 GHz
- Dual channel filter in one housing
- Rugged machined aluminum construction

The USB 3-2 Filter consists of two USB 3.0 compliant filters inside a machined aluminum housing which provides exceptional RF shielding on all data and power lines.

The JRE USB 3-2 USB 3.0 'SuperSpeed' data filter operates on an entirely new principle in data signal filtering. Previous filter designs used low pass filtering on the data lines to attenuate interfering wireless RF signals - however, as data speeds have increased, the data signals fall within the same frequency range as the interfering signals. Thus, simple low pass filtering cannot be used since such a filter will attenuate both the data and the interference!

Our Patented design uses an innovative application of signal phasing techniques and topology to filter out all RF signals except for the desired data signals. This ability to discriminate between data signals and undesired RF signals is especially valuable when testing at USB Super Speed data rates (since the signaling rate falls within Wireless signal frequencies), or when testing devices where the potential RF interfering frequencies fall within the pass band of a low pass filtered USB interface (such as wireless keyfobs or RFID devices).

Fully USB compliant, correct enumeration process ensures any test 'hiccups' will be properly exchanged between devices, ie: no hang-ups are undetected, a problem when using fiber optic or other such interfaces! The filter 'appears' to the devices as just a one meter long USB 3 cable.

The USB interface consists of balanced pairs of data lines utilizing proprietary signal phasing techniques along with filtered power and return conductors. Standard USB Type A connectors are used allowing simple and reliable connection to your USB devices. The data line filtering passes the USB Type 1, 2 or 3 'SuperSpeed' data while providing rejection of 80 dB to undesired RF wireless signals. Included are 2 USB 3.0 Type A Male-Male jumper cables.

Tight RF shielding to the enclosure wall is assured by the use of a series of 4-40 size mounting screws (template included for stand alone installation). Tests made on competitive filters utilizing a single hole mount with large securing nut were prone to leakage since the coarse thread pitch does not allow a reliable flat seat against the enclosure wall. Additionally, the single mechanical point of securing the filter is subject to loosening and even a tiny loss of tightness results in leakage. Our specifications are measured with the filter installed in an enclosure - and with the same reliability no matter how many times connectors are inserted or the filter bumped or jostled. The smaller size also allows more filters on the I/O plate.

### FEATURES & BENEFITS

- Patented unique design discerns between data and RF signals
- Extremely wideband operation, from low VHF through microwave
- Low loss, appears to the devices as a one meter long cable
- Heavy duty machined aluminum case for reliable shielding and ruggedness
- Multiple points of attachment secures without rotation or loosening

### SPECIFICATIONS:

- Insertion Loss on Data lines: less than 1.5 dB
- 80 dB isolation in test system configuration
- Data Line Balanced Impedance: 90 Ohms typical
- DC lines: 0.1 ohms resistance, -20 db @ 1 MHz, -80 db @ 10 MHz to 6 GHz

### DIMENSIONS

Outside: 3.2" H x 3.2" W x 0.8" D 80x80x20 mm



### JRE USB 3-2 Dual Filtered Interface Adapter

**USB Inside:** USB 3.0 Type A Female Connectors

**USB Outside:** USB 3.0 Type A Female Connectors

**Power capability:** USB standard or up to 50 VDC at 1 amp, DC resistance each leg, 0.1 ohms

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