

## JRE LAN10G-USB 3

# Dual Filtered Interface: 10GBASE-T Ethernet and USB 3.0

Our fastest combo — 10G Ethernet and USB 3 SuperSpeed, both on the patented phasing design, neither throttled by the filter.



Both sections use the patented signal-phasing topology

## AT A GLANCE

- **Two fully independent filter sections** in one housing — a 10GBASE-T Ethernet filter and a USB 3.0 SuperSpeed filter — on a single I/O plate footprint
- **Both sections use the patented signal-phasing topology** (two US patents) — not low-pass filters; they discriminate data from RF rather than attenuating both
- **80 dB conducted attenuation** per section, 50 MHz to over 6 GHz
- Ethernet section runs **10GBASE-T** over RJ-45 copper, plus **5GBASE-T** and **2.5GBASE-T** — PoE pass-through compatible
- USB section handles **USB 1.1, 2.0 and 3.x SuperSpeed** over standard Type-A
- **No inherent speed limit in either section** — achievable rate is set by total cable attenuation, not by the filter
- **Fully passive** — no active components, no firmware · 100% made in USA

## DESCRIPTION

The JRE LAN10G-USB 3 is two separate, fully independent filtered interfaces — one 10GBASE-T Ethernet, one USB 3.0 SuperSpeed — built into a single rugged machined-aluminum housing. Each section performs exactly as its single-filter counterpart would, on one footprint instead of two.

Both sections work on an entirely different principle from older data filters. Earlier designs low-pass filtered the data lines to knock down interfering RF, but as data rates climbed the data itself moved into the same band as the interference — and a low-pass filter can no longer tell them apart. Our patented design exploits the fact that data travels as balanced differential pairs while interfering RF appears as common mode, rejecting the RF while

passing the data clean. That matters most exactly where low-pass filtering fails: when the signaling rate falls inside the wireless bands, or when the interferer sits inside a low-pass filter's own pass band, as with key fobs and RFID.

Neither section has a speed limit of its own. The USB section looks like roughly 1 to 1.5 metres of USB cable — with the included jumper you will reliably pass 5 Gbps and often 10 Gbps; for longer runs use an active cable outside the chamber. The Ethernet section looks like about 2 metres, which Ethernet shrugs off. Note the Ethernet section is built for 10GBASE-T copper and is not compatible with 10GBASE-R, SFP+ or fibre 10G.

### ETHERNET SECTION

|                                                   |                           |
|---------------------------------------------------|---------------------------|
| Speeds                                            | 10GBASE-T, 5G, 2.5GBASE-T |
| Filtering                                         | Patented phasing          |
| Isolation, in test system                         | 80 dB                     |
| PoE pass-through                                  | Compatible                |
| Interface                                         | RJ-45 female jacks        |
| Not compatible with 10GBASE-R / SFP+ / fibre 10G. |                           |

### USB 3 SECTION

|                           |                     |
|---------------------------|---------------------|
| Standard                  | USB 1.1 / 2.0 / 3.x |
| Filtering                 | Patented phasing    |
| Isolation, in test system | 80 dB               |
| Interface                 | Type A female       |

### ELECTRICAL

|                              |                         |
|------------------------------|-------------------------|
| Frequency range              | 50 MHz – 6 GHz+         |
| Insertion loss, data lines   | 5 dB                    |
| Data line balanced impedance | 90–100 $\Omega$ typ.    |
| Power capability             | 60 VDC @ 1 A            |
| DC resistance per leg        | 0.1 $\Omega$ max        |
| Cables                       | USB A 1 m and RJ-45 1 m |

### DIMENSIONS & MOUNTING

|                                                                                                   |                          |
|---------------------------------------------------------------------------------------------------|--------------------------|
| Outside                                                                                           | 3.2" H × 3.2" W × 0.8" D |
|                                                                                                   | 80 × 80 × 20 mm          |
| Mounting screws                                                                                   | 4-40, included           |
| Clearance hole                                                                                    | 0.1285" (#30 / 3.3 mm)   |
| Equivalent cable length: USB section ~1–1.5 m, Ethernet section ~2 m. Drilling template included. |                          |

## COMPATIBILITY

Works with any JRE RF shielded test enclosure or screen room. JRE's enclosure line provides superior RF isolation from 10 MHz to over 6 GHz, covering the full range of commercial, private and government communications systems. Need the sections separately? See the JRE LAN-10G-1 and JRE USB 3-1. Cable length and speed guidance is in the USB-3 and USB-C Special Considerations white paper at [jretest.com](http://jretest.com).