



# Wireless RF Test Enclosures

## JRE LAN-10G-1 Ethernet 10GBASE-T Interface Filter

Easily test all 10GBASE-T Ethernet devices in an RF Shielded test environment! Innovative new Patented design is NOT a low pass filter - which can impact data signals!

- 10GBASE-T Ethernet speeds as well as 2.5G and 5G BASE-T
- Patented design utilizes new approach to filtering high speed data signals
- Unique ability to discern between Data and interfering RF signals
- Does not filter or impact the Ethernet data signals
- 80 db isolation in test system from 50 MHz to over 6 GHz
- Rugged machined aluminum construction

The JRE LAN-10G-1 Filtered Interface consists of a Ethernet 10GBASE-T compliant filter, using standard RJ-45 connectors, inside a machined aluminum housing which provides exceptional RF shielding on all data and power lines.

This Ethernet 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 the 10G Ethernet 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 Ethernet interface (such as wireless keyfobs or RFID devices).

Fully Ethernet 10GBASE-T compliant with direct 'copper' connection between RJ-45 ports, this 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 a couple meter long Ethernet cable.

The filtered interface consists of balanced pairs of data lines utilizing proprietary signal phasing techniques, there are no low pass filters on any of the data conductors. Standard RJ-45 Female connectors are used allowing simple and reliable connection to your test devices. The data line filtering passes the Ethernet data while providing rejection of 80 dB to undesired RF wireless signals. Included is a short Ethernet male to male jumper cable.

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 longer Ethernet 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 5 dB
- 80 dB isolation in test system configuration
- Data Line Balanced Impedance: 90 Ohms typical

### DIMENSIONS

Outside: 2" H x 3.2" W x 0.8" D 50x80x20 mm



## JRE LAN-10G-1 Filtered 10GBASE-T Ethernet Interface Adapter

**RJ-45 Female jacks both sides**

**Cable:** 1 meter Ethernet M-M jumper cable included

**Power capability:** Ethernet standard or up to 60 VDC at 1 amp. DC resistance each leg, 0.1 ohms

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