

JRE LAN-1

RJ-45 Ethernet 10/100/1000 Filtered Interface

Test Ethernet-connected devices in a sealed RF environment — full gigabit throughput, cellular and WiFi locked out.



Machined aluminum housing; all eight lines filtered

AT A GLANCE

- Passes **10/100/1000BASE-T** Ethernet while rejecting cellular, LTE, WiFi and everything above 700 MHz
- **All eight RJ-45 lines filtered** — usable as a general 8-line filtered interface, not just for Ethernet
- Flat passband to ~480 MHz; **>70 dB** rejection above 700 MHz; **>80 dB** from 1 GHz through 6 GHz
- **PoE pass-through compatible** — up to 250 mA per line at under 1.5 Ω DC
- **Fully passive** — no active components, no firmware, nothing that could be subverted in a data-side attack
- Balanced filtering for minimal ringing; also accepts RJ-11 plugs with identical filtering
- Rugged machined-aluminum housing · 100% made in USA

DESCRIPTION

The JRE LAN-1 is a 10/100/1000 Ethernet low-pass filtered interface built into a machined-aluminum housing that gives exceptional RF shielding on all eight signal lines. It passes data between RJ-45-connected devices — routers, switches, access points and the like — while rejecting frequencies above the ~700 MHz cellular bands.

For Ethernet at these speeds, a low-pass filter is exactly the right tool. The 10/100/1000BASE-T data spectrum sits well below the wireless bands you want to keep out, so a clean low-pass design passes the data untouched while sharply attenuating cellular, LTE and WiFi. (At 10GBASE-T speeds the data itself climbs into those same bands, which is why the JRE LAN-10G uses a different patented phasing approach. For gigabit and below, the LAN-1 is the purpose-built and better-isolating choice.)

Because all eight lines are filtered — 10/100 uses only four of the eight, while 1000 uses all eight — the LAN-1 doubles as a general-purpose filtered interface. Wire any signal onto any of the eight pins and pass it across the filter, knowing anything below 480 MHz passes and anything above 700 MHz is knocked down by more than 70 dB.

Reliable shielding starts at the mounting. The LAN-1 secures to the enclosure wall with a ring of 4-40 screws, drawing the flange flat and tight around its entire perimeter — unlike single-nut designs, which never seat reliably flat and work loose over time. Every specification here is measured with the filter installed in an enclosure.

TYPICAL INSERTION LOSS — ALL EIGHT SIGNAL LINES

10 MHz	0.1 dB
150 MHz	1.2 dB
250 MHz	1.5 dB
350 MHz	2.0 dB
480 MHz	3.0 dB
700 MHz	> 70 dB
800 MHz – 6 GHz	> 80 dB

ELECTRICAL

Data line balanced impedance	100 Ω typ.
Power capability	60 VDC @ 250 mA
Max DC resistance per line	1.5 Ω
PoE pass-through	Compatible

CONNECTOR

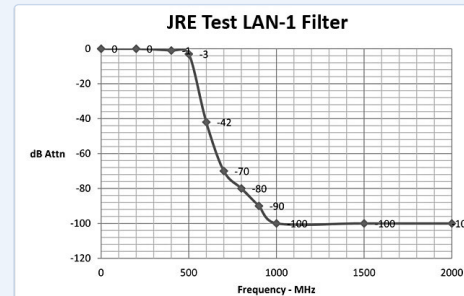
Interface	RJ-45 female jacks
Lines filtered	All 8
Also accepts	RJ-11 plugs

DIMENSIONS & MOUNTING

Outside	2" H × 3.2" W × 0.8" D
	50 × 80 × 20 mm
Mounting screws	4-40, included
Clearance hole	0.1285" (#30 / 3.3 mm)

Drilling template included for standalone installation.

MEASURED FREQUENCY RESPONSE



Insertion loss vs. frequency, filter installed in an enclosure.

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. Whether you are designing, integrating or conformance testing, JRE provides a solution ready for today's technology and the next generation.