JRE HDMI-1

HDMI 1.4 (and higher) Filtered Interface

Patented phasing design rejects wireless RF without touching your video — HDMI 1.4 and higher, including Ethernet, ARC, CEC and HEAC.

Machined aluminum housing; fully passive signal path

AT A GLANCE

- **Not a low-pass filter** — a patented signal-phasing topology (two US patents) discriminates balanced differential video from common-mode RF instead of attenuating both
- **HDMI 1.4 and higher compliant**, including HDMI Ethernet (HEC), ARC, CEC and HEAC, over standard Type-A connectors
- **Same filter across HDMI versions** — the version lives in the source and sink devices; the cable and the filter set the limit, not the version number
- **No inherent data-speed limit** — achievable rate is set by total cable attenuation, not by the filter
- **80 dB** conducted attenuation, 50 MHz to over 6 GHz; insertion loss under 5 dB on data lines
- **Fully passive** — no active silicon, no firmware, nothing that could be subverted in a data-side attack
- One HDMI Type-A male-to-male jumper included · 100% made in USA

DESCRIPTION

The JRE HDMI-1 is a fully passive HDMI filtered interface built into a machined-aluminum housing that gives exceptional RF shielding on every data and control line. It uses standard HDMI Type-A connectors and is fully compliant with HDMI version 1.4 and higher, including the Ethernet, ARC, CEC and HEAC channels.

It works on an entirely different principle from older HDMI bulkheads. The earlier approach was a shielded feedthrough with no real filtering, where isolation depended on the cable shield alone — leaky, especially at higher frequencies. Nor can you simply low-pass filter HDMI: as rates climbed, the video signal moved up into the same band as the interfering RF, so a low-pass filter attenuates both. Our patented design exploits the fact that HDMI data travels as balanced differential pairs while interfering RF appears as common mode, rejecting the RF and passing the video clean, with appropriately filtered control and low-frequency lines.

The filter has no speed limit of its own; electrically it looks like about 2 metres of HDMI cable, and it is the total attenuation of filter plus cables that sets the achievable rate. For everyday HDMI that is a non-issue. For the higher-rate versions and longer runs, use an active cable on the external side to regenerate and equalise the signal — contact us and we will help you pick one for your devices and lengths.

RF PERFORMANCE

Conducted attenuation	**80 dB**
Frequency range	**50 MHz – 6 GHz+**
Insertion loss, data lines	**< 5 dB**
Isolation, in test system	**80 dB**

LOW FREQUENCY LINES

DC resistance	**0.1 Ω max**
1 MHz	**−20 dB**
10 MHz – 6 GHz	**−80 dB**

ELECTRICAL & CONNECTOR

Compliance	**HDMI 1.4 and higher**
Channels carried	**HEC, ARC, CEC, HEAC**
Data line balanced impedance	**90 Ω typ.**
Power capability	**HDMI std or 50 VDC @ 1 A**
HDMI inside / outside	**Type A female**
Cable	**Type A M-M jumper incl.**

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. The filter presents roughly 2 m of equivalent cable — budget for it in your overall cable length.

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 two HDMI ports on one plate? See the JRE HDMI-2. Cable length and active-cable guidance is in the USB-3 and USB-C Special Considerations white paper at jretest.com — the same principles apply to HDMI.

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