

STEHR140 High Resolution Video Interface



FULL 4K VIDEO PASSBAND >85dB, 600 MHz TO 8 GHz!

- ✓ Passes up to 2160p video, embedded audio and Ethernet protocols, with greater than 85 dB RF isolation
- ✓ Universal HDMI input and output connectors
- ✓ Full rejection of 4G LTE and other low frequency service bands down to 600 MHz
- ✓ Easy and convenient single hole mount for an RF tight installation on any RF chamber or screen room environment
- ✓ Rugged milled aluminum construction for optimal shielding and RF isolation
- ✓ Includes two high-flex double shielded HDMI interconnect cables

FINALLY... A HIGH RESOLUTION VIDEO SOLUTION!

In our decades and decades of being the leading manufacturer of RF Shielded Test Enclosures, we have met every I/O challenge in the industry. We conquered the challenge of high speed USB2.0 with our highly popular compact STEUSB2071 interface. From there we took on Ethernet with the first -90dB down Gigabit with full 802.3af/at PoE compatibility. Then we did the impossible, we developed and brought you the first 10GbE Ethernet PoE interface that provides Ethernet connectivity up a blazing 10,000 Mbps! But then came the real challenge!

Technology has now brought us into the high resolution video revolution! In just a short few years, that term 1080p in TV's and video monitors, that was once considered a luxury, is now standard on even the most common displays. Quickly the consumer industry realized that sources for these displays had to follow the trends, and HD and 1080p wireless devices suddenly appeared and also became commonplace. Built-in cameras with 1080p output, HD and 1080p mobile screen resolutions, 802.11x home security cameras at 1080p, and a whole lot more. In short, the standard video format for wireless devices is now 1080p! That's a video resolution of 1920x1080... a far cry from 480 line NTSC broadcast video or 800x600 VGA video!



Up to this point, there have been two options for HDMI or high resolution video RF Test Enclosure I/O's:

1. A simple unfiltered and unshielded HDMI feedthrough connector, that provided zero radiated RF isolation and zero conductive RF isolation.
2. A lowpass filtered VGA connector with HDMI adapters, that provided a mere 50 dB of conductive isolation but at the cost of limited resolution and severely rolled-off video.

Just like our 10GbE Ethernet interface that everyone said was impossible, we realized a high resolution video interface was paramount for any RF isolated environment. We enlisted the help of our customers to share their high resolution video interface requirements with us, and we came up with the following minimum requirements:

- ✓ RF isolation greater than 85 dB down, all the way down to the 700 MHz 4G LTE bands
- ✓ Fully compatible with V1.4 HDMI standards
- ✓ Fully compatible with SD HD, UHD, and 3D video modes
- ✓ Fully compatible with all embedded audio and Ethernet protocols
- ✓ Transparent HDCP pass-through
- ✓ Compact and RF-tight easy to field install form factor
- ✓ Integrated physical port protection

The Ramsey STEHR140 High Resolution Video Interface was designed to provide the ultimate performance in conjunction with your RF isolated test environment. You will be amazed at its bandpass that exceeds 4K resolution with an RF reject greater than 85dB from 600MHz to >8GHz! And considering that a good portion of the passband falls within the reject band, that's quite the engineering feat!

85 dB ISOLATION FROM 600 MHz TO 8 GHz!

The typical RF reject band in competitive filtered I/O devices is 1 GHz to 6 GHz. That was OK years ago, but technology does change! All you have to do is look at LTE coverage maps for any of the major carriers and you will see that there is probably a cell site at 700 MHz in your back yard. That doesn't make it easy when you're trying to maintain complete isolation from these signals. It's not just LTE in the US, 9 of the UMTS operating bands fall below 900 MHz... as do 15 of the E-ULTRA bands. So much for the typical 1 GHz to 6 GHz low pass filter! And with future refarming of UHF frequencies below 700MHz, we've already got you covered all the way down to 600MHz.

SIMPLE HDMI OPERATION!

When asking our customers about their application, it was unanimous. Their device inside the RF test enclosure was the source signal device that needed to exit the enclosure downstream to the display or presentation device. Sounds simple... It's not! The STEHR140 was designed from the ground up to act as a simple and transparent short active cable that would also provide pure HDCP pass through therefore not reporting back as neither a receiver, repeater, or extender. In short, the interface merely emulates a very short downstream directional length of cable in all regards! The entire design also emulates full V1.4 protocol specifications, providing video resolution up to 2160p! And again, all this while maintaining greater than 85 dB rejection from 600 MHz to 8 GHz!

COMPACT RF-TIGHT DESIGN

RF leakage must be kept in check with any RF isolation environmental interface, and shielding becomes paramount. Therefore, just like we did with our USB, Gigabit, and 10GbE interfaces, we designed the HDMI Interface inside a solid finely milled block of aluminum. That, along with precision gasketing, assures a radiated isolation also greater than 85 dB. And that was our target for both conductive and radiated isolation. Then we added integral solid milled tension surrounds on both sides to accommodate the duty cycle of lab insertions and connections as well as inadvertent overtensioned cables. Like our other units, the entire interface can be installed on your RF test enclosure or screen room panel with one single 1.25" hole. A custom flange nut and RF EMI gasket is included to provide 100% bonding to the mounting surface.



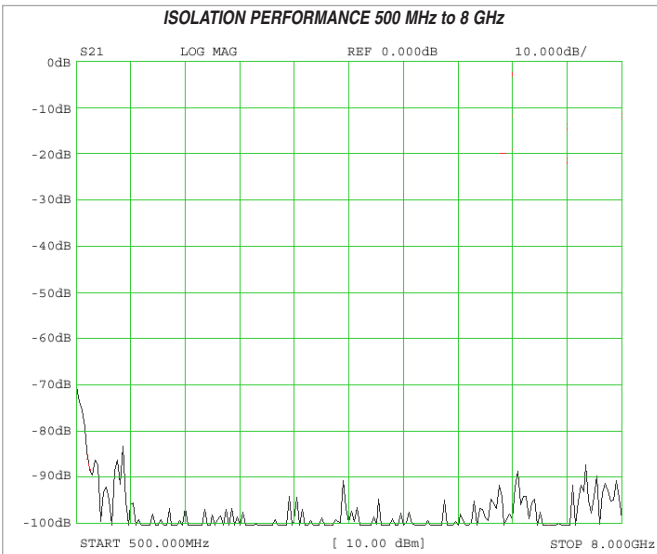
Solid milled HDMI port protection!

INCLUDES EVERYTHING YOU NEED!



We include everything you need with the STEHR140 interface. We include two 1M double shielded gold rated HDMI cables rated from SD all the way up to 2160p UHD, plus 3D and HEC Ethernet. One for the output of you DUT to the internal side of the interface, and the other for the external output side to your display or monitoring equipment. We

also include our own global 100VAC-240VAC 12VDC regulated switching power supply with interchangeable input blades for all popular country power standards.



THE RF ISOLATION LEADER!

With thousands of RF Shielded Test Enclosures placed in service worldwide, our RF isolation technologies have become the global standard not only for RF isolated chambers, but for the best matching I/O interfaces available.

They said 10GbE Ethernet was impossible, we did it! And now you can equip your RF Test Enclosures with full resolution HDMI interconnectivity while maintaining >85 dB RF isolation!

SPECIFICATIONS

GENERAL

Product Part Number:	STEHR140
UPC	871183006147
Outside Dimensions:	3.4"H x 3.25"W x .675"D (86.36mmH x 82.55mmW x 17.145mmD)
Weight:	1.0 lbs (.34kg) with nut, washer, and RF gasket
Construction:	Milled aluminum
Mounting:	Single 1.25" OD hole with provided EMI collar gasket, and 1.25-18 UNF nut (.625"/15.9mm max panel thickness)
External Connection:	HDMI Type-A 19 pin receptacle
Internal Connection:	HDMI Type-A 19 pin receptacle
Supplied Accessories:	2ea ultraflex double shielded 1M HDMI cables Global multi-standard 12VDC regulated power supply

TECHNICAL

HDMI Standard:	V1.4
Video Standards:	SD, HD, UHD, 3D
Supported Resolutions:	480i up to 2160p
HEC Ethernet Support:	100Mbit/s
Audio Support:	Dolby TrueHD, DTS-HD Master Audio, Return
HDCP:	Transparent pass-through
Directivity:	One way video, internal input, external output, bidirectional HDCP
Insertion Loss, DC-100 MHz:	<1.0 dB
Insertion Loss, 250 MHz:	<1.6 dB
Insertion Loss, 350 MHz:	>27 dB
Insertion Loss, 450 MHz:	>55 dB
Insertion Loss, 600 MHz - 8 GHz:	>85 dB
Availability:	In-stock for immediate delivery
Available Versions:	STE RF Test Enclosure installed option Individual stand-alone accessory for customer installation OEM bulk (Contact Ramsey Electronics®)

Note: Specifications are average achieved and certified final test measurement values. Subject to change and revisions. Not responsible for typographical errors and omissions.



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10GbE PoE Ethernet



Gigabit PoE Ethernet



USB2.0 High Speed



Global Power Interface