STEUSB2071 USB2.0 RF Filtered Interface

THE ULTIMATE USB2.0 HIGH SPEED I/O INTERFACE!

- ✔ **Pass USB2.0 high speed data, at full speed, while maintaining the full isolation of your chamber or screen room**
- ✔ **Full support for 4G LTE and other 700 to 900 MHz bands**
- ✔ **Easy and convenient single hole mount for an RF tight installation on any chamber or screen room environment**
- ✔ **Automatic USB DC power detection and LED indication**
- ✔ **Rugged milled aluminum construction for optimal shielding and RF isolation**
- ✔ **Transparent USB cable configuration**

Available as an STE I/O Option or a Field Installable Upgrade!

THE ULTIMATE HIGH SPEED USB2.0 SOLUTION!

Low pass filters used to be simple. With 802.11xx devices operating at 2.4 GHz or 5.0 GHz, with cellular devices operating at GSM, UMTS, CDMS and other PCS frequencies, and with the goal to pass USB2.0 high speed data at 480 Mbit/s, the typical RF Test Enclosure low pass filter was designed to notch out anything above 1 GHz.

However, a number of vendors seem to have forgotten about 4G LTE and a number of services in the 26 UMTS bands! We took a long hard look at the requirements for a quality USB2.0 RF Filtered I/O, and here it is, the Ramsey Electronics® STEUSB2071.

700 MHz TO 6 GHz!

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 26 UMTS operating bands fall below 900 MHz. So much for the typical 1 GHz to 6 GHz low pass filter!

ULTIMATE DESIGN!

When it comes to testing your DUT in an isolated RF environment, there is little tolerance for variables. Likewise, when we designed this Filtered I/O, we spared no expense to assure you that you had the best possible filter available. First, we took a good look at isolation. We wanted to tightly notch the passband as close to -80 dB as we could, while passing USB2.0 at its full speed. To accomplish this, shielding was paramount and we designed the filter to be built inside a solid finely milled block of aluminum.

Then we looked at the mounting and installation process. The typical vendor filter has multiple perimeter mounting holes whose centers and pattern need to be precisely matched to the mounting surface. Not only does this require a mounting template, but also requires exact multiple-hole drilling or milling. And even with tightly spaced perimeter mounting holes, unless installed and bonded to a perfect mounting surface, there will be RF egress and ingress. If such a unit was mounted on a painted or powder coat surface, the entire surface would need to be burnished to remove the paint, or the leakage would be even worse.

To solve this we designed and machined the filter around a single-hole mount! The entire filter can be installed on your RF Test Enclosure, or your screen room I/O panel with one single 1" hole. With the provided oversized nut, lockwasher, and mesh EMI gasket, the filter is 100% bonded to your mounting surface. It simply doesn't get any better than that.

AUTOMATIC USB POWER DETECTION!

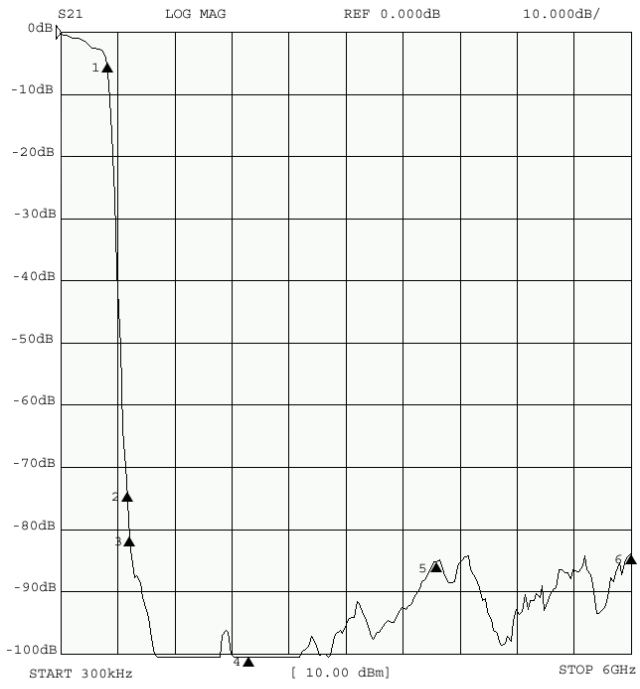
During the design we put ourselves in your shoes. What would we want if we were connecting a USB device through an I/O interface? Beyond the RF characteristics above, the question of USB power was the first thing that came up. How do you know if you're providing DC power to the DUT? How do you know if the DUT is providing DC power through the filter? Sounds simple, but it's not easy to check realtime. We designed an automatic 5VDC detector into the filter, when there is power present, a filter front panel LED indicator is illuminated. Once again, it doesn't get any better… or easier than that.

COMMON SENSE CABLES!

Next up was the often confusing USB cable types. We made it both simple and proper. The outside connection to the Filtered I/O is the standard USB-B receptacle. The chamber internal connection to the Filtered I/O is the standard USB-A receptacle. Therefore, cable wise, the Filtered I/O is transparent.

On the outside of the chamber or screen room, use a standard USB cable with an A-plug to the computer or equipment and a B-plug to the Filtered I/O. Then use another standard USB cable on the inside, with an A-plug to the Filtered I/O and a B-plug to the DUT. And so it is entirely transparent, we even provide a heavy double shielded USB cable with dual ferrite cores with the Filter to connect your computer, laptop, or equipment. Truly transparent.

FILTER PERFORMANCE 300 kHz to 6 GHz



SPECIFICATIONS

Product Part Number:	STEUSB2071
UPC	871183005966
Outside Dimensions:	3.55"H x 2.2"W x .8"D *(90.17mmH x 55.88mmW x 20.32mmD)*
Weight:	.75 lbs *(.34kg)*
Construction:	Milled aluminum
Mounting:	Single 1" OD hole with provided EMI collar gasket, internal lockwasher and 1-14 UNF nut
External USB Connection:	USB-B receptical (requires standard USB-B device plug)
Internal USB Connection:	USB-A receptical (requires standard USB-A computer plug)
USB Cable Provided:	3m goldplate double shielded USB-A/USB-B with dual ferrite cores
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®)

DATA LINES D+ AND D-

Impedance:	90 ohm
Insertion Loss, 100 MHz:	<0.1 dB
Insertion Loss, 250 MHz:	<0.8 dB
Insertion Loss, 350 MHz:	<2.4 dB
Insertion Loss, 480 MHz:	<3.3 dB
Insertion Loss, 700 MHz - 740 MHz:	>74 dB
Insertion Loss, 741 MHz - 6 GHz:	>81 dB

DC POWER LINES +5VDC AND RETURN

Maximum Current:	2A
DC Resistance:	0.1 ohm
Insertion Loss, 10 MHz - 50 MHz:	>40 dB
Insertion Loss, 51 MHz - 6 GHZ	>80 dB
Automatic Power Detection:	Front panel LED illumination

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

THE LEGACY CONTINUES

In 1997 Ramsey Electronics® took the technician out of the large expensive shielded screen room and put his hands and eyes into a portable benchtop RF Shielded Test Enclosure. With thousands placed in service worldwide, our patented STE design and technologies became the standard for efficient and cost effective RF isolated device testing. With over 30 models to choose from, with literally thousands of available configurations, that legacy continues. But our commitment doesn't stop there. A chamber or shielded screen room is only as efficient as the I/O's going in and coming out of it. As technology changes, our 15+ years as the leading manufacturer of RF benchtop test enclosures assures you compatibility with the latest technologies.

If you are looking for a highly effective and efficient RF Isolated Filter I/O option for your STE RF Shielded Test Enclosure, the STEUSB2071 is your high performance choice. If you are looking to upgrade your existing Ramsey Electronics® or other RF Enclosure or RF Shielded screen room, for USB2.0 High Speed communications, the STEUSB2071 can be easily field installed to meet your requirements.

Test Equipment Solutions for the Wireless Industry

RAMSEY ELECTRONICS®, 590 Fishers Station Drive, Victor NY USA, (585) 924-4560 (585) 924-4555 FAX

www.ramseytest.com