

SUPER SPEED STEUSB 3.1 GEN 2 RF ISOLATED INTERFACE

STEUSB312



Overview

The STEUSB312 is a USB 3.1 Gen 2 RF Isolated Interface designed to pass USB communications at 10 Gbps speed while providing RF isolation from 1MHz to 40GHz. The conductive insertion loss will be greater than 80 dB within this band. The unit also provides 5 volts DC at up to 1.5 amps while providing data, up to 2.2 amps with no host (dedicated charge mode). The unit is fully backward compatible with previous versions of USB communications.

Applications

The primary application is for use in an RF Shielded Test Enclosure. The STEUSB312 allows USB 3.1 Gen 2 data to pass while maintaining an enclosure RF isolation. The interface will also work well in RF Screen Room applications, or anywhere you need to pass USB data and maintain RF isolation.

Features

- USB Type B input connector
- USB Type A output connector
- Single Flange Nut for Bonding
- Gasket Washers to provide high quality RF bond
- Includes 12 VDC 2 Amp Switching Power supply
- Port Savers
- Strain Relief Post



STEUSB312 Interface Specifications

Power Requirements:

Voltage: 10 to 15VDC, Typically 12VDC Via provided Switching Power Supply.
Input Current: 1.2A Maximum @12VDC.
Data Only: 350mA Maximum @12VDC.
Data + Power: (1.5 amps Max delivered to load) 1.1 A @ 12VDC.

Ports:

Power Connector: 5.5mm x 2.1mm DC Jack, Center Positive.
Input Connector, Label side: USB3.1 Gen2 Type B, computer port, data only.
Output Connector, Pipe Side: USB3.1 Gen2 Type A, device port, data and BC v1.2 or Dedicated Charge available.

Compatible Data Protocols:

USB 1.0: Low Speed, 1.5Mbps.
USB 1.1: Full Speed, 12Mbps.
USB 2.0: High Speed, 480Mbps.
USB 3.1 Gen 1 (USB 3.0): SuperSpeed, 5Gbps.
USB 3.1 Gen 2 (USB 3.1): SuperSpeed+, 10Gbps.

Communication:

Computer Connection: Upstream Facing Port, Label side port.
Device Connection: Downstream Facing Port, Pipe side port.
Data Line: 90 Ohm Typical, Balanced Impedance.
USB2 Pairs: 480Mbps (HS), 12Mbps (FS), 1.5Mbps (LS).
USB3 Pairs: 10Gbps (SS+), 5Gbps (SS).

Power/ Charger Pair:

BC v1.2 Mode: Up to 1.5A at 5VDC (Available with and without host connected, w/data.)
Dedicated Charge: Up to 2.2A at 5VDC (Available when no host is connected, w/o data.)

Indicators:

Red: Power On.
Amber: On in Dedicated Charge Mode (no host detected).

RF Isolation (Conductive Insertion Loss All Lines):

DC to 1MHz: Unspecified.
1MHz to 40GHz: >80dB, >90dB typical.



Physical:

Dimensions: 3.96" H (100.6mm) x 2.46" W (62.5mm) x 0.85" (21.5mm) D,
Plus Pipe and Strain Relief.
Weight: 11.6oz (0.329 Kg).
Pipe Data: 0.9" (22.9mm) Long, 1.0" - 20 Threaded Pipe with Flange Nut.
Strain Relief Data: 0.37" (9.3mm) Long x 0.35" (9.0mm) Diameter.
Operating Temp: 32° to 122°F (0° to 50°C).

Included Power Supply *:

Description: AC-DC Switching Power Supply.
Ramsey Part Number: PS105.
Input Voltage: 90 to 264VAC.
Output Voltage: 12VDC.
Input Frequency: 47 to 63Hz.
Input Current: 0.58 Amps.
Output Current: 2 Amps Maximum.
Output Power Max: 24 Watts.
Operating Temperature: 32°F to 104°F (0° to 40°C).
Efficiency Level: VI.
Input Connector: Interchangeable Blades: US, Europe, United Kingdom, Australia,
China.
Output Connector: 5.5mm x 2.1mm DC Plug, Center Positive.

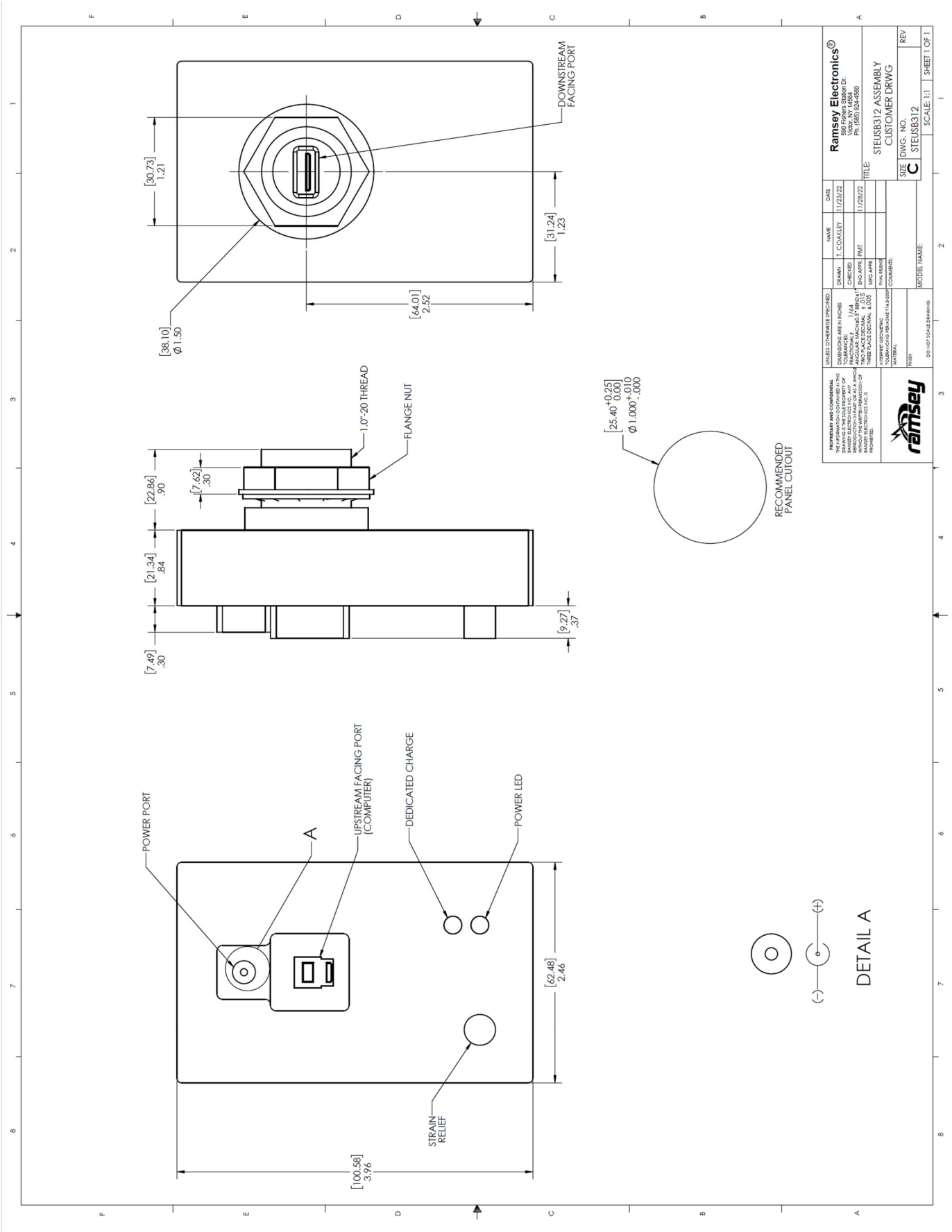
Included 2x Data Cables *:

Description: USB 3.0 Type A to Type B Cable.
Ramsey Part Number: CABL50.
Length: 1 Meter.
Data Conductors: 30AWG.
Power Conductors: 24AWG.
Shielding: Fully Shielded with drain conductor.
Operating Temperature: -4°F to 176°F (-20°C to 80°C).

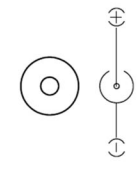
*** Due to availability, included parts may be substituted without notice.**

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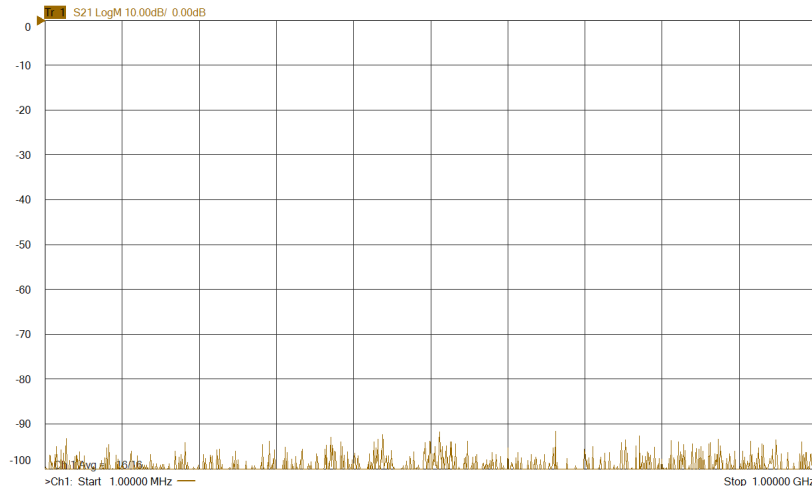
STEUSB312 Dimensional Drawing



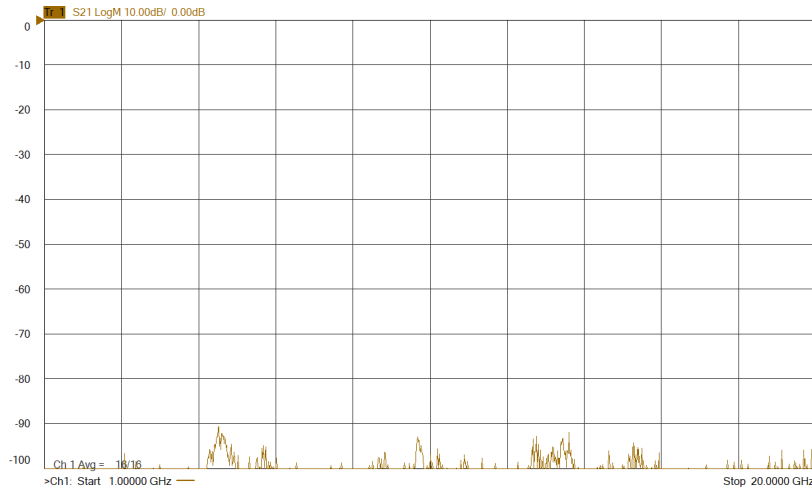
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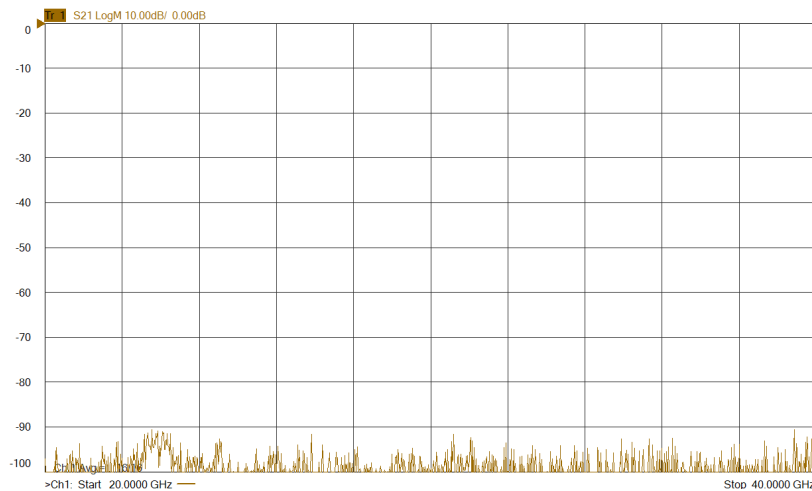
Power Line Typical Insertion Loss Plots



1MHz ~ 1GHz

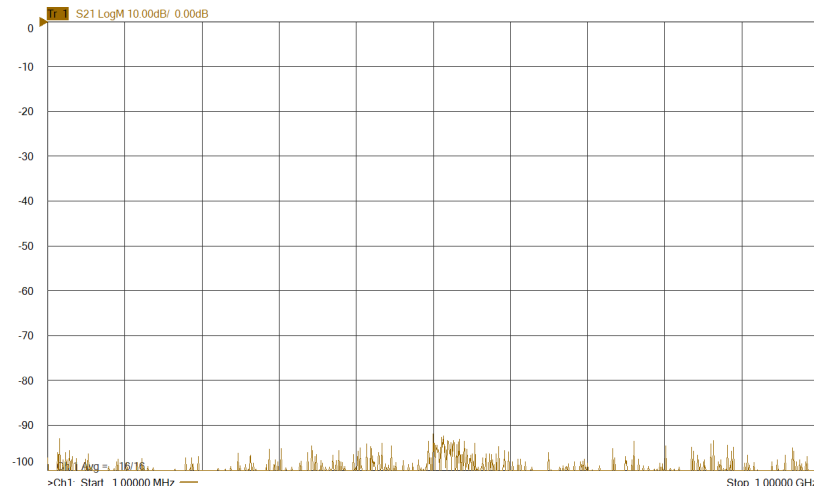


1GHz ~ 20GHz

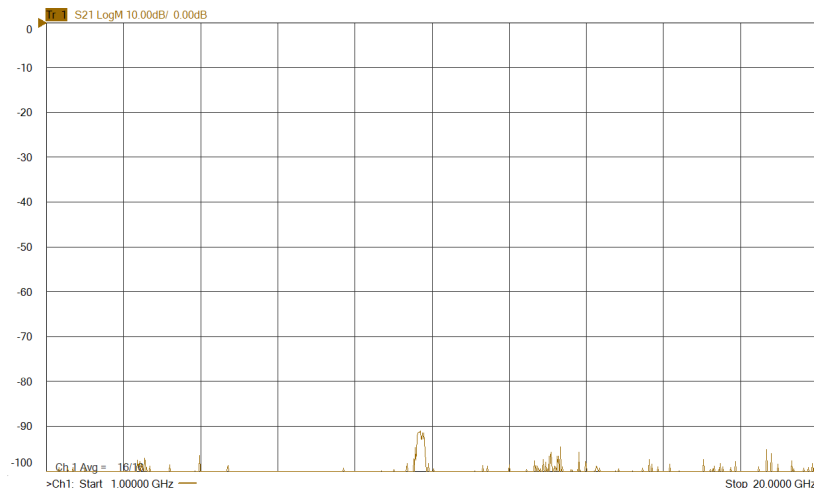


20GHz ~ 40GHz

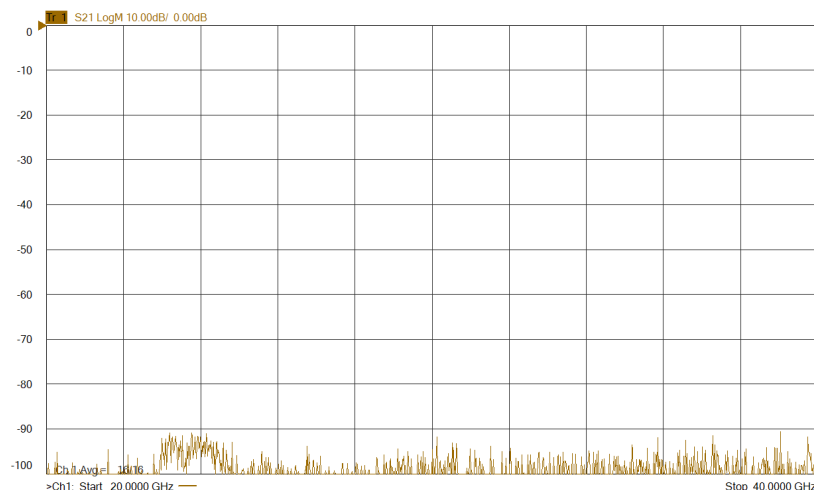
High Speed Data Lines Typical Insertion Loss Plots



1MHz ~ 1GHz

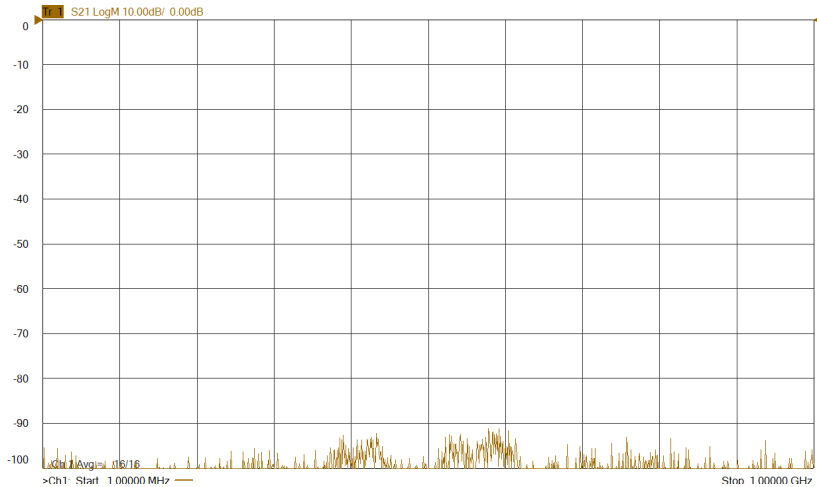


1GHz ~ 20GHz

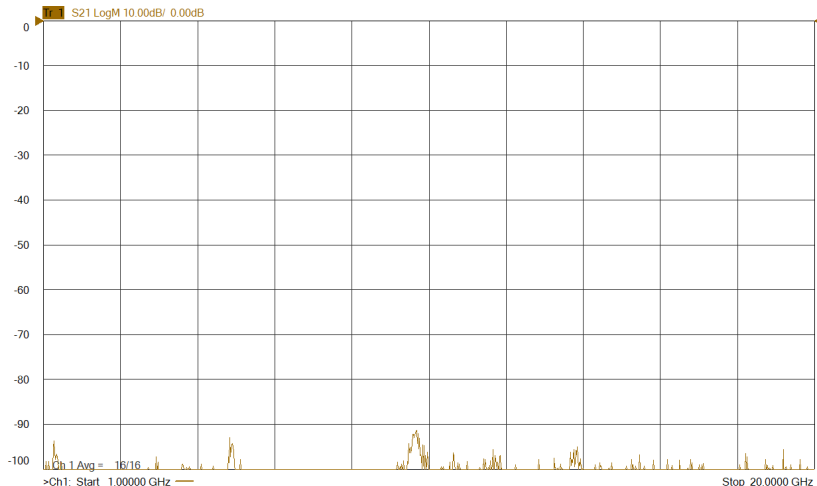


20GHz ~ 40GHz

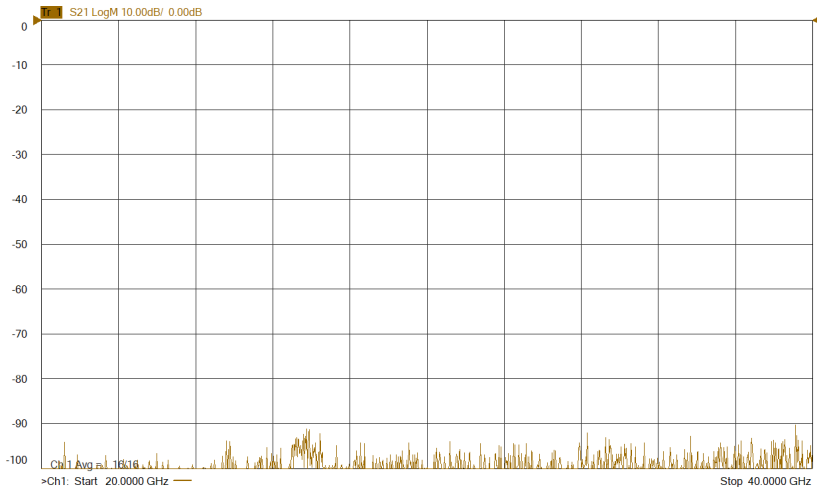
Super Speed Data Lines Typical Insertion Loss Plots



1MHz ~ 1GHz



1GHz ~ 20GHz



20GHz ~ 40GHz

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