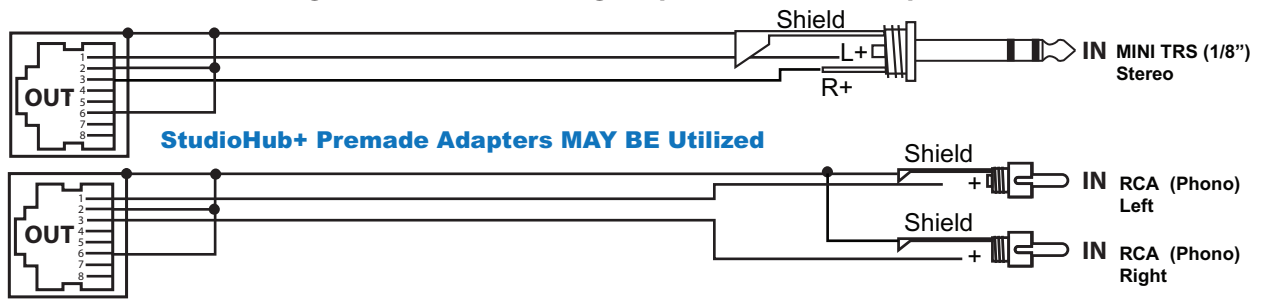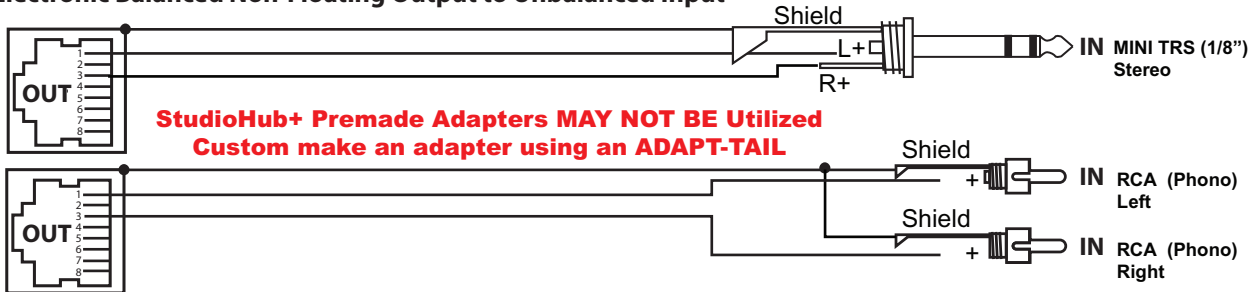# Connecting StudioHub+ inputs and outputs to non-balanced devices

StudioHub+ strongly recommentds **balanced** connctions. unbalanced inputs and outputs should be balanced **first** via Matchjack balancing amplifier. The unbalanced adapter below, should be used only when necessary, over sort distances and when a 3-6db deficit in cross-talk can be tollerated.
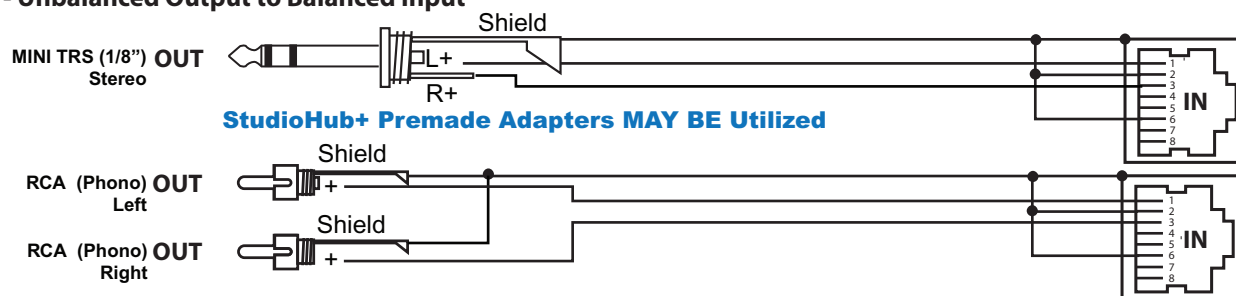
Type 1 - Electronic Balanced Floating or Transformer Floating Output to Unbalanced Input

StudioHub+ Premade Adapters MAY BE Utilized

Type 2 - Electronic Balanced Non-Floating Output to Unbalanced Input

StudioHub+ Premade Adapters MAY NOT BE Utilized
Custom make an adapter using an ADAPT-TAIL

Type 3 - Unbalanced Output to Balanced Input

StudioHub+ Premade Adapters MAY BE Utilized

Connecting balanced outputs to an unbalanced inputs (DESTINATIONS)

Determine the type of circuit of your device before choicing your connection configuration

Electronic balanced floating type - SEE TYPE 1 This is the topology of the differential instrumentation chips such as made by Texas Instruments, Analog Devices & THAT Corp.
This is also the output topology used in most StudioHub+ products.
Connect the "-" output pin to ground (shield) as shown.
The output level will not change, but the headroom will decrease by 6dB.

Transformer balanced floating type -SEE TYPE 1 this is the topology of the standard transformer (non electronic) balanced outputs.
This technology is found on legacy gear and some very high end new equipment.
Connect the "-" output pin to ground (shield) as shown.
The output level will not change, and the headroom will not change.

Electronic balanced non floating type - SEE TYPE 2 this is the topology of the more typical "5532" type op-amp chip.
This is also the output topology used in the Angry Audio DA4x4a, Millenium A Console, etc.
DO NOT connect the "-" output pin to ground (shield) as shown.
The output will be reduced by 6dB but the headroom will not change.

Connecting unbalanced output signals to balanced inputs (SOURCES)

SEE TYPE 3 - Connect the "-" output pin to ground (shield) as shown.

StudioHub+ Premade Adapters

These premade adapters connect the negative lead to shield.
Use only for connection Types 1 & 3 above.

Part #: ADAPT-MINIUNBAL   Part #: ADAPT-RCAM