



# Australian Technical Production Services

## The Simple DI

Congratulations on buying the, Blah, Blah, Blah....

I know it is customary to congratulate the new owner of a piece of equipment on their perspicacity\* in buying one of the finest Thnga-ma-jigs of its kind on the market today, but I dunno, starting an instruction manual with that kind of self-congratulatory stuff just seems a bit odd.

It has been suggested, a Feature list may be a good idea, so here it is:

- Uses a quality Harbuch\*<sup>2</sup> Transformer to isolate the output, so there is no need for an Earth lift switch.
- Very low noise Class A pre-amplifier, which can handle a wide range of inputs levels so does not need a Pad switch under normal usage (although if you want to drive it from the output of a power amplifier, this could be a problem)
- High impedance Jfet input (560K $\Omega$ ).
- Low output impedance to minimise high frequency roll off on longer cable runs
- Phantom powered so doesn't need a battery.
- Smart switching, so either socket can be either the input, or the through connector, so no more spending ten minutes trouble shooting only to find you have plugged into it incorrectly in the dark.
- Built in passive mixer can be used to mix two inputs together if required.
- Permanent power LED so you can see at a glance that it is powered up.

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\* Lets try one new word today, or revisit an old word you already know:

**perspicacity** (noun): [pur-spi-kas-i-tee]

keenness of mental perception and understanding; discernment; penetration.

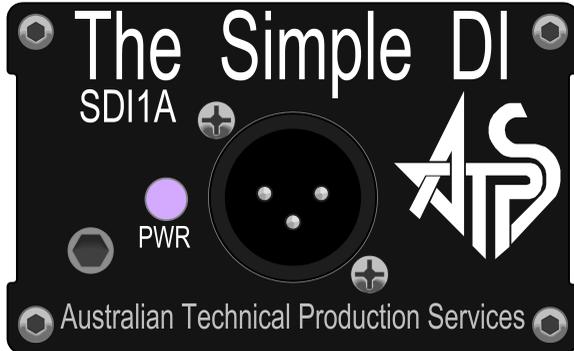
\*2 Harbuch is a trademark of Harbuch Electronics Pty, Ltd

## Detailed instructions:

As the name suggests, this DI is pretty simple, but even so, there are still a few things to ponder;

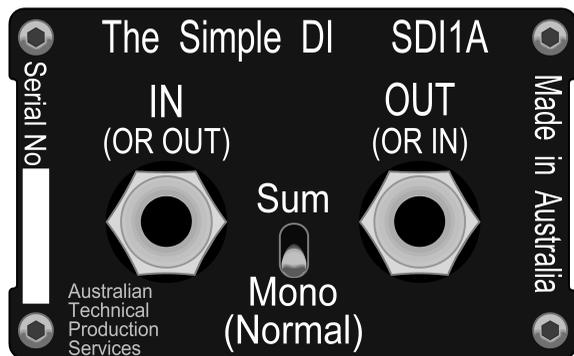
First, this DI runs off phantom power, now every desk I have used in the last decade or two, has P48 phantom power, so this should not be a problem.

The LED marked PWR next to the XLR, shows when phantom power is on.



If the LED is not lit, then Phantom power may not be turned on at the mixing desk or it may not be correctly patched.

On the input side are the In (or out) and out (or in) sockets, now really either socket may be used as input or output, but field trials showed that people are so used to having an input and an output, that marking anything else caused confusion. So it was decided to label them “in” and “out”, however should you inadvertently plug them in the other way around, it will all still work fine.



The one complication is the switch, which allows two inputs to be resistively mixed together if this is required, e.g. where a stereo signal needs to be summed into a single channel.

To sum the two inputs together, the Sum/Mono switch needs to be up (in the sum position). To run the DI as a regular high input impedance mono DI this

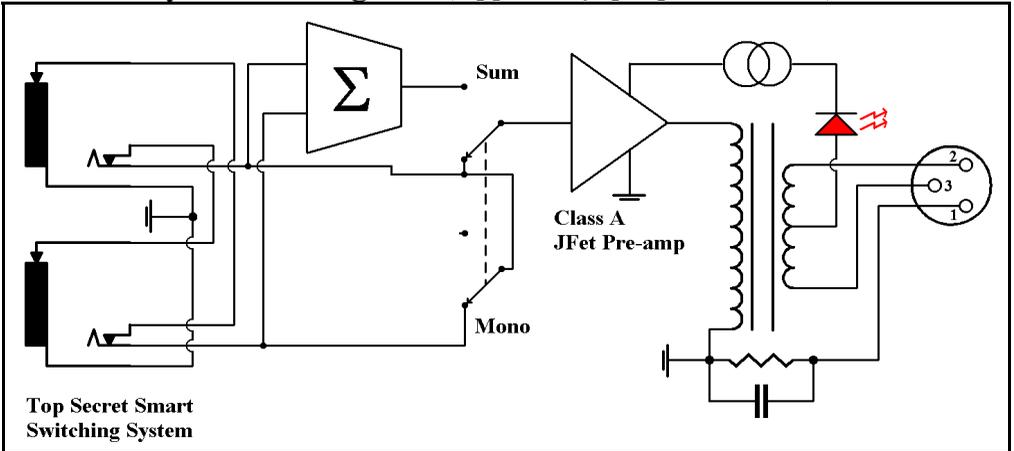
switch needs to be in the down position.

I had considered eliminating this switch, but there always seems to be an occasion when a simple mixer is required (although I may release a later variation without this switch and the added confusion it brings).

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## Technical stuff

### Mandatory Block Diagram (Apparently, people like these):



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## Specifications (Numbers and things)

Frequency Response:	30Hz - 30 KHz at -3dB (-6dB = 18Hz - 30KHz)*
THD+N	< 0.05% 50-20KHz, rising to 0.07% @ 18Hz *
Max input	> + 12dBu
Noise	< - 90dBu
Gain	-14dB
Input impedance	560K Ω (in normal 'mono' mode)
Sum mixer impedance	10K Ω (input impedance in 'sum' mode)
Output impedance	200 Ω
Power requirements	IEC 61938 P48 phantom power supply

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\* Measurements taken with 0dBu input, driving a 600 Ω load.

As typical microphone pre-amplifiers are >1500 Ω input impedance, actual usage will yield lower distortion, and better frequency response than this.

--- -This is the Back page. --- -

I have said all I need to say. But I guess if you are resorting to reading the back page of the meagre instructions for a Simple DI, then you must be bored, so maybe I could share a Poem with you for your entertainment:

## **The (expletive) before Christmas.** By Richard Freeman

T'was a few days before Christmas and the network had tanked,  
not a node was happy as their database stank.

A rebooting switch card in Sydney no less,  
had caused a corruption which made quite a mess.

As quickly as fibre carried the tirade,  
the corrupted database went down to Adelaide.

Next on the list making things worse,  
the database headed westward to Perth.

Meanwhile back on the east coast it seems,  
Newcastle and Cairns came apart at the seams.

Now Brisbane and Melbourne got in on the fun,  
each of them wanting their day in the sun.

At least on the plus side a few nodes hung in,  
with the database not reaching Los-angeles or Darwin.

But all of this stress is making wonder  
if I wouldn't have rather had a job as a plumber.

Still bored?

Go book a Gig, Busk, Play, Mix, Record, do whatever it is you like doing!

