

Over longer lengths, external disturbances like hum, RFI and so forth take on a greater degree of importance.

The disturbances' intensity can be figured out by computing the RMS signal to noise ratio, in decibels.

A balanced, high quality, *floating* line can reach more than 120 dB of rejection, or -120dB relative to the signal, which represents one part per million, 1 ppm, a truly remarkable performance.

In full balanced mode, the result is far inferior, and in practice is barely better than -60dB, 0.1%. This may seem small, but just keep in mind that this implies component tolerances tighter than 0.5%, a truly demanding task. Professional consoles capable of such results are truly high-end by their 6+ figures price.

It is very important to point out that balanced lines, whatever they may be, are not impedance matched. This means that even though they are fairly immune to external disturbances, they alter the musical signal proportionally to their length.

Just ask a sound engineer if he is happy to use a cable 100 meters long when 10 meters are plenty enough.

Just ask him if high frequencies do not suffer from very great lengths, of the order of 100+ meters.

The 50Ω links used in the **darTZeel NHB-108 model one**, and described hereunder, behave differently...

T5.5. darT to Zeel 50Ω

The NHB-108 model one is equipped with 50Ω BNC connectors.

After a lot of research, we concluded that the *one and only* means for transmitting an electrical musical signal with no alteration or losses over a long distance is impedance matched lines, from end to end.

We have already mentioned that the **darTZeel NHB-108 model one** was thought up without any compromise in mind, especially regarding its cost price.

We confirm this once again, of course, but the purpose here is just to say we pursued this quest of sound purity simply because no other amplifier could bring us what we were looking for. So we designed the NHB-108 model one.

As for electric transmission lines, we didn't want to reinvent the already existing wheel. Perfect impedance-matched lines have been in use for almost a century. And so have coaxial cables.

Impedance matched links are utilized everywhere when high tech performance is needed. Radio applications, radar, microwaves, computers, and all

such precision technologies use impedance-matched links. So why not audio?

The great advantage of impedance matched-links is their virtual absence of losses, whatever their length.

For those of you who want to know everything about matching impedance in audio links, do not hesitate to contact us at moreinfo@dartzeel.com

Propagation time delay is preserved in DC up to several GHz in such lines, and no other link from any make can claim this, unless perfect impedance matching is achieved.

So the NHB-108 model one is fitted with such inputs, here called "Zeel 50Ω", while the **darTZeel NHB-18NS** preamplifier has "50Ω darT" outputs.

These inputs/outputs use 50Ω coaxial cables fitted on BNC connectors.

External disturbance immunity of a coaxial link depends on the cable itself. It can vary from -50dB to -100dB or more, the latter being greatly superior to the full active balanced mode, and all this, please bear in mind, *without any sonic alteration*.

You can use very affordable off the shelf RG58U cable, and will be very surprised by the result. Many shorter but much more expensive cables do not do better! And when there is a big length increase, there is no shadow of doubt, *darT to Zeel 50Ω* is simply unbeatable. Trying and hearing is just believing.

The optional coaxial cables delivered with the NHB-108 model one are furthermore of the high-end grade, silver plated pure copper, designed for hyper frequency applications. You will at last discover what resolution *really* means...

As stated above, one of the main advantages of *darT to Zeel* links is that you can locate the power amplifier as far as you want from the preamplifier. No more treble roll off, harsh or fuzzy. No more sluggish low end.

The theoretical length limit is... infinite! In practice, we recommend not to use lengths greater than 1 kilometre (we are *not* joking here, for once.)

This new way of linking is still in its infancy as regards audio, even if some of our esteemed competitors disagree. **darTZeel** will also offer in the near future, for professional applications, *darT to Zeel floating* balanced links.

Are you looking for **darTZeel** sound integrity in concerts and pro audio studios? You can have it just for the asking.