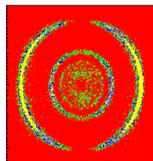


Signal converters LA1 and pInv(Att)



RoentDek
Handels GmbH
Supersonic Gas Jets
Detection Techniques
Data Acquisition Systems
Multifragment Imaging Systems

RoentDek offers a variety of active and passive signal converters. Among those are units to cut off excessive pulse heights for preventing damage to follow-up electronics ([VL1](#) and [SP1](#)) and the here-described [pInv\(Att\)](#) and [LA1](#).

The passive circuits pInv, pAtt and pInvAtt:

Although developed for inverting ([pInv](#)) or attenuating* ([pAtt](#)) short analogue signals (< 10V at max. bandwidth 300 MHz), or to do both ([pInvAtt](#)) the latter may also be used to convert logic TTL signals to NIM signals, while the [pAtt](#) alone can serve to reduce TTL signals to the LVTTTL level. Due to their nature as passive circuits the application range is limited to certain regimes of signal width w and/or signal frequency f : $2 \text{ ns} < w < 100\text{ns}$, $f < 100 \text{ MHz}$, with $f \cdot w < 0.2$

Beyond these limits it cannot be guaranteed that a “HIGH” level is fully maintained and specified switching thresholds are always reached.

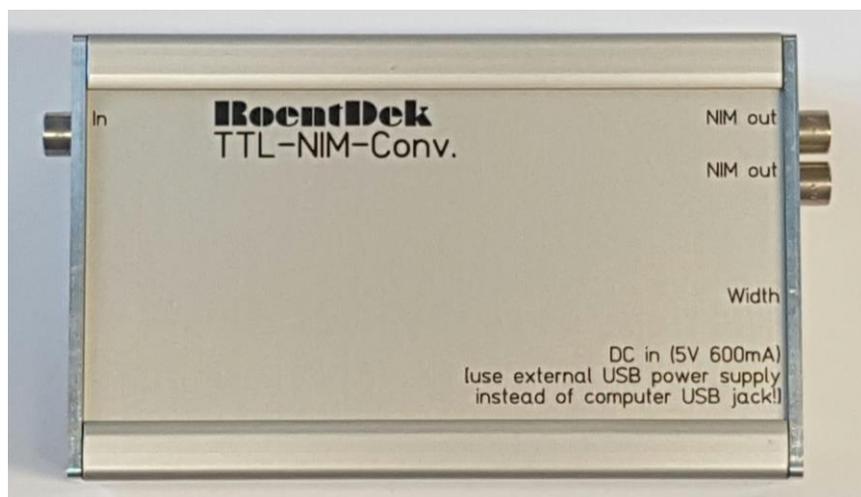
Figure: [pInvAtt](#) (usually equipped with two lemo sockets)

Size approx.: 62 mm x 12 mm x 10 mm



TTL-to-NIM or NIM-to-TTL converters can be configured as variations of the [RoentDek LET1+](#) discriminator unit. Containing “active” circuits powered by a mains adapter the [LA1](#) overcomes certain limitations of passive signal converters: maximum frequency is at least 100 MHz at any duty cycle and input signal width is not limited. Output width is selectable between <10 ns and 2.5 μs

Note, that an [LA1](#) signal converter is pre-set to be operated either with negative input signals (e.g. as NIM to TTL converter) or with positive input levels (TTL to NIM or LVTTTL to NIM/TTL). Output A always produces a signal with fixed length (adjustable by potentiometer), which can be either NIM or TTL (factory-set). Output B is always NIM and can either have the same fixed length as output A, or maintain the original input signal length (this is also factory-set).



A
B

* Attenuation factor is factory set between 40 dB (100x) and 3 dB (1.4x), typical 10 dB (3x)