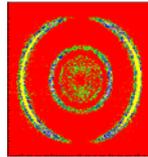# The ATR19-2b amp and CFD module

RoentDek
Handels GmbH

Supersonic Gas Jets
Detection Techniques
Data Acquisition Systems
Multifragment Imaging Systems

The **RoentDek ATR19-2b** module is a two-channel version of the **ATR19 front-end electronics** (amplifier and constant-fraction discriminator) for the read-out of **RoentDek** MCP-based detectors.

It contains one **DLATR2.0** board with two channels of amp&CFD circuits, providing amplification and timing for signals from an MCP, read-out anode (e.g. **RoentDek DET40**) or other fast signals, differential or single-ended.

The **ATR19-2b** module measures 3 height units of a 19" standard rack.
It has the same input/output options and controls as the **ATR19 front-end electronics** module, but comes with a 12V mains adapter (<12W power consumption), connected via a sub-D connector on the rear panel.[1]

The amplification for each channel can be adjusted from 20x to 100x by potentiometers on the side panel. The bandwidth of the input is 100MHz, with 100Ω differential input impedance or single-ended 50 Ohm non-inverting (IN1) / inverting (IN2) inputs via lemo sockets.

The amplified signals can be verified with a "Monitor" output (lemo socket). Timing output signals (NIM or ECL) from the CFD circuit with adjustable width (10-150 ns) are provided by lemo sockets. The width of the timing signals and the threshold (0 and 100 mV relative to the respective channels' "Monitor" signal height) are set by potentiometers or by remote 0-5V DC input via lemo sockets.

The CFD delay can be adjusted internally between 4 and 10 ns via jumpers on the **DLATR2.0** boards. The walk is automatically adjusted.

The achievable time resolution is between <100 and 500 ps, depending on the input signal width and the application. The double-hit dead-time of the CFD-outputs is about ≥ 20ns also depending on the input signal width.
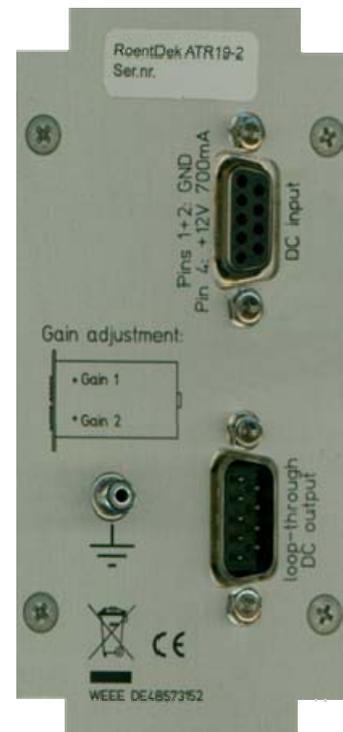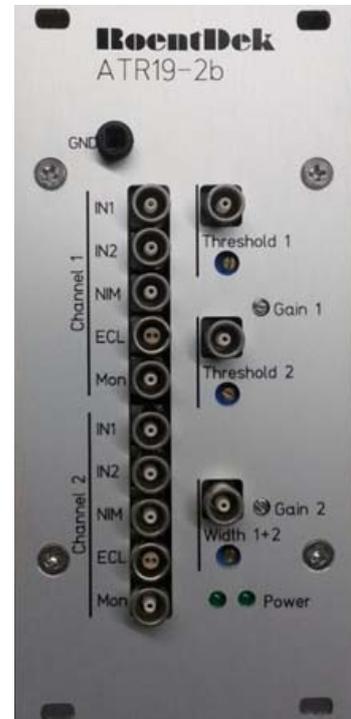
*Front and rear panels of the **RoentDek** ATR19-2b module*

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[1] The older **ATR19-2** unit requires an external "clean" +/-6V power source, e.g. the **RoentDek SPS1(b)**