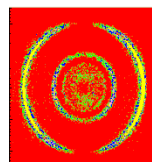# The RM-6 Rate-meter and Counter

RoentDek
Handels GmbH

Supersonic Gas Jets
Detection Techniques
Data Acquisition Systems
Multifragment Imaging Systems

The **RoentDek** **RM-6** is a six-channel 100 MHz counter/rate-meter for logic signals (default: NIM, on 50 Ohm impedance lemo00 input socket) with a variety of display and computing options. The counter memories can be read-out via USB and blue-tooth allowing full control for analysing the data stream on the inputs by software (a small GUI-interface or via our software **CoboldPC or LabView**).

Figure 1: RM-6 counter module. Several displays allow simultaneous observation of up to six count rates.

The display range adopts automatically for each channel. The Response Time (i.e. display refresh rate) can adopt automatically for each channel or be manually set for all channels.

Parallel read-out through a USB socket or via Bluetooth allows full control in recording the data stream. An audio output allows sensing count-rate changes if the **RM-6** display is out of sight.

The display of channel 3 can optionally show the ratio between the rates on channels 1 and 2. Channel 6 can either show the rate on input 6 *or* the ratio between channels 4 and 5 *or* the integrated counts on input 6. The actual rates on inputs 3 and 6 can still be accessed via USB or Bluetooth.

The **RM-6** comes in a 1 HU 19" case (WxHxD: 483 x 43.6 x 230 mm³ incl. Bluetooth antenna. Insertion depth: < 270 mm with power cable connected. Weight: 1.6 kg without mains adapter). It has a power consumption of about 12 W (1 A on 12 V, supplied via mains adapter (included) for 100-250 VAC).
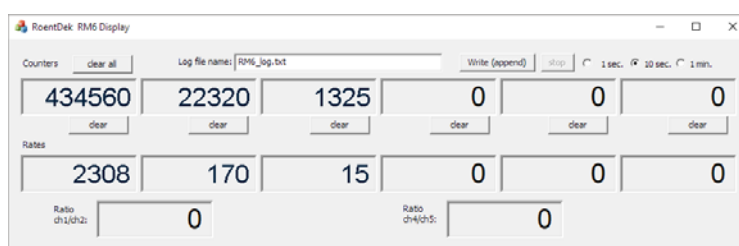

Figure 2: Read-out software.

List of features:

-   Input: 6 channels via 50 Ohm Lemo00 sockets, NIM level ("High" < - 0.3 V), DC coupled
-   other input levels and polarities (e.g. TTL) can optionally be factory-set.
-   Additional output channel programmable for signalling events (e.g. signal after n input signals or when the rate exceeds or falls below a certain limit. Adjustable via software.)
-   Maximum rate per channel: about 160 MHz (burst: 250 MHz for up to 4 signals), but display is limited to 99.999 MHz. Higher rates will only be visible via USB or Bluetooth!
-   Minimum count rate 1 Hz
-   Minimum input signal width: 2 ns (for NIM)
-   Maximum voltage tolerance of inputs +/- 2V (for NIM input version)
-   Outputs:
    o   6x digital displays with automatic ranging and variable integration times

- o 1x audio output (3.5mm Line Out jack for connecting active speakers)
  - o 1x analog output (Lemo 00 socket) for channel 6 (0.55-2.75 V correspond to a rate of 0-100 MHz)
  - o data logging via USB and Bluetooth.
- Available Response Times: 'AU' (each channel adjusts automatically), '--' (current rate will be displayed without smoothing), '1.0', '2.0', '5.0', '10.0' (smoothing with 1/2/5/10 s time constant)
- Windows read-out and control software. Rate and counter values can be directly read from **CoboldPC** and written into the LMF-data file. **LabView** is also supported.