

Experimental Run Time System

... it lights up your lab!

External Keyboard Logic

Advantages of external response pads

- Using EXKEY you are able to design and use your own response-pads. Subjects will no longer have the feeling to work on a PC. With a dual-monitor configuration you may even separate the computer completely from monitor and response-pad.

Improved accuracy

- Unlike PC-keyboard and mouse input, whose hardware transfers responses with delays and/or variance, EXKEY response registration is accurate to the millisecond.

Simultaneous key presses

- EXKEY has a build-in key-event buffer and is therefore able to register multiple and even simultaneous responses.

Modular design

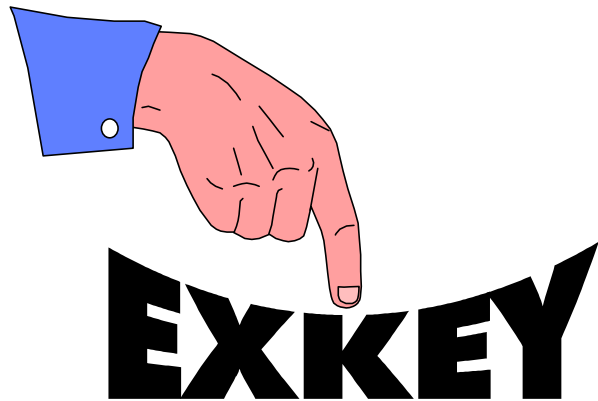
- EXKEY is a separate device with a documented interface to the response pad. You may connect any kind of electronic open/close switches (keys).

External TTL-trigger

- Because EXKEY works with TTL-level, you may connect third party devices that produce TTL-trigger signals.

Easy integration in ERTS

- To activate response registration in ERTS you just use the pre-defined key names E1 to E16 within your trial commands.



Input Device	Mean	Variance	Min	Max
PC-keyboard	18.5	5.00	14.3	21.8
Serial Mouse ¹	24.4	0.07	23.9	24.9
Bus Mouse (30Hz)	17.6	76.44	0.8	31.6
PS-2 Mouse	27.1	31.98	14.3	39.7
EXKEY-Logic	0.6	0.01	0.5	0.8

¹ For mouse data see Beringer, J. (1992). Timing accuracy of mouse response registration on the IBM microcomputer family. Behavior Research Methods, Instruments, & Computers, 24, 3, pp. 486-490.

Software configurable

- The 8/16-key modes and the debounce levels are adjustable by ERTS software configuration

8-key mode

- The 8-key mode of EXKEY supports registration of press and release events for up to 8 keys.

16-key mode

- The 16-key mode of EXKEY supports registration of press events only for up to 16 keys.

Electronic debouncing

- The EXKEY microprocessor logic includes debouncing of key contacts. 8 different debounce levels between 1.1ms and 70ms.

Parallel port connection

- EXKEY is directly connected to one of the parallel port and requires correct interrupt assignments of the parallel port.

MRI Integration

- ERTS event timing can be controlled by MRI scans by connecting the MRI scan signal to EXKEY. ERTS uses this signal as an external counter tic and which can be used to define event timing and trial duration.