LED – SiPM injection signal source

Fastest signal I could get (~3.6ns fall time) with pulsed LED
PCB t-line

left (blue) and right (yellow) outputs

fall time the same as input
glass t-lines (strips on strips)

left (blue) and right (yellow) outputs

qualitatively, same signal as PCB t-line
discussion

• could not see signal on 'inside-out' glass anodes. Maybe signal too slow, or issues with grounding top strips w.r.t. scope

• The fact that glass signal looks like PCB tline board is promising – we know the PCB board works well with commercial MCPs

• Would like to have more 'MCP-like' input (faster). Probably need laser to do this, but will see if I can refine current setup (or wait for mock-tile).

• Can start quantifying signal output (i.e. measuring charge while varying injection site along strips, cross-talk) once happy with set-up. LED-SiPM injector made such that injection site can be varied without changing input signal amplitude.
extra – effective injector circuit