

Risetime plots for 8X8 APDS



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Sensors with intrinsic gain (APD)
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Outline of presentation

- Comparison of tct signals at centre & at edge.
- Comparison of risetime & tct signals for 5 mil & 2 mil kapton

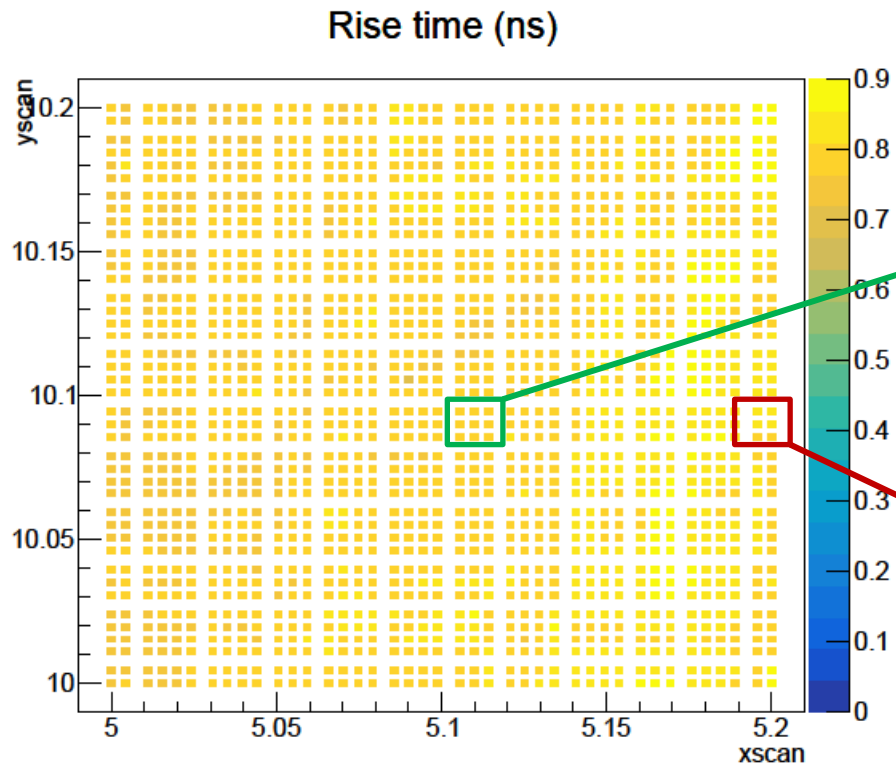
*All scans @: temperature = 293K

****Cut used for risetime calculation:**

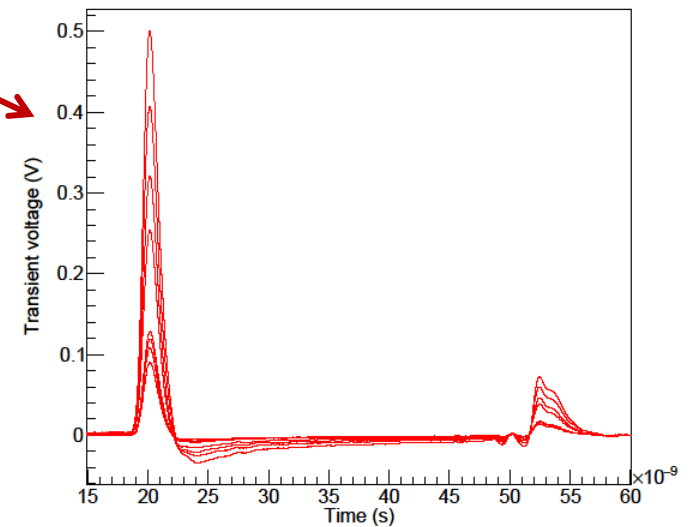
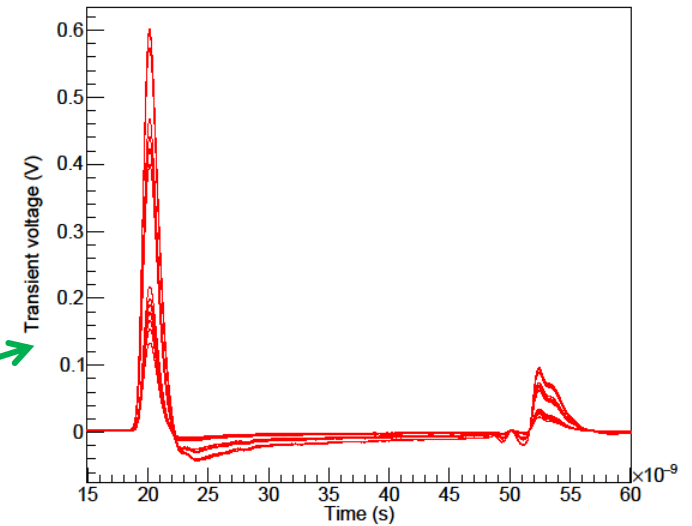
TCT signal with a max. amplitude of atleast 0.005V.

Risetime_2016_02_26_08_16_33_sou_APD_5mil

Infrared **detailed** XY scan – **5 mil**

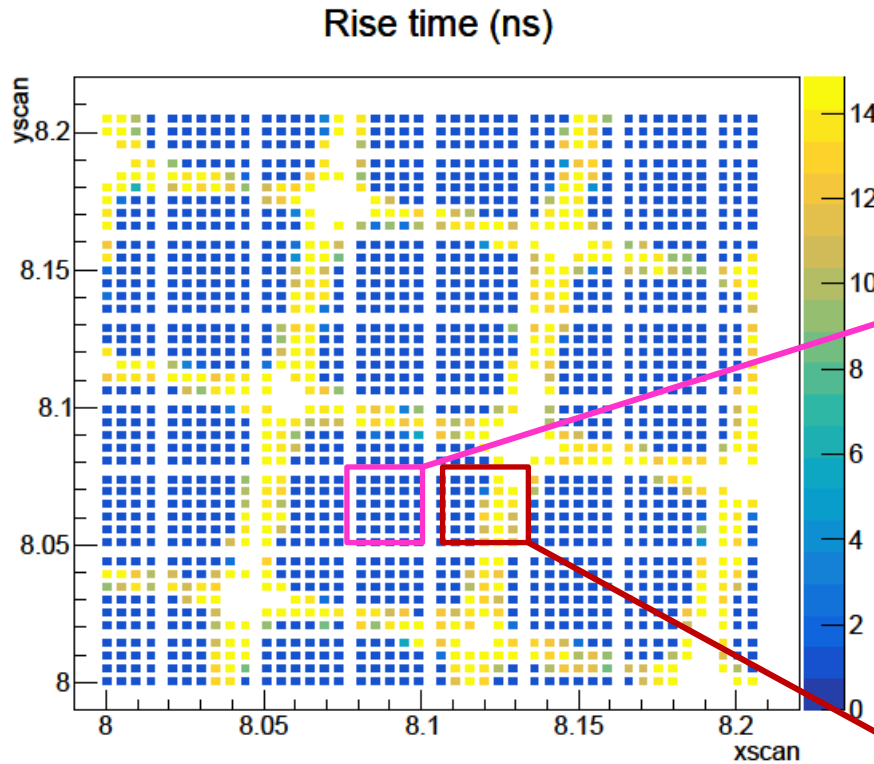


@ 1776 V

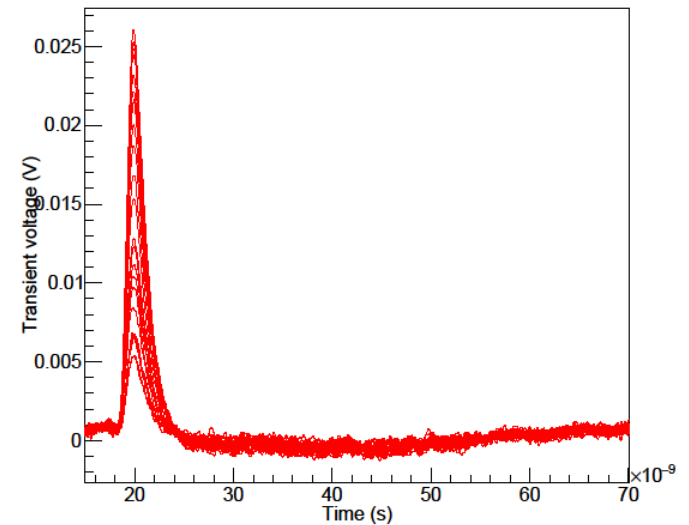
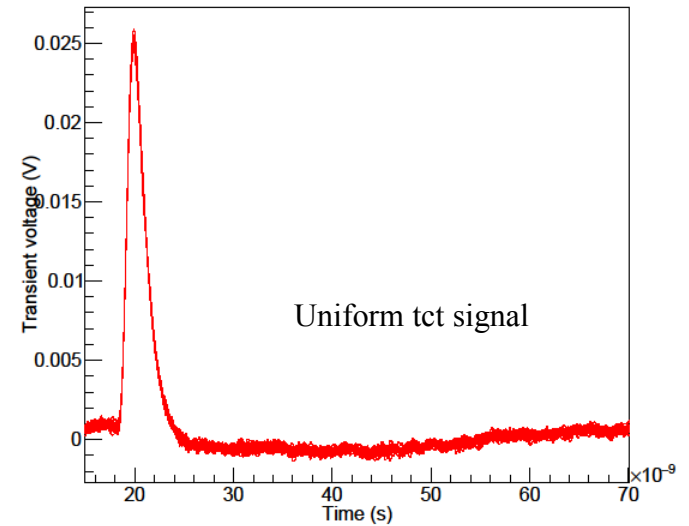


Risetime_2016_03_07_16_26_47_sou_APD_2mil

Infrared **detailed** XY scan – **2 mil**



@ 1400 V



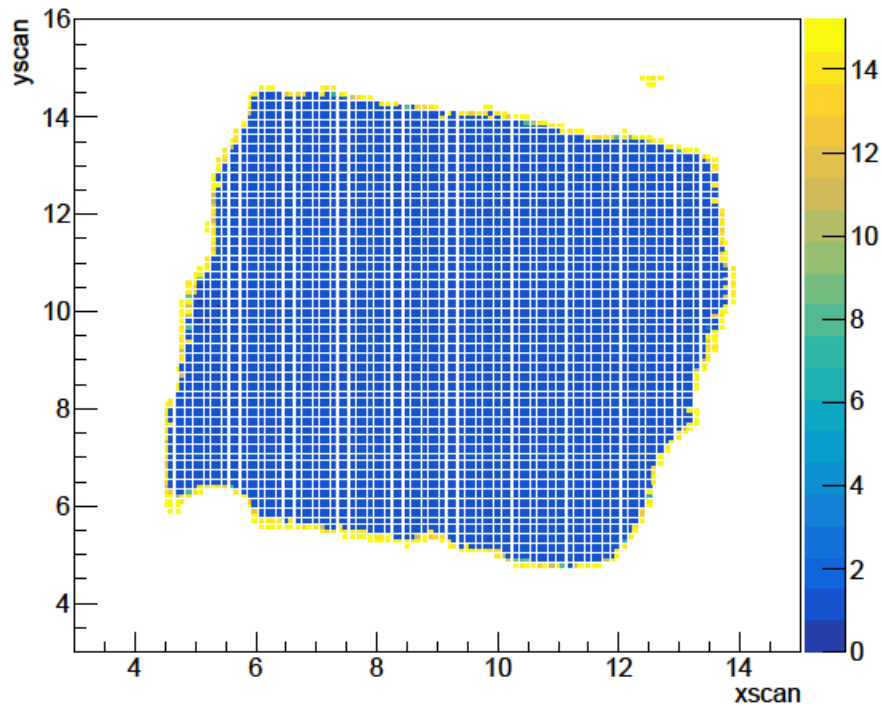
Risetime_2016_02_27_15_06_56_sou_APD_2mil

Risetime_2016_03_07_18_03_19_sou_APD_2mil

Infrared full detector XY scan – 2 mil

Defocused laser scan

Rise time (ns)

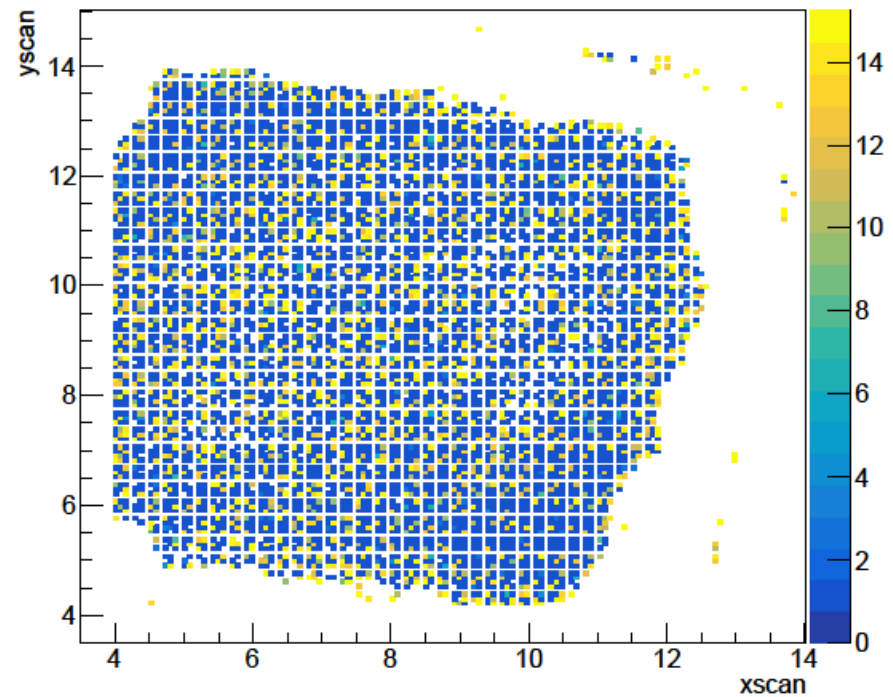


@ 1400 V

Infrared full detector XY scan – 2 mil

Focused laser scan

Rise time (ns)



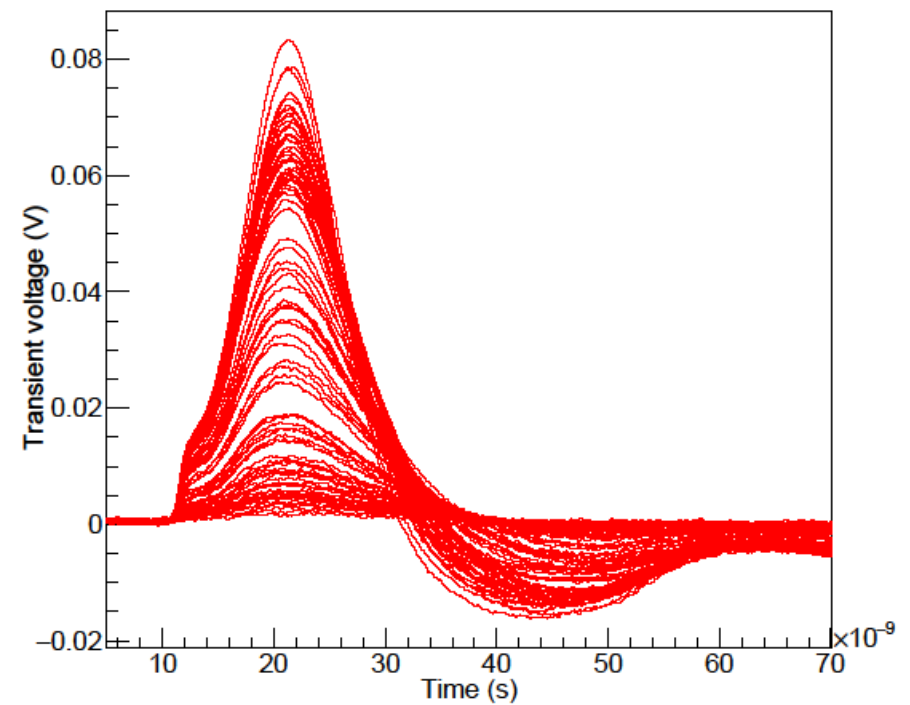
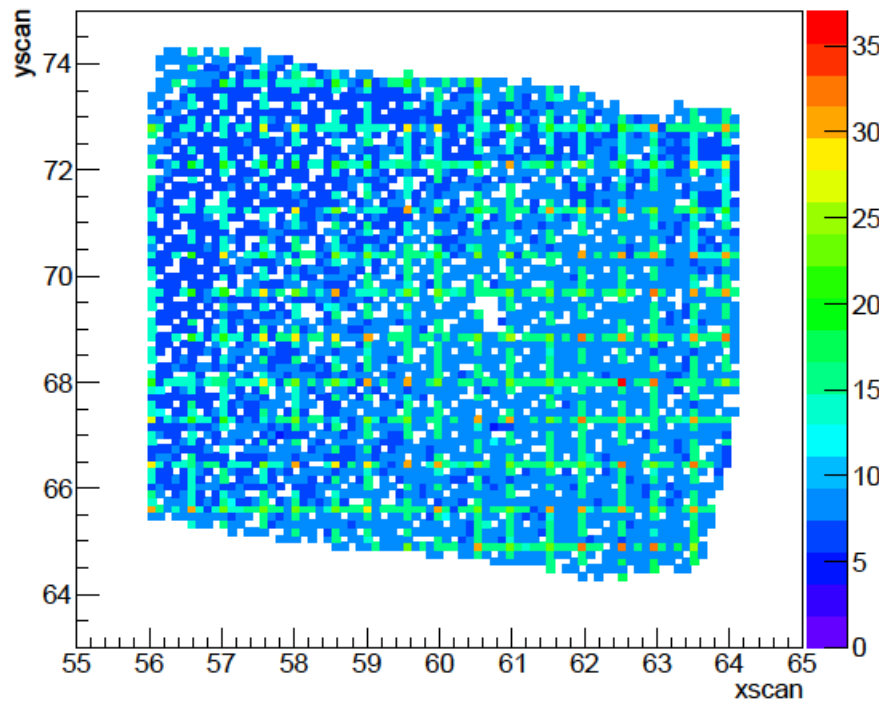
@ 1400 V

BACKUP



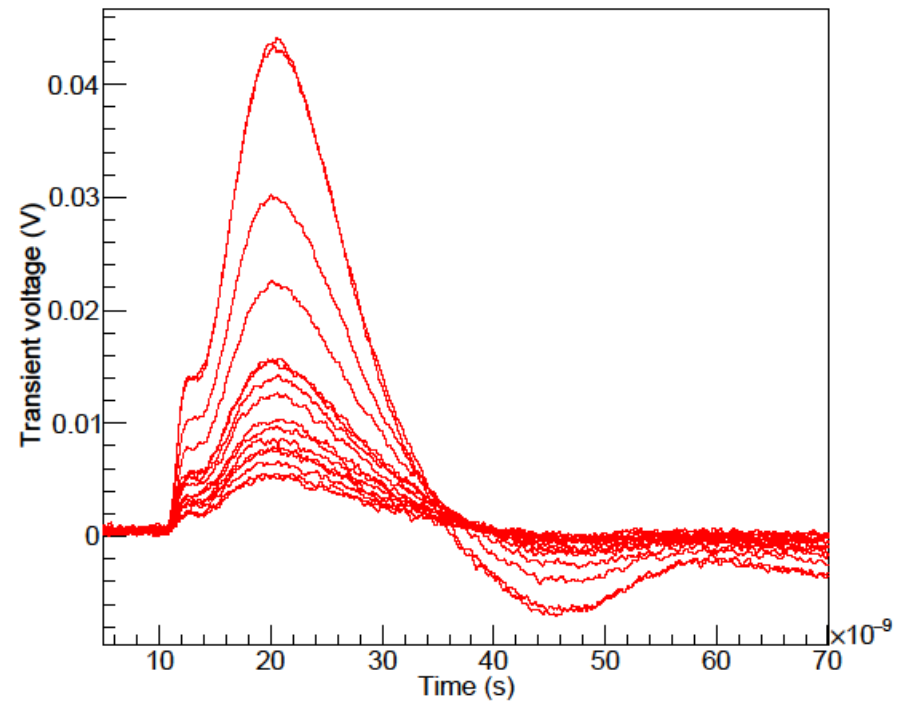
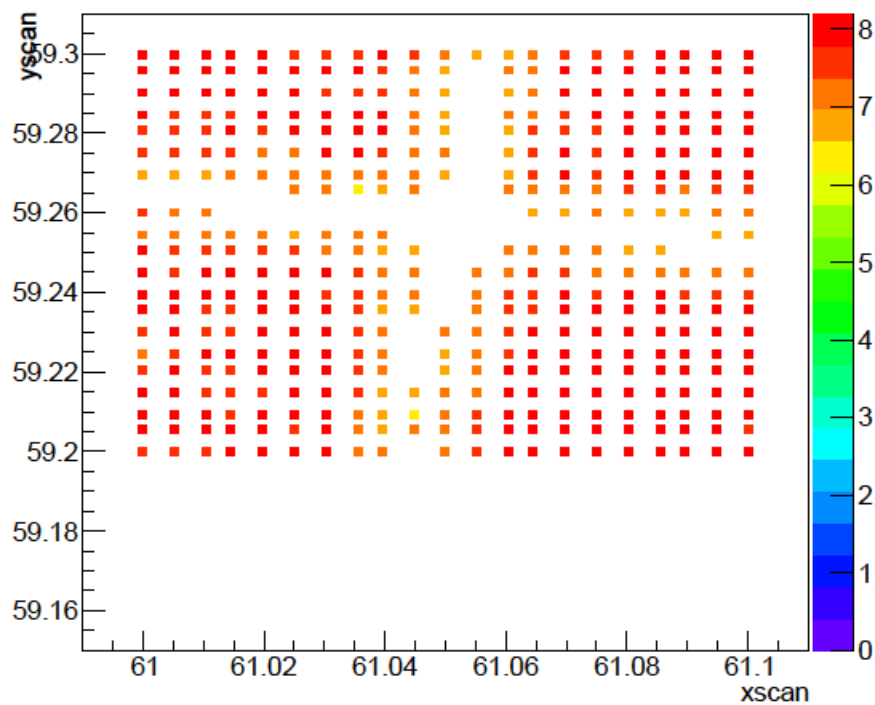
Red-Front XY scan of full sensor

Rise time (ns)



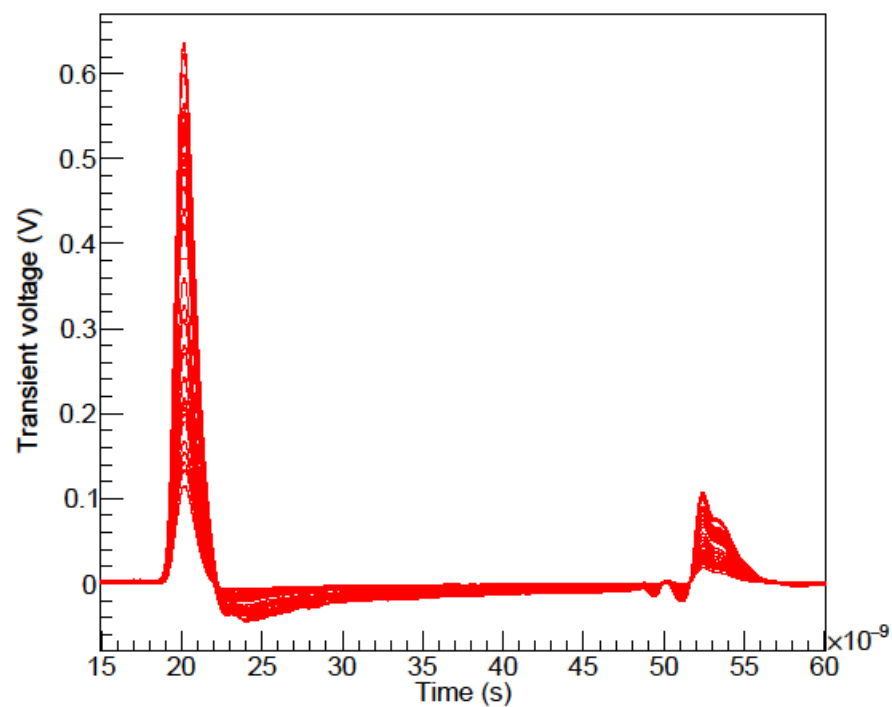
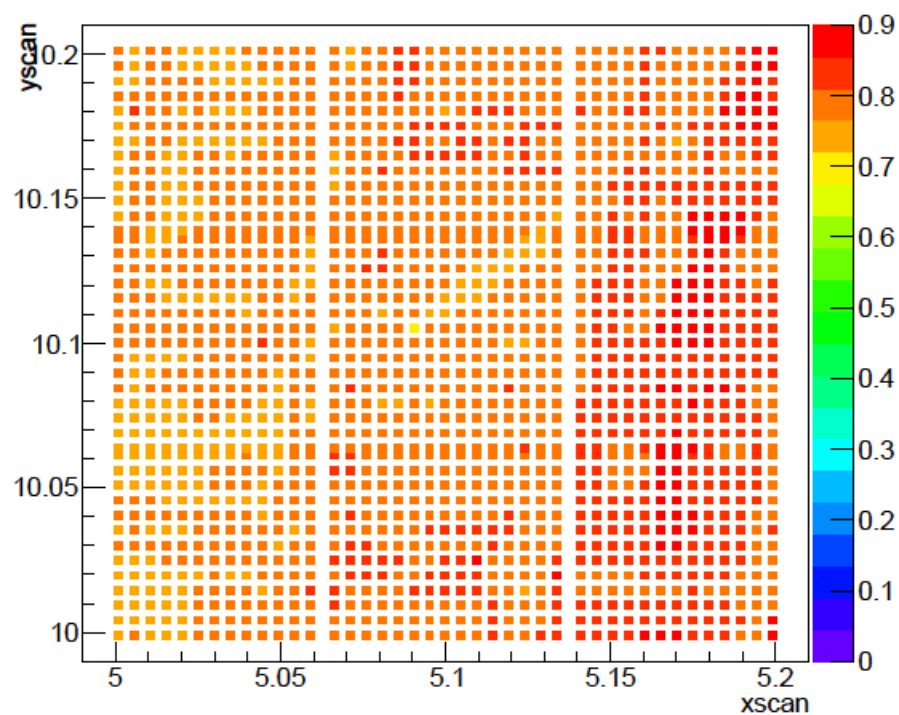
Red-Front detailed XY scan

Rise time (ns)



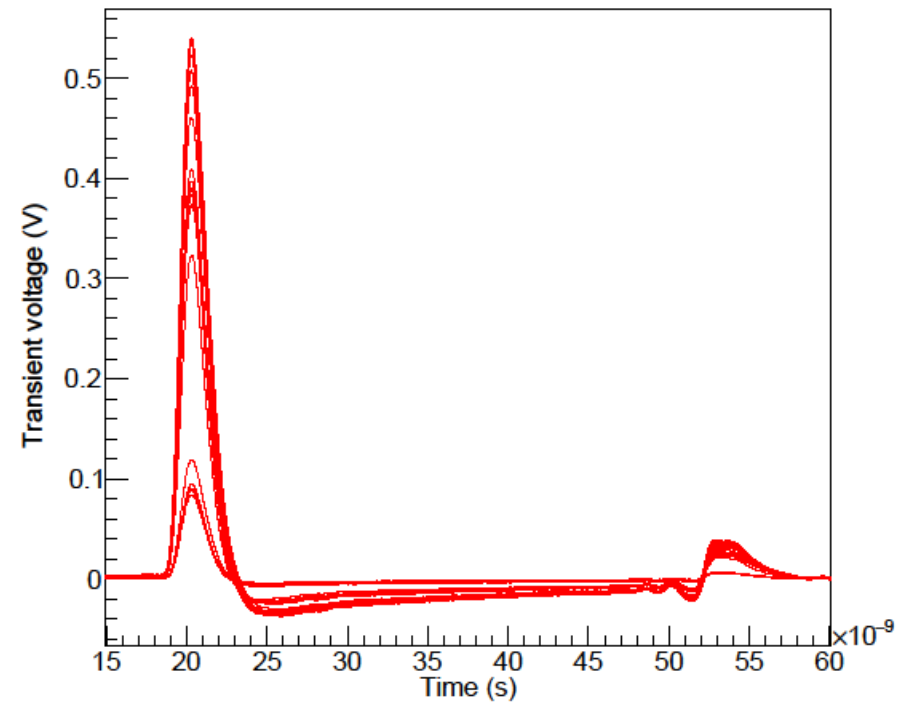
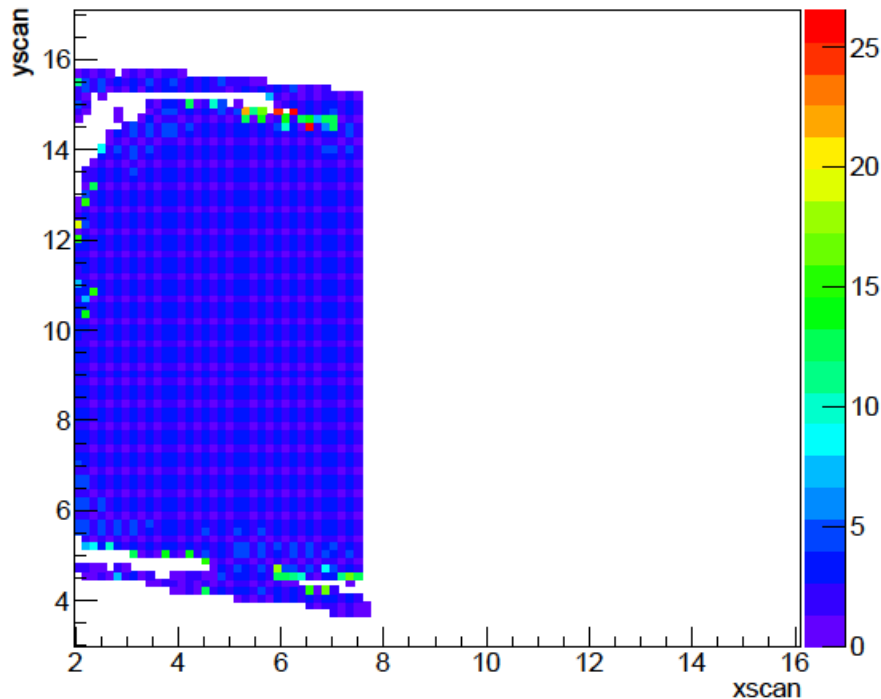
Infrared detailed XY scan

Rise time (ns)



Infrared **detailed** XY scan – incomplete
because DAQ stopped after it measured signal amplitude higher than 1V – limitation of amplifier input

Rise time (ns)



Summary



- Built code in ROOT for risetime calculation.
 - discussion with Sebastian.
- Looked at risetime values for the surface scans of 8*8 APDs with 5 mil thickness.

*TCT data of the XY scans has been provided by Sofia.