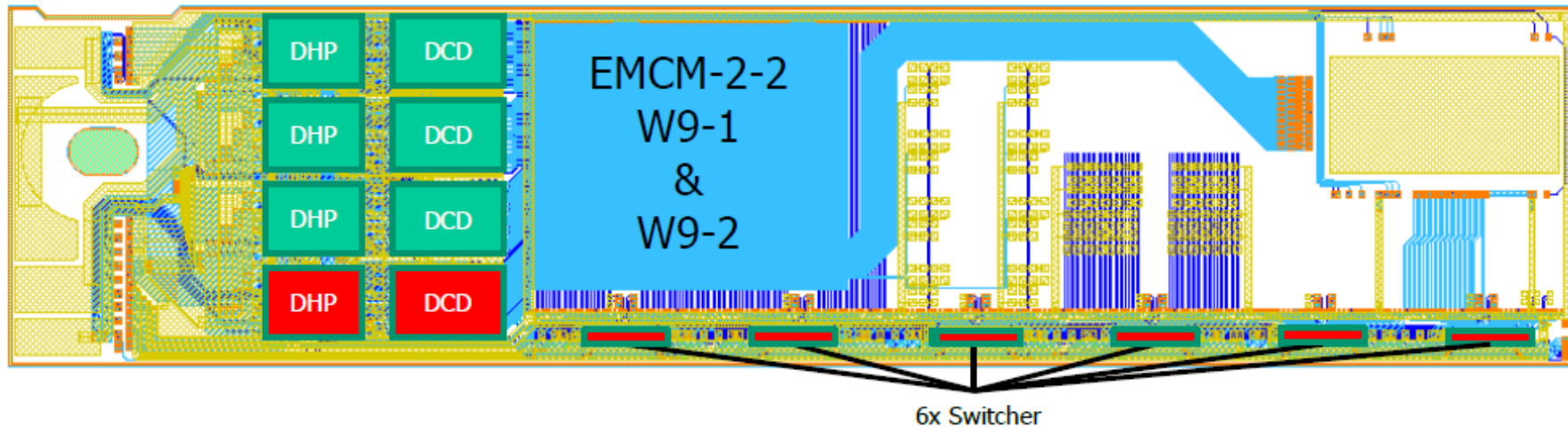




# EMCM electronic tests

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team

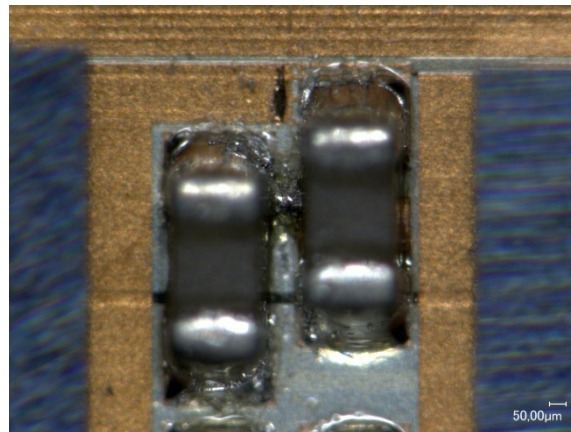
● EMCMs



**EMCM: 1 DCDV2, 1 DHP0.2, 6 Switcher B18V1**



W9-1: Term resistor



W9-2: cap GNDA Vrefin

W9-1 → DHP control signals shorted on termination resistors → not functional

W9-2 → Short between DCD supplies (GNDA an Vrefin) → can be used for SWB testing

# ● EMCM Setup

Voltages for SWB testing

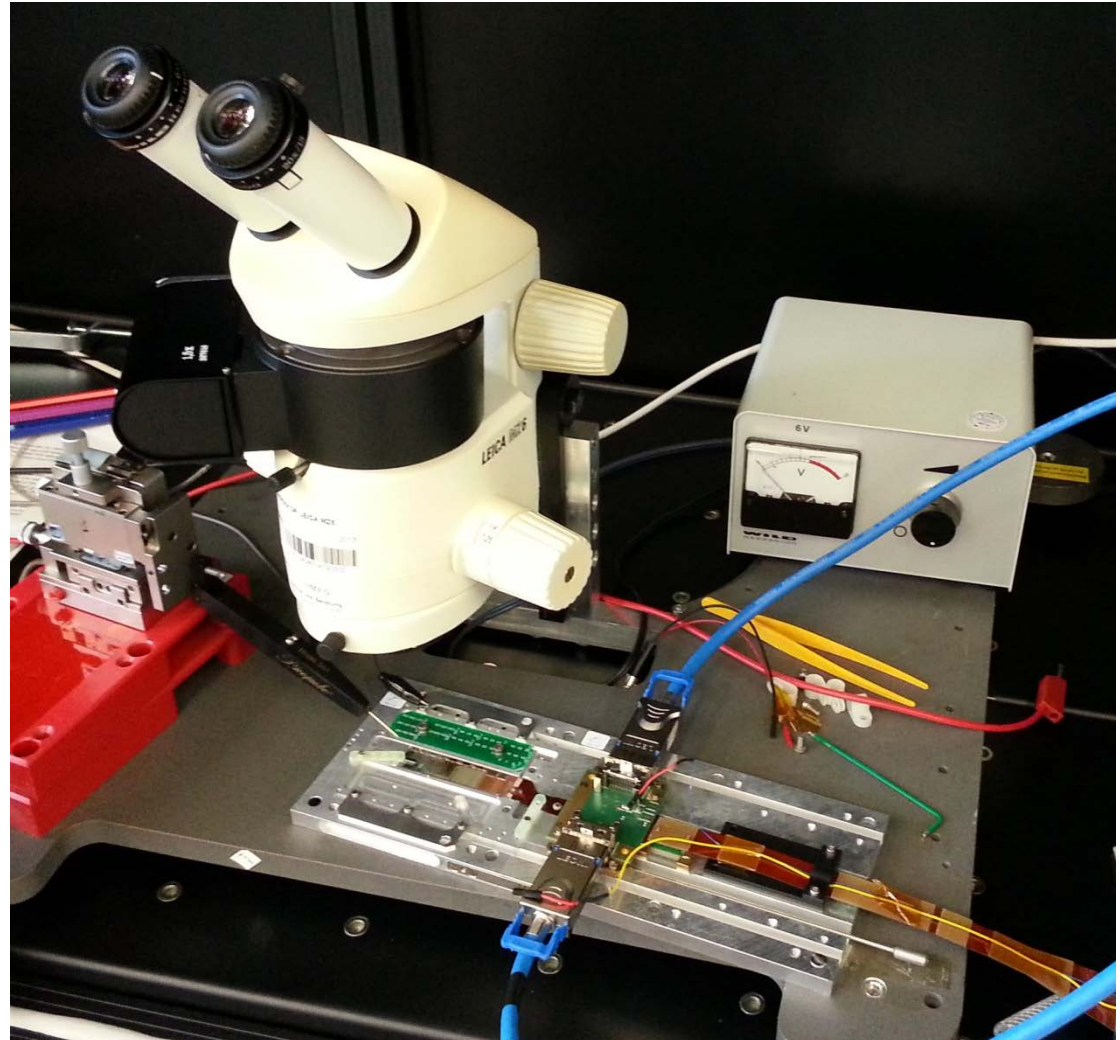
GateOn 2V

GateOff 8V

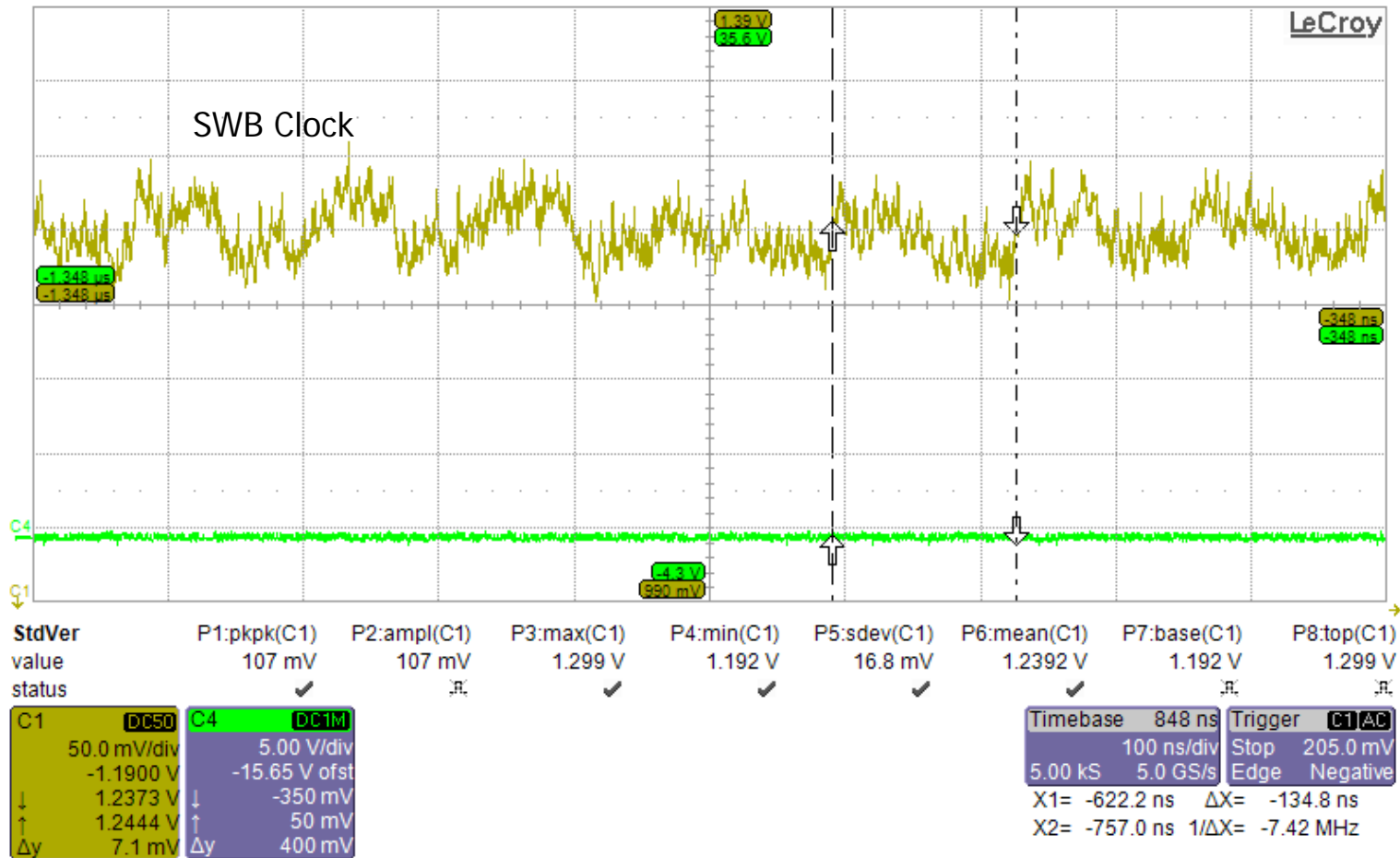
ClearOn 12V (9V)

ClearOff 3V

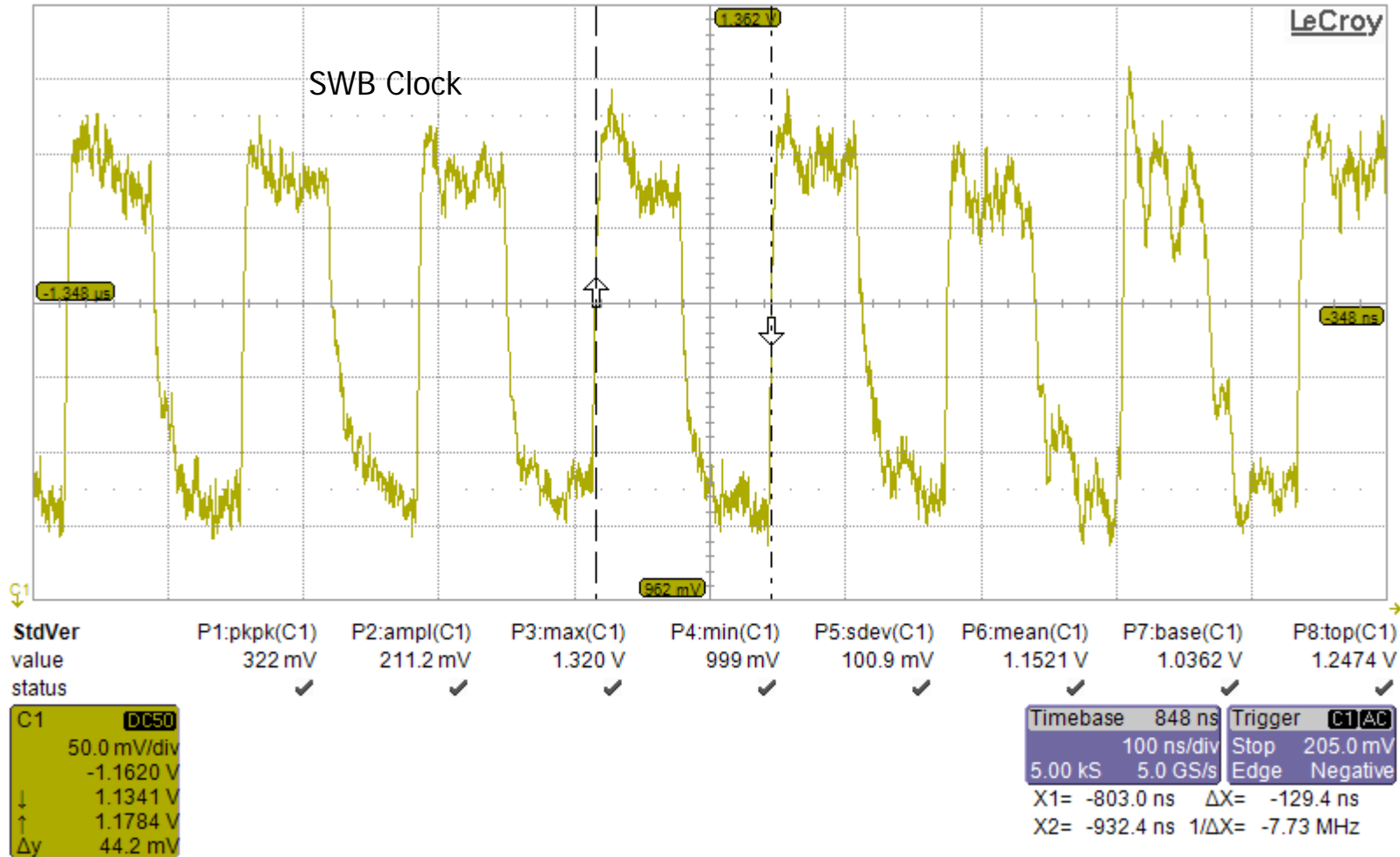
Probing on EMCM and  
Debugging Board (only SWB  
outputs)



# SWB Clock



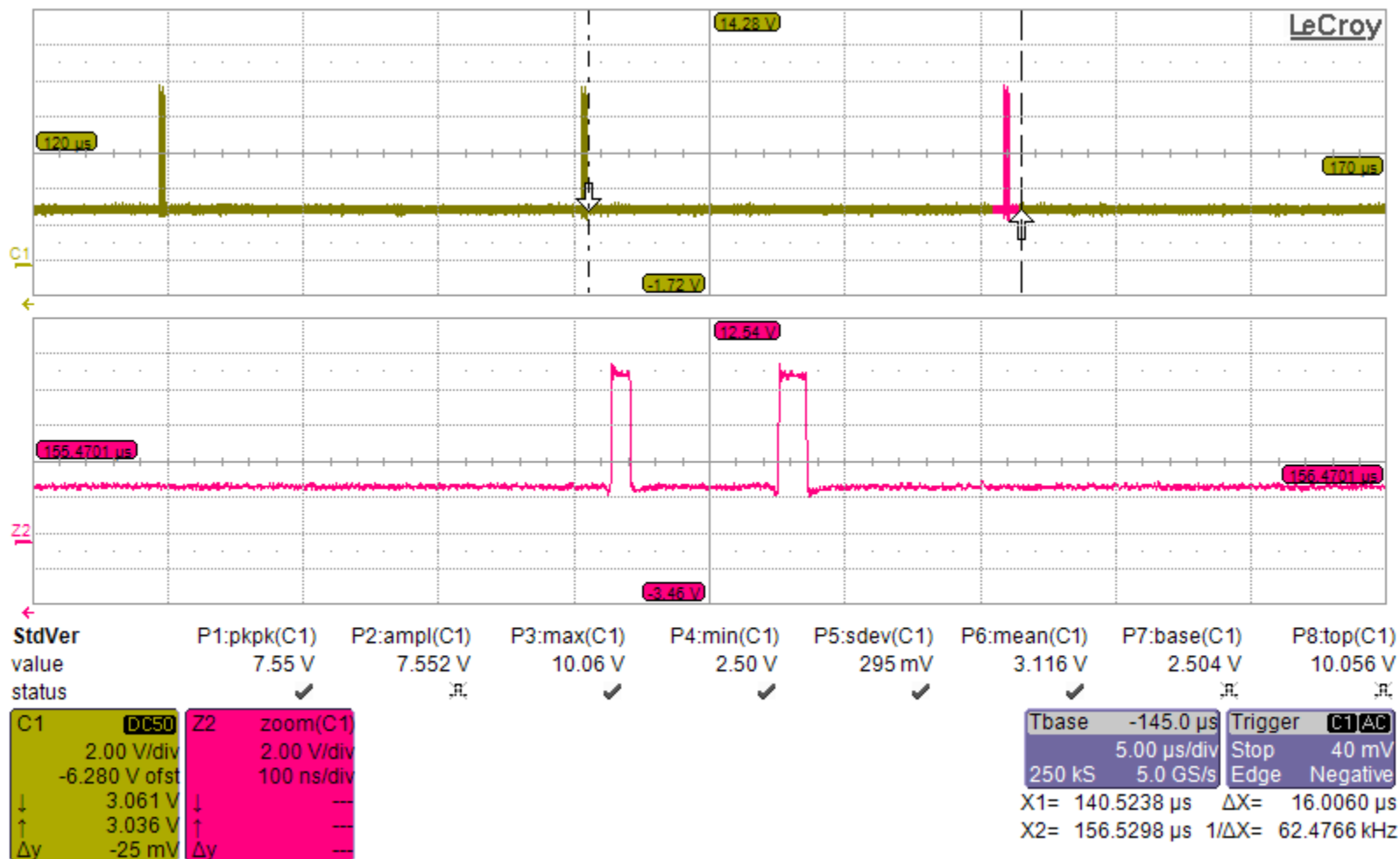
# ● SWB Clock



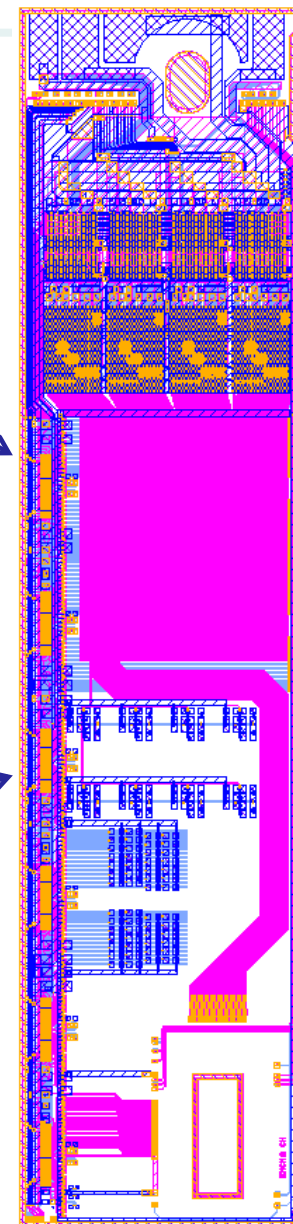
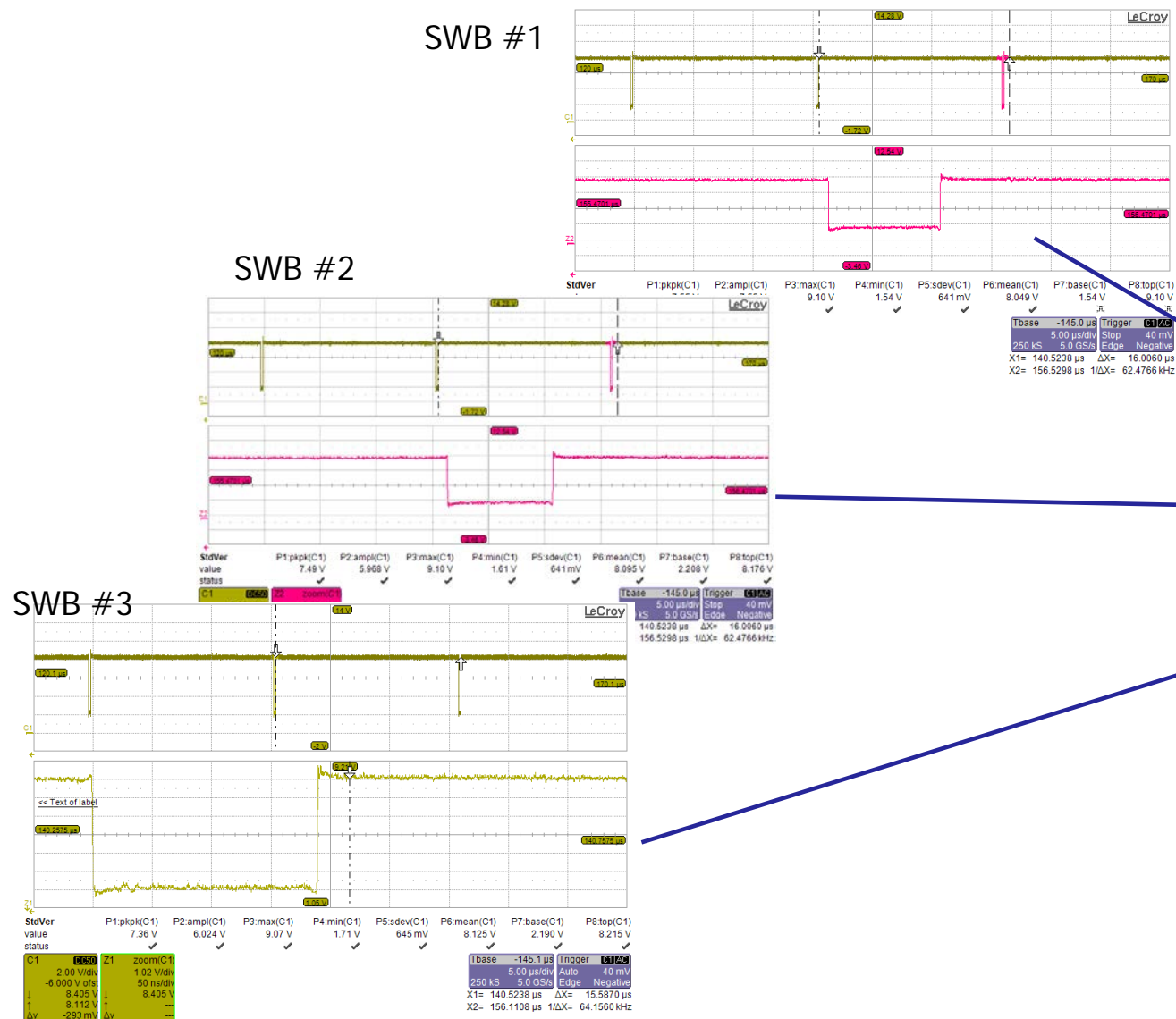
- Same signal after all Switchers have been configured via JTAG (on die termination switched off)



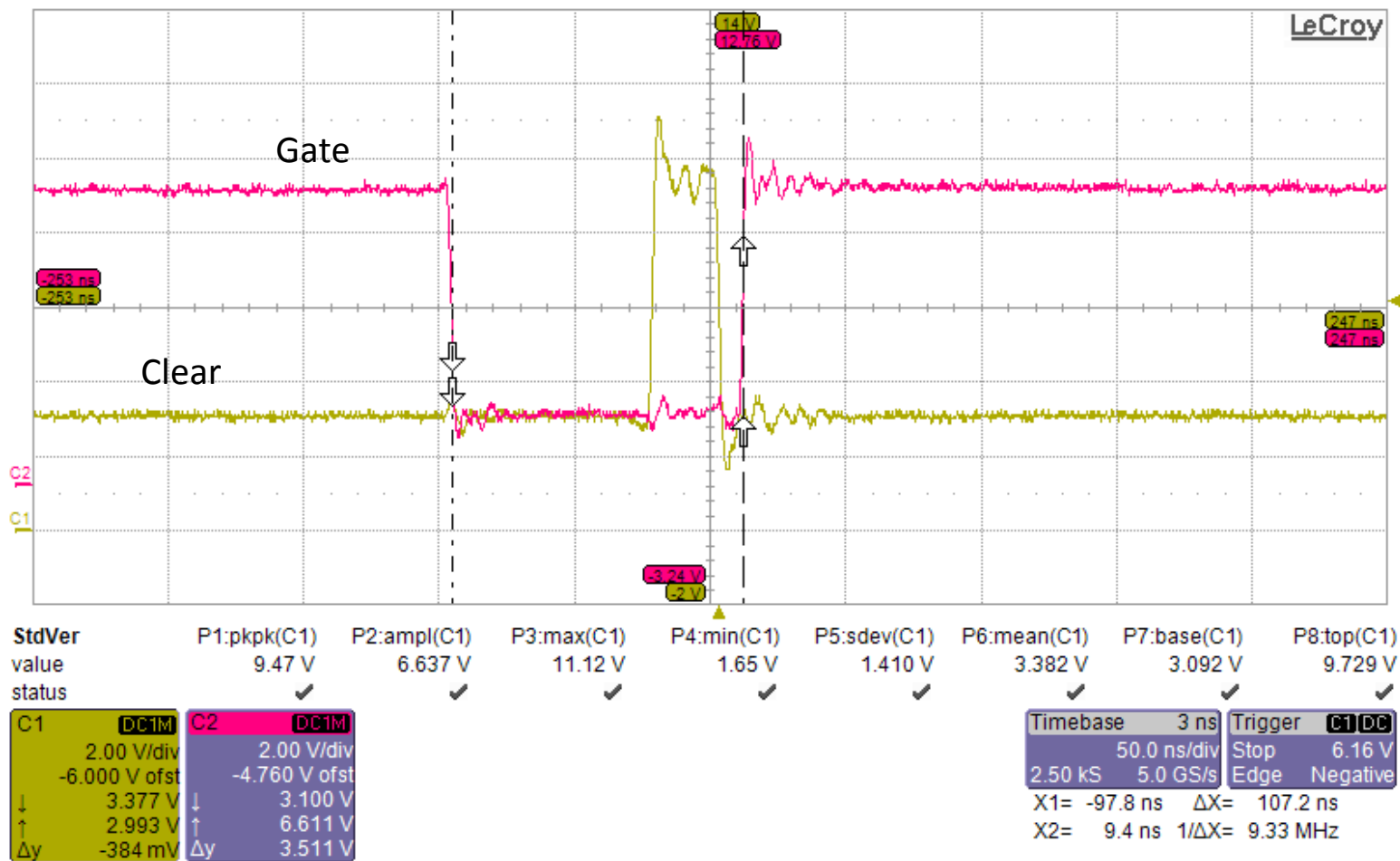
# ● Clear Output – incorrect timing settings



# ● Switcher #1 - #3 Gate Outputs

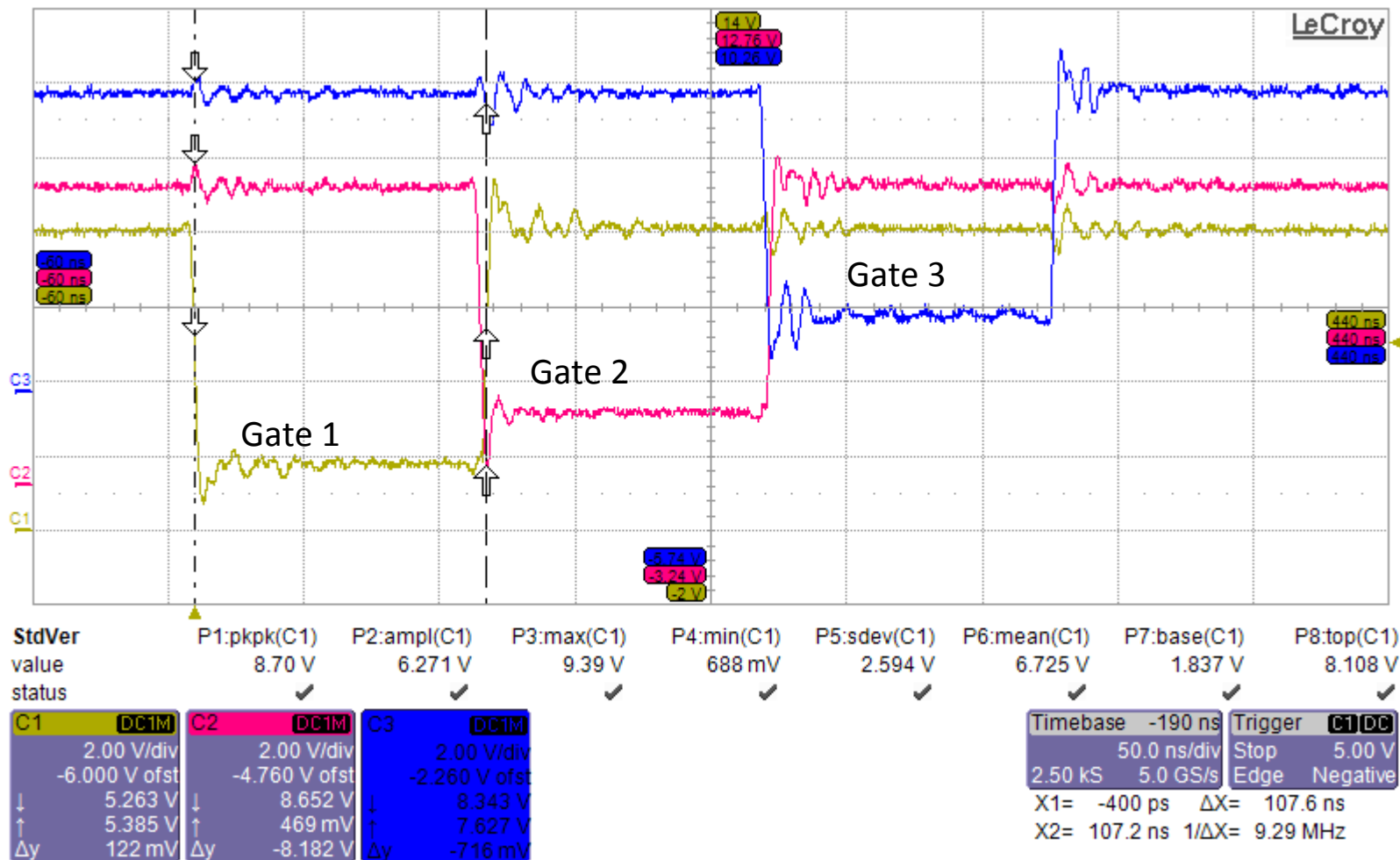


# ● Gate and Clear Signal – SWB #6







# ● Three consecutive Gates – SWB #6



GateOn Time 108ns (DHP clock 76.2MHz)

→ No missing gate rows seen

# ● EMCMs – Open Topics

Open Topics	What is needed	Comment
Stable operation of the 4 high speed links (DHP to DHH)	4 x DHP0.2 - 1 x DHH(microTCA)	P4-1 can be used for the debugging 
Operation of all 1000 DCD channels at <b>320MHz</b>	4 x DHPT1.0 and 4 x DCDBv4/DCDPipeline	- with single ended CMOS bit-clock on EMCM-2 modules - with differential LVDS bitclock on EMCM-3
<b>Stable Switcher outputs on a fully assembled EMCM</b>	1 x DHP02 and 6 x SWB without gated mode	Ongoing on W9-2 PXD6 assembly not possible 
PXD6 operation on the EMCM	1 x DHP02, 1 x DCDBv2, 1 SWB without gated mode	
Gated Mode	4 x DHPT1.0 and 4 x DCDBv4/DCDPipeline 6 x SWB18v2 (with gated mode) PXD6 and/or additional load caps for the clear	2 fully assembled modules needed! Only 12 SWB18v2 gated mode available!

Thank you!