



sPHENIX INTT

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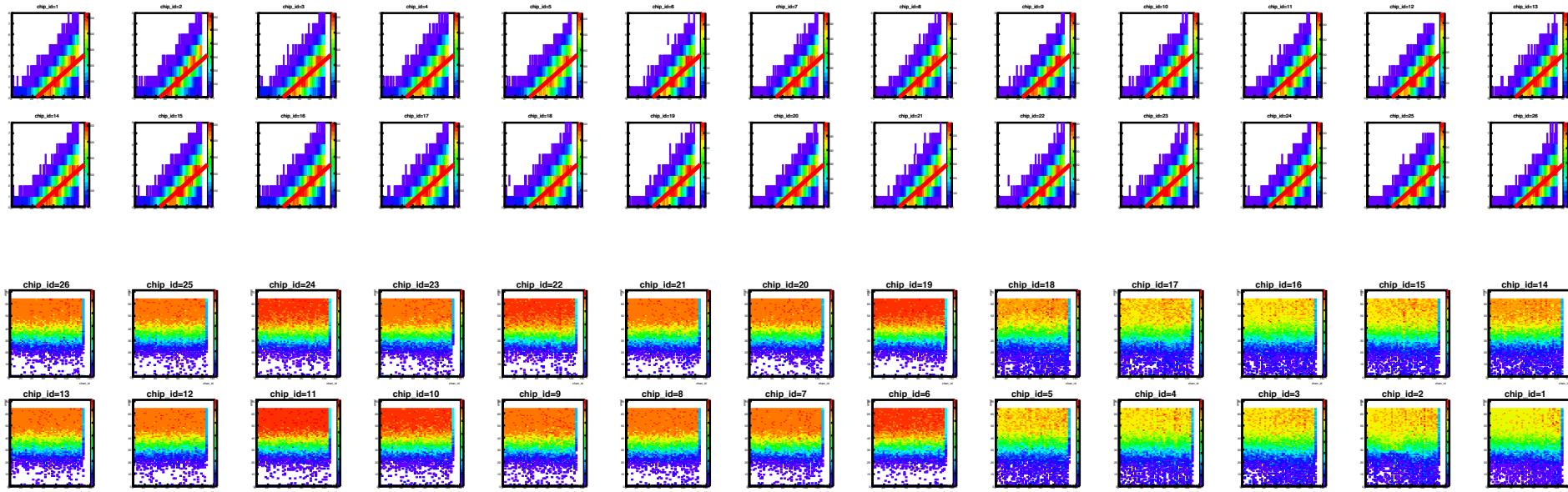


First real module in Taiwan



2020/06/04

First real module assembled by TW-sPHENIX : pre-production 001



20 channels are covered by glue

17 channels can not be bonded

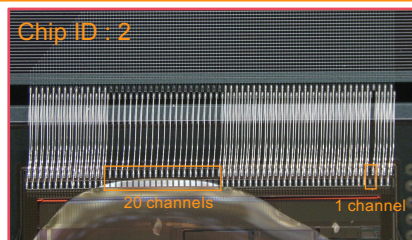
Total : 37 error pads

Bonding performance : 98.9%

Can not see the obvious difference under original code



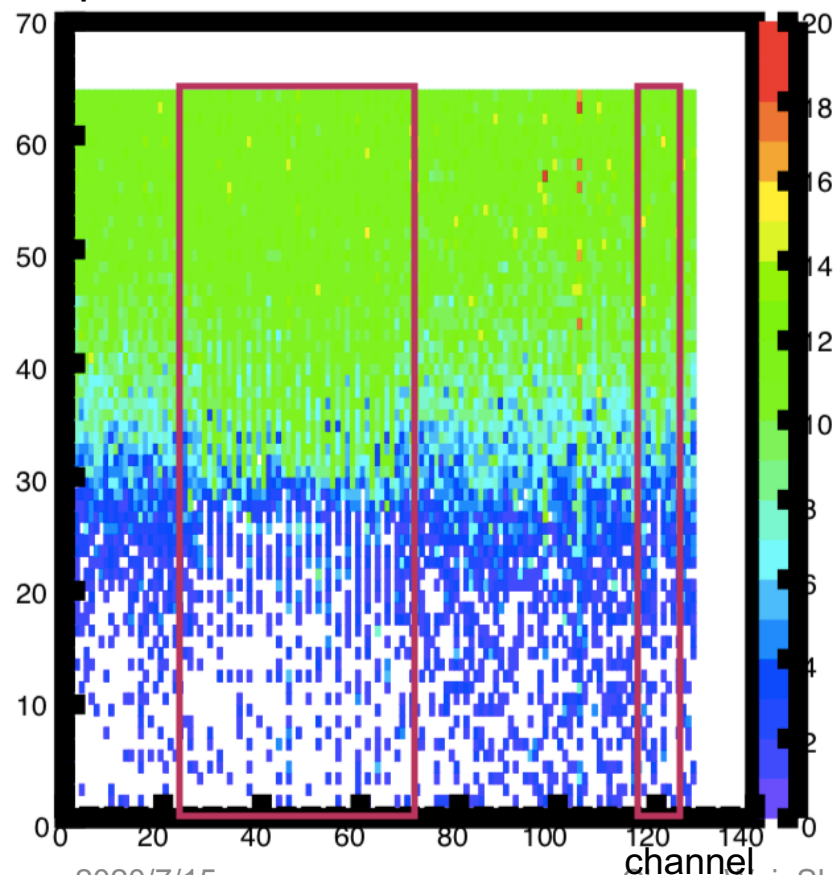
Assembly performance check : pre-production 001



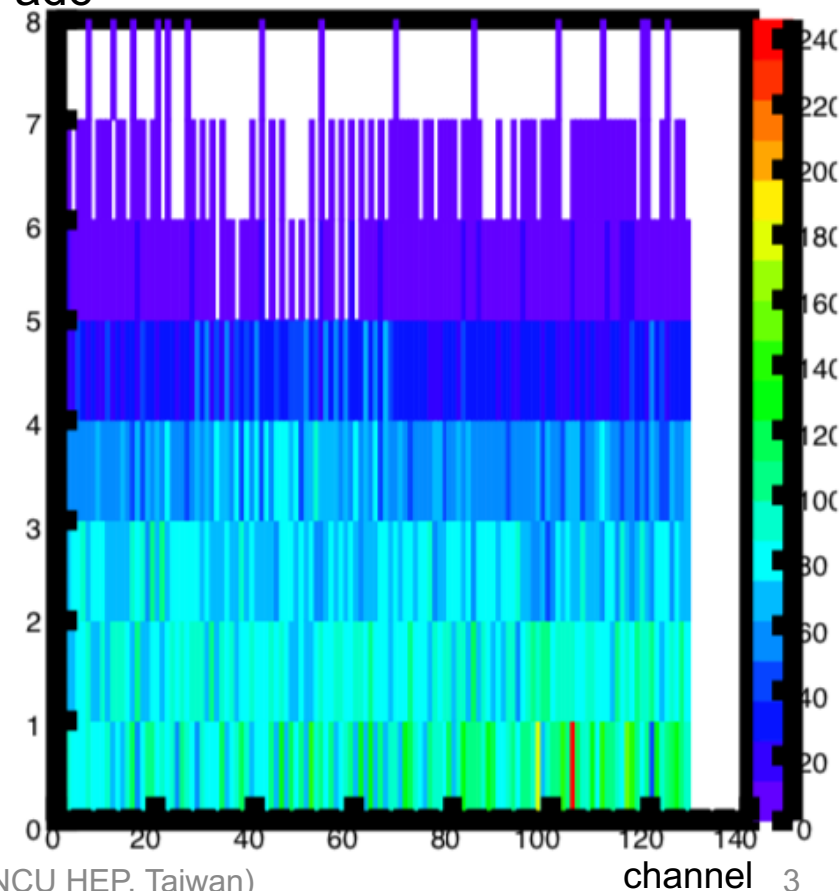
Channel to ampl
chip_id=2

Channel to adc
chip_id=2

ampl



adc



2020/7/15

Cheng Wei, Shih (NCU HEP, Taiwan)



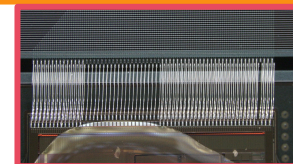
Assembly performance check : pre-production 001



Without bias voltage

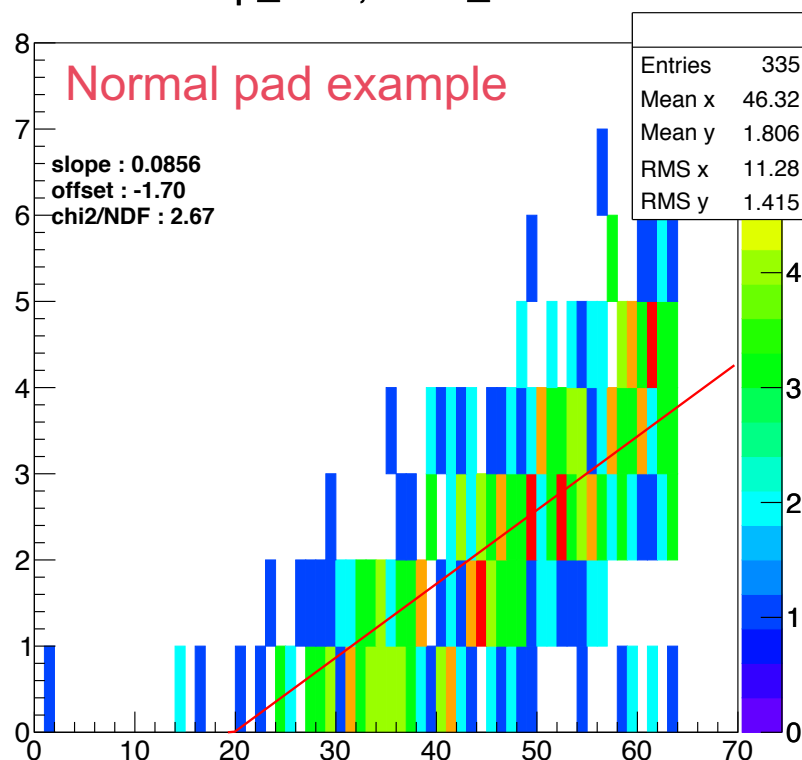
$$Y = \text{slope} * x + \text{offset}$$

Chip 2

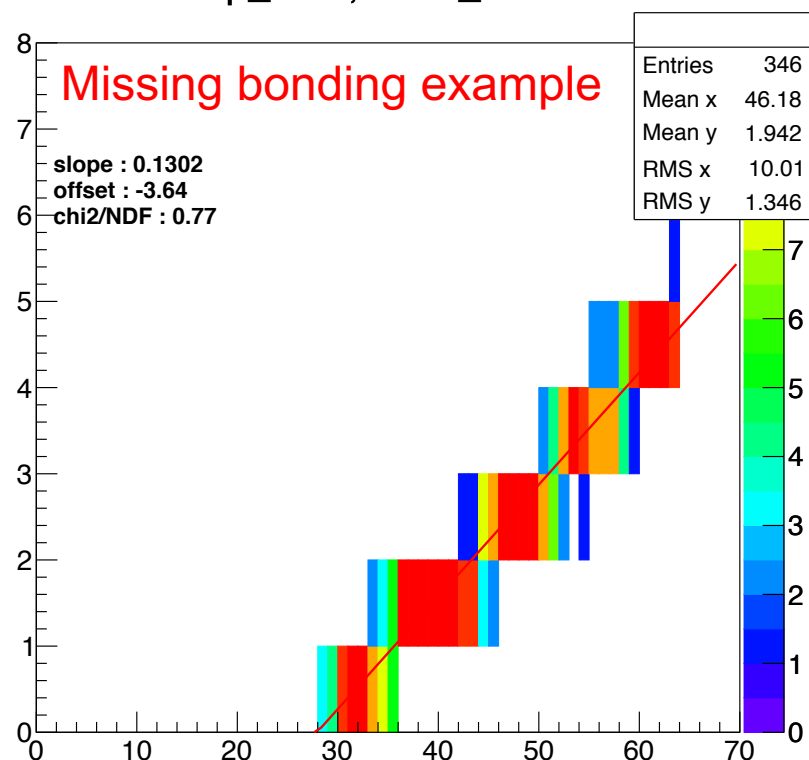


Ampl - ADC check, channel to channel

chip_id=2, chan_id = 0



chip_id=2, chan_id = 28



Error pad check : self - comparison



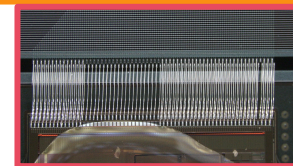
Assembly performance check : pre-production 001



With bias voltage (+50V)

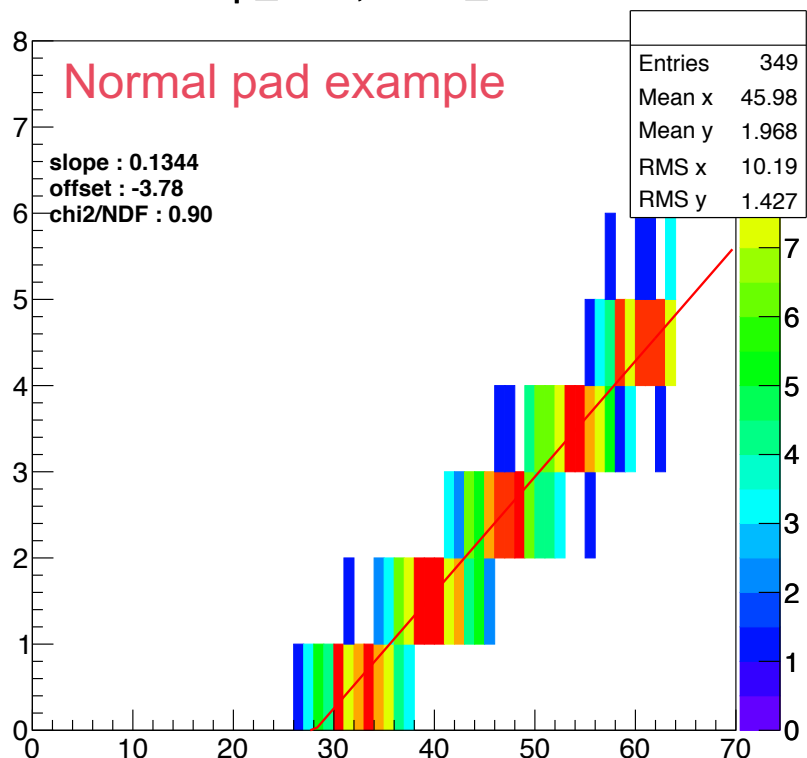
$$Y = \text{slope} * x + \text{offset}$$

Chip 2

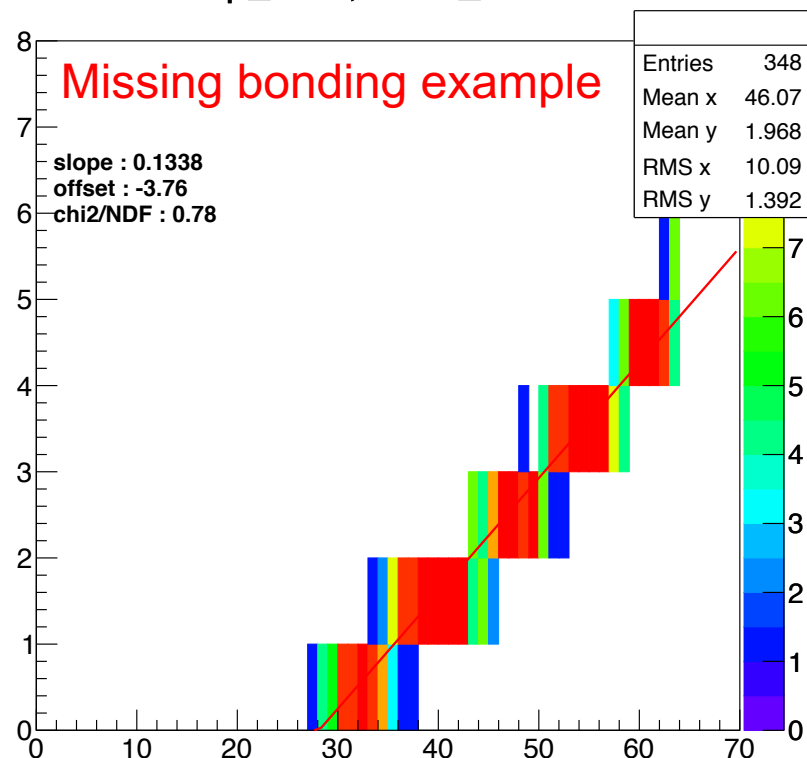


Ampl - ADC check, channel to channel

chip_id=2, chan_id = 0



chip_id=2, chan_id = 28



Error pad check : slope subtraction

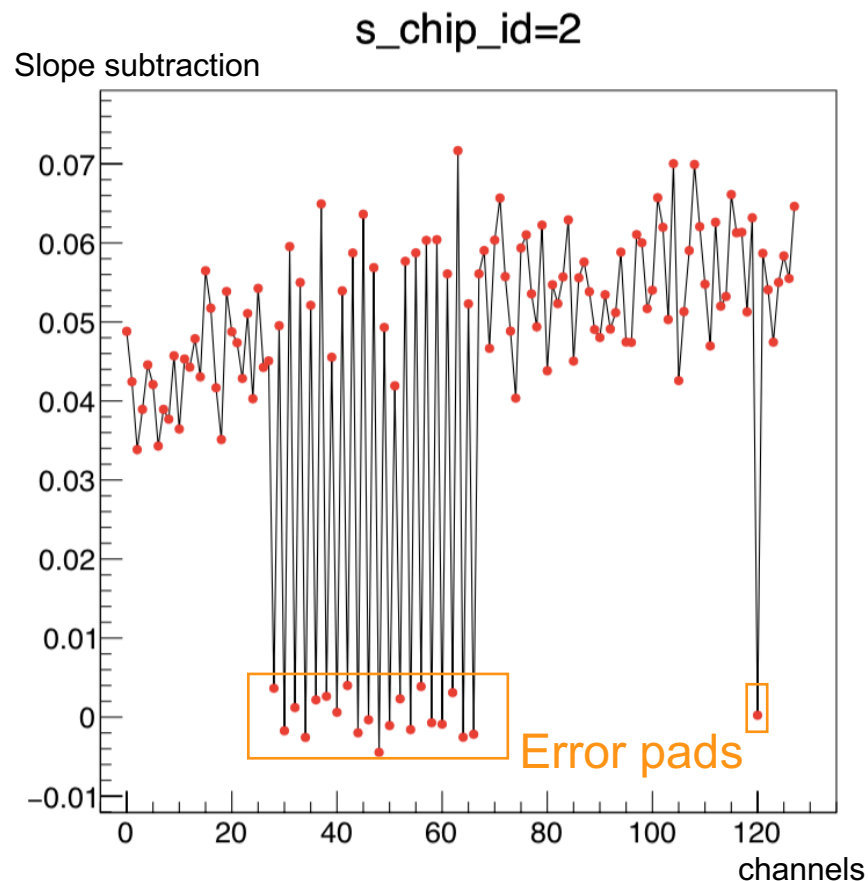
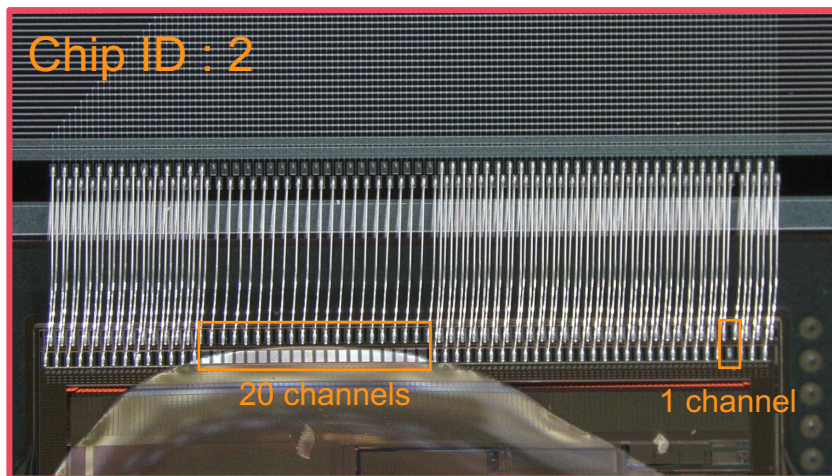


Assembly performance check : pre-production 001



U2 : 21 error pads

	error pad		error pad
U1		U14	79
U2	68,95~114	U15	
U3		U16	22,111
U4		U17	3,99,102
U5		U18	
U6		U19	
U7		U20	
U8		U21	
U9	76,96,115	U22	40,115,116,118
U10		U23	42,109
U11		U24	76
U12		U25	
U13		U26	

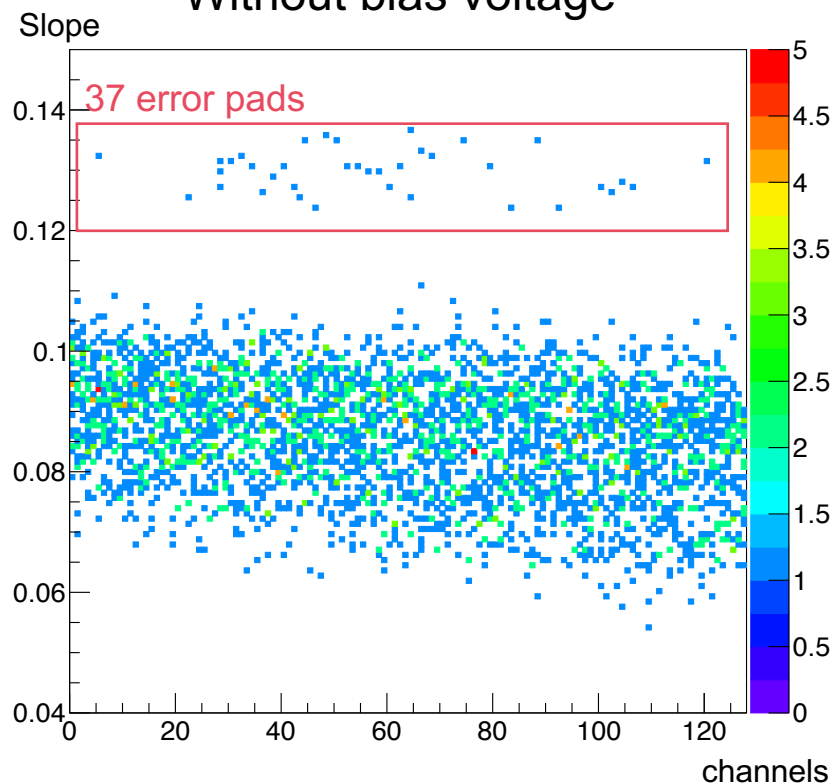




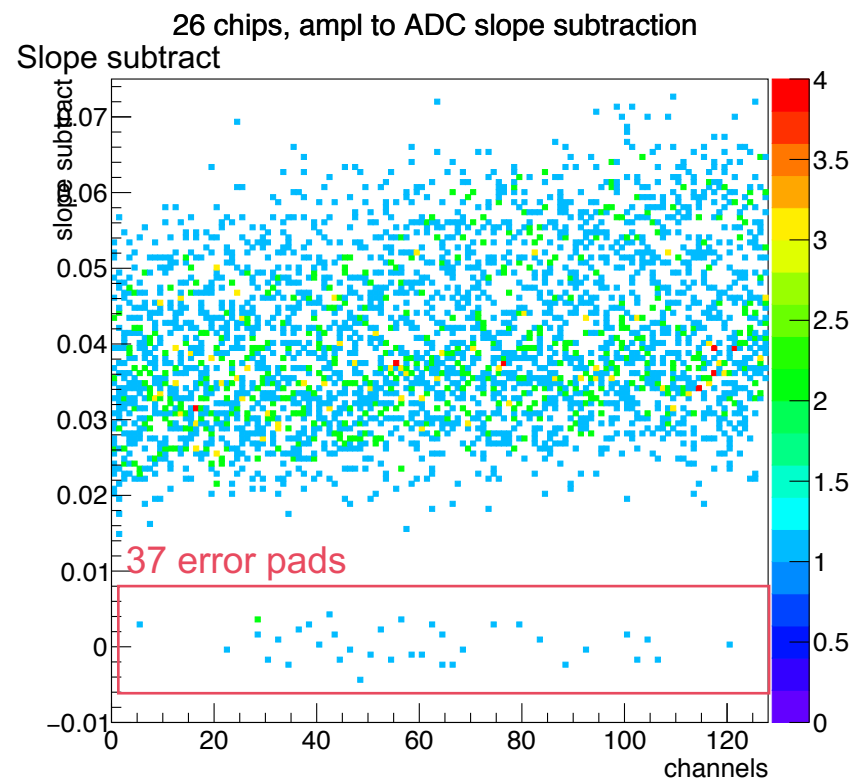
Assembly performance check : pre-production 001



Self-comparison,
Without bias voltage



w/ and w/o bias voltage comparison

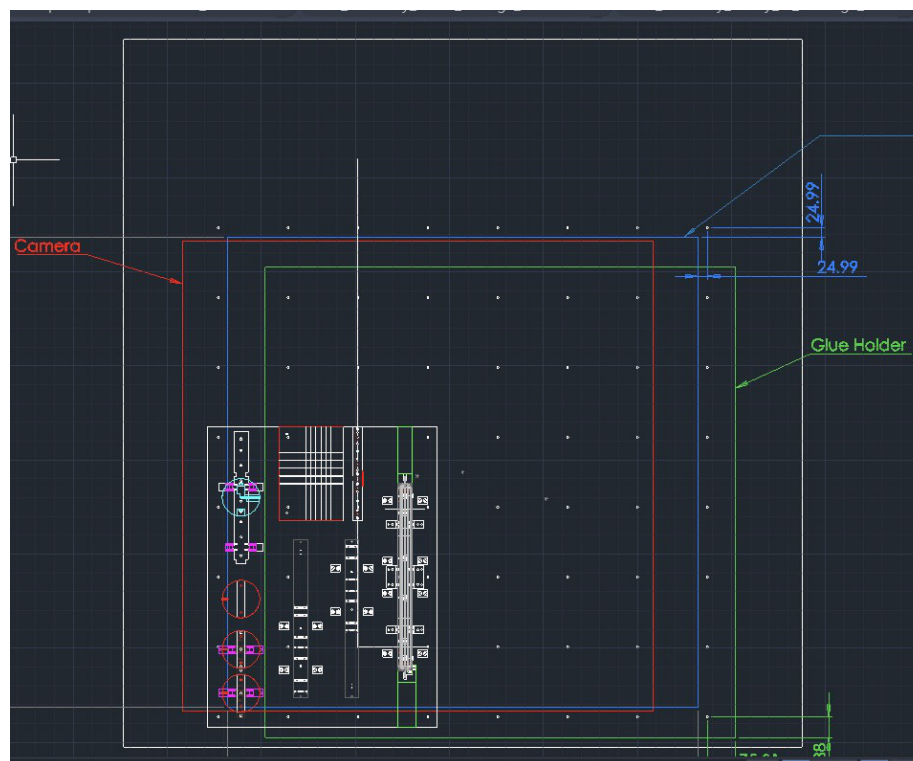




To do list



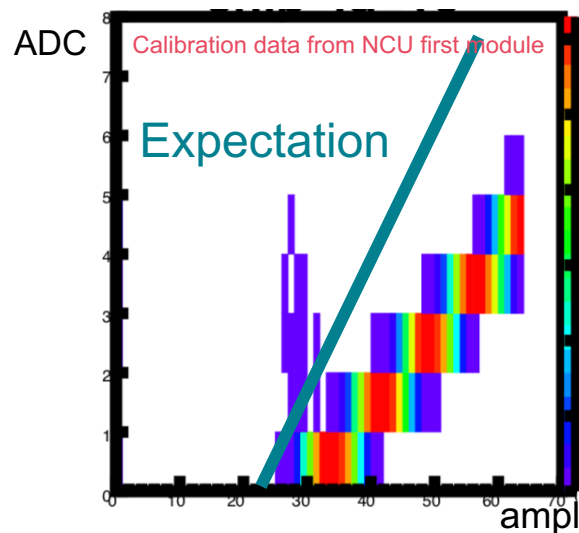
- ~~Modify the assembly tools -> massive production~~
- R&D the encapsulated glue apply.
- Module assembly test
- Cosmic ray test
- Pedestal test
- Source test



Back up



Testbench problems



The threshold setting on GUI in NCU TestBench

DAC0	20	Read	Write	Set	Reset	Default
DAC1	25	Read	Write	Set	Reset	Default
DAC2	30	Read	Write	Set	Reset	Default
DAC3	35	Read	Write	Set	Reset	Default
DAC4	40	Read	Write	Set	Reset	Default
DAC5	45	Read	Write	Set	Reset	Default
DAC6	50	Read	Write	Set	Reset	Default
DAC7	55	Read	Write	Set	Reset	Default

Energy deposit

