LAMPS monthly meeting

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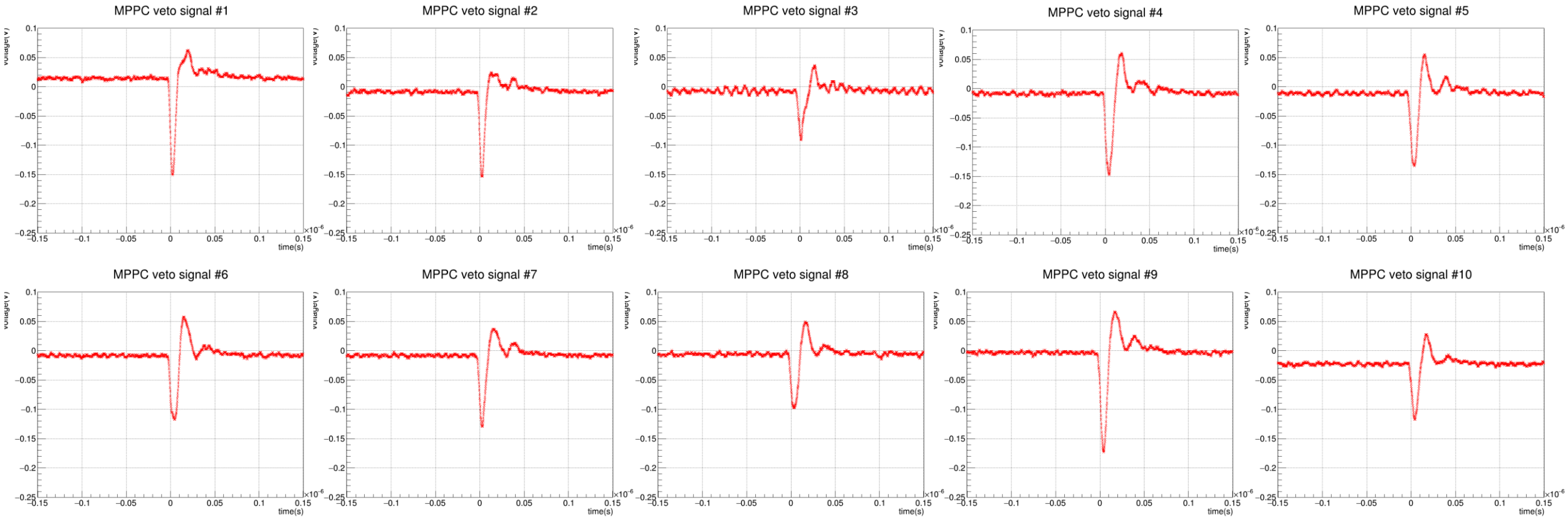
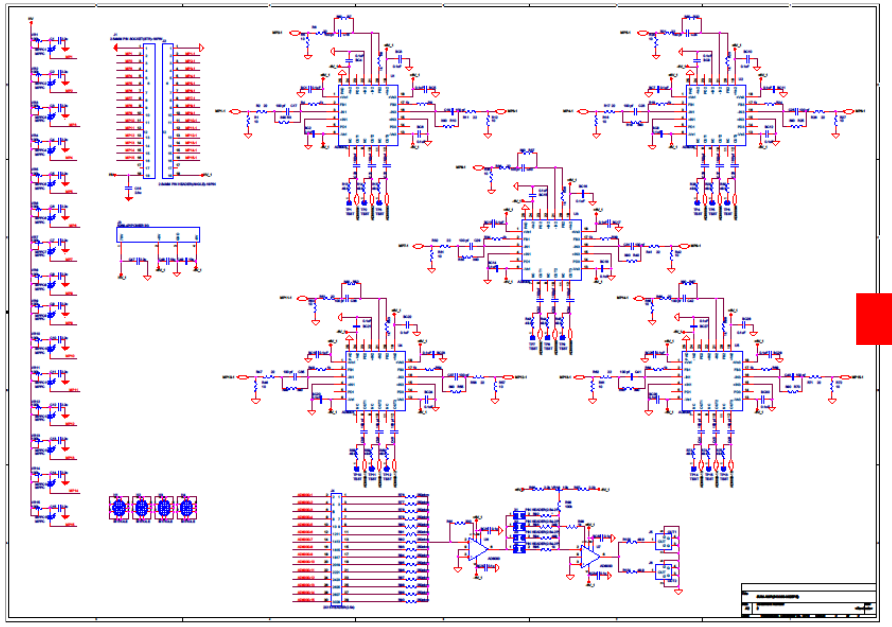
MPPC test



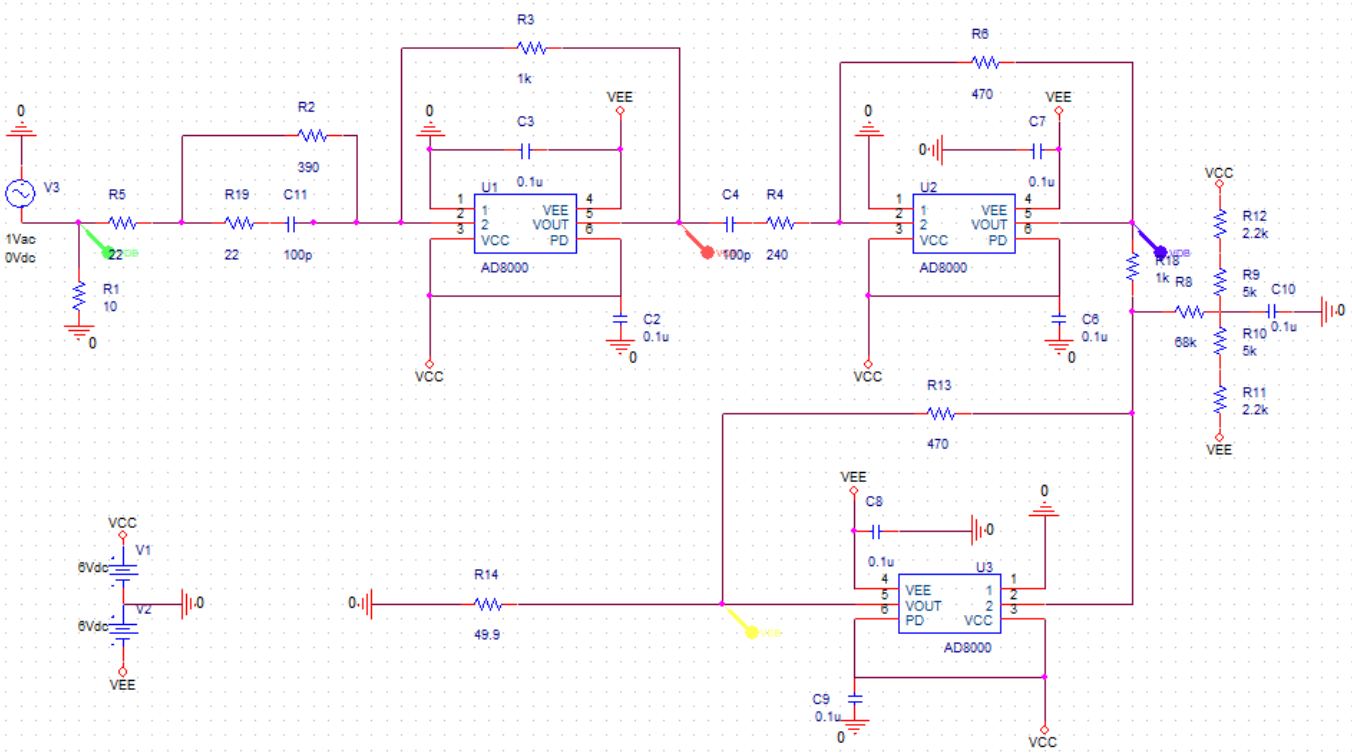
To check the overshooting proceeds only on a specific board, check all 10 produced boards.
As a result, I knew that overshooting occurred on all boards.

Pspice Simulation

Circuit ordered



Circuit made by using Pspice



Pspice Simulation

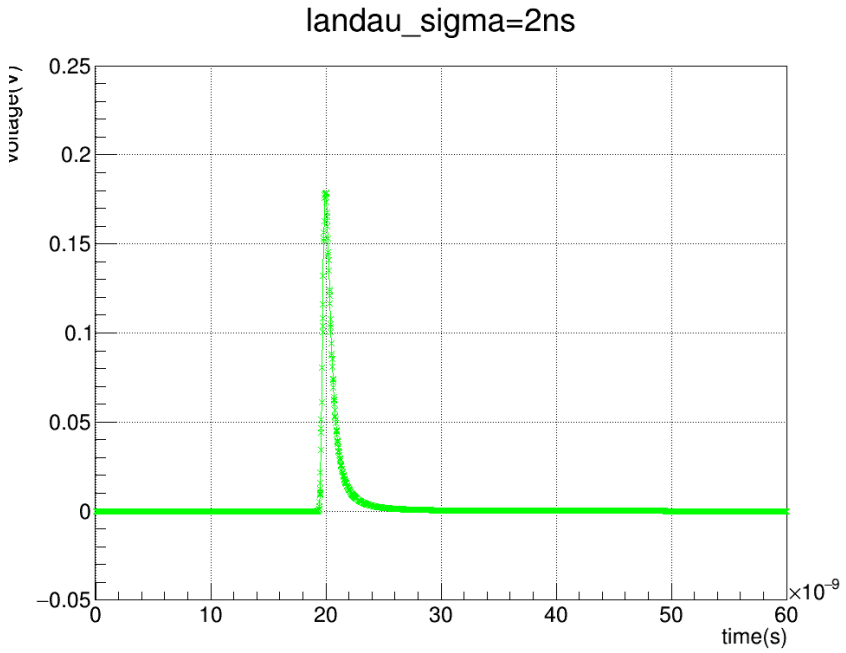
1. Make a specific pulse and input the circuit.

2. Check how the pulse changes as it passes through the circuit.

3. Checking how much the pulse of wavelength with a certain frequency is amplified through each amp.

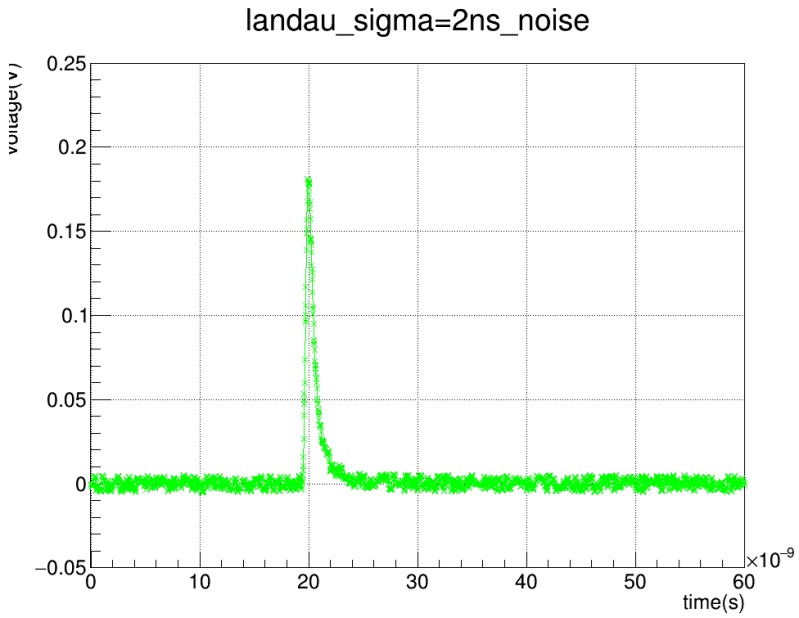
4. Fourier transform and other calculation.

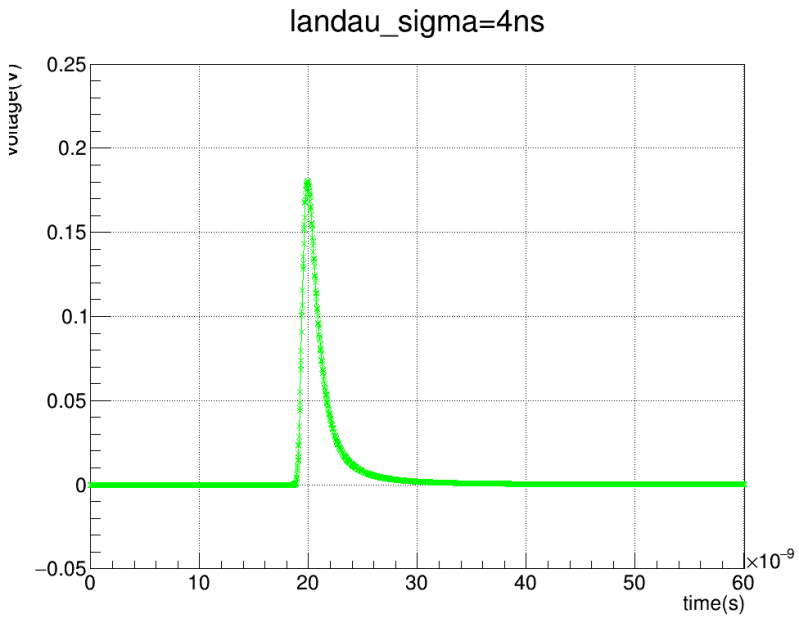
Pspice Simulation



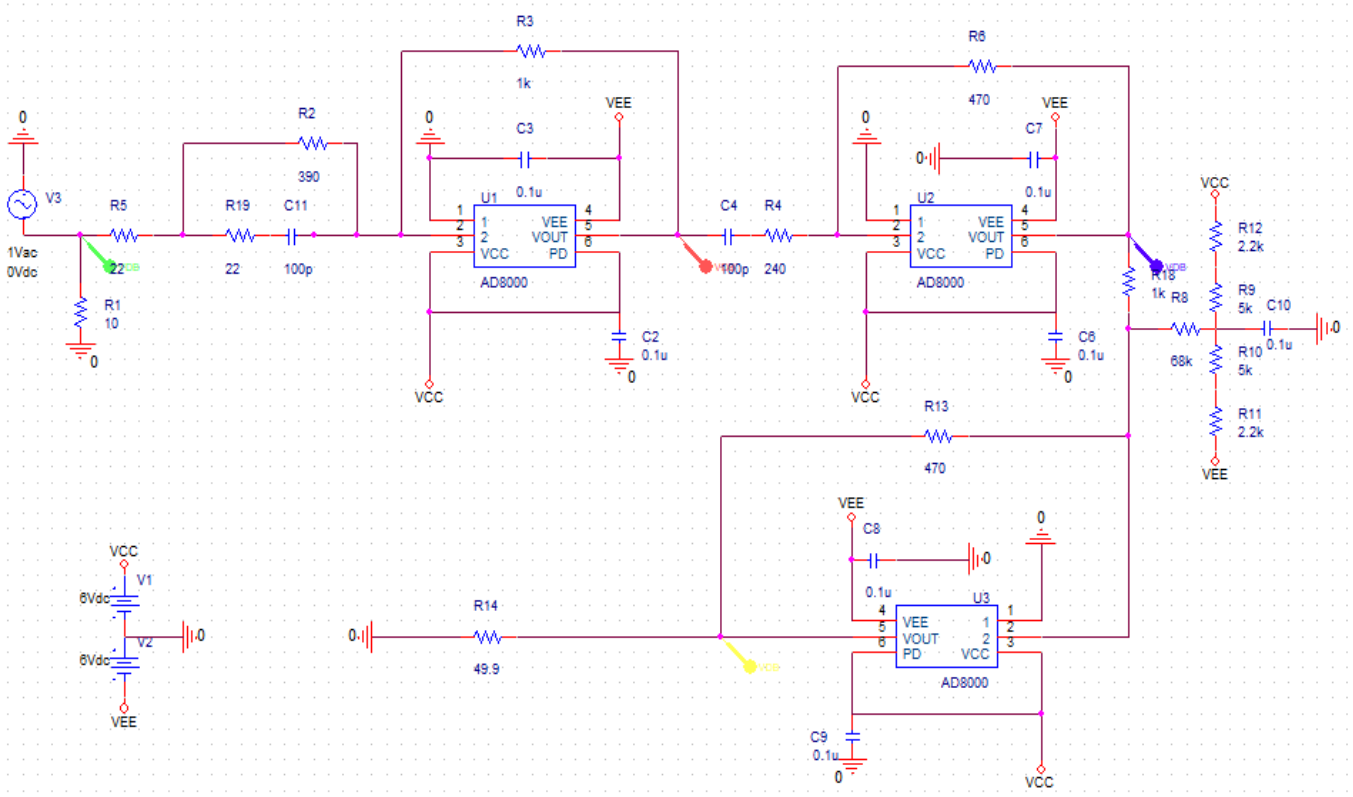
noise

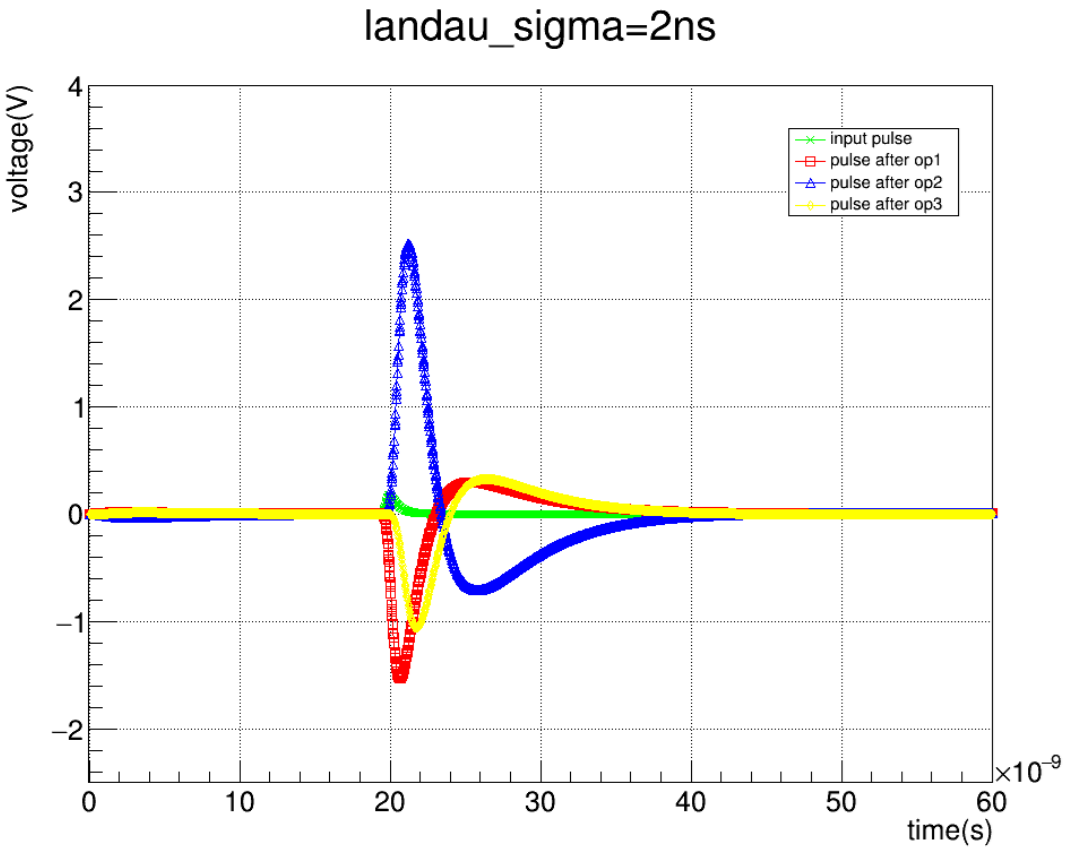
σ : 2ns $\rightarrow$ 4ns



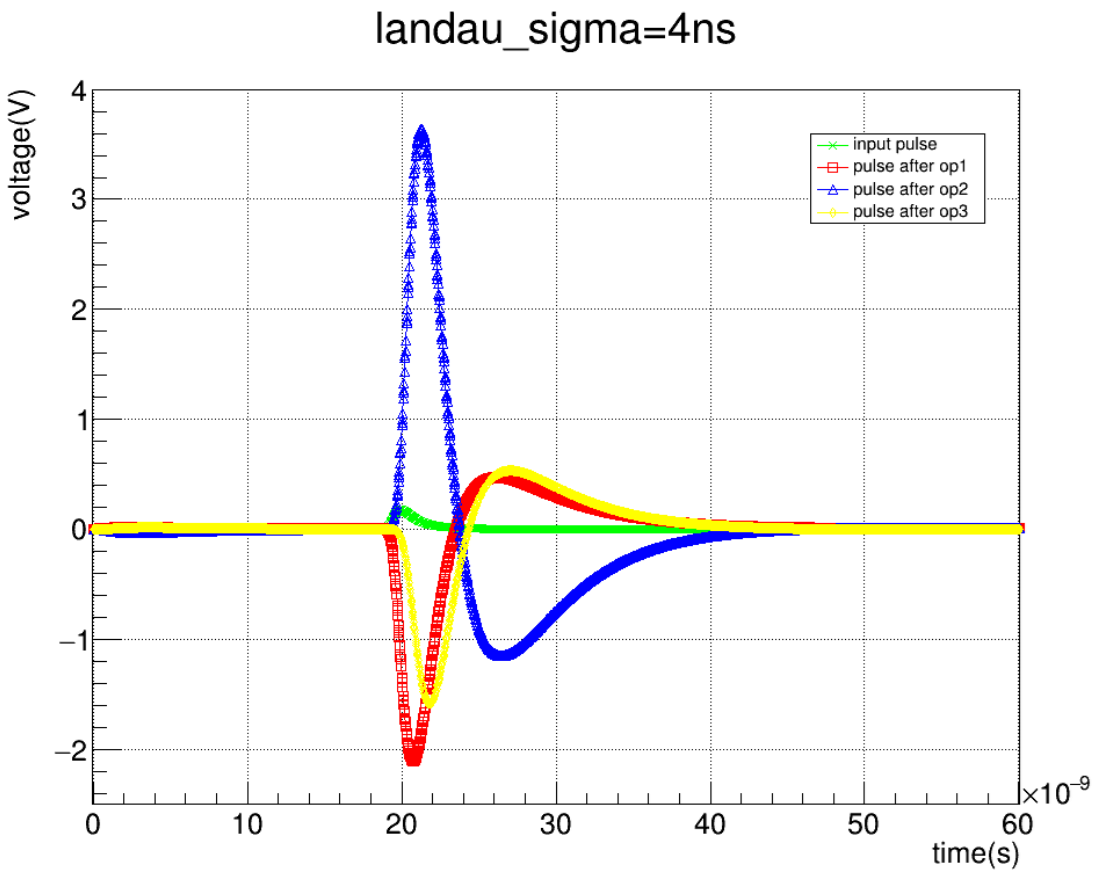


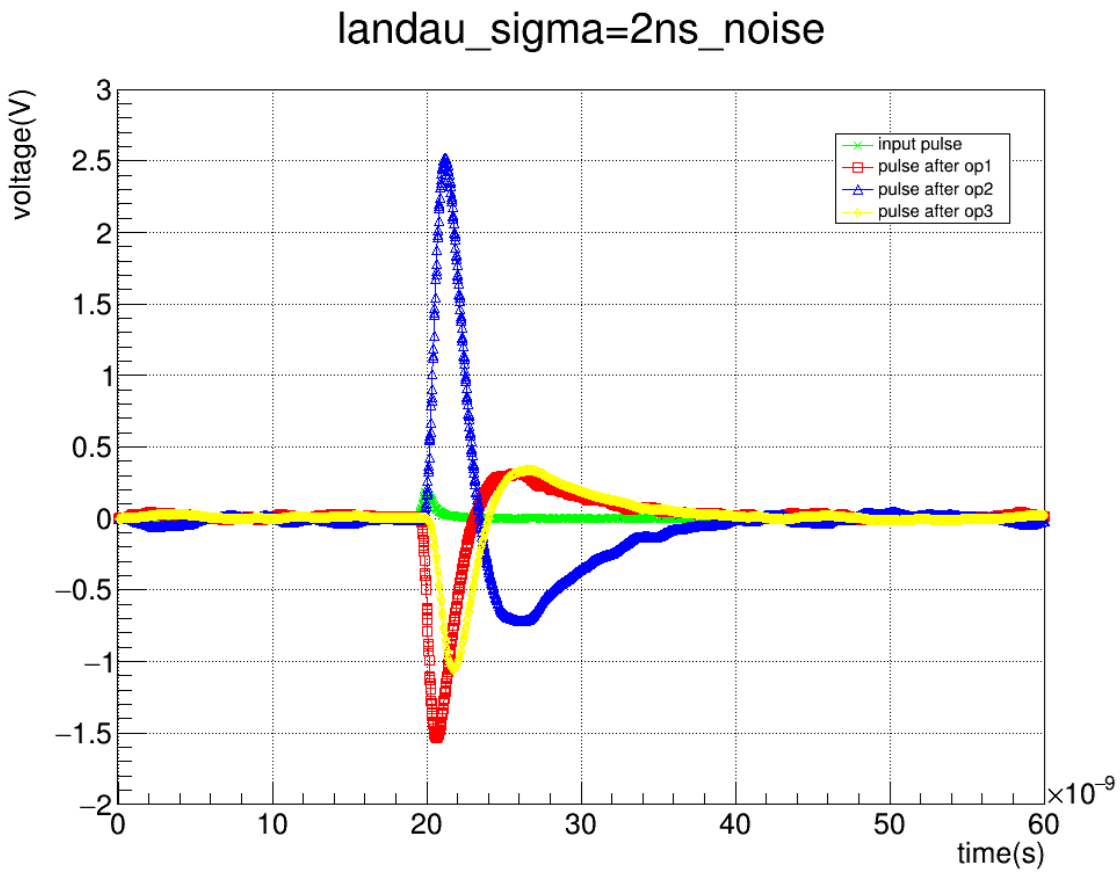
Pspice Simulation



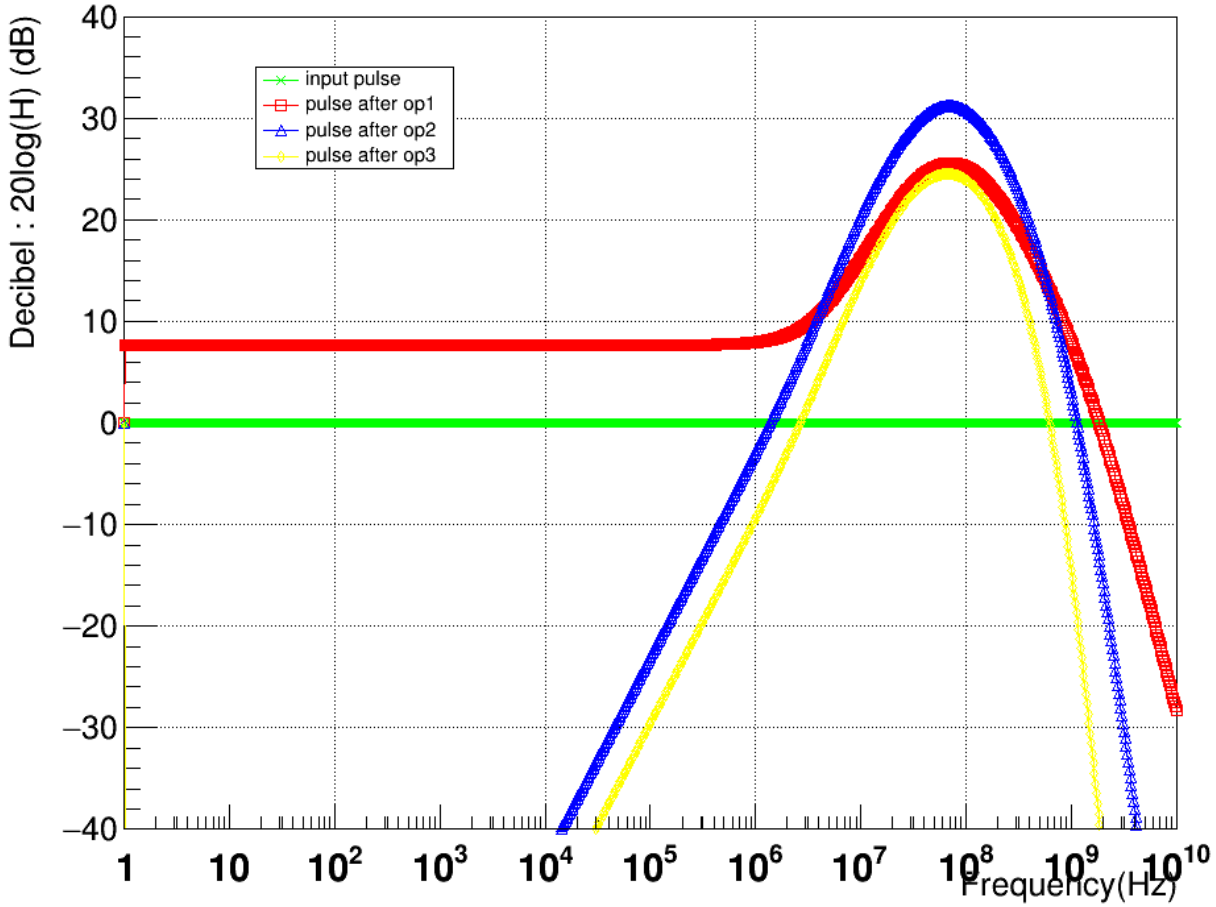


Pspice Simulation





Pspice Simulation



$H = \frac{v_{out}}{v_{in}}$: Transfer function

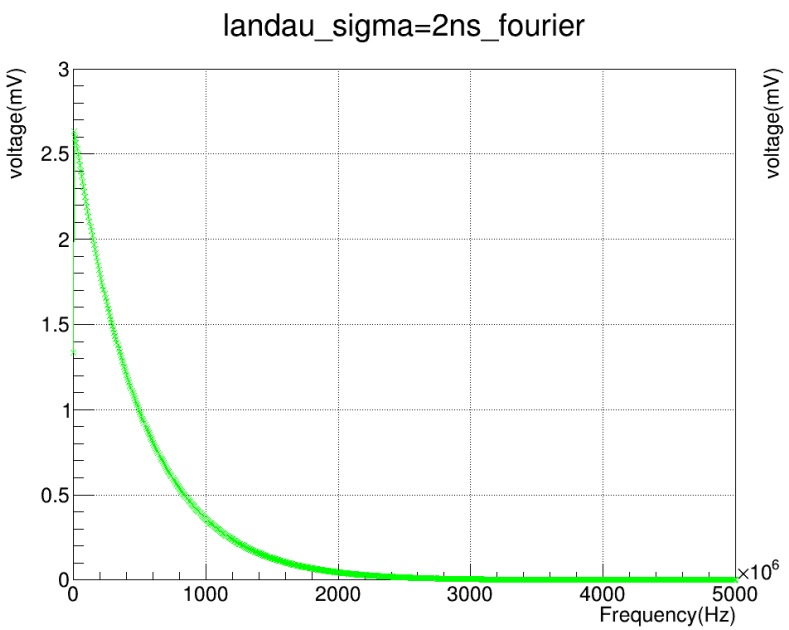
$-20\text{dB} = 10\%$ output

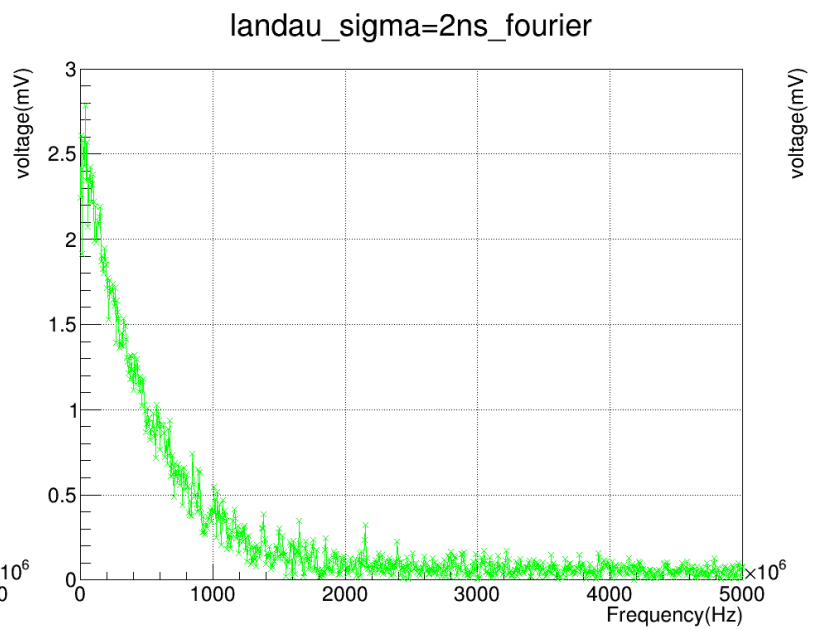
$-6\text{dB} \sim 50\%$ output

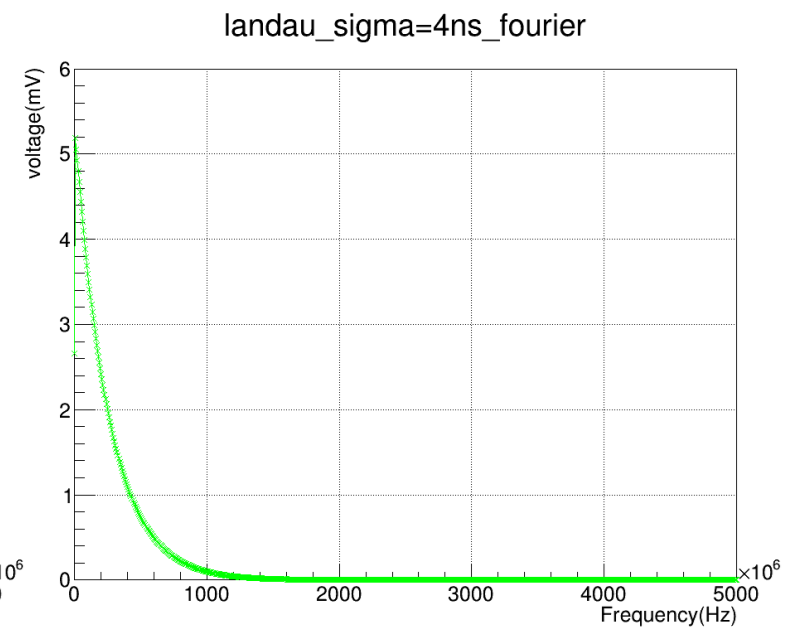
$\rightarrow$ $2.5\text{MHz} \sim 600\text{MHz}$ 영역에서 0dB 이상

Pspice Simulation

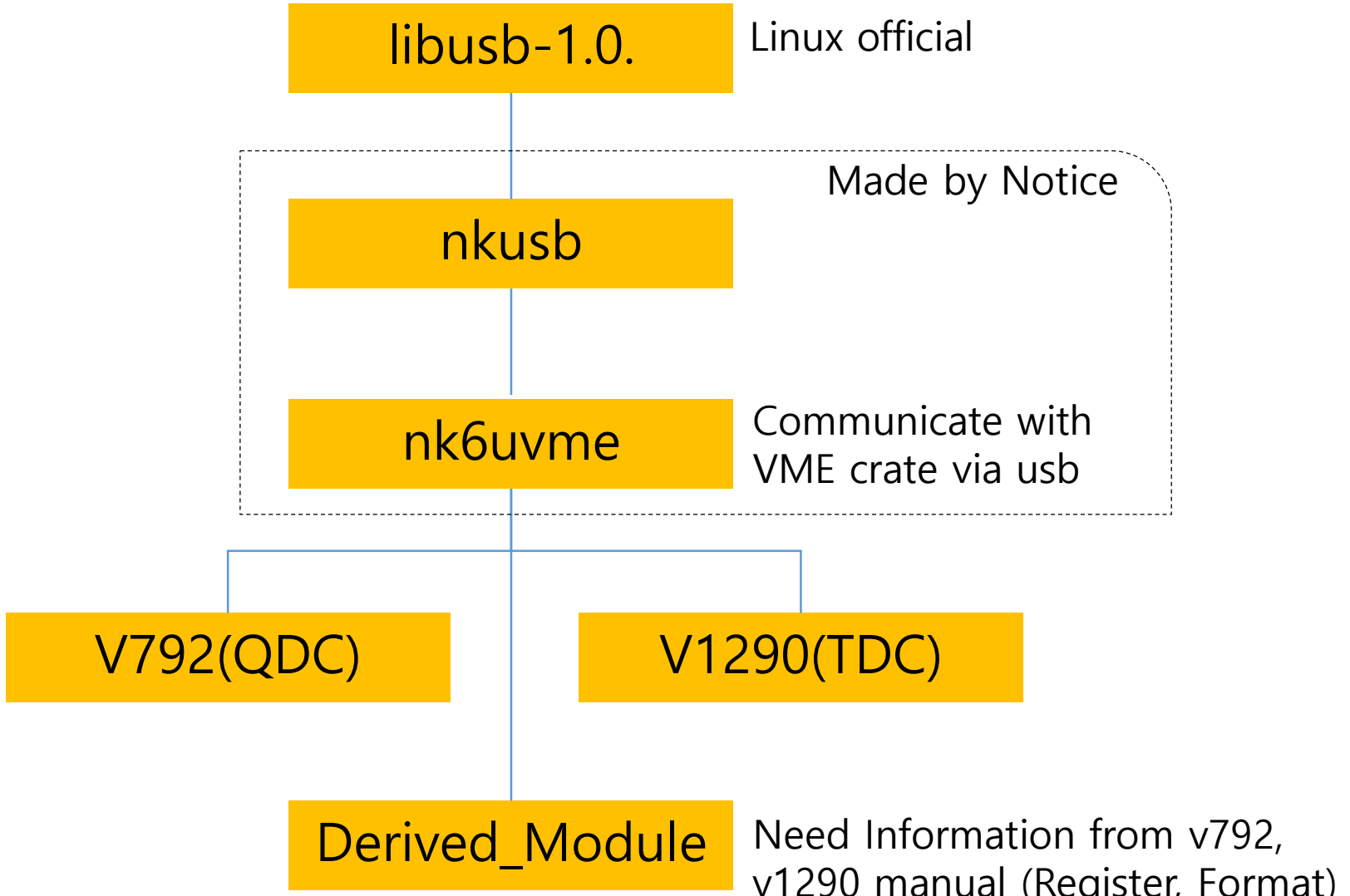
Fourier transformation and check the distribution of each pulse's frequency



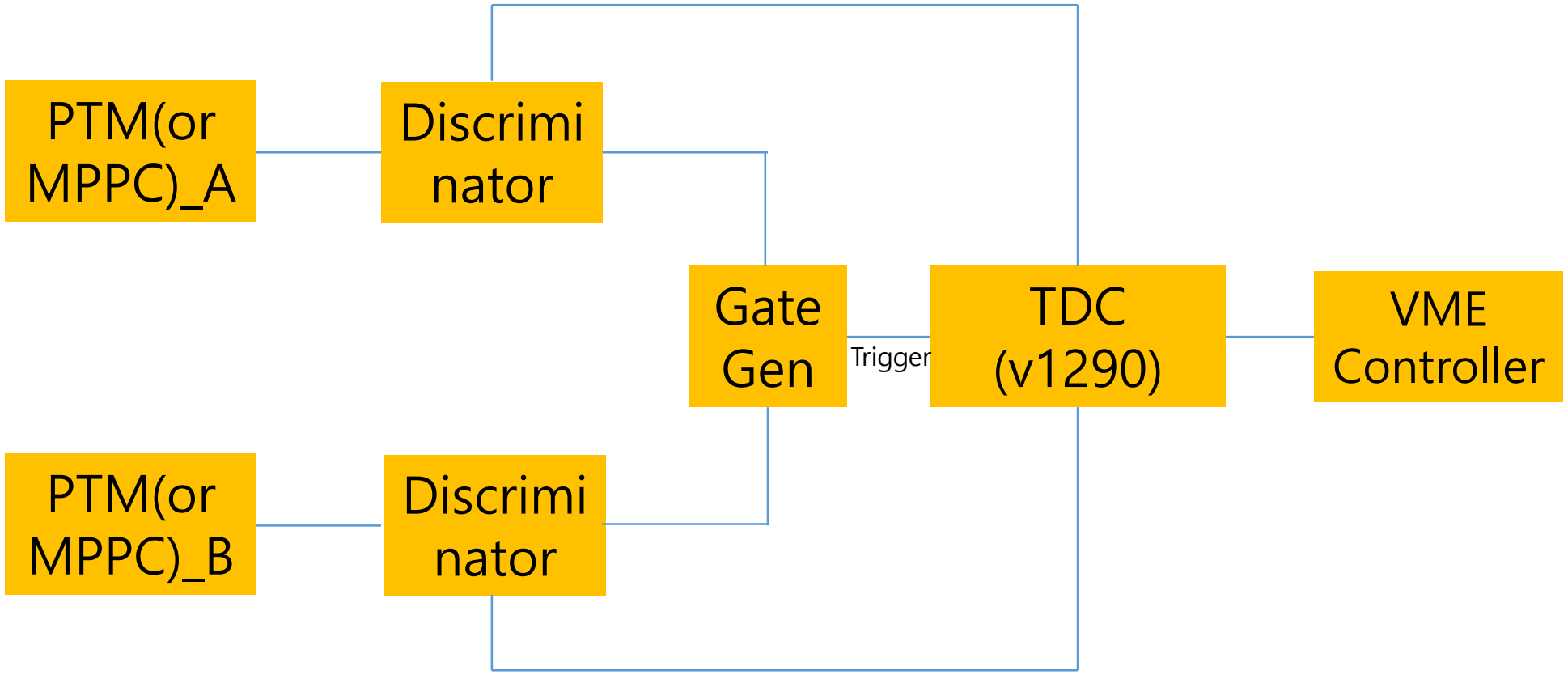




DAQ


libusb-1.0.
Linux official
Made by Notice
nkusb
nk6uvme
Communicate with
VME crate via usb
V792(QDC)
V1290(TDC)
Derived_Module
Need Information from v792,
v1290 manual (Register, Format)

DAQ


PTM(or MPPC)_A
Discrimi nator
Gate Gen
Trigger
TDC (v1290)
VME Controller
PTM(or MPPC)_B
Discrimi nator

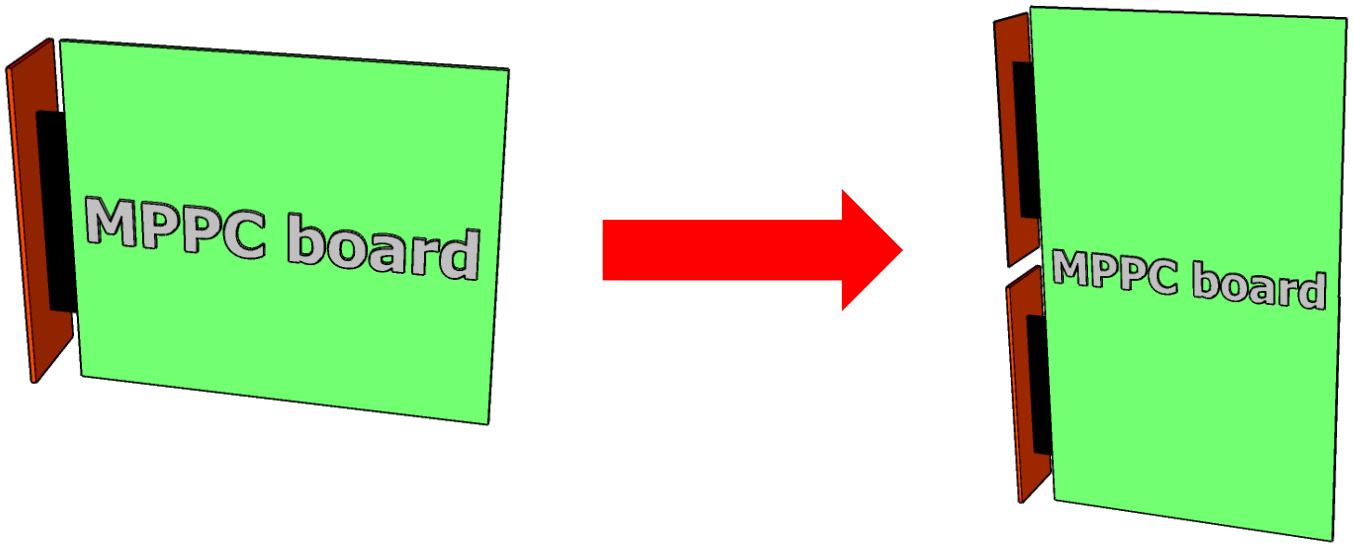
Plan

1. Complete making DAQ code.

2. Check a tendency of output pulse according to circuit change by using Pspice.

3. Develop a circuit with less overshooting

4. Make a main board that can combine 30 MPPC signals and receive them at once



Current version.

Upgrade version.

Plan

1. Complete making DAQ code.

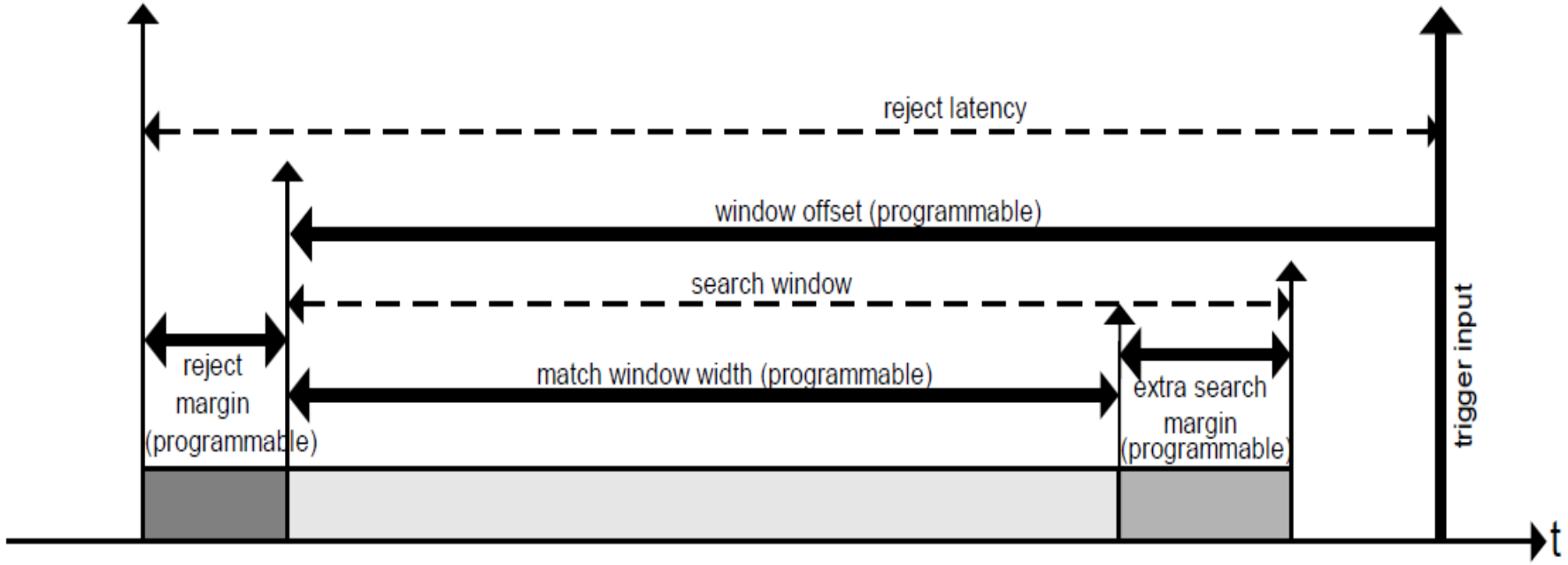
2. Check a tendency of output pulse according to circuit change by using Pspice.

3. Develop a circuit with less overshooting

4. Make a main board that can combine 30 MPPC signals and receive them at once

PLAN	5/ 3^{rd}week	4^{th}week	5^{th}week	6^{th}week	6/ 1^{st}week	2^{nd}week	3^{rd}week	4^{th}week	5^{th}week
DAQ code	←	→							
Board R&D	←	→	→						
Making board				←	→	→			
Board test							←	→	→

Back up


reject latency
window offset (programmable)
search window
reject
margin
(programmable)
match window width (programmable)
extra search
margin
(programmable)
trigger input
t