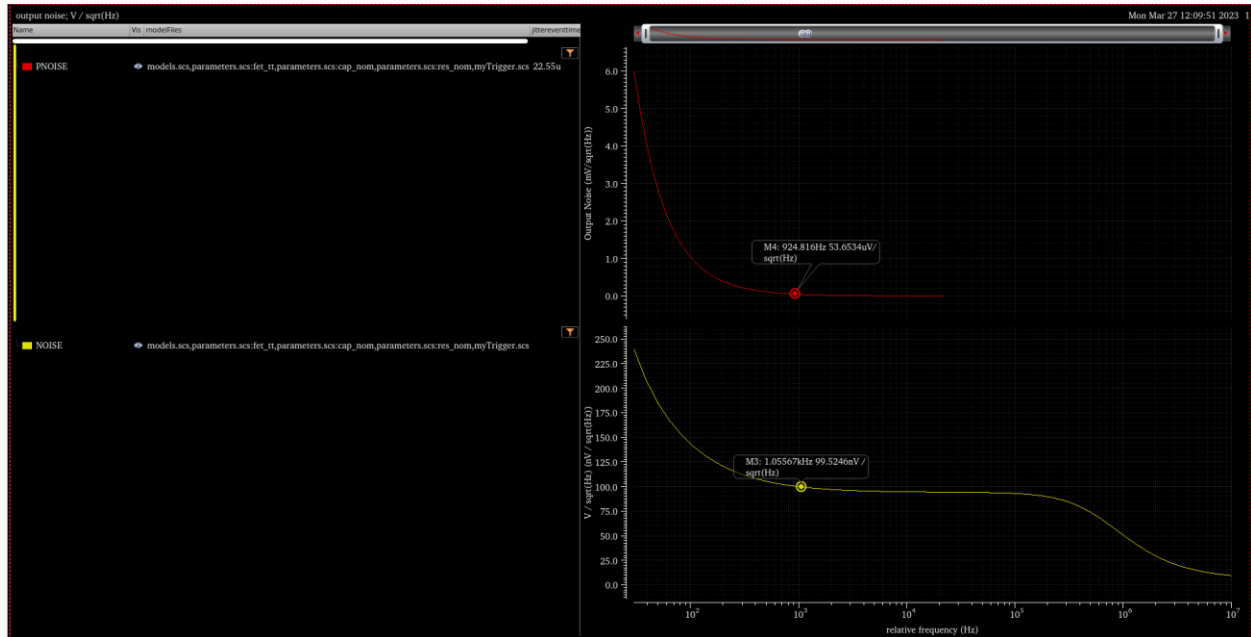


PNOISE (red) vs NOISE (yellow). 53.6uV/rt(Hz) compared to 100nV/rt(Hz) at 1KHz.



PSS Setup:

Periodic Steady State Analysis

Engine: Shooting Harmonic Balance

#	Name	Expr	Value	Signal	SrcId

Clear/Add Delete Update From Hierarchy

Beat Frequency Beat Period $R(*period_calc*)$ Auto Calculate

Output harmonics: Number of harmonics

Accuracy Defaults (errpreset): conservative moderate liberal

Transient-Aided Options: Run transient? Yes No Decide automatically

Detect Steady State: Stop Time (tstab)

Save Initial Transient Results (saveinit): no yes

Dynamic Parameter

Oscillator Oscillator node+ /out Oscillator node- /agnd

Calculate initial conditions (ic) automatically Enable tuning mode analysis

Sweep:

New Initial Value For Each Point (restart): no yes

Loadpull:

Enabled

PNOISE SETUP:

Periodic Noise Analysis

PSS Beat Period (sec)

Multiple noise

Sweeptype

Output Frequency Sweep Range (Hz)

Start-Stop Start Stop

Stop At Half Fundamental Frequency yes

Sweep Type

Add Specific Points

Add Points By File

Sidebands

Method default fullspectrum

Maximum sideband

Calculates noise contributions up to the frequency determined by PSS time point resolution

Noise Type Sample Ratio

#	Event	Trig	TrigVal	Targ	TargVal	TD
1	cross	out-agnd	5.000e-01	out-agnd		

Enabled

Timing Event Edge Crossing Edge Delay Sampled Phase

Edge Crossing : PM jitter measurement at the measurement node

Trigger

Positive Output Node

Negative Output Node

Edge Number Threshold Value Edge Direction Sleep Time

Measurement

Positive Output Node

PSS Parameters:

Important parameter values in tstab integration:

```
start = 0 s
outputstart = 0 s
stop = 1.25566 ms
period = 22.8302 us
maxperiods = 50
step = 1.16434 us
maxstep = 913.207 ns
ic = all
useprevic = no
skipdc = no
reitol = 1e-06
abstol(V) = 1 nV
abstol(I) = 1e-21 A
temp = -193 C
tnom = 27 C
tempeffects = all
method = gear2only
lteratio = 3.5
relref = sigglobal
cmin = 0 F
gmin = 1e-24 S
rabsshort = 1 mOhm
```

Important parameter values in pss iteration:

```
start = 456.611 us
outputstart = 0 s
stop = 479.441 us
period = 22.8302 us
maxperiods = 50
steadyratio = 100e-03
step = 1.16434 us
maxstep = 57.0754 ns
ic = all
useprevic = no
skipdc = no
reitol = 1e-06
abstol(V) = 1 nV
abstol(I) = 1e-21 A
temp = -193 C
tnom = 27 C
tempeffects = all
errpreset = conservative
method = gear2only
lteratio = 3.5
relref = alllocal
cmin = 0 F
gmin = 1e-24 S
rabsshort = 1 mOhm
```

The marker on the plot below is where the noise jitter trigger is set. The waveform is the PSS transient waveform.

