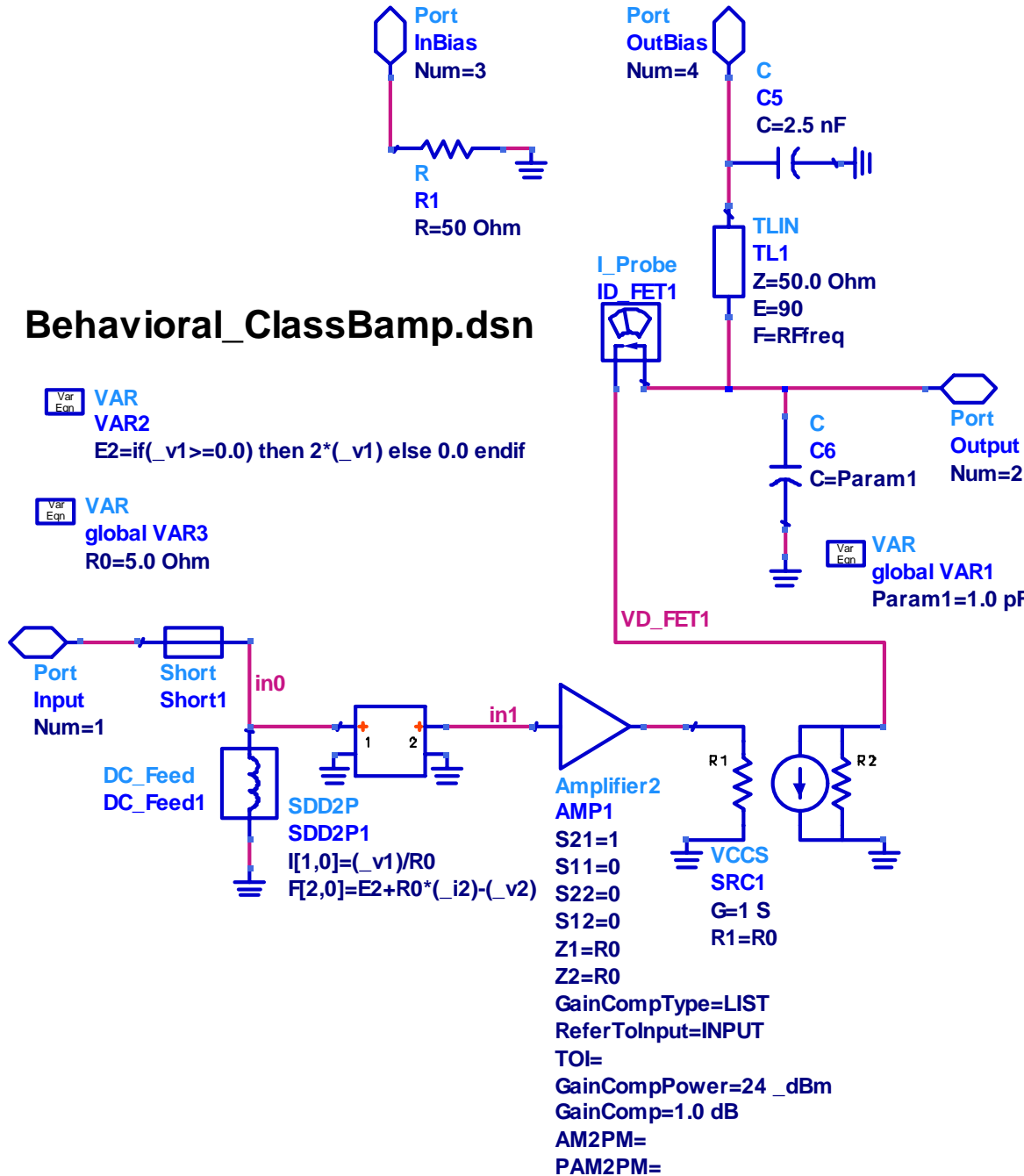


Behavioral_ClassBamp.dsn

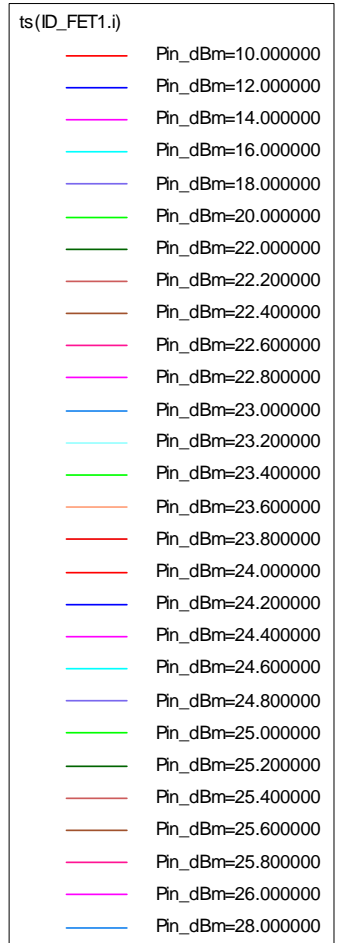
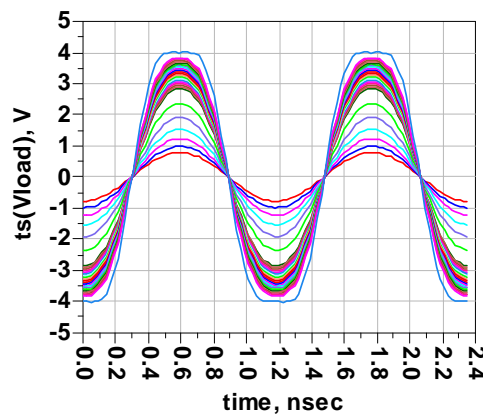
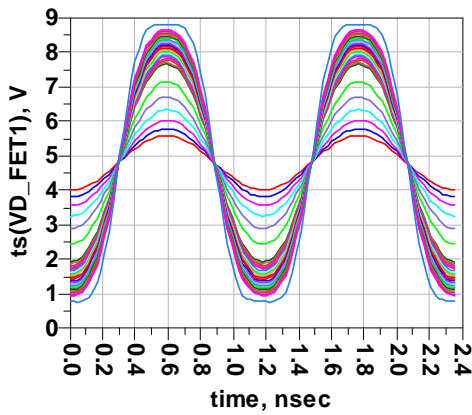
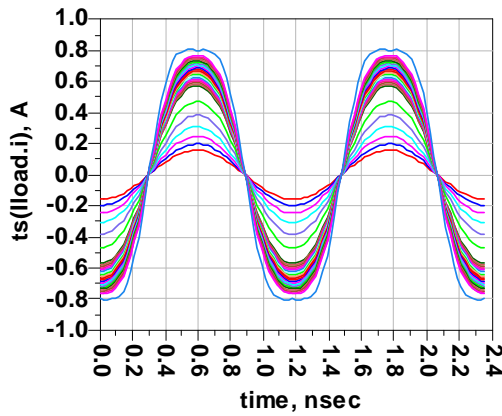
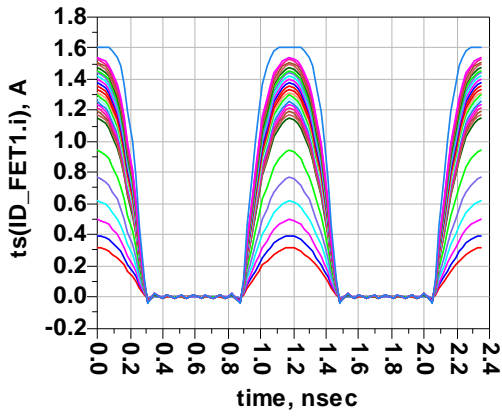
VAR
 Egn VAR2
 E2=if(_v1>=0.0) then 2*(_v1) else 0.0 endif

VAR
 Egn global VAR3
 R0=5.0 Ohm

VAR
 Egn global VAR1
 Param1=1.0 pF



Results for One Large Tone HB Analysis

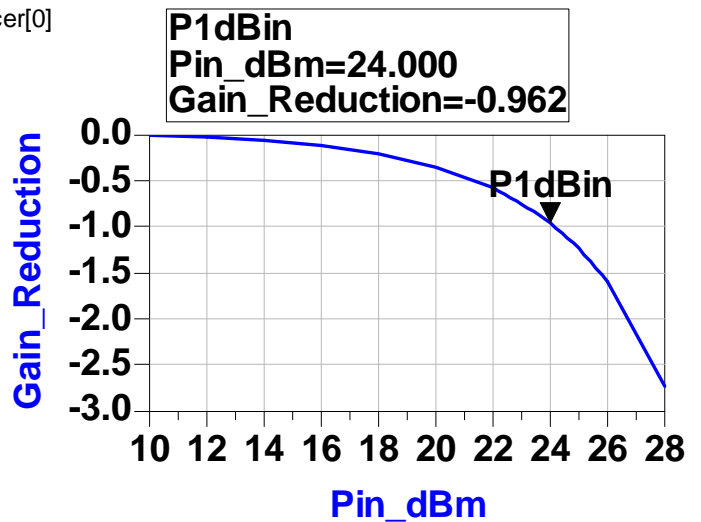
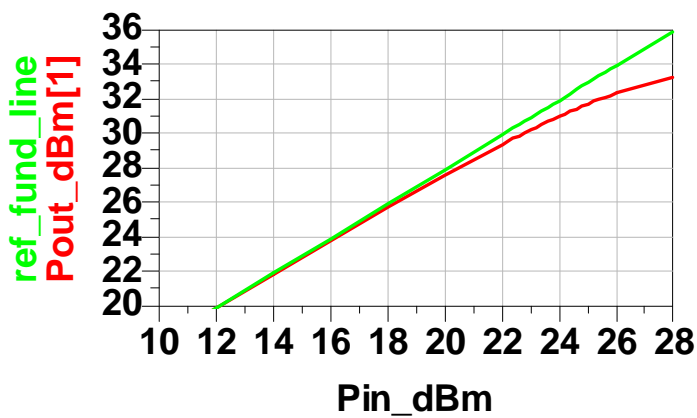


Eqn $P_{out_dBm} = 10 \cdot \log_{10}(0.5 \cdot \text{real}(V_{load} \cdot \text{conj}(I_{load.i})) + 1e-20) + 30$

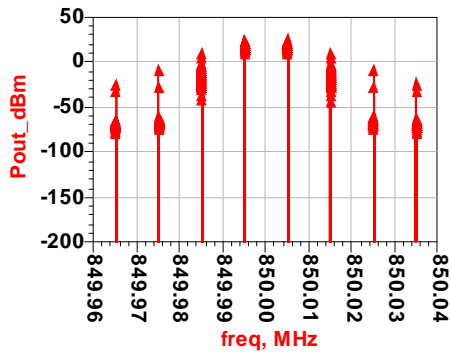
Eqn $P_gain_transducer = P_{out_dBm}[1] - Pin_dBm$

Eqn $Gain_Reduction = P_gain_transducer - P_gain_transducer[0]$

Eqn $ref_fund_line = 1 \cdot Pin_dBm + 7.9$

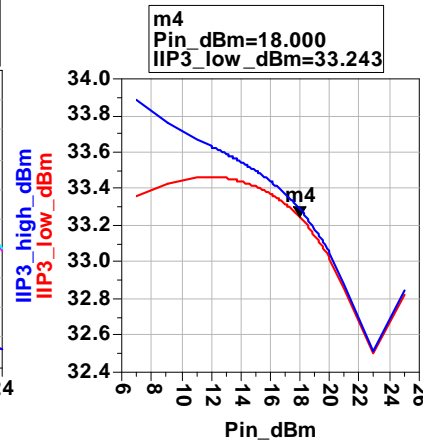
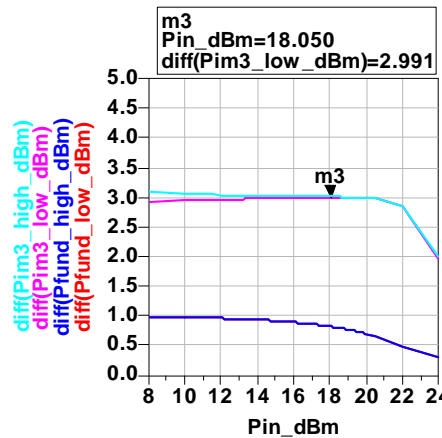
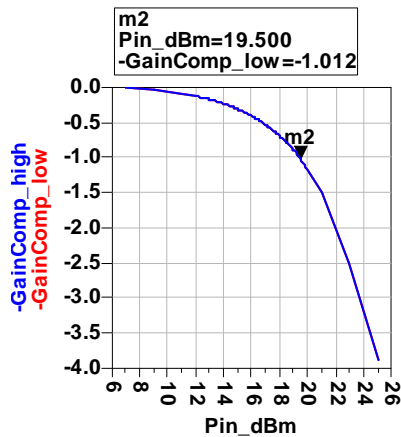
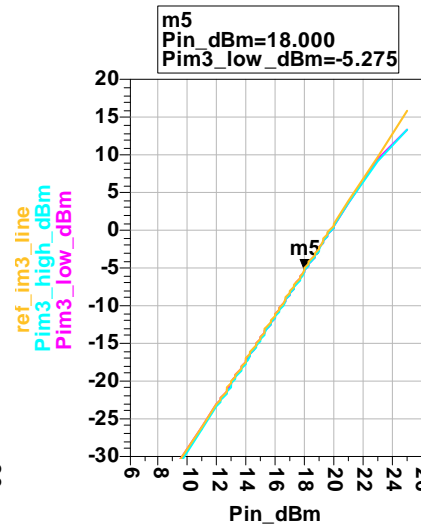
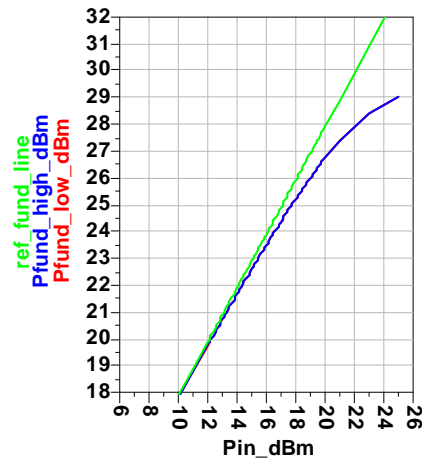
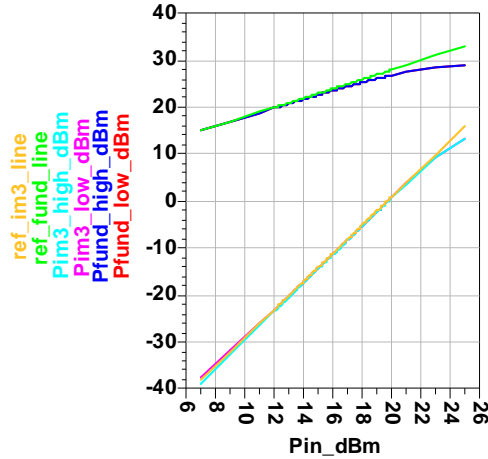


Results for Two Large Tone HB Analysis

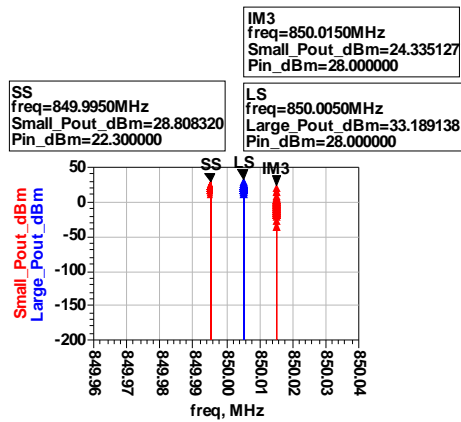


```

Eqn Pout_dBm=10*log10(0.5*real(Vload*conj(Iload.i))+1e-20)+30
Eqn Pfund_low_dBm=mix(Pout_dBm,{1,0},Mix)
Eqn Pfund_high_dBm=mix(Pout_dBm,{0,1},Mix)
Eqn Pim3_low_dBm=mix(Pout_dBm,{2,-1},Mix)
Eqn Pim3_high_dBm=mix(Pout_dBm,{-1,2},Mix)
Eqn IM3_low=Pfund_low_dBm-Pim3_low_dBm
Eqn IM3_high=Pfund_high_dBm-Pim3_high_dBm
Eqn IIP3_low_dBm=IM3_low/2+Pin_dBm
Eqn IIP3_high_dBm=IM3_high/2+Pin_dBm
Eqn ref_fund_line=1*Pin_dBm+7.9
Eqn ref_im3_line=3*Pin_dBm-59.1
Eqn Gain_low=Pfund_low_dBm-Pin_dBm
Eqn Gain_high=Pfund_high_dBm-Pin_dBm
Eqn GainComp_low=Gain_low[0]-Gain_low
Eqn GainComp_high=Gain_high[0]-Gain_high
    
```



Results for One Large Tone + One Small Signal HB Analysis

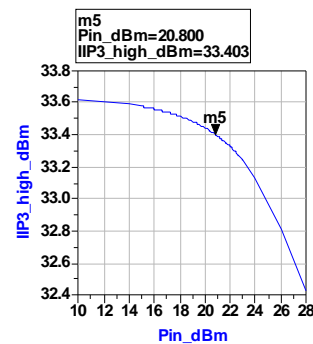
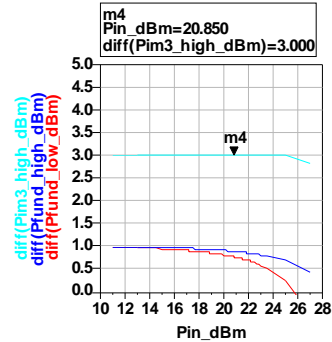
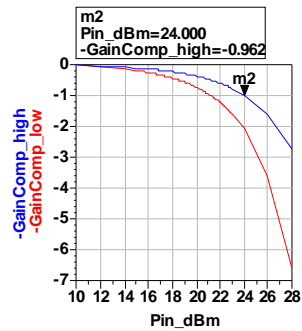
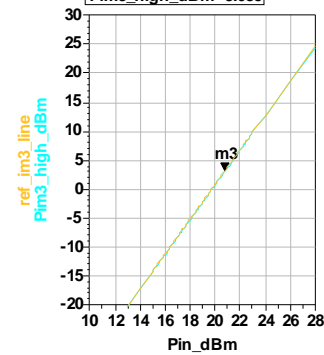
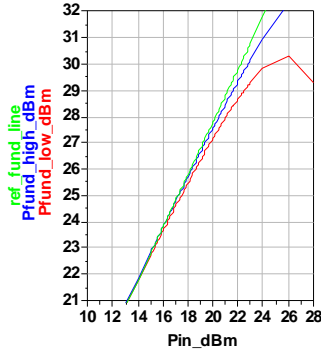
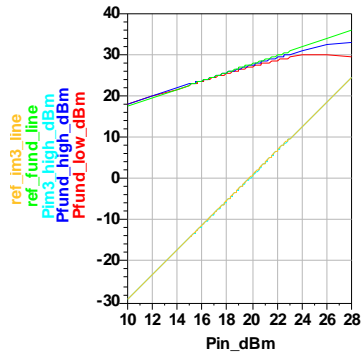


`mix(SM.freq[0:::],[1,-1],SM.Mix[0:::])`
849.9950 MHz

`mix(SM.freq[0:::],[1,1],SM.Mix[0:::])`
850.0150 MHz

- Eqn Large_Pout_dBm=10*log10(0.5*real(HB.Vload*conj(HB.Iload.)))+1e-20)+30
- Eqn Small_Pout_dBm=10*log10(0.5*real(SM.Vload*conj(SM.Iload.)))+1e-20)+30
- Eqn Pfund_high_dBm=Large_Pout_dBm[1]
- Eqn Pfund_low_dBm=mix(Small_Pout_dBm,[1,-1],SM.Mix)
- Eqn Pim3_high_dBm=mix(Small_Pout_dBm,[1,1],SM.Mix)
- Eqn IM3_high=Pfund_high_dBm-Pim3_high_dBm
- Eqn IP3_high_dBm=IM3_high/2+SM.Pin_dBm
- Eqn ref_fund_line=1*HB.Pin_dBm+7.8
- Eqn ref_im3_line=3*SM.Pin_dBm-59.2
- Eqn Gain_low=Pfund_low_dBm-SM.Pin_dBm
- Eqn Gain_high=Pfund_high_dBm-HB.Pin_dBm
- Eqn GainComp_low=Gain_low[0]-Gain_low
- Eqn GainComp_high=Gain_high[0]-Gain_high

m3
Pin_dBm=20.800
Pim3_high_dBm=3.085



Comparison between HB2 and HB1SS

Eqn Large_Pout_dBm=10*log10(0.5*real(\$HB1SS.HB.Vload*conj(\$HB1SS..HB.Iload.i))+1e-20)+30

Eqn Small_Pout_dBm=10*log10(0.5*real(\$HB1SS.SM.Vload*conj(\$HB1SS..SM.Iload.i))+1e-20)+30

Eqn HB1SS_Pfund_high_dBm=Large_Pout_dBm[1]

Eqn HB1SS_Pfund_low_dBm=mix(Small_Pout_dBm,{1,-1},\$HB1SS..SM.Mix)

Eqn HB1SS_Pim3_high_dBm=mix(Small_Pout_dBm,{1,1},\$HB1SS..SM.Mix)

Eqn HB1SS_IM3_high=HB1SS_Pfund_high_dBm-HB1SS_Pim3_high_dBm

Eqn HB1SS_IIP3_high_dBm=HB1SS_IM3_high/2+\$HB1SS..SM.Pin_dBm

