**Verification of PI3USB223 IBIS model**

1. **Introduction:**

To verify the correlation between the ibis model and hspice model, we need to do some simulations:



1. **SWITCH1: from USB input (D+, D-) to common terminal (D+/R, D-/L)**

The frequency of signal is **1GHz**:

vin1 pindp 0 pulse ( 0 1 0 .05n .05n .45n 1n)

vin2 pindn 0 pulse ( 1 0 0 .05n .05n .45n 1n)

1. Add **50Ω pull-down** resistors and **10pF** pull-down capacitance to OUTPUT;
2. **SWITCH2: from audio input (R, L) to common terminal (D+/R, D-/L)**

The frequency of signal is **1GHz**:

vin1 pinr 0 pulse ( 0 1 0 .05n .05n .45n 1n)

vin2 pinl 0 pulse ( 1 0 0 .05n .05n .45n 1n)

1. Add **50Ω pull-down** resistors and **10pF** pull-down capacitance to OUTPUT;
2. **Conclusion:**
3. For **SWITCH1** and **SWITCH2**, the simulation results of IBIS model can match very well with the HSPICE model at different load conditions.

1. **Simulation Result:**
2. **SWITCH1: from USB input (D+, D-) to common terminal (D+/R, D-/L)**

PI3USB223

**OUT0**

**OUT1**

R**CL\_C**

**SDA\_C**

R

**D+**

C

C

**Differential Signals**

**Output**

**D-**

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D+/R

D-/L

**IN0**

**IN1**

1. Add **50Ω pull-down** resistors and **10pF** pull-down capacitance to OUTPUT;



1. **SWITCH2: from audio input (R, L) to common terminal (D+/R, D-/L)**

PI3USB223

**OUT0**

**OUT1**

R**CL\_C**

**SDA\_C**

R

**R**

C

C

**Differential Signals**

**Output**

**L**

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D+/R

D-/L

**IN0**

**IN1**

1. Add **50Ω pull-down** resistors and **10pF** pull-down capacitance to OUTPUT;

