IEEE P802.3dj 200Gbps/lane Cabled Backplane Channels

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Intel
IEEE P802.3dj Electrical Ad hoc
October 10, 2023

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Objective

- To provide simulated cable backplane channels
  - TP0 – TP5: 20dB, 22dB, 24dB, 26dB, 28dB, 30dB and 32dB

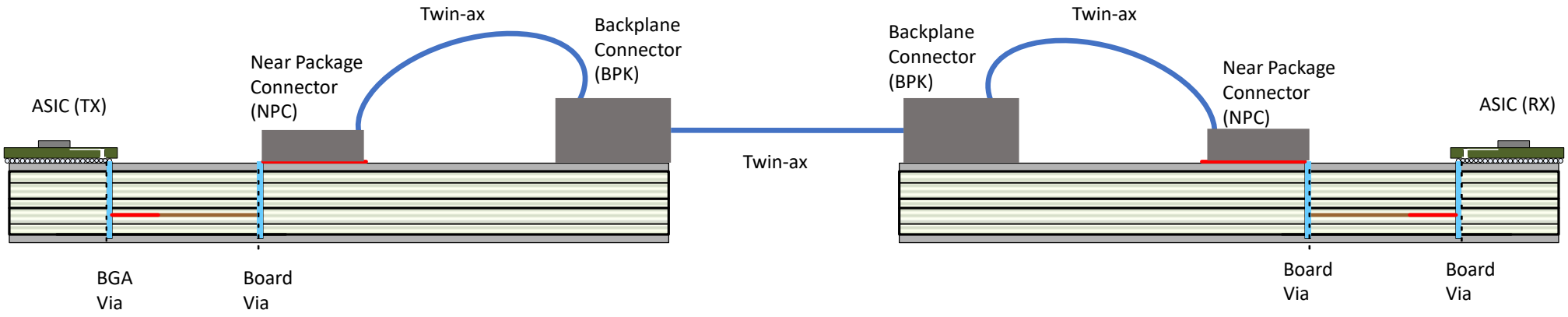
- This presentation intends to provide cabled backplane channels in support of the two-package approach.

Channel Description

- Simulation of 200Gbps/Lane cabled backplane channels
- Number of aggressors
  - FEXT: 3 aggressors
  - NEXT: 4 aggressors
- BGA escape model.
  - BGA ball not included, 5 mil stub, 0.8mm pitch
  - Via Drill Depth: Tx: 10 mils and Rx: 20 mils
- Host PCB impedance corners provided
  - 93 ohms
  - 1.5dB/in @ 53.125 GHz
- Does NOT include Package or Silicon structures

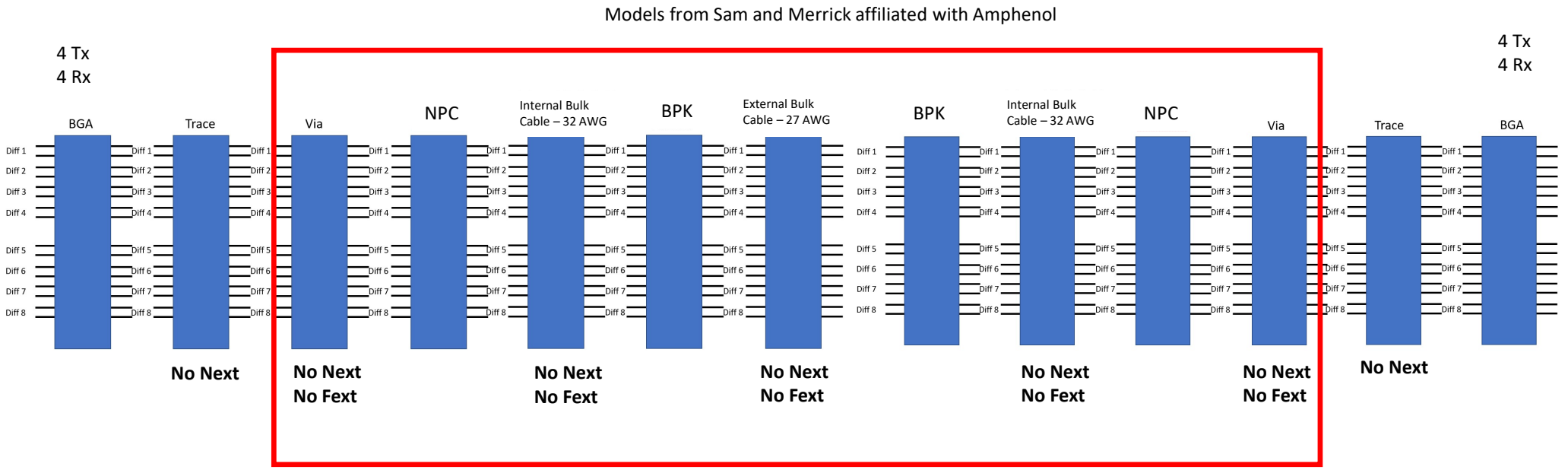
Internal Twinax: 250mm 32AWG
External Twinax: XXmm 27AWG

Cases

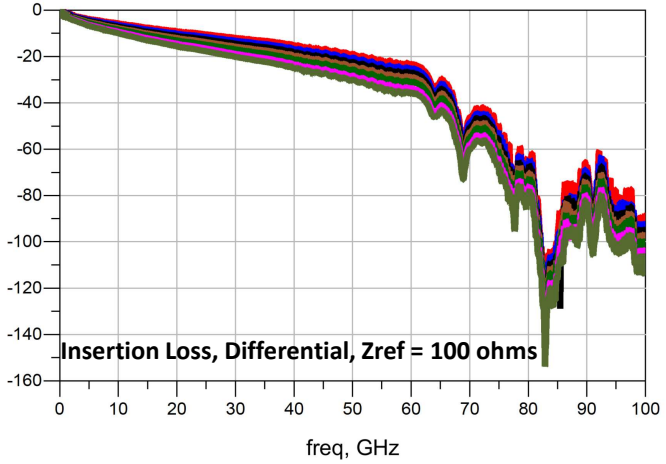


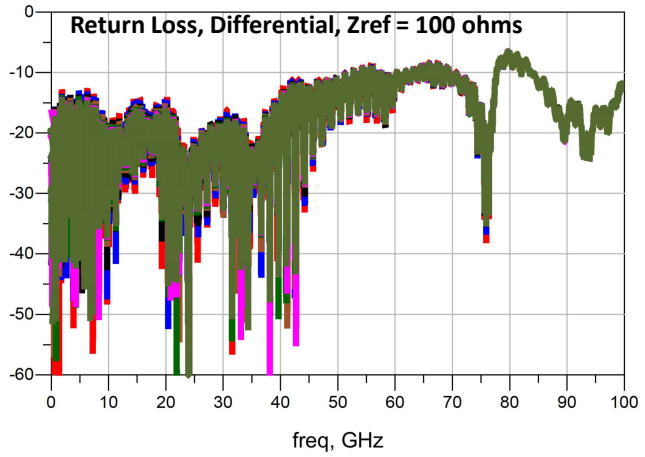
Channel #	PCB	Internal Cable	External Cable	Internal Cable	PCB
1	2in	250mm	100mm	250mm	2in
2	2in	250mm	300mm	250mm	2in
3	2in	250mm	500mm	250mm	2in
4	2in	250mm	700mm	250mm	2in
5	2in	250mm	900mm	250mm	2in
6	2in	250mm	1200mm	250mm	2in
7	2in	250mm	1400mm	250mm	2in

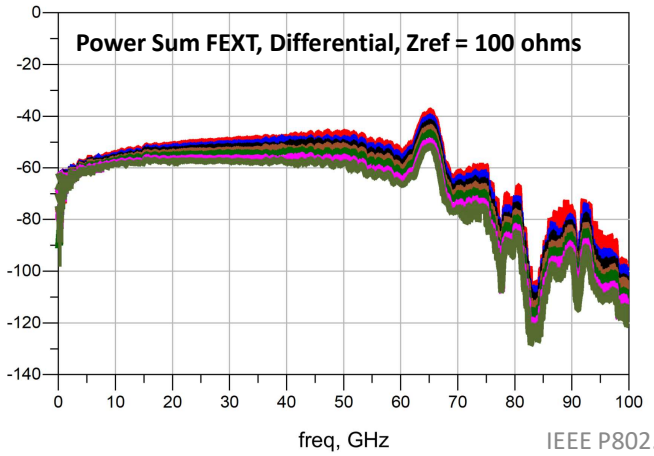
Cabled Backplane Channel Structure

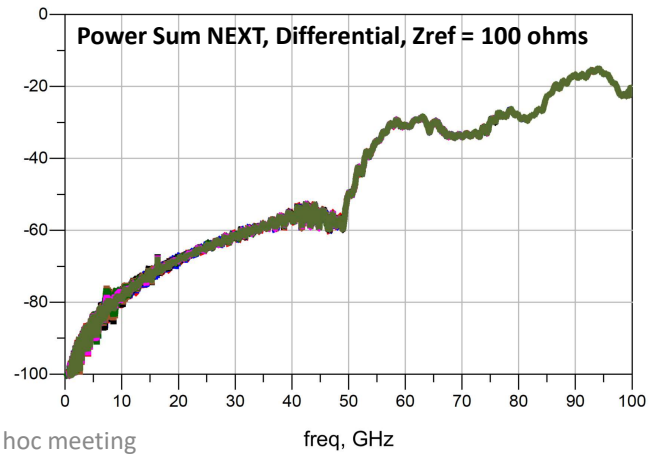


Cable Backplane Channel Characteristics









File Naming (1)

Channel 1	Channel 2
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p
Tx_NPC_250mm_32AWG_BPK_100mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p	Tx_NPC_250mm_32AWG_BPK_300mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p

File Naming (2)

Channel 3	Channel 4
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p
Tx_NPC_250mm_32AWG_BPK_500mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p	Tx_NPC_250mm_32AWG_BPK_700mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p

File Naming (3)

Channel 5	Channel 6
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p
Tx_NPC_250mm_32AWG_BPK_900mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p	Tx_NPC_250mm_32AWG_BPK_1200mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p

File Naming (4)

Channel 7
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_thru1.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk1_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk2_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk3_Fext.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk4_Next.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk5_Next.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk6_Next.s4p
Tx_NPC_250mm_32AWG_BPK_1400mm_27AWG_BPK_250mm_32AWG_NPC_Rx_xtalk7_Next.s4p

Summary

- We have created a set of cabled backplane channels in support of the two-package approach.
  - Nominal Conditions: Temperature and Impedance
  - No skew is added intentionally
- These KR channels include PCB Vias, PCB Traces, Near Package Connectors, Internal Cables, Backplane Connectors, and External Cables.