ANALOG DEVICES

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Simplified Pull Down scheme

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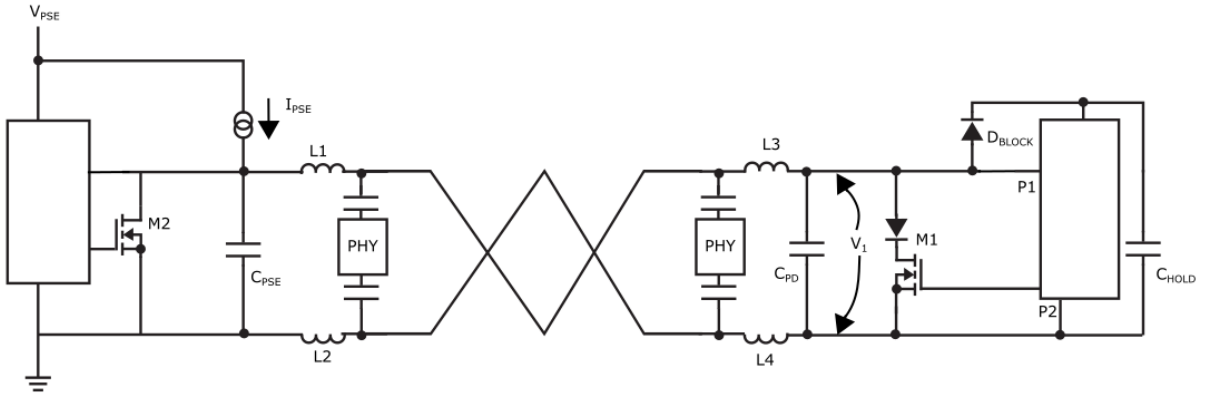
Presentation Outline

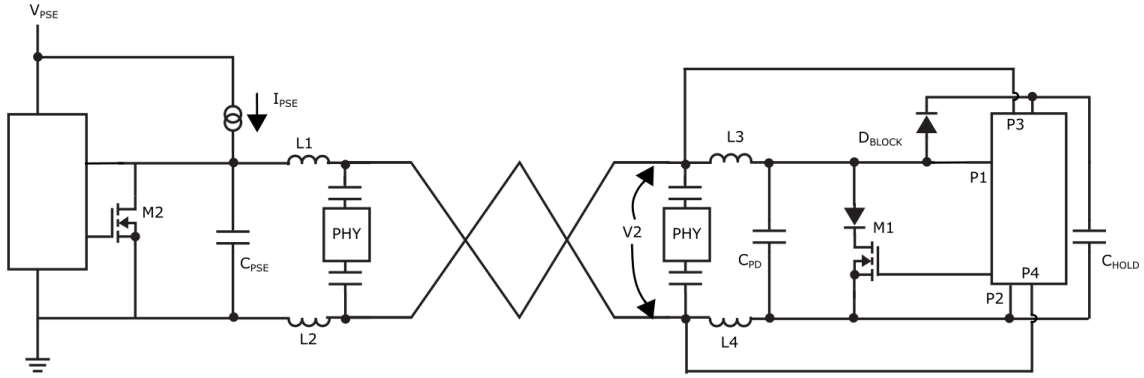
- Few issues with traditional pull down scheme
- Simplified Pull Down scheme
  - FET and blocking devices (diode or another FET)
  - Additional magnetic device for boosting Return Loss
- Additional Benefits of the scheme
  - (Eliminating Kelvin Sensing)
  - Eliminating Voltage Measurement at PD for CRM

Few Issues with traditional Pull Down scheme

- Inaccuracy due to Power Coupling Network
  - DCR of Coupling Inductors introduces inaccuracy in measured cable resistance



- Need additional connections for Kelvin Sensing
  - Kelvin sensing can be implemented to eliminate the DCR inaccuracy at the cost of more connections



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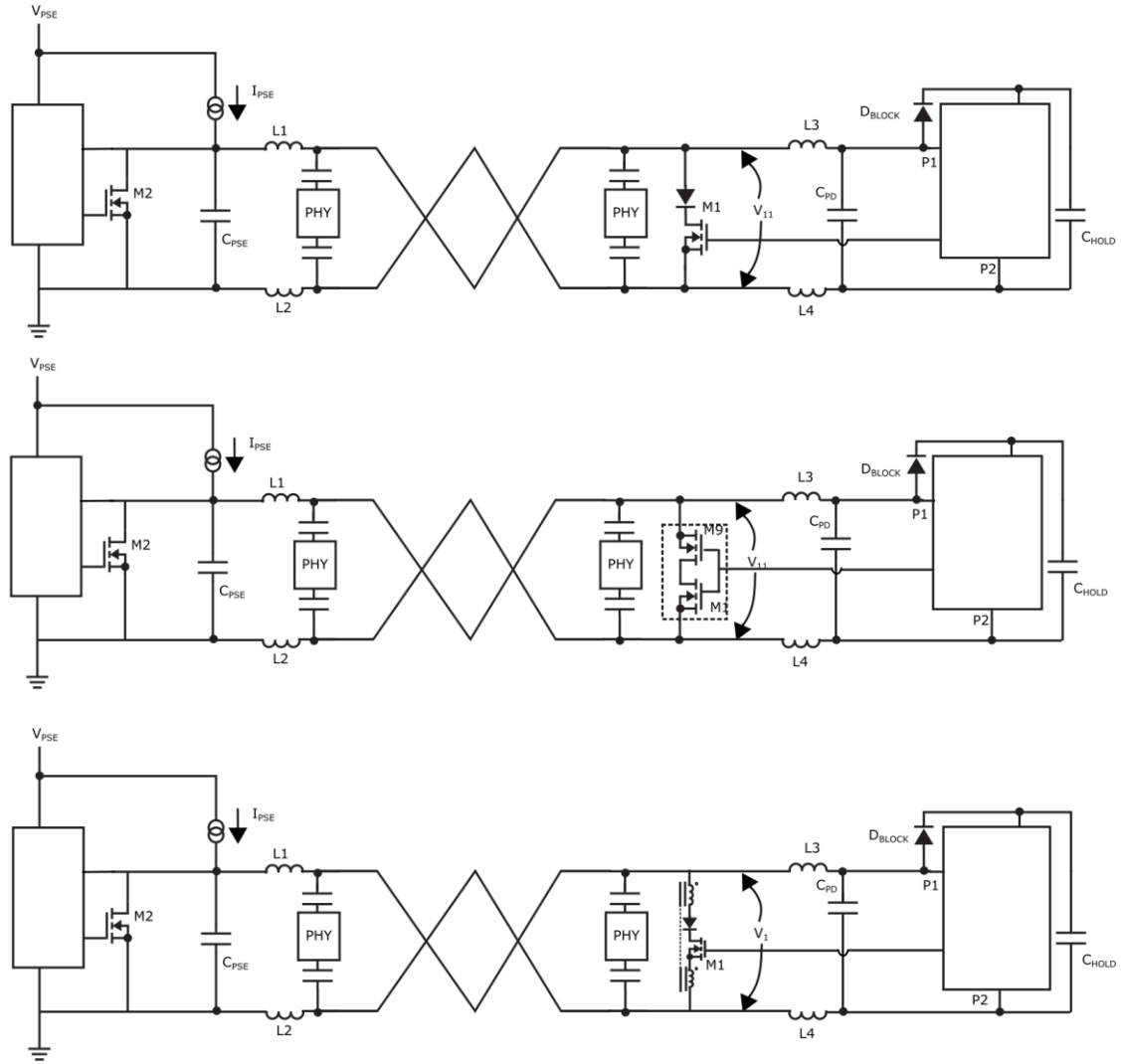
Simplified Pull Down Scheme

- Pull Down FET and reverse blocking device are placed on the Line Side of power coupling inductors
  - Kelvin sensing implemented using connection thru the coupling inductors, without additional connections
- Reverse blocking device can be another back to back connected MOSFET
- Additional magnetic device may be added to boost Return Loss



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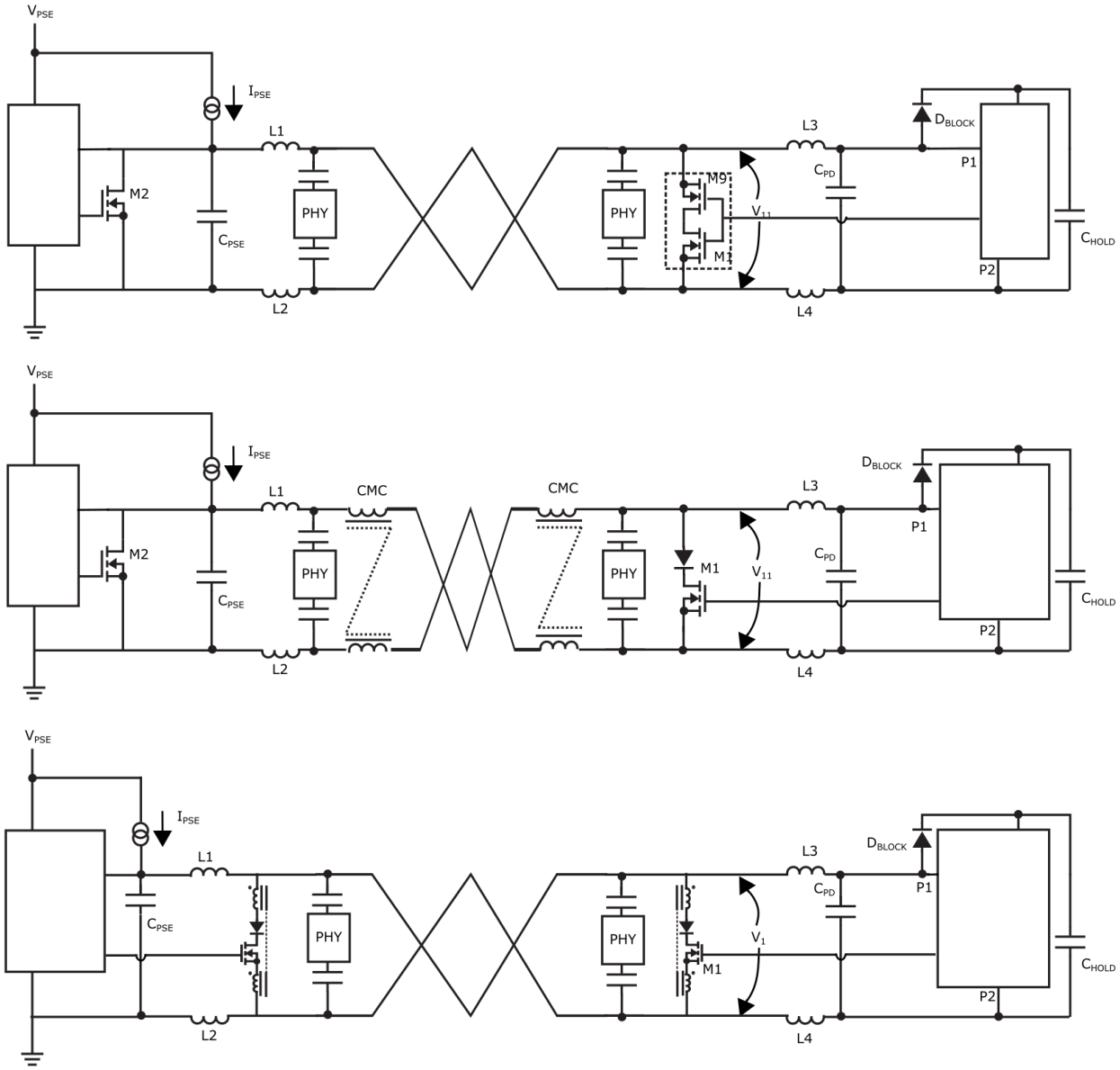
Additional Benefits of the Scheme

- Low $R_{DS\text{-}ON}$ FETs can be used to Pull Down
  - With a strong enough Pull Down, Voltage at PD PI need not be measured
  - Can be reported as a fixed pre-programmed voltage
  - Also useful in achieving a lower threshold voltage for SCCP
- Noise at PI can be reduced by using CMC
- Similar schemes can be used at PSE as well



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Thank You!

QUESTIONS? FEEDBACK?