

All-silicon Meeting

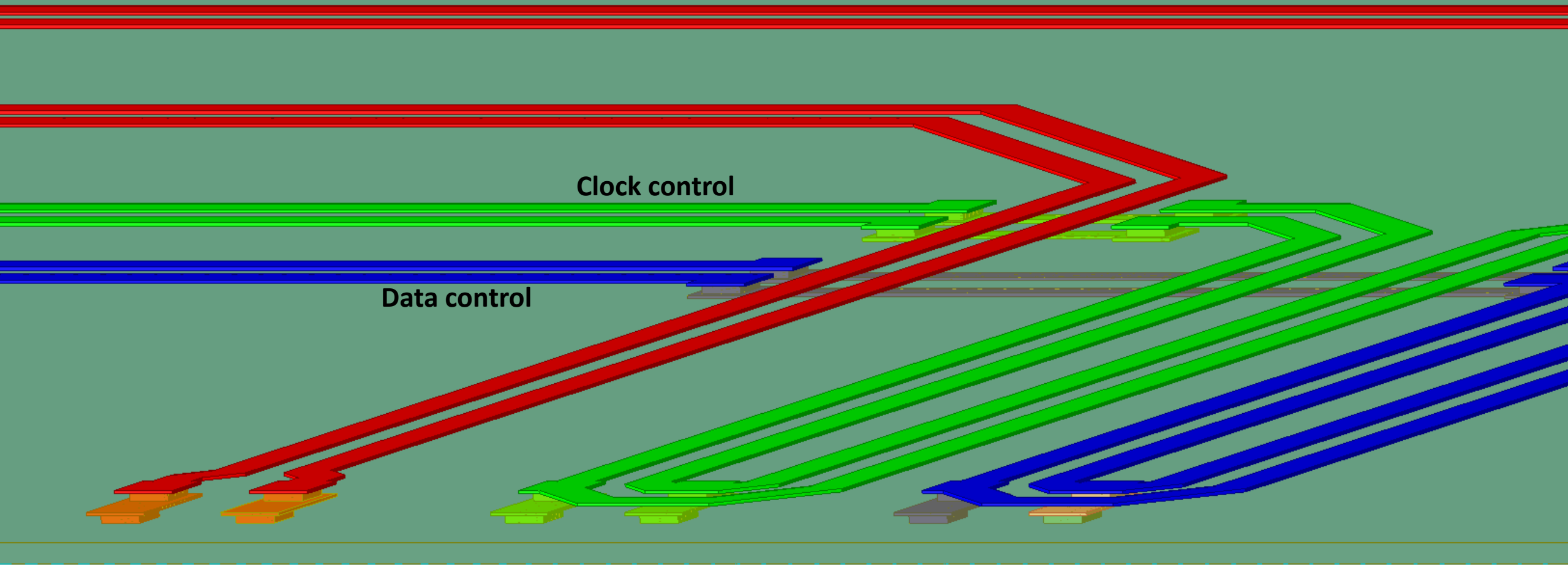
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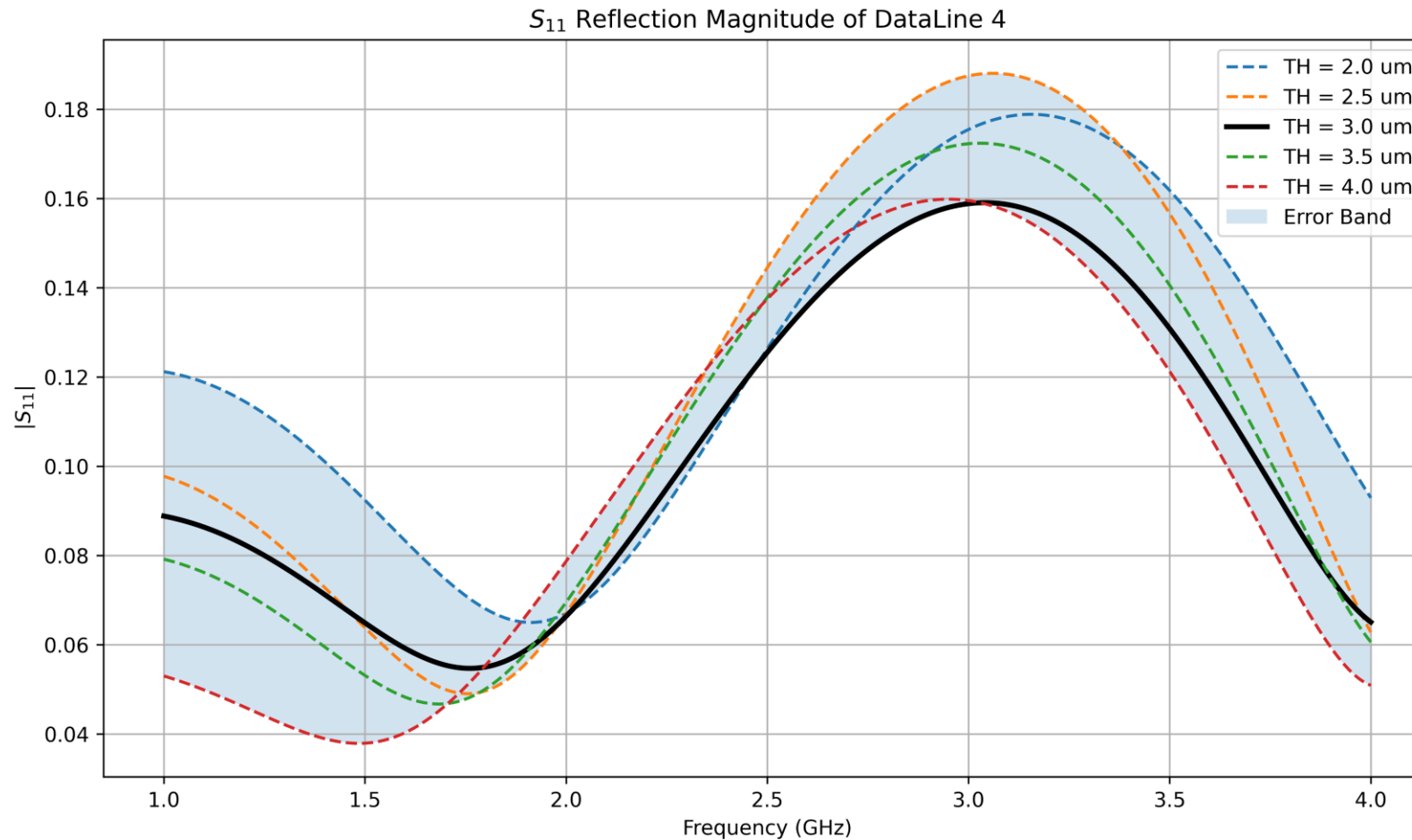
In collaboration with

Ansys (HFSS) Simulations Design of IZM structure

Ansys
2025 R2

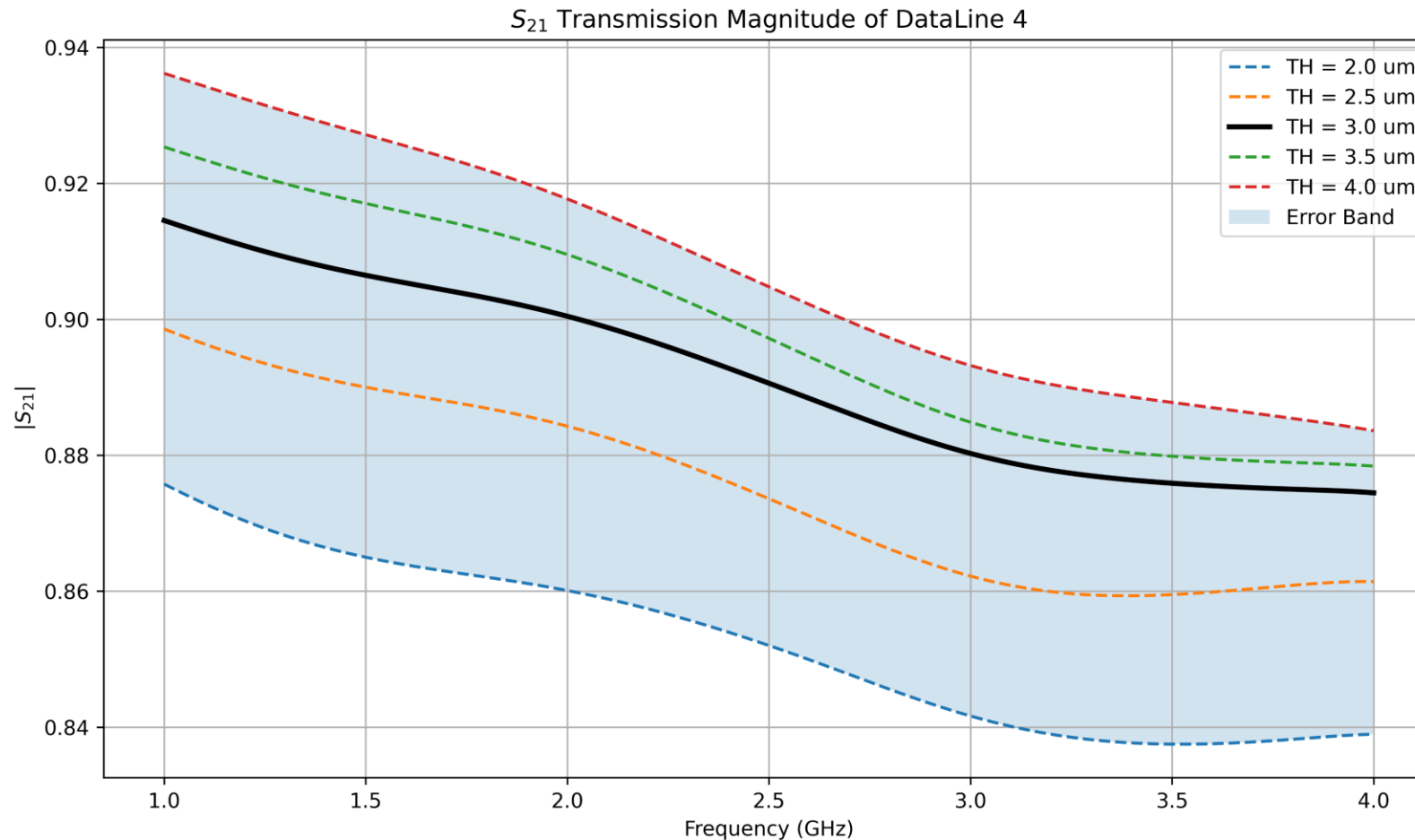


Results of ANSYS (HFSS) simulations of the IZM structure



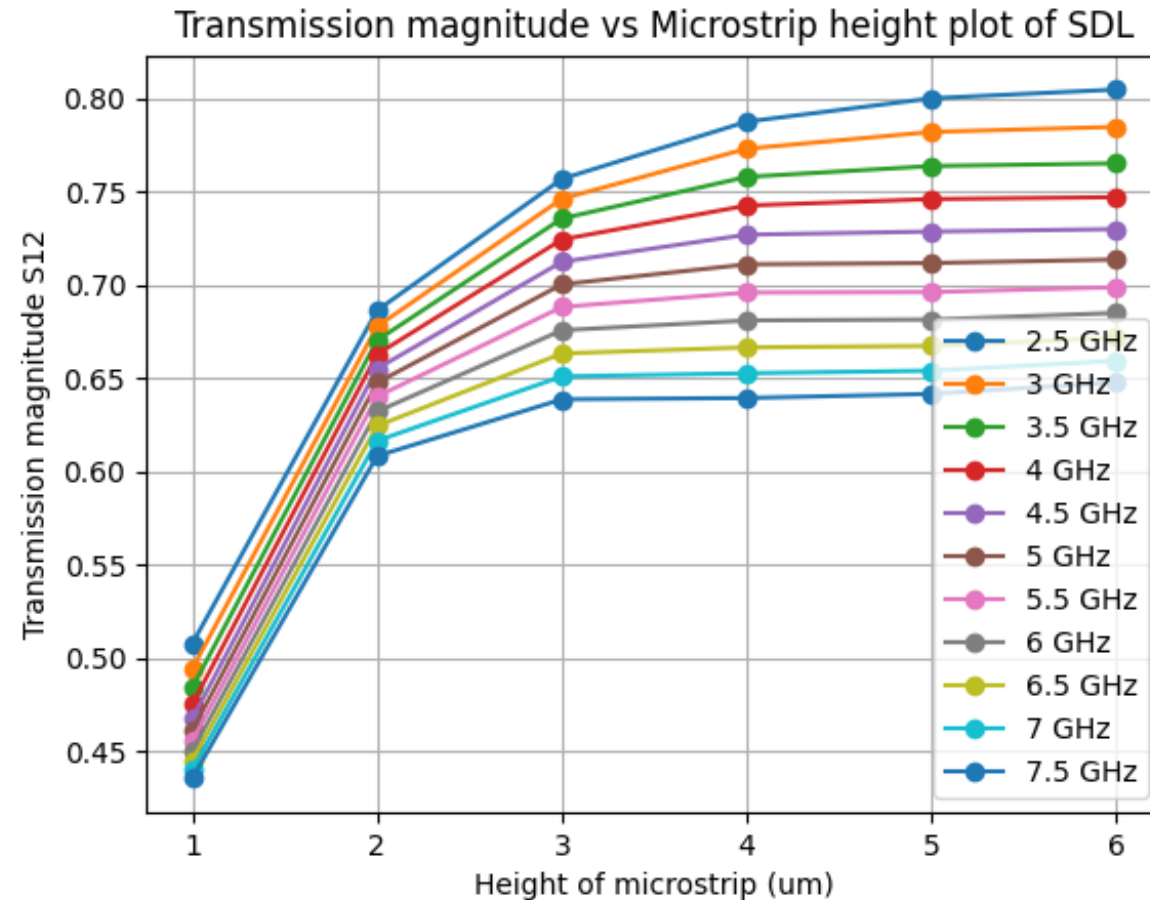
- Trace height (TH) varied from 2 μm to 4 μm in steps of 0.5 μm to estimate systematic error in S-parameter
- The main simulation is done for 3 μm and it was terminated with 80 ohm
- The origin of the error is an impedance mismatch across the line

Results of ANSYS (HFSS) simulations of the IZM structure



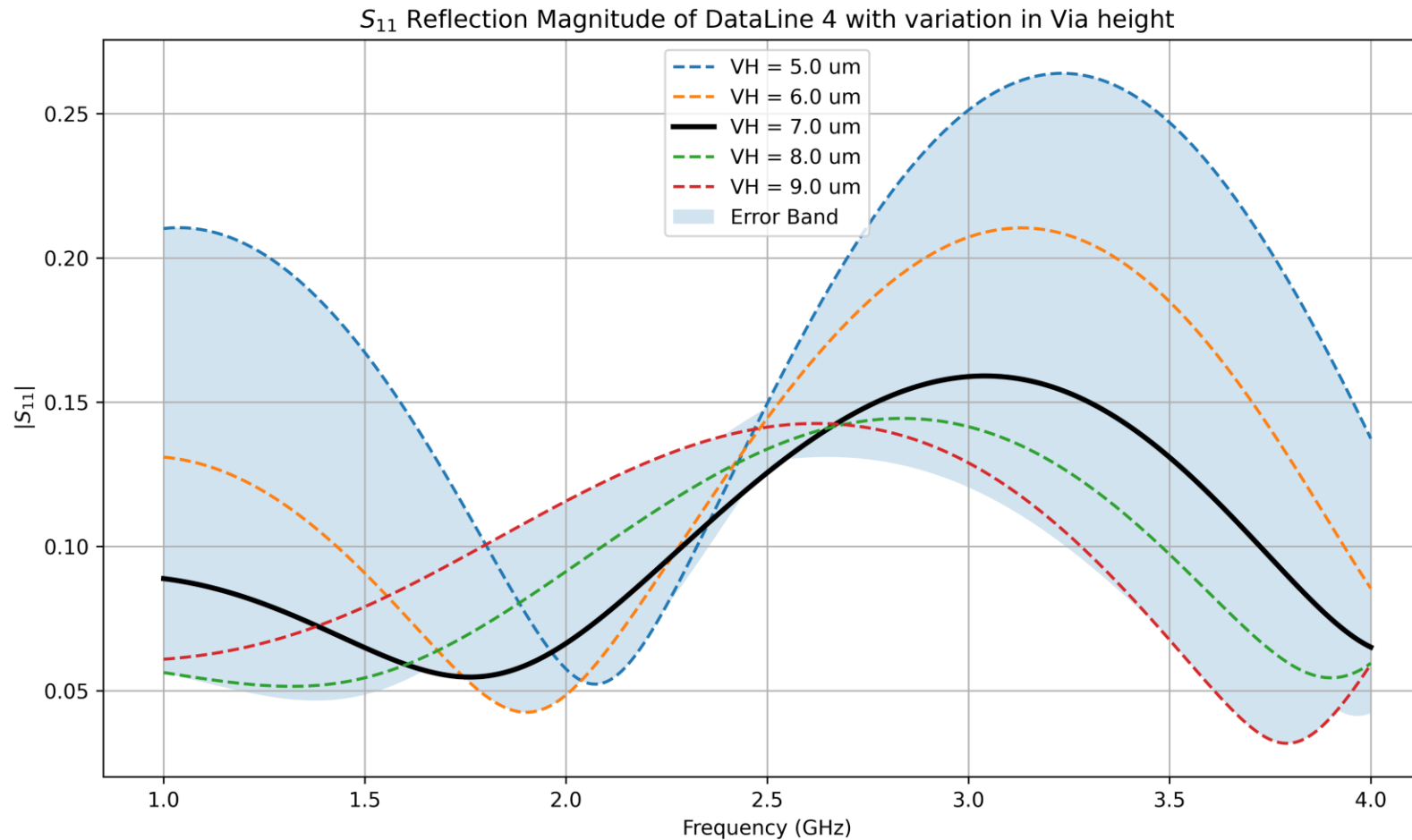
- The distance between two lines mainly depends on two reasons:
 1. Impedance mismatch
 2. As discussed before, a decrease in trace height results in a decrease in transmission magnitude

Results of ANSYS (HFSS) simulations of the IZM structure



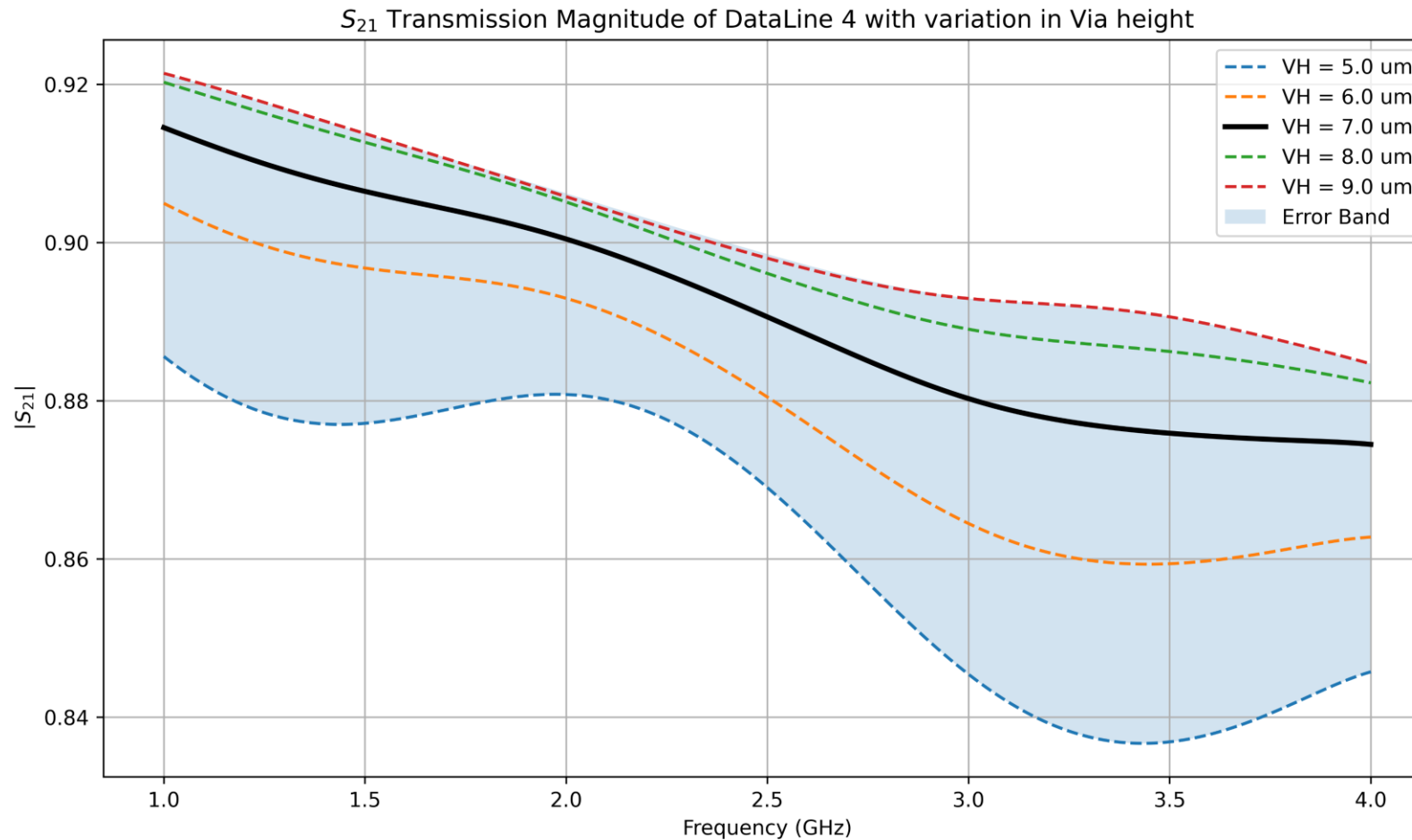
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Results of ANSYS (HFSS) simulations of the IZM structure



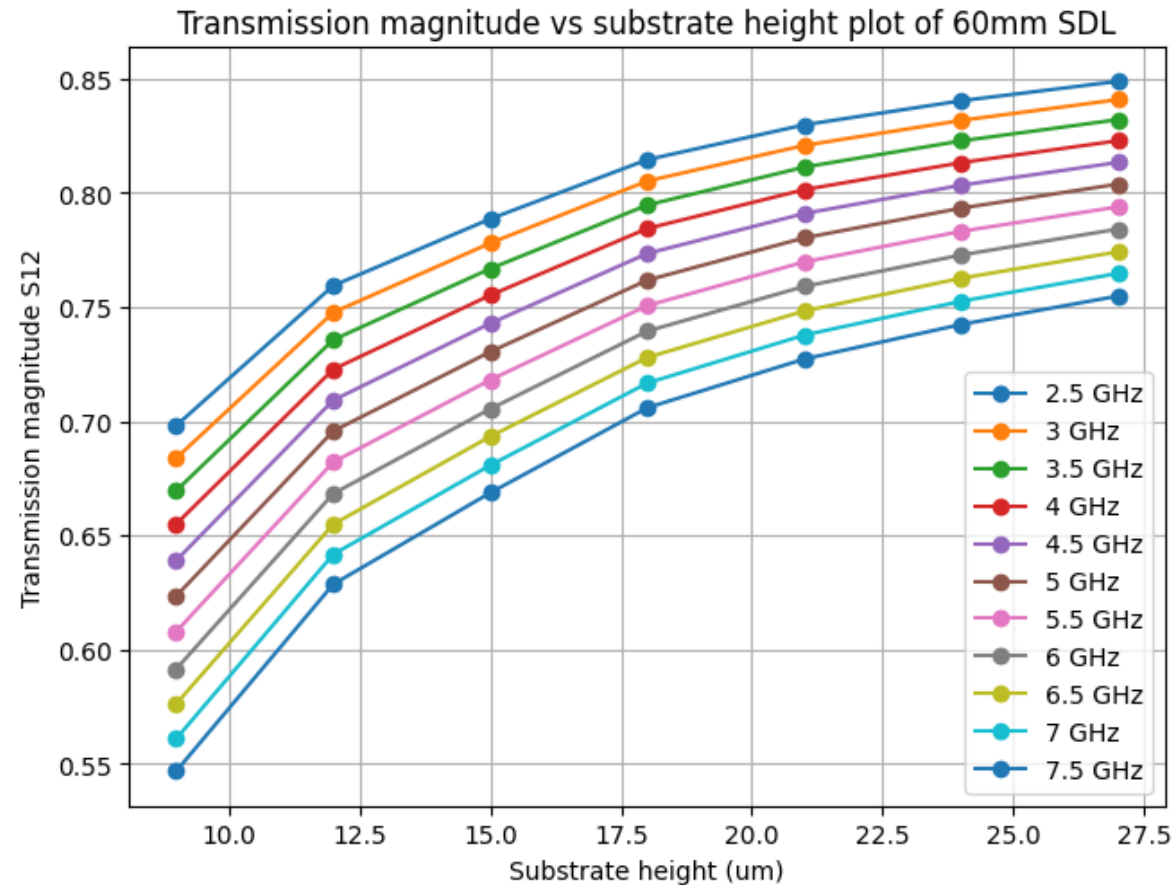
- Via height (VH) varied from 5 μm to 9 μm in steps of 0.5 μm to estimate systematic error in S-parameter
- The main simulation is done for 7 μm and it was terminated with 80 ohm
- The origin of the error is an impedance mismatch across the line

Results of ANSYS (HFSS) simulations of the IZM structure



- The distance between two lines mainly depends on two reasons:
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Results of ANSYS (HFSS) simulations of the IZM structure



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 1. Impedance mismatch
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Next steps :

- Simulations of the IZM structure with tolerance in trace height and via height progress for all data lines
- TDR measurements didn't go well on the first try, and they will be done again

