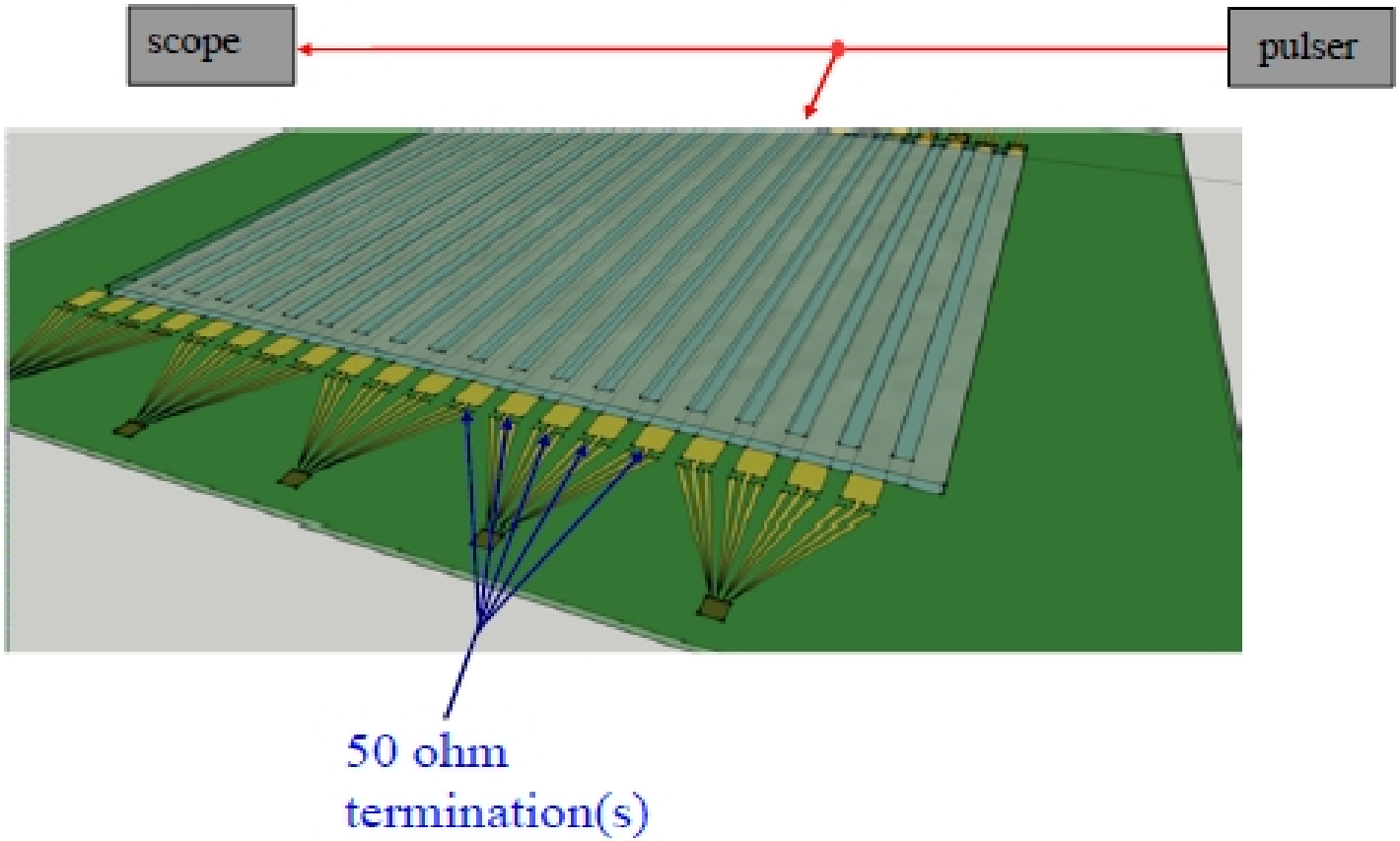
Time Domain

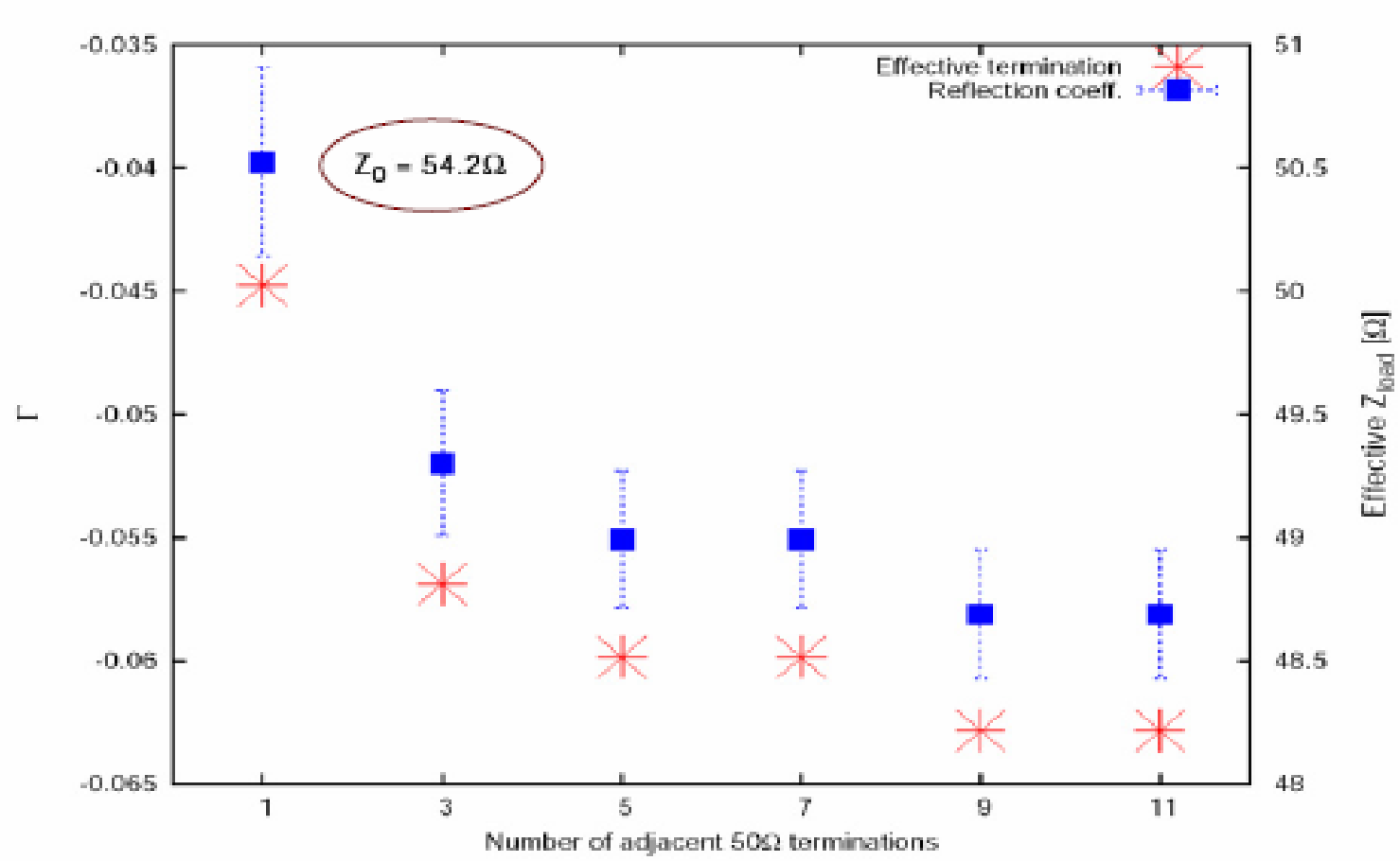
parallel R termination:

look at potential effect of multiple 50ohm terminations in parallel

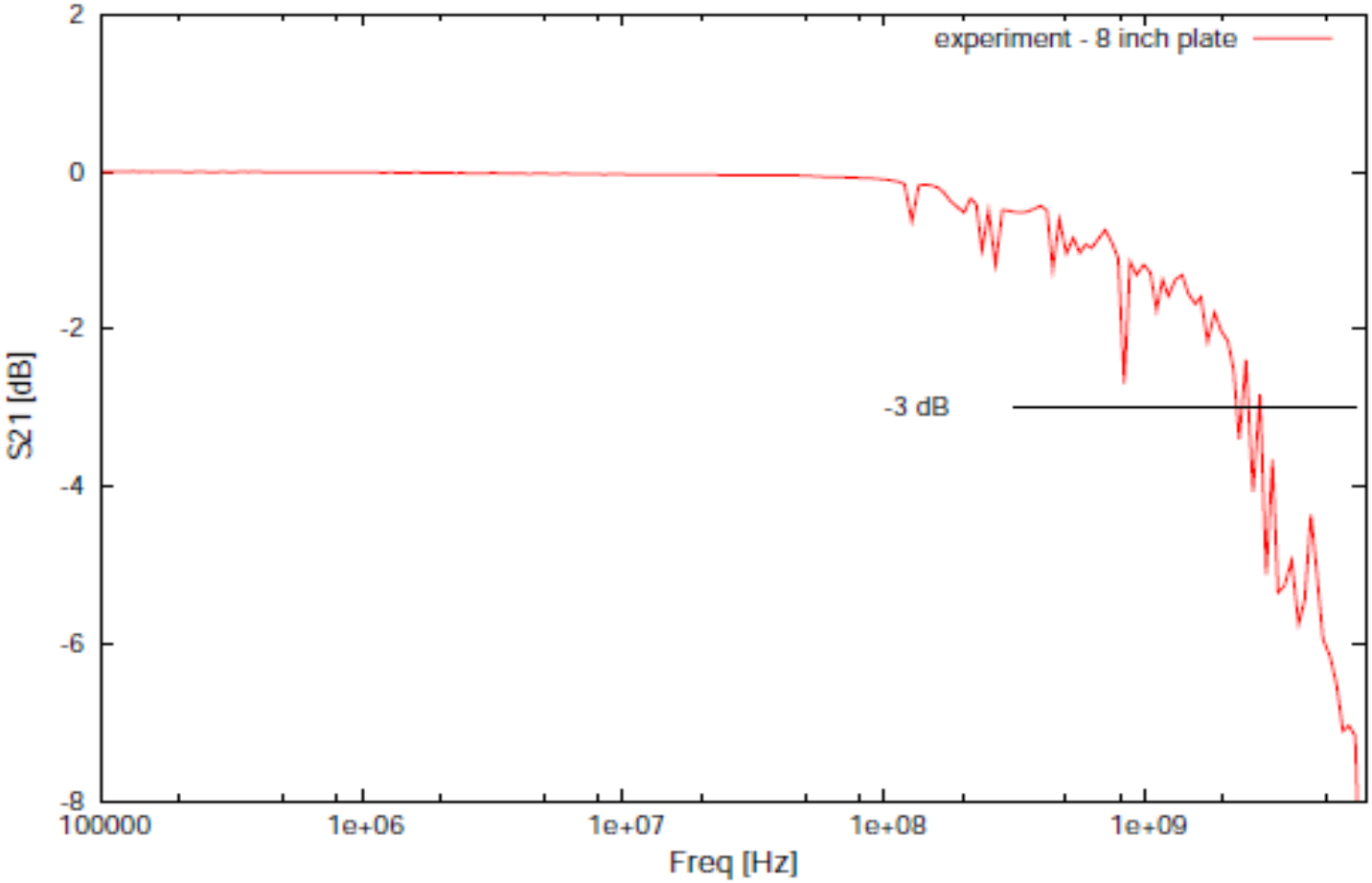


Time Domain

parallel R termination - results



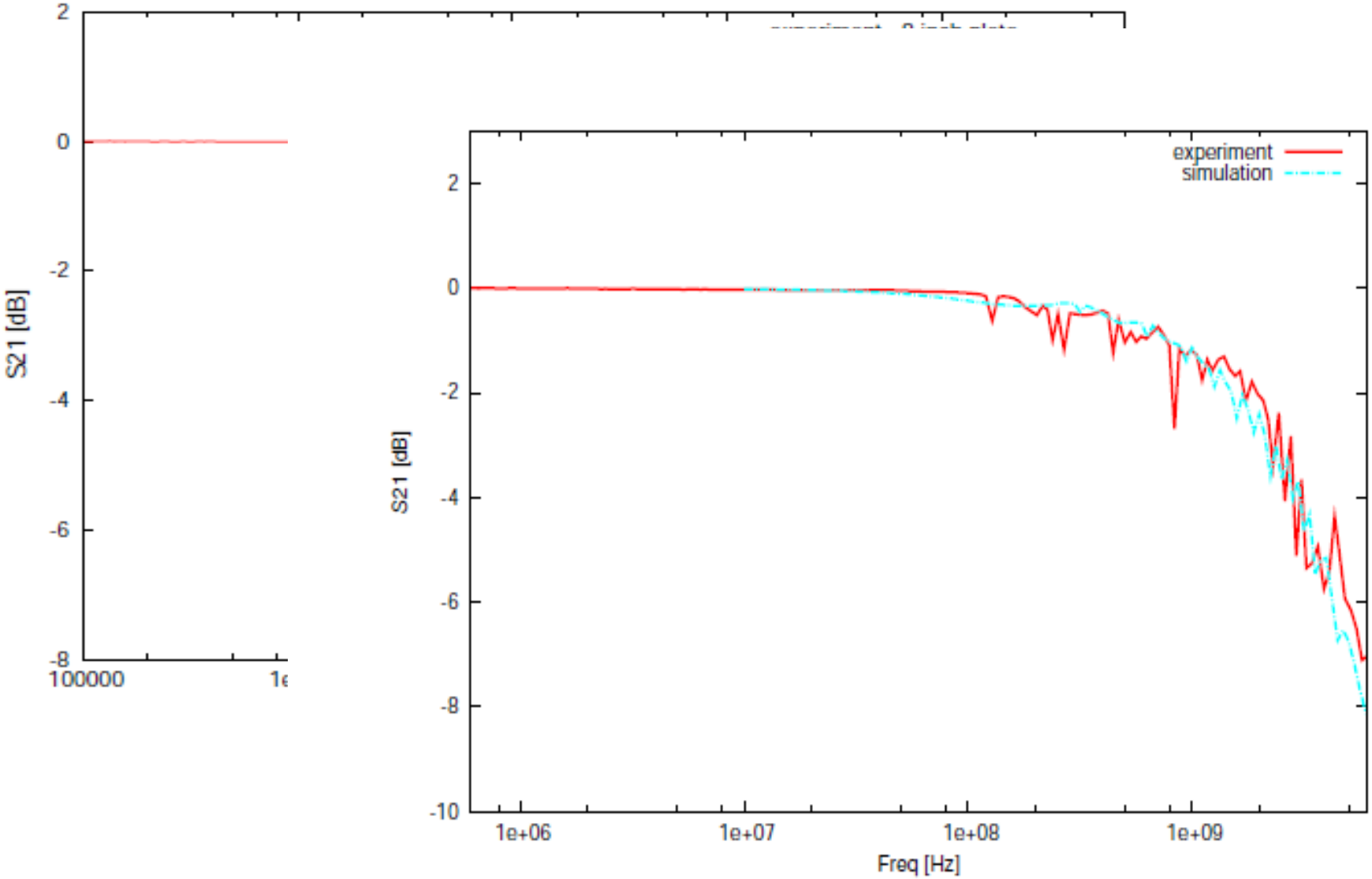
Frequency Domain



3db~2.4 GHz

Geometry: glass - pcb - signal striplines - glass - return strips

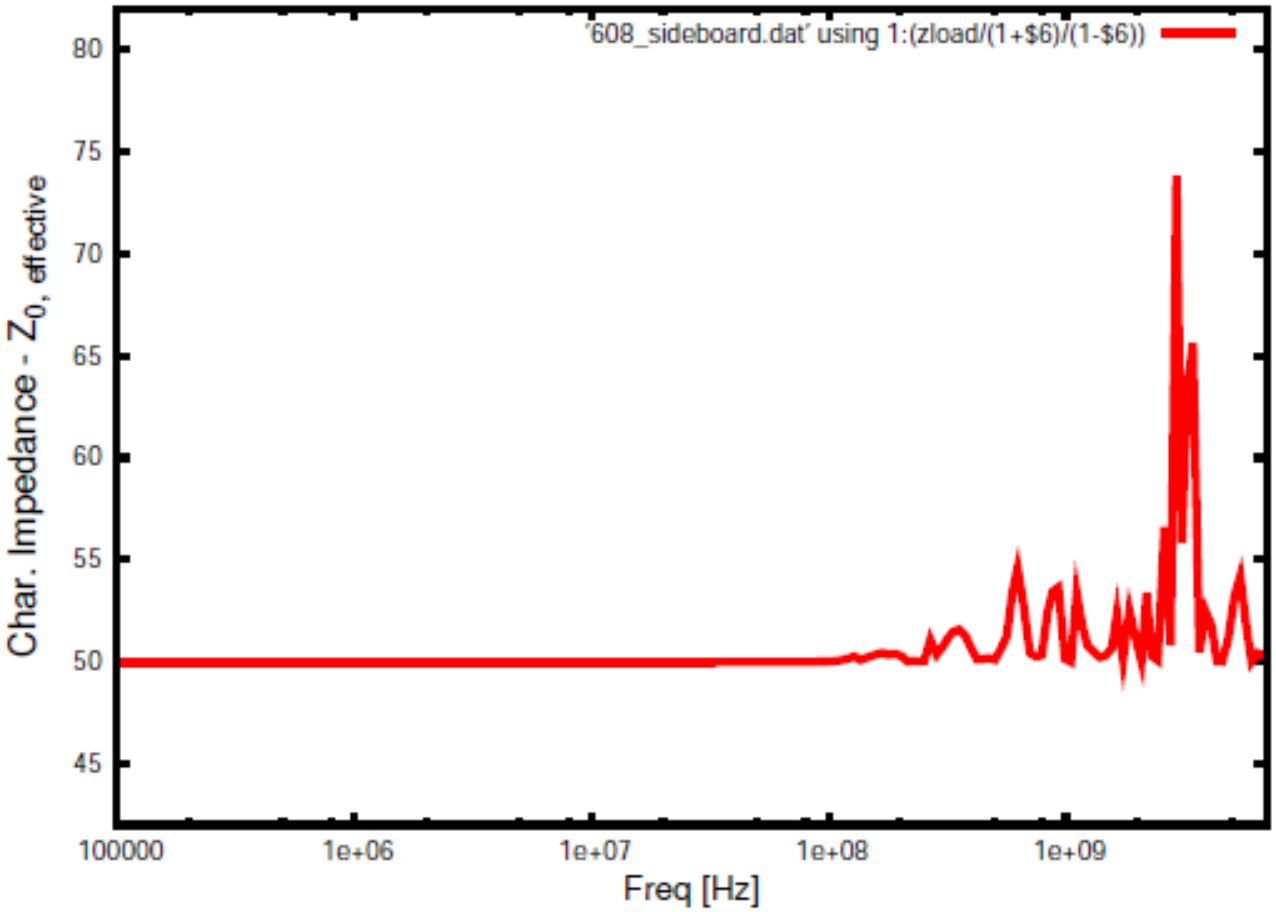
Frequency Domain



Geometry: glass - pcb - signal striplines - glass - return strips

Frequency Domain

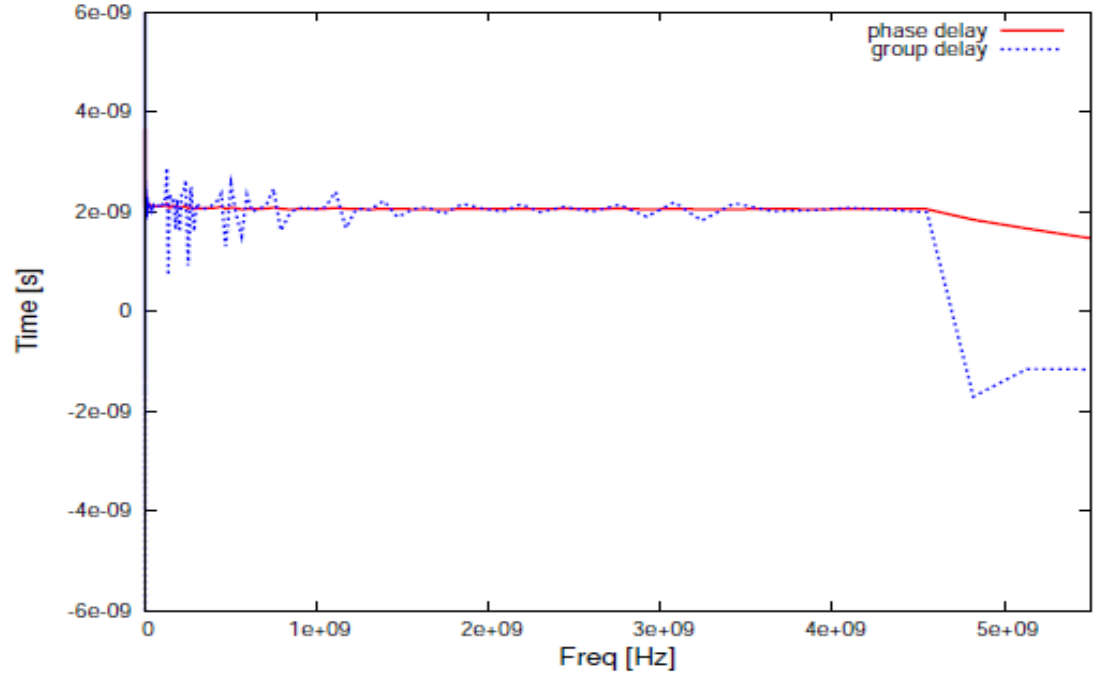
Characteristic Impedance



Frequency Domain

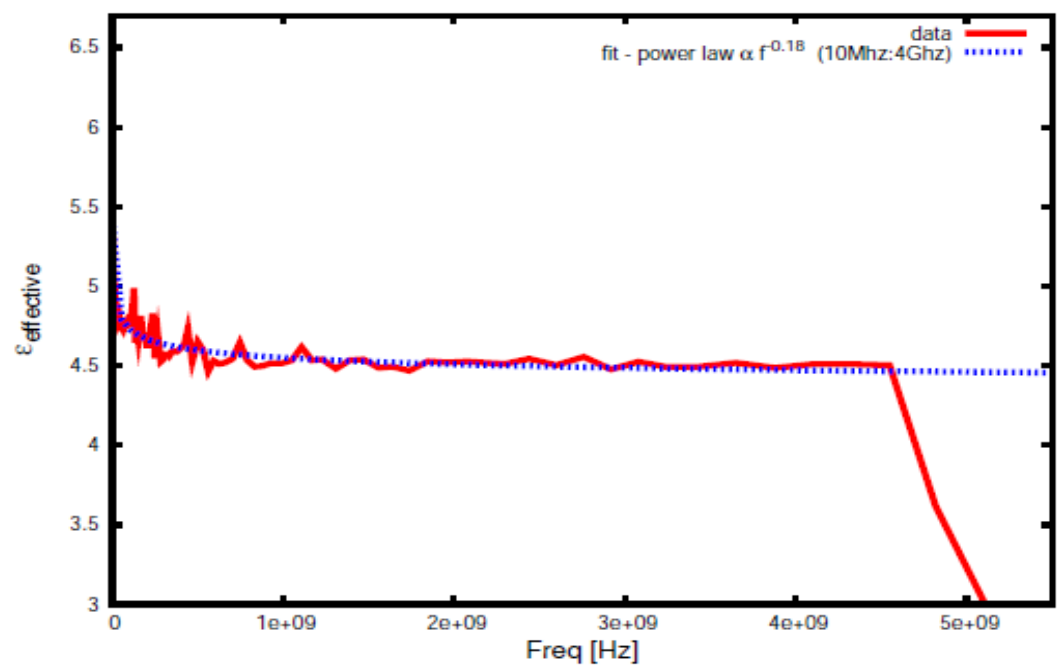
<u>Group vs. phase velocity</u>

-split around 4.5 GHz



<u>Effective dielectric</u>

-looks to be fairly constant until 4.5 GHz



What's happening above 4.5 GHz?

Summary

Results look good so far...

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...but, we need to experimentally test MCP-like input:

- fast, single-ended current source

  Ideas: ~~Transistor switch/RC discharge~~

  Step-recovery diode

  Avalanche breakdown (diode)

  MCP itself? – (need vacuum)

- successful coupling to microstrip-mode?

We know TLine readout works (Burle MCP+anode card, 33mm tests, etc)

- But, somewhat different with inside-out design → inject on ground plane
- Highly dependent on signal rise time!