



Proposed Changes to SDD11 / SDD22 Return Loss Masks

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All data taken by UNH-IOL



Proposed SDD11 / SDD22 Model

- For 0 to 3 GHz
 - $SDD_{xy} = 2.7e-9 * \text{frequency} - 13$ (dBm)
- For 3 GHz to 15 GHz
 - $SDD_{xy} = -5$ (dBm)

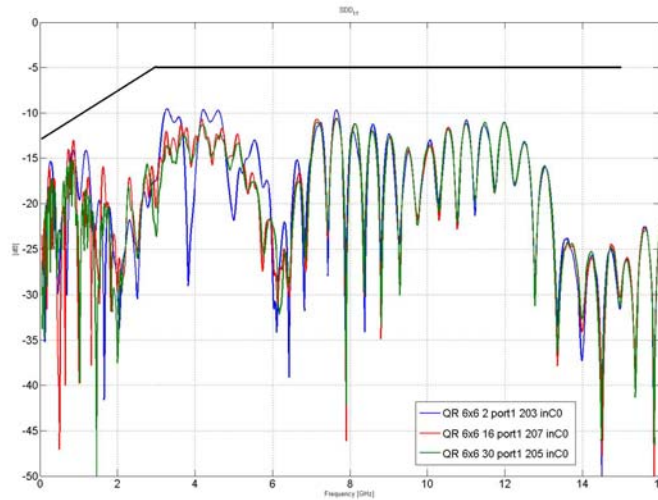


Return Loss Factors

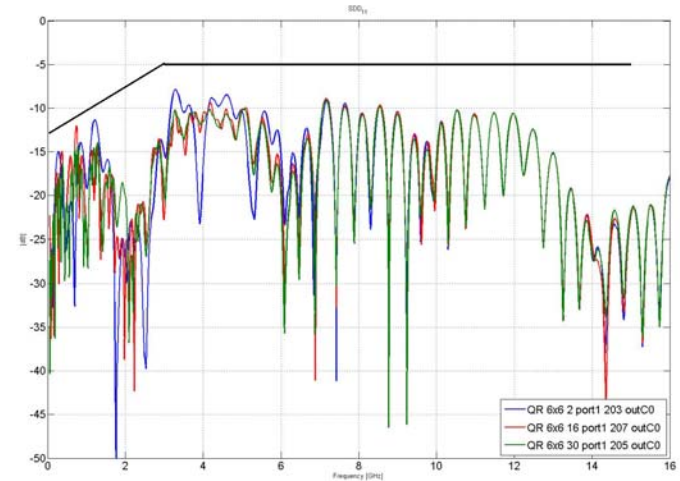
- Overall System Length
- Materials
- Daughtercard Length
- Daughtercard Stub
- Backplane Length
- Backplane Stub
- Trace width

Impact of 4000-13 QuadRoute Layer Connections and Backplane Length (6" 4000-6 per LC)

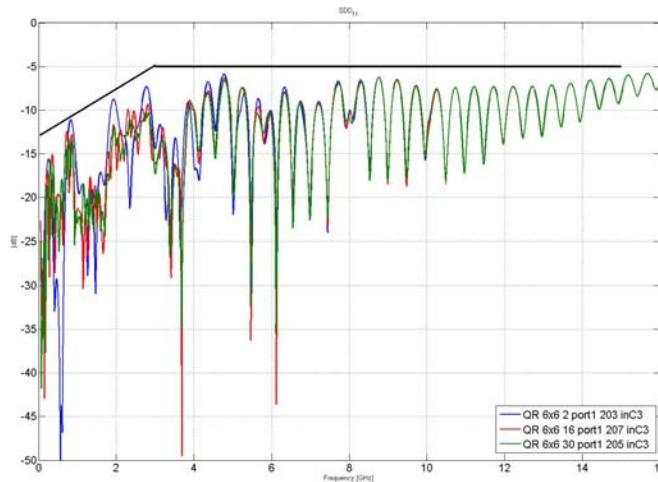
LC Bot / BP Bot



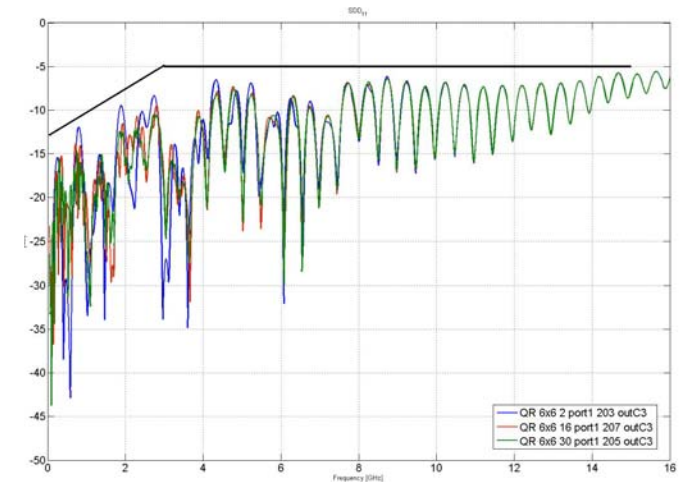
LC Bot / BP Top



LC Top / BP Bot



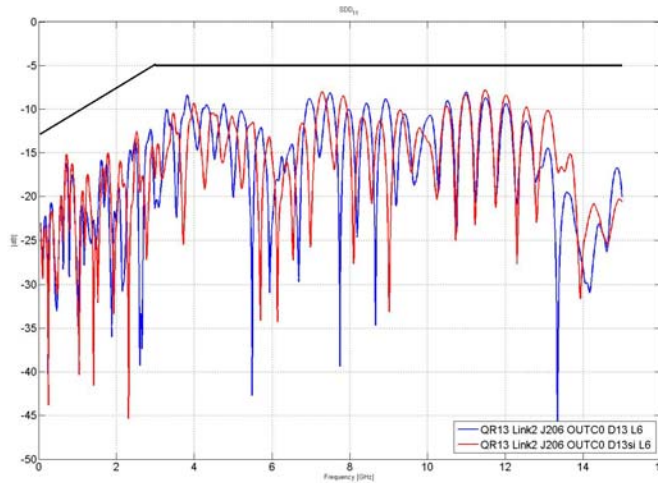
LC Top / BP Top



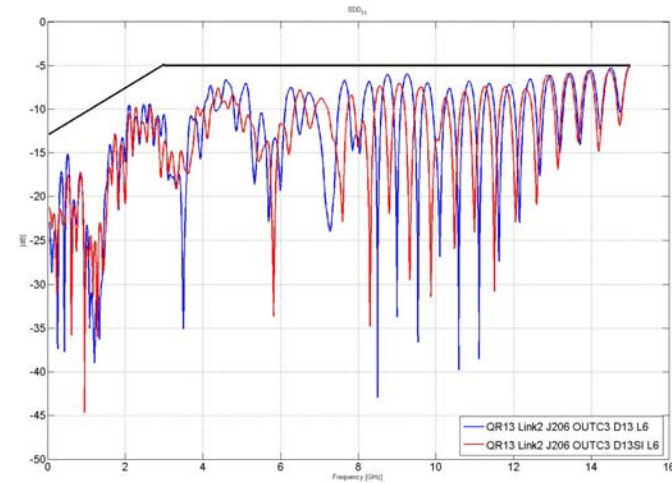
Impact of Daughtercard Materials for 6" per LC with 16" QuadRoute Backplanes

QuadRoute
4000-13

LC Bot / BP Bot

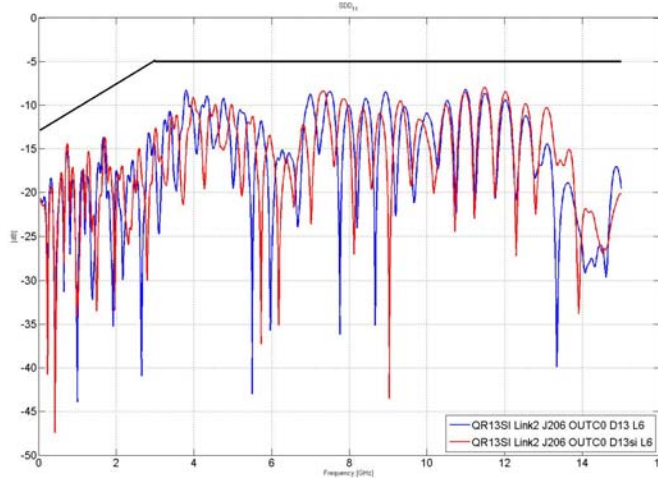


LC Top / BP Top

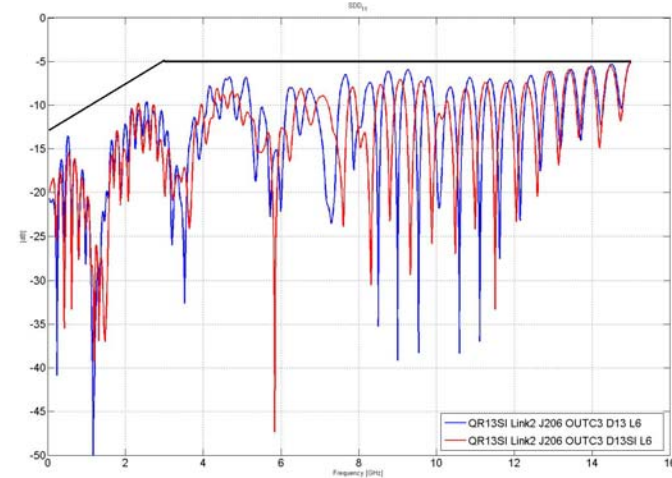


QuadRoute
4000-13SI

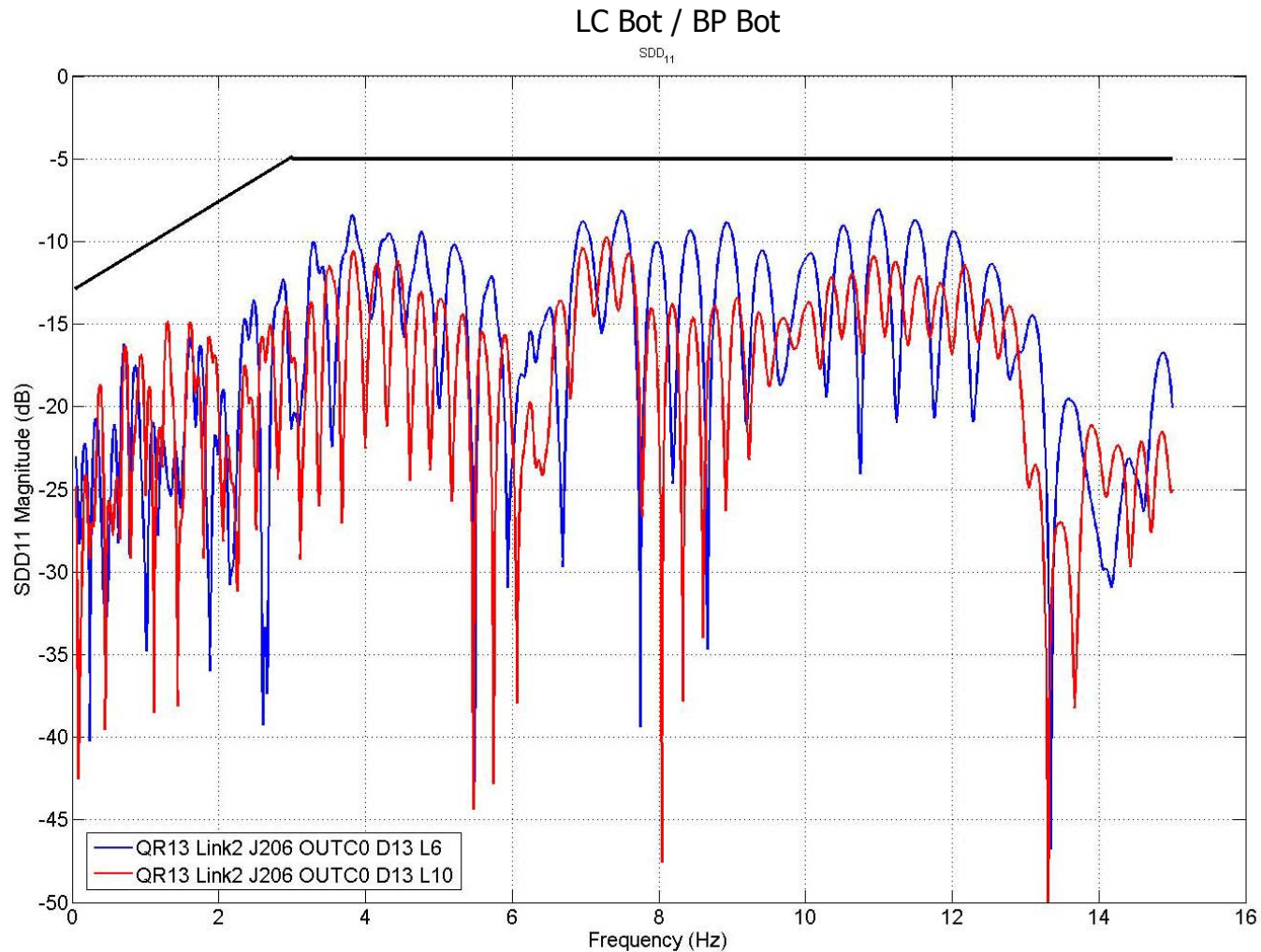
LC Bot / BP Bot



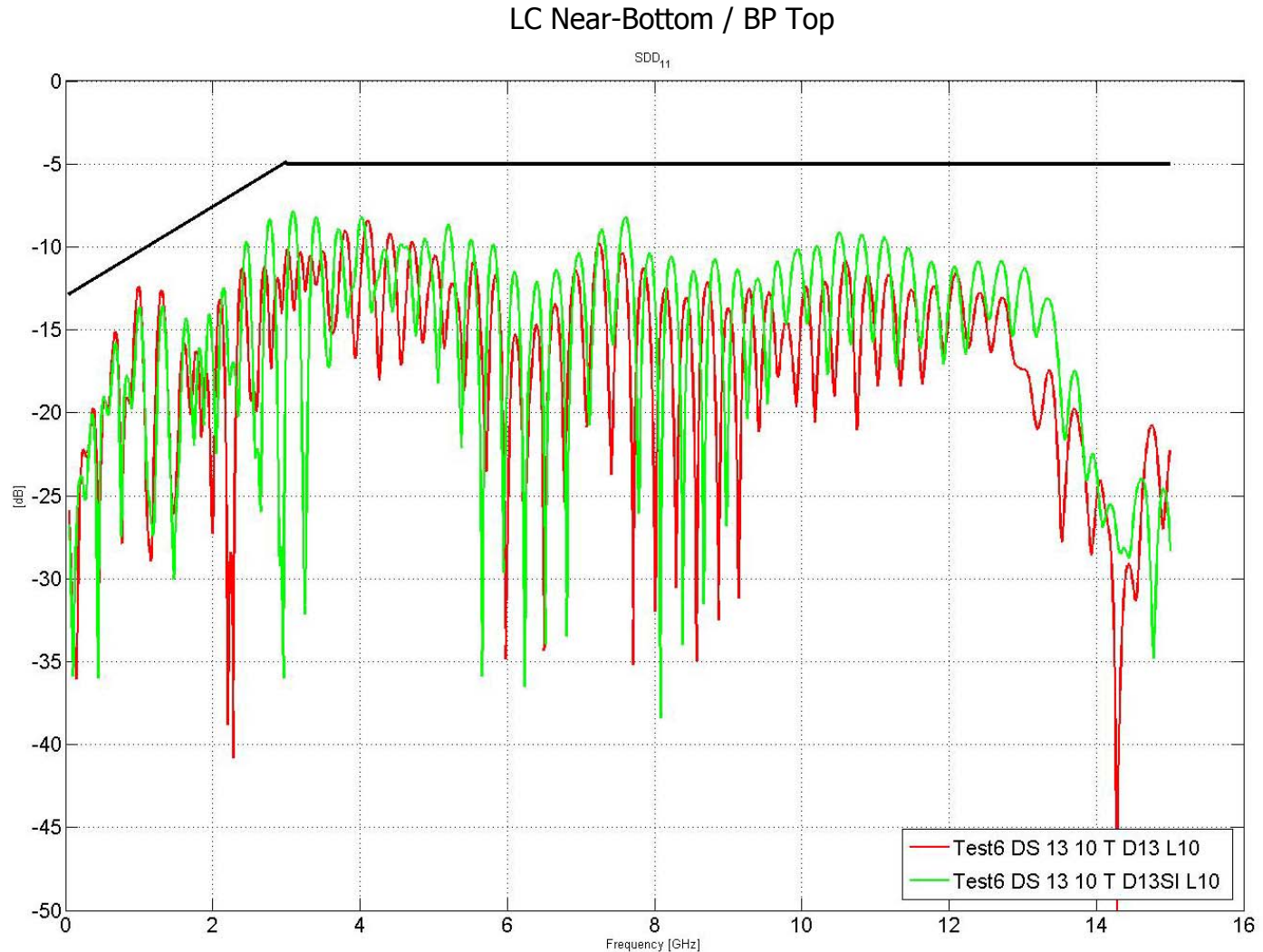
LC Top / BP Top



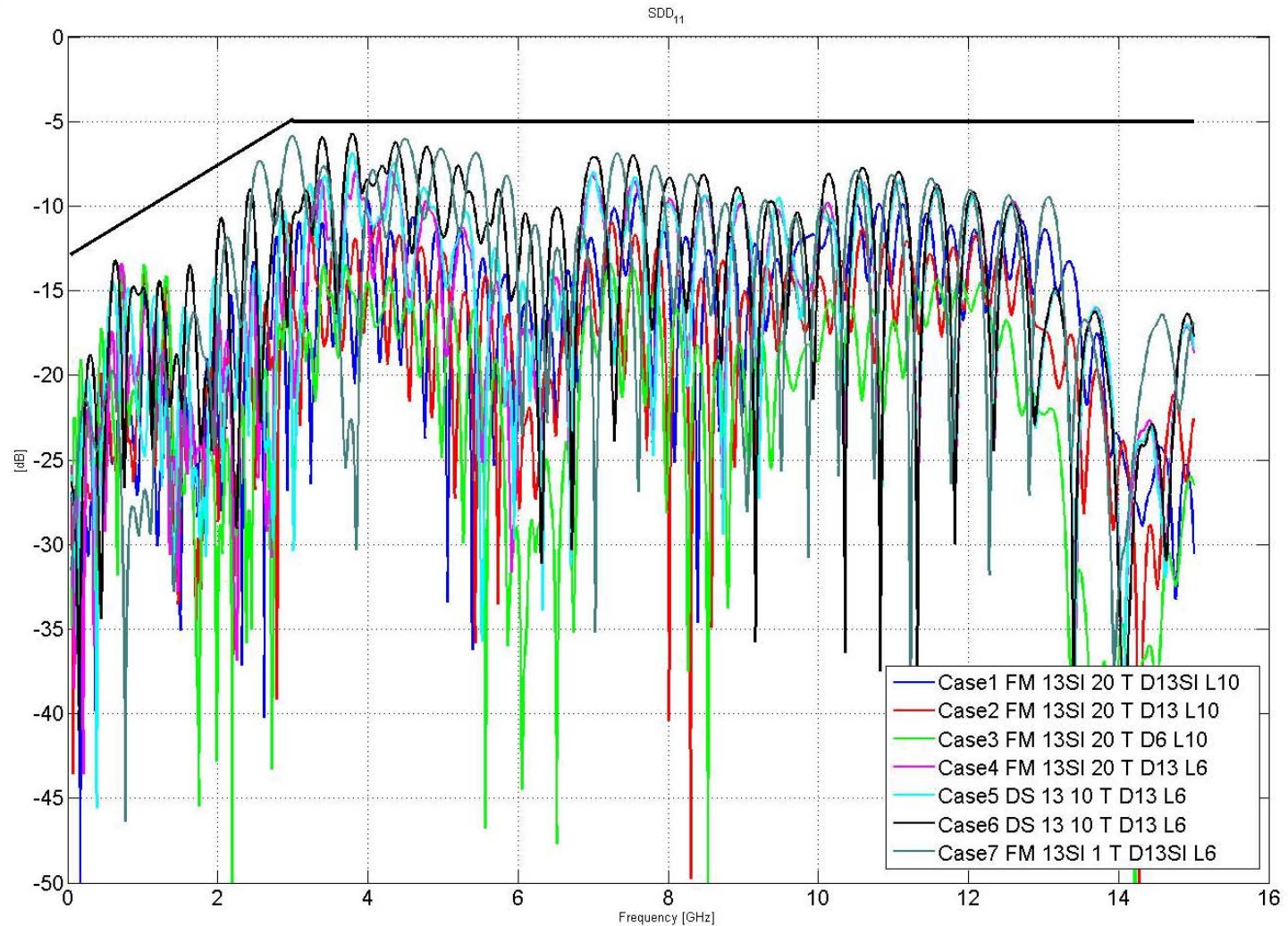
Impact of LC Length (4000-13 LC)



Impact of Daughtercard Materials for 10" per LC with 10" Tyco Dual Star ATCA Backplane



Proposal to Signaling Ad Hoc





Conclusions

- Return loss is a system issue
- Daughtercard layer connection primary source
 - Limited ability to counterbore
 - Only 0.092" daughtercards tested, switch card could be 0.150"
- Proposed mask passes all cases