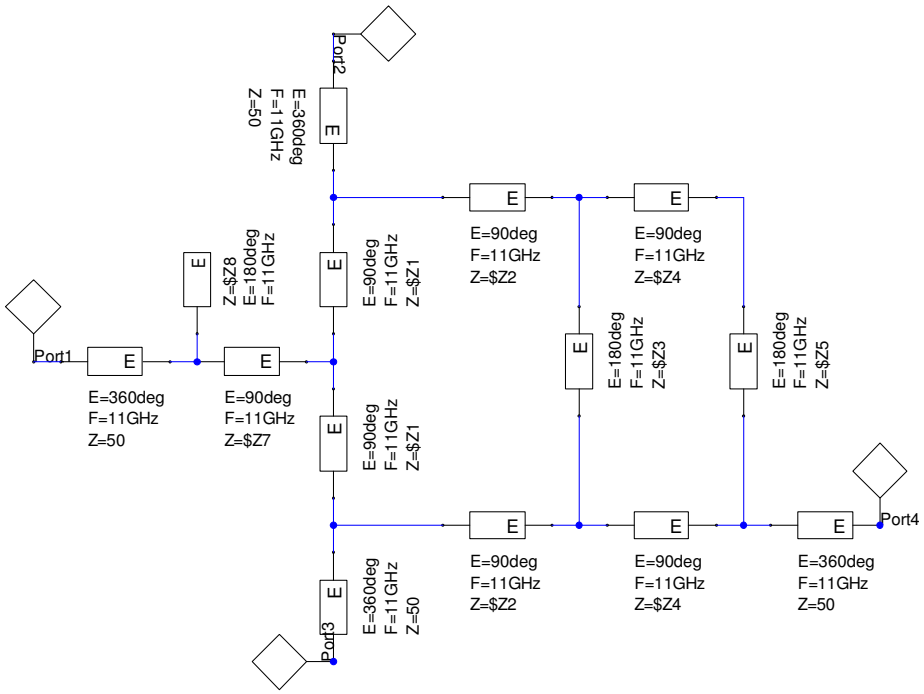
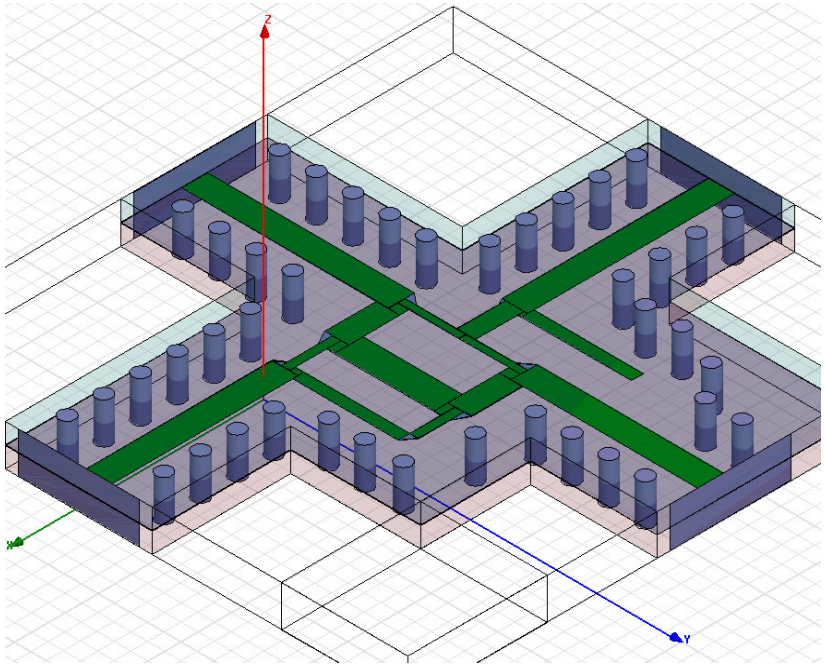
Detailed Design Review
February 13th, 2009

P09343 Microwave Data II

180° Knöchel Hybrid Coupler



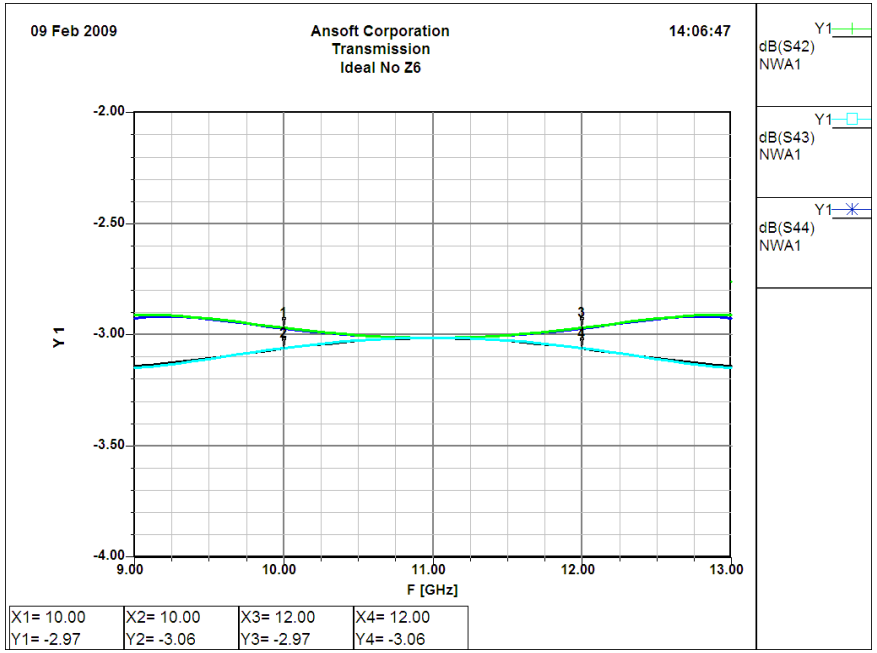
Ideal Designer Simulation Model



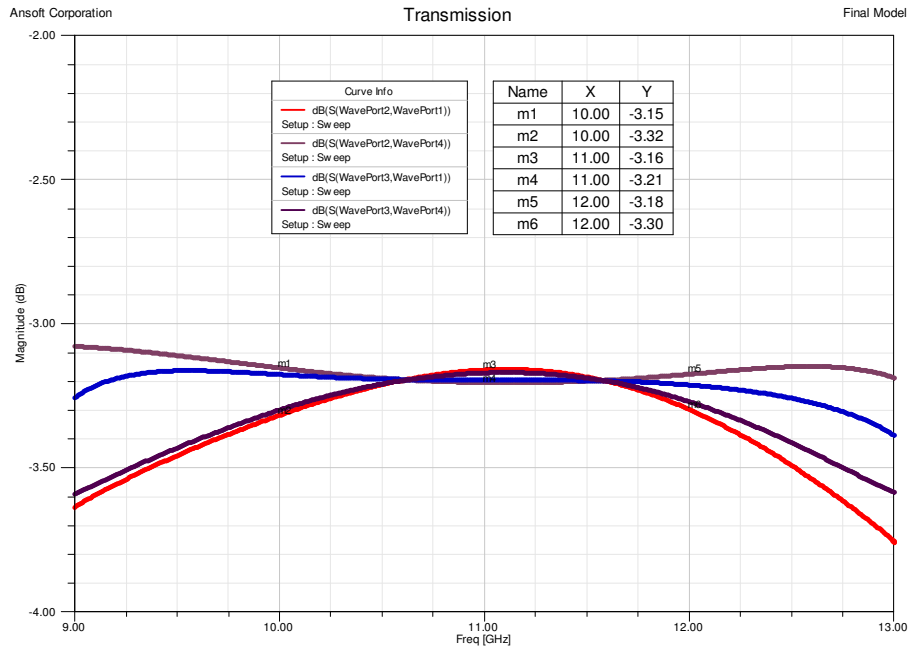
HFSS Simulation Model

180° Knöchel Hybrid Coupler

Transmission



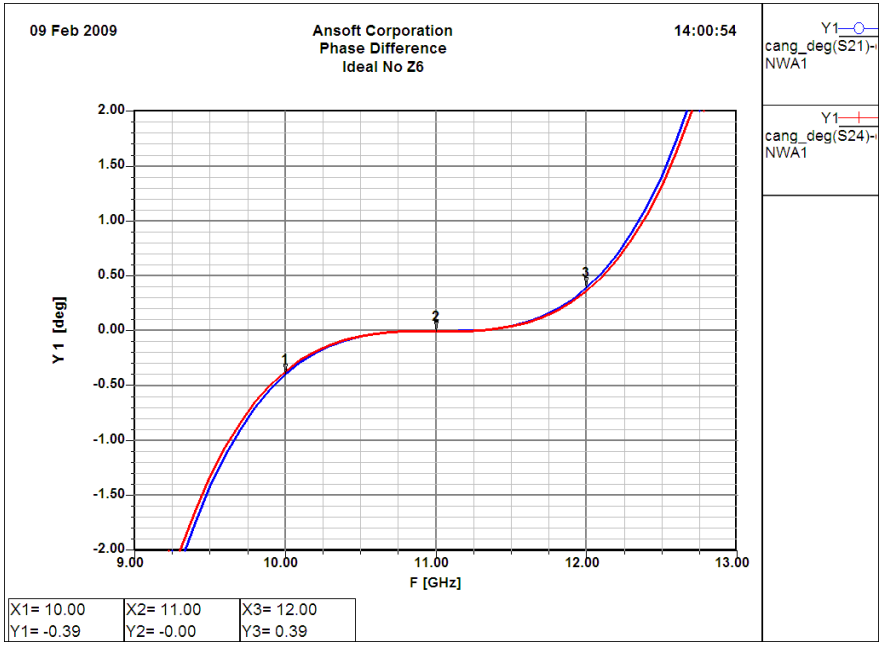
Ideal Designer Transmission
All return losses are -3.03 +/- 0.3dB



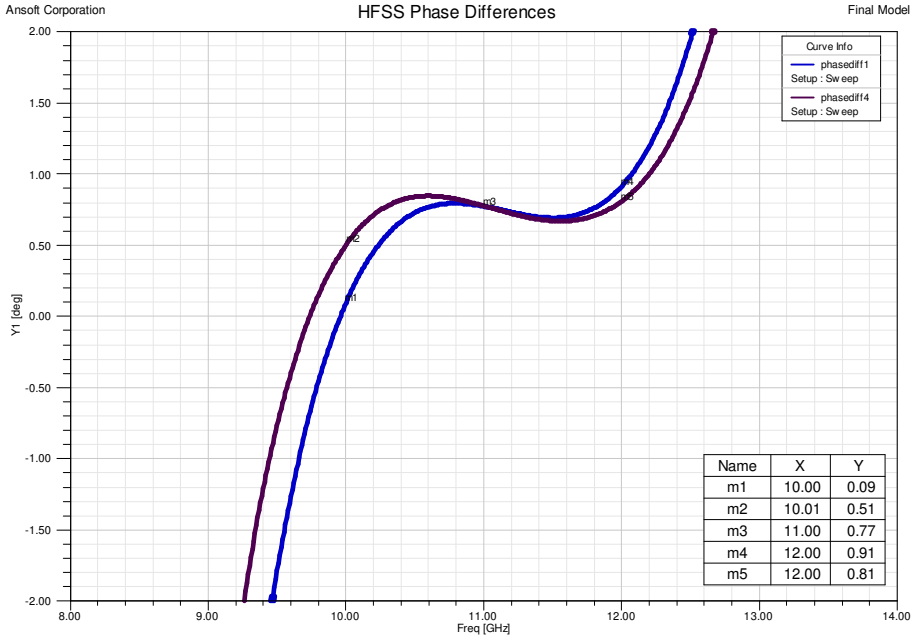
HFSS Model Transmission
All return losses are -3.18 +/- 0.15dB

180° Knöchel Hybrid Coupler

Phase Differences



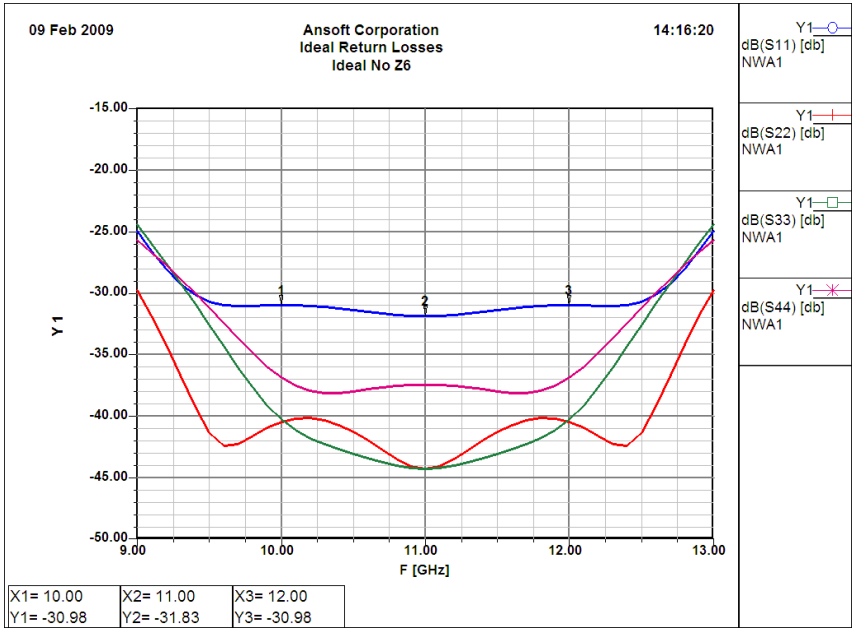
Ideal Designer Phase Differences
(S_{2N}-S_{3N})
All phases are 0º +/-0.4º

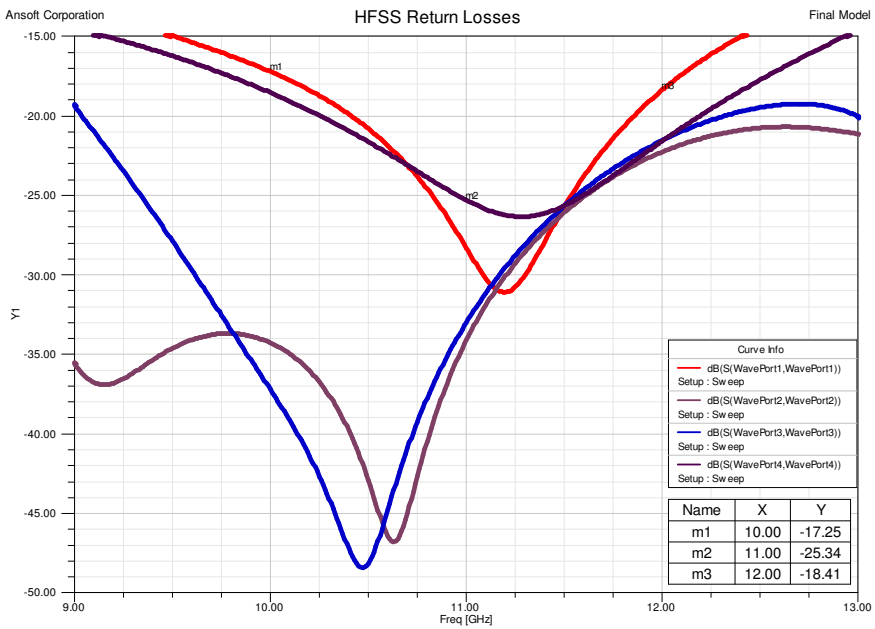


HFSS Model Phase Differences
(S_{2N}-S_{3N})
All phases are 0.5º +/-0.4º

180° Knöchel Hybrid Coupler

Return Loss



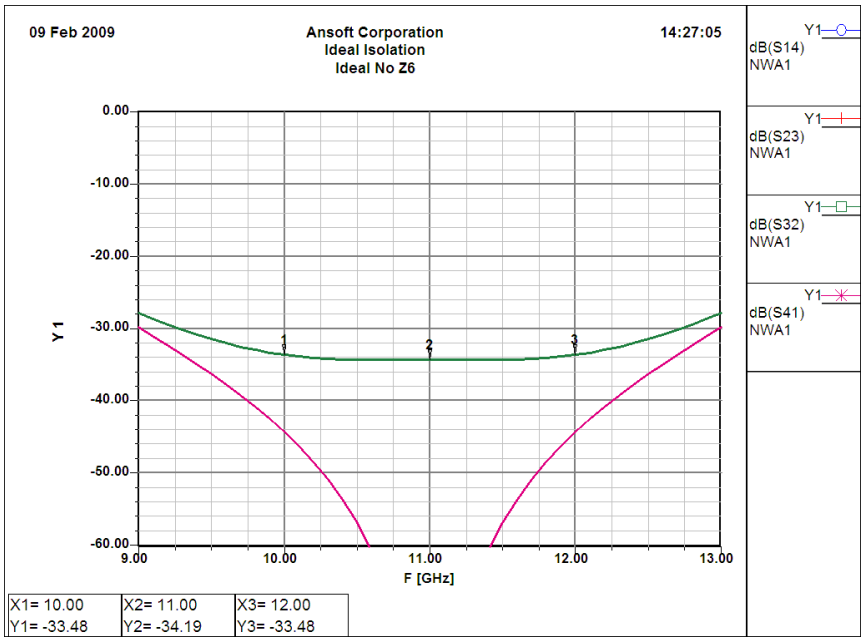


Ideal Designer Return Losses
All Return Losses are less than -30dB

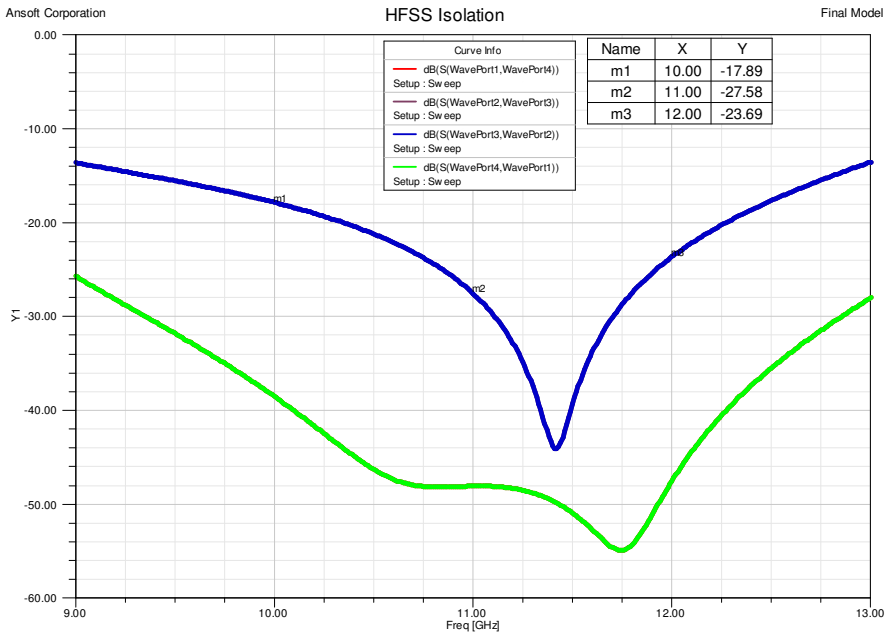
HFSS Model Return Losses
All Return Losses are less than -17.25dB

180° Knöchel Hybrid Coupler

Isolation



Ideal Designer Model Isolation
All Isolation vales are less than -33dB



HFSS Model Isolation
All Isolation vales are less than -17.89dB