

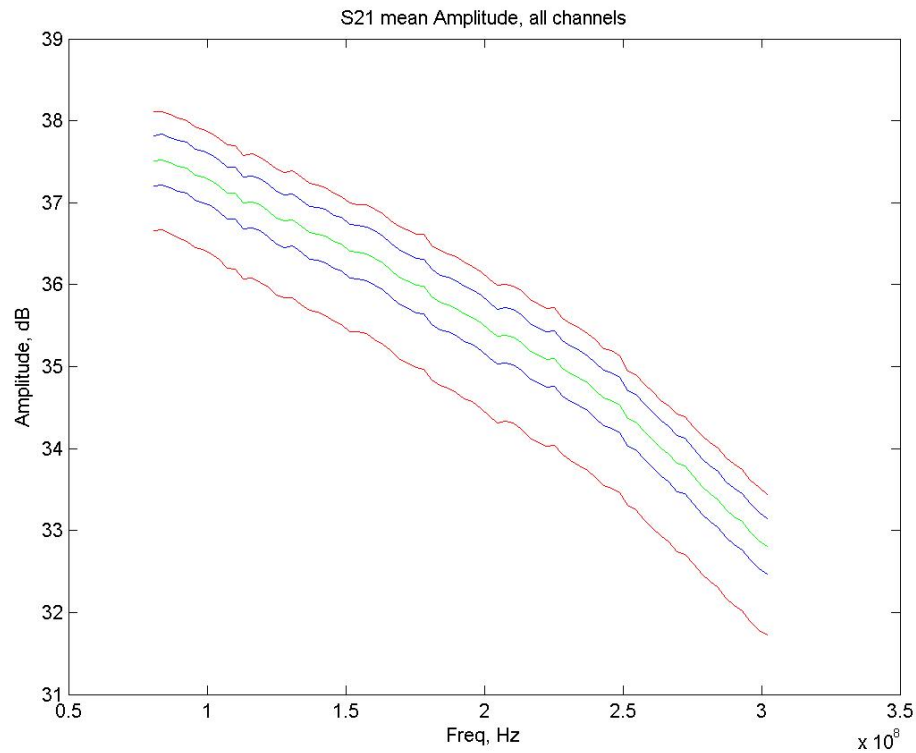
Beamformer Electrical Characteristics

High Gain Delayline Boards Using the SGA-4563

Eric Kratzenberg, Brian Corey
Haystack Observatory
September 28, 2009

Mean delayline board gain over 16 channels: statistics for 20 boards

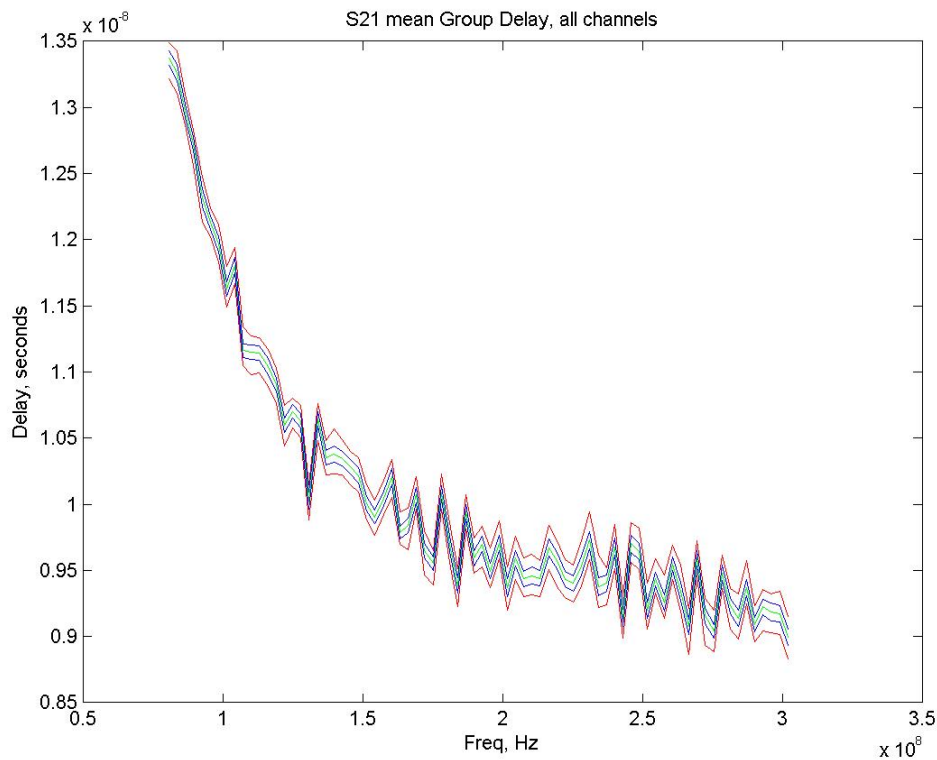
green = mean blue = $\pm 1\sigma$ magenta = extrema



No delaylines
switched in

Mean delayline board delay over 16 channels: statistics for 20 boards

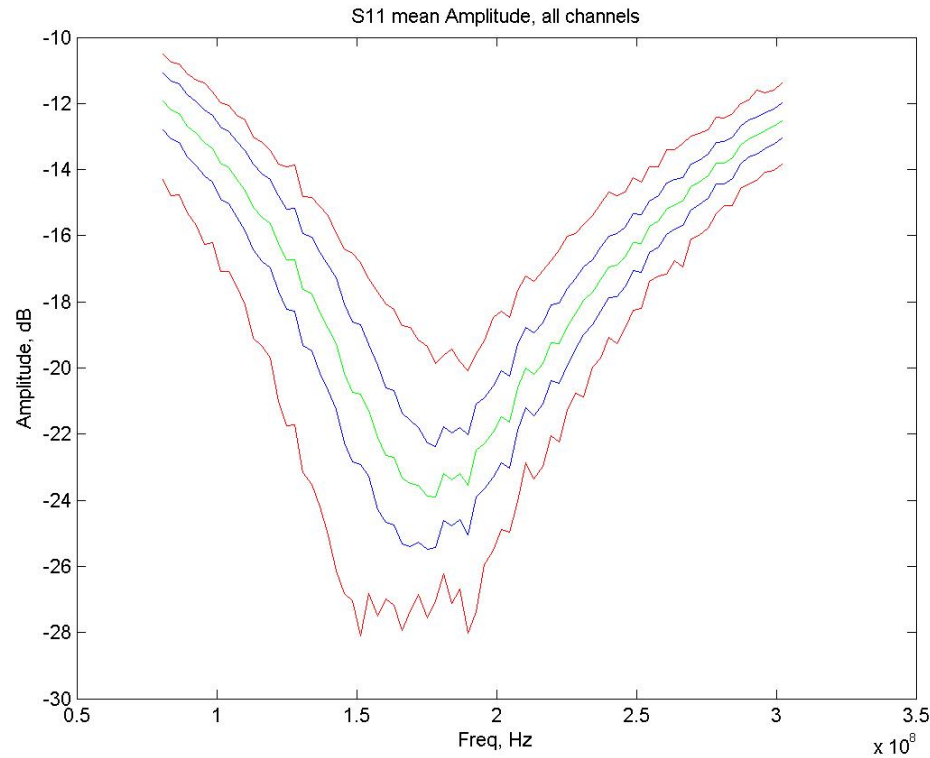
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No delaylines
switched in

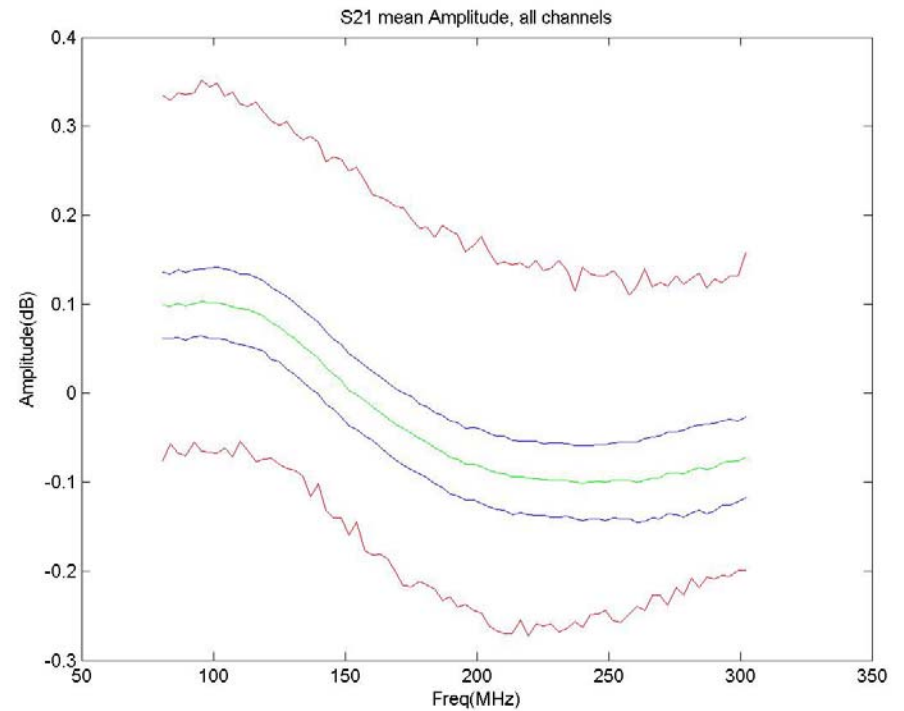
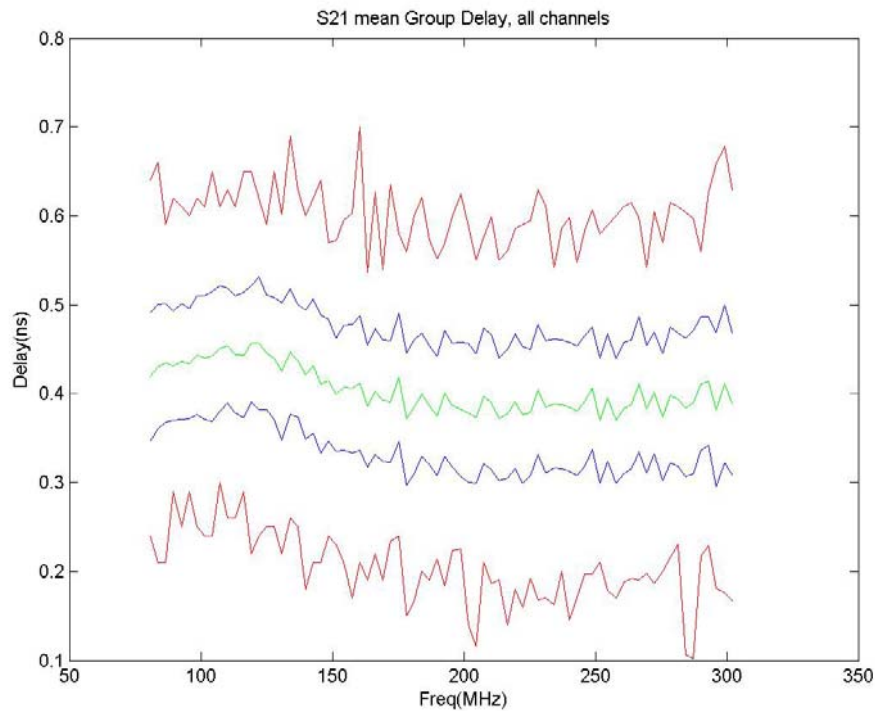
Mean delayline board return loss over 16 channels: statistics for 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



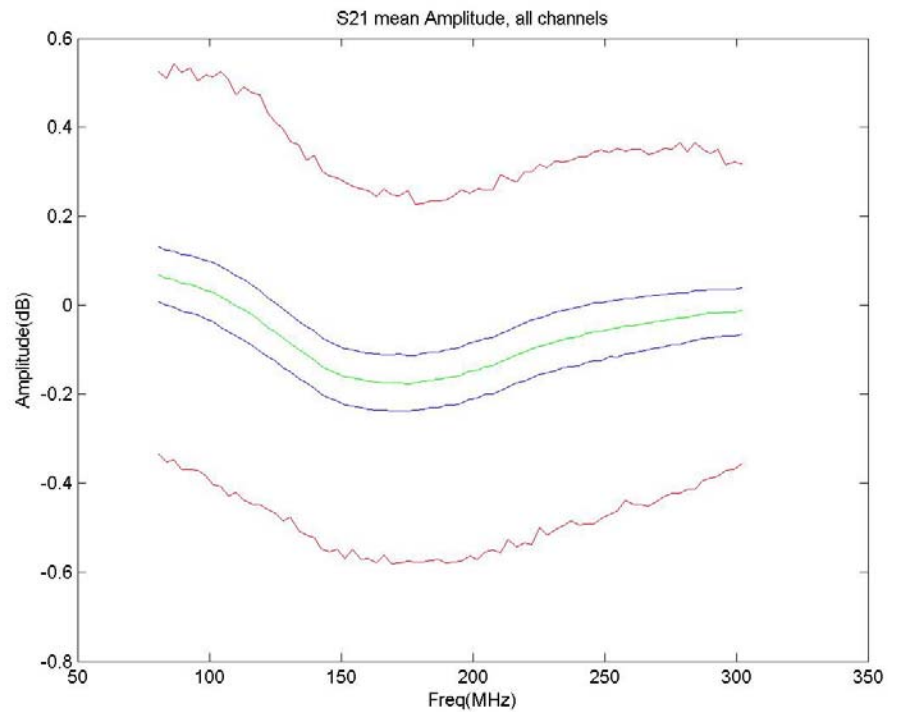
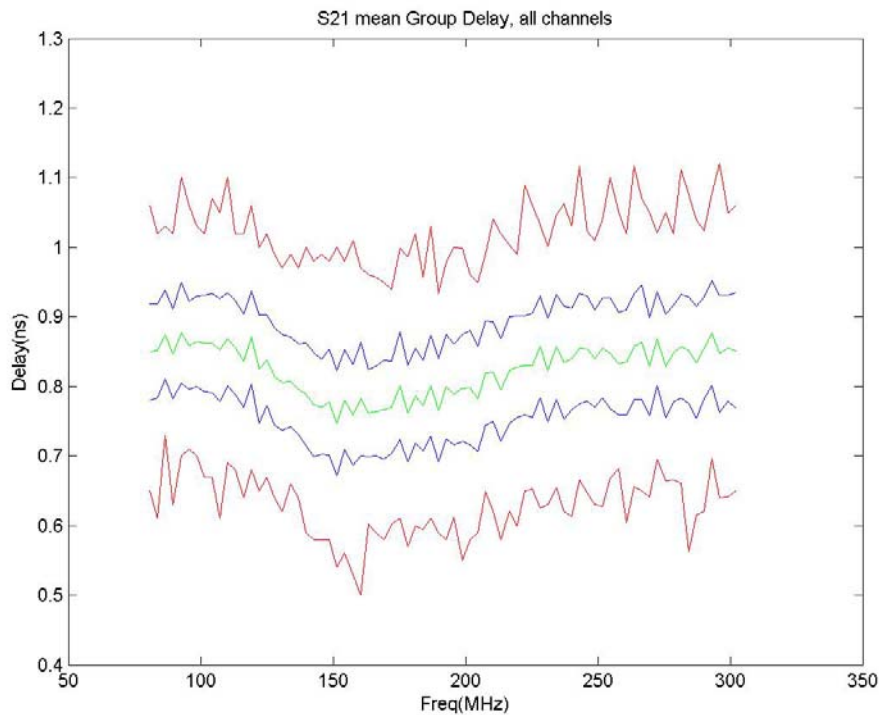
Delay 1 - Delay 0 differential delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



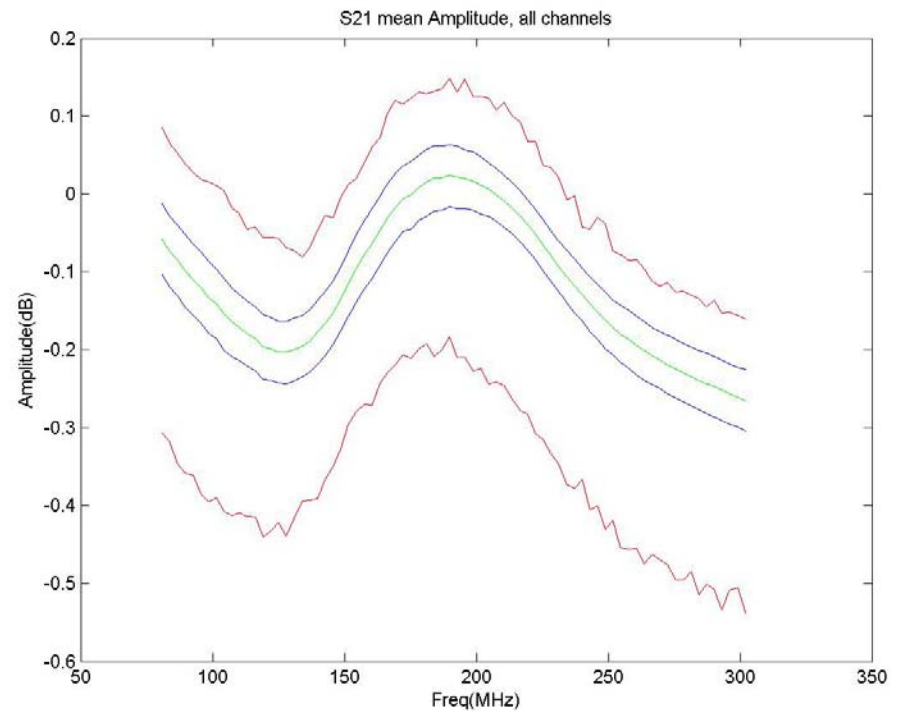
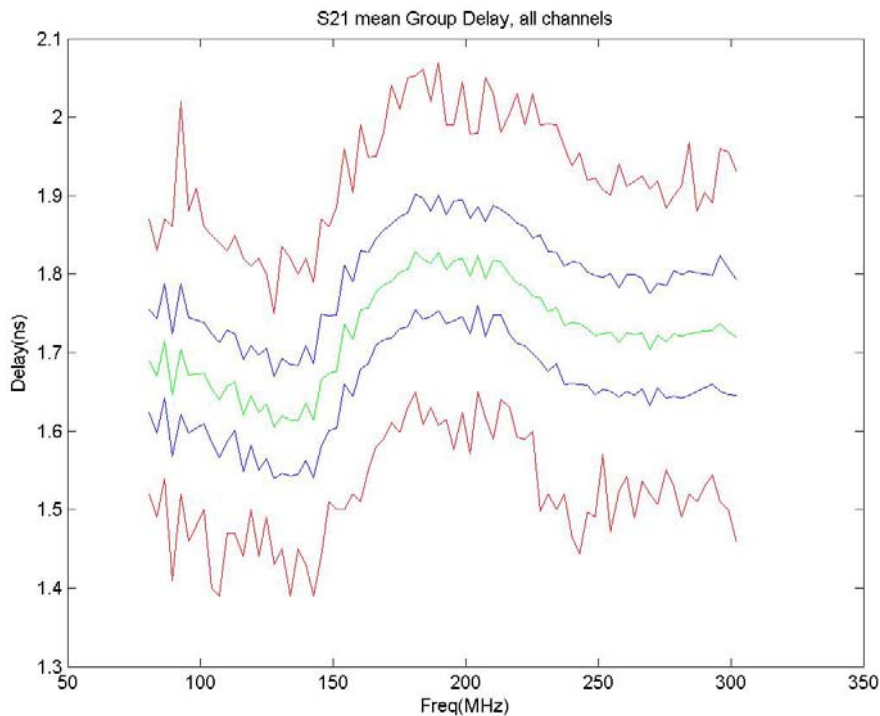
Delay 2 - Delay 0 differential delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



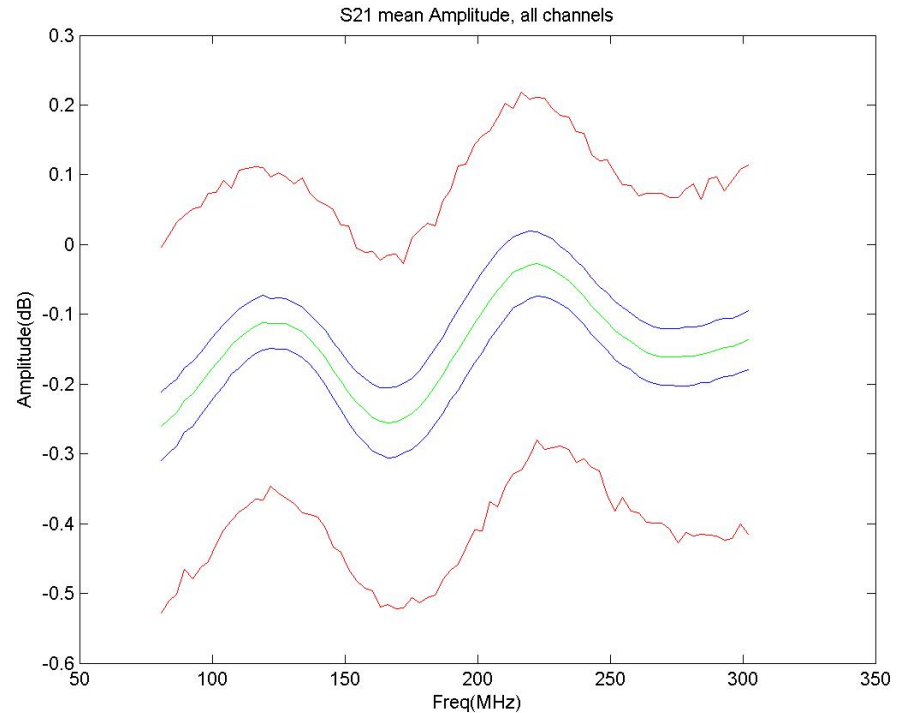
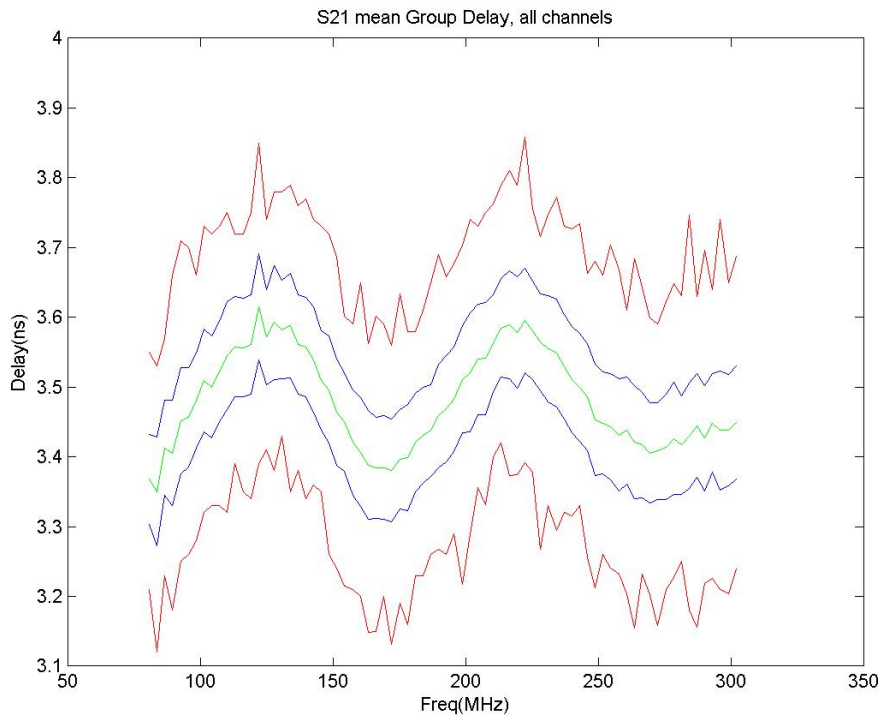
Delay 3 - Delay 0 differential delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



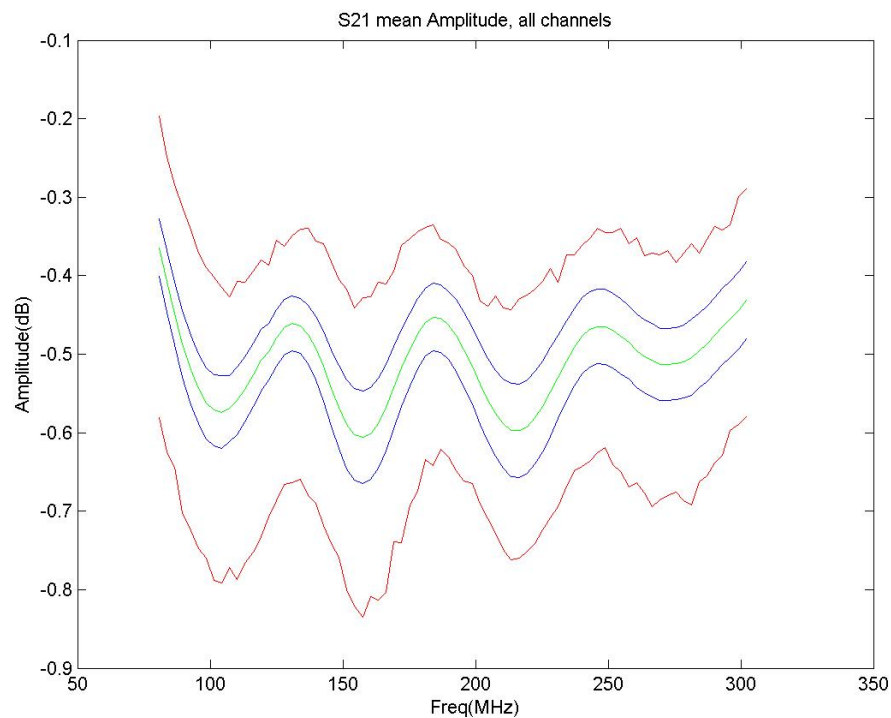
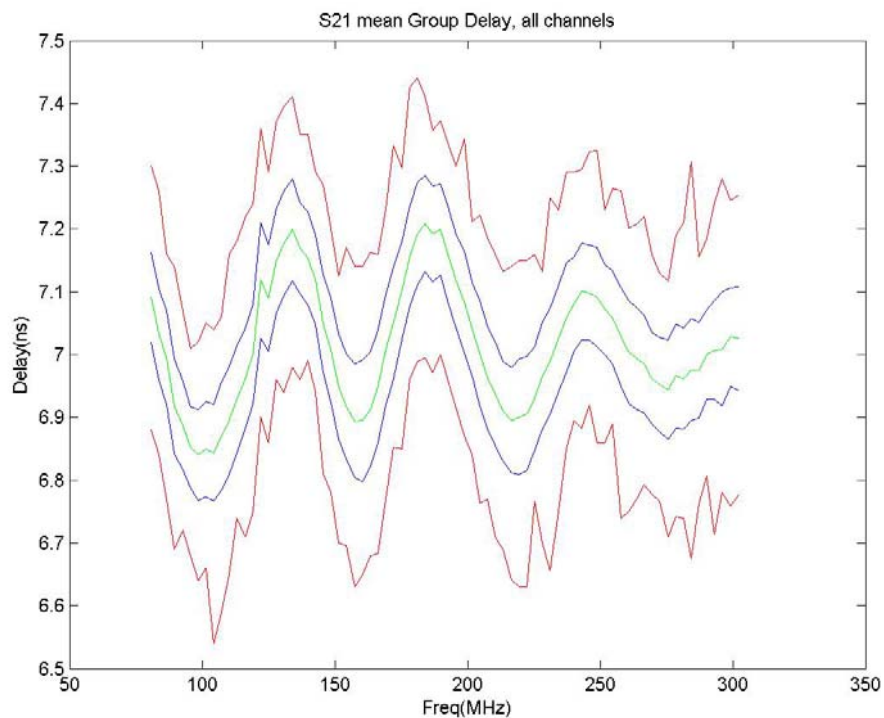
Delay 4 - Delay 0 differential delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



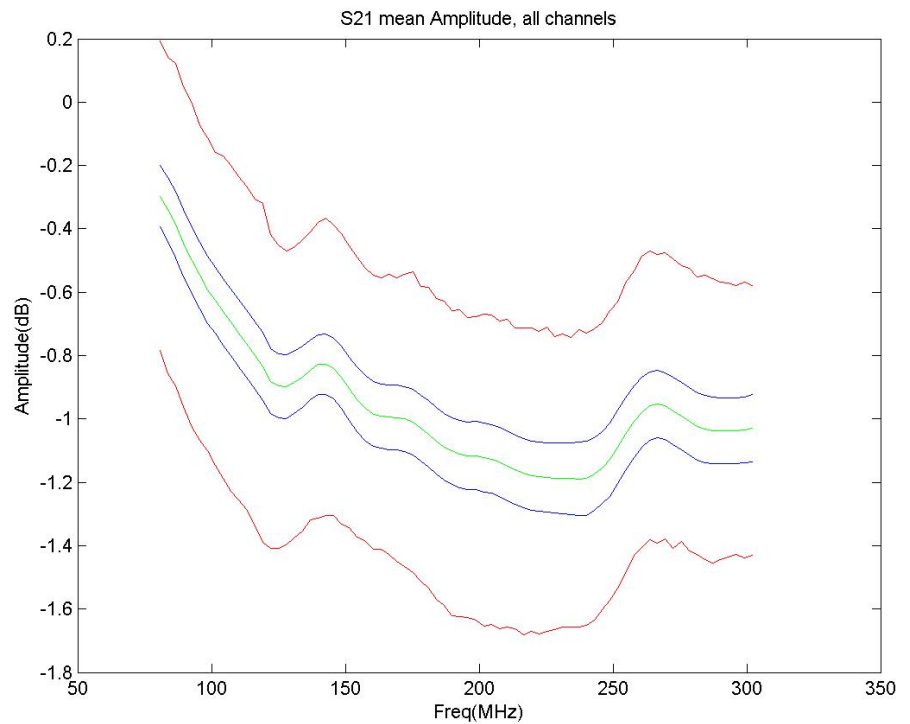
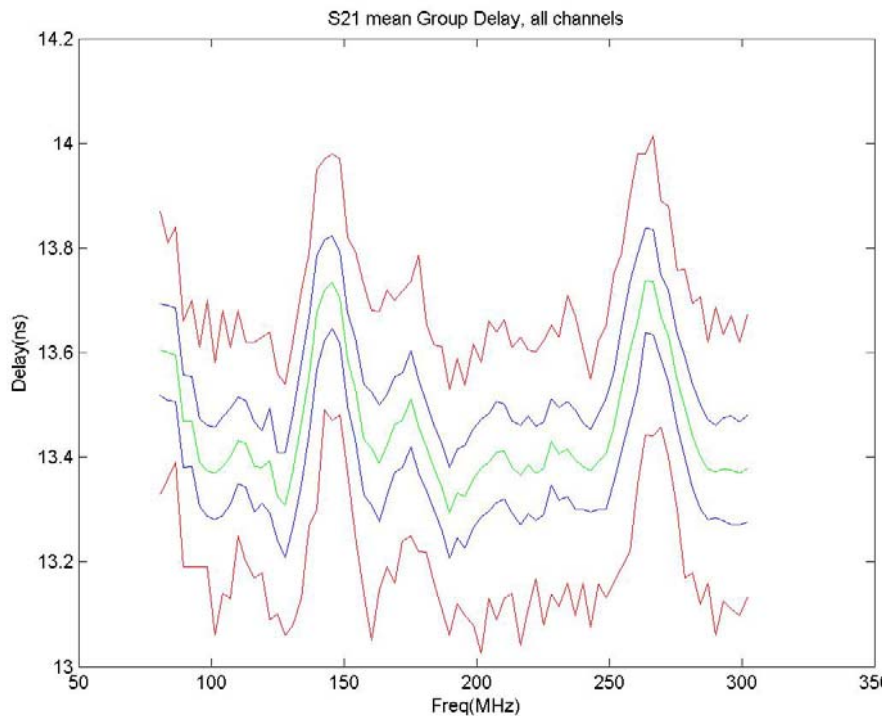
Delay 5 - Delay 0 differential delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



Max delay (1+2+3+4+5) - Delay 0 diff. delay and gain: statistics for 16 channels x 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema



Differential gain and phase for two Walsh states: statistics for 20 boards

green = mean blue = $\pm 1\sigma$ magenta = extrema

