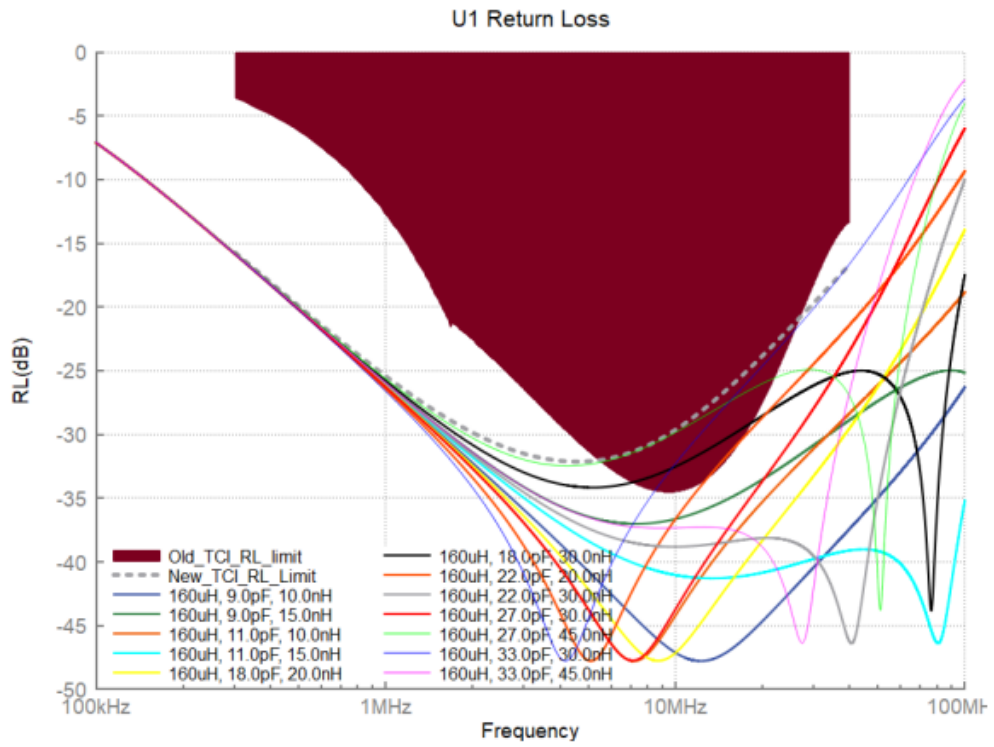
Return Loss and Comp. Inductor Variation

Michael Paul

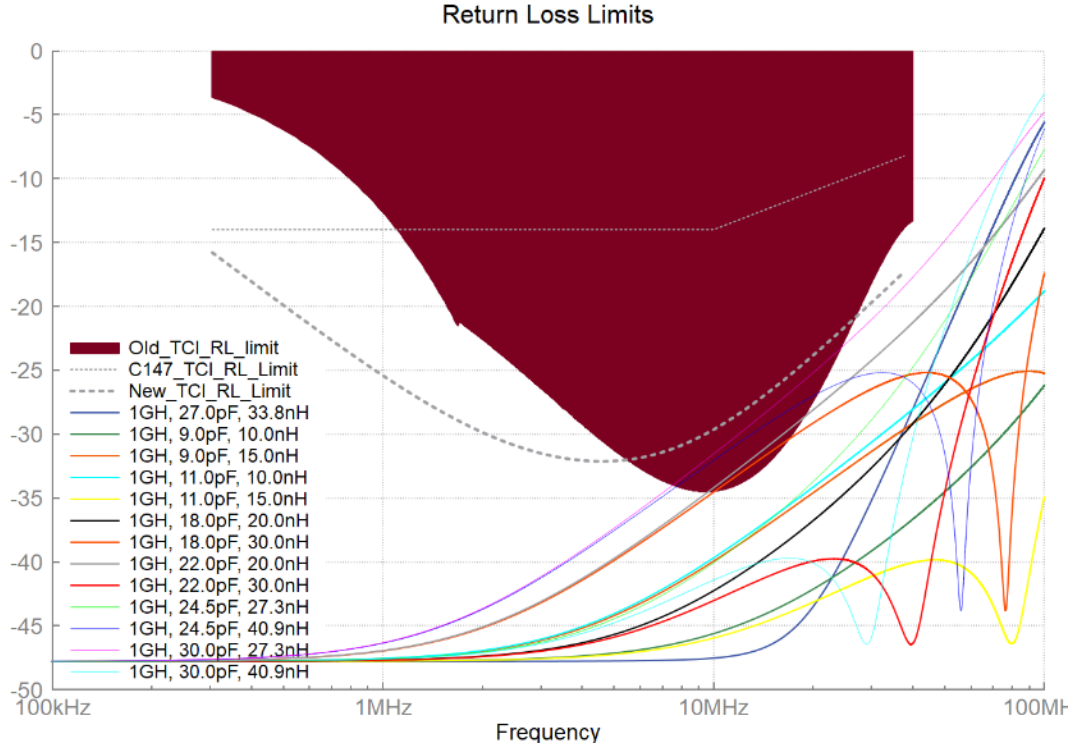
Comparing Powered / Unpowered Return Loss

Power Coupling Inductor set to 160uH from [mpaul_da_01_20250310_v2.pdf](), slide 7



Power Coupling Inductor set to 1GH

Variation in RL is mostly due to compensation inductors variation +/-20% initial variation



Compensation Component Requirement

Value of compensation components will tend to decrease as current through the compensation inductors increases

Inductors typically have an Isat specification that tells the current where inductance value will drop by 30%

A 30% change in compensation inductance will likely cause an MPD to stop meeting RL spec.

Compensation inductors will need to tolerate much more than 2A without damage to maintain compliance