

An initial comparison of NEBS based anechoic chamber test and section 113 clamp test

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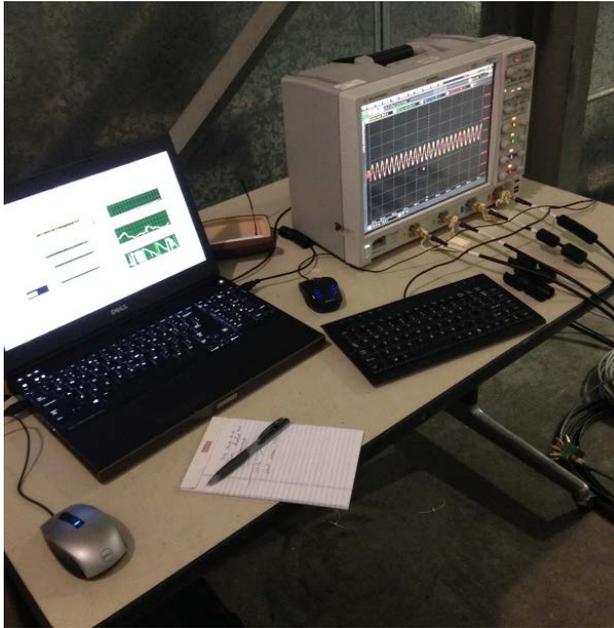
A termination box and channel were mounted in a representative NEBS test configuration

The box encloses an early version Cat 8 jack (no magnetics – only coax chokes) feeding 4 coax from the split and a side pair with the other two pairs 100/25 terminated

An early version Cat 8 channel is plugged in

(early version is used to provide more significant field pickup response)



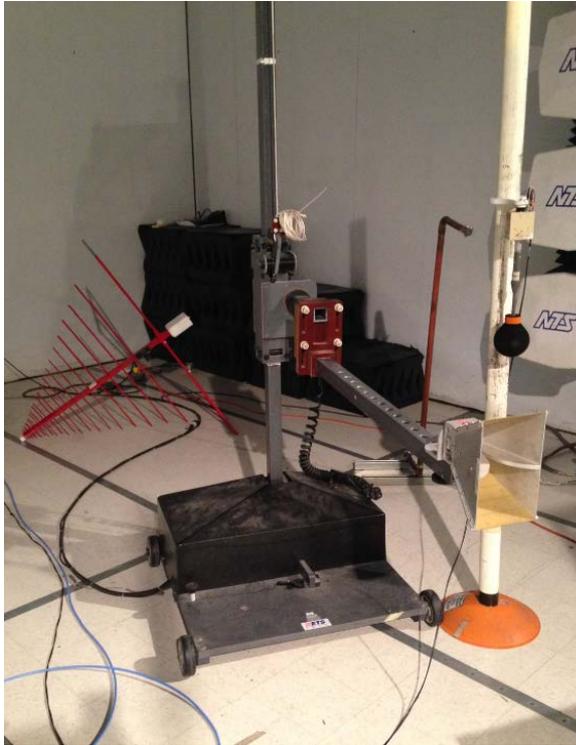


Most of the channel was placed outside the chamber next to the sampling scope

Far end 100/25 terminated with a Cat 8 jack

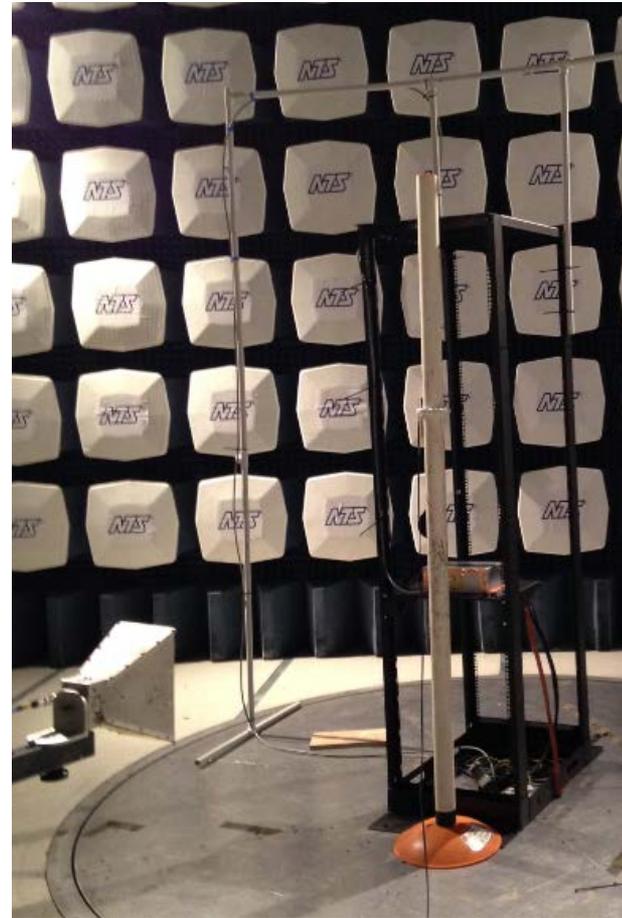
Various grounding changes showed no effect

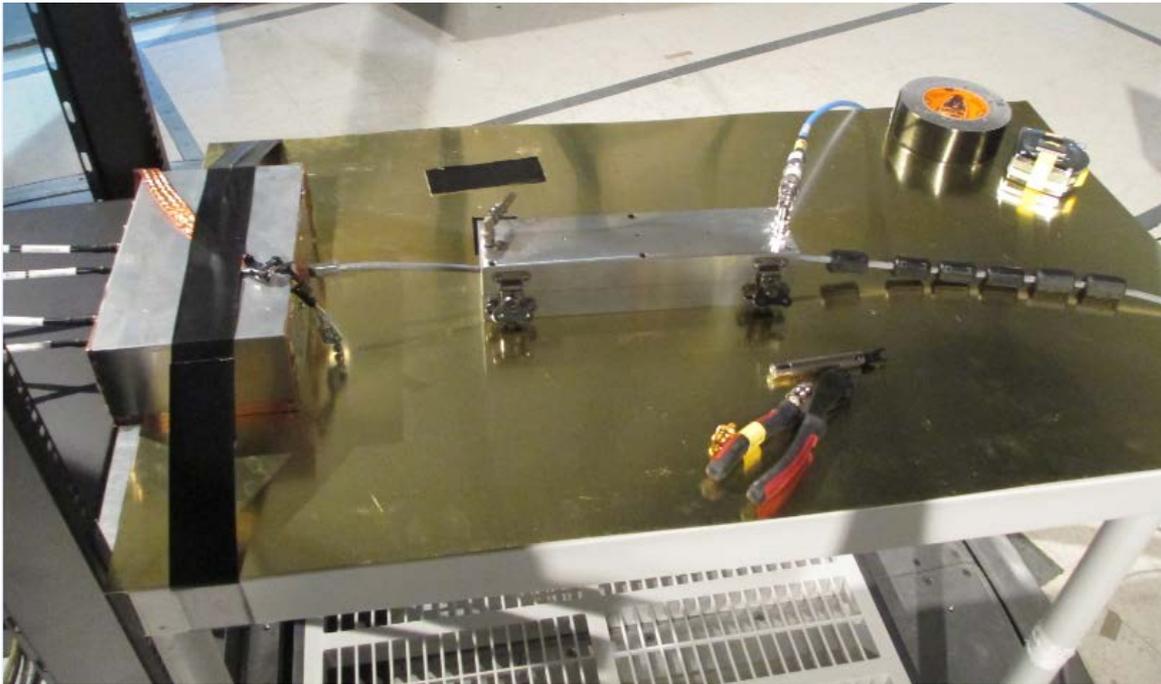




Vertical and Horizontal 10V/m fields from 80 MHz to 2 GHz were impressed on the front of the termination box

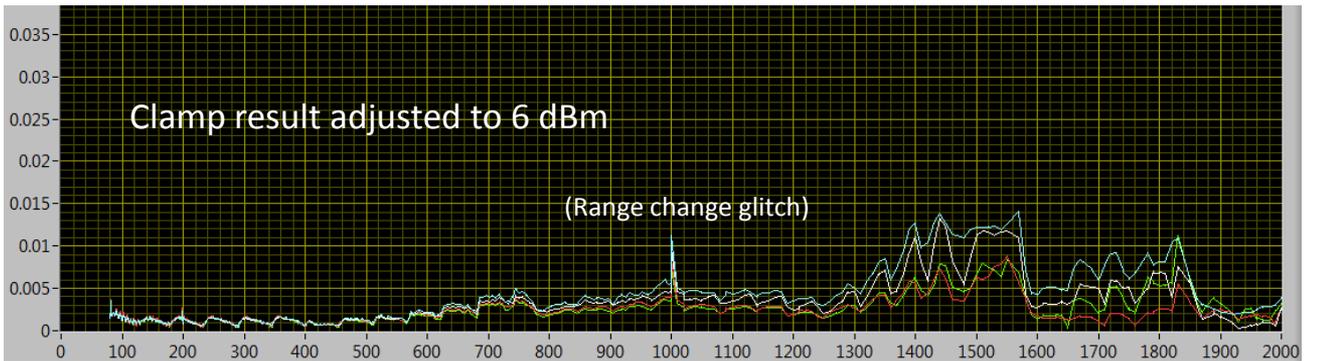
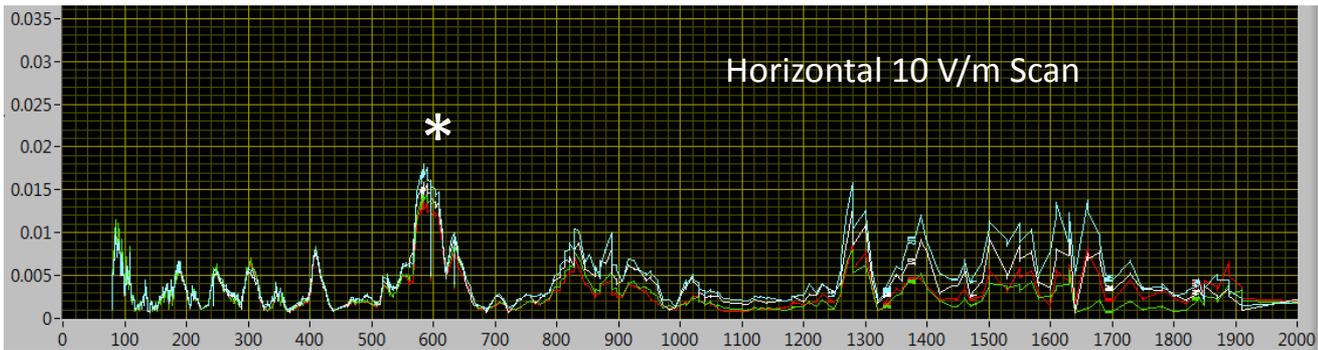
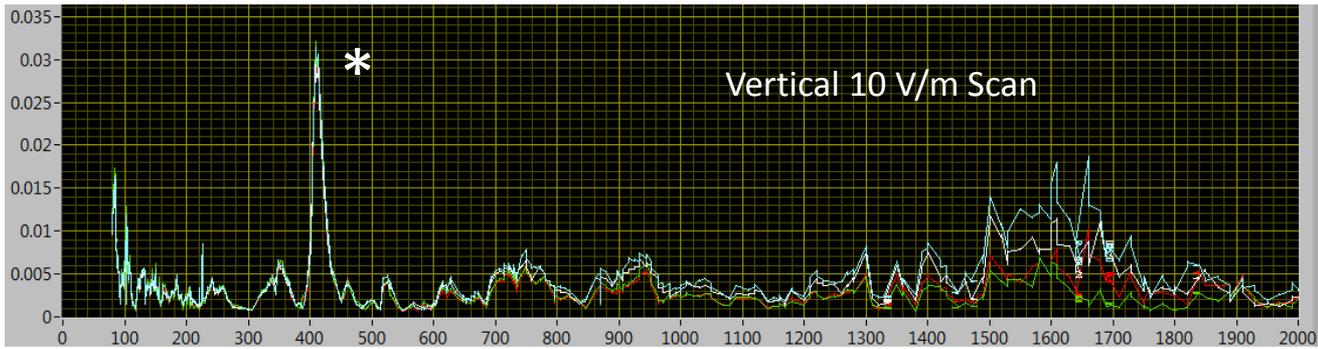
The channel was routed up to 9 feet and over to the drop and back to the center exit





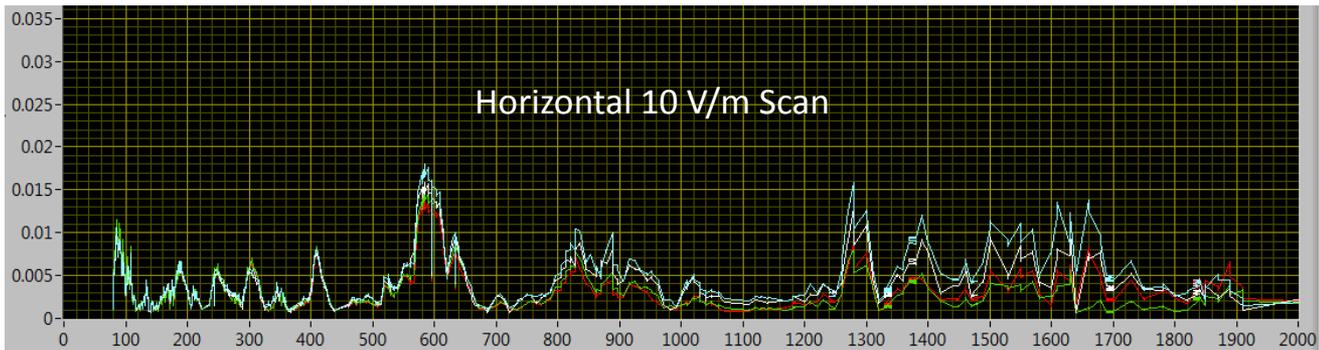
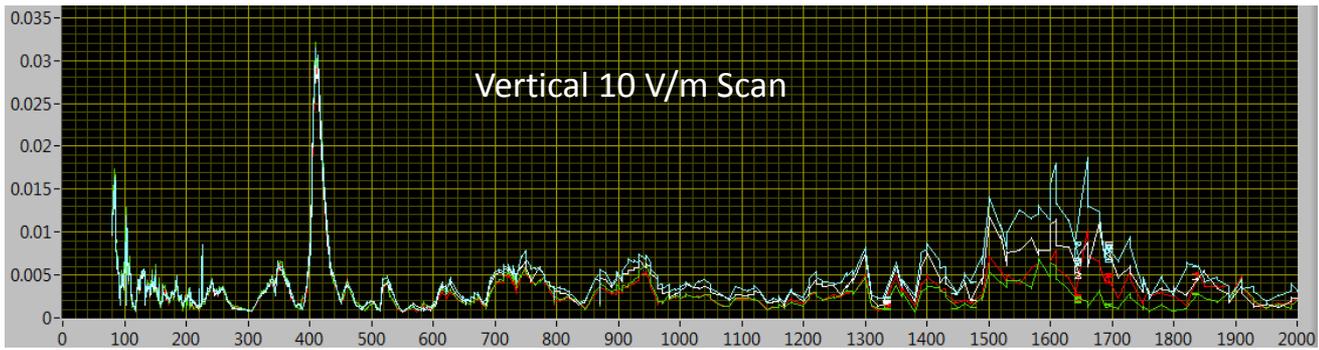
After the field scans, the box was moved out onto a ground plate and the channel was unmounted and rerouted in through the clamp

The clamp is now driven by the antenna amplifiers

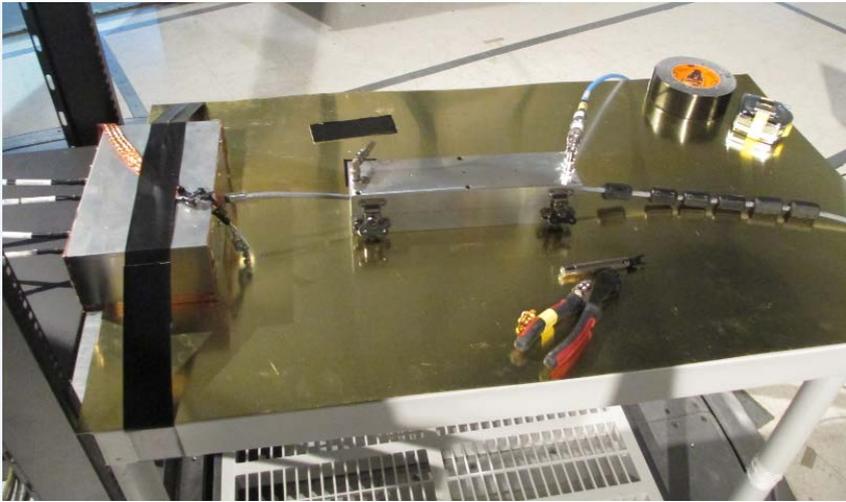


Comparison Results

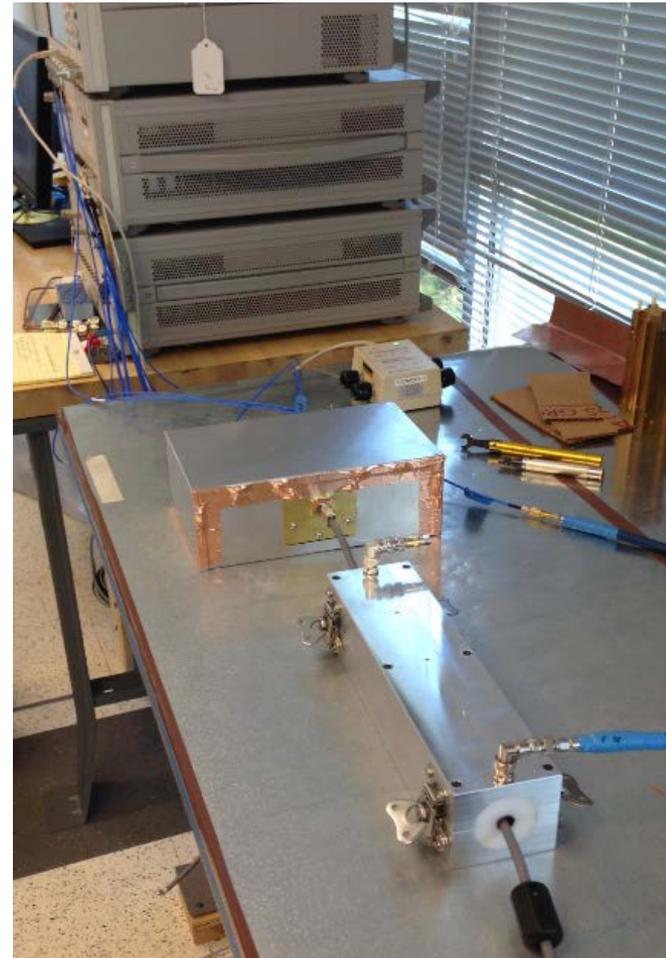
* These strong peaks may be due to setup grounding issues – more testing and study is needed

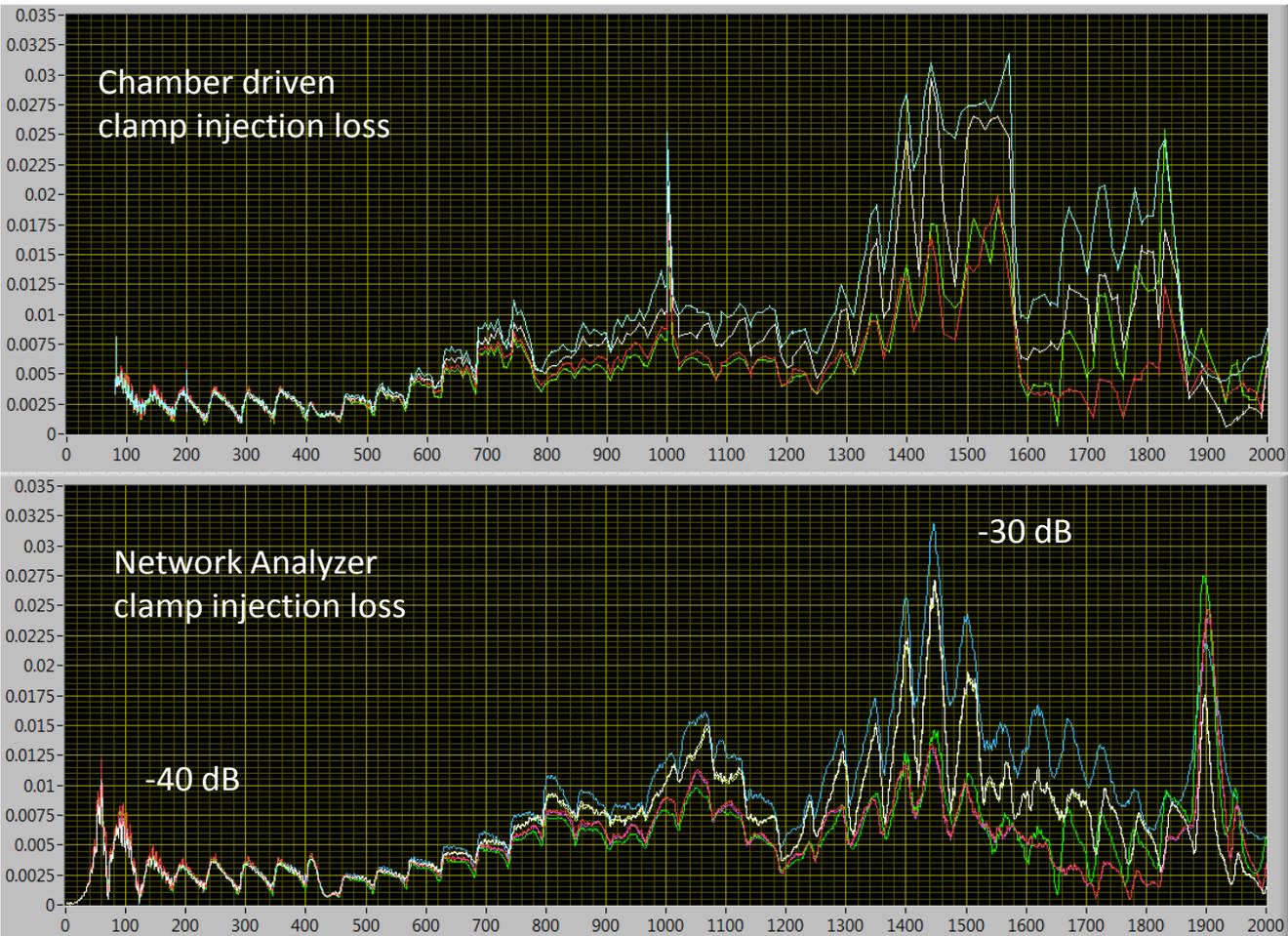


Result adjusted as if 6 dBm is maintained at the clamp output



A followup clamp test was done in an established lab setup for comparison





Comparison of chamber amplifier driven clamp with equivalent network analyzer measurement (as if 1v referenced or +13 dBm)

Preliminary conclusions

- Strong chamber pickup peaks that are noted need further study – grounding and alternative chamber test arrangements should be examined
- Clamp drive results are consistent between amplifier driven and network analyzer
- Clamp levels appear to be on par with 10 V/m field tests at higher frequencies, but more like 3 V/m field tests at lower frequencies
- Adjusting to 6 dBm at clamp output appears to excessively distort results – it should be clear also that the high clamp loss at these frequencies also makes for high error levels post-adjustment