

REVIEW OF CA-N DATA

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802.3by ad-hoc

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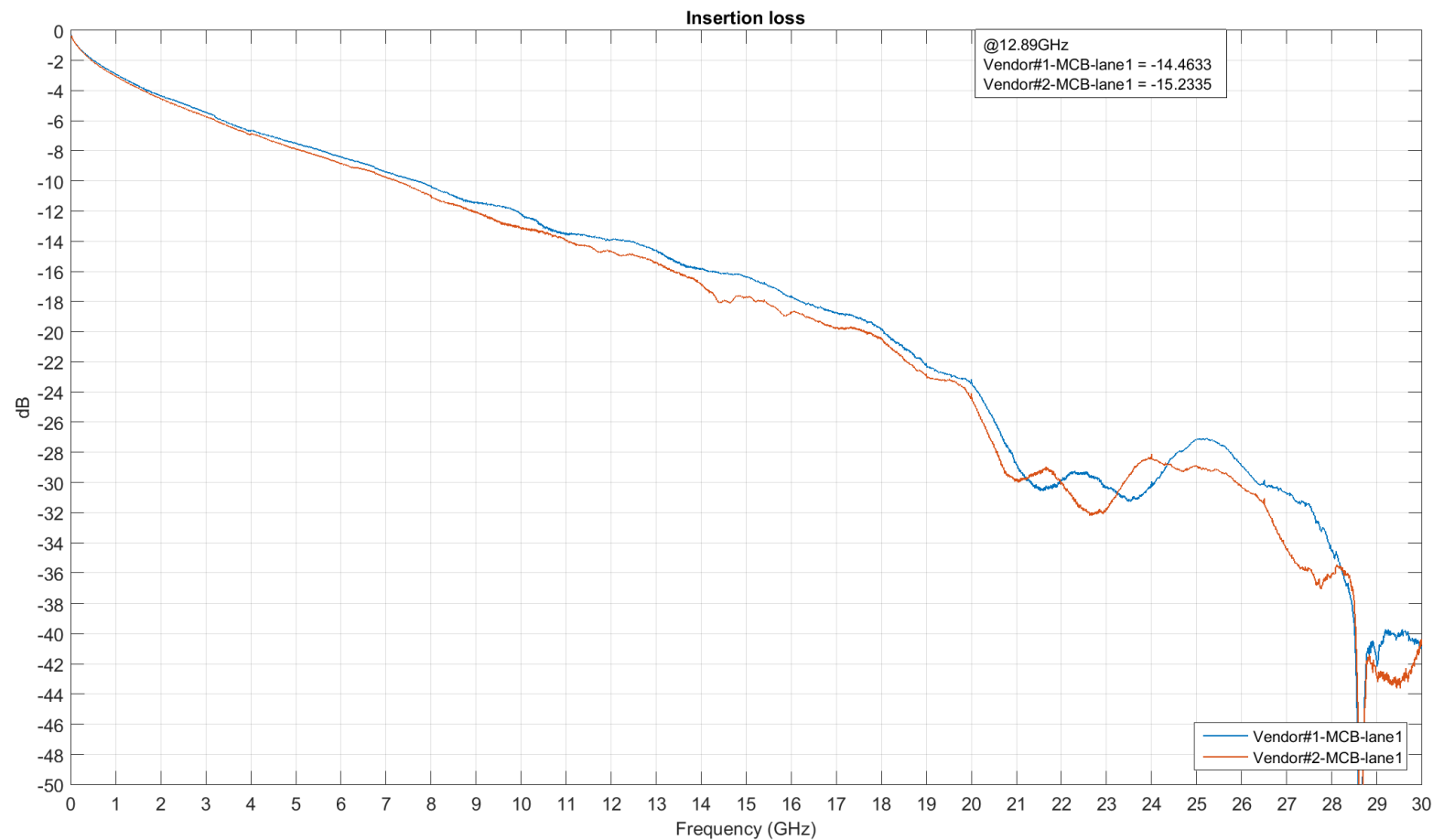
CA-N PRESENT STATE

- 15.5 dB loss @ 12.89GHz
- Separate COM definitions than CA-S and CA-L
 - So already differentiated than CA-S.
- Approximately 3 metres

UPON DEPLOYMENT

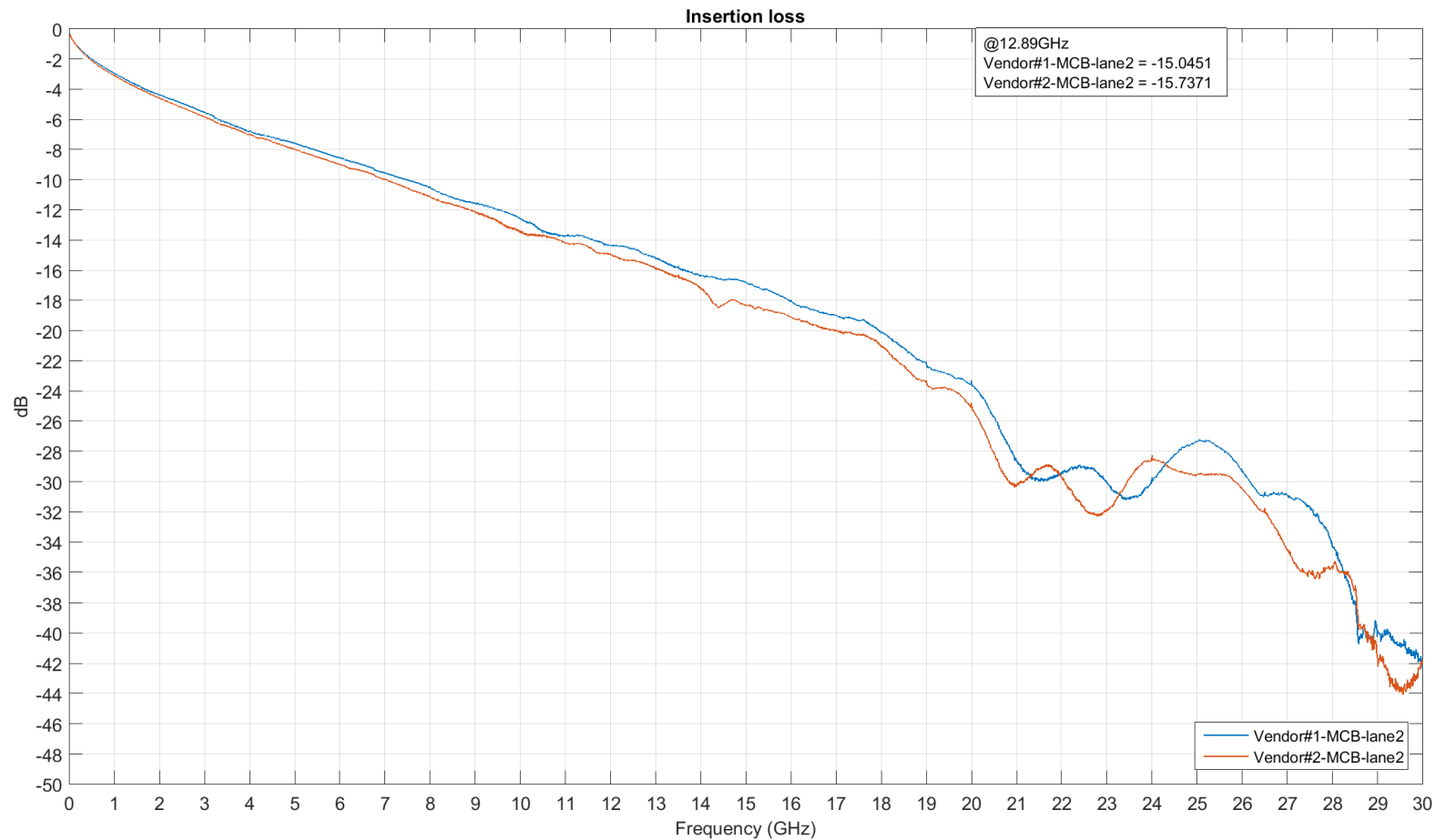
- Cables from different vendors were measured ...
- ... using MCBs from different vendors
- Reminder: 110B.1.2 SFP28 Cable assembly test fixture
 - The test fixture printed circuit board reference insertion loss is given in Equation (92–35). The effects of differences between the insertion loss of an actual test fixture and the reference insertion loss are to be accounted for in the cable assembly or module measurements.
- The latter was not done in this presentation.
- All cables are CA-N candidates
- All MCBs pass the mated test
- Let's look at the results

3 METRE 26 AWG LANE 1



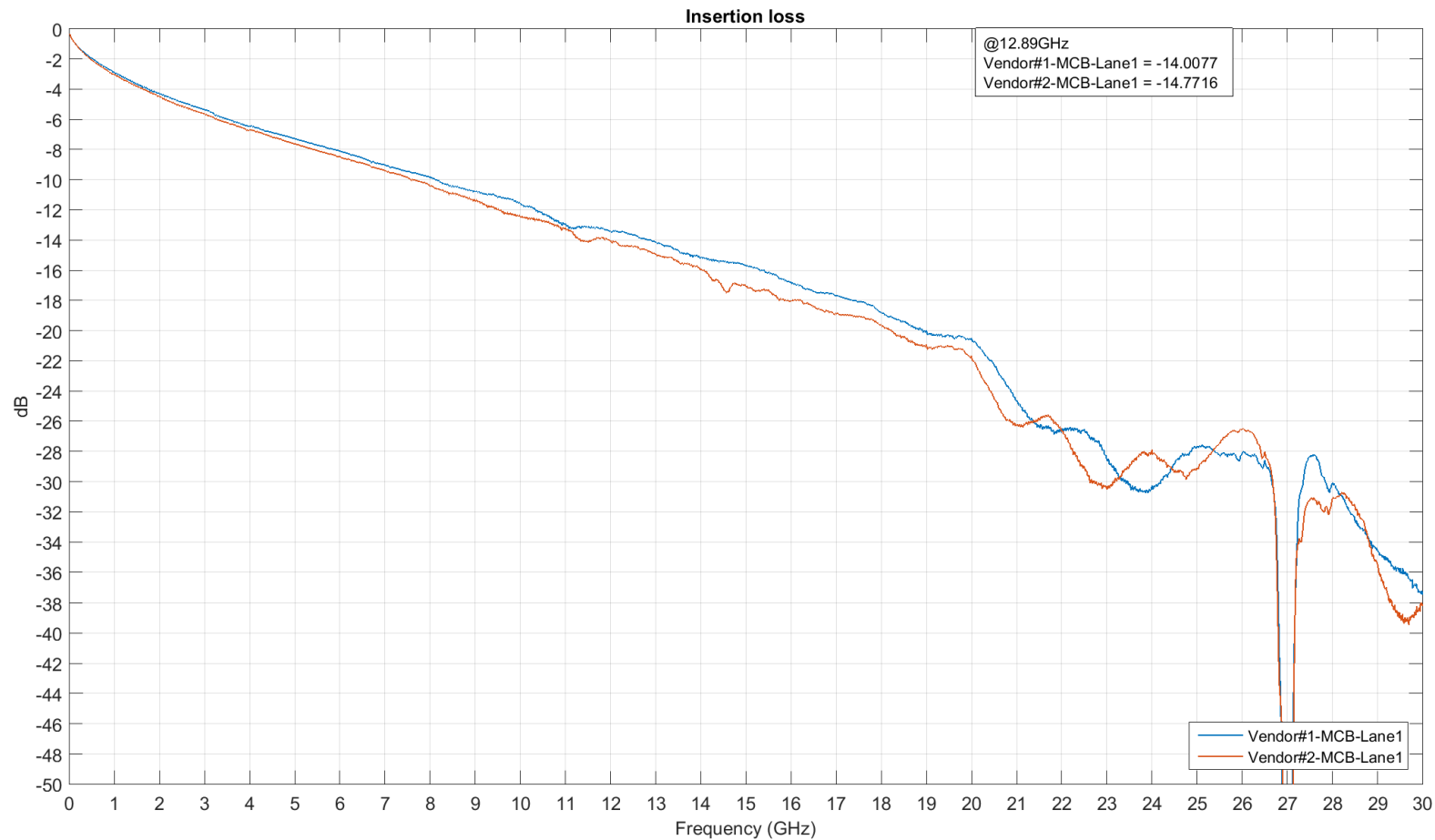
- SFP28-SFP28
- Both MCBs pass the mated test.
- Measurements at 12.89GHz are more than **0.7** dB apart.

3 METRE 26 AWG LANE 2



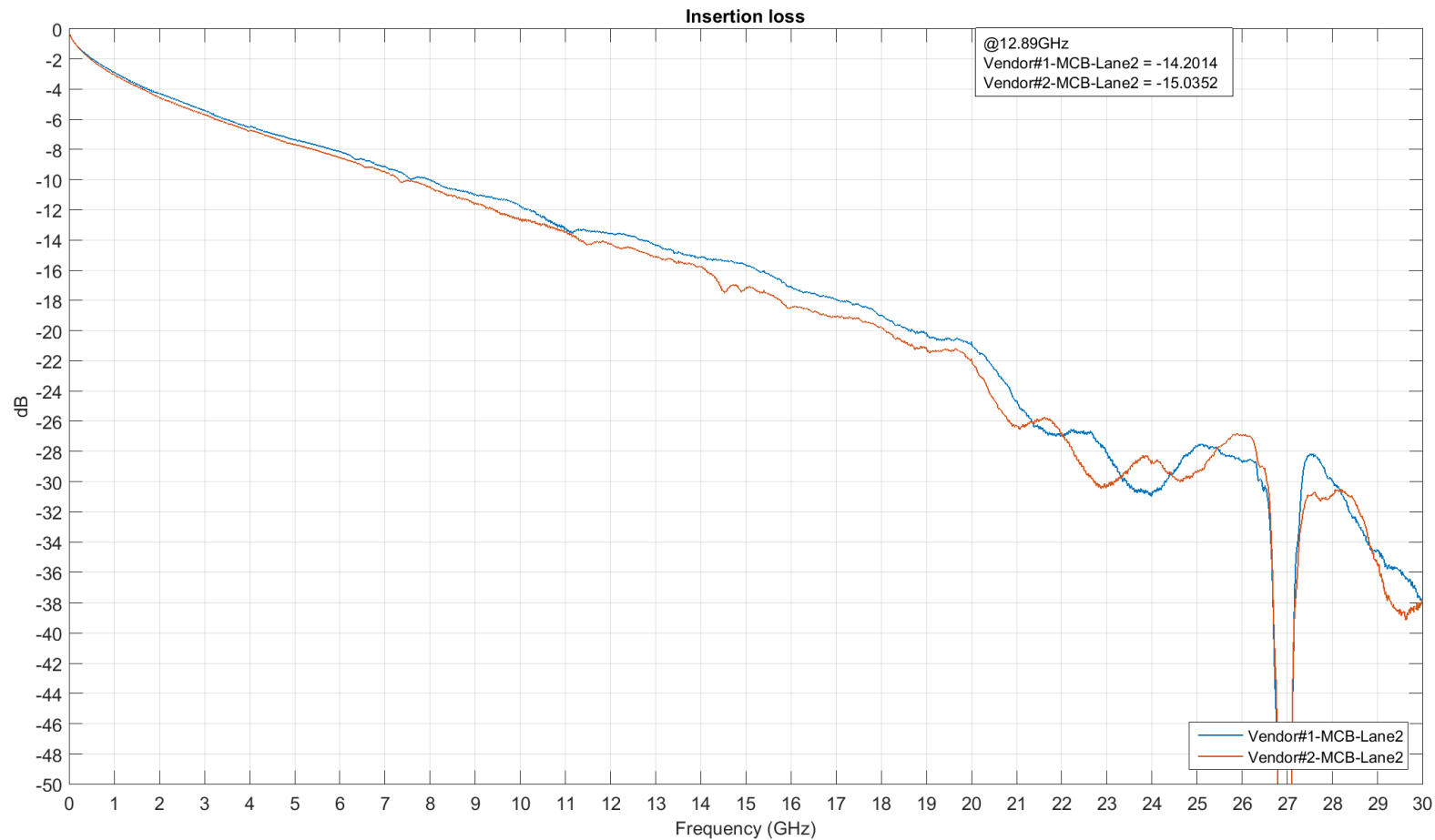
- Both MCBs pass the mated test.
- Measurements at 12.89GHz are more than **0.6 dB** apart.
- SFP-SFP

2 METRE 30 AWG LANE 1



- Both MCBs pass the mated test.
- Measurements at 12.89GHz are more than **0.7** dB apart.
- SFP-SFP

2 METRE 30 AWG LANE 2



- Both MCBs pass the mated test.
- Measurements at 12.89GHz are more than **0.8** dB apart.
- SFP-SFP

SOME REMARKS

- The good –
 - There exist cables that manage to pass compliance with all MCBs.
 - All shown cables passed CA-N COM.
- The bad –
 - There seems to be too much (greater than **0.5 dB**) variance between different MCBs.
 - Within each form factor, we easily identify a difference of at least 0.5 dB between two lanes of the same cable !
 - Lanes 1 and 2 of the 3m 26 AWG are **~0.5dB apart**
- The ugly –
 - You don't have to dig these examples up, they exist in any reasonable sample set of cables and MCBs you pick off the shelf...
 - At least 4 cable vendors were tested.
 - At least 3 MCB vendors were tested.

DISCUSSION

- The variance between compliant MCBs is not news, it just happens to be critical for CA-N.
- Same goes for the variance between lanes of the same raw cable.
- We don't want to change RX / TX / COM parameters over this.
- Changing CA-N loss @12.89GHz from 15.5 to 16.0 should provide enough margin to handle more cases, and most cases over time
- Adding more than 0.5dB loss to the cable assembly spec is not a reasonable solution from the silicon vendor point of view.

THANKS !

BACK UP SLIDES