CA-S Cable Specification

Mike Dudek   QLogic

IEEE 802.3by ad hoc Oct 7 2015.

Introduction.

- **With the draft 2.1 specifications for no FEC interference tolerance test the existing specifications for the Base-R interference tolerance test are extremely relaxed, such that there will be significant excess margin in this test for all receivers.**

- **Rather than wasting this margin we should use it to relax the CA-S cable specification.   This would enable thinner (smaller bend radius and lower cost) 3m CA-S cables and extend the available length for CA-S.**

Summary of Changes for CA-S and base-R interference tolerance test.

- Use the same values for Tx-SNR and max CTLE for CA-S as are used for CA-N.
- Increase the CA-S cable loss to 19-19.5dB (Tentative value TBC)
- Increase the CA-S cable distance to 3.5-4m (Tentative value TBC)
- Reduce the COM at max loss in the interference tolerance test to 2.4-2.5dB (tentative value TBC).

dudek_3by_ad_hoc_1007

Text change proposal. (changed values are tentative)

- In Table 110-6 change test 2 (high loss) fitted loss to 26.46   linearly scaling the "a" parameters. (a1 becomes 3.86, a2 becomes 0.52, a4 becomes 0.034) and split the COM row to 3dB for test 1 and 2.4dB for test 2.

- On line 51 page 151 change the CA-25G-S max cable length from 3m to 4m.

- On line 40 page 152 change the CA-25G-S max attenuation from 16.48dB to 19.5dB

- In Table 110-10 for the CA-25G-S column change the value of Tx SNR to 28.4dB and CTLE minimum value to -16 (to match the CA-25G-N column). Add a footnote to the 3dB COM value "For CA-25G-S cable assemblies with insertion loss at 12.89 GHz greater than 16dB, the minimum COM is relaxed to 2.4dB.

- In table 110A-1 (For CA-S IIcamax becomes 19.5dB and IIchmax becomes 31.02dB

- On page 232 line 24 and in table 110C-1 change 3m to 4m

Advantages in keeping CA-S specification.

- Less confusion with one cable type for each FEC mode.

- Least change to the draft.

- Providing a CA-S specification enables plug and play with Base-R FEC.

- Auto-negotiation results in the correct FEC being chosen based on reading information from the cable. No more difficult for the customer than 2 cable types.