Coupling Attenuation

SPE–l link segment

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Status coupling attenuation D 2.1

146.7.1.5 Coupling attenuation

The coupling attenuation requirement applies to shielded link segments and depends on the electromagnetic noise environment. The requirements in Table 146–6 shall be met based on the local environment as described by the electromagnetic classifications given in Table 146–7, E1, E2, or E3. The coupling attenuation is tested as specified in IEC NP 61156-13.

Editor's Note (to be removed prior to publication):

IEC NP 61156-13 is still in development and the specification reference will likely change prior to publication. The references will be considered for inclusion in the draft based on Task Force review of relevancy prior to publication.

Table 146–6—Coupling attenuation

Frequency (MHz)	(dB)		
	E_1	E_2	E_3
0.1 το 20	≥ 40	≥ 50	≥ 60

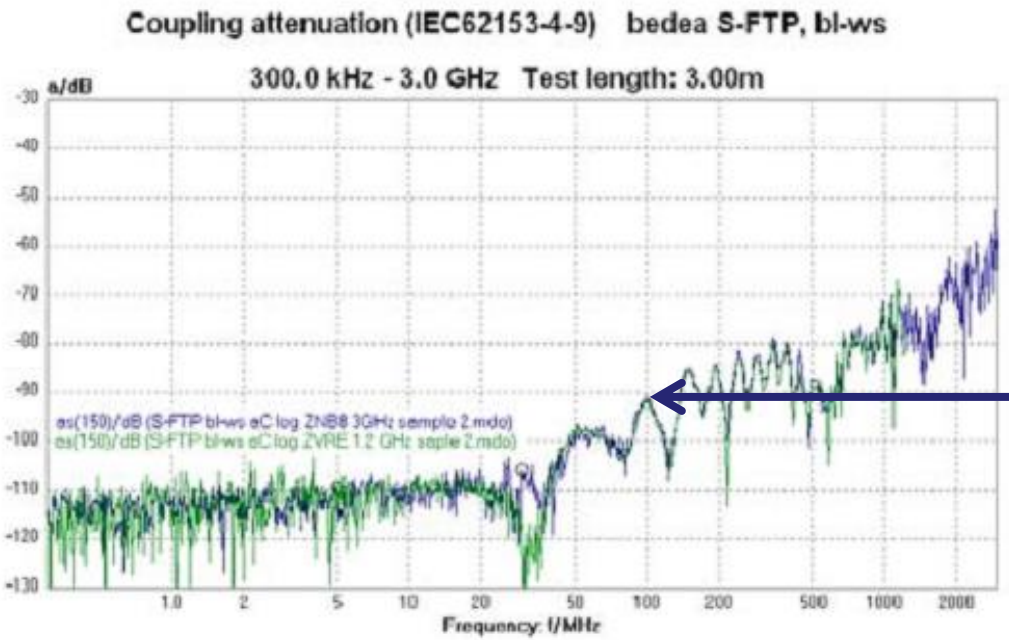
What happened in the meantime

- IEC TC46 decided not to pursue the work in a cable standard but in a measurement standard.
- IEC 62153-4-9Ed2Amd1: Coupling attenuation of screened balanced cables, triaxial method

- this makes sense, the project is approved and the amendment will specify the setup to measure frequencies below 1 MHz.

- The values in actual table 146-7 are the limits at 100 MHz (as in 802.3bp). The frequency dependency is not shown.
- The slope towards lower frequencies is confirmed to be 20 dB/decade (as it is for higher frequencies).
- Example of the formula: 50-20log(f/100) with a measurement plateau of 85 dB.

Measurement example of a very high shielded cable.



90 dB CA at 100 MHz

Things to do (Page 2)

Replace reference IEC NP61136-13 by IEC 62153-4-9Ed2Amd1 2 times

Leave editors note.

Replace table 146-7 by:

Frequency (MHz)	**(dB)**		
	E_1	E_2	E_3
0,1 to 20	40- 20lg(f/100)	50- 20lg(f/100)	60- 20lg(f/100)
Values greater than 85 shall revert to 85			

Thank you