Coupling Attenuation

SPE–l link segment Update

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Status coupling attenuation D 2.3

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

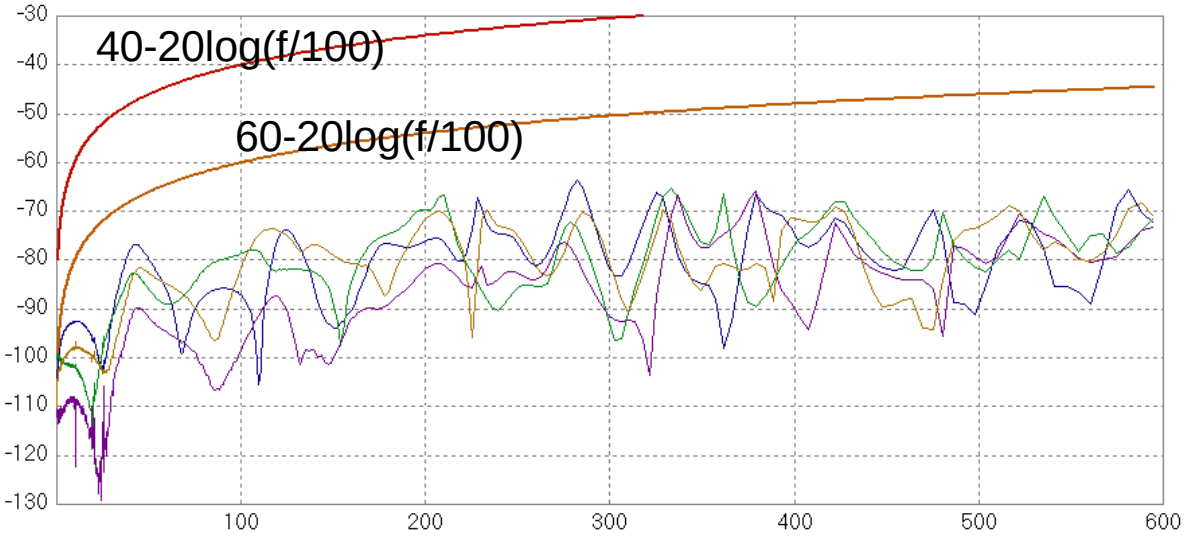
From last presentation:

- 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

- 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 a measurement was shown last time, but from a very high performance cable
- Due to the very high values a measurement plateau of 85 dB is proposed.

Measurement example of a 4p F/UTP shielded cable.



Low frequency coupling attenuation Ssd21 - 300 kHz – 2 GHz,
Cat5 F/UTP (two foils) - draft IEC 62153-4-9Ed2 Amd1 - 3m test length
At 100 MHz 60 dB
At 1 MHz 100 dB
Provided by Mr. Mund IEC TC46C

Additional advantage

- One advantage of the intrinsic higher value of coupling attenuation at low frequencies, is that alien noise, especially PSAFEXT can be neglected even in the case of very short disturbers
- Details to be seen in ISO/IEC 11801-1

Thank you