

Expected Performance of ISO/IEC Class II Cabling

IEEE 802.3bq Next Generation BASE-T Task Force
July, 2013
Geneva, Switzerland

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Objectives

1. Summarize Class II channel insertion loss, PSNEXT loss, PSANEXT loss, PSACRF, PSAACRF, and return loss limits as specified ISO/IEC PDTR 11801-99-1, dated 2013-07-19
2. Describe category 8.2 connecting hardware specified for use in Class II cabling
3. Review Category 8.2 connecting hardware intermateability and backward compatibility

Class II cabling supports a balanced PHY design

Refer to:

http://www.ieee802.org/3/bq/public/may13/booth_01_0513_40GBT.pdf



Operating on...



PHY

Balance

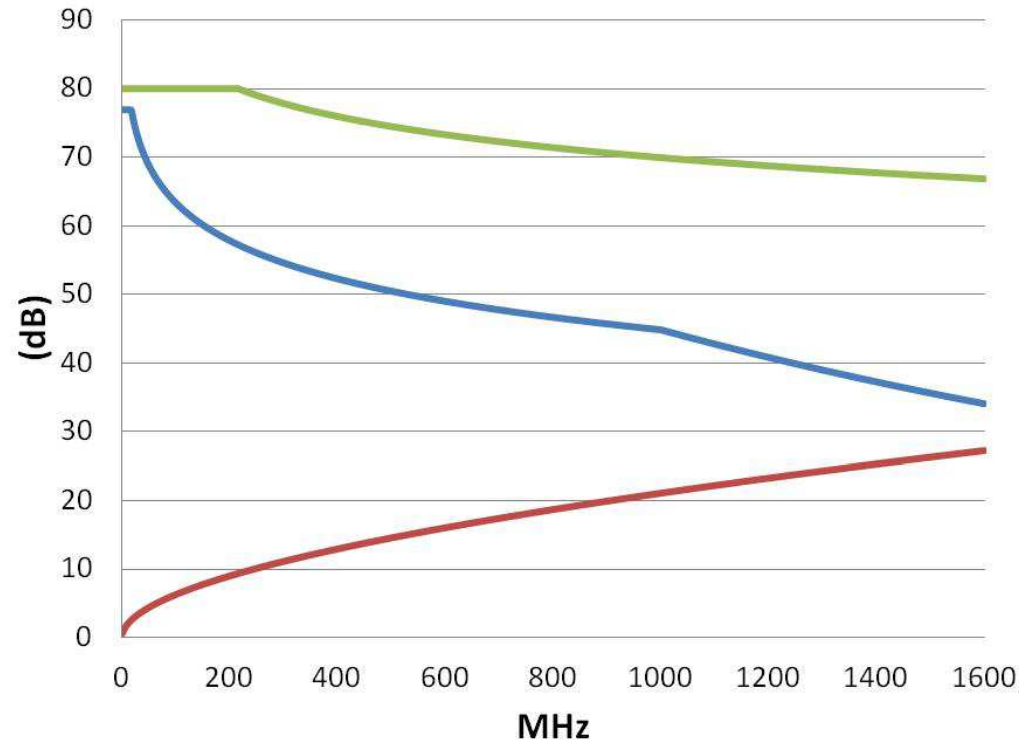
Cabling

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Class II channel insertion loss, PSNEXT, and PSANEXT



— ISO/IEC Class II PSANEXT Loss
— ISO/IEC Class II PSNEXT Loss
— 30m ISO/IEC Class II Insertion Loss

	1 GHz (dB)	1.6 GHz (dB)
Insertion Loss	21.1	27.2
PSNEXT	44.9	34.1
PSANEXT	70.0	66.9

Notes:

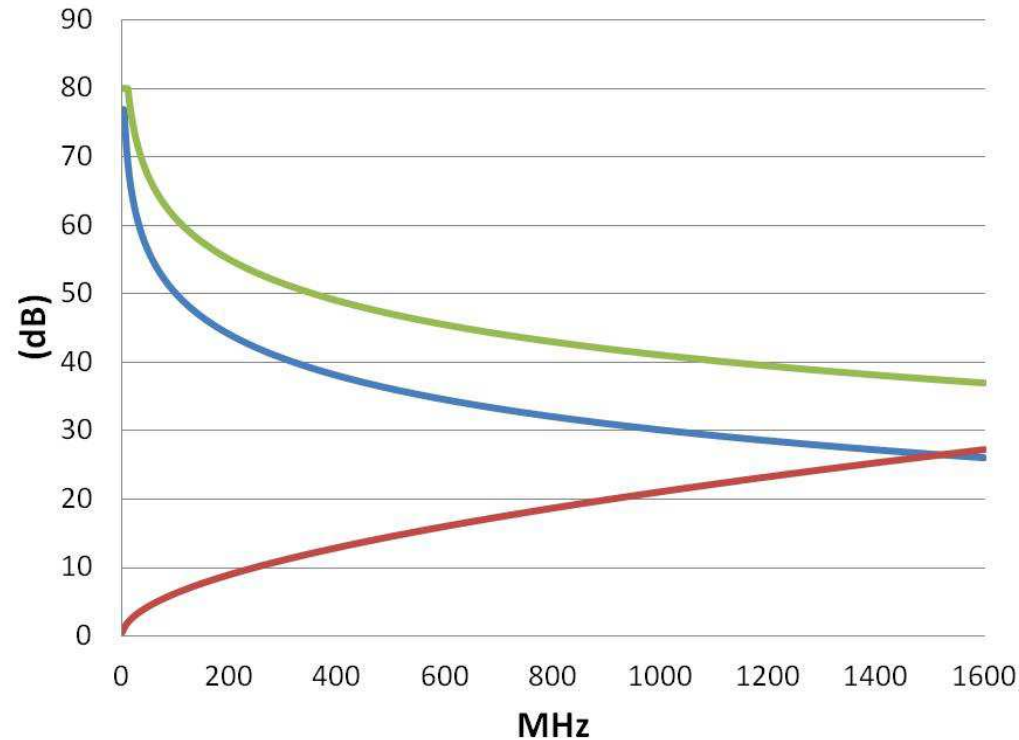
- 1) Specifications for 1.6 to 2.0 GHz are for future study
- 2) Curves are based on draft requirements

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Class II channel insertion loss, PSACRF, and PSAACRF

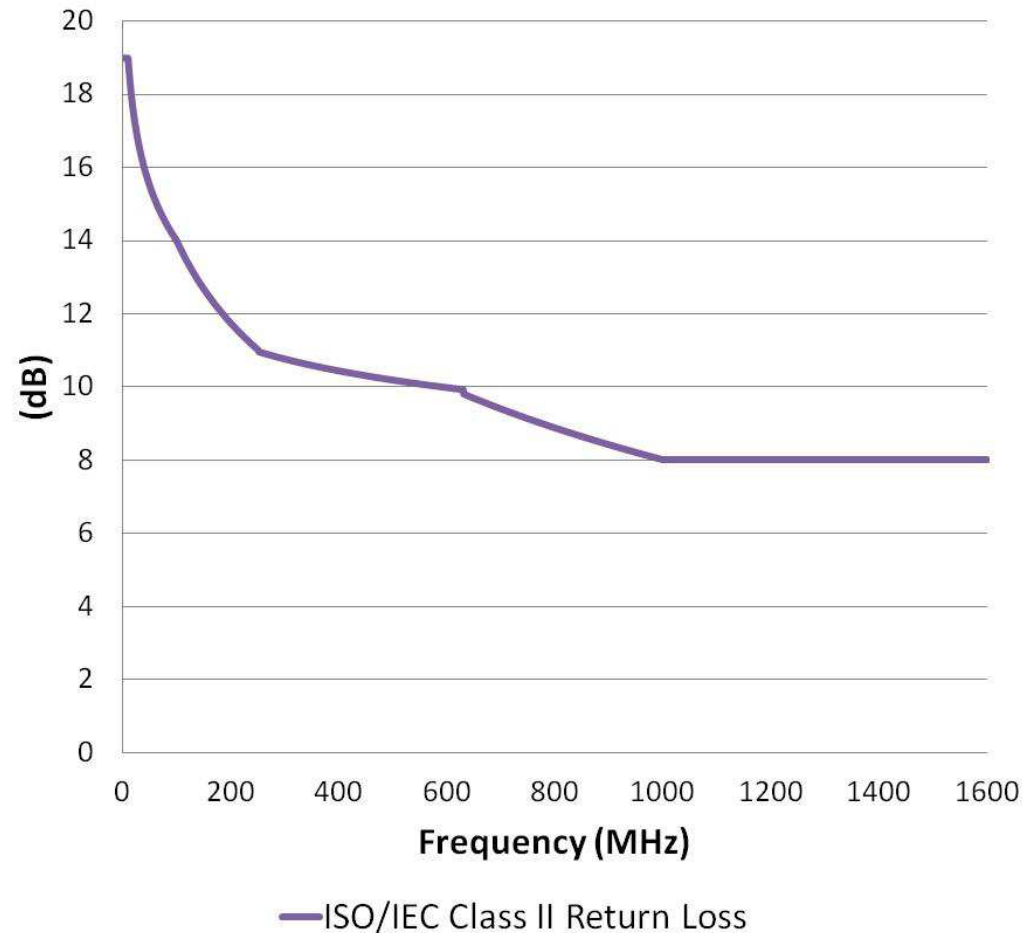


	1 GHz (dB)	1.6 GHz (dB)
Insertion Loss	21.1	27.2
PSACRF	30.1	26.0
PSAACRF	41.0	36.9

Notes:

- 1) Specifications for 1.6 to 2.0 GHz are for future study
- 2) Curves are based on draft requirements

Class II channel return loss



	1 GHz (dB)	1.6 GHz (dB)
Return Loss	8.0	8.0

Notes:

- 1) Specifications for 1.6 to 2.0 GHz are for future study
- 2) Curves are based on draft requirements

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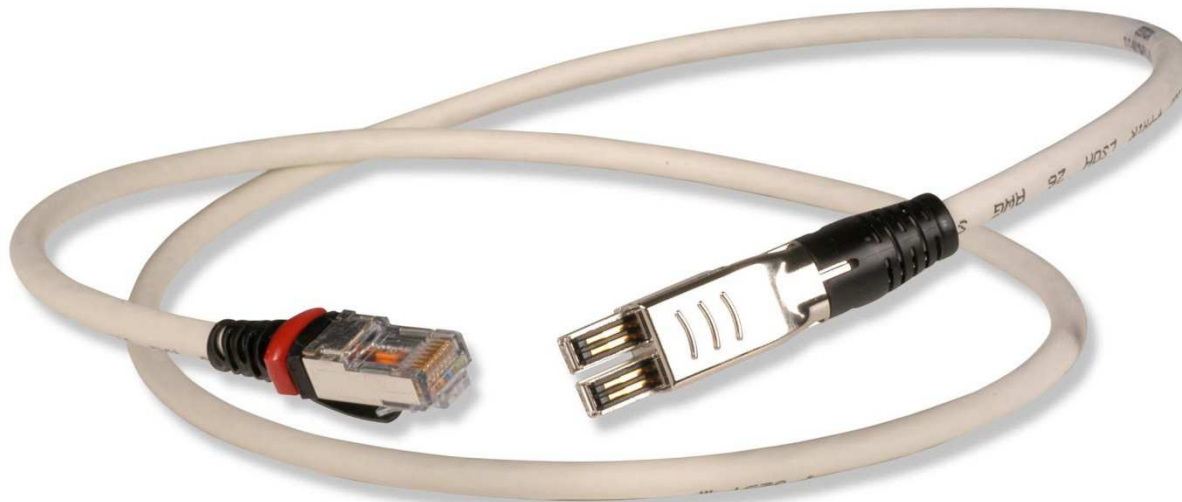
Connecting hardware choices



- Class II cabling is supported by the following category 8.2 interfaces:
- IEC 60603-7-71, 1st edition currently specified to 1 GHz (e.g. GG45)
- IEC 61076-3-104, 3rd edition will specify performance to 2 GHz and is expected to publish in 2014 (e.g. Siemon TERA®)
- IEC 61076-3-110, 2nd edition currently specified to 1 GHz and will be extended to 2 GHz in the next revision (e.g. ARJ45)

Interoperability and backward compatibility

- Interoperability and backward compatibility between both Category 8.2 connecting hardware and legacy systems is simply achieved by the use of hybrid cords
- Keep in mind that the ISO/IEC and TIA channel configurations exclude the end connectors at the equipment interfaces



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Summary and conclusions

- Class II cabling best satisfies the target of balancing PHY complexity and cabling performance
- Category 8.2 connecting hardware designs are well-specified and several options have been commercially available for years
- Category 8.2 connecting hardware is backward compatibility and interoperable with each other and legacy systems