40GBASE-T RJ45 ICM

IEEE 802.3bq San Diego 2014

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40GBaseT ICM development

•Bel/TRP ICMs is committed to support the development of the 802.3bq standard.

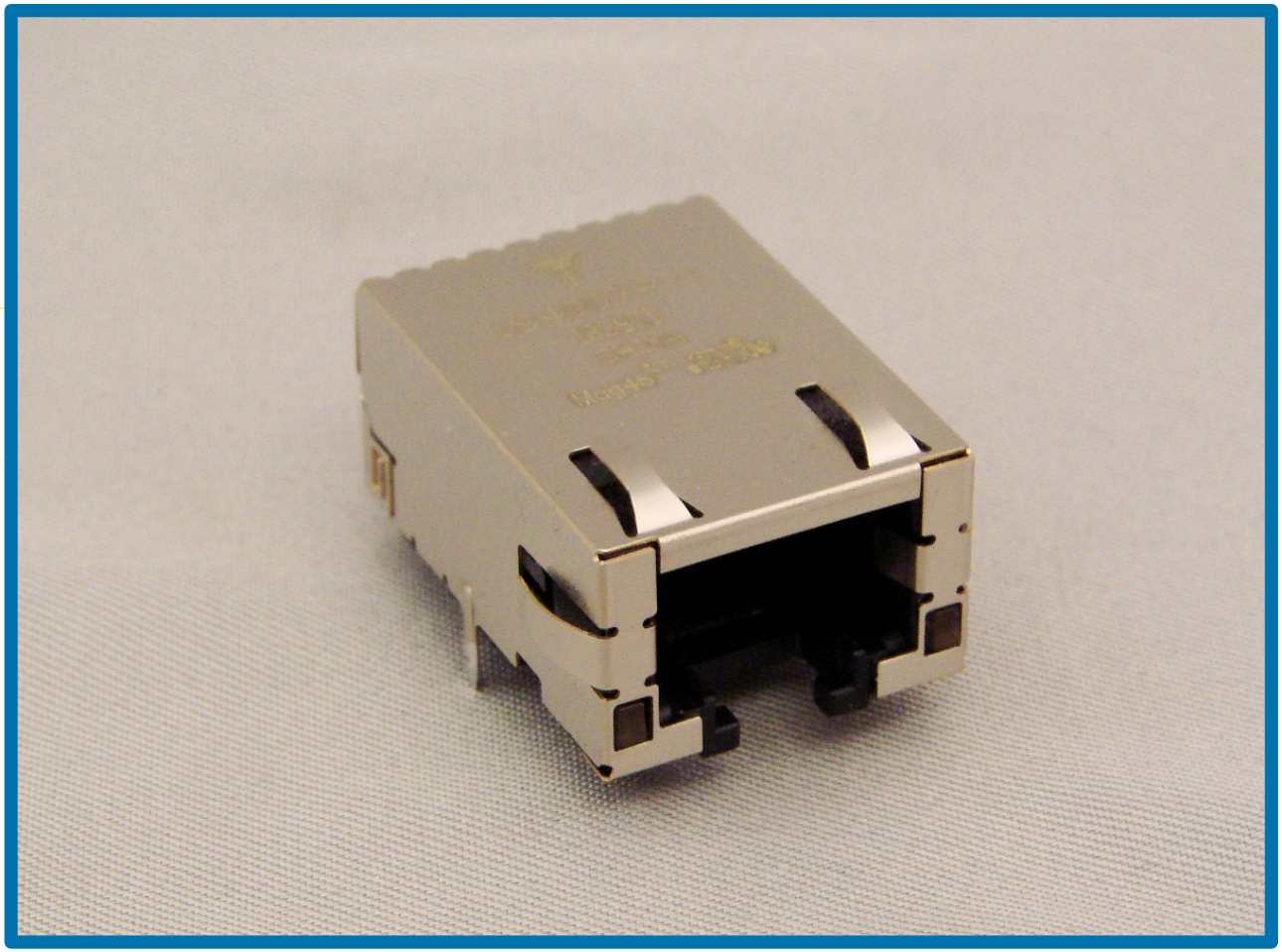
•Our magnetic designs include transformer with minimum OCL of 160uH over the temperature range (0°C to 70°C) and common choke.

•Our first 40GBASE-T ICM was design around the existing RJ45 connector using existing tooling and 1st GEN magnetics.

•In order to help improve the channel performance Bel/TRP developed it's 3rd GEN magnetic components and installed them on the RJ45 ICM to submit to the IEEE 802.3bq Task Force as an MDI solution.

•Bel/TRP continues to move forwards with its magnetic development and once a Cat 8.1 plug is available will work on a compensation scheme to minimize NEXT.

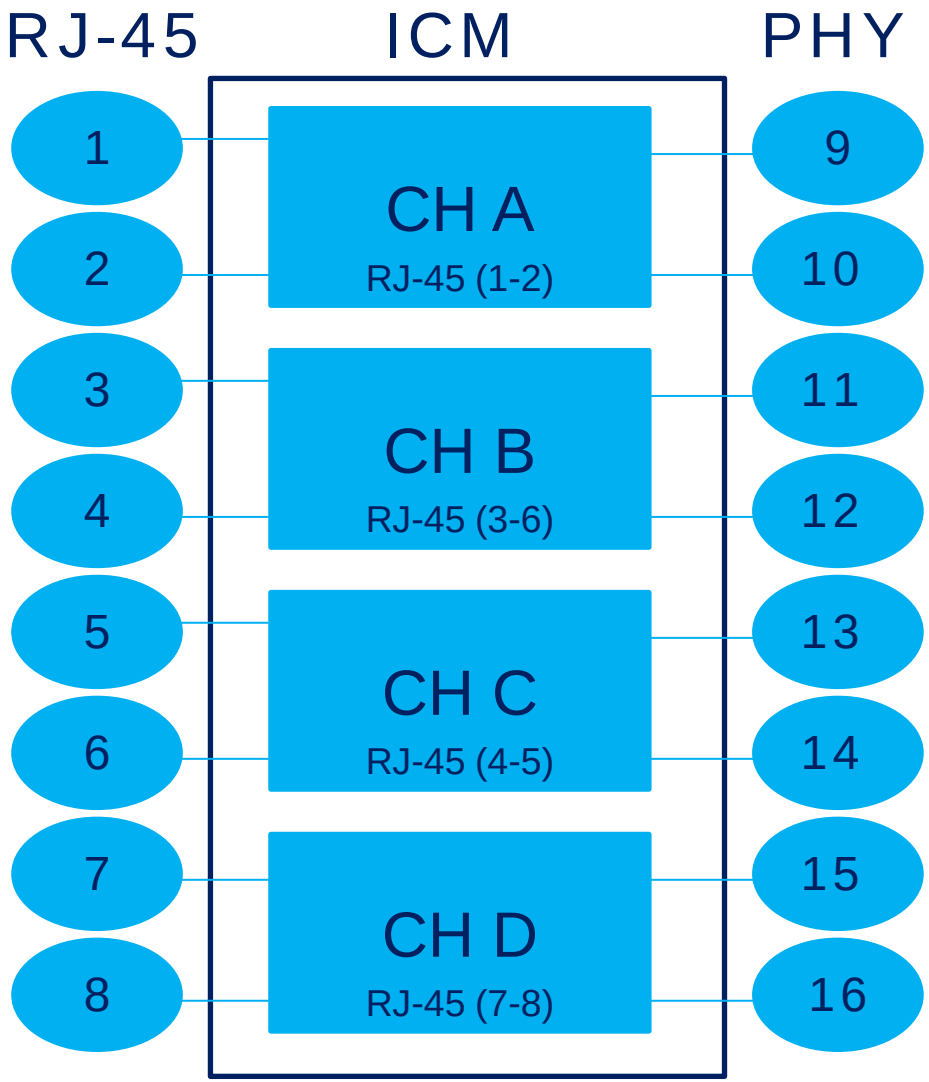
ICM (INTEGRATED MAGNETIC MODULE)



40GBASE-T ICM

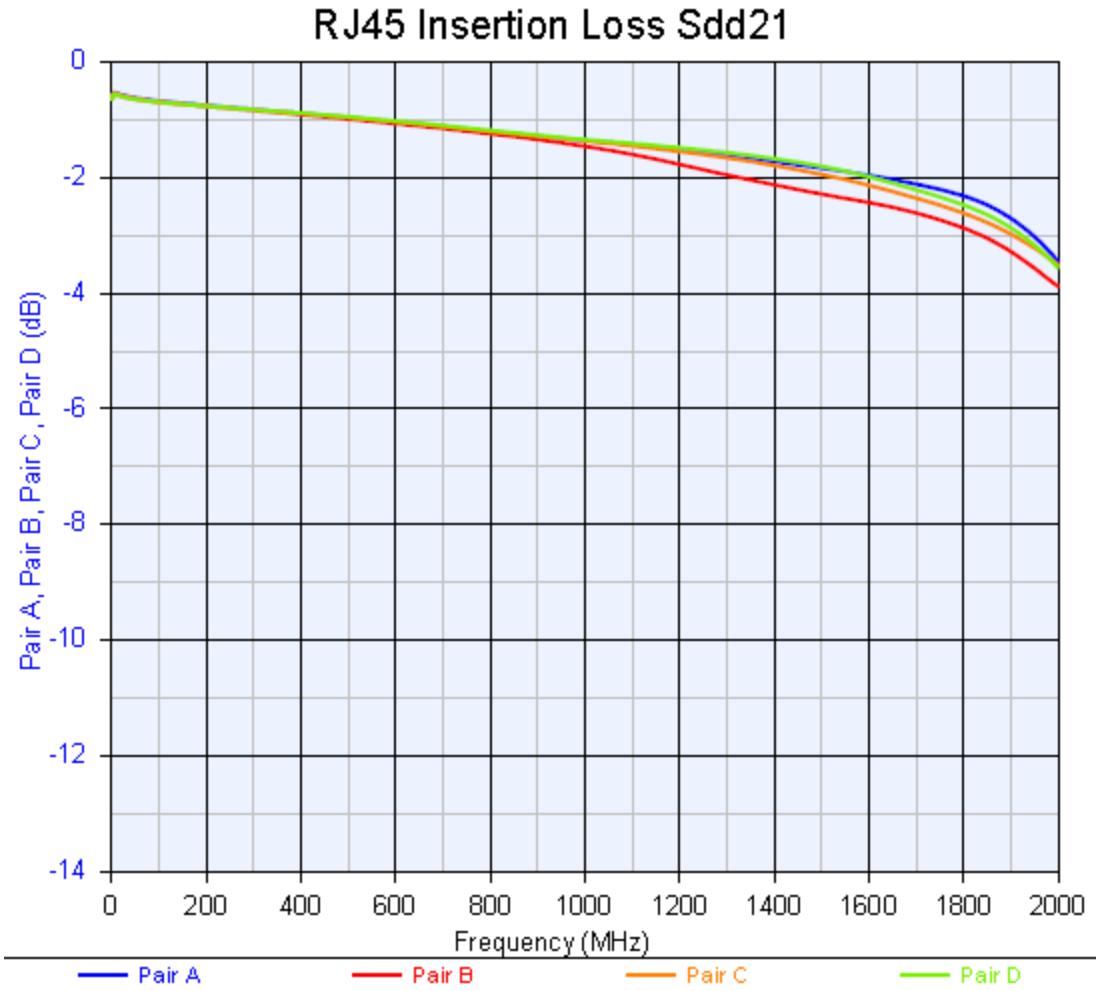
Sixteen port model

- VNA ports 1 and 2 are RJ-45 side
- VNA ports 3 AND 4 are PHY side
- E5071C ENA used
- Measurements made @ 50 Ohms single ended
- Swept 1MHz TO 2GHz
- 1601 points used, maximum allowed by E5071C
- Current testing done on standard RJ-45.



PORT NUMBERING PER ADHOC MODEL

Typical insertion loss



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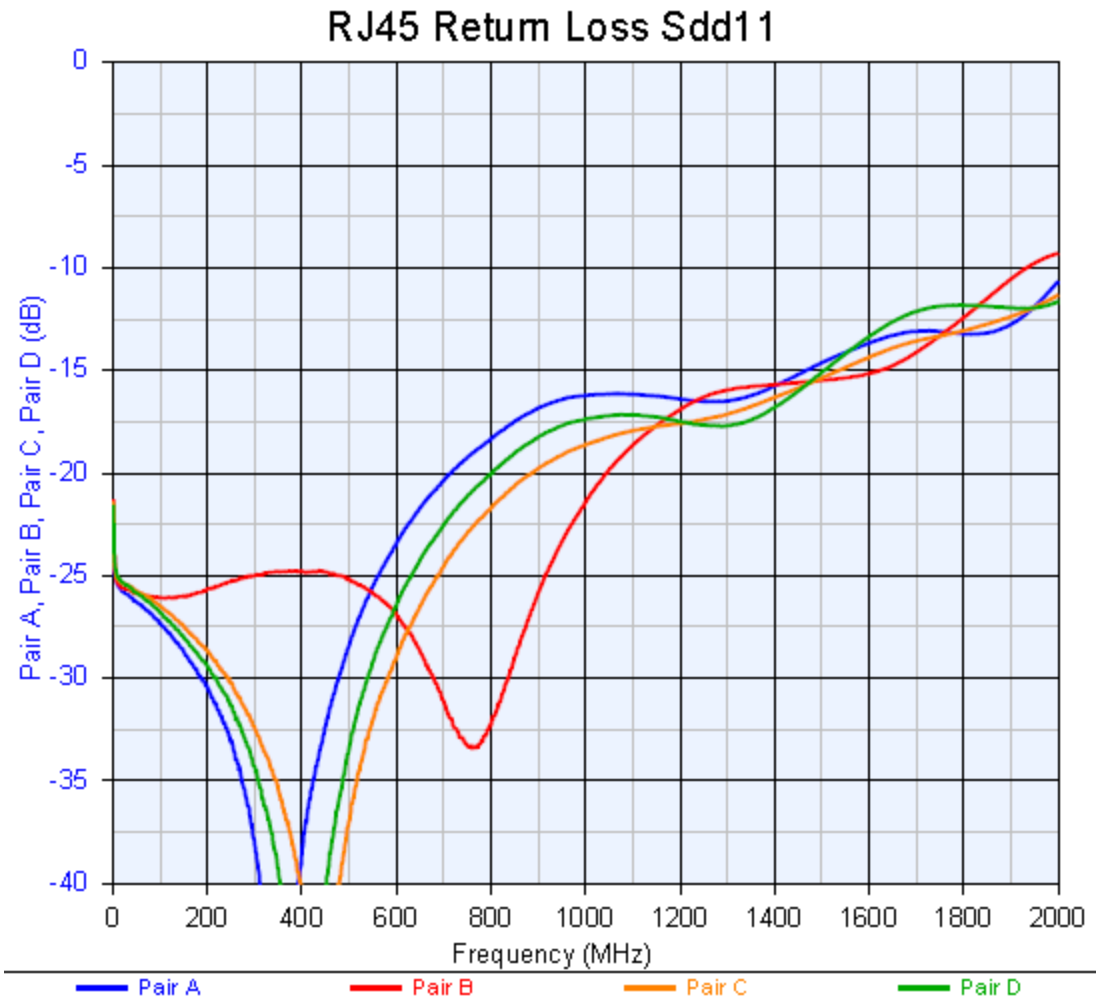
Typical return loss



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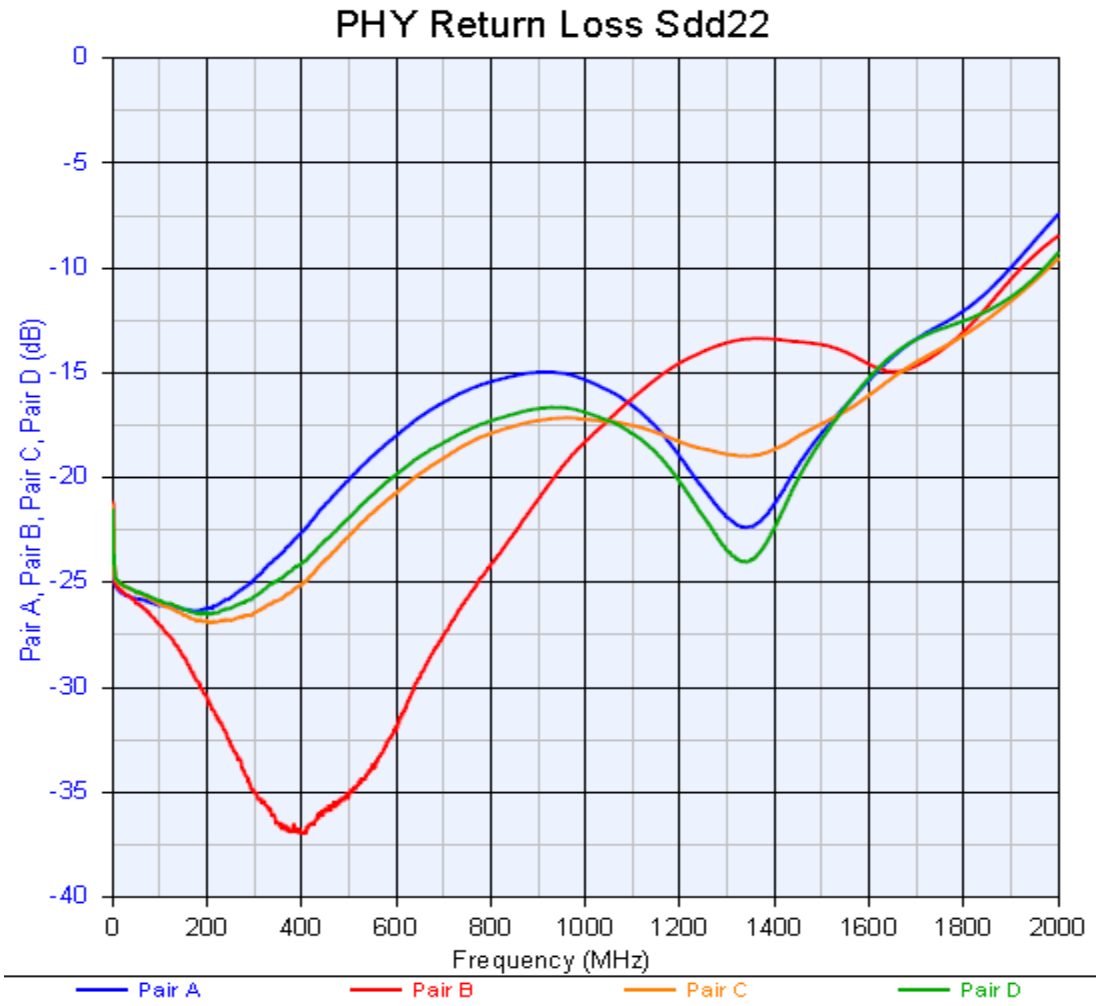
Typical return loss



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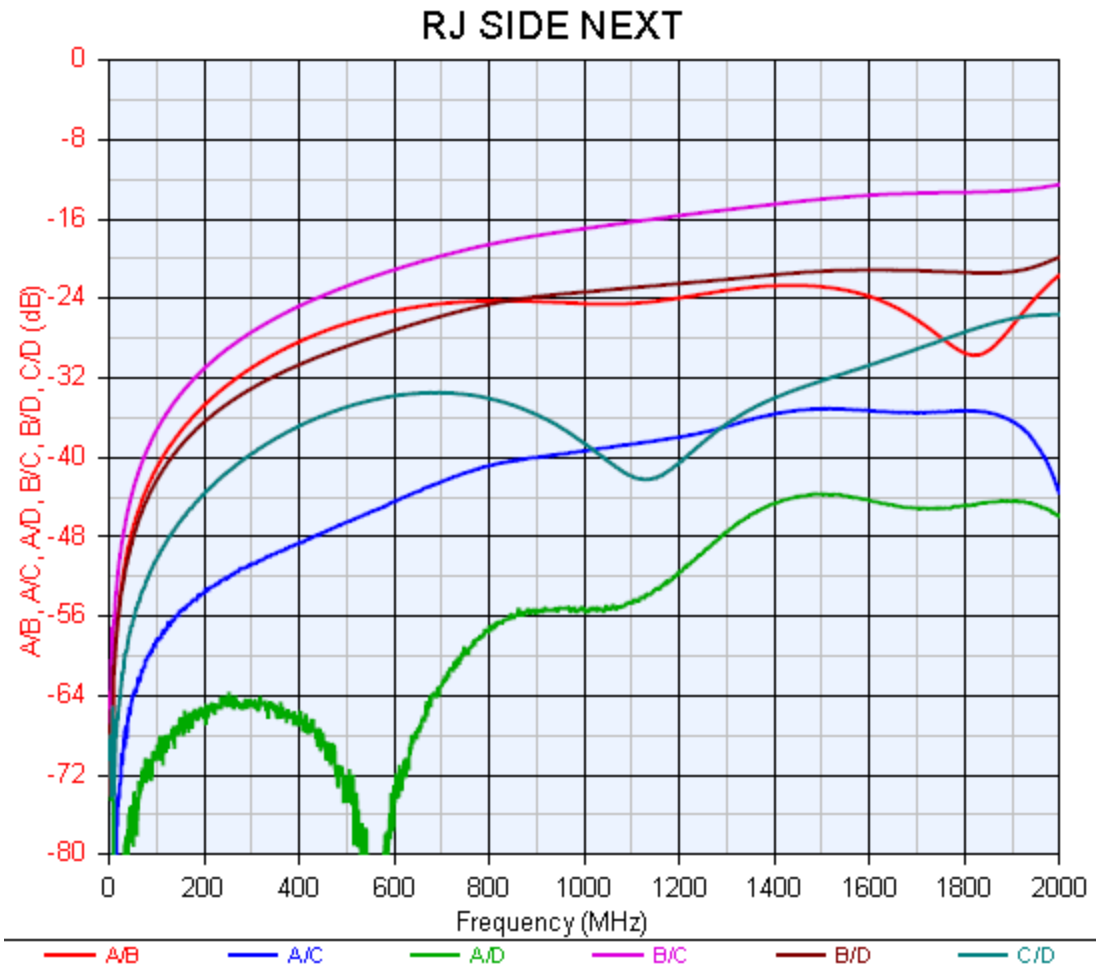
Typical NEXT



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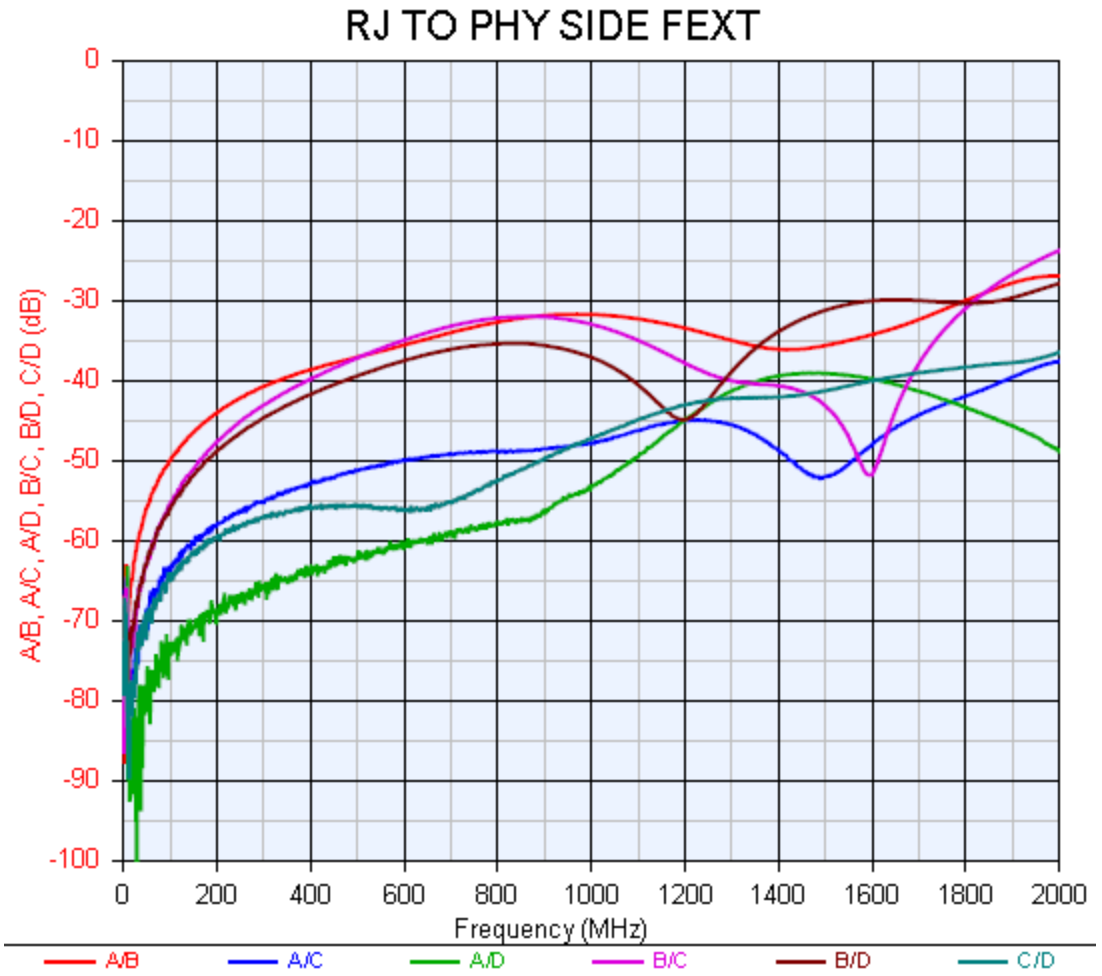
Typical FEXT



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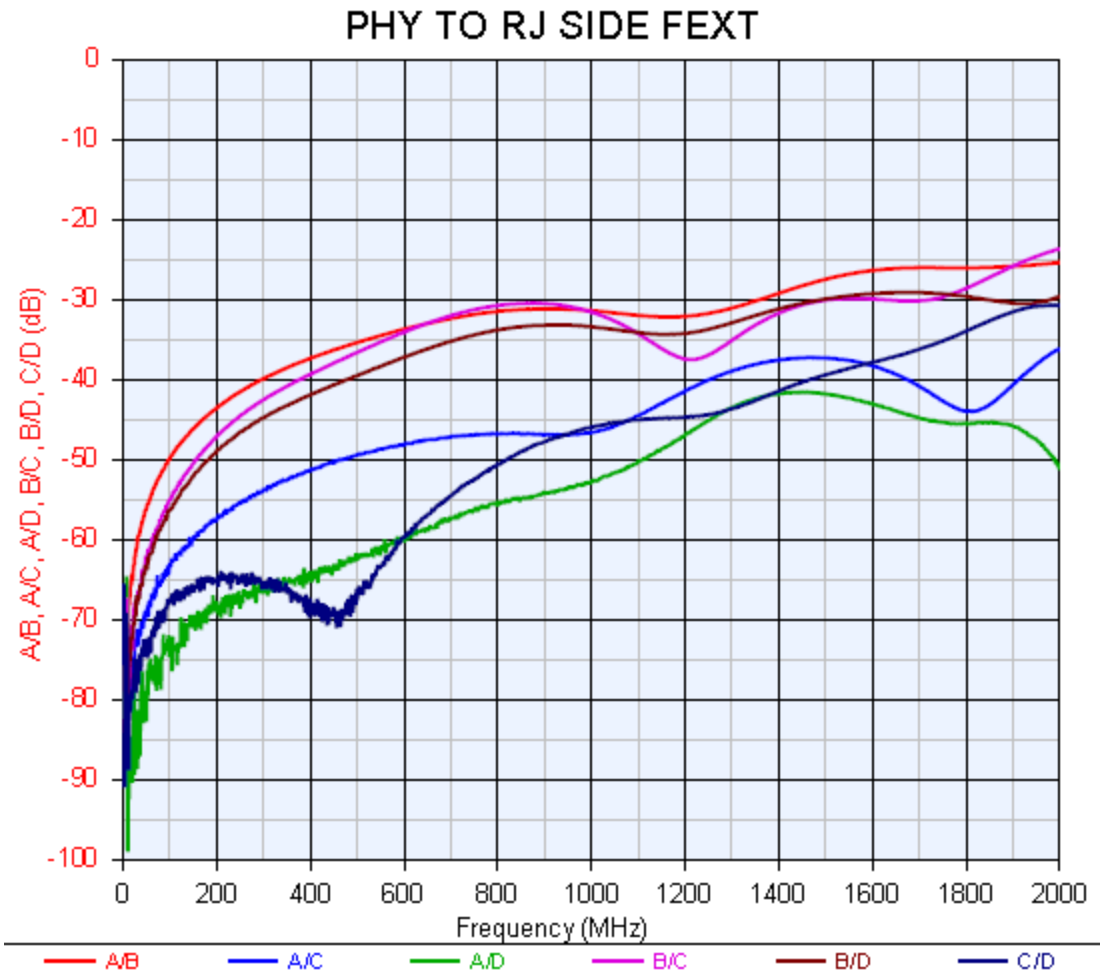
Typical FEXT



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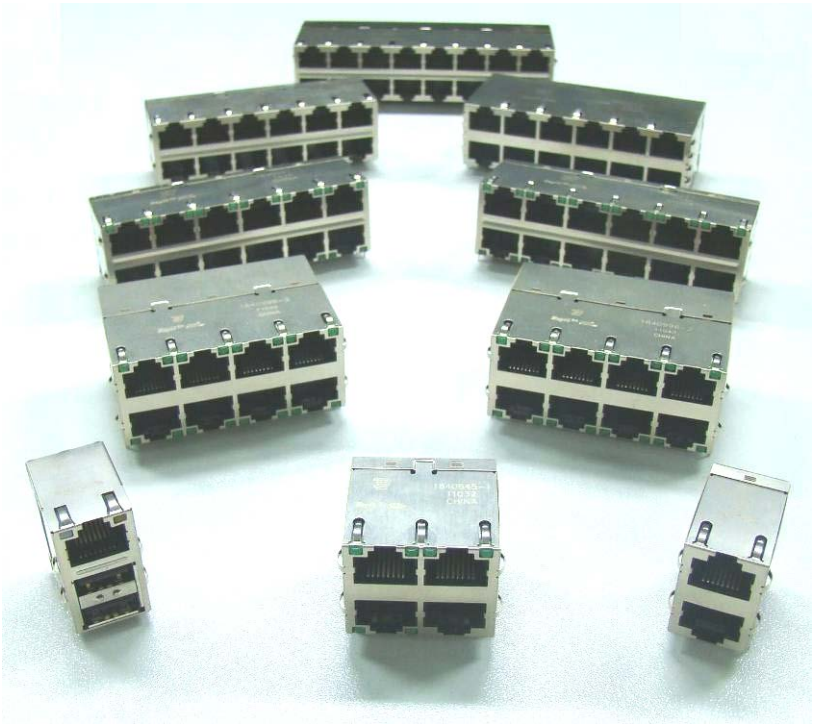
Other parameters

- OCL > 160uH
- Meets IEEE HIPOT specification
- Compatible with 2XN high density port connectors
- Backward compatible 1G/10GBASE-T
- Forward compatible to category 8.2 (Class II)



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THANK YOU!