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# **10GBASE-CX4**

## **Physical Layer Specifications**

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**10GBASE-CX4**

# 10GBASE-CX4 Compliance Channel

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Component	Insertion Loss (dB)
Cable	15 dB @ 1.56 GHz
(2) Connectors	$2*(.012659*\sqrt{f})$ @ 1.56 GHz = 1.0
deviation	.5 dB

## 10GBASE-CX4- Compliance Channel Insertion loss:

The insertion loss of each pair of the CX4 cable assembly shall be:

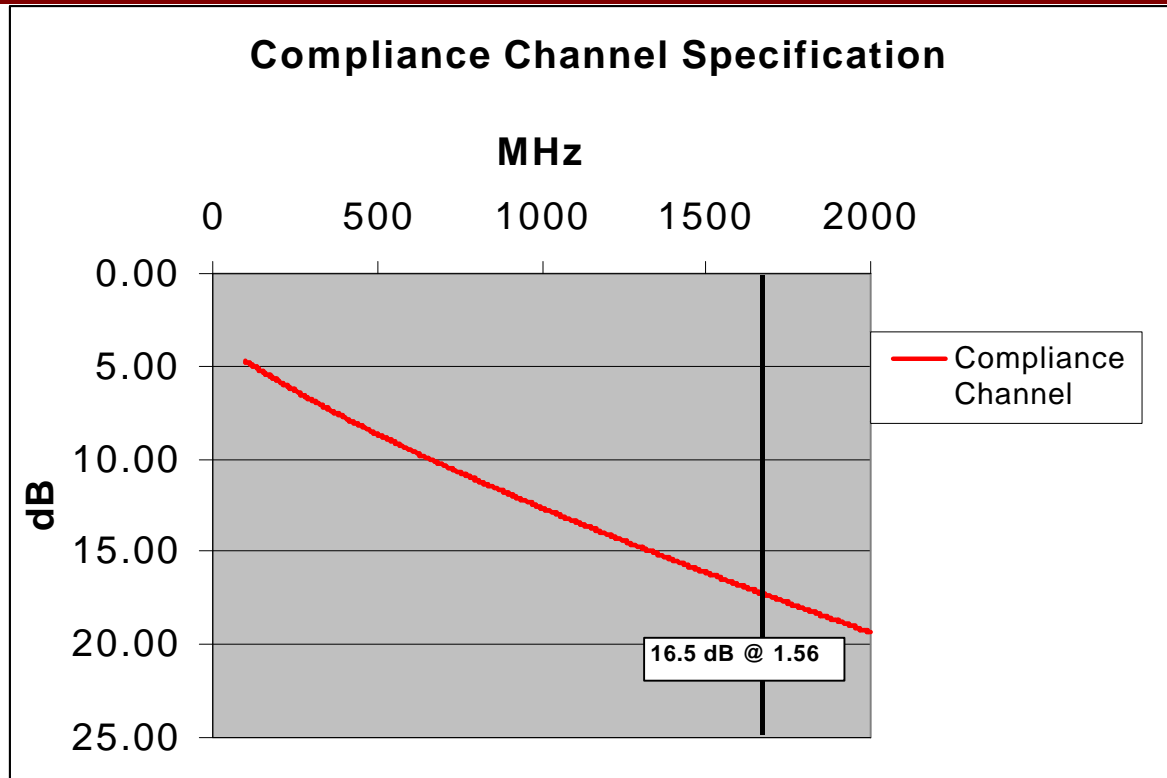
$$\text{Insertion loss} \leq \left( .2629 \cdot \sqrt{f_k} + .0034 \cdot f_k + \frac{12.7632}{\sqrt{f_k}} + .5 \right) \text{ Frequency (MHz)}$$

$$\sim 16.5 \text{ @ } 1.56 \text{ GHz}$$

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# 10GBASE-CX4 Compliance Channel



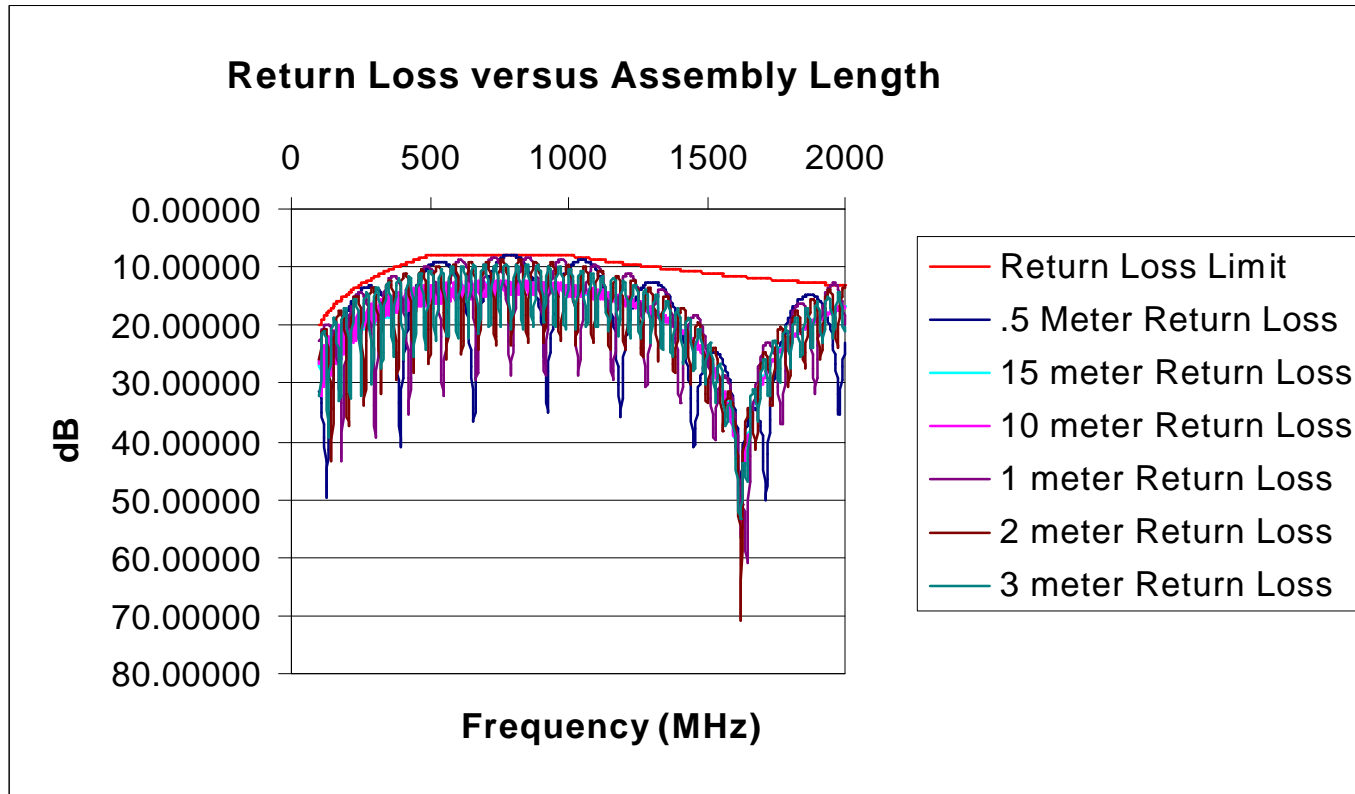
## 10GBASE-CX4- Compliance Channel Insertion loss:

The insertion loss of each pair of the CX4 cable assembly shall be :

$$\text{Insertion loss} \leq \left( .2629 \cdot \sqrt{f_k} + .0034 \cdot f_k + \frac{12.7632}{\sqrt{f_k}} + .5 \right) \quad \text{Frequency (MHz)}$$

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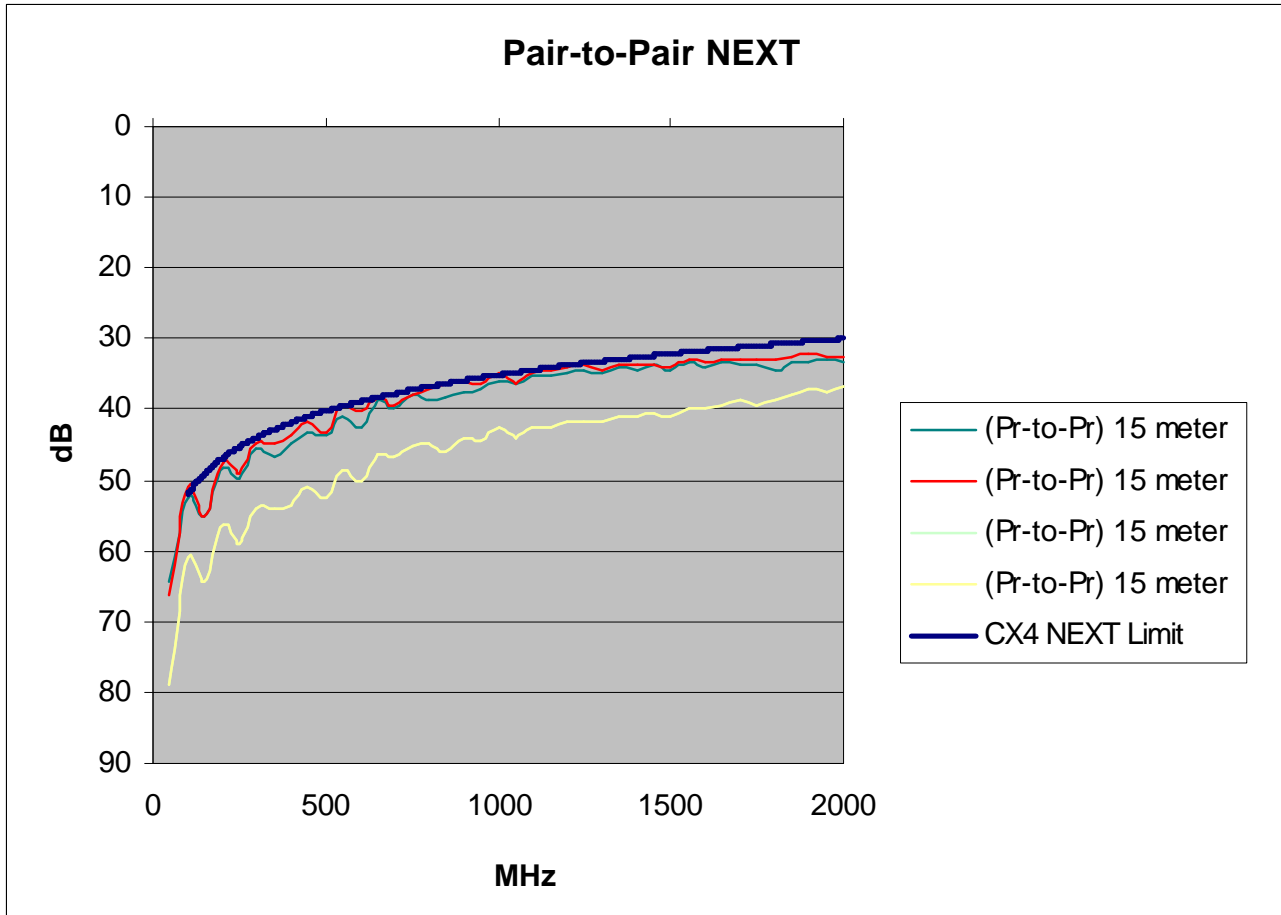
# CX4 Assembly Return Loss Limit



Frequency (MHz)	Minimum Return Loss (dB)
$100 \leq f < 500$	$20 - 17.7 \cdot \log(f/500)$
$500 \leq f < 1000$	8
$1000 \leq f \leq 2000$	$8 + 17.3 \cdot \log(f/1000)$

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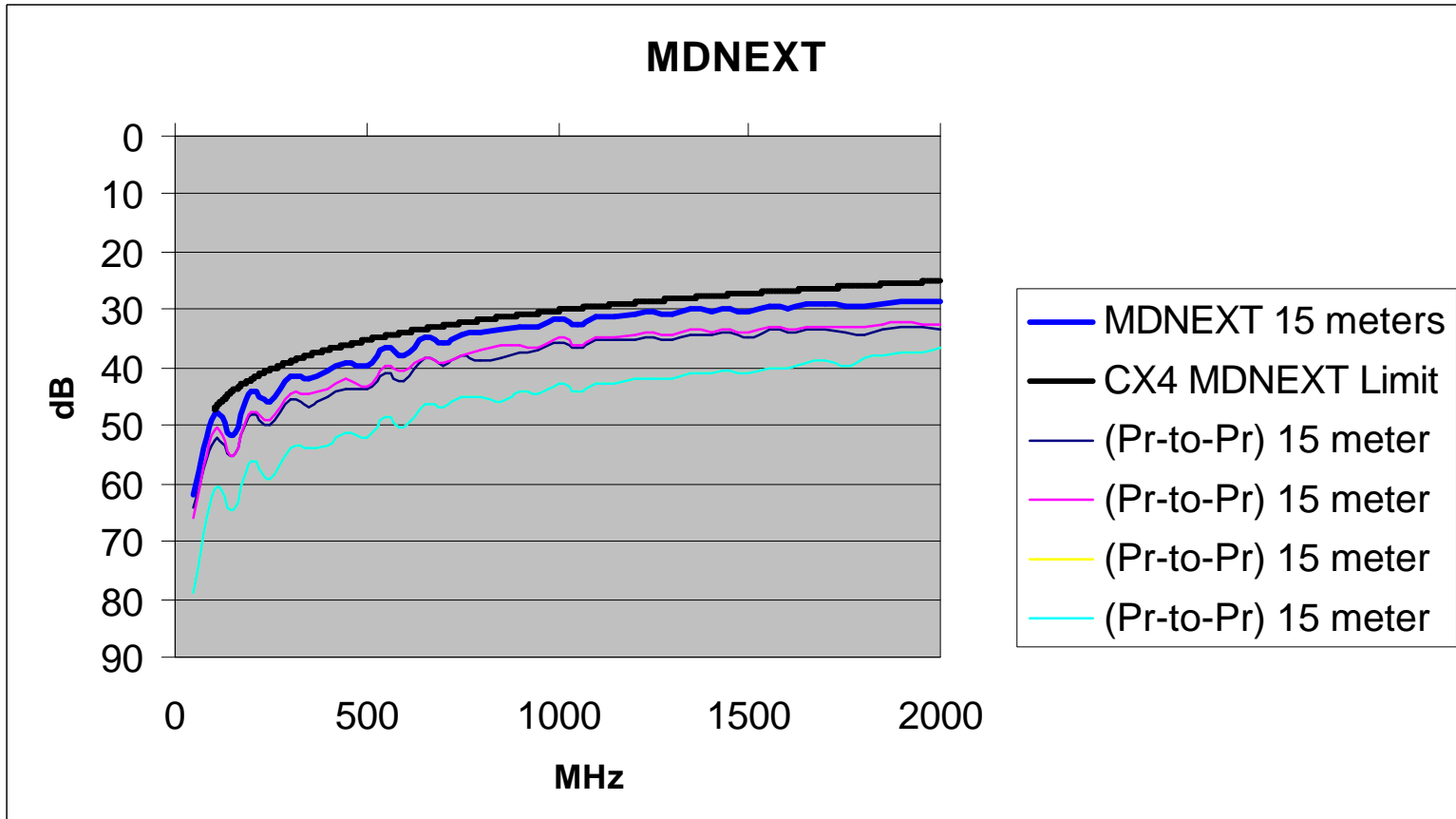
# CX4 Assembly NEXT Limit



The NEXT loss between any two channels of a CX4 link segment shall be at least:  $30 - 17 \cdot \log_{10}(f/2000)$  f(MHz)

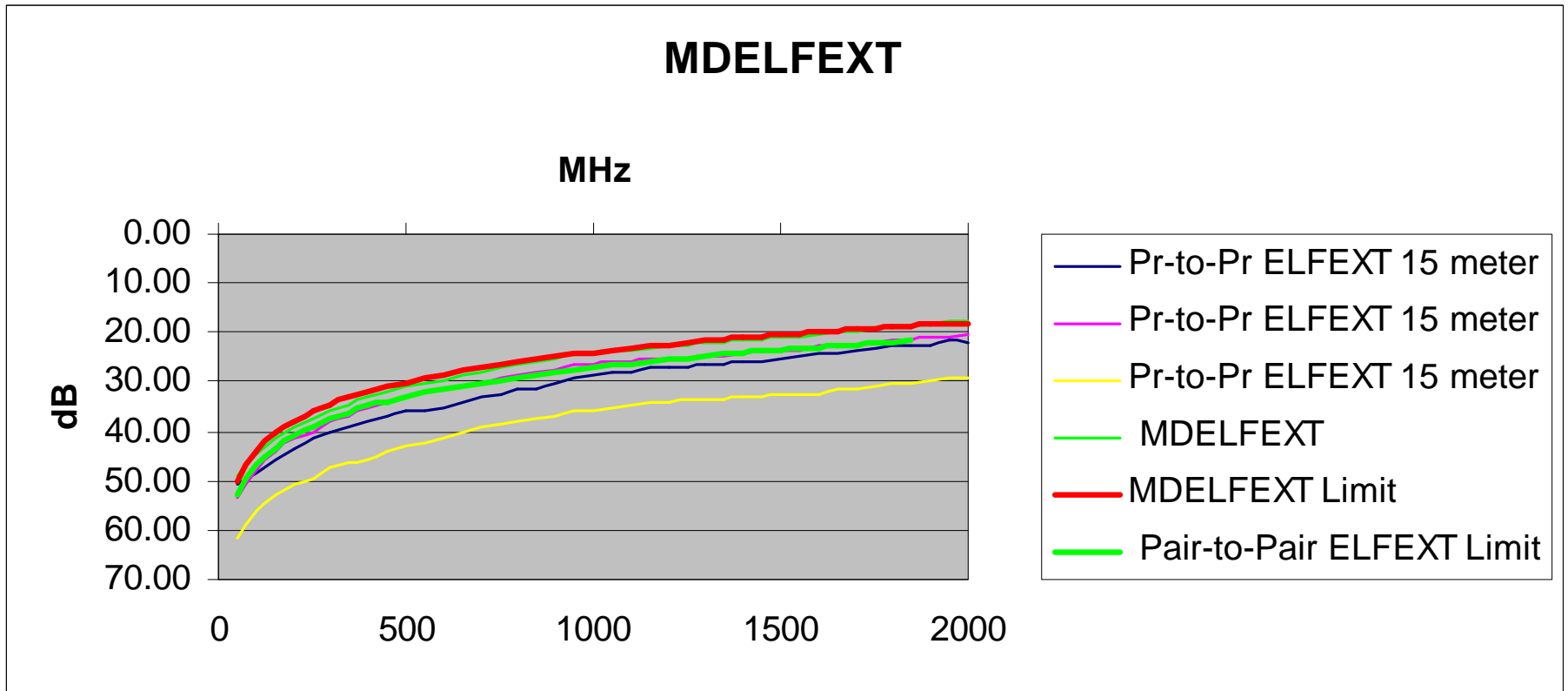
**10GBASE-CX4**

# CX4 Assembly MDNEXT Limit



The MDNEXT loss between any two channels of a CX4 link segment shall be at least:  $25 - 17 \cdot \log_{10}(f/2000)$  f(MHz)

# CX4 Assembly MDELFEXT Limit



The PSELFEXT loss between any two channels of a CX4 link segment shall be at least:  $18-20 \cdot \log_{10}(f/2000)$  f(MHz)