10GBASE-CX4

Draft 4.1 Physical Layer Specifications

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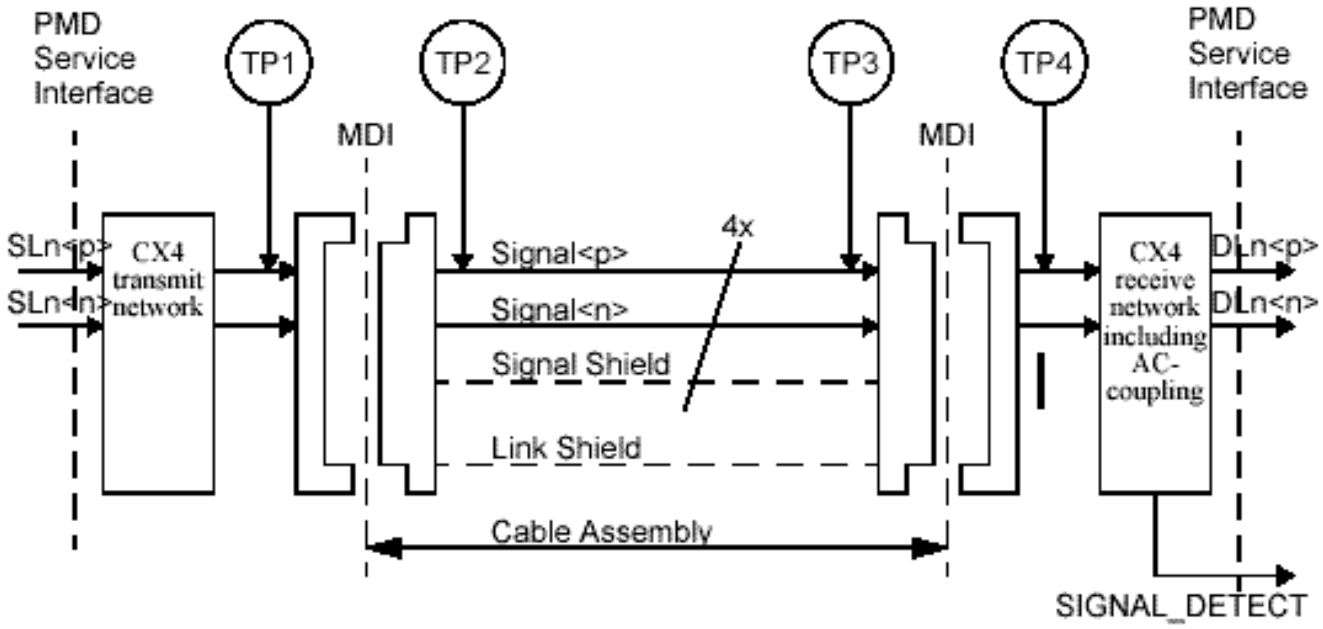
Chris DiMinico
MC Communications
cdiminico@ieee.org

Cable assembly characteristics



All cable assembly measurements are to be made between TP1 and TP4 as shown in the Figure illustrated above.

10GBASE-CX4 Compliance Channel

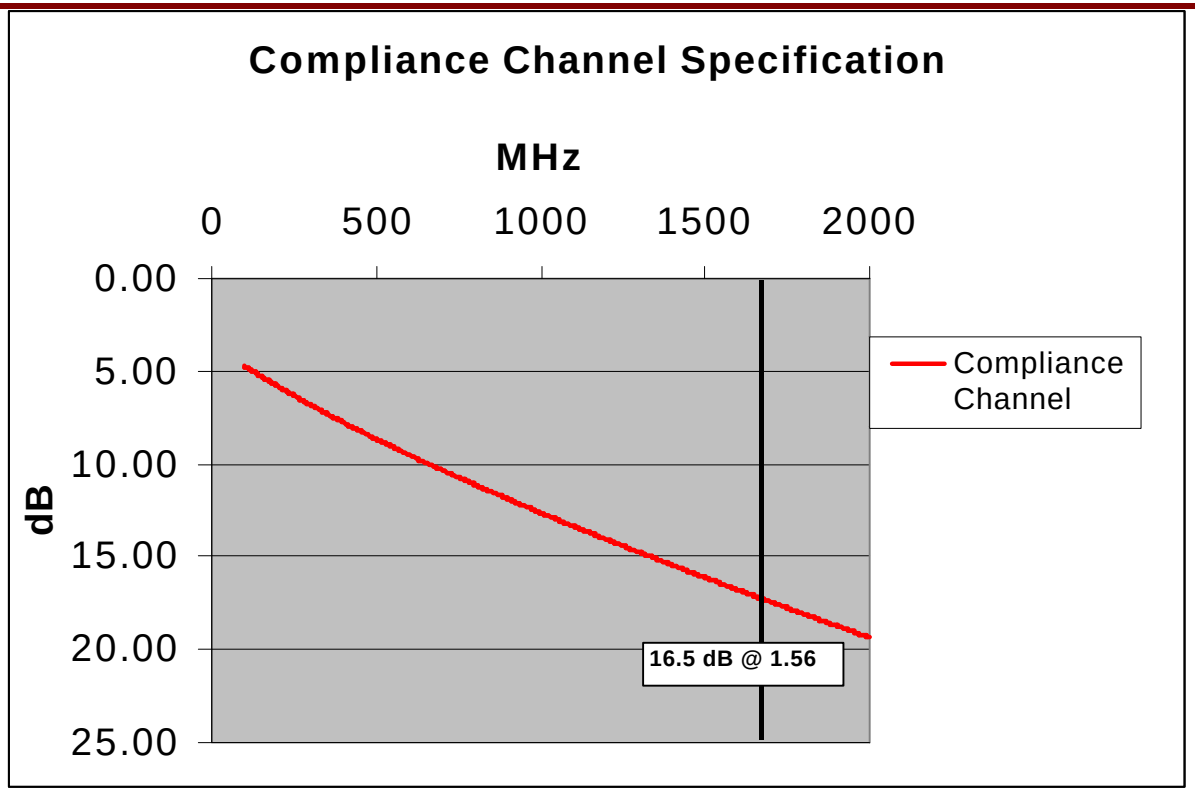
Component	Insertion Loss (dB)
Cable	15 dB @ 1.56 GHz
(2) Connectors	2*(.012659*sgrt(f)) @ 1.56 GHz = 1.0
deviation	.5 dB

10GBASE-CX4- Compliance Channel Insertion loss:
The insertion loss of each pair of the CX4 cable assembly shall be:

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

~16.5 @ 1.56 GHz

10GBASE-CX4 Compliance Channel

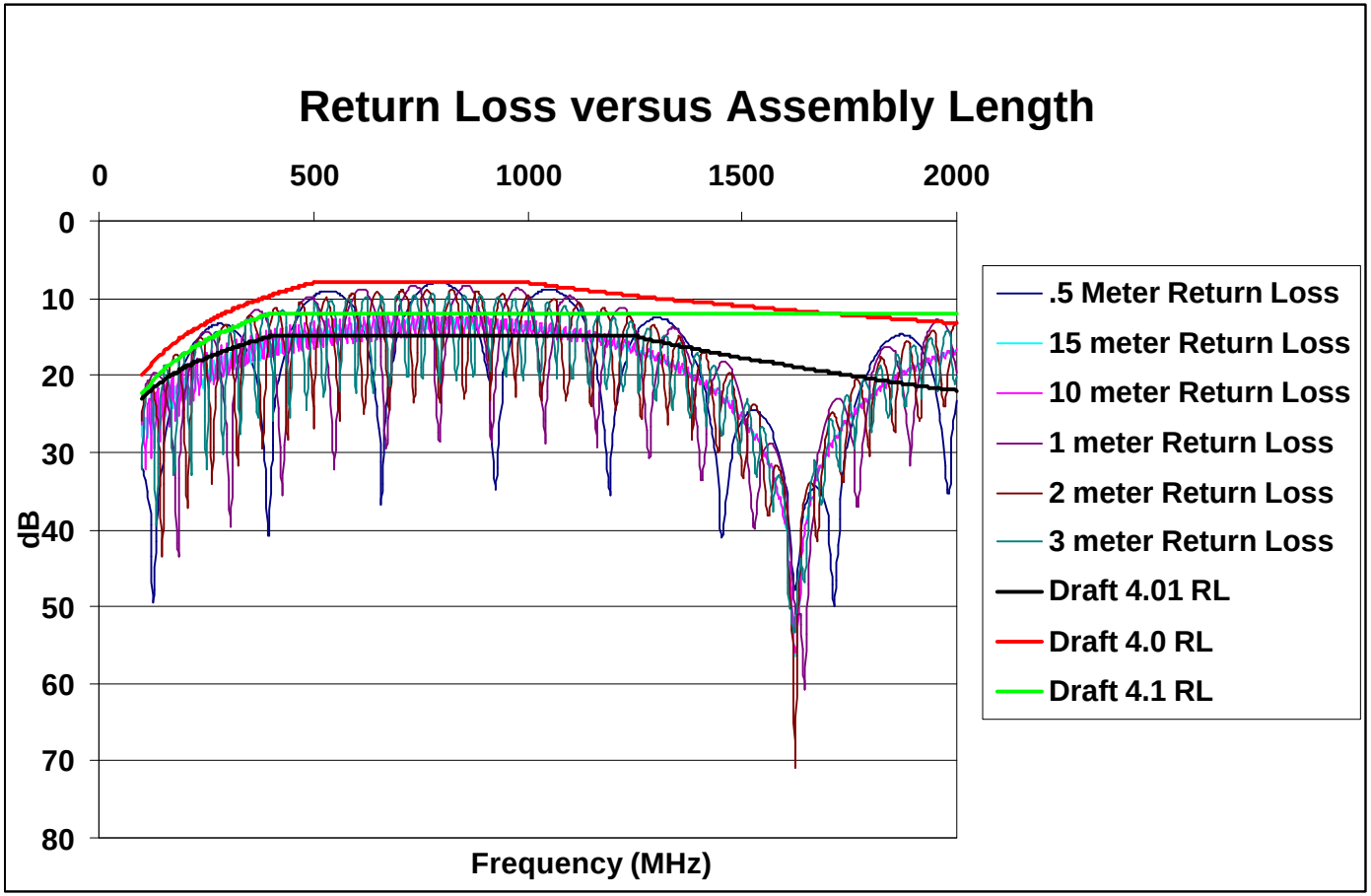


10GBASE-CX4- Compliance Channel Insertion loss:

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

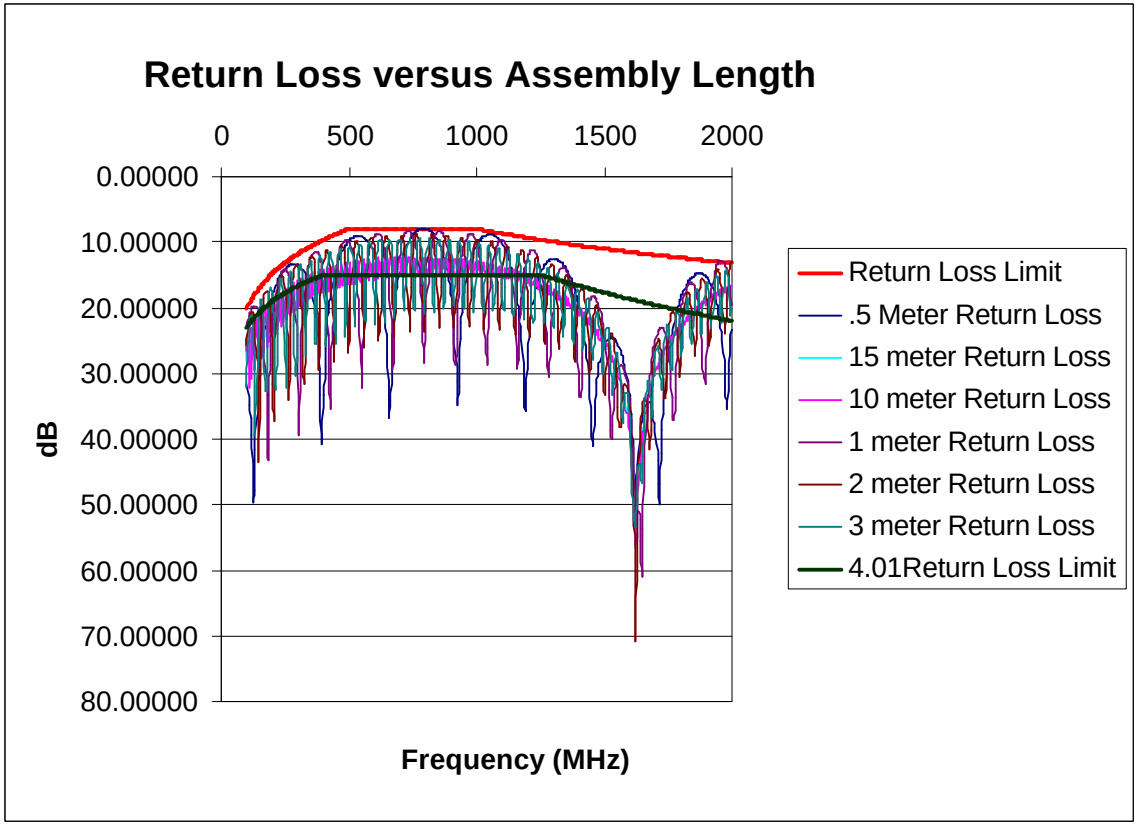
Insertion loss $\leq \left(.2629 \cdot \sqrt{f_k} + .0034 \cdot f_k + \frac{12.7632}{\sqrt{f_k}} + .5 \right)$ Frequency (MHz)

CX4 Assembly Return Loss Limit (Draft 4.1)



Frequency (MHz)	Minimum Return Loss (dB)
100≤ f< 400	22.35-17.7*log(f/100)
400≤ f <2000	12

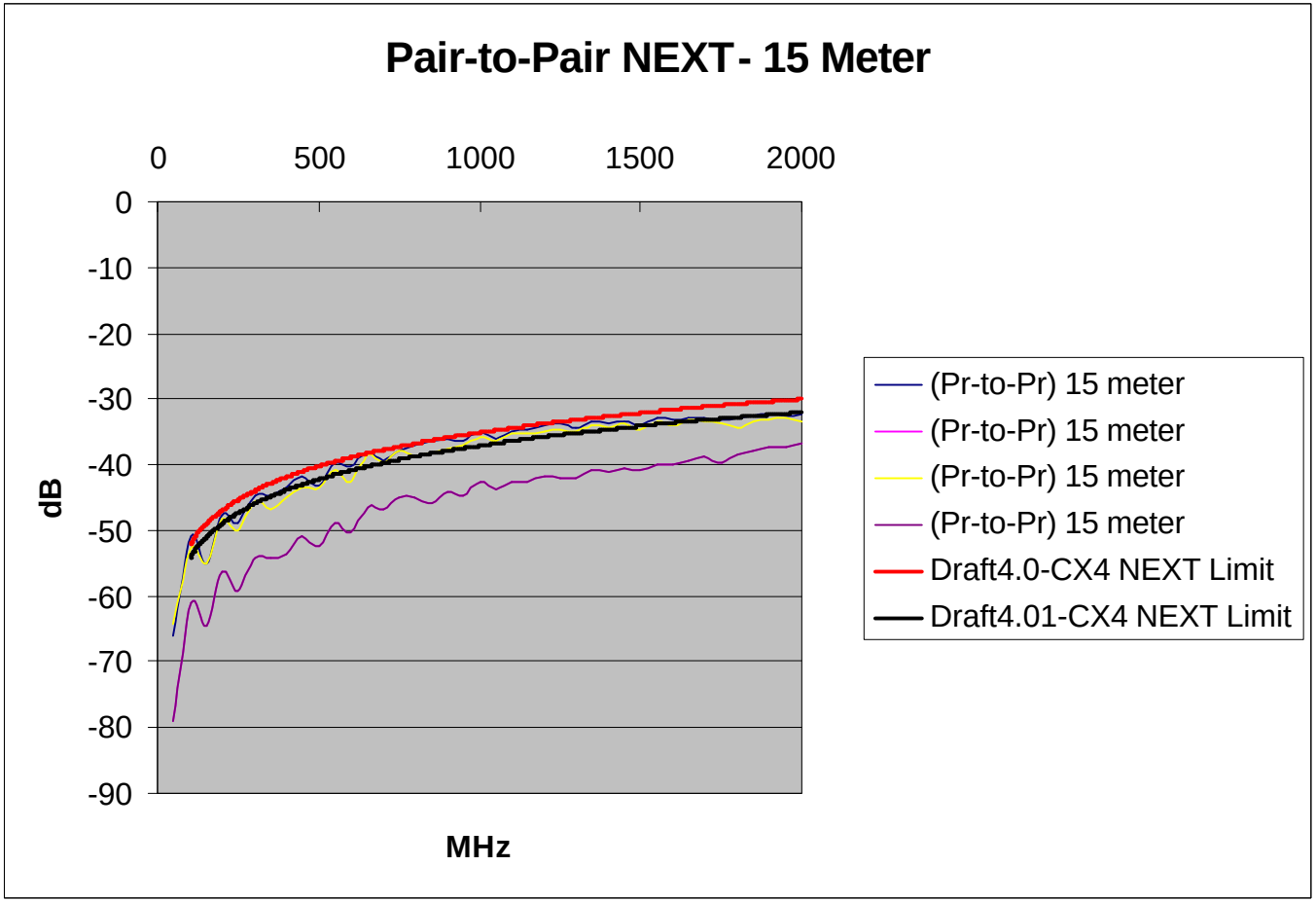
CX4 Assembly Return Loss Limit (Draft 4.0 -Draft 4.02)



Frequency (MHz)	Minimum Return Loss (dB)
100≤ f< 500	20-17.7*log(f/100)
500≤ f <1000	8
1000 ≤ f ≤2000	8+17.3*log(f/1000)

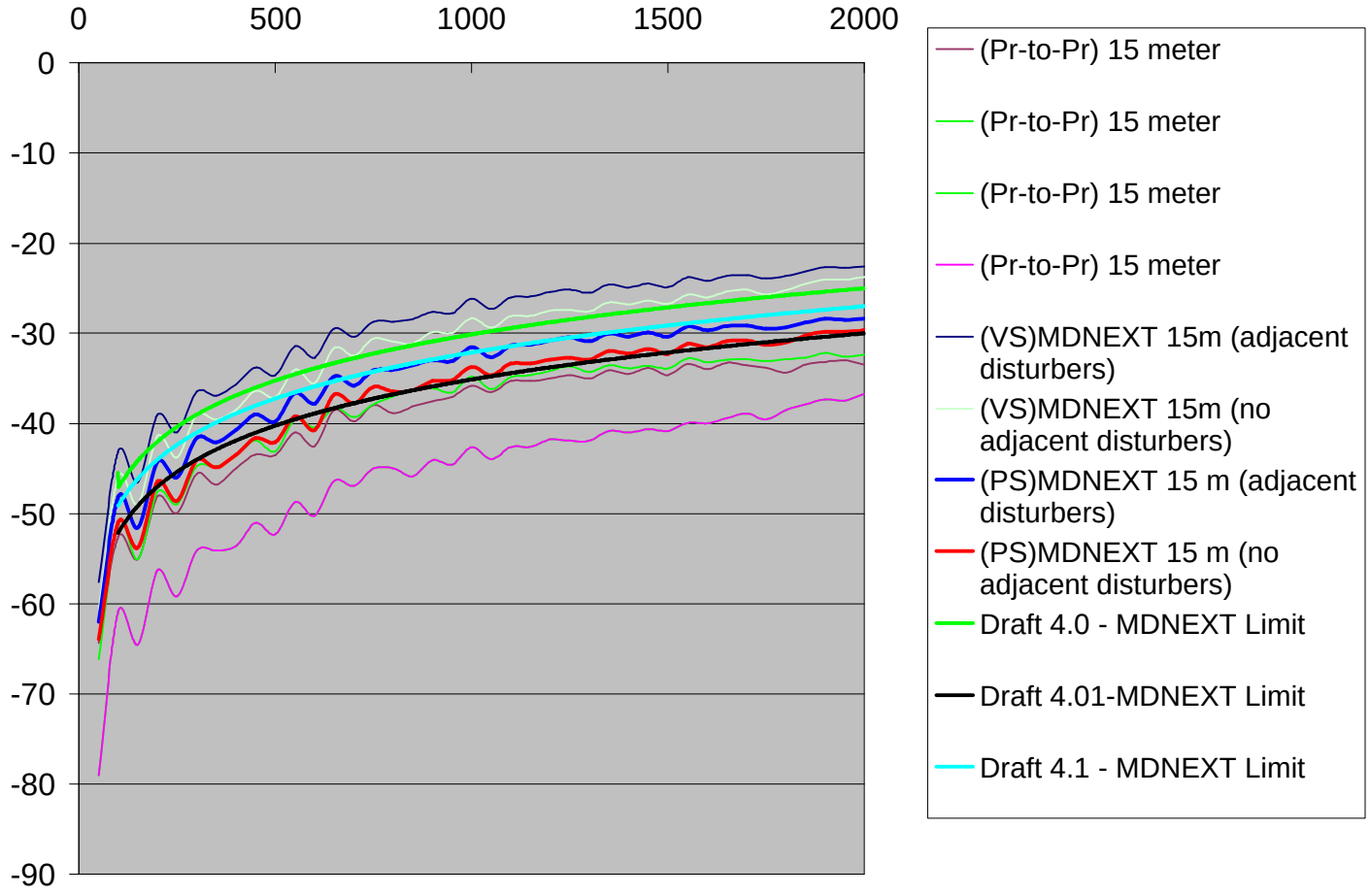
Frequency (MHz)	Minimum Return Loss (dB)
100≤ f< 400	30-13.33*log(f/30)
400≤ f <1250	15
1250 ≤ f ≤2000	15+34.3*log(f/1250)

CX4 Assembly NEXT Limit (Draft 4.0 = Draft 4.1)



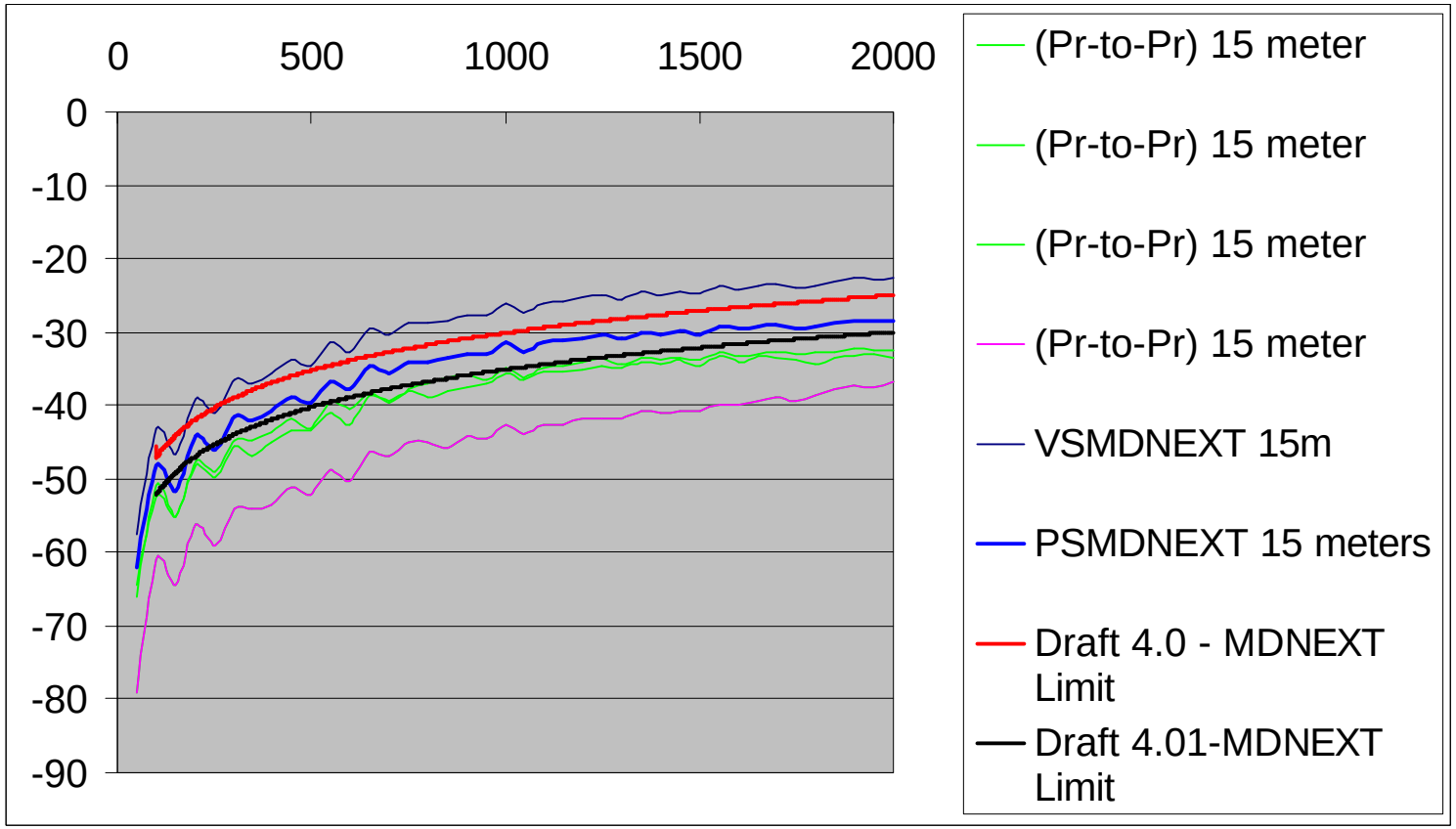
The NEXT loss between any two channels of a CX4 link segment shall be at least: 30-17*log10(f/2000)

CX4 Assembly MDNEXT Limit (Draft 4.1)



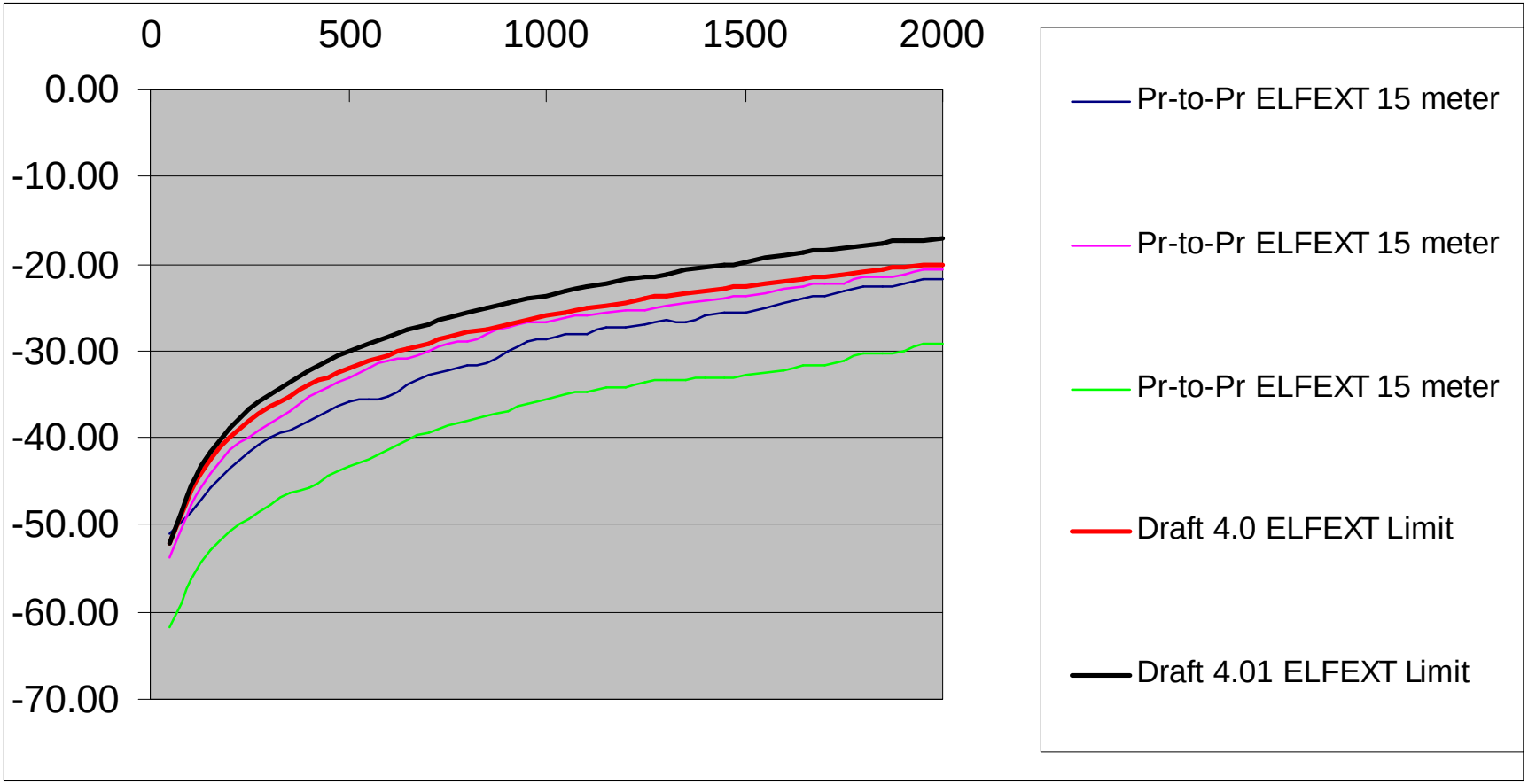
The MDNEXT loss between any two channels of a CX4 link segment shall be at least: 27-17*log10(f/2000)

CX4 Assembly MDNEXT Limit (Draft 4.0 - Draft 4.02)



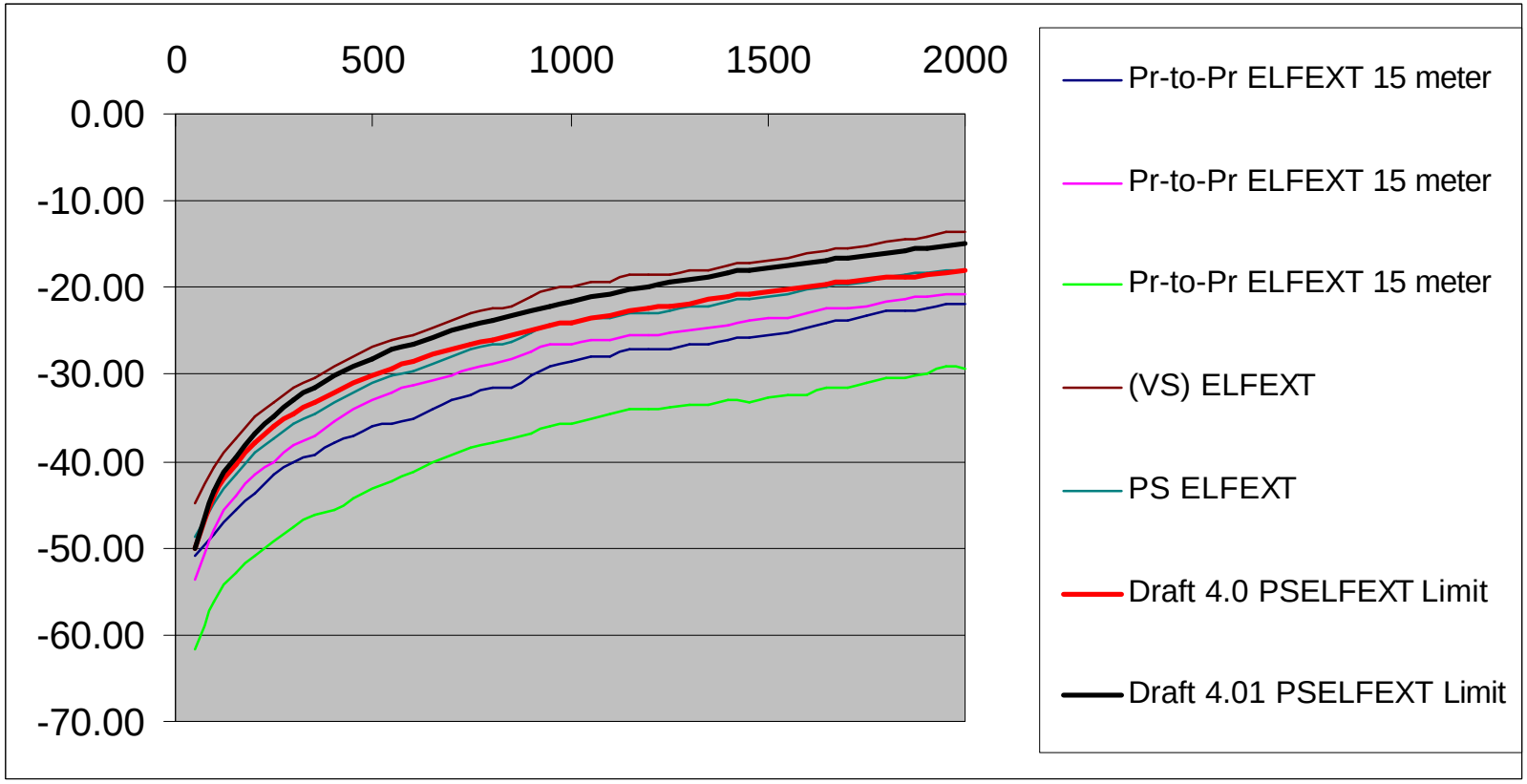
The MDNEXT loss between any two channels of a CX4 link segment shall be at least: 25-17*log10(f/2000) <-> **30-17*log10(f/2000)** f(MHz)

CX4 Assembly ELFEXT Limit (Draft 4.0 = Draft 4.1)



The worst pair ELFEXT loss between any two channels of a CX4 link segment shall be at least: 20-20*log10(f/2000)

CX4 Assembly MDELFEXT Limit (Draft 4.0 = Draft 4.1)



The PSELFEXT loss between any two channels of a CX4 link segment shall be at least: 18-20*log10(f/2000)