

500m CWDM TDECQ measurements in support of 800GBASE-FR4-500 baseline proposal

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Supporters

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CWDM EML TDECQ measurements


- Welch_3dj_01a_2401 presented a baseline proposal for the 800GBASE-FR4-500 objective using FECo mode
 - Questions were raised about the CWDM TX capability over 500m in FECo mode at extremes of chromatic dispersion
 - This contribution presents additional CWDM TDECQ measurements to support adoption of the baseline with $TDECQ(\max) = 3.4\text{dB}$.
- The following slide shows sample TDECQ measurements made on 1271 and 1331nm EML chips-on-carrier over 500m SMF
 - Signal: 106.25 GBd SSPRQ pattern
 - Reference RX: 15-tap FFE, target $SER = 4.8e-4$
 - Operating wavelengths: 1270.6 and 1334.9nm
 - Results show $TDECQ < 3.0\text{ dB}$ and magnitude of CD penalty is $\sim 0.25\text{dB}$

TDECQ measurements

WL (nm)	TECQ (dB)	TDECQ 500m (dB)	CD penalty (dB)
1270.6	2.51	2.41	-0.1
1334.9	2.59	2.85	0.26

- 500m spool was too short to measure CD directly
- TDECQ < 3.0 dB up to 500m
- |TDECQ-TECQ| < 0.26 dB at 500m

Comparison of worst case CD spec limits



PMD	Dmin (ps/nm)	Dmax (ps/nm)
DR4 500m	-0.9	0.8
FR4 500m	-3.0	1.7
DR4 2km	-3.7	3.2
FR4 2 km	-11.9	6.7

Thank you