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Subject: What is the BER on copper ? How likely are problems ?  
Posted by [Walter F.J. Müller](#) on Wed, 15 Sep 2004 17:40:15 GMT  
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Error protection is certainly a good feature. The question is, how often do errors happen, how likely is a malfunction if there is no error protection ?

In the "Hardware" talk given by G. Kopcsay on the 2003 BlueGene/L workshop in Reno you'll find on page 17 some numbers for the serial links used in BlueGene/L. Bottom line is, that the BER is around 10-18.

If this is translated into an AS system with at 10 Tb/s throughput, one gets roughly one bit error per day. About half will be caught by the coding layer, and with reasonable packet sizes less than 20% will be in the AS header, so there is a potential problem at the once every 2 week level.

If somebody has BER numbers for 2.5 Gbps links over 20-30" FR4 plus two connectors, which is a typical backplane scenario, please post a pointer to this information.

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