Planning Fiber Optic Networks

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Please note the following corrections for errors found in this printing.
The corrections are shown in **green bold**.

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less than 1 mW. Table 2.1 shows a few common milliwatt to dBm conversion.

Power in mW	Power in dBm
31.6	15
10	10
7	8.5
5	7
2	3
1	**0**
0.5	-3
0.32	-5
0.1	-10
0.01	-20
.0032	-25

Table 2.1: Common milliwatt to decibel conversions

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For example, if a 100 km fiber link has an effective group refractive index is n_g = 1.4682 what is the signal latency in the fiber?

$$t_f = \frac{100 \times 10^3 \times 1.4682}{2.9979 \times 10^8}$$

$$t_f = 4.8974 \times \mathbf{10^{-4}}$$

The fiber's latency or time required for the signal to propagate 100 km in this fiber link is **0.489744** ms.

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Total delay is calculated as follows:

$$t_T = 4.8974 \times \mathbf{10^{-4}} + 2 \times 98.282 \times 10^{-6} + 2 \times 7 \times 10^{-3}$$

$$t_T = \mathbf{14.686} \times 10^{-3}$$

The calculated channel latency is **14.686** ms. The accuracy of this latency depends on the accuracy of the measured fiber distance,

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Please accept my apologizes for these typos.
If you should find any other typos, feel free to email me at
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