What signal-to-noise ratio is needed to put a T1 (1.544 x 10^6 bps) carrier on a 50,000 Hz line?

- Maximum data rate = $H \log_2(1 + S/N)$ bits/sec
- S/N – the ratio of signal power to noise power .

(1.544 x 10^6) = (50,000)log_2(1+R)

30.88 = log_2(1+[S/N])

[S/N] = 1.98*10^9