

Tying the C/N Ratios Together



- **C/N = power received divided by total noise in carrier bandwidth B**
- **$C/N_0 = C/N + 10\log(B)$**
- **$C/T = C/N_0 - 228.6$**
- **$E_b/N_0 = C/N_0 - 10\log(R_b)$**
 - **R_b is the information rate, including overhead but not FEC**

DVB-S Flexible/Dynamic Coding Rates



Inner code rate, R	1/2	2/3	3/4	5/6	7/8
E_b/N_0 (dB)	3.3	3.8	4.3	4.8	5.2

Implementation margin (1 to 3 dB) needed for non-linearity in ground equipment and satellite repeater.