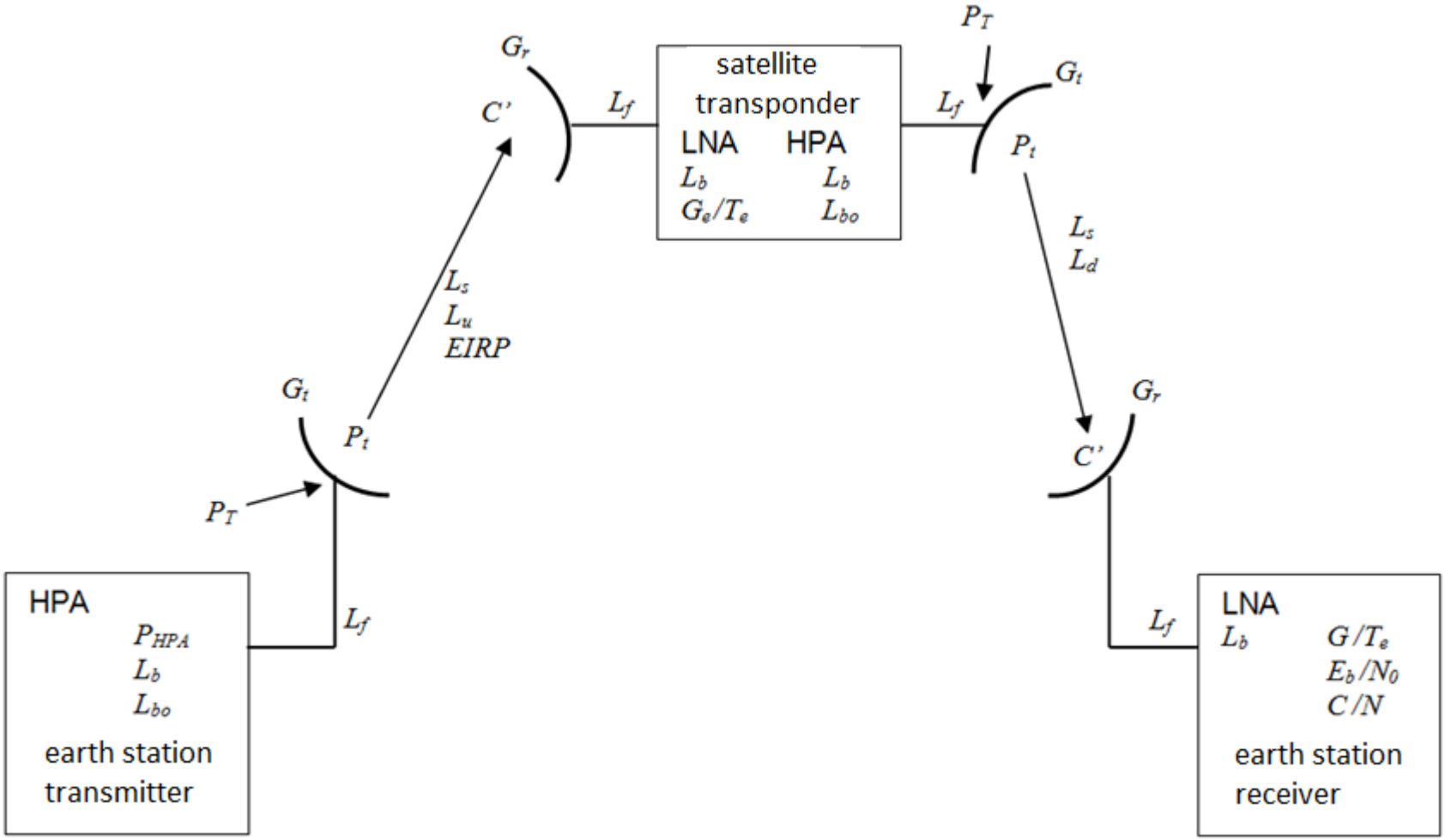
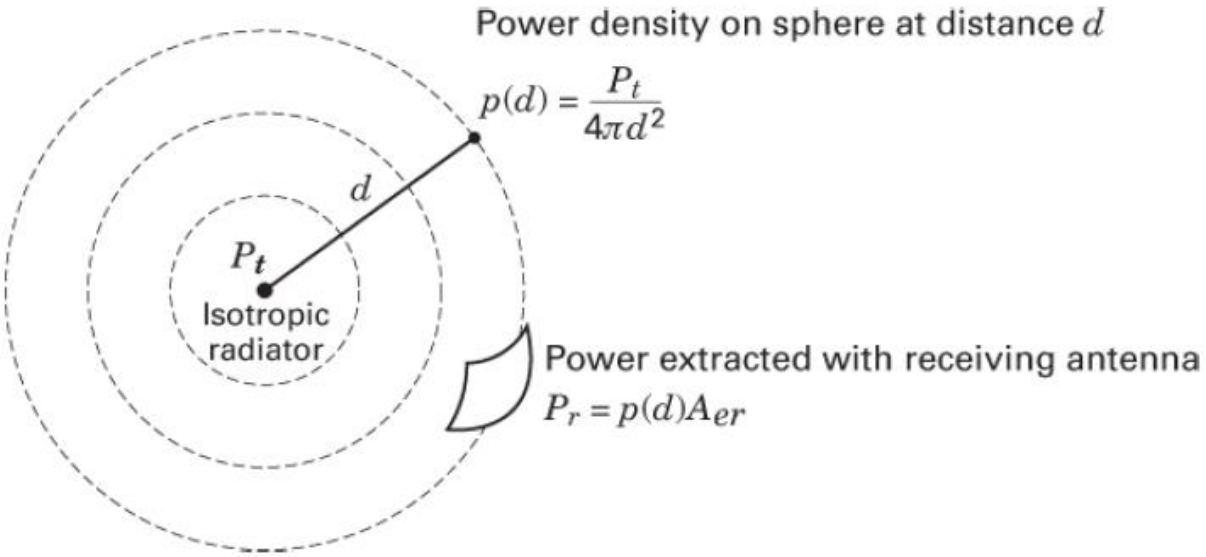


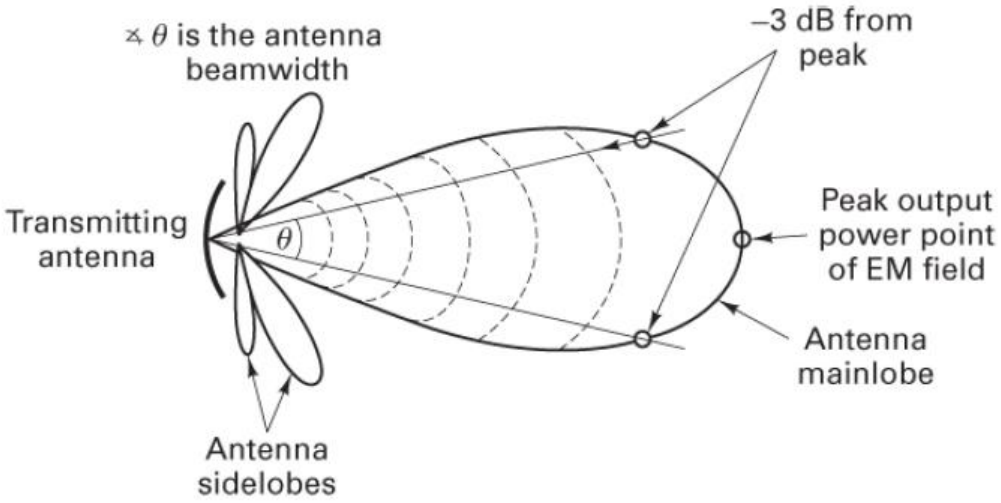
simplified model of the satellite system

HPA – power amplifier
P_{HPA} – output power HPA
L_{bo} - back-off losses
L_f - feeder loss
L_b - losses due to signal distribution (in connectors, couplings, etc.)
G_t - power gain of the transmitting antenna
(the efficiency of the antenna is already included here)
P_T - total power at the antenna input
P_t - total radiated power
L_u - additional atmospheric losses for UL
G_r - power gain of the receiving antenna
(the efficiency of the antenna is already included here)
G/T_e - receiver sensitivity
L_s - losses due to signal propagation over long distances
L_d - additional atmospheric losses for DL
LNA – low noise amplifier
C/T_e - ratio of signal power (carrier f.) to equivalent noise temperature
C/N_0 - ratio of signal power (carrier f.) to noise PSD
Eb/N_0 - ratio of signal energy per 1 bit to noise PSD
C/N - ratio of signal power (carrier f.) to noise power



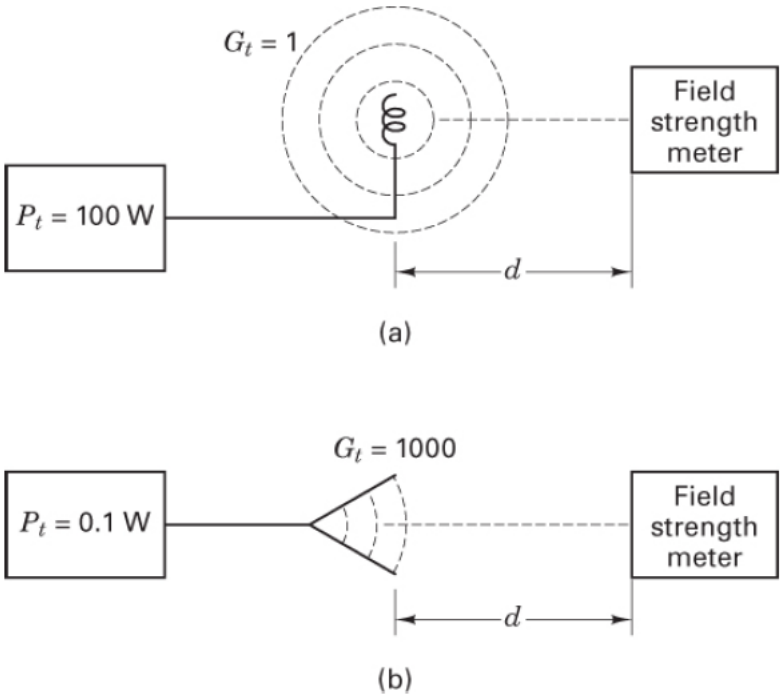
Isotropic radiator

source: B. Sklar, digital Communications



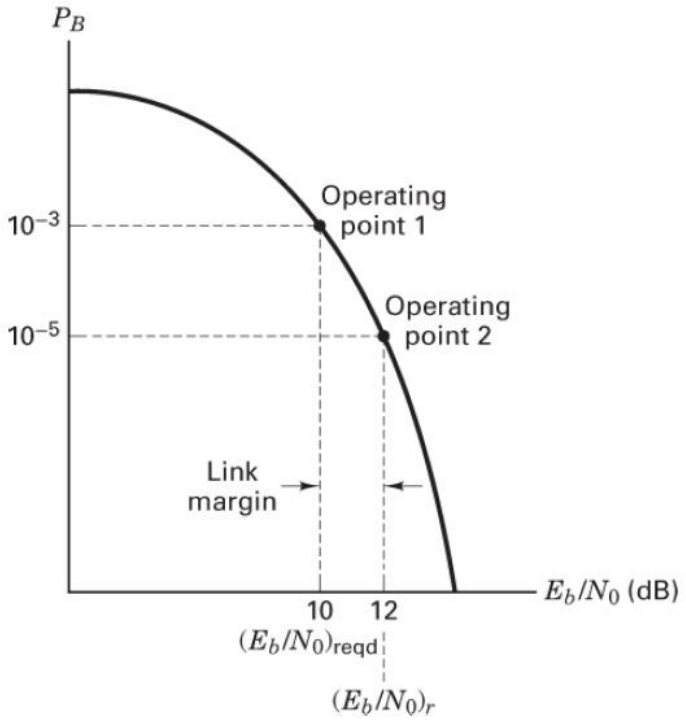
Antenna gain is the result of concentrating the isotropic RF flux

source: B. Sklar, digital Communications



The same value of EIRP produced two different ways

source: B. Sklar, digital Communications



Two Eb /N0 values of interest

source: B. Sklar, digital Communications