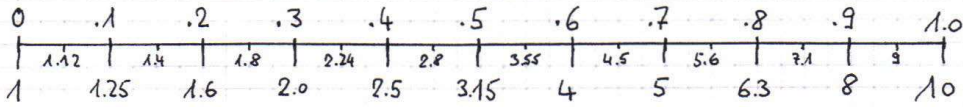


# Kopfrechnen mit dB

17.3.2023 HB9BQ1



- \* 0 dBm = 1mW
  - \* 10 dBm = 10mW
  - \* 20 dBm = 100mW
  - \* 30 dBm = 1W
  - \* 40 dBm = 10W
  - \* 50 dBm = 100W
  - \* 60 dBm = 1kW
- 1 dB = 1.25
  - 2 dB = 1.6
  - \* 3 dB = 2.0 (doppelt)
  - \* 6 dB = 4 (vierfach)
  - \* 7 dB = 5 (fünffach)
  - \* 9 dB = 8 (achtfach)

z.B. 33 dBm = 30 + 3 dBm = 1W + (2fach) = 2W

\* unbedingt merken!

$$dB = 10 \cdot (\log P_{\text{gross}} - \log P_{\text{klein}})$$

Verstärker Gain - 17 dB

Input 1 Watt

Out? 3 dB + 17 dB = 47 dB = 50 Watt

1 Watt + Gain = (40 dB) 10W · fünffach = 50W

Endstufe Out 200 Watt

in 100 mW

Gain in dB?

100mW = 20 dBm  
200Watt = 53 dBm

f = 145 MHz / 10 m RG58CU = 1.8 dB

Stecker u. SWR-Meter = 0.2 dB

Power TX = 10 Watt / Verluste = 2.0 dB

Gain = 53 dB - 20 dB = 33 dB

P Ant? P = 10W : 1.6 = 6.3 Watt  
Kopfrechnung rez. 1.25 · 1.25 = 0.8 · 0.8 = 6.4 Watt

EHE Station 6 dB S/N / Dämpfung = 250 dB / Power PA?

Rx Empf. = 149 dB = 149

VV 3.5 dB = 1

Ant. 4x17EL à 13 dB = 19

Verlust Kabel/Stecker 2.5 dB

Total Gain = 169 dB

Dämpfung Erde-Hond-Erde 250 dB

RX Gain 169 dB

Tx Gain Ant 19 dB

Gain tot. 169 + 19 = 188 dB

Power PA = 250 dB - 188 dB = 62 dB = 1600 Watt