Definícia _Np_ - základná

$$m_{Np} = \ln \frac{U_1}{U_2} \qquad m_{Np} = \ln \frac{I_1}{I_2}$$

Mierka

$$1\,\text{Np} = 8{,}686\,dB$$
$$1\,\text{dB} = 0{,}115\,Np$$

Definícia _dB_ - základná

$$m_{dB} = 10 \log \frac{P_1}{P_2}$$

Definícia _Np_ - odvodená

$$m_{Np} = \frac{1}{2} \ln \frac{P_1}{P_2}$$

Definícia _dB_ - odvodená

$$m_{dB} = 20 \log \frac{U_1}{U_2} \qquad m_{dB} = 20 \log \frac{I_1}{I_2}$$

Úrovne		
	relatívna	absolútna
napäťová	$p_{ru} = \ln \dfrac{U}{U_R} = 20 \log \dfrac{U}{U_R}$	$p_{au} = \ln \dfrac{U}{U_0} = 20 \log \dfrac{U}{U_0}$
prúdová	$p_{ri} = \ln \dfrac{I}{I_R} = 20 \log \dfrac{I}{I_R}$	$p_{ai} = \ln \dfrac{I}{I_0} = 20 \log \dfrac{I}{I_0}$
výkonová	$p_{ru} = \dfrac{1}{2} \ln \dfrac{P}{P_R} = 10 \log \dfrac{P}{P_R}$	$p_{ap} = \dfrac{1}{2} \ln \dfrac{P}{P_0} = 10 \log \dfrac{P}{P_0}$

Normálový (jednotkový) generátor

$$Z_V = Z_0 = 600\,\Omega, \; P_0 = 1\text{mW}, \; U_0 = \sqrt{P_0 Z_0} = 0{,}775\,V, \; I_0 = \sqrt{P_0/Z_0} = 1{,}29\,mA$$

Vzťah medzi p_{au} **a** p_{ap}

$$p_{ap} = p_{au} + 10 \log \frac{600\,\Omega}{Z} \quad \left(p_{ap} = 10 \log \frac{P}{P_0} = 10 \log \frac{U^2/Z}{U_0^2/Z_0} = 10 \log \frac{U^2 Z_0}{U_0^2 Z} = 20 \log \frac{U}{U_0} + 10 \log \frac{Z_0}{Z} \right)$$

Prevádzkové tlmenie a_p

$$a_p = \frac{1}{2} \ln \frac{P_{0p}}{P_2} = 10 \log \frac{P_{0p}}{P_2} \qquad\qquad a_p = a_0 + k \Rightarrow a_p = \ln \frac{U_V}{2 U_2} + \frac{1}{2} \ln \frac{Z_2}{Z_V}$$

$$\left(a_p = 10 \log \frac{U_{0p}^2/Z_V}{U_2^2/Z_2} = 10 \log \frac{U_{0p}^2}{U_2^2} + 10 \log \frac{Z_2}{Z_V} = 20 \log \frac{U_{0p}}{U_2^2} + 10 \log \frac{Z_2}{Z_V} \right)$$

Tlmenie	Zosilnenie
$a = 10 \log \dfrac{P_{VSTUP}}{P_{VÝSTUP}}$	$a = 10 \log \dfrac{P_{VÝSTUP}}{P_{VSTUP}}$