

FORMULE NEL FOGLIO DI CALCOLO "Trafi_TX"

CELLA	FORMULA	NOTE
B15	$A_{ec} = nA_e$	n numero ferriti
B16	$tg \delta_m = \frac{\mu_s''}{\mu_s'}$	
B17	$\mu_p' = \mu_s' \left[1 + \left(\frac{\mu_s''}{\mu_s'} \right)^2 \right]$	
B18	$\mu_p'' = \mu_s'' \left[1 + \left(\frac{\mu_s''}{\mu_s'} \right)^2 \right]$	
B19	$SWR = \left \frac{1 - 10^{\frac{ \Gamma _{dB}}{20}}}{1 + 10^{\frac{ \Gamma _{dB}}{20}}} \right $	
B20	$N_p = \sqrt{\frac{Z_{in} \sqrt{1 - 10^{\frac{2 \Gamma _{dB}}{20}}}}{(16\pi^2 f (10^{\frac{ \Gamma _{dB}}{20}}) \sqrt{\mu_s'^2 + \mu_s''^2} \frac{A_e}{l_e} 10^{-6}})} \text{ [spire]}$	f [kHz], A_e [cm ²] e l_e [cm]
B22	$B = 10V_{eff} / (\sqrt{2}\pi f 10^{-3} N_p A_{ec}) \text{ [mT]}$	f [kHz] e A_e [cm ²]
B23	$X_m = 8\pi^2 f \frac{A_e}{l_e} N_p^2 \mu_p' 10^{-6} \text{ [\Omega]}$	f [kHz] e L_m [nH]
B24	$R_c = 8\pi^2 f \frac{A_e}{l_e} N_p^2 \mu_p'' 10^{-6} \text{ [\Omega]}$	f [kHz], A_e [cm ²] e l_e [cm]
B25	$R_t = Real \left[1 / \left(\frac{1}{Z_{out}} + \frac{1}{R_c} - j \frac{1}{X_m} \right) \right] + R_w \text{ [\Omega]}$	Tutto in [\Omega]
B26	$X_t = Imm \left[1 / \left(\frac{1}{Z_{out}} + \frac{1}{R_c} - j \frac{1}{X_m} \right) \right] + \frac{X_m}{10^4} \text{ [\Omega]}$	Tutto in [\Omega]
B27	$Z_t = R_t + jX_t \text{ [\Omega]}$	Tutto in [\Omega]
B28	$V_{eff} = \sqrt{PZ_t} \text{ [V]}$	P [W] e Z_t [\Omega]
B29	$S = \frac{V_{eff}}{Z_t} R_w + \left(V_{eff} - \left R_w + j \frac{X_m}{10^4} \right \frac{V_{eff}}{Z_t} \right)^2 / R_c \text{ [W]}$	
B30	$N_s = N_p \sqrt{Z_{out} / Z_{in}} \text{ [spire]}$	
B32	$N = N_p / N_s$	
B33	$Z'_{out} = Z_{out} N^2 \text{ [\Omega]}$	
B34	$\eta = (P - S) / P$	
B36	$ \Gamma _{dB} = 20 \log \left \frac{Z_p - Z_{in}}{Z_p + Z_{in}} \right \text{ dove } Z_p = 1 / \left[R_t + j \frac{1}{\left(\frac{1}{X_t} - 2\pi f C_{ } 10^{-9} \right)} \right]$	$C_{ }$ [pF], f [kHz] il resto in [\Omega]