SWR Measurement

Return loss is a measure of magnitudes of incident and reflected signals and does not take account of phase relationships.

This mismatch will result in some of the energy contained in the primary wave (the reflected signal) being reflected back from the load (LNB), and lost. To make things worse, the reflected wave will also interfere with the incident (incoming) wave, causing the signal to be reduced as well.

Voltage (Model 70)

K = $\frac{Vrms_r}{Vrms_f}$ **VSWR** = $\frac{(1+K)}{(1-K)}$ K = $\frac{(VSWR-1)}{(VSWR+1)}$

Return Loss (dB) = 20 log $\frac{Vrms_f}{Vrms_r}$

Reflected Power (%) = $10^{((-Return\ Loss+20)/10)}$

Watts

Return Loss = 10 log $\frac{P_f}{P_r}$ P = $\sqrt{\frac{P_r}{P_f}}$ SWR = $\frac{(1+P)}{(1-P)}$