



$$\frac{U_2}{U_1} = V_u \quad \text{NR:} \quad \left| \begin{array}{l} U_1 = H_{11} I_1 + H_{12} U_2 \quad (1) \\ I_2 = -\frac{U_2}{R_A} ; \quad U_2 = -I_2 \cdot R_A \end{array} \right.$$

$$V_u = \frac{U_2}{H_{11} I_1 + H_{12} U_2} = \frac{1}{H_{11} \frac{I_1}{U_2} + H_{12}} = \frac{1}{H_{12} - \frac{I_1}{I_2 R_A} \cdot H_{11}}$$

$$\text{NR:} \quad \left| \begin{array}{l} I_2 = H_{21} \cdot I_1 + H_{22} U_2 \quad (2) \\ I_2 = H_{21} \cdot I_1 - H_{22} I_2 R_A \\ \frac{I_1}{I_2} = \frac{1 + H_{22} R_A}{H_{21}} \end{array} \right.$$

$$V_u = \frac{1}{H_{12} - H_{11} \cdot \frac{1}{R_A} \cdot \frac{1 + H_{22} R_A}{H_{21}}}$$

$$\text{NR:} \quad \left| \begin{array}{l} H_{11} \cdot H_{22} - H_{12} \cdot H_{21} = \det H \end{array} \right.$$

$$V_u = - \frac{H_{21} R_A}{H_{11} + R_A \cdot \det H} = \frac{U_2}{U_1}$$
