

$$\begin{pmatrix} Y \\ C_r \\ C_b \end{pmatrix} = \begin{pmatrix} 0.257 & 0.504 & 0.098 \\ 0.439 & 0.368 & -0.071 \\ -0.148 & -0.291 & 0.439 \end{pmatrix} \begin{pmatrix} R \\ G \\ B \end{pmatrix}$$