

Video Compression Hw#1: Color Transform

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RGB -> YUV

RGB轉YUV

$$Y = 0.299 * R + 0.587 * G + 0.114 * B$$

$$U = -0.169 * R - 0.331 * G + 0.5 * B + 128$$

$$V = 0.5 * R - 0.419 * G - 0.081 * B + 128$$

RGB -> YCbCr

RGB轉YCbCr

$$Y_YCbCr = 0.299 * R + 0.587 * G + 0.114 * B$$

$$Cb = -0.168736 * R - 0.331264 * G + 0.5 * B + 128$$

$$Cr = 0.5 * R - 0.418688 * G - 0.081312 * B + 128$$

Input



Output results

- R_channel



- G_channel



▪ B_channel



▪ Y_channel



▪ U_channel



- V_channel



- Cb_channel



- Cr_channel

