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HANRO
OF SWITZERLAND

$s_0(t) = V_0 \cos(2\pi f_0 t)$ $\quad f_0 = 1\ MHz$

$x(t) = V_1 \cos(2\pi f_1 t - \varphi_1) + V_2 \cos(2\pi f_2 t - \varphi_2)$

$(V_1 = V_2 = 1\ V \quad f_1 = 20\ KHz, \quad f_2 = 30\ KHz)$

(1)

$s(t) = V_0 [1 + k\, x(t)] \cos(2\pi f_0 t)$

(2)

$s(t) = V_0 \cos(2\pi f_0 t) + V_0 k\, x(t) \cos(2\pi f_0 t) =$

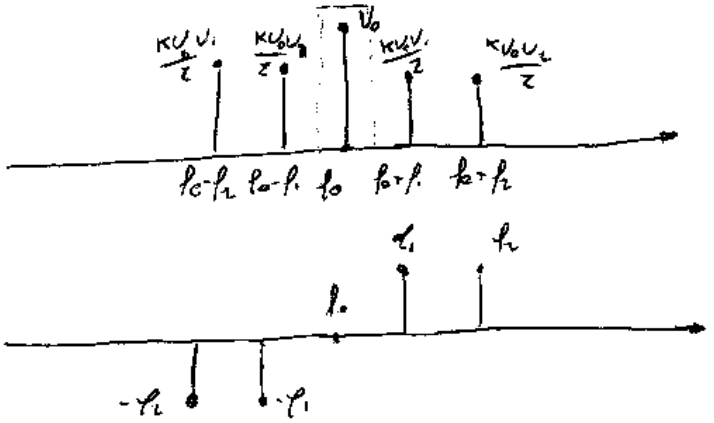
$V_0 \cos(2\pi f_0 t + k V_0 V_1 \cos(2\pi f_1 t - \varphi_1) \cos(2\pi f_0 t) +$

$+ k V_0 V_2 \cos(2\pi f_2 t - \varphi_2) \cos(2\pi f_0 t) =$

$= V_0 \cos(2\pi f_0 t) + \frac{k V_0 V_1}{2} \{\cos[2\pi (f_0 + f_1) t - \varphi_1] +$

$\cos[2\pi (f_0 - f_1) t + \varphi_1] + \frac{k V_0 V_2}{2} \{\cos[2\pi (f_0 + f_2) t - \varphi_2] +$

$+ \cos[2\pi (f_0 - f_2) t - \varphi_2]\}$



$m_a = \max(k|x(t)|)$

$m_a = k \max(|x(t)|)$

$1 = (V_1 + V_2) k$

$1 = 2k \Rightarrow k = \frac{1}{2}$

(3)