[QUOTE=simbaliya;1335196]Hi LvW, I do not understand why "The -3dB bandwidth always is identical to the loop gain`s cross-over frequency", can you explain with details?[/QUOTE]

Yes - it is rather simple:

When speaking about frequency characteristics we need to take the real opamp gain (finite) into account.
That means: With very good accuracy we can presume that the opamp gain in the interesting region (around the closed-loop corner frequency) has an first order (integrating) characteristic:

$A_{OL} = \omega_T / \mathrm{j}\omega$ (ω_T:Transitfrequency).

Hence, the classical expression for closed-loop gain is :

$$A_{CL} = H_F \frac{A_{OL}}{1 - LG} = H_F \frac{A_{OL}}{1 - H_R A_{OL}} = H_F \frac{A_{OL}}{1 - H_R \omega_T / \mathrm{j}\omega} = H_F \frac{A_{OL}}{1 + \mathrm{j} H_R \omega_T / \omega}.$$

(H_F: Forward attenuation factor, $H_R A_{OL}$: Loop gain).

For inverter:

$H_F = -R_F / (R_O + R_F)$ and $H_R = R_O / (R_O + R_F)$

Now it can be seen that the <u>magnitude</u> of the denominator of Acl is SQRT(2) if the imaginary part (loop gain) is |LG| =1.
This condition (real part=imag. part) fulfills the definition for the 3-dB corner frequency.