The cascaded IP3 for the above is calculated using the equation

$$IP_{TOT} = \cfrac{1}{\cfrac{1}{IP3_1} + \cfrac{Gain_1}{IP3_2} + \cfrac{Gain_1 \cdot Gain_2}{IP3_3} + \dots}$$

Use the linear terms for IP3 and Gain in the above equations, not the decibel form, ie.:

$$Gain_n = 10^{\frac{Gain_n(dB)}{10}}$$

$$IP3_n = 10^{\frac{IP3_n(dB)}{10}}$$

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TECHNICAL NOTES AND ARTICLES