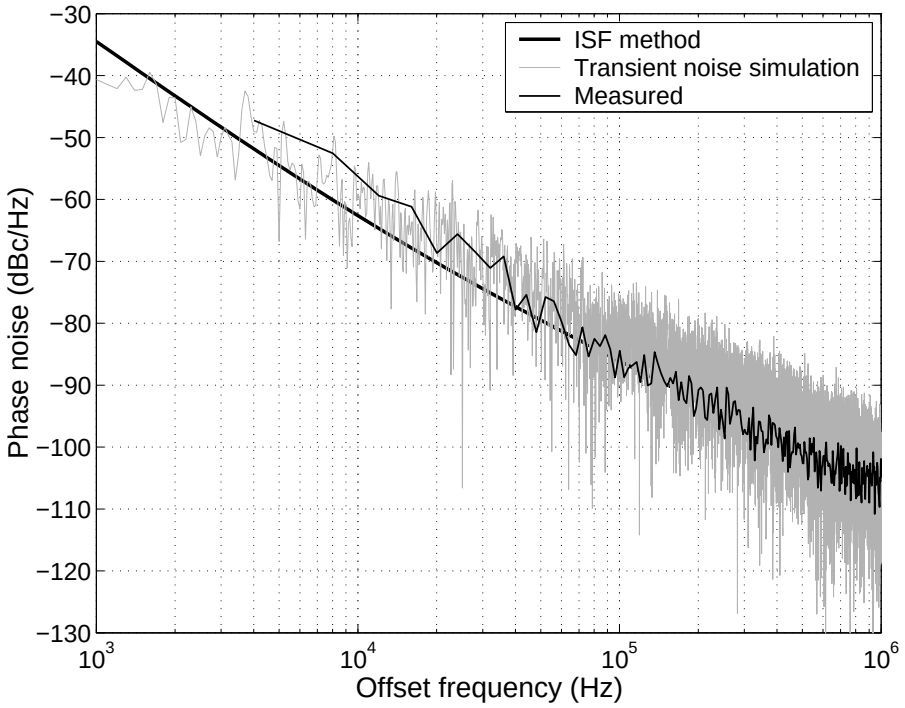
Errata

Equations (7) in [P1] and (6) in [P9] are incorrect. The right way to determine the phase noise spectrum resulting from a flicker noise source is to utilize one of the two following expressions:

$$\mathcal{L}\left(\Delta\omega\right) = 10\log_{10}\left(\frac{\Gamma_{dc}^2}{q_{max}^2}\frac{\overline{i_n^2}/\Delta f}{8\pi^2\Delta f^2}\frac{f_{1/f}}{\Delta f}\right) = 10\log_{10}\left(\frac{\phi_{dc}^2}{\Delta q^2}\frac{\overline{i_n^2}/\Delta f}{8\pi^2\Delta f^2}\frac{f_{1/f}}{\Delta f}\right),$$

which are consistent with (5.20) and with the footnote text on the same page. The phase noise spectra of the 2.0-MHz frequency reference, originally presented in Figs. 6 and 11 in [P1] and [P9], respectively, are redrawn below.

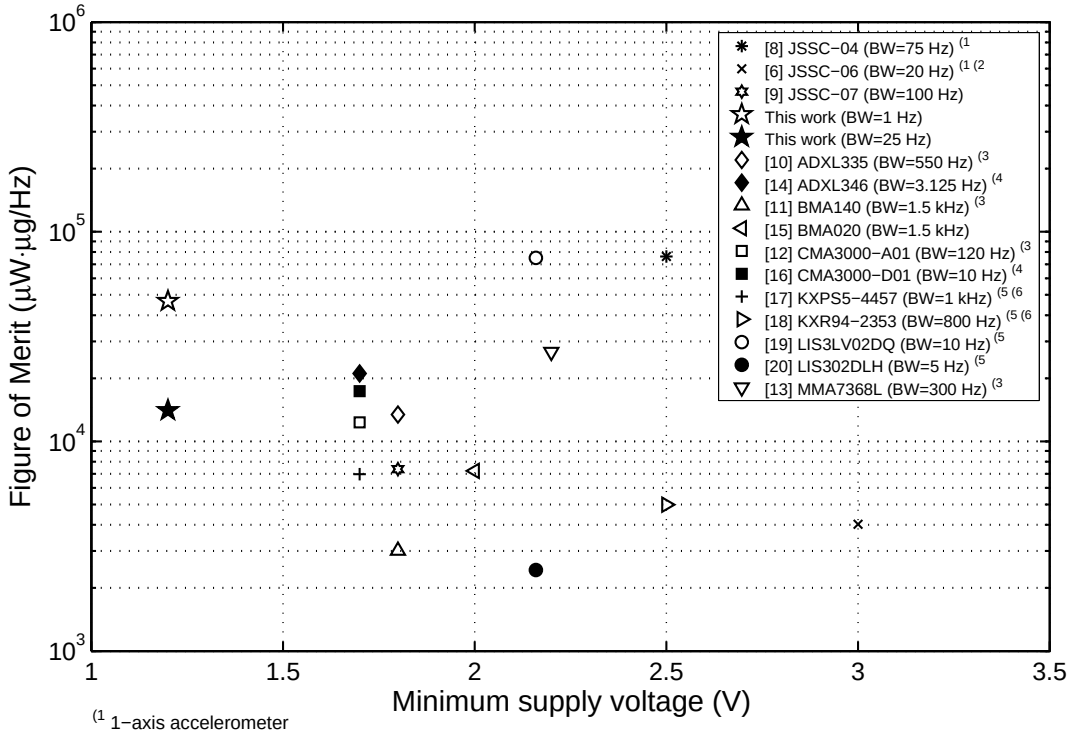


In [P5], Fig. 32.2.3 implies that the output voltage of the $\Delta\Sigma$-type sensor front-end is directly proportional to V_{REF}, i.e.,

$$V_{OUT} = \frac{C_P - C_N}{C_P + C_N}V_{REF},$$

which is in conflict with the equations presented in [P8], as well as with that given in (3.9). The equation shown above is valid only when $V_{REF} = V_{DD}/2$. Moreover, in order to shift the output range to extend from zero to V_{DD}, an additional sum term equal to $V_{DD}/2$ should be added. Because this front-end performs the direct C/D conversion, it is practical to define the output as a bit average $\overline{B}$, as has been done in [P8] and (3.9).

In [P8], Fig. 15 includes three products, namely ADXL346, CMA3000-D01, and LIS3LV02DQ, the FOMs of which were calculated erroneously as a result of misinterpretation of the datasheets. Redefined FOM results are shown below. Furthermore, the signal bandwidths used in the calculations are included in the legend of each accelerometer.



(1 1−axis accelerometer
(2 Operates mechanically in closed−loop
(3 Analog accelerometer
(4 Assumed that noise floor does not change when bandwidth and current consumption are decreased
(5 Mechanical noise floor used in (19)
(6 Mechanical bandwidth used in (19)