Errata

Errata for "Design and Analysis of a Programmable Receiver Front End Based on Baseband Analog-FIR Filtering Using an LPTV Resistor"

Sameed Hameed, *Member, IEEE*, and Sudhakar Pamarti, *Member, IEEE*

A FEW errors were made in [1] that were missed during the final production phase of the paper. While the authors made IEEE aware of these errors prior to final publication, they were unfortunately left uncorrected. The errors are corrected as follows.

1) The factor $\frac{1}{T_s}$ incorrectly appears in [1, eq. (6)]. The corrected equation is:

$$G(f) = G\left(e^{j2\pi f T_{\text{ck}}}\right) \text{sinc}\left(f T_{\text{ck}}\right). \tag{6}$$

2) The x-axis of the filter frequency response shown in [1, Fig. 5] has a scaling error. The corrected Fig. 5 is shown here. The parameters corresponding to the filter frequency response are $F_s = 5$ MHz, $F_{\text{pass}} = 2.5$ MHz, $F_{\text{stop}} = 5 \times F_{\text{pass}} = 12.5$ MHz, and $F_{lo} = 500$ MHz. The expression for F_{stop} was formatted incorrectly in the final paragraph of [1, Sec. II].

3) A factor of 2 is missing in the second line of [1, eq. (14)]. The correct version of the equation and the text following it are:

$$\begin{aligned} F &= \frac{\text{mean}[(R_s + R_{\text{in}}(t))^{-1}]}{R_s \text{mean}[(R_s + R_{\text{in}}(t))^{-2}]} \\ &= 2 \times \frac{\text{mean}[g_{\text{norm}}(\tau)]}{\text{mean}[g^2_{\text{norm}}(\tau)]} \quad 0 \le \tau < T_s. \end{aligned} \tag{14}$$

It can be easily seen that for $R_{\text{in}}(t) = R_s$ [or $g_{\text{norm}}(\tau) = 1$], i.e., the LTI case, $F = 2 = 3$ dB as expected.

4) The denominator should have been squared in the second line of [1, eq. (15)]. The corrected equation is:

$$\begin{aligned} F_{\text{aliasing}}(\Delta f = 0) &= \frac{\text{mean}[(R_s + R_{\text{in}}(t))^{-2}]}{\{\text{mean}[(R_s + R_{\text{in}}(t))^{-1}]\}^2} \\ &= \frac{\text{mean}[g^2_{\text{norm}}(\tau)]}{\{\text{mean}[g_{\text{norm}}(\tau)]\}^2} \quad 0 \le \tau < T_s. \end{aligned} \tag{15}$$

5) The factor $\frac{1}{T_s}$ is missing in [1, eq. (25)]. This additional factor is required with the continuous-time PSD on the left-side of the equation to accurately relate it to the discrete-time PSD (corresponding to a signal sampled with sampling period T_s) on the right. The correct version of the equation is:

$$\begin{aligned} &\frac{2kT R_s}{T_s} \sum_{n=-\infty}^{\infty} |G(\Delta f + nF_s)|^2 \\ &\quad = \frac{2kT}{C^2} \int_{t=0}^{T_s} \frac{R_s}{[R_s + R_{in}(t)]^2} dt. \end{aligned} \tag{25}$$

The rest of the paper remains unchanged. The authors and IEEE sincerely regret the errors.

REFERENCES

[1] S. Hameed and S. Pamarti, "Design and analysis of a programmable receiver front end based on baseband analog-FIR filtering using an LPTV resistor," *IEEE J. Solid-State Circuits*, vol. 53, no. 6, pp. 1592–1606, Jun. 2018.

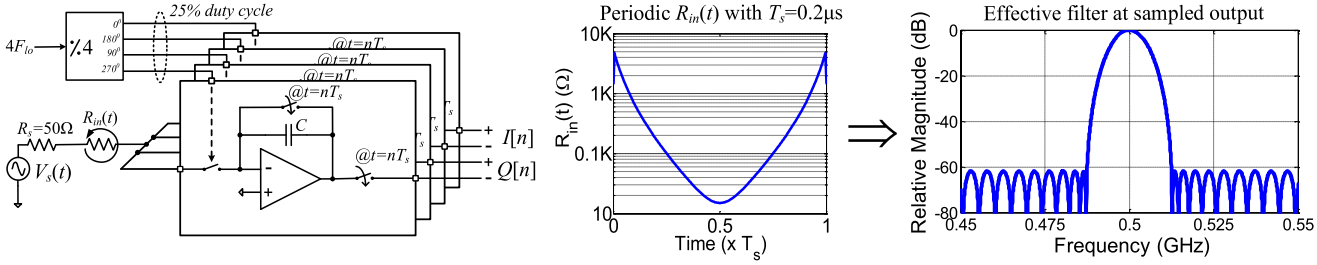

Fig. 5. Bandpass filtering by incorporating a passive mixer into the baseband filter in Fig. 3, and an example filter obtained for LO frequency of 500 MHz.

Manuscript received May 25, 2018; accepted June 7, 2018. Date of current version August 27, 2018. The authors are with the Department of Electrical Engineering, University of California at Los Angeles, Los Angeles, CA 90095 USA (e-mail: sameed@ucla.edu; spamarti@ucla.edu).

Color versions of one or more of the figures in this paper are available online at http://ieeexplore.ieee.org.

Digital Object Identifier 10.1109/JSSC.2018.2862118