

Errata 2th edition

for the book

Digital Signal Processing with Field Programmable Gate Arrays

by

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Preface 2:

Page XI 5th bullet point:

Replace “request a copy via e-mail from Uwe.Meyer-Baese@ieee.org” with “from www.amazon.com”

Chapter 1:

Page 1 last line: Replace “Figgure” with “Figure”

Page 16 first line in sec. 1.4.1: Replace “seemed” with “seem”

Page 20 second line before Timing Estimates section: replace “rows” with “columns”

Page 21 Example 1.2, 6 line from the end: Replace t_{cici} with $7 \times t_{cici}$

Page 22 Figure 1.14 low part of 74LS175: Replace “6 x FF” with “2 x FF” twice

Chapter 2:

Page 33 One’s Complement: Replace “same representation except” with “bit-by-bit complement representations including”

Page 36: first sentence after Example 2.1: Replace “nonezero” with “nonzero”

Page 41: last line before table: Replace “C=r” with “C=2”

Page 62 Eq. (2.31): Replace “ Y_2Y_2 ” with “ X_2Y_2 ”

Page 89 Equation (2.46): Replace “ $x_b[k]$ ” with “ $x_b[n]$ ”

Page 90 Table second line: Replace “001₂” with “010₂”

Page 91 Eq. (2.48) and (2.49): Replace “ -2^b ” with “ -2^B ”

Page 92 Example 2.24: Replace “N=4-bit” with “B=4-bit”

Page 93 Equation (2.51): Replace “ $Ll+n$ ” with “ $Nl+n$ ” twice

Page 96 for \sqrt{W} : Replace “ $m=1$ ” with “ $m=-1$ ”

Page 96 Table 2.11, $m=1$: Replace “ $Y_K=K_1 (X_0 \cos(Z_0)+Y_0 \sin(Z_0))$ ” with “ $Y_K=K_1 (Y_0 \cos(Z_0)+X_0 \sin(Z_0))$ ”

Page 96 Table 2.11, $m=-1$: Replace “ $X_K=K_{-1} \sqrt{X_0^2 + Y_0^2}$ ” with “ $X_K=K_{-1} \sqrt{X_0^2 - Y_0^2}$ ”

Replace “ $Y_K=K_{-1} (X_0 \cosh(Z_0)+Y_0 \sinh(Z_0))$ ” with “ $Y_K=K_{-1} (Y_0 \cosh(Z_0)+X_0 \sinh(Z_0))$ ”

Page 99 Fig. 2.38 Three times bottom assignments: Exchange “-/+” and “+/-”

Chapter 3:

Page 110 next to Eq. (3.4): Replace “ L^{th} -order” with “length- L ”

Page 115 Eq. (3.8): Replace “ $d\Phi(\omega)$ ” with “ $-d\Phi(\omega)$ ”

Page 115 Eq. (3.10): Add “ $k>0$ ” to sum sign

Page 121 Fig. 3.8a: Replace “ $f_s/2$ ” with “ f_n ”

Page 123 before Eq. (3.17): Replace “ L^{th} -order” with “length- L ”

Page 135 Example 3.8 first sentence: Replace “da3.mif” with “darom3.mif”

Page 142 first sentence after Example 3.10: Replace “archived” with “achieved”

Chapter 4:

Page 150 Eq. (4.3): Replace “ $y[n-k]$ ” with “ $y[n-l]$ ”

Page 152 item 4): Replace “unit circle” with “real axis”

Page 153 first sentence after Eq. (4.6): Replace “ $|F(\omega)|^2$ ” with “ $|F(\omega)|^2$ ”

Page 159 Example 4.2, coefficients A,B incorrect: Remove “We will get ... B=0.0001,... A=1.000...”

Page 160 Fig. 4.13 caption: Replace “(b) phase, and (c) group delay response” with “(b) group delay response, and (c) Pole/zero plot.”

Page 161 Table 4.2: Replace “11 x 9” with “1 x 9”

Page 166 Text before Eq. (4.16): Replace “0.25” with “0.75” and “1/4” with “3/4”

Page 167 Last Eq. in Example 4.5: Add “72z⁴” to numerator

Chapter 5:

Page 176 first section: Replace “Fig. 5.5” with “Fig. 5.5b

Page 182 VHDL comments: Replace “m[0]=127” with “m[0]=124” and “g[0]=127” with “g[0]=124”

Page 185 Figure lower signal path: Replace “F₁(z)” with “F₀(z)”

Page 185 sentence after Eq. (5.17): Replace “addition” with “delay”

Page 185 Eq. (5.19): Replace “z⁻¹” with “-z⁻¹”

Page 191 Fig. 5.17 caption: Add Fig. 5.17. MATLAB Simulation of ...

Page 192 VHDL code: Replace “unsigned” with “signed”

Page 196 Eq. (5.28): Replace “2N” with “2S”

Page 197 Fig. 5.22: Switch “D=1” and “D=2”

Page 197 Eq. (5.32): Replace “j=2N+1” with “k=2S+1”

Page 199 VHDL code: Replace twice “2**14” with “2**13”; “2**13” with “2**12”; “2**12” with “2**11”; “unsigned” with “signed”

Page 203 Fig. 5.26 third input: Replace “x₂” with “x₃”

Page 219 Eq. (5.61): Use

$$G(z)\hat{G}(z) + H(z)\hat{H}(z) = F(z) - \hat{G}(-z)G(-z) = F(z) - F(-z)$$

Page 219 Eq (5.62): Replace “+” with “-”

Page 226 VHDL code: Replace “unsigned” with “signed”

Page 231 Eq. (5.83) replace “k²/2” with “-k²/2”

Chapter 6:

Page 241 Fig. 6.1: Replace “Tuckey” with “Tukey”

Page 244 Eq. (6.6): Use

$$\mathbf{x}^* = \frac{1}{N} (\mathbf{W}^* \mathbf{W})^* = \frac{1}{N} \mathbf{W} \mathbf{X}^*,$$

Page 245 Table 6.1 second column: Replace “n=0” with “k=0” also “x([n]” with “x[n]”

Page 249 Eq. (6.8): Add 3 times subscript “N” to **W**

Page 251 Fig. 6.8 title: “2...” with “4...”

Page 252 Last equation: Replace

$$\begin{bmatrix} 20 \\ 30 \\ 40 \\ 50 \\ 60 \\ 70 \end{bmatrix} \quad \text{with} \quad \begin{bmatrix} 20 \\ 40 \\ 30 \\ 70 \\ 50 \\ 60 \end{bmatrix}$$

Page 254 VHDL code: Replace “unsigned” with “signed”

Page 258 Example 6.7:

$$\begin{bmatrix} X[0] \\ X[1] \\ X[2] \\ X[3] \\ X[4] \end{bmatrix} \quad \text{with} \quad \begin{bmatrix} X[0] \\ X[4] \\ X[3] \\ X[2] \\ X[1] \end{bmatrix}$$

Page 262 third line: Replace “3 additions” with “6 additions”

Page 265 Example 6.11: Replace “ $e^{j\pi/9}$ ” with “ $e^{j\pi/10}$ ” and “ e^{j20} ” with “ e^{j18} ”

Page 267 VHDL comments: Replace “ $i \leq (c-s)$ ” with “ $i \leq (c+s)$ ” also “ $(c+s)*y$ ” with “ $(c-s)*y$ ”

Page 267 last line: Replace “will increase” with “increases”

Page 269 VHDL code: Replace “unsigned” with “signed”

Page 286 Exercise 6.17: replace “ $y = [x(1:2:N); x(N:-2:2)];$ ” with “ $y = [x(1:2:N), x(N:-2:2)];$ ”

Chapter 7:

Page 351 Table 7.19: Replace “1,5” with “1.5” and “1,0” with “1.0”

Page 357 Table 7.21: Replace “Stage” with “State”

Chapter 8:

Page 369 second equation: Replace “ $E\{x^2\}$ ” with “ $E\{(x-\eta)^2\}$ ”

Page 371 Equation after (8.7): Remove “(” and Replace “ $\mathbf{x}^T[n] \mathbf{x}[n] f_{\text{opt}}$ ” with “ $\mathbf{x}[n] \mathbf{x}^T[n] f_{\text{opt}}$ ”

Page 374 third equation: Replace “ $x[n] = f\hat{o}$ ” with “ $y[n] = f\hat{o}$ ”

Page 376 Eq. (8.18); page 397 second equation; page 398 eq. (8.47); page 410 Eq. (8.66); Page 413 third equation; page 415 second equation: Replace “=” with “=”

Page 385 Fig. 8.15c x axis label: Replace “Iteration” with “Sample n”

Page 408 after equation (8.60): Replace “ $\mathbf{A}^{-1}\mathbf{B}$ ” with “(” and “ $\mathbf{C}+$ ” with “ $\mathbf{C}^{-1}+$ ”

Page 408 next equation: Replace “ $\mathbf{A}=\mathbf{R}_{xx}[n+1]$ ” with “ $\mathbf{A}=\mathbf{R}_{xx}[n]$ ”

Page 408 equation (8.61): Replace “ $=\mathbf{R}_{xx}^{-1}[n]$ ” with “ $=\mathbf{R}_{xx}[n]$ ” and “ $=\mathbf{R}_{xx}^{-1}[n]+$ ” with “ $=\mathbf{R}_{xx}^{-1}[n]-$ ”

Page 408 equation after (8.61): Replace “ $=\mathbf{R}_{xx}^{-1}[n]$ ” with “ $=\mathbf{R}_{xx}[n]$ ” and “ $=\mathbf{R}_{xx}^{-1}[n]+$ ” with “ $=\mathbf{R}_{xx}^{-1}[n]-$ ”

Page 410 equation (8.67): Replace “ $\mathbf{R}_{xx}^{-1}[n]+$ ” with “ $\mathbf{R}_{xx}^{-1}[n]-$ ”

Page 420 Exercise 8.8: remove “where $n[n]$ is a white Gaussian noise with variance 1.”

References:

Page 426 reference 73: Replace “1995” with “1975”

Appendix :

Page 451 line 17: Replace “[W3-1:0] y_out” with “[W4-1:0] y_out”

Page 489 table: switch VHDL page reference div_aegp<-> div_res, i.e. 67<->74